

**Hiroshima University Graduate of Biomedical &  
Health Sciences (Dentistry) and Hiroshima University  
Hospital (Dental Departments)**

**Research Achievements 2018**

# Contents

## Hiroshima University School of Dentistry, Hiroshima University Hospital, Graduate School of Biomedical & Health Sciences

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Surgery and Oral Medicine (Department of Dental Anesthesiology and Orofacial Pain Management)

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○ **Program of Oral Health Sciences**

- Department of Public Oral Health
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- Department of Anatomy and Functional Restorations
- Department of Medical System Engineering
- Department of Oral Biology & Engineering

○ **Graduate School of Biomedical & Health Sciences (Dentistry)** including Central Research Laboratory and Center for Cause of Death Investigation Research

○ **University Hospital (Dental departments)**

- Division of General Dentistry, Department of General Dentistry
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- Central Clinical Divisions, Dental Hygiene Section
- Dental Clinic
- Dental Medical Information Section

## Department of Maxillofacial Anatomy and Neuroscience

### (1) Staff and Students

Professor : Ryuji Terayama

### (2) Main Research Activities

- 1 : Studies on nociceptive transmission of orofacial region
- 2 : Roles of glial cells in the development of neuropathic pain
- 3 : Effects of administration of drugs on neuropathic pain

### (3) Research Achievements

#### A) Original Papers (including Case Reports)

1 : Tabata M, Terayama R, Maruhama K, Iida S, Sugimoto T, Differential induction of c-Fos and phosphorylated ERK by a noxious stimulus after peripheral nerve injury. *Int J Neurosci*, 128(3):208-218, 2018.

2 : Terayama R, Tabata M, Maruhama K, Iida S, A<sub>3</sub> adenosine receptor agonist attenuates neuropathic pain by suppressing activation of microglia and convergence of nociceptive inputs in the spinal dorsal horn. *Exp Brain Res*, 2018 in press.

#### B) Review

1 : Terayama R, New findings of synaptic abnormalities on neuropathic pain, *The Cell*, 50(14):33-36, 2018.

#### C) Publications

#### D) Other Publications

#### E) Presentation at Scientific Meeting

1 : Terayama R, Maruhama K, Differential induction of c-Fos and phosphorylated ERK after peripheral nerve injury, The 60th Annual Meeting of Japanese Association for Oral Biology (Fukuoka), 2018

(4) Status of Receiving Grants-in Aid for Scientific Research, etc.

1 : Grant-in Aid-for Scientific Research (C): Ryuji Terayama, 16K11440, ¥1,300,000

(5) Academic Awards, etc.

(6) Patents

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## Department of Physiology and Oral Physiology

### (1) Staffs and Students

Professor : SUGITA, Makoto

Assistant Professor : KITAGAWA, Michinori

Graduate Students : YAMAMOTO, Kuniyo

### (2) Main Research Activities

- 1 : The molecular and cellular bases of taste perception and coding
- 2 : The neuronal mechanisms underlying the taste-evoked behavioral and emotional responses
- 3 : The molecular mechanisms of ion and fluid transport in salivary glands
- 4 : The molecular mechanisms in development, morphogenesis and functional maintenance of salivary glands and oral tissues
- 5 : Studies on the function and dysfunction of ion channels and transporters

### (3) Research Achievements

#### A) Original Papers (including Case Reports)

- 1 : The biphasic effect of extracellular glucose concentration on carbachol-induced fluid secretion from mouse submandibular glands : Terachi M., Hirono C., Kitagawa M., Sugita M. : *Eur. J. Oral Sci.*, 126, 197-205, 2018.
- 2 : The activity of Na<sup>+</sup>-K<sup>+</sup>-2Cl<sup>-</sup> cotransporter for salivary Cl<sup>-</sup> secretion revealed by gramicidin-perforated patch recording : Sugita M. : *J. Hiroshima Univ. Dent. Soc.*, 50, 9-14, 2018.

#### B) Review

#### C) Publications

#### D) Other publication

#### E) Presentation at Scientific Meeting

- 1 : Taste aversion learning induces plastic changes in amygdalar neurons defined by genetic tracing of

taste representation : Chang C-M., Takemoto T., Sugita M. : The 51st Annual Meeting of Hiroshima University Dental Society (Hiroshima), 2018.

- 2 : The rate-limiting activities for Cl<sup>-</sup> secretion from salivary acinar cells with their dependency on extracellular glucose concentration : Sugita M., Terachi M., Kitagawa M., Hirono C. : The 70th Annual Meeting of the PSJ Chugoku-Shikoku Division (Toon), 2018.
- 3 : Visualization of Hippo signaling pathway by bimolecular fluorescence complementation (BiFC) method : Kitagawa M., Sugita M. : The 41th Annual Meeting of the Molecular biology Society of Japan (Yokohama), 2018.
- 4 : Information processing in the brainstem neurons relaying attractive and aversive salt tastes : Yamamoto K., Sugita M. : 2018 NIPS Research Meeting (Okazaki), 2018.

#### (4) Status of Receiving Grants-in Aid for Scientific Research, etc.

- 1 : Grant-in-Aid for Scientific Research (C): Sugita M., The functional mapping of taste information processing in the brain by using genetic tracing. 18K09519. ¥1,100,000.
- 2 : Takeda Science Foundation: Sugita M., The functional anatomy of taste representation in the whole brain. ¥2,000,000.
- 3 : Satake Technology Promotion Foundation: Kitagawa M., Analysis of the effects of sex hormone on taste sensitivity and the molecular mechanisms. ¥500,000.

#### (5) Academic Awards, etc.

#### (6) Patents

## Department of Molecular Biology and Biochemistry

### (1) Staff and Students

Professor: Chisa Shukunami

Assistant Professor: Katsumi Fujimoto

Assistant Professor (Special Appointment): Yuki Yoshimoto (~Mar.)

Special Postdoctoral Researcher: Yuki Yoshimoto (Apr. ~)

Education and Research Support Staff: ROSLI, Siti Nur Zawani (Apr. ~)

Undergraduate Student: Shinsei Yanbe (Apr. ~), Reina Hatano (Apr. ~), Yuki Yamasaki (Apr. ~)

### (2) Main Research Activities

- 1 : Mechanisms regulating in the establishment of the junction between cartilage and tendon/ligament
- 2 : The role of Pax1 during formation of vertebral column
- 3 : Mechanisms of tendon/ligament formation
- 4 : Mechanisms of periodontal ligaments formation
- 5 : Pathogenic mechanisms involved in adolescent idiopathic scoliosis
- 6 : Mechanisms regulating differentiation of dental pulp stem cells

### (3) Research Achievements

#### A) Original Papers (including Case Reports)

- 1 : Scleraxis is a transcriptional activator that regulates the expression of Tenomodulin, a marker of mature tenocytes and ligamentocytes : Shukunami C, Takimoto A, Nishizaki Y, Yoshimoto Y, Tanak S, Miura S, Watanabe H, Sakuma T, Yamamoto T, Kondoh G, and Hiraki Y.: *Sci. Rep.*, 8, 3155, 2018.
- 2 : Host defense against oral microbiota by bone-damaging T cells : Tsukasaki M, Komatsu N, Nagashima K, Nitta T, Pluemsakunthai W, Shukunami C, Iwakura Y, Nakashima T, Okamoto K, and Takayanagi H.: *Nat. Commun.*, 9, 701, 2018.
- 3 : THRAP3 interacts with and inhibits the transcriptional activity of Sox9 during chondrogenesis : Sono T, Akiyama H, Miura S, Deng JM, Shukunami C, Hiraki Y, Tsushima Y, Azuma Y, BehringerRR, Matsuda S.: *J. Bone Miner. Metab.*, 36, 410-419, 2018.
- 4 : Characterization of human dental pulp cells grown in chemically defined serum-free medium : Fujii S, Fujimoto K, Goto N, Abiko Y, Imaoka A, Shao J, Kitayama K, Kanawa M, Sosiawan A, Suardita K, Nishimura F, Kato Y.: *Biomed. Rep.*, 8(4), 350-358, 2018.



- 5 : Deficiency of the basic helix-loop-helix transcription factor DEC1 prevents obesity induced by a high-fat diet in mice : Noshiro M, Kawamoto T, Nakashima A, Ozaki N, Ueno T, Saeki M, Honda K, Fujimoto K, Kato Y.: *Genes Cells*, 23(8), 658-669, 2018.
- 6 : Genetic Markers Can Predict Chondrogenic Differentiation Potential in Bone Marrow-Derived Mesenchymal Stromal Cells : Kanawa M, Igarashi A, Fujimoto K, Higashi Y, Kurihara H, Sugiyama M, Saskianti T, Kato Y, Kawamoto T.: *Stem Cells Int.*, 9530932, 2018.

## B) Review

- 1 : Enthesis formation and repair: Current understanding and perspectives for the future regenerative therapy : Takuya Tokunaga, Hitoshi Arimura, Hiroshi Mizuta, Yuji Hiraki, Chisa Shukunami.: *Clinical Calcium*, 28(3), 43-51, 2018.
- 2 : Role of cytokines in rotator cuff healing: Takuya Tokunaga, Hitoshi Arimura, Hiroshi Mizuta, Yuji Hiraki, Chisa Shukunami.: *Orthopaedic Surgery and Traumatology*, 61(11), 1391-1396, 2018.

## C) Publications

## D) Other Publications

## E) Presentation at Scientific Meeting

- 1 : Molecular mechanisms regulating entheses formation: Chisa Shukunami : Institute for Frontier Medical and Life Sciences, Kyoto University “Joint Usage/ Research Center Program for Transdisciplinary Collaboration on Tissue Engineering and Regenerative Medicine” Meeting for Joint Research in 2018 in Kyoto University.
- 2 : Regulation of periodontal ligament and alveolar bone remodeling by Scleraxis and Osterix : Chisa Shukunami: The 60<sup>th</sup> Annual Meeting of Japanese Association for Oral Biolog: Symposium of JAOB (Fukuoka), 2018.

## F) Special lectures in academic meetings

- 1 : Current situation and perspective of tendon and ligament research: Chisa Shukunami: The 36<sup>th</sup> Annual Meeting of the Japanese Society for Bone and Mineral Research Meet the Experts 5(Nagasaki), 2018.
- 2 : Regulation of periodontal ligament and alveolar bone remodeling by Scleraxis and Osterix : Chisa Shukunami: The 60<sup>th</sup> Annual Meeting of Japanese Association for Oral Biolog: Symposium of JAOB

(Fukuoka), 2018.

- 3 : Functional roles of Pax1/9 in formation and homeostasis of the intervertebral discs : Chisa Shukunami :  
The 33<sup>rd</sup> Annual Meeting of the Japanese Society for Clinical Rheumatology and Related Research.  
Symposium 9: Basics and clinics on spine arthritis (Tokyo), 2018.
- 4 : Regulation of *Aggrecan* expression by Pax1/9 in the annulus fibrosus of the intervertebral disc: Aki  
Takimoto and Chisa Shukunami: The 41<sup>st</sup> Annual Meeting of the Molecular Biology Society of Japan,  
Workshop “Molecular mechanisms regulating junction formation and maintenance in the  
musculoskeletal system“ (Yokohama), 2018

#### (4) Status of Receiving Grants-in Aid for Scientific Research, etc.

- 1 : Grant-in-Aid for Challenging Exploratory Research: Chisa Shukunami, 16K15780. ¥1,100,000
- 2 : AMED : Chisa Shukunami, 17929951. ¥1,153,000
- 3 : Grant-in-Aid for Scientific Research (C): Aki Takimoto, Chisa Shukunami, 16K10899. ¥100,000
- 4 : The Cooperative Research Program of the Institute for Frontier Medical and life Sciences, Kyoto  
University: Chisa Shukunami, ¥2,000,000
- 5 : Grant-in-Aid for Young Scientists (B): Yuki Yoshimoto, 17K17092. ¥1,040,000
- 6 : Grant-in-Aid for JSPS Research Fellow: Yuki Yoshimoto, 18J40203. ¥1,430,000
- 7 : Grant-in-Aid for Scientific Research (C): Fuyuki Sato, Katsumi Fujimoto, 16K09624. ¥100,000
- 8 : Grant-in-Aid for Scientific Research (C): Katsumi Fujimoto, 18K09638. ¥450,000
- 9 : Grant-in-Aid for Scientific Research (C): Masami Kanawa, Katsumi Fujimoto, 17K11541. ¥300,000

#### (5) Academic Awards, etc.

#### (6) Patents

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## Department of Oral and Maxillofacial Pathobiology

### (1) Staffs and Students

Professor : Takashi Takata  
Associate Professor : Mutsumi Miyauchi  
Assistant Professor : Hisako Furusho, Toshinori Ando  
Researcher : Chea Chanbora (D4, Graduated in March),  
Graduate Student : Shunryo Yanagisawa (D4, graduated in March), Atsuhiro Nagasaki (D3),  
Shinichi Sakamoto (D2), Hiroki Tsuji (D2), Shrestha Madhu (D2),  
Naoki Sako (M2), Sakura Yamada (D2, Department of orthodontics)

### (2) Main Research Activities

- 1 : Molecular pathological study on proliferation and development of oral squamous cell carcinoma
- 2 : Experimental pathological study on the mechanism of regeneration of periodontal tissues
- 3 : Experimental pathological study on relationship between odontogenic infection and systemic health condition
- 4 : Study on the criteria of diagnosis and cellular differentiation of odontogenic tumors and salivary gland tumors

### (3) Research Achievements

#### A) Original Papers (including Case Reports)

- 1 :  $\gamma$ -Glutamyltranspeptidase is an endogenous activator of Toll-like receptor 4-mediated osteoclastogenesis: Moriwaki S., Into T., Suzuki K., Miyauchi M., Takata T., Shibayama K., Niida S.: Sci. Rep. 24(6):35930, 2016. doi: 10.1038/srep35930.
- 2 : Human odontogenic epithelial cells derived from epithelial rests of Malassez possess stem cell properties: Tsunematsu T., Fujiwara N., Yoshida M., Takayama Y., Kujiraoka S., Qi G., Kitagawa M., Kondo T., Yamada A., Arakaki R., Miyauchi M., Ogawa I., Abiko Y., Nikawa H., Murakami S., Takata T., Ishimaru N., Kudo Y.: Lab. Invest. 96(10):1063-75, 2016. doi: 10.1038/labinvest.2016.85.
- 3 : N-terminal region of human ameloblastin synthetic peptide promotes bone formation: Kitagawa M., Ando T., Subarnbhesaj A., Uchida T., Miyauchi M., Takata T.: Odontology. 2016. [Epub ahead of print]
- 4 : Effects of C-Terminal Amelogenin Peptide on Proliferation of Human Cementoblast Lineage Cells:

- Yoshimi Y., Kunimatsu R., Hirose N., Awada T., Miyauchi M., Takata T., Li W., Zhu L., Denbesten P., Tanne K., Tanimoto K.: J. Periodontol. 87(7):820-7, 2016. doi: 10.1902/jop.2016.150507.
- 5 : The C-terminus of amelogenin enhances osteogenic differentiation of human cementoblast lineage cells: Kunimatsu R., Yoshimi Y., Hirose N., Awada T., Miyauchi M., Takata T., Li W., Zhu L., Denbesten P. K., Tanimoto K.: J. Periodontal Res. 2016 doi: 10.1111/jre.12384. [Epub ahead of print]
- 6 : Enhanced Expression of Contractile-Associated Proteins and Ion Channels in Preterm Delivery Model Mice With Chronic Odontogenic *Porphyromonas Gingivalis* Infection: Miyoshi H., Konishi H., Teraoka Y., Urabe S., Furusho H., Miyauchi M., Takata T., Kudo Y.: Reprod. Sci. 23(7):838-46, 2016. doi: 10.1177/1933719115620497.
- 7 : Ameloblastin induces tumor suppressive phenotype and enhances chemosensitivity to doxorubicin via Src-Stat3 inactivation in osteosarcoma: Ando T., Kudo Y., Iizuka S., Tsunematsu T., Umehara H., Shrestha M., Matsuo T., Kubo T., Shimose S., Arihiro K., Ogawa I., Ochi M., Takata T.: Sci. Rep. 2016. in press.
- 8 : Exophytic Verrucous Hyperplasia of the Oral Cavity – Application of Standardized Criteria for Diagnosis from a Consensus Report: Zain R. B., Kallarakkal T. G., Ramanathan A., Kim J., Tilakaratne W. T., Takata T., Warnakulasuriya S., Hazarey V. K., Rich Alison., Hussaini H. M., Jalil A.: Asian Pac. J. Cancer Prev. 17(9):4491, 2016. doi: 10.7314/APJCP.2016.17.(9).4491.
- 9 : Expression of Wilms' tumor 1 (WT1) in ameloblastomas: Bolongna-Molina R., Takeda Y., Kuga T., Chosa N., Kitagawa M., Takata T., Ishisaki A., Mikami T.: J. Oral Sci. 58(3):407-13, 2016. doi: 10.2334/josnusd.15-0546.
- 1 0 : MicroRNA-203 suppresses invasion and epithelial-mesenchymal transition induction via targeting NUA1 in head and neck cancer: Obayashi M., Yoshida M., Tsunematsu T., Ogawa I., Sasahira T., Kuniyasu H., Imoto I., Abiko Y., Xu D., Fukunaga S., Tahara H., Kudo Y., Nagao T., Takata T.: Oncotarget 7(7):8223-39, 2016. doi: 10.18632/oncotarget.6972.
- 1 1 : Phospholipase C-related Catalytically Inactive Protein Is a New Modulator of Thermogenesis Promoted by  $\beta$ -Adrenergic Receptors in Brown Adipocytes: Oue K., Zhang J., Harada-Hada K., Asano S., Yamawaki Y., Hayashiuchi M., Furusho H., Takata T., Irifune M., Hirata M., Kanematsu T.: J. Biol. Chem. 291(8):4185-96, 2016. doi: 10.1074/jbc.M115.705723.
- 1 2 : Distinction Between Cell Proliferation and Apoptosis Signals Regulated by Brain-Derived Neurotrophic Factor in Human Periodontal Ligament Cells and Gingival Epithelial Cells: Kashiwai K., Kajiyama M., Matsuda S., Ouhara K., Takeda K., Takata T., Kitagawa M., Fujita T., Shiba H., Kurihara H.: J. Cell. Biochem. 117(7):1543-55, 2016. doi: 10.1002/jcb.25446.
- 1 3 : Interrelationship Between Periapical Lesion and Systemic Metabolic Disorders: Sasaki H., Hirai K., Martins C. M., Furusho H., Battaglino R., Hashimoto K.: Curr. Pharm. Des. 22(15):2204-15, 2016.
- 1 4 : Elevated CD14 (Cluster of Differentiation 14) and Toll-Like Receptor (TLR) 4 Signaling Deteriorate Periapical Inflammation in TLR2 Deficient Mice: Rider D., Furusho H., Xu S., Trachtenberg A. J.,

Kuo W. P., Hirai K., Susa M., Bahammam L., Stashenko P., Fujimura A., Sasaki H.: Anat. Rec. (Hoboken), 299(9):1281-92, 2016. doi: 10.1002/ar.23383.

- 1 5 : Morbidly obese patient with non-alcoholic steatohepatitis-related cirrhosis who died from sepsis caused by dental infection of *Porphyromonas gingivalis*: A case report.: Omura Y., Kitamoto M., Hyogo H., Yamanoue T., Tada Y., Boku N., Nishisaka T., Miyauchi M., Takata T., Chayama K.: Hepatol. Res. 46(3):E210-5, 2016. doi: 10.1111/hepr.12528.
- 1 6 : Application of Online Learning Support System on Short-term Undergraduate International Exchange Programs: Oka H., Takata T.: Journal of Japanese Dental Education Association, 32(2):64-71, 2016.
- 1 7 : The relationship between oral health and systemic diseases - Odontogenic infection of *P. gingivalis* is a risk factor of nonalcoholic steatohepatitis (NASH) - : Takata T. : Kanagawa Shigaku, 51(1):1-8, 2016.

## B) Reviews

- 1 : Part 2 Molecular pathology of cancer, B cancer of organ, 3. Odontogenic tumor: Ando T., Ogawa I., Takata T.: Molecular pathology of cancer –from pathological diagnosis to search for therapeutic target. (edited by Fukayama M., Kanai Y., Tanaka S.) Pathology and Clinical Medicine Special issue vol. 34, 79-83, 2016.

## C) Publications

- 1 : Chapter V Pathology of salivary gland tumors 2 malignant tumors: Ogawa I., Takata T.: Thorough lecture Saliva · Salivary gland (edited by Japan Salivary Gland Society), 156-163, 2016.

## D) Other Publications

## E) Presentation at Scientific Meeting

### 1) Special lectures in academic meetings

- 1 : The relationship between periodontal disease and systemic health condition - Odontogenic infection of *P. gingivalis* is a risk factor of nonalcoholic steatohepatitis and preterm birth– : Takata T. : The 23<sup>rd</sup> annual meeting of the Hiroshima Society of Nutrition and Dietetics (Hiroshima), 2016.
- 2 : Implementation report of dental accreditation trial, Dental accreditation trial (Niigata University) - The report from the evaluation committee-: Takata T.: The open symposium for business report in

Heisei 27<sup>th</sup> (Osaka), 2016.

- 3 : Oral administration of liposomal lactoferrin regulates progression of osteolytic diseases like periodontal disease and rheumatoid arthritis: Takata T.: The 16<sup>th</sup> annual meeting of Japanese Society of Anti-Aging Medicine (Yokohama), 2016.
- 4 : Revised points of WHO classification of odontogenic tumors: Takata T.: The 47<sup>th</sup> meeting of Kinki branch in the Japanese Society of Oral and Maxillofacial Surgeons (Osaka), 2016.
- 5 : Major revised points of 4th edition of WHO classification of odontogenic tumors: Takata T.: 18<sup>th</sup> International Congress on Oral Pathology and Medicine & XXV Conference of Indian Association of Oral and Maxillofacial Pathologists (India, Chennai), 2016.
- 6 : Chronic odontogenic infection and systemic health – the relationship between odontogenic infection of *P. gingivalis* and nonalcoholic steatohepatitis (NASH) - : Takata T.: Hiroshima prefecture branch of the Alumni Association of Hiroshima University (Hiroshima), 2016.
- 7 : Development of prognostic/diagnostic examination system of preterm birth targeting serum Galectin-3: Miyauchi M., Takata T.: Bio Japan 2016 (Yokohama), 2016.
- 8 : Symposium: “Application of Lactoferrin in the ageing society” Lactoferrin suppresses chronic inflammation and inflammatory bone destruction such as periodontal disease and rheumatoid arthritis: Takata T.: The 7<sup>th</sup> annual meeting of Japanese Association for Lactoferrin (Tokyo), 2016.
- 9 : The basis of histopathological diagnosis of salivary gland tumors Symposium “Cytology of salivary gland tumors: for comprehensive understanding”: Ogawa I., Takata T.: The 55<sup>th</sup> annual autumn meeting of the Japanese Society of Clinical Cytology (Beppu), 2016.

## 2) Presentation at International Scientific Meeting

- 1 : Key roles of TLR2 in NASH progression by *P.g.*-odontogenic infection: Furusho H., Nagasaki A., Sakamoto S., Miyauchi M., Takata T.: 94<sup>th</sup> General Session & Exhibition of the International Association for Dental Research, 64<sup>th</sup> Annual Meeting of JADR (Korea, Seoul), 2016.
- 2 : Ameloblastin induces tumor suppression and chemosensitivity in osteosarcoma: Ando T., Shrestha M., Kudo Y., Tsunematsu T., Ogawa I., Miyauchi M., Takata T.: 18<sup>th</sup> International Congress on Oral Pathology and Medicine & XXV Conference of Indian Association of Oral and Maxillofacial Pathologists (India, Chennai), 2016.
- 3 : Novel regulation of tumor growth by tissue inhibitor of metalloproteinases (TIMP-1 and 4) in sarcomas: Shrestha M., Ando T., Nishisaka T., Ogawa I., Miyauchi M., Takata T.: 18<sup>th</sup> International Congress on Oral Pathology and Medicine & XXV Conference of Indian Association of Oral and Maxillofacial Pathologists (India, Chennai), 2016. ddddddddddddddddddddddddddddddddddddd
- 4 : Heterogeneity of ameloblastoma on cell lines and tissue specimens originated from a single patient: Mikami T., Bologna-Molina R., Kitagawa M., Takata T., Takeda Y.: 18<sup>th</sup> International Congress on

Oral Pathology and Medicine & XXV Conference of Indian Association of Oral and Maxillofacial Pathologists (India, Chennai), 2016.

### 3) Presentation at Domestic Scientific Meeting

- 1 : Large scale collaborative research on actual condition of odontogenic tumor in Asia: Takata T., Semba I., Naeda H., Takeda Y., Kumamoto H., Kuyama K., Toyosawa S., Nagatsuka H., Miyauchi M., Ikuko O.: The 105<sup>th</sup> annual meeting of Japanese society of Pathology (Sendai), 2016.
- 2 : A case report of odontogenic carcinoma needed to differentiation from fibrous dysplasia: Hirai C., Jimbo N., Morinaga Y., Kishino M., Toyosawa S., Ogawa I., Takata T., Itoh T.: The 105<sup>th</sup> annual meeting of Japanese society of Pathology (Sendai), 2016.
- 3 : Odontogenic infection of *Porphyromonas gingivalis* exacerbates pathological progression of non-alcoholic steatohepatitis through activation of hepatic stellate cells: Nagasaki A., Sakamoto S., Furusho H., Miyauchi M., Takata T.: The 49th Hiroshima University Dental Society (Hiroshima), 2016.
- 4 : Elimination of *Porphyromonas gingivalis*-infection by dental treatments is a beneficial impacts on non-alcoholic steatohepatitis progression: Nagasaki A., Sakamoto S., Furusho H., Miyauchi M., Takata T.: The 27<sup>th</sup> Annual Meeting of the Japanese Society of Oral Pathology (Hiroshima), 2016.
- 5 : Bovine lactoferrin attenuates bone invasion of oral squamous cell carcinoma: Okamoto K., Miyauchi M., Chea C., Imanaka M., Takata T.: The 27<sup>th</sup> Annual Meeting of the Japanese Society of Oral Pathology (Hiroshima), 2016.
- 6 : Oncogenic role of Tissue Inhibitor of Metalloproteinase-1, TIMP-1, through regulation of YAP in HNSCC: Dyshafilia Charindra., Madhu Shrestha., Ando T., Takata T.: The 27<sup>th</sup> Annual Meeting of the Japanese Society of Oral Pathology (Hiroshima), 2016.
- 7 : Overexpression of N-cadherin induces anti-apoptosis effects on cancer cells through TRAIL receptors and caspase pathway: Nguyen PT, Nguyen D., Miyauchi M., Fujii M., Takata T.: The 27<sup>th</sup> Annual Meeting of the Japanese Society of Oral Pathology (Hiroshima), 2016.
- 8 : Detection of KRAS Missense Mutations in Adenomatoid Odontogenic Tumour: Mikami T., Ogawa I., Kitagawa M., Takata T., Bologna-Molina R., Takeda Y.: The 27<sup>th</sup> Annual Meeting of the Japanese Society of Oral Pathology (Hiroshima), 2016.
- 9 : Odontogenic Infection of *Porphyromonas gingivalis* Exacerbates Pathological Progression of Nonalcoholic steatohepatitis (NASH) through Activation of Hepatic Stellate Cells: Kato M.: Japan Dental Association / Dentsply Sirona, Student Clinician Research Program (SCRP), Japanese delegate qualifying competition (Tokyo), 2016.
- 10 : Key roles of TLR2 in NASH progression by *P.g.*-odontogenic infection: Furusho H., Miyauchi M., Takata T.: The 58th Annual Meeting of Japanese Association for Oral Biology (Sapporo), 2016.

- 1 1 : Extraction of characteristics of liver cancer and periodontitis by exhalation components analysis: Sakumura Y., Tokutake H., Miyauchi M., Ohara K., Hidemi K., Takata T., Shin U., Tanaka A., Sato K.: 8<sup>th</sup> annual meeting of Japan society for medical application of stable isotope and biogas (Tokyo), 2016.
- 1 2 : Inhibition of Galectin-3 prevents preterm birth caused by odontogenic infection of Porphyromonas gingivalis.: Ishida E., Nagao H., Zhao J., Bushida J., Sakamoto S., Nagasaki A., Furusho H., Miyauchi M., Takata T.: The 23rd General Meeting of the Japanese Association for Dental Science (Fukuoka), 2016.
- 1 3 : Dental health guidance for Cambodian children ~ in cooperation with oral health sciences students and international dental course students ~: Iwamoto Y., Iwamoto A., Sumi N., Amano H., Kozai K., Takata T., Sugai M., Kato K.: 55th Hiroshima Prefecture Dental Association 100th Hiroshima University Dental Society (Hiroshima), 2016.

#### 4) Case Reports at Scientific Meeting

- 1 : Palatal tumor (Mucoepidermoid carcinoma, clear cell variant): Ogawa I., Ando T., Nagasaki A., Okamoto K., Tani R., Konishi M., Takata T.: 119<sup>th</sup> Academic Meeting of Chugoku-Shikoku Branch of the Japanese Society of Pathology (Ube), 2016.
- 2 : A case of ameloblastic carcinoma showing atypical histologic features: Mishima T., Hamana T., Hamada A., Hirota S., Hayashido Y., Miyauchi M., Okamoto T.: The 45<sup>th</sup> meeting of Chugoku shikoku branch in the Japanese Society of Oral and Maxillofacial Surgeons (Hiroshima), 2016.
- 3 : A case of mucoepidermoid carcinoma derived from glandular odontogenic cyst: Uchisako K., Koizumi K., Higaki M., Ishida Y., Toratani S., Nagasaki A., Ando T., Ogawa I., Okamoto T.: The 45<sup>th</sup> meeting of Chugoku shikoku branch in the Japanese Society of Oral and Maxillofacial Surgeons (Hiroshima), 2016.
- 4 : Palatal tumor (Pleomorphic adenoma with widespread oncocyctic metaplasia): Sakamoto S., Ogawa I., Kayamori K., Kirimura S., Tomii S., Takata T.: 66<sup>th</sup> Meeting of Hiroshima Pathological Conference (Hiroshima), 2016.
- 5 : A tumor of maxilla (Ameloblastic carcinoma, secondary type): Chea C., Furusho H., Miyauchi M., Hamana T., Hayashido Y., Ogawa Y., Okamoto T., Takata T.: The 27<sup>th</sup> Annual Meeting of the Japanese Society of Oral Pathology (Hiroshima), 2016.
- 6 : A case of hybrid odontogenic tumor: Calcifying cystic odontogenic tumor and odontoma showing various developing stages-: Shrestha M., Shrestha A., Dangol A., Maharjan I. M., Ogawa I., Miyauchi M., Takata T.: The 27<sup>th</sup> Annual Meeting of the Japanese Society of Oral Pathology (Hiroshima), 2016.
- 7 : Parotid gland lesion (Intercalated duct hyperplasia): Sakamoto S., Ogawa I., Obayashi M., Fujiwara



- M., Takata T.: 121<sup>th</sup> Academic Meeting of Chugoku-Shikoku Branch of the Japanese Society of Pathology (Hiroshima), 2016.
- 8 : A case of epulis-like melanoma in maxillary gingiva with black-colored metastatic focus: Seino S., Shimasue H., Ohta K., Ando T., Ogawa I., Takechi M.: The 61<sup>st</sup> Congress of the Japanese Society of Oral and Maxillofacial Surgeons (Makuhari) , 2016.
- 9 : A case of sialolipoma with nodular oncocytic hyperplasia: Ogawa I., Takahashi T., Tamura M., Nagao T., Takata T.: The 61st Annual Meeting of Japan Salivary Gland Society (Tokyo), 2016.
- 10 : Parotid gland tumor (Myoepithelial carcinoma ex pleomorphic adenoma, non-invasive): Furusho H., Miyauchi M., Sakaida N., Okamura M., Ogawa I., Takata T.: 67<sup>th</sup> Meeting of Hiroshima Pathological Conference (Hiroshima), 2016.

#### (4) Status of Receiving Grants-in Aid for Scientific Research

- 1 : Grants-in-Aid for Scientific Research (B) (New): Takata T.: Decision of the sequence on Lactoferrin important for anti-osteoclastogenesis and development of peptide medicine for bone destructive lesions. 25293373. 5,600,000 yen
- 2 : Grants-in-Aid for Scientific Research (C) (New): Miyauchi M.: Comprehensive research on the role of Galectin-3 in the progression of preterm birth induced by periodontal disease. 16K11444. 1,300,000 yen
- 3 : Grants-in-Aid for Encouragement of Young Scientists (B) (New): Furusho H.: Elucidation of the mechanism of NASH exacerbated by odontogenic red complex infection through TLR2 pathway. 16K20437. 900,000 yen
- 4 : Grants-in-Aid for Scientific Research (B) (Continuance, until March): Takata T.: Control of proliferation and bone invasion of oral cancer by using liposomal lactoferrin. 25293373. 3,600,000 yen
- 5 : Grants-in-Aid for Scientific Research (B) (Continuance, until March): Takata T.: A large-scale study on odontogenic tumors in Asia aiming for the revision WHO classification of head and neck tumors. 26305033. 3,600,000 yen
- 6 : Grants-in-Aid for Scientific Research (Challenging Exploratory Research) (Continuance, until March): Takata T.: Development of diagnostic/preventive methods for odontogenic infection induced preterm birth and low birth weight targeting of Galectin-3. 26670802. 1,500,000 yen
- 7 : “Base of knowledge-Aichi” Joint research project of emphasis research program (Continuance, until March): Takata T.: Development of gas sensing device and analysis of relationships between human respiratory/skin gas and diseases. 1,980,000 yen
- 8 : Grants-in-Aid for Scientific Research (C) (Continuance, until March): Miyauchi M.: Clarification of pathological progression mechanisms nonalcoholic steatohepatitis caused by dental infection of

periodontal pathogen. 25462855. 1,000,000 yen

- 9 : Grants-in-Aid for Encouragement of Young Scientists (B) (Continuance, until March): Furusho H.:  
The role of TLR2 in NASH progression caused by *P. gingivalis* odontogenic infection. 26861574.  
1,500,000 yen
- 1 0 : Donated fund from Sanstar Co. Ltd. (Continuance): Takata T. (Study on periodontitis)
- 1 1 : Donated fund for Hiroshima Prefecture tumor registration business (Continuance): Takata T.
- 1 2 : Donated fund from Mitsubishi-Mihara Hospital (Continuance): Takata T. (Study on diagnosis for  
oral disease)

### (5) Academic Awards

- 1 : Hisako Furusho      The 64<sup>th</sup> annual meeting of JADR JADR/GC Encouragement Award
- 2 : Toshinori Ando      18<sup>th</sup> International Congress on Oral Pathology and Medicine  
(IAOP), Poster Award
- 3 : Atsuhiko Nagasaki    49<sup>th</sup> Hiroshima University Dental Society Research Incentive Award  
27<sup>th</sup> Annual Meeting of the Japanese Society of Oral Pathology  
BEST GENERAL POSTER AWARD
- 4 : Madhu Shrestha      18<sup>th</sup> International Congress on Oral Pathology and Medicine  
(IAOP) Oral Paper Prize
- 5 : Minami Kato          Japan Dental Association / Dentsply Sirona, Student Clinician Research  
Program (SCRIP), Japanese delegate qualifying competition, The 2nd Place  
/ 2016 Clinical Research: The 1st Place Award
- 6 : Eri Ishida            The 23rd General Meeting of the Japanese Association for Dental Science  
The first prize of student poster award
- 7 : Kana Okamoto        27<sup>th</sup> Annual Meeting of the Japanese Society of Oral Pathology  
BEST STUDENT POSTER
- 8 : Dyshafilia Charindra 27<sup>th</sup> Annual Meeting of the Japanese Society of Oral Pathology  
STUDENT POSTER

### (6) Patents

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## Department of Bacteriology

### (1) Staff and Students

Visiting Professor: Motoyuki Sugai (from 1-Apr,2018), Keigo Shibayama(from 1-Apr,2018)

Visiting Associate Professor: Junzo Hisatune (from 28-Dec,2018), Shizuo Kayama(from 28-Dec,2018)

Assistant Professor: Junzo Hisatune (by1-Dec.2018), Shizuo Kayama (by 1-Dec.2018)

Research Colleagues: Keiko Turuda, Ikue Hayashi

Researcher : Chika ARAI, Liansheng Yu (by 31-May, 2018)

Graduate Student: Yoshie Harino, Ryuichi Kuwahara, Mitsuyasu Ikeda, Yoshie Niitsu, Toshinori Hara,  
Raita Yano, Kayoko Tadera, Kanako Masuda, Shouko Kutsuno, Isamu Kado,  
FATKHANUDDIN AZIZ, Yuuta Kuroo, Hirotake Inagawa, LE MI NGUYEN TRA,  
Seiya Kashiyama, Yuuma Koizumi, Hiroki Kitagawa

### (2) Main Research Activities

- 1 : Research on peptidoglycan hydrolases
- 2 : Drug resistance mechanism of nosocomial pathogens and molecular epidemiology
- 3 : Research on bacterial toxins modifying signal transduction
- 4 : Functional study of virulence factors of periodontopathogenic bacteria
- 5 : Comparative genomic analysis of staphylococci
- 6 : Gene expression analysis of *S. aureus*

### (3) Research Achievements

#### A) Original Papers (including Case Reports)

- 1 : Rapid identification of carbapenemase-type bla GES and ESBL-type bla GES using multiplex PCR  
Shizuo Kayama, Raita Yano, Katsutoshi Yamasaki, Chiemi Fukuda, Keiko Nishimura,  
Hitoshi Miyamoto, Hiroki Ohge, Motoyuki Sugai, Journal of Microbiological Methods 2018
- 2 : *Staphylococcus aureus* from atopic dermatitis skin accumulates in the lysosomes of keratinocytes  
with induction of IL-1 $\alpha$  secretion via TLR9,Masaya Moriwaki, Kazumasa Iwamoto, Yoshie Niitsu,  
Ayako Matsushima, Yuhki Yanase, Junzo Hisatsune, Motoyuki Sugai, Michihiro Hide  
Allergy.2019;74:560

- 3 : New colony multiplex PCR assays for the detection and discrimination of vancomycin-resistant enterococcal species, Takahiro Nomura, Yusuke Hashimoto, Jun Kurushima, Hidetada Hirakawa, Koichi Tanimoto, Bo Zheng, Genjie Ruan, Feng Xue, Jian Liu, Junzo Hisatsune, Motoyuki Sugai, Haruyoshi Tomita, Journal of Microbiological Methods Volume 145, February 2018, Pages 69-72
- 4 : Prosthetic Valve Endocarditis Caused by ST8 SCCmecIV1 Type Community-associated Methicillin-resistant *Staphylococcus aureus*: A Case Report, Hiroki Kitagawa, Hiroki Ohge, Junzo Hisatsune, Toshiki Kajihara, Keiji Katayama, Shinya Takahashi, Taijiro Sueda, Motoyuki Sugai, Intern Med Advance Publication DOI: 10.2169/internalmedicine.1415-18
- 5 : Tailor-made gene silencing of *Staphylococcus aureus* clinical isolates by CRISPR interference Yusuke Sato'o, Junzo Hisatsune, Liansheng Yu, Tetsushi Sakuma, Takashi Yamamoto, Motoyuki Sugai, PLOS ONE | <https://doi.org/10.1371/journal.pone.0185987> January 29, 2018
- 6 : Detection of *mcr-1*-mediated colistin resistance in *E. coli* isolate from imported chicken meat from Brazil, Naoko Chiba, Koichi Tanimoto, Junzo Hisatsune, Motoyuki Sugai, Keigo Shibayama, Haruo Watanabe, Haruyoshi Tomita, Journal of Global Antimicrobial Resistance, volume 16, Marh 2019, page 249-250
- 7 : CdtC-Induced Processing of Membrane-Bound CdtA Is a Crucial Step in *Aggregatibacter actinomycetemcomitans* Cytolethal Distending Toxin Holotoxin Formation, Keiko Tsuruda, Oranart Matangkasomubut, Masaru Ohara, Motoyuki Sugai, Infection and Immunity March 2018 Volume 86 Issue 3 e00731-17
- 8 : Multiple intraabdominal Abscesses Caused by *Mycoplasma hominis* Infection Following Simultaneous Pancreas-Kidney Transplantation, Yumiko Okumura, Toshiki Kajihara, Yumiko Koba, Makoto Onodera, Toshinori Hara, Hiroyuki Tahara, Hideki Ohdan, Hiroki Ohge, Michiya Yokozaki, Motoyuki Sugai, Ann Lab Med. 2018 Jul;38(4):381-383.

#### E) Presentations at Scientific Meetings

- 1 : 2018-05-31 第 66 回 日本化学療法学会総会（岡山県）  
広島県内の医療施設にて中国からの帰国者より分離された string test 陽性 blaKPC-2 保有 *K. pneumoniae* の解析, 鹿山鎮男, 横田和久, 大毛宏喜, 菅井基行
- 2 : 2018-11-16 第 47 回薬剤耐性菌研究会（長野県）

広島県にて海外渡航者より分離された blaNDM-7 保有株および blaKPC-2 保有株の解析  
鹿山鎮男, 森三郎, 池田光泰, 鈴木仁人, 矢原耕史, 柴山恵吾, 大毛宏喜, 菅井基行

(4) Status of Receiving Grants-in Aid for Scientific Research, etc.

- 1 : 基盤研究 (C) : 久恒順三, 皮膚感染症由来黄色ブドウ球菌の病原因子の情報基盤.  
課題番号 18K08299. 1,400 千円 (直接経費 : 1,400 千円、間接経費 : 420 千円)
- 2 : 基盤研究 (C) : 久恒順三, H.pylori 菌体成分の口腔粘膜炎症誘導機構と胃癌患者の  
口腔内細菌叢変化. 課題番号 17K11839. 50 千円
- 3 : 基盤研究 (C) : 久恒順三, 糖尿病由来 CA-MRSA-ST8-SCCmecIV1 株の侵襲性感染症  
に関する研究. 課題番号 16K08777. 500 千円
- 4 : 基盤研究 (C) : 鹿山鎮男, 肺炎桿菌が高い粘稠性を示す新規メカニズムの解析.  
課題番号 18K07112. 2,210 千円 (直接経費 : 1,700 千円、間接経費 : 510 千円)

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## Department of Cellular and Molecular Pharmacology

### (1) Staff and Students

Professor: Takashi Kanematsu

Assistant Professor: Satoshi Asano, Yosuke Yamawaki

Professor (Special Appointment): Katsuya Morita, Toshiyuki Sasaguri, Minoru Wakamori, Takayuki Tsukuba, Akira Toyofuku, Tamotsu Kiyoshima

Graduate Student: Yuka Maetani, Hiroki So, Syuzo Sakata

Collaborator: Kae Harada (Kagoshima University), Kana Oue (Hiroshima University Hospital Medical Staff), Tomomi Sano (Kyushu University)

Research Student: Satoru Kusaka (6th), Munechika Takaishi (6th), Yasuka Ikura (5th), Mitsuki Nishimoto (4th)

### (2) Main Research Activities

- 1 : Studies on the molecular mechanisms of GABA<sub>A</sub> receptor signaling in the central nervous system
- 2 : Studies on the regulatory mechanisms of food intake and energy metabolism
- 3 : Studies on the roles of a new autophagy-related molecule in autophagy pathway
- 4 : Studied on the mechanisms of cell migration regulated by a new molecule
- 5 : Studies on the molecular mechanisms of thermogenesis in brown adipocytes
- 6 : Studies on the relationship between immune systems and depression-like behavior

### (3) Research Achievements

#### A) Original Papers (including Case Reports)

1 : Poor motor-function recovery after spinal cord injury in anxiety-model mice with phospholipase C-related catalytically inactive protein type 1 knockout. Fujita T., Kumagai G., Liu X, Wada K., Tanaka T., Kudo H., Asari T., Fukutoku T., Sasaki A., Nitobe Y., Nikaido Y., Furukawa KI, Hirata M., Kanematsu T., Ueno S., and Ishibashi Y. *J. Neurotrauma*, 35(12) : 1379–1386, 2018.

2 : Sodium butyrate abolishes lipopolysaccharide-induced depression-like behaviors and hippocampal microglial activation in mice. Yamawaki Y., Yoshioka N., Nozaki K., Ito H., Oda K., Harada K., Shirawachi S., Asano S., Aizawa H., Yamawaki S., Kanematsu T., and Akagi H. *Brain Res.*, 1680 : 13–38, 2018.

3 : Prolyl isomerase Pin1 suppresses thermogenic programs in adipocytes by promoting degradation of transcriptional co-activator PRDM16. Yusuke Nakatsu, Yasuka Matsunaga, Takeshi Yamamotoya, Koji

Ueda, Masa-ki Inoue, Yu Mizuno, Mikako Nakanishi, Tomomi Sano, Yosuke Yamawaki, Akifumi Kushiyama, Hideyuki Sakoda, Midori Fujishiro, Akihide Ryo, Hiraku Ono, Tohru Minamino, Shin-Ichiro Takahashi, Haruya Ohno, Masayasu Yoneda, Kei Takahashi, Hisamitsu Ishihara, Hideki Katagiri, Fusanori Nishimura, Takashi Kanematsu, Tetsuya Yamada, Tomoichiro Asano. Cell reports, in press, 2019.

## B) Review

## C) Publications

1 : Current Dental Pharmacology, 6th edition : Takashi Kanematsu (Keiichi Oya, Kunio Suzuki et al., Akifumi Togari, Kazuhiro Aoki, Takashi Kanematsu, Takayuki Tsukuba), Ishiyaku Publishers, Inc., Tokyo, Japan, pp.8–11, pp.12–24, pp.30, pp.143–158, 2018

2 : New Textbook for Dental Hygienist: Pharmacology, 2nd edition : Takashi Kanematsu (Kunio Suzuki et al., ed), Ishiyaku Publishers, Inc., Tokyo, Japan, pp.81–91, pp.93–101, pp.129–134, pp.144–148, 2018

3 : Basic Principles of Dental Pharmacology (Simplified for Dental Students) : Takashi Kanematsu, : Edit-Kiyoshi Ohura, Akifumi Togari, Takashi Kanematsu, Akira Nifuji, Suenaga (Kyoto Japan), pp.16–22, 2019.

## E) Presentation at Scientific Meeting

1 : Role of a novel molecule in regulation of inflammation-induced suppression of food intake, Yosuke Yamawaki, Takashi Kanematsu: 138th Annual Meeting of the Pharmaceutical Society of Japan (Kanazawa), 2018.

2 : PRIP protects PI(4,5)P<sub>2</sub> from its metabolic enzyme and contributes to completion of cytokinesis : Yasuka Ikura, Asano Satoshi, Kanematsu Takashi : 7th Hiroshima Conference (Hiroshima), 2018.

3 : PI(4,5)P<sub>2</sub> metabolism regulator PRIP controls the metastatic potential in breast cancer cells: Satoshi Asano, Takashi Kanematsu: 59th Chu-shikoku Branch Meeting of the Japanese Biochemical Society (Yonago), 2018.

4 : A new sphingolipid regulator for cytokinesis : Satoshi Asano : Annual Meetings of Japanese Association for Oral Biology (Tokyo), 2018.

5 : PRIP modulates AKT–GSK3 $\beta$  signaling and regulates cell cycle progression : Yuka Maetani, Satoshi Asano, Masahiro Irifune, Takashi Kanematsu : The 51th Annual Meeting of the Hiroshima University Dental Society (Hiroshima), 2018.

6 : Phospholipase C-related catalytically inactive protein regulates phosphatidylinositol metabolism and modulates cancer cell migration : Takashi Kanematsu, Satoshi Asano, Yosuke Yamawaki, Satoru Kusaka : 8th World Congress of Basic and Clinical Pharmacology (WCP2018) (Kyoto), 2018.

7 : Phospholipase C-related catalytically inactive protein enhances cisplatin-induced apoptosis : Satoshi Asano, Yuka Maetani, Yasuka Ikura, Takashi Kanematsu : 8th World Congress of Basic and Clinical Pharmacology (WCP2018) (Kyoto), 2018.

8 : Imipramine enhances the expression of astrocytic interleukin-10 under inflammatory state : Yosuke Yamawaki, Satomi Shirawachi, Munechika Takaishi, Shigeto Yamawaki, Takashi Kanematsu : 8th World Congress of Basic and Clinical Pharmacology (WCP2018) (Kyoto), 2018.

9 : Expression of PRIP in breast cancer cells downregulates tumor growth : Yuka Maetani, Satoshi Asano, Takashi Kanematsu : The 60th Annual Meetings of Japanese Association for Oral Biology (Fukuoka), 2018.

10 : Analysis of neuroinflammation induced by peripheral injection of Pg-LPS : Hironori So, Yosuke Yamawaki, Kotaro Tanimoto, Takashi Kanematsu : The 102th Hiroshima Prefecture Dental Association Hiroshima University Dental Society (Nippon Academy of Dental Technology Chugoku and Shikoku branch) (Hiroshima), 2018.

11 : Anti-inflammatory effect of imipramine in astrocyte-microglia interaction : Yosuke Yamawaki, Munechika Takaishi, Shigeto Yamawaki, Takashi Kanematsu : 28th Annual Meeting of the Japanese Society of Clinical Neuropsychopharmacology : The 48th Annual Meeting of the Japanese Society of Neuropsychopharmacology (Tokyo), 2018.

12 : Phospholipase C-related catalytically inactive protein modulates cytokinesis progression : Kanematsu Takashi, Asano Satoshi : The 92th Annual Meeting of The Japanese Pharmacological Society, (Osaka), 2019.

#### F) Special lectures in academic meetings

1 : Phospholipase C-Related Catalytically Inactive Protein Regulates Fat Metabolism and Energy Expenditure. Takashi Kanematsu, Kana Oue, Yosuke Yamawaki, Satoshi Asano, obesity-2018 (Amsterdam, Netherlands), 2018.

2 : A new molecular mechanism that regulates energy expenditure by regulating the function of white and brown adipocytes : Takashi Kanematsu, Kana Oue, Shuzo Sakata, Yosuke Yamawaki, Satoshi Asano : The 60th Annual Meetings of Japanese Association for Oral Biology (Fukuoka), 2018.

3 : Phospholipase C-related catalytically inactive protein, a phosphatidylinositol metabolism regulator, controls the metastatic potential in breast cancer cells. Takashi Kanematsu, Satoshi Asano, the 8th Annual World Congress of Molecular & Cell Biology, (Fukuoka), 2018.

#### G) Award lectures in academic meetings

1 : A new molecular mechanism in obesity control : Takashi Kanematsu : 18th Lion Dental Research Award



lecture : The 60th Annual Meetings of Japanese Association for Oral Biology (Fukuoka), 2018.  
2 : Novel phosphatidylinositol metabolism regulator controls the metastatic potential in breast cancer cells :  
Satoshi Asano : 30th Japanese Association for Oral Biology Encouragement Award lecture: The 60th Annual  
Meetings of Japanese Association for Oral Biology (Fukuoka), 2018.

#### (4) Status of Receiving Grants-in Aid for Scientific Research, etc.

1 : Grant-in-Aid for Scientific Research (C): Kanematsu T.: Study of phospholipid metabolism dysfunction  
in cancer. Project number 16K11503. Amount 4,680,000 (2016–2018).  
2 : Grant-in-Aid for Scientific Research (C): Asano S.: Development research of anti-malignant tumor agent  
applying a new metastasis-regulating factor PRIP. Project number 17K11644. Amount 4,550,000 (2017–  
2019).  
3 : Grant-in-Aid for Scientific Research (C): Yamawaki Y.: Research for elucidating mechanisms of stress  
responsiveness as basis of central dysfunction caused by periodontal disease. Project number 17K11670.  
Amount 4,550,000 (2017–2019).

#### (5) Academic Awards, etc.

1 : Takashi Kanematsu : 18th Lion Dental Research Award  
2 : Satoshi Asano : 30th Japanese Association for Oral Biology Encouragement Award, Best Paper Award  
(co-authors: Yuri Taniguchi, Yosuke Yamawaki, Takashi Kanematsu)  
3 : Yasuka Ikura : 7th Hiroshima Conference Young Investigator Award (co-authors: Satoshi Asano, Takashi  
Kanematsu)

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## Department of Biomaterials

### (1) Staff and Students

Professor: Koichi Kato

Assistant Professor: Yuji Nomura, Isao Hirata

Graduate Student: Shakya Ajay, Azusa Onishi, Tomoko Ogasawara, Fumiko Nishio, Yuuka Yamauchi,  
Satoshi Miyauchi, Ayana Nakano

### (2) Main Research Activities

- 1: Biomaterials and biodevices for regenerative medicine
- 2: Study on the interactions between biological systems and biomaterial surfaces
- 3: Development of novel disinfectants for dental materials

### (3) Research Achievements

#### A) Original Papers (including Case Reports)

- 1: Kan Kato, K. Morita, I. Hirata, K. Doi, T. Kubo, Koichi Kato, K. Tsuga: Enhancement of calcification by osteoblasts cultured on hydroxyapatite surfaces with adsorbed inorganic polyphosphate: *In Vitro Cell. Dev. Biol. Animal*, 54:449 (2018)
- 2: Y. Aida, H. Kurihara, K. Kato: Wnt3a promotes differentiation of bone marrow-derived mesenchymal stem cells into cementoblast-like cells: *In Vitro Cell. Dev. Biol. Animal*, 54:468 (2018)
- 3: S. Shimoe, I. Hirata, M. Otaku, K. Kato, T. Satoda: Formation of chemical bonds at zirconia surfaces with acidic functional monomers: *J. Oral Sci.*, 60:187 (2018)
- 4: R. Nishikiori, M. Sawajiri, T. Okuda, A. Otoshi, K. Watanabe, I. Hirata, W. Nishijima, M. Okazaki: Effect of ozonated water on the surface roughness of dental stone casts: *Dent. Mater. J.* 37:740 (2018)
- 5: H. Oka, H. Nikawa, K. Tanimoto, K. Kato: An Assessment of the Dual Linguistic Education System at the School of Dentistry, Hiroshima University: :The Changes in Students' Understanding on Class Contents and Recognition of the Meaning of the System: *The Journal of Japanese Dental Education Association*, 34(2): 49 (2018).

#### B) Review

### C) Publications

- 1: K. Endo, K. Ishikawa, S. Imazato, M. Uo, Y. Takada, T. Nezu, N. Nomura, M. Hashimoto, K. Hamada, S. Ban, I. Hirata, Y. Miyagawa, T. Miyasaka: A Glossary for Dental Materials and Devices: Ishiyaku Pub., Inc.

### D) Other Publications

### E) Presentation at Scientific Meeting

- 1: Engineering tissues that mimic natural cartilage microstructure: H. Sugino, M. Kanawa, K. Tanimoto, K. Kato: 7th Hiroshima Conference on Education and Science in Dentistry (Hiroshima, Japan), 29-30 Mar 2018.
- 2: Immobilization of basic fibroblast growth factor onto bioengineered surfaces. A novel approach for the efficient expansion of mesenchymal stem cells: A. Shakya, I. Hirata, K. Kato: 7th Hiroshima Conference on Education and Science in Dentistry (Hiroshima, Japan), 29-30 Mar 2018.
- 3: Spatially-controlled co-culture for analyzing epithelial-mesenchymal interactions (second report): R.Nishikiori, C. Kubota, S. Sakakitani, K. Yoshii, K. Kato: The 71th General Session of the Japanese Society for Dental Materials and Devices (Hirakata, Japan), 14-15 Apr 2018.
- 4: Oriented immobilization of basic fibroblast growth factor on alkanethiol monolayers for stem cell expansion: A. Shakya, I. Hirata, K. Kato: 6th Japan-China Symposium on Nanomedicine (Matsue, Japan), 25-27 May 2018.
- 5: Surface-immobilization of neurotrophin-4 mimetic peptide for the selective binding of a TrkB-expressing cell population from iPS cells: H. Watanabe, A. N. Abdullah, Y. Yamauchi, I. Hirata, K. Kato: 6th Japan-China Symposium on Nanomedicine (Matsue, Japan), 25-27 May 2018.
- 6: Optimization of culture conditions for the efficient induction of dental epithelial cells from iPS cells: S. Miyauchi, A. N. Abdullah, K. Kato: 6th Japan-China Symposium on Nanomedicine (Matsue, Japan), 25-27 May 2018.
- 7: Synthesis of Amphoteric Polymer Gel with Mucoadhesive Properties: F. Nishio, I. Hirata, K. Tsuga, K.Kato: 47th Biomedical Polymer Symposium (Tokyo, Japan), 19-20 Jul 2018.
- 8: The effect of epidermal growth factor on oral epithelial-like cell induction from mouse iPS cells: A. Onishi, A. N. Abudullah, K. Tanimoto, K. Kato: 5th TERMIS World Congress - 2018 (Kyoto, Japan), 4-7 Sep 2018.
- 9: Design of mucoadhesive gel for clinical application: F. Nishio, I. Hirata, K. Tsuga, K. Kato: The 72th General Session of the Japanese Society for Dental Materials and Devices (Sapporo, Japan), 6-7 Oct 2018.

- 10: Novel bioengineered surface design for the expansion of mesenchymal stem cells: A. Shakya, E. Imado, Nguyen Kim Phuong, T. Matsuyama, K. Horimoto, I. Hirata, K. Kato: The 40th Annual Meeting of the Japanese Society for Biomaterials (Kobe, Japan). 12-13 Nov 2018.
- 11: Design of culture substrate for efficient amplification of neural progenitor cells derived from induced pluripotent stem cells: Y. Yamauchi, I. Hirata, K. Tanimoto, K. Kato: The 40th Annual Meeting of the Japanese Society for Biomaterials (Kobe, Japan). 12-13 Nov 2018.
- 12: Development of micropore-forming polylactide filaments for use in 3D printing: I. Hirata, K. Kato: The 40th Annual Meeting of the Japanese Society for Biomaterials (Kobe, Japan). 12-13 Nov 2018.
- 13: Oriented immobilization of basic fibroblast growth factor onto solid surfaces for stem cell expansion: A. Shakya, E. Imado, N. K. Phuong, T. Matsuyama, K. Horimoto: 12th International Symposium on Nanomedicine (Ube, Japan), 6-8 Dec 2018.

#### F) Special lectures in academic meetings

- 1: Evaluation of acid-corrosion and molecule-adhesion of titanium passivation layer by surface plasmon resonance analysis: I. Hirata: Pacific Rim Nano Medicine Symposium2018 (Kobe, Japan), 25-26 Jan 2018.
- 2: Creation of biomaterials using biodatabase: K. Kato: 6th Chu-Shikoku Block Symposium of Japanese Society for Biomaterials (Olayama, Japan) 15 Feb 2018.
- 3: An approach to selectively expand stem cells: Oriented immobilization of growth factors onto solid surfaces: K. Kato: 6th Japan-China Symposium on Nanomedicine (Matsue, Japan), 25-27 May 2018.
- 4: Toward engineering organ regeneration: K. Kato: 5th Joint Scientific Meeting in Dentistry (Surabaya, Indonesia), 2 Oct 2018.
- 5: Engineering aspects of stem cell-based regenerative dentistry, K. Kato: FORIL XII (Jakarta, Indonesia), 1-3 November 2018.
- 6: Integrated thin-film electrochemical sensors for monitoring nucleic acid amplification: M. Tabata, D. Ainiwaer, T. Goda, A. Matsumoto, K. Kato, Y. Miyahara: 3rd International Symposium on Biomedical Engineering (Hiroshima, Japan), 8-9 November 2018.
- 7: Bioadhesion of amphoteric hydrogels enhanced by nanoscale dynamics of polymer segments: F. Nishio, I. Hirata, K. Tsuga, K. Kato: 12th International Symposium on Nanomedicine (Ube, Japan), 6-8 December 2018.

#### (4) Status of Receiving Grants-in Aid for Scientific Research, etc.

- 1: Grant-in-Aid for Scientific Research (B), Ministry of Education, Culture, Sports, Science and Technology, Representative Kato K.: Kato K.: Design of culture substrate for large-scale preparation of epithelial cell derived from iPS cell.: No. 16H03182. 2,500,000JPY.

- 2: Grant-in-Aid for Scientific Research (C), Ministry of Education, Culture, Sports, Science and Technology, Representative Tanimoto K.: Kato K.: Dynamic control of stem cells from human exfoliated deciduous teeth (SHED) by construction of microenvironment and its application to palate cleft regeneration treatment.: No. 16K11788. 200,000JPY.
- 3: Grant-in-Aid for Scientific Research (C), Ministry of Education, Culture, Sports, Science and Technology, Representative Shimoe S.: Hirata I.: Development of new micro-maintenance for expansion of application area of zirconia.: No. 16K11593. 50,000JPY.
- 4: Grant-in-Aid for Scientific Research (B), Ministry of Education, Culture, Sports, Science and Technology, Representative Kato K.: Hirata I.: Design of culture substrate for large-scale preparation of epithelial cell derived from iPS cell.: No. 16H03182. 100,000JPY.
- 5: Grant-in-Aid for Scientific Research (C), Ministry of Education, Culture, Sports, Science and Technology, Representative Kanawa M.: Hirata I.: Development of differentiation predictive marker to evaluate stemness of bone marrow derived mesenchymal stem cells.: No.17K11541. 300,000JPY.
- 6: Overseas joint research promotion support 2018, Hiroshima University: K. Kato. 750,000JPY.
- 7: Japan-China Sasagawa Medical Scholarship Program / Joint Research Grant 2018, The Japan China Medical Association: K. Kato. 500,000JPY.

#### (5) Academic Awards, etc.

- 1: A. Shakya, I. Hirata, K. Kato: Immobilization of basic fibroblast growth factor onto bioengineered surfaces. A novel approach for the efficient expansion of mesenchymal stem cells: 7th Hiroshima Conference on Education and Science in Dentistry (Hiroshima, Japan), 29-30 Mar 2018. Poster Award.
- 2: H. Sugino, M. Kanawa, K. Tanimoto, K. Kato: Engineering tissues that mimic natural cartilage microstructure: 7th Hiroshima Conference on Education and Science in Dentistry (Hiroshima, Japan), 29-30 Mar 2018. Young Investigator Award.

#### (6) Patents

- 1: Nomura Y., Sawajiri M.: Method for producing aqueous solution containing chlorine dioxide and steam generator. (P6359344) (Medical Environment Techno Co., Ltd., Mikasa Shoji Co., Ltd.)
- 2: Nomura Y., Sawajiri M.: Pharmaceutical composition for repairing and activating skin. (P6445879) (Medical Environment Techno Co., Ltd.)

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**Department of Periodontal Medicine**  
**Division of Preventive and Restorative Dentistry**  
**(Department of Periodontics)**

(1) Staffs and Students

Professor: Hidemi Kurihara

Associate Professor: Tsuyoshi Fujita

Associate Professor, Lecturer: Noriyoshi Mizuno

Assistant Professor: Katsuhiko Takeda, Tomoyuki Iwata, Kazuhisa Ouhara, Mikihiro Kajiya,  
Shinji Matsuda

Resident: Mizuho Kittaka (studying abroad), Tetsuya Yoshimoto (studying abroad), Ai Okanobu, Manabu  
Takewaki, Syuichi Munenaga, Nao Komatsu, Yoko Sato (October-)

Graduate Student: Yoshie Niitani (under leave of absence), Masahiko Suzukawa, Keiichi Akutagawa (-  
March), Yoko Sato (-September), Shinya Sasaki, Yuta Hamamoto, Tasuku Takemura,  
Daisuke Furutama, Saki Hatano, Sota Motoike, Susumu Horikoshi, Misako Tari, Takumi  
Memida, Tomoya Ogawa, Hisakatsu Sone

Clinical Trainee: Takayoshi Nagahara (-March), Akihiro Konishi, Yoshiaki Shimasaki, Kei Takeshita,  
Ryoko Kishi, Keita Takahashi, Hiromitsu Sasaki

(2) Main Research Activities

- 1: Immunological and genetic study on the onset of periodontics
- 2: Study on periodontal tissue regeneration using bone marrow mesenchymal stem cells
- 3: Study on periodontal tissue regeneration using neurotrophins
- 4: Study on the relationship between periodontal disease and rheumatoid arthritis
- 5: Study on the relationship between periodontal disease and diabetes mellitus
- 6: Study on physiological function and differentiation of the cells derived from periodontal ligament
- 7: Study on prevention for periodontal disease
- 8: Study on gingival hyperplasia

(3) Research Achievements

A) Original Papers (including Case Reports)

1. Involvement of Porphyromonas gingivalis in the progression of non-alcoholic fatty liver disease.  
Nakahara T., Hyogo H., Ono A., Nagaoki Y., Kawaoka T., Miki D., Tsuge M., Hiraga N., Hayes CN.,  
Hiramatsu A., Imamura M., Kawakami Y., Aikata H., Ochi H., Abe-Chayama H., Furusho H., Shintani

- T., Kurihara H., Miyauchi M., Takata T., Arihiro K., Chayama K.:  
Journal of Gastroenterology, 2018 Feb, 53 (2), 269-280, 2
2. Cryopreserved clumps of mesenchymal stem cell/extracellular matrix complexes retain osteogenic capacity and induce bone regeneration.  
Souta Motoike, Mikihiro Kajiya, Nao Komatsu, Manabu Takewaki, Susumu Horikoshi, Shinji Matsuda, Kazuhisa Ouhara, Tomoyuki Iwata, Katsuhiko Takeda, Tsuyoshi Fujita, Hidemi Kurihara  
Stem Cell Research & Therapy, 2018 May, 9, 73
  3. Intravital endoscopic technology for real-time monitoring of inflammation caused in experimental periodontitis.  
Alexandru Movila, Mikihiro Kajiya, Wichaya Wisitrasameewong, Philip Stashenko, Saynur Vardar-Sengul, Maria Hernandez, H. Thomas Temple, Toshihisa Kawai  
Journal of Immunological Methods, 2018 June, 457, 26-29
  4. Wnt3a promotes differentiation of human bone marrow-derived mesenchymal stem cells into cementoblast-like cells.  
Aida Y, Kurihara H, Kato K  
In Vitro Cell Dev Biol Anim., 2018 June, 54(6), 468-476
  5. The induced RNA-binding protein, HuR, targets 3'-UTR region of IL-6 mRNA and enhances its stabilization in periodontitis.  
Kazuhisa Ouhara, Syuichi Munenaga, Mikihiro Kajiya, Katsuhiko Takeda, Shinji Matsuda, Yoko Sato, Yuta Hamamoto, Tomoyuki Iwata, Satoshi Yamasaki, Noriyoshi Mizuno, Tsuyoshi Fujita, Eiji Sugiyama, Hidemi Kurihara  
Journal of Experimental Immunology 2018 June, 192(3), 325-336
  6. Reparative bone-like tissue formation in the tooth of a systemic sclerosis patient.  
Matsuda S, Memida T, Mizuno N, Ogawa I, Ouhara K, Kajiya M, Fujita T, Sugiyama E, Kurihara H  
Int End J, 2018 September, 51(9), 1059-1066
  7. Combined endodontic and periodontal management of a class 3 invasive cervical resorption in a mandibular first molar.  
Nagahara T, Takeda K, Aida Y, Iwata T, Yagi R, Kurihara H, Shiba H.  
Clin Case Rep., 2018 September, 4; 6(10), 2005-2010
  8. The involvement of C5a in the progression of experimental arthritis with Porphyromonas gingivalis infection in SKG mice.  
Syuichi Munenaga, Kazuhisa Ouhara, Mikihiro Kajiya, Katsuhiko Takeda, Yuta Hamamoto, Satoshi Yamasaki, Toshihisa Kawai, Noriyoshi Mizuno, Tsuyoshi Fujita, Eiji Sugiyama, Hidemi Kurihara  
Arthritis Research and Therapy, 2018 November, 3; 20(1), 247
  9. Type I collagen deposition via osteoinduction ameliorates YAP/TAZ activity in 3D floating culture

clumps of mesenchymal stem cell/extracellular matrix complexes

Nao Komatsu, Mikihiro Kajiya (equal contribution), Souta Motoike, Manabu Takewaki, Susumu Horikoshi, Tomoyuki Iwata, Kazuhisa Ouhara, Katsuhiko Takeda, Shinji Matsuda, Tsuyoshi Fujita, Hidemi Kurihara

Stem Cell Research & Therapy, 2018 December, 9, 342

## B) Review

1. Evaluation of Porphyromonas gingivalis infection using serum antibody titer

Shintani T., Kitagawa M., Ogawa I., Kurihara H.

Journal of Japanese Society for Evidence and the Dental Professional. 2018 March, 10(1), 39-43.

2. Regulation of defensive function on gingival epithelial cells can prevent periodontal disease.

Fujita T., Yoshimoto T., Kajiya M., Ouhara K., Matsuda S., Takemura T., Akutagawa K., Takeda K., Mizuno N., Kurihara H.

Japanese Dental Science Review, 2018 May, 54, 66-75 review

3. For achievement of centenarian by regulating chronic inflammation in periodontal tissue.

Kurihara H, Fujita T

The Japanese Journal of Conservative Dentistry, 2018 December, 6, 327-332 review

## C) Publications

1. Infection prophylaxis measures, Sterilization, disinfection, irrigation handbook.

ICHG group: Hidemi Kurihara, Hiromi Nishi.

Ishiyaku Pub. Inc., 2018 November

## D) Other Publications

1. Periodontal disease is diabetes in your mouth: Ishikawa M.:Touen

## C) Presentation at Scientific Meeting

1. Dental hygienist's activities and the effects in dental clinical support for HIV-infected patients

Okada M, Matsui K, Iwata T, Shintani T, Kinoshita K, Miyahara A, Ikeda Y, Saitou S, Maruyama E, Hamamoto K, Yamasaki N, Fujii T, Shiba H.

The 19th Japanese HIV dental medical workshop (2018 January, Tokyo)

2. In critical domain, relationship of standardizing nurses' oral care to bacterial count in oral cavity

Morishita T, Okamoto M., Yano K., Sarada K., Kirishima A., Miura M., Kawahori M., Nishi H., Kurihara H., Iiboshi R.

The 45th Annual Meeting of the Japanese society of Intensive Care Medicine (2018 February, Chiba)

3. Involvement of C5a in the progression of experimental arthritis in SKG mice induced by

Porphyromonas gingivalis infection.



- Syuichi Munenaga, Kazuhisa Ouhara, Mikihito Kajiya, Katsuhiko Takeda, Noriyoshi Mizuno, Tsuyoshi Fujita, Hidemi Kurihara  
7th Hiroshima Conference on Education and Science in Dentistry (2018 March, Hiroshima)
4. Mechanotransduction in 3D Culture Clumps of Mesenchymal Stem Cells/Extracellular Matrix Complexes Regulates the Cell Fate  
Nao Komatsu, Mikihito Kajiya, Souta Motoike, Manabu Takewaki, Susumu Horikoshi, Tomoyuki Iwata, Kazuhisa Ouhara, Katsuhiko Takeda, Tsuyoshi Fujita, Hidemi Kurihara  
7th Hiroshima Conference on Education and Science in Dentistry (2018 March, Hiroshima)
5. Elucidation of the role of NR4A1 in CsA induced gingival overgrowth  
Ai Okanobu, Shinji Matsuda, Saki Hatano, Mikihito Kajiya, Tsuyoshi Fujita, Hidemi Kurihara  
7th Hiroshima Conference on Education and Science in Dentistry (2018 March, Hiroshima)
6. Effects of Brain-derived Neurotrophic Factor (BDNF) as an Adjunct to Non-surgical Periodontal Treatment on Ligature-induced Periodontitis in Dogs  
Shinya Sasaki, Katsuhiko Takeda, Manabu Takewaki, Mikihito Kajiya, Shinji Matsuda, Noriyoshi Mizuno, Tsuyoshi Fujita, Hidemi Kurihara  
7th Hiroshima Conference on Education and Science in Dentistry (2018 March, Hiroshima)
7. The localization of ACPA derived from RA patient in periodontal tissue of mouse periodontitis model  
Kazuhisa Ouhara, Syuichi Munenaga, Tatsuomi Kuranobu, Eiji Sugiyama, Hidemi Kurihara  
The 62nd Annual General Assembly and Scientific Meeting of the Japan College of Rheumatology (2018 April, Tokyo)
8. An index and the periodontal pathogens which are related to an outcome for three months of patients with stroke patient.  
Nishi H, Ohta K, Shigeishi H, Shintani T, Obayashi T, Kurihara H, Kawaguchi H.  
The 15th Annual Meeting of the Japanese Society of Oral Care (2018 April, Fukuoka)
9. Effects of brain-derived neurotrophic factor (BDNF) on macrophage activation  
Shinya Sasaki, Katsuhiko Takeda, Kazuhisa Ouhara, Souta Motoike, Mikihito Kajiya, Shinji Matsuda, Noriyoshi Mizuno, Tsuyoshi Fujita, Hidemi Kurihara  
The 61th Spring Meeting of the Japanese Society of Periodontology (2018 May, Tokyo)
10. The effect of dysbiosis in gut for aggravation of synovitis in the mouse models of rheumatoid arthritis with Porphyromonas gingivalis infection  
Yuta Hamamoto, Kazuhisa Ouhara, Syuichi Munenaga, Mikihito Kajiya, Noriyoshi Mizuno, Tsuyoshi Fujita, Hidemi Kurihara  
The 61th Spring Meeting of the Japanese Society of Periodontology (2018 May, Tokyo)
11. The analysis of cellular response on periodontal tissue in ligature-induced experimental periodontitis in mice  
Tasuku Takemura, Tsuyoshi Fujita, Shinji Matsuda, Mikihito Kajiya, Keiichi Akutagawa, Misako Tari, Kazuhisa Ouhara, Katsuhiko Takeda, Noriyoshi Mizuno, Hidemi Kurihara  
The 61th Spring Meeting of the Japanese Society of Periodontology (2018 May, Tokyo)
12. The role of NR4A1 in drug-induced gingival overgrowth.  
Saki Hatano, Shinji Matsuda, Ai Okanobu, Mikihito Kajiya, Daisuke Furutama, Kazuhisa Ouhara, Noriyoshi Mizuno, Tsuyoshi Fujita, Hidemi Kurihara

- The 61th Spring Meeting of the Japanese Society of Periodontology (2018 May, Tokyo)
13. The improvement of periodontal tissue lead to improved eating habit and HbA1c patient with diffuse chronic periodontitis with type 2 diabetes.  
Ishikawa M, Takahashi K., Kozono C., Nakaoka M., Kajiya M., Kurihara H.  
The 61th Spring Meeting of the Japanese Society of Periodontology (2018 May, Tokyo)
14. Cryopreserved clumps of mesenchymal stem cell/extracellular matrix complexes retain osteogenic capacity and induce bone regeneration  
Souta Motoike, Mikihiro Kajiya, Nao Komatsu, Manabu Takewaki, Susumu Horikoshi, Shinji Matsuda, Kazuhisa Ouhara, Tomoyuki Iwata, Katsuhiko Takeda, Noriyoshi Mizuno, Tsuyoshi Fujita, Hidemi Kurihara.  
The 51st meeting of the Hiroshima University Dental Society (2018 June, Hiroshima)
15. Morphological analysis of junctional epithelium on ligature-induced experimental periodontitis in mice  
Tasuku Takemura, Tsuyoshi Fujita, Shinji Matsuda, Mikihiro Kajiya, Keiichi Akutagawa, Kazuhisa Ouhara, Katsuhiko Takeda, Noriyoshi Mizuno, Hidemi Kurihara  
The 51st meeting of the Hiroshima University Dental Society (2018 June, Hiroshima)
16. A case of multiple root resorption in a systemic sclerosis patient  
Shinji Matsuda, Takumi Memida, Noriyoshi Mizuno, Kazuhisa Ouhara, Mikihiro Kajiya, Tsuyoshi Fujita, Hidemi Kurihara  
The 148th Meeting of The Japanese Society of Conservative dentistry (2018 June, Yokohama)
17. Effects of glycyrrhizin on ligature-induced periodontitis with Porphyromonas gulae infection in diabetes model mice  
Keiichi Akutagawa, Tsuyoshi Fujita, Kazuhisa Ouhara, Mikihiro Kajiya, Shinji Matsuda, Noriyoshi Mizuno, Hidemi Kurihara  
The 148th Meeting of The Japanese Society of Conservative dentistry (2018 June, Yokohama)
18. Study on the anti-inflammatory molecules against inflamed adipose/periodontal tissue  
D. Sanada, T. Sano, T. Fukuda, M. Iwashita, A. Yamashita, T. Fujita, S. Sanui, H. Kurihara, F. Nishimura  
The 148th Meeting of The Japanese Society of Conservative dentistry (2018 June, Yokohama)
19. Surgical endodontic treatment of huge periapical lesion around the maxillary lateral incisor  
Nagahara Takayoshi, Yamada Y, Iwata T, Takeda K, Shiba H  
The 39th Annual Scientific Meeting of Japan Endodontic Association (2018 July, Fukuoka)
20. The oral environment and taste function in HIV – positive patients  
Shintani T., Yamasaki N., Iwata T., Saitou S., Kitagawa M., Ogawa I., Okada M., Mastui K., Unei H., Fujita K., Hamamoto K., Kinoshita K., Ikeda Y., Fujii T., Kurihara H., Shiba H.  
The 11th Annual Meeting of Japanese Society for Evidence and the Dental Professional (2018 August, Tokyo)
21. Analysis of actual condition of cnm-positive Streptococcus mutans carriers: A preliminary study.  
Kitagawa M., Ouhara K., Nagamine K., Shintani T., Ogawa I., Kurihara H.  
The 11th Annual Meeting of Japanese Society for Evidence and the Dental Professional (2018

- August, Tokyo)
22. Serum antibody titer of periodontal bacteria against Porphyromonas gingivalis infection focusing on genotype of fimbria  
Shintani T., Ouhara K., Kitagawa M., Ogawa I., Kurihara H  
The 11th Annual Meeting of Japanese Society for Evidence and the Dental Professional (2018 August, Tokyo)
  23. Activity report on the support that dental hygienists provide in the dental clinical practice for people infected with HIV.  
Okada M, Nakaoka M, Iwata T, Shintani T, Shiba H.  
The 13th Annual Meeting of the Japan Dental Hygienists Association (2018 September, Fukuoka)
  24. Dental hygienist's approach to palliative care event  
Ino N., Yano K., Kuramoto Y., Takeda Y., Nishi H., Nakaoka M., Kegoya S., Kawaguchi H., Kurihara H.  
The 13th Annual Meeting of the Japan Dental Hygienists Association (2018 September, Fukuoka)
  25. A case in which stomatitis frequently occurred after transplantation of living body kidney and difficulty in oral care  
Tokui F, Yano K., Nishi H., Nakaoka M., Kawaguchi H., Kurihara H.  
The 13th Annual Meeting of the Japan Dental Hygienists Association (2018 September, Fukuoka)
  26. The serum IgG antibody titers for Fusobacterium is associated with an outcome for three months of patients with stroke.  
Nishi H, Ohta K, Shigeishi H, Shintani T, Obayashi T, Kurihara H, Kawaguchi H.  
The 28th Annual Meeting of the Japanese Society of Oral Medicine, the 31st Annual Meeting of the Japanese Society of Oral Diagnosis / Oral Medicine. (2018 September, Yokohama)
  27. The oriental medicine, magnoliaceae (Kouboku), inhibits the production of methyl mercaptan via mgl mRNA inhibition.  
Yoko Sato, Choki Taku, Kazuhisa Ouhara, Misako Tari, Tomoaki Shintani, Masae Kitagawa, Ikuko Ogawa, Noriyoshi Mizuno, Tsuyoshi Fujita, Hidemi Kurihara  
The 102nd Hiroshima university dental society (2018 September, Hiroshima)
  28. The case report of multiple root resorption in a systemic sclerosis patient  
Takumi Memida  
The 102nd Hiroshima university dental society (2018 September, Hiroshima)
  29. Causative bacteria of apical periodontitis and their susceptibility to antibiotics  
Kozono C, Ouhara K., Kitagawa M., Ogawa I., Shindo S., Saito N., Akutagawa K., Nakaoka M., Mizuno N., Fujita T., Kurihara H.  
The 102nd Hiroshima university dental society (2018 September, Hiroshima)
  30. Case report: the maxillary first premolar and the mesial root of the mandibular second molar with three canals  
Nagahara Takayoshi, Kurihara H, Shiba H  
The 102nd Hiroshima university dental society (2018 September, Hiroshima)
  31. Oral bacteria is associated with complications in the chemotherapy.  
Nishi H, Obayashi T, Shintani T, Kitagawa M, Ogawa I, Kurihara H, Kawaguchi H.

- The 102nd Hiroshima university dental society (2018 September, Hiroshima)
32. Morphological change and cellular response of periodontal tissues in ligature-induced experimental periodontitis in mice  
Tasuku Takemura, Tsuyoshi Fujita, Shinji Matsuda, Mikihiro Kajiyama, Keiichi Akutagawa, Misako Tari, Kazuhisa Ouhara, Katsuhiko Takeda, Noriyoshi Mizuno, Hidemi Kurihara  
The 5th joint scientific meeting in dentistry (5th JSMiD) (2018 October, Surabaya, Indonesia)
  33. Association between oral bacteria and chemotherapy complications  
Nishi H, Shintani T, Kitagawa M, Ohta K, Obayashi T, Ogawa I, Kurihara H, Kawaguchi H.  
The 27th Annual Meeting of the Japanese Society for Oral Infectious Disease. (2018 October, Hiroshima).
  34. A Human ACPA Monoclonal Antibody Is Preferably Localized at Inflammatory Gingival Tissue and Activates Osteoclastogenesis in Porphyromonas Gingivalis Infected SKG Mouse  
Kazuhisa Ouhara, Tatsuhiko Ozawa, Syuichi Munenaga, Tatsuomi Kuranobu, Yuta Hamamoto, Toshihisa Kawai, Eiji Sugiyama, Hidemi Kurihara  
2018 ACR/ARHP Annual Meeting (2018 October, Chicago, USA)
  35. Identification of a causative gene in a family case with aggressive periodontitis by exome sequencing and linkage analysis  
Noriyoshi Mizuno, Tomoyuki Iwata, Kazuhisa Ouhara, Shinji Matsuda, Mikihiro Kajiyama, Katsuhiko Takeda, Tsuyoshi Fujita, Hidemi Kurihara  
The 58th General Session of Korean Academy of Periodontology (2018 October, Seoul, Korea)
  36. Investigation of the regulatory mechanism for cell function on mesenchymal stem cells in periodontal regeneration via micro RNA  
Tomoyuki Iwata, Takayoshi Nagahara, Noriyoshi Mizuno, Eri Ikeda, Mikihiro Kajiyama, Ryoichi Yagi, Akihiro Konishi, Masae Kitagawa, Tsuyoshi Fujita, Takashi Takata, Hidemi Kurihara  
The 61th Autumn Meeting of the Japanese Society of Periodontology (2018 October, Osaka)
  37. Inflammatory response in Hippocampal region induced by experimental periodontitis in mice.  
Daisuke Furutama, Shinji Matsuda, Tsuyoshi Fujita, Yousuke Yamawaki, Mikihiro Kajiyama, Saki Hatano, Ai Okanobu, Noriyoshi Mizuno, Takashi Kanematsu, Hidemi Kurihara  
The 61th Autumn Meeting of the Japanese Society of Periodontology (2018 October, Osaka)
  38. Availability of masticatory function test for functional indicator of patients with periodontal disease  
Haruna Miyazawa, Takako Nakajima, Yumi Matsukawa, Shintaro Shimizu, Yasushi Furuichi, Eiji Nemoto, Hideki Takai, Yohei Nakayama, Yorimasa Ogata, Takuya Iwasaki, Yuichi Ishihara, Asako Makino-Oi, Atsushi Saito, Chiharu Fujihara, Shinya Murakami, Kazu Hatanaka, Shogo Takashiba, Katsuhiko Takeda, Tsuyoshi Fujita, Hidemi Kurihara, Kazuhisa Yamazaki  
The 61th Autumn Meeting of the Japanese Society of Periodontology (2018 October, Osaka)
  39. Effect of High Fat Diet on inflammatory response in periodontal tissue  
Misako Tari, Tsuyoshi Fujita, Keiichi Akutagawa, Shinji Matsuda, Mikihiro Kajiyama, Kazuhisa Ouhara, Noriyoshi Mizuno, Hidemi Kurihara  
The 149th Meeting of the Japanese Society of Conservative Dentistry (2018 November, Kyoto)
  40. Inflammatory response in Hippocampal region induced by experimental periodontitis in mice

- Daisuke Furutama, Shinji Matsuda, Tsuyoshi Fujita, Hidemi Kurihara  
The 30th The Japan Geriatrics Society Chugoku regional meeting (2018 November, Hiroshima)
41. Serum antibody titer against FimA Type IV of *Porphyromonas gingivalis* is a possible marker for preterm birth cause by periodontitis.  
Hikaru Takagi, H. Furusho, M. Miyauchi, K. Ouhara, T. Fujita, S. Urabe, T. Shintani, H. Kurihara, Y. Kudo, T. Takata  
The 66th Annual Meeting of Japanese Association for Dental Research (2018 November, Sapporo)
42. Investigation for usability of AUDIT System of Hiroshima Safety Dental service Support network to improve the countermeasure against dental safety in the dental clinic  
Tomoyuki Iwata, Noriyoshi Mizuno, Miyuki Nakaoka, Hiroyuki Kawaguchi, Kazuhiro Tsuga, Hidemi Kurihara  
The 13th Annual Congress of Japanese Society for Quality and Safety in Healthcare (2018 November, Nagoya)
43. Case reports of bone like tissue replacing root resorption in systemic sclerosis  
Shinji Matsuda, Takumi Memida, Kazuhisa Ouhara, Shintarou Hirata, Yusuke Yoshida, Eiji Sugiyama, Hidemi Kurihara  
The 29th Scientific Meeting of the Japan College of Rheumatology in Chugoku and Shikoku region (2018 November, Kagawa)
44. The influence of anti-HIV drug on oral environment and taste function  
Shintani T, Yamasaki N., Iwata T., Saitou S., Okada M., Matsui K., Unei H., Fujita K., Hamamoto K., Kinoshita K., Ikeda Y., Fujii T., Shiba H.  
The 32th Annual Meeting of Japanese Society for AIDS Research (2018 December, Osaka)

#### D) Special lectures in academic meetings

1. The background of “Kyoto Declaration” in Japanese Society of Periodontology – Why is extermination of periodontal disease at present?  
Hidemi Kurihara  
Lecture in Sasebo-city dental association (2018 January, Sasebo)
2. Paradigm shift of the prevention of periodontal disease in super aged society  
Tsuyoshi Fujita  
The 4<sup>th</sup> Clinical workshop in Chubu area of Japanese society of periodontology (2018 January, Tsu)
3. Current status of infection control of dental outpatient clinical practice  
Yukiko Nagatani, Miyuki Nakaoka, Hidemi Kurihara  
The 33th Annual Meeting of Japanese Society for Infection Prevention and Control (2018 February, Tokyo)
4. Symposium 9 “Complication/infection of Rheumatic disease and the countermeasure” Infection of periodontopathic bacteria *Porphyromonas gingivalis* and rheumatoid arthritis  
Hidemi Kurihara  
The 62nd Annual General Assembly and Scientific Meeting of the Japan College of Rheumatology (2018 April, Tokyo)

5. “Paradigm shift in periodontal treatment – New clinical index in coalition between medical and dental-“  
Hidemi Kurihara  
Lecture in School of dentistry, Aichi Gakuin University (2018 May, Nagoya)
6. Finding Dental health care provider system turned over for next age – Aim at more development of Dental medicine/health care –  
Kurihara Hidemi  
The 4st Japan dental facilities with beds Council/Workshop Lecture, Himawari Dental clinic (2018 June, Hiroshima)
7. Perioperative oral management required for dental hygienists  
Kuramoto Y  
36th Annual Meeting of the Japanese Academy of Clinical Periodontology (2018 June, Hiroshima)
8. Workshop for Application of facility standards “Safety dental service on super-aging society”  
Hidemi Kurihara  
Yamaguchi prefectural dental association (2018 June, Yamaguchi)
9. “Sickness and health start with oral cavity – deep topic between diabetes mellitus/ dementia and periodontal disease”  
Hidemi Kurihara  
The Japanese Academy of Clinical Periodontology civic forum (2018 July, Hiroshima)
10. Lecture “Wealthy way of life transmitting from dental clinic 100-years-life”  
Hidemi Kurihara  
2018 Forum for Dental clinic development – “Work style reform” transmitting from dental clinic-(2018 July, Hiroshima)
11. Identification and functional analysis of a causative gene in a family case with aggressive periodontitis  
Noriyoshi Mizuno, Tomoyuki Iwata, Mikihiro Kajiya, Hideshi Kawakami, Hidemi Kurihara  
The 36th Annual Meeting of the Japanese Society for Bone and Mineral Research (2018 July, Nagasaki)
12. Lecture “Consider the infection barrier! – Dental health care and Infection prevention measures - ”  
Hidemi Kurihara  
Medical cooperation Tokushin-kai workshop (2018 August, Tokyo)
13. “Periodontal disease and Systemic disease- Inflammation connects periodontal disease with diabetes mellitus”  
2018 Hiroshima prefectural dental association 1<sup>st</sup> academic lecture (2018 August, Hiroshima)
14. Career-up lecture “Thinking of dental health care turned over for next age”  
Hidemi kurihara  
Tokushima University Career development support center for dentists (2018 September, Tokushima)
15. To perform oral management based on evidence; The utility of the oral environment evaluation  
Kuramoto Y  
27th Annual Meeting of Japanese Association for Oral Infectious Diseases (2018 October, Hiroshima)

16. Health promotion from periodontal treatment  
Tsuyoshi Fujita  
Hiroshima Prefectural Dental Hygienist Association Local Dental Health workshop (2018 October, Hiroshima)
17. Symposium by duty hospital “Necessary factor for propulsion of infection control by local cooperation”  
Hidemi Kurihara  
The 20<sup>th</sup> hospital of national, prefectural and other public universities and colleges Infection Control Council general meeting (2018 October, Nagoya)
18. For achievement of centenarian by regulating chronic inflammation in periodontal tissue  
Tsuyoshi Fujita  
The 61<sup>th</sup> Autumn Meeting of the Japanese Society of Periodontology (2018 October, Osaka)
19. Lecture for hospital staff in Japanese Red Cross Nagasaki Genbaku Hospital  
“Importance of Oral care on infection control measure”  
Hidemi Kurihara  
Japanese Red Cross Nagasaki Genbaku Hospital (2018 November, Nagasaki)
20. Alveolar bone regenerative therapy by clumps of MSCs/ECM complexes  
Mikihito Kajiya  
The 22<sup>nd</sup> Annual Meeting of Japanese Academy of Maxillofacial Implants (2018 December, Tokyo)
21. The mechanism of induction of rheumatoid arthritis by ACPA  
Kazuhisa Ouhara  
Osteoimmunology Seminar 2018 Second Half (2018 December, Hiroshima)

#### (4) Status of Receiving Grants-in Aid for Scientific Research.

1. Grants-in aid for scientific research: Hidemi Kurihara: #18H02977
2. Grants-in aid for scientific research : Noriyoshi Mizuno: #18H02978
3. Grants-in aid for scientific research: Tsuyoshi Fujita:# 16K114445B
4. Grants-in aid for scientific research : Kazuhisa Ouhara : #18K09599
5. Grants-in aid for scientific research: Katsuhiro Takeda:# 16K11831
6. Grants-in aid for scientific research: Shinji Matsuda: #16K11830
7. Grants-in aid for scientific research: Mikihito Kajiya: #17K17351
8. Grants-in aid for scientific research : Manabu Takewaki: #17H0689700
9. Grants-in aid for scientific research : Ai Okanobu: #18K17070
10. The year of 2018 grant-in-Aid for Japan society for the promotion of science special research fellows :  
Sota Motoike : #18J13726
11. Hiroshima University the year of 2018 research grant for young researcher: Mikihito Kajiya
12. Hiroshima University the year of 2018 step-up support for Grants-in aid for scientific research:  
Tsuyoshi Fujita
13. Hiroshima University the year of 2018 Grant for portent research (Support for young researcher): Nao

Komatsu

14. Hiroshima University the year of 2018 Grant for portent research(Support for young researcher):  
Syuichi Munenaga
15. The Satake research grant : Takumi Memida : #1811670
16. Japanese Society of Periodontology Encouragement research grants – in aid for Seeds foster young  
researcher (the year of 2017):Manabu Takewaki
17. General foundation Ryokufukai The year of 2018 education and research prize for encouragement  
(Grant for young researcher grant): : Tasuku Takemura
18. The Nakatomi Foundation research Grant for 2017: Mikihito Kajiya

(5) Award.

1. Syuichi Munenaga

Best Poster Presentation Award. 7th Hiroshima Conference on Education and Science in Dentistry.  
“Involvement of C5a in the progression of experimental arthritis in SKG mice induced by  
Porphyromonas gingivalis infection.”

2. Nao Komatsu

7th Hiroshima Conference on Education and Science in Dentistry Poster Award  
“Mechanotransduction in 3D Culture Clumps of Mesenchymal Stem Cells/Extracellular Matrix  
Complexes Regulates the Cell Fate”

3. Ai Okanobu

7th Hiroshima Conference on Education and Science in Dentistry Poster Award  
“Elucidation of the role of NR4A1 in CsA induced gingival overgrowth”

4. Shinya Sasaki

7th Hiroshima Conference on Education and Science in Dentistry Poster Award  
7th Hiroshima Conference on Education and Science in Dentistry Young Investigator Award  
“Effects of Brain-derived Neurotrophic Factor (BDNF) as an Adjunct to Non-surgical  
Periodontal Treatment on Ligature-induced Periodontitis in Dogs”

5. Tomoyuki Iwata

The 13th Annual Congress of Japanese Society for Quality and Safety in Healthcare Best practice  
award first place  
“Investigation for usability of AUDIT System of Hiroshima Safety Dental service Support network  
to improve the countermeasure against dental safety in the dental clinic.”

(6) Patents



1. Kitagawa M., Nagamine K., Kurihara H.

Time shortening detection method of Streptococcus mutans

(Patent Number : 2018-293498)

(Patent applicant : Hiroshima University • Hiroshima International University)

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**Department of Molecular Oral Medicine & Maxillofacial Surgery**  
**Division of Oral & Maxillofacial Surgery and Oral Medicine**  
**(Department of Oral & Maxillofacial Surgery)**

(1) Staff and Students

Professor: Tetsuji Okamoto Department Chair: Tetsuji Okamoto (Concurrent appointment)

Associate Professor: Shigeaki Toratani

Clinical Associate Professor: Yasutaka Hayashido

Assistant Professor: Ryouji Tani, Yukio Yoshioka, Kouichi Koizumi, Taku Kanda, Kensaku Sumi,  
 Tomoaki Hamana, Sachiko Yamasaki, Taishi Sakaue

Clinical fellow: Yuki Taguchi, Atuko Hmada, Shigeru Sakurai, Hirotaka Takatao

Humitaka Obayashi, Kouji Tsushima, Taeko Fukutani(~May), Youji Nakase,

Mirai Higaki, Suguru Hirota, Kensaku Matsui

Registered part-time doctor: Isao Takahashi, Koh Nabeshima, Yasutaka Ishida,

Hidemasa Miyata, Yoshinari Myoken, Yoshinori Fujita

Kohsei Okamoto, Yoku Ito,

Graduate Student: Youji Nakase(~May), Mirai Higaki(~May), Suguru Hirota(~May),

Kensaku Matsui(~May), Nguyen Quang Tam(~Sep),

Kaori Uchisako, Seiya Hayashi, Tadayoshi Nobumoto, Takefumi Mishima

Shigeki Sato, Hideaki Takahasji(~Apr)

Iwao Katayama, Hidemasa Miyata, Yuuichi Arita, Tomohiro Sado,

Visiting Researcher: ROSLI, Siti Nur Zawani

(2) Main Research Activities

1. Gene/molecular diagnosis and therapy for oral cancer and salivary gland tumors. (Cancer stem cells, growth factors, growth factor receptors, invasion and metastasis, tumor angiogenesis, and molecular/gene target therapy).
2. The molecular/genetic diagnosis and therapy for oral and cranio-maxillofacial deformities.
3. Establishment and characterization of human induced pluripotent stem (iPS) cells derived from human pulp cells in serum- and feeder-free cell culture.
4. Generation of human induced pluripotent stem (iPS) cells derived from patients with genetic disorders in the oral and cranio-maxillofacial region in serum- and feeder-free culture to elucidate the molecular mechanism involved in the disease.

5. Purification of biologically active factors from marine organism.
6. Photodynamic therapy for oral cancer.
7. Immune cell therapy for oral cancer by using NK/lymphokine-activated killer (LAK) cells.
8. Jaw and tooth regeneration *in vitro*.
9. Molecular-epidemiological study of oral and maxillofacial disease among residents of Semipalatinsk Nuclear Test Site (SNTS) area in Kazakhstan.
10. Measuring brain hemodynamic changes on mounting dental appliance using Near-Infrared Spectroscopy

### (3) Research Achievements

#### Original Papers (including Case Reports)

1. New Crambescidin-Type Alkaloids from the Indonesian Marine Sponge *Clathria bulbotoxa*.: Kasmia K, Yoshioka Y, Okamoto T, Ojika M.: *Mar Drugs*. 2018 Mar 8;16(3). pii: E84. doi: 10.3390/md16030084.
2. A tribute to Dr. Gordon Hisashi Sato .: Sato JD, Okamoto T, Barnes D, Hayashi J, Serrero G, McKeehan WL (December 17, 1927-March 31, 2017). *In Vitro Cell Dev Biol Anim*. 2018 Mar;54(3):177-193. doi: 10.1007/s11626-018-0230-1. Epub 2018 Feb 12.
3. pathological factors involved in local failure insquamous cell cartinoma of the oral cavity:retrospective study and proposal of a new clinical classification.: S.Toratani, I. Ogawa, H.Sasahara, Y.Yoshioka, T. Kanda, R.Tani, T. Okamoto. *Int. J. Oral Maxillofacial.surg*. pii: S0901-5027(18)30253-4. doi: 10.1016/j.ijom.2018.07.005. Sep 3.2018.
4. Suture granulomas developing after the treatment of oral squamous cell carcinoma. : Yukio Yoshioka, Hirotaka Nakatao, Tomoaki Hamana, Atsuko Hamada, Taku Kanda, Koichi Koizumi, Shigeaki Toratani, Tetsuji Okamoto.: *Int J Surg Case Rep.*, 50 68-71, 2018.
5. Comment on "Nasolabial Flap Improves Healing in Medication-Related Osteonecrosis of the Jaw" by Lemound et al. Myoken Y, Fujita Y. : *Journal of Oral and Maxillofacial Surgery*.;76(9):1833-1834. 2018 Sep.
6. Comment on "A novel method to prevent biting through nasolabial flap: Modified oral screen" by Chaudhary et al. Fujita Y, Nishida T, Myoken Y. : *Journal of Oral and Maxillofacial Surgery, Medicine, and Pathology*. In press
7. Comment on "Nonsurgical Management of Medication-Related Osteonecrosis of the Jaws Using Local Wound Care" by Hadaya et al. Nishida T, Fujita Y, Myoken Y. : *Journal of Oral and Maxillofacial Surgery*. In press

8. Central mucoepidermoid carcinoma arising from glandular odontogenic cyst confirmed by analysis of MAML2 rearrangement: A case report. : Atsuhiko Nagasaki, Ikuko Ogawa, Yukiko Sato, Kengo Takeuchi, Masae Kitagawa, Toshinori Ando, Shinnichi Sakamoto, Madhu Shrestha, Kaori Uchisako, Koichi Koizumi, Shigeaki Toratani, Masaru Konishi and Takashi Takata.: *Pathology International* 68:31-35. 2018 Jul
9. Chemically modified antisense oligonucleotide against ARL4C inhibits primary and metastatic liver tumor growth.: Takeshi Harada, Shinji Matsumoto, Suguru Hirota, Hirokazu Kimura, Shinsuke Fujii, Yuuya Kasahara, Hidetoshi Gon, Toshihiko Yoshida, Tomoo Itoh, Naotsugu Haraguchi, Tsunekazu Mizushima, Takehiro Noda, Hidetoshi Eguchi, Satoshi Nojima, Eiichi Morii, Takumi Fukumoto, Satoshi Obika, and Akira Kikuchi: *Molecular Cancer Therapeutics.*, doi: 10.1158/1535-7163.MCT-2018-August 24.
10. Abnormal positioning of the common carotid artery clinically diagnosed as a submandibular mass.: Nakamoto T, Suetani Y, Konishi M, Kanda T, Verdonschot RG, Kakimoto N. *Oral Radiol.* doi: 10.1007/s11282-018-0355-7. 2018 Oct 30.
11. A case of pediatric odontogenic myxofibroma of the mandible.: T. Kanda, T. Nobumoto, A. Hamada, S. Satou, F. Obayashi, Y. Yashima, S. Sakamoto, I. Ogawa, S. Toratani, T. Okamoto.: *J. Hiroshima Univ. Dent. Soc.* 50 77-83 2018.
12. A case of mandibular bone wide area ameloblastoma reconstruction by titanium mesh tray and iliac particulate cancellous bone and marrow graft.: Y. Ito, F. Tkatu, J. Hara, M. Matuura, S. Yonehara, T. Kannda, T. Okamoto.: *The Medical Bulletin of Onomichi General Hospital.* 28 37-41, 2018.

#### B) Review article

not applicable

#### C) Publications

not applicable

#### D) Other Publications

not applicable

#### E) Presentation at Scientific Meeting

##### **International Meeting**

1. Invited lecture speaker: Examination and diagnosis based on oral and gut microbiome characteristic of oral cancer, and establishment and characterization of disease-specific induced pluripotent stem cells.:T.Okamoto.: Symposium organized by the Japan Science Council co-sponsored by the Japan Oral Test Society, 27 August 2018, Tokyo, Japan
2. Invited lecture speaker: Establishment and characterization of cranio-maxillofacial disease-specific induced pluripotent stem cells in feeder cell-, integration-, and serum-free defined culture.:T.Okamoto 1 October 2018, Kuopio University School of Oral Medicine, Kuopio, Finland
3. Invited lecture speaker: Examination and diagnosis based on oral and gut microbiome characteristic of oral cancer, and establishment and characterization of disease-specific induced pluripotent stem cells.:T.Okamoto.: Taipei Medical University, 17 December 2018

#### **Domestic Meeting presentations**

1. Mandibular reconstruction using reconstruction plate and soft tissue graft.: S.Nagamatsu, K.Yokota, S.Toratani,K.Koizumi, Y.Yoshioka, T.Kanda, S.Takeno,T.Ueda, T.Hamamoto, H.Furuya, T.Kouno.: The Congress of the 42<sup>th</sup>Japan Society for Neck and Cancer,(Tokyo) 2018.4.12
2. Analysis of Adolescent and Young adult patients with oral cancer in our department: Y. YOSHIOKA, K. MATSUI, A. HAMADA, T. SAKAUE, S. YAMASAKI, T. HAMANA, K. SUMI, T. KANDA, R. TANI, Y. HAYASHIDO, S. TORATANI, T. OKAMOTO. The 72<sup>nd</sup> Annual Meeting of Japanese Stomatological Society (Nagoya), 2018.5.11~5.13
3. Purification, structure characterization of bioactive substances from marine organisms.:Y. YOSHIOKA, A. HAMADA, H. NAKATAO, S. HIROTA, M. OJIKI, T. OKAMOTO.: The 72<sup>nd</sup> Annual Meeting of Japanese Stomatological Society (Nagoya), 2018.5.11~5.13
4. Exosomal-miR-6887-5p induced by Eldecalcitol (ED-71) inhibits squamous cell carcinoma cell growth in vitro and in vivo through suppressing heparin-binding protein 17/ fibroblast Growth factor binding Proein-1.: M.Higaki, T.Shintani, A.Hamada, S.N.Z. Rosli, E.Usui, T.Okamoto.:The 72<sup>th</sup> The meeting of Japanese Stomatological Society (Nagoya), 2018.5.11-13.
5. Genetic diagnosis of Neurofibromatosis type I (von Recklinghausen's disease, NF1) and establishment of NF1-specific induced pluripotent stem cells (iPSCs) for the study of disease mechanisms: T. Fukutani, A. Hamada, H. Nakatao, F. Obayashi, S. Yamasaki, T. Kanda, K. Koizumi, S. Toratani, T. Okamoto.: The 72<sup>nd</sup> Annual Meeting of Japanese Stomatological Society (Nagoya), 2018.5.11-13
6. Early and definitive identification of Aspergillus species in oral tissue samples of patients with hematologic malignancies by in situ hybridization.Y. Myoken, E. Sakaue, Y. Fujita, T. Okamoto.: The 72<sup>nd</sup> Annual Meeting of Japanese Stomatological Society (Nagoya), 2018.5.11-13
7. Establishment of the in-hospital oral health maintenance system in the bone resorption suppressant use of the malignant tumor patient and construction of the regional alliances pass.: N.Ito,

- K.Okamoto, Y.Ueda, S.Toratani, T.Okamoto.:The 72<sup>nd</sup> Annual Meeting of Japanese Stomatological Society (Nagoya), 2018.5.11-13
8. The examination of the forecast factors of the prognosis of the patients with the aspiration pneumonia for the oral ingestion.: Y.Arita, A.Sakamoto, R.Ryouji, Y.Yoshioka, K.Koizumi T.Shintani, Y.Hayasgidou, S.Toratani, T.Okamoto.: The 72<sup>nd</sup> Annual Meeting of Japanese Stomatological Society (Nagoya), 2018.5.11-13
  9. Establishment and characterization of radiation resistant strains from squamous cell carcinoma cell lines in serum-free defined culture.:Tam Quang NGUYEN, Atsuko HAMADA, Shigeaki TORATANI, Tetsuji OKAMOTO.: The 72<sup>nd</sup> Annual Meeting of Japanese Stomatological Society (Nagoya), 2018.5.11-13
  10. *MICA* gene polymorphism and clinical characteristics in oral cancer patients.:Ryouji TANI, Sachiko YAMASAKI, Kensaku MATSUI, Atsuko HAMADA, Takefumi MISHIMA, Kaori UCHISAKO, Hisako SASAHARA, Shigeaki TORATANI, Tetsuji OKAMOTO. : The 72<sup>nd</sup> Annual Meeting of Japanese Stomatological Society (Nagoya), 2018.5.11-13
  11. Expression of immune checkpoint-related molecules and its effects on intestinal and oral microbiota in oral cancer.: K. Matsui, R. Tani, S. Yamasaki, A. Hamada, T. Mishima, K. Uchisako, H. Sasahara, S. Toratani, T. Ootomo, K. Tokumaru, T. Okamoto: The 72<sup>nd</sup> Annual Meeting of Japanese Stomatological Society (Nagoya), 2018.5.11-13
  12. Diversity analysis of gut and oral microbiome in oral cancer patients .:K. Matsui, R. Tani, S. Yamasaki, A. Hamada, T. Mishima, K. Uchisako, H. Sasahara, S. Toratani, T. Ootomo, K. Tokumaru, T. Okamoto.: The 72<sup>nd</sup> Annual Meeting of Japanese Stomatological Society (Nagoya), 2018.5.11-13
  13. A clinical study of super-elderly patients over 90 years old with oral cancer: T. SAKAUE, Y. YOSHIOKA, F. OBAYASHI, K. TSUSHIMA, K. MATSUI, A. HAMADA, S. YAMASAKI, T. HAMANA, K. SUMI, T. KANDA, R. TANI, Y. HAYASHIDO, S. TORATANI, T. OKAMOTO. The 72<sup>nd</sup> Annual Meeting of Japanese Stomatological Society (Nagoya), 2018.5.11-13
  14. Establishment of von Recklinghausen's disease-specific induced pluripotent stem cells (iPSCs) in virus integration-, feeder-, and serum-free defined culture for the study of disease mechanisms : A. Hamada, Y. Nakase, H. Nakatao, F. Obayashi, T. Fukutani, S. Yamasaki, T. Kanda, K. Koizumi, S. Toratani, T. Okamoto.: The 72<sup>nd</sup> Annual Meeting of Japanese Stomatological Society (Nagoya), 2018.5.11-13
  15. Measuring brain hemodynamic changes on mounting dental appliance using Near-Infrared Spectroscopy H. Miyata, R. Tani, T. Hamana, S. Toratani, T. Okamoto.: The 72<sup>nd</sup> Annual Meeting of Japanese Stomatological Society (Nagoya), 2018.5.11-13

16. A case of mandibular bone wide area ameloblastoma reconstruction by titanium mesh tray and iliac particulate cancellous bone and marrow graft.:Y.Ito, F.Takatu, J.Hara, T. Kanda, T. Okamoto.: The 72<sup>nd</sup> Annual Meeting of Japanese Stomatological Society (Nagoya), 2018.5.11-13
17. A case of oral floor carcinoma reconstructed with the submental island flap.: Yu Yamane, Yoshinori Fujita, Eri Sakaue, Taeko Fukutani, Junko Kobayasi, Tetsuji Okamoto, Yoshinari Myoken.: The 51<sup>th</sup> Annual Meeting of Hiroshima University Dental Society ,(Hiroshima) 2018.6.9
18. A clinical study of elderly patients over 90 years old with oral malignancies. : Taishi Sakaue, Yukio Yoshioka, Fumitaka Obayashi, Kouji Tsushima, Kensaku Matui, Atsuko Hamada, Sachiko Yamasaki, Tomoaki Hamana, Kensaku Sumi, Taku Kanda, Koichi Koizumi, Ryoji Tani, Yasutaka Hayashidou, Hisako Sasahara, Shigeaki Toratani, Tetsuji Okamoto.: The 51<sup>th</sup> Annual Meeting of Hiroshima University Dental Society, (Hiroshima) 2018.6.9
19. A clinical study on Adolescent and Young Adult (AYA) patients with oral cancer: Y. YOSHIOKA, T. SAKAUE, K. MATSUI, K. TSUSHIMA, F. OBAYASHI, A. HAMADA, S. YAMASAKI, T. HAMANA, K. SUMI, T. KANDA, K. KOIZUMI, R. TANI, Y. HAYASHIDO, H. SASAHARA, S. TORATANI, T. OKAMOTO: The 51<sup>th</sup> Annual Meeting of Hiroshima University Dental Society ,(Hiroshima) 2018.6.9
20. The present state of perioperative oral management in the Miyoshi municipal central hospital. : N.Kimura, T.Sado, Y.Arita, Y.Yoshimura, S.Toratani, T.Okamoto. : The 51<sup>th</sup> The General Meeting of Hiroshima University Dental Association ,(Hiroshima), 2018.6.9.
21. A clinical study of super elderly patients over 90 years old with oral cancer. : T. Sakaue, Y. Yoshioka, F. Obayashi, K. Tsushima, K. Matsui, A. Hamada, S. Yamasaki, T. Hamana, K. Sumi, T. Kanda, K. Koizumi, R. Tani, Y. Hayashido, H. Sasahara, S. Toratani, T. Okamoto. : The 51<sup>th</sup> Annual Meeting of Hiroshima University Dental Society, (Hiroshima) 2018.6.9
22. A case of advanced tongue cancer with giant cervical lymph node metastases successfully treated with platinum-based chemotherapy, bio-radiotherapy with cetuximab (Cmab), followed by Cmab and nivolumab monotherapy. : T. Hamana, T. Mishima, H. Nakatao, S. Toratani, T. Okamoto.: The 51<sup>th</sup> Annual Meeting of Hiroshima University Dental Society, (Hiroshima) 2018.6.9
23. A case of dentigerous cyst associated with a wisdom tooth in the maxillary sinus. : F. Obayashi, K. Koizumi, T. Hamana, T. Okamoto.: The 51<sup>th</sup> Annual Meeting of Hiroshima University Dental Society, (Hiroshima) 2018.6.9
24. A Case Report : A Case of Multiple Suture Granulomas Mimicking Tumor Recurrence of Gingival Cancer : H. Nakatao, Y. Yoshioka, T. Hamana, A. Hamada, T. Kanda, K. Koizumi, S. Toratani, T. Okamoto. : The 51<sup>th</sup> Annual Meeting of Hiroshima University Dental Society, (Hiroshima) 2018.6.9
25. Efficacy of Autofluorescence imaging (illumiscan<sup>®</sup>) for early detection of oral cancer and oral potentially malignant disorders. : Y. Taguchi, S. Toratani, S. Hayashi, S. Sato, F. Obayashi, K.

- Tsushima, H. Nakatao, S. Sakurai, A. Hamada, T. Sakaue, S. Yamasaki, T. Hamana, T. Kanda, K. Sumi, T. Okamoto. : The 51<sup>th</sup> Annual Meeting of Hiroshima University Dental Society, (Hiroshima) 2018.6.9
26. A case of pediatric odontogenic myxofibroma of the mandible.: Tadayoshi Nobumoto, Taku Kanda, Atsuko Hamada, Hideaki Takahashi, Shigeaki Satou, Humitaka Oobayashi, Kouji Tsusima, Yuka Yashima, Shinichi Sakamoto, Ikuko Ogawa, Shigeaki Toratani, Tetsuji Okamoto.: The 51<sup>th</sup> Annual Meeting of Hiroshima University Dental Society, (Hiroshima) 2018.6.9
  27. An overview of the dysphagia rehabilitation team at Mazda Hospital and its recent activities.: Yuichi Arita, Akihiko Sakamoto, Ryouji Tani, Yukio Yoshioka, Koichi Koizumi, Tomoaki Shintani, Yasutaka Hayashido, Shigeaki Toratani, Tetsuji Okamoto.: The 51<sup>th</sup> Annual Meeting of Hiroshima University Dental Society, (Hiroshima) 2018.6.9
  28. Clinical Study of Recent 10 year Orthognathic Surgery in Dent-Oral-Maxillofacial Surgery at JA Onomichi General Hospital.: Fuyuyoshi Takatu, Yoku Ito, Jun-ichi Hara, Tomoaki Hamana, Taku Kanda, Koichi Koizumi, Masashi Kobayashi, Shigeaki Toratani, Tetsuji Okamoto.: The 51<sup>th</sup> Annual Meeting of Hiroshima University Dental Society, (Hiroshima) 2018.6.9
  29. The present conditions of the peri-operative oral functional management in our hospital.: N.Ito, A.Hurukawa, K.Okamoto: The 20<sup>th</sup> Japan Society for Health Care Management (Hokkaido), 2018.6.8.-9.
  30. The present conditions of the oral cavity function management in JA Onomichi General Hospital palliative team.: Y.Ito, N.Sikabayashi, C.Okugawa, F.Takatu, M.Odawara, C.Fujiwara, T.Shimazui, R.Nakanuno, N.Takazawa, T.noriyuki.: The 23<sup>rd</sup> Congress of Japanese Society for Palliative Medicine 2018, (Hyogo), 2018.6.14-17.
  31. Examination about the palliative care and advance care planning from a diagnosis.: T.Noriyuki, N.Takazawa, R.Nakanuno, Y.Ito, K.Hirakawa, M.Odawara, C.Fujiwara, T.Shimazui, T.hirai, T.Egusa, Y.Unemoto.: The 23<sup>rd</sup> Congress of Japanese Society for Palliative Medicine 2018 (Hyogo) 2018.6.14-17
  32. About the present conditions and a consciousness change about the cancer patient working of the local personal company.: M.Odawara, C.Fujiwara, T.Noriyuki, Y.Ito, Y.Yasutomo, M.Morimoto, N.Toyota, C.Miyazawa, Y.Hamamoto, C.Okugawa, N.Shikabayashi.: The 23<sup>rd</sup> Congress of Japanese Society for Palliative Medicine 2018 (Hyogo), 2018.6.14-17.
  33. A case of suture granuloma developing after the treatment of oral squamous cell carcinoma: H. NAKATAO, Y. YOSHIOKA, T. HAMANA, A. HAMADA, K. KOIZUMI, S. TORATANI, T. OKAMOTO: The 47<sup>th</sup> Chugoku/Shikoku regional congress of the Japanese Society of Oral and Maxillofacial surgery (Okayama) 2018.6.16



34. A Case of Dentigerous Cyst Associated with a Wisdom Tooth in Maxillary Sinus. : F.Ohbayshi, K.Koizumi, T.Hmana, T.Okamoto.: The 47<sup>th</sup> Chugoku/Shikoku regional congress of the Japanese Society of Oral and Maxillofacial surgery (Okayama) 2018.6.16
35. A case of carcinoma of floor of mouth reconstructed with the submental island flap. : Y. Yamane, J. Kobayashi, T. Fukutani, E. Sakaue, J. Nomura, Y. Fujita, T. Okamoto, Y. Myoken.: The 47<sup>th</sup> Chugoku/Shikoku regional congress of the Japanese Society of Oral and Maxillofacial surgery (Okayama) 2018.6.16
36. The present conditions and problem of the specialized mouth care intervention by the dental hygienist in our House.:N.Shikabayashi, C.Okugawa, F.Takatu, Y.Ito, T.Ezaki, S.Onogawa.: The 11th meeting of Japanese society for parenteral and Enteral nutrition(Hiroshima), 2018.8.18.
37. Diversity analysis of gut and oral microbiome in oral cancer patients.: K. Matsui, R. Tani, S. Yamasaki, A. Hamada, T. Mishima, K. Uchisako, H. Sasahara, S. Toratani, T. Ootomo, K. Tokumaru, T. Okamoto : The 28th general meeting of Japanese Society of Oral Medicine • The 31th general meeting of The Japanese Society of Oral Diagnosis/Oral Medicine. (Yokohama) 2018.9.15
38. A case of brain metastasis of carcinoma ex pleomorphic adenocarcinoma with adenocarcinoma not otherwise specified (NOS) arising at sublingual gland: Y. YOSHIOKA, S, TORATANI, T. OKAMOTO: The 28th general meeting of Japanese Society of Oral Medicine • The 31th general meeting of The Japanese Society of Oral Diagnosis/Oral Medicine (Yokohama) 2018.9.15
39. A case of advanced tongue cancer with giant cervical lymph node metastases successfully treated with radiotherapy and medical therapy. : T. Mishima, T. Hamana, H. Nakatao, K.Matsui, S. Toratani, T. Okamoto.: The 28th general meeting of Japanese Society of Oral Medicine • The 31th general meeting of The Japanese Society of Oral Diagnosis/Oral Medicine (Yokohama) 2018.9.15
40. The role of the dental hygienist in the local acute care hospital hospital respiration support team and problem in the future.:N.Shikabayashi, C.Okugawa, F.Takatu, Y.Ito.:The 13th The general meeting of Japanses Dental Hyginist Society(Fukuoka), 2018.9.15-17.
41. A case of recurrent lung cancer with lichenoid oral mucositis during Nivolumab therapy. : N.Ito, K.Okamoto, I.Ogawa, S.Toratani, T.Okamoto.: The 63<sup>rd</sup> Congress of the Japanese Society of Oral and Maxillofacial Surgeons (Makuhari), 2018.11.2.-4.
42. A case of carcinoma of floor of mouth reconstructed with the submental island flap.:Y. Yamane, T. Fukutani, E. Sakaue, Y. Fujita, T. Okamoto, Y. Myoken.: The 63<sup>rd</sup> Congress of the Japanese Society of Oral and Maxillofacial Surgeons (Makuhari), 2018.11.2.-4.
43. A Case of recurrence Huge Thyroglossal Duct Cyst in Oral Floor,which was fenestration in perinatal.:Y.Ito, F.Takatu, J.Hara.: The 63nd General meeting of Japanese Oral & Maxillofacial surgery Society(Chiba), 2018.11.2-4.

44. Establishment and characterization of radiation resistant strains from squamous cell carcinoma cell lines in serum-free defined culture: A. Hamada, T. Quang Nguyen, K. Uchisako, Y. Nakase, H. Nakatao, S. Toratani, T. Okamoto.: The 55th annual meeting of Japan tissue culture society for dental research (Hyogo), 2018.11.10.
45. Establishment and characterization of disease-specific induced pluripotent stem cells: Y. Nakase, A. Hamada, H. Nakatao, F. Obayashi, S. Yamasaki, T. Hata, N. Kitamura, T. Yamamoto, S. Toratani, T. Okamoto.: The 55th annual meeting of Japan tissue culture society for dental research (Hyogo), 2018.11.10.
46. Establishment of primary oral neuroendocrine carcinoma - neuroendocrine carcinoma diagnosed from the growth style of their primary culture-: S. Sato, A. Hamada, S. Sakurai, T. Hamana, S. Toratani, T. Okamoto.: The 55th annual meeting of Japan tissue culture society for dental research (Hyogo), 2018.11.10.
47. A Case of Non calcifying type of calcifying epithelial odontogenic tumor in the maxillary incisor region.: K.Tsushima, T.Kanda, I.Ogawa, S.Toratani, T.Okamoto.:The 66<sup>th</sup> Regional Meeting of the Japanese Stomatological Society, (IZUMO) 2018.11.23
48. Pathological factors involved in local failure in squamous cell carcinoma of the oral cavity: retrospective study and proposal of a new clinical classification...:S.Toratani, I.Ogawa, K.Sasahara, T.Kanda, K.Koizumi, Y.Yoshioka, R.tani, T.Okamoto.:The 66<sup>th</sup> Regional Meeting of the Japanese Stomatological Society, (IZUMO) 2018.11.23
49. Successful treatment in orthognathic surgery in a patient with Severe Congenital Neutropenia.: M.Higaki,K.Koizumi,S.Hirota,M.Kobayashi,T.Okamoto.: The 66<sup>th</sup> Regional Meeting of the Japanese Stomatological Society, (IZUMO) 2018.11.23
50. A reserch of risk of the development of periodontal disease in people with intellectual disabilities using Probiotics(L802):.Y.Oda, C.Shimizu, Y.Mizota, C.Morimoto, A.Wakita, M.Watari, M.Nakaoka, T.Tokikazu, Y.Hayashiuti,T.Kanda,F.hayashi,Y.Kaihara,Y.Okada.: The 35<sup>th</sup> Annual meeting of Japanese Society for Disability and Oral Health, (Tokyo) 2018.11.16-18
51. Long term oral hygiene management for the patient who implant denture wearing patient –a case report.: T.Tokikazu, T.Kanda, N.Ino, A,Wakita, M.Nakaoka,C.Furutani, Y.Oda,Y.Okada.: The 35<sup>th</sup> Annual meeting of Japanese Society for Disability and Oral Health, (Tokyo) 2018.11.16-18
52. Changes in consciousness of ward staff due to dental intervention to neurosurgery inpatients and future issues.: C.Okugawa, K.Hamahara, Y.Ito, J,Hara.:The 40th Hiroshima farm village medical society (Hiroshima) 2018.2.18.

## F) Other lectures

1. Regional alliances pass in the bone resorption suppressant use patient.: K.Okamoto, N.Ito.: Asa dental association lecture. (Hiroshima) 2018.2.21.

2. Regional alliances pass in the bone resorption suppressant use patient.: K.Okamoto, N.Ito.: Asa dental association lecture. (Hiroshima) 2018.3.14.
3. Regional alliances pass in the bone resorption suppressant use patient.: K.Okamoto, N.Ito. :Yamagata district dental association lecture. (Hiroshima) 2018.3.24.
4. Construction of the regional alliances pass in the bone resorption suppressant use patient.: N.Ito, K.Okamoto.:Asahi Kasei office study session (Hiroshima) 2018.4.5.
5. The latest oral management to an osteoporotic patient.: N.Ito, K.Okamoto.: Asa arts and sciences lecture (Hiroshima), 2018.6.20.
6. Oral flail prevention.: K.Okamoto, N.Ito.: Asakita district welfare council lecture. (Hiroshima), 2018.6.30.
7. Reducing Advanced Glycated Endproducts (AGEs) induce the healthy aging life. :A.Sakamoto,Y.Arita.: Mazda Hospital lecture (Hiroshima) 2018.9.11
8. Prophylactic oral care for the prevention of aspiration pneumonia.: :A.Sakamoto,Y.Arita.: Mazda Hospital lecture (Hiroshima) 2018.9.27
9. The clinical path for the dysphagia (The outline of the dysphagia): Y. Arita, A.Sakamoto.: The Meeting of Clinical Path (Hiroshima) 2018.1.22
10. The Correspondence for the dysphasia with the dementia. :Y. Arita, A.Sakamoto.: The 5th Conference of Dysphagia (Hiroshima) 2018.4.26
11. The role of the each type of jobs about the dysphagia in the local health care.: Y. Arita, A.Sakamoto.: The 1st Seminar of Dysphagia in the Aki Dental Association (Hiroshima) 2018.5.26
12. The initiatives for the dysphagia in the local.: Y. Arita, A.Sakamoto.: The Network Conference in Ozu area(Hiroshima) 2018.10.20
13. The method of detecting the dysphagia.: Y. Arita, A.Sakamoto.: The 6th Conference of Dysphagia (Hiroshima) 2018.10.25
14. Let's try the swallowing function evaluation.: Y. Arita, A.Sakamoto.: The 2st Seminar of Dysphagia in the Aki Dental Association (Hiroshima) 2018.10.27
15. The Workshop of the Dysphagia.:Rehabilitation 2018.: Y. Arita, A.Sakamoto.: Hiroshima Prefecture Local Health Care General Security Business, (Kure) 2018.12.2
16. Oral care not induce aspiration-related pneumonia cause.:C.Okuawa, N.Shikabayashi, F.Takatu, Y.Ito.:Mihara Onomichi nursing meeting for the study(Hiroshima), 2018.10.6.
17. Dental caries and Periodontal disease. : Yasutaka Ishida.:Shimokamagari elementary school lecture. (Kure)2018.6.21.
18. Oral controls your health. :Yasutaka Ishida. : 6th Shimokamagari hospital health festival, Health lecture. (Kure) 2018.11.18

(4) Status of Receiving Grants-in Aid for Scientific Research, etc.

1. Grants-in aid for scientific research (B): Tetsuji Okamoto: Grant #18H0300000
2. Grants-in aid for scientific research (C): Toratani Shigeaki: #18K09744
3. Grants-in aid for scientific research (C): Yukio Yoshioka: #17K11838
4. Grants-in aid for scientific research (C): Tomoaki Shintani: #16K11723
5. Grants-in aid for scientific research (C): Taku Kanda: #16K11687
6. Grants-in aid for scientific research (C): Tomoaki Hamana: #17K11875
7. Grant-in-Aid for Young Scientists(B): Sachiko Yamasaki: #18K09723
8. Grant-in-Aid for Young Scientists(B): Taishi Sakaue: #17K17251
9. Grant-in-Aid for Young Scientists(B):Yuki Taguchi: #16K20539
10. Grant-in-Aid for Young Scientists(B):Atsuko Hamada: #17K17252
11. Grant-in-Aid for Young Scientists(B):Hirotaka Nakatao: #18K17199

#### (5) Academic Awards, etc.

1. M.Higaki, T.Shintani, A.Hamada, S.N.Z. Rosli, E.Usui, T.Okamoto : Growth regulation by ED-71 of human squamous cell carcinoma cell lines through exosomal microRNA production in serum-free culture : 7th Hiroshima Conference on Education and Science in Dentistry. (Hiroshima) ,2018.3.29-30 Poster Award, Young Investigator Award
2. S.Satoh,A.Hamanda,S.Sakurai,T.hamana,S.Toratani,T.Okamoto.: Establishment of primary oral neuroendocrine carcinoma - neuroendocrine carcinoma diagnosed from the growth style of their primary culture-The 55<sup>th</sup> meeting of Japan Tissue Culture for Dental Research. 2018.11.10. (Hyogo). Best Presentation Award of the55<sup>th</sup> meeting of Japan Tissue Culture for Dental Research.
3. A.Hamada: 2018 Incentive award of the Alumni association of Oral and maxillofacial surgery. 2018.11.17.(Hiroshima)

#### (6) Patents

1. Patent Application Number:2018-084480, Okamoto, T, Tani, R, Matsui, Tokumaru, K.; Method for Determining Cancer Risk) Hiroshima University, Japan Kefia, Patent pending date: 6 May. 2018.
2. Patent Application Number:2018-084491, Okamoto, T, Tani, R, Tokumaru, K.:A method of judging prognosis after cancer treatment and a method of judging an onset risk of young and adolescent cancerHiroshima University, Japan Kefia, Patent pending date: 6 May. 2018.

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- **Department of Advanced Prosthodontics**
- **Division of Preventive and Restorative Dentistry  
(Department of Oral Implant)**

(1) Staff and Students

Professor: Kazuhiro Tsuga

Associate Professor: Yasuhiko Abe, Mineka Yoshikawa, Takayasu Kubo

Associate Professor/Lecturer: Koh-ichi Kuremoto, Katsunori Koretake

Assistant Professor: Hiroshi Oue, Yohei Okazaki, Shinsuke Okada

Research Associate: Maho Takeuchi, Mariko Maruyama, Takahiro Mori, Aya Hiraoka, Kan Kato, Yosuke Takeda, Azusa Kuroki

Graduate Student: Miwa Sasaki, Erika Asahara, Eri Ishida, Kiichi Nakamori, Kanako Yamawaki

Clinical Trainee: Toru Akutu

Administrative staff: Rinko Kurumi

(2) Main Research Activities

- 1 : Elucidation of the effect of prosthodontic treatments on the quality of life of elderly people.
- 2 : Removal prosthodontics and swallowing function of elderly people.
- 3 : Development and clinical application of functional oral rehabilitation utilizing tongue pressure measurement.
- 4 : Development and clinical application of new materials for oral implants.
- 5 : Development of "bio-hybrid" artificial bone made of interconnected porous hydroxyapatite and mesenchymal stem cells.
- 6 : Elucidation of the effect of FGF on bone formation surrounding oral implants.
- 7 : Biomechanics analysis of prostheses and their surrounding bone supported by implants.

(3) Research Achievements

A) Original Papers (including Case Reports)

- 1 : Candy eating behavior to improve swallowing function in dementia subjects: Kawano H, Mori T, Kuroki A, Nagasaki T, Maruyama M, Yoshikawa M, Yoshida M, Tsuga K: Arch Gerontol Geriatr, 75: 181-184, 2018.

- 2 : Effect of polymerization temperature on the properties of autopolymerizing resin: Morita K, Tsuka H, Kato K, Tsuga K: *J Prosthet Dent*, 119: 840-4, 2018.
- 3 : Association between buccal mucosa ridging and oral or occlusal status among older people: Morita K, Mori T, Maruyama M, Hiraoka A, Higa C, Kuroki A, Yoshida M, Tsuga K: *Oral Dis*, 24: 778-83, 2018.
- 4 : Factors related to masticatory performance in healthy elderly individuals: Morita K, Tsuka H, Kato K, Mori T, Nishimura R, Yoshida M, Tsuga K: *J Prosthodont Res*, 62: 432-5, 2018.
- 5 : Enhancement of calcification by osteoblasts cultured on hydroxyapatite surfaces with adsorbed inorganic polyphosphate: Kato K, Morita K, Hirata I, Doi K, Kubo T, Kato K, Tsuga K: *In Vitro Cell Dev Biol Anim*, 54: 449-57, 2018.
- 6 : Dual functionalized liposome-mediated gene delivery across triple co-culture blood brain barrier model and specific in vivo neuronal transfection: Dos Santos Rodrigues B, Oue H, Banerjee A, Kanekiyo T, Singh J: *J Control Release*, 286: 264-278, 2018.
- 7 : Effect of laser groove treatment on shear bond strength of resin-based luting agent to polyetheretherketone (PEEK): Tsuka H, Morita K, Kato K, Kimura H, Abekura H, Hirata I, Kato K, Tsuga K: *J Prosthodont Res*, doi: 10.1016/j.jpor.2018.08.001. Epub 2018 Sep 13.
- 8 : Novel fabrication of porous titanium by a resin-impregnated titanium substitution technique for bone reconstruction: Kobatake R, Doi K, Kubo T, Makihara Y, Oki Y, Umehara H, Tsuga K: *RSC Adv*, accepted, 2018.
- 9 : Histological and Bone Morphometric Evaluation of Osseointegration Aspects by Alkali Hydrothermally-Treated Implants: Umehara H, Kobatake R, Doi K, Oki Y, Makihara Y, Kubo T, Tsuga K: *Appl Sci*, 8: 635, 2018.

## B) Review

## C) Publications

## D) Other Publications

## E) Presentation at Scientific Meeting

- 1 : Effect of fibroblast factor receptor 2b attenuation on odontoblast differentiation and dentin formation: Yokoi M, Kuremoto K, Okada S, Kagawa K, Tsuga K: Japan prosthodontic Society (Okayama), 2018.
- 2 : Effect of fibroblast growth factor receptor 2b signaling attenuation on odontoblast differentiation and dentin formation: Yokoi M, Kuremoto K, Tsuga K: International Association for Dental Research (London), 2018.
- 3 : Relationship between sarcopenia, EAT-10, and tongue pressure in Japanese elderly: Yoshikawa M, Kitagawa M, Nagao A, Nishikawa Y, Yoshida M, Tsuga K: 8th ESSD congress (Dublin), 2018.
- 4 : A case on denture treatment for a patient with severe residual ridge resorption in which multi-oral functional examination was valid: Hiraoka A, Yasuda K, Higa C, Okazaki Y, Yoshikawa M, Abe Y, Kohada A, Tsuga K: 2018 annual meeting of Japan Prosthodontic Society Chugoku-Shikoku branch (Tokushima), 2018.
- 5 : The influence of eating posture on tongue pressure: Takeda C, Yoshikawa M, Yamawaki K, Yoshida M, Kuroki A, Higa C, Hiraoka A, Mori T, Tsuga K: 2018 annual meeting of Japan Prosthodontic Society Chugoku-Shikoku branch (Tokushima), 2018.
- 6 : Factors related to normal diet feeding for the dependent elderly: Kuroki A, Mori T, Yoshikawa M,

- Tsuga K: International Association for Dental Research (London), 2018.
- 7 : Factors related to normal diet feeding for the dependent elderly: Kuroki A, Mori T, Maruyama M, Yokoi M, Asahara E, Umehara H, Yoshikawa M, Yoshida M, Tsuga K: Japanese Society of Gerodontology (Tokyo), 2018.
- 8 : Factors related to masticatory performance in healthy elderly individuals: Morita K, Tsuka H, Maruyama M, Hiraoka A, Mori T, Yamamoto Y, Yoshida M, Tsuga K: The 127th Japan Prosthodontic Society (Okayama), 2018.
- 9 : A case of recovering masticatory function treated with oral implants in leukemia patient: Morita K: Annual Scientific meeting of Japan Prosthodontic Society Kyushu, Chugoku and Shikoku Branch (Tokushima), 2018.
- 1 0 : Decreased number of present teeth changes the physical, oral or occlusal status among healthy elderly individuals: Morita K, Nishio F, Tsuka H, Kimura H, Nakamori K, Yoshida M, Tsuga K: The 51th Hiroshima University Dental Society (Hiroshima), 2018.
- 1 1 : Designing mucoadhesive hydrogels toward their clinical applications: Nishio F, Hirata I, Tsuga K, Kato K: The 72th of academic meeting of the Japanese society for dental materials and devices (Sapporo), 2018.
- 1 2 : A case on denture treatment for a patient with severe residual ridge resorption in which multi-oral functional examination was valid: Hiraoka A, Yasuda K, Higa C, Okazaki Y, Yoshikawa M, Abe Y, Kohada A, Tsuga K: Scientific Meeting of Japan Prosthodontic Society Chugoku, Shikoku and Kansai branch (Tokushima), 2018.
- 1 3 : Fundamental study on application of composites resin-veneered PEEK to superstructure of dental implants: Tsuka H, Morita K, Kimura H, Abekura H, Tsuga K: The 11th Congress of the Asian Academy of Osseointegration (Seoul), 2018.
- 1 4 : Effect of Different Implant-Abutment connections in the Patient Examined Bone Turnover Markers: Yasuda K, Okada S, Okazaki Y, Abe Y, Tsuga K: The 11th Congress of Asian Academy of Osseointegration, ITI Korea Section Annual Meeting, Korean Academy of Stomatognathic Function and Occlusion (Seoul), 2018.
- 1 5 : Effect of laser groove treatment on Shear bond strength of adhesive resin cement to polyetheretherketone (PEEK): Kimura H, Tsuka H, Morita K, Abekura H, Koretake K, Tsuga K: Japan Prosthodontic Society Chugoku & Shikoku Branch (Tokushima), 2018.
- 1 6 : Effect of various surface pre-treatments on shear bond strength of adhesive resin cement to polyetheretherketone (PEEK): Kimura H, Tsuka H, Morita K, Abekura H, Tsuga K: The 72th Japanese Society for Dental Materials and Devices (Sapporo), 2018.
- 1 7 : Intermittent parathyroid hormone administration enhances implant stability in osteoporosis model: Oki Y, Doi K, Makihara Y, Kubo T, Tsuga K: European association for osseointegration (Vienna), 2018.
- 1 8 : Osseointegration aspect of implants placed in bone reconstructed site with novel porous titanium: Kobatake R, Doi K, Oki Y, Yokoi M, Makihara Y, Umehara H, Kubo T, Tsuga K: 27th annual scientific meeting of European association for osseointegration (Vienna), 2018.
- 1 9 : Investigation of material property and bioactivity of novel developed bioactive titanium membrane: Doi k, Kubo T, Kobatake R, Oki Y, Umehara H, Makihara Y, Tsuga K: The 47th Annual Meeting of the Japanese Society of Oral Implantology (Osaka), 2018.
- 2 0 : Evaluation of implant stability in bone reconstruction site with porous titanium: Kobatake R, Doi K, Kubo T, Umehara H, Tsuga K: 72nd annual meeting of Japanese society for dental materials and devices (Sapporo), 2018.
- 2 1 : Aspect of apatite formation ability of alkali treated titanium membrane: Umehara H, Doi K, Kobatake R, Kubo T, Tsuga K: The 70th of academic meeting of the Japanese society for dental materials and devices (Sapporo), 2018.
- 2 2 : Bone reconstruction with titanium: Kobatake R: HIRAKU 3MT Competition 2018 (Hiroshima), 2018.
- 2 3 : Physical and biological characteristics of a novel porous titanium block for bone reconstruction: Kobatake R, Doi K, Oki Y, Makihara Y, Kubo T, Tsuga K: 96th General session & exhibition of the IADR (London), 2018.
- 2 4 : Development of novel porous titanium as bone reconstruction material: Kobatake R, Doi K,

- Makihara Y, Oki Y, Kubo T, Abekura H, Tsuga K: 7th Hiroshima Conference on Education and Science in Dentistry (Hiroshima), 2018.
- 2 5 : Investigation of material property and bioactivity of novel developed bioactive titanium membrane: Umehara H, Doi K, Kobatake R, Oki Y, Kubo T, Tsuga K: The 11th Congress of the Asian Academy of Osseointegration (Seoul), 2018.
- 2 6 : Surface decontamination of titanium thin membrane by UV-LED irradiation: Makihara Y, Doi K, Umehara H, Yasuda K, Abe Y, Tsuga K: The 11th Congress of the Asian Academy of Osseointegration, (Seoul), 2018.
- 2 7 : Investigation of surface topography and apatite formation ability on the alkali treated titanium membrane: Umehara H, Kubo T, Doi K, Kobatake R, Oki Y, Tsuga K: The 38th annual meeting of the Chugoku/Shikoku branch of the Japanese society of oral implantology (Hiroshima), 2018.
- 2 8 : Deletion of LRP1 in vascular mural cells causes cognitive impairment depending on apoE isoforms: Oue H, Yamazaki Y, Mosneag I-E, Aikawa T, Holm M-L, Bu G, Kanekiyo T: Neuroscience 2018 (San Diego), 2018.

#### F) Special lectures in academic meetings

##### (4) Status of Receiving Grants-in Aid for Scientific Research, etc.

- 1 : MEXT Grant-in-Aid for Scientific Research (C): Yoshikawa M: Can the early detection and early improvement of oral frailty stop the frailty? (Grant No. 16K11887). ¥1,170,000
- 2 : MEXT Grant-in- Aid for Young Scientists (B): Mori T: Development of new inspection of food crush performance to provide elderly persons needing long-term care with an appropriate dietary form. (Grant No. 17K17171). ¥1,500,000
- 3 : National Institute on Aging (ADRC Pilot Grant): Oue H: Interleukin-1 receptor-like 1 (IL1RL1) and CAA in Alzheimer's disease. \$40,000
- 4 : MEXT Grant-in-Aid for Scientific Research (C): Tsuga K: Development of novel examination for chewing force. (Grant No. 18K09660). ¥650,000
- 5 : MEXT Grant-in-Aid for Scientific Research (Support for Starting Research Activities): Hiraoka A: Elucidation of the optimal period of PAP therapy aiming at oral ingestion by ALS patients. (Grant No. 16H07002). ¥1,560,000
- 6 : MEXT Grant-in-Aid for Scientific Research (C): Kubo T: Establishment of implant treatment with acceleration of bone metabolism (Grant No. 16K1159560). ¥1,430,000

##### (5) Academic Awards, etc.

- 1 : Tsuga K, Yoshikawa M, Oue H, Okazaki Y, Tsuchioka H, Maruyama M, Yoshida M, Akagawa Y: Maximal voluntary tongue pressure is decreased in Japanese frail elderly persons. The award of Japanese Society of Gerodontology, 2018.
- 2 : Tsuga K: President commendation of Hiroshima University, 2018.

##### (6) Patents

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- **Department of Advanced Prosthodontics**
- **Division of Preventive and Restorative Dentistry  
(Department of Prosthetic Dentistry)**

(1) Staff and Students

Professor	: Kazuhiro Tsuga
Associate Professor	: Hitoshi Abekura, Mitsuyoshi Yoshida
Assistant Professor	: Kazuya Doi, Kouji Morita, Hiroki Tsuka, Yusuke Makihara
Resident	: Kazuko Kagawa, Chiaki Higa, Keisuke Yasuda, Yosifumi Oki, Miyuki Yokoi,
Graduate Student	: Reiko Kobatake, Fumiko Nishio, Hanako Umehara, Hitomi Kimura, Chiho Takeda, Kanako Yamawaki
Clinical Trainee	: Sachiko Takagi, Wataru Teshima
Administrative staff	: Rinko Kurumi

(2) Main Research Activities

- 1 : Covariance structure analysis of sleep, diurnal bruxism, sociopsychological and TMD
- 2 : Clinical assessment of CAD/CAM produced crown with hybrid resin (Sera Smart) for molar teeth
- 3 : Exploration of amelogenic stem/progenitor cells for tissue-engineered tooth.
- 4 : The roles of FGFR2b signaling in the regenerative capacity of tooth and bone.
- 5 : Study of occlusal-supporting ability of individual maxillary and mandibular teeth
- 6 : Relation between prosthetic treatment and general condition in elderly with dementia.
- 7 : Establishment of bone regeneration by using interconnected porous hydroxyapatite and biopolymeric material
- 8 : Study on the dental materials

(3) Research Achievements

A) Original Papers (including Case Reports)

- 1 : Candy eating behavior to improve swallowing function in dementia subjects: Kawano H, Mori T, Kuroki A, Nagasaki T, Maruyama M, Yoshikawa M, Yoshida M, Tsuga K: Arch Gerontol Geriatr, 75: 181-184, 2018.
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## B) Review

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- 7 : Factors related to normal diet feeding for the dependent elderly: Kuroki A, Mori T, Maruyama M, Yokoi M, Asahara E, Umehara H, Yoshikawa M, Yoshida M, Tsuga K: Japanese Society of Gerodontology (Tokyo), 2018.
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- 1 1 : Designing mucoadhesive hydrogels toward their clinical applications: Nishio F, Hirata I, Tsuga K, Kato K: The 72th of academic meeting of the Japanese society for dental materials and devices (Sapporo), 2018.
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- 1 3 : Fundamental study on application of composites resin-veneered PEEK to superstructure of dental implants: Tsuka H, Morita K, Kimura H, Abekura H, Tsuga K: The 11th Congress of the Asian Academy of Osseointegration (Seoul), 2018.
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- 1 5 : Effect of laser groove treatment on Shear bond strength of adhesive resin cement to polyetheretherketone (PEEK): Kimura H, Tsuka H, Morita K, Abekura H, Koretake K, Tsuga K: Japan Prosthodontic Society Chugoku & Shikoku Branch (Tokushima), 2018.

- 1 6 : Effect of various surface pre-treatments on shear bond strength of adhesive resin cement to polyetheretherketone (PEEK): Kimura H, Tsuka H, Morita K, Abekura H, Tsuga K: The 72th Japanese Society for Dental Materials and Devices (Sapporo), 2018.
- 1 7 : Intermittent parathyroid hormone administration enhances implant stability in osteoporosis model: Oki Y, Doi K, Makihara Y, Kubo T, Tsuga K: European association for osseointegration (Vienna), 2018.
- 1 8 : Osseointegration aspect of implants placed in bone reconstructed site with novel porous titanium: Kobatake R, Doi K, Oki Y, Yokoi M, Makihara Y, Umehara H, Kubo T, Tsuga K: 27th annual scientific meeting of European association for osseointegration (Vienna), 2018.
- 1 9 : Investigation of material property and bioactivity of novel developed bioactive titanium membrane: Doi k, Kubo T, Kobatake R, Oki Y, Umehara H, Makihara Y, Tsuga K: The 47th Annual Meeting of the Japanese Society of Oral Implantology (Osaka), 2018.
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- 2 1 : Aspect of apatite formation ability of alkali treated titanium membrane: Umehara H, Doi K, Kobatake R, Kubo T, Tsuga K: The 70th of academic meeting of the Japanese society for dental materials and devices (Sapporo), 2018.
- 2 2 : Bone reconstruction with titanium: Kobatake R: HIRAKU 3MT Competition 2018 (Hiroshima), 2018.
- 2 3 : Physical and biological characteristics of a novel porous titanium block for bone reconstruction: Kobatake R, Doi K, Oki Y, Makihara Y, Kubo T, Tsuga K: 96th General session & exhibition of the IADR (London), 2018.
- 2 4 : Development of novel porous titanium as bone reconstruction material: Kobatake R, Doi K, Makihara Y, Oki Y, Kubo T, Abekura H, Tsuga K: 7th Hiroshima Conference on Education and Science in Dentistry (Hiroshima), 2018.
- 2 5 : Investigation of material property and bioactivity of novel developed bioactive titanium membrane: Umehara H, Doi K, Kobatake R, Oki Y, Kubo T, Tsuga K: The 11th Congress of the Asian Academy of Osseointegration (Seoul), 2018.
- 2 6 : Surface decontamination of titanium thin membrane by UV-LED irradiation: Makihara Y, Doi K, Umehara H, Yasuda K, Abe Y, Tsuga K: The 11th Congress of the Asian Academy of Osseointegration, (Seoul), 2018.
- 2 7 : Investigation of surface topography and apatite formation ability on the alkali treated titanium membrane: Umehara H, Kubo T, Doi K, Kobatake R, Oki Y, Tsuga K: The 38th annual meeting of the Chugoku/Shikoku branch of the Japanese society of oral implantology (Hiroshima), 2018.

F) Special lectures in academic meetings

G) Others

(4) Status of Receiving Grants-in Aid for Scientific Research, etc.

- 1 : MEXT Grant-in-Aid for Scientific Research (C): Abekura H: The study for discontinuous sprint use based on long-term bruxism analysis by electromyogram and electroencephalogram. (Grant No. 17K11782). ¥500,000
- 2 : MEXT Grant-in-Aid for Scientific Research (C): Morita K : Fabrication of porous titanium with honeycomb structure. (Grant No. 16K11594). ¥1,560,000
- 3 : MEXT Grant-in-Aid for Scientific Research (C): Tsuga K: Development of novel examination for chewing force. (Grant No. 18K09660). ¥650,000
- 4 : MEXT Grant-in-Aid for Young Scientists (B): Higa C: New development of iterative tongue motion test and training method. (Grant No. 17K17373). ¥3,000,000
- 5 : MEXT Grant-in-Aid for Young Scientists (B): Oki Y: New development of the cell control functionality membrane. (Grant No.18K17122). ¥2,080,000
- 6 : MEXT Grant-in-Aid for Scientific Research (C): Doi K: Establishment of bone reconstruction with implant stability using bioactive porous titanium: (Grant No. 18K09683). ¥1,170,000
- 7 : Kobatake R: Development of the plants growth medium by porous titanium: 12th Dream Challenge Award. ¥50,000
- 8 : Kobatake R: Hiroshima Young Venture Award, Gold Prize of Science and Technology Department. ¥100,000

(5) Academic Awards, etc.

- 1 : Tsuga K, Yoshikawa M, Oue H, Okazaki Y, Tsuchioka H, Maruyama M, Yoshida M, Akagawa Y: Maximal voluntary tongue pressure is decreased in Japanese frail elderly persons. The award of Japanese Society of Gerodontology, 2018.
- 2 : Tsuga K: President commendation of Hiroshima University, 2018.
- 3 : Umehara H: Excellent student scholarship of Hiroshima university, 2018.
- 4 : Kobatake R: Bone reconstruction with titanium: HIRAKU 3MT Competition 2018 Outstanding Performance Award, 2018.
- 5 : Kobatake R: Bone reconstruction with titanium: HIRAKU 3MT Competition 2018 Chugai Technos Corporation Award, 2018.
- 6 : Kobatke R: Establishment of jawbone reconstruction treatment with novel bioactive porous titanium:

2019-2020 fiscal year JSPS Research Fellowship for Young Scientists (DC2)

7 : Kobatake R: Development of the plants growth medium by porous titanium: 12th Dream Challenge Award, 2018.

8 : Kobatake R: 25Th Hiroshima Young Venture Award, Gold Prize of Science and Technology Department, 2018.

(6) Patents

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- **Department of Orthodontics and Craniofacial Development Biology**
- **Division of Oral Health and Development (Department of Orthodontics)**

(1) Staffs and Students

Professor	: Kotaro Tanimoto
Associate Professor	: Hiroshi Ueda, Masato Kaku
Lecture	: Ryo Kunimatsu
Assistant Professor	: Yuki Asakawa, Naoto Hirose, Yuki Yoshimi, Tetsuya Awada, Yuji Tsuka(H30.6.1~)
Intern	: Yuji Tsuka(~H30.5.31), Kayo Horie, Takaharu Abe, Hidemi Gunji, Yuko Nakao, Chikako Sumi, Aya Kimura, Kengo Nakajima, Makoto Yanoshita, Taeko Yamamoto
Graduate Student	: Kazuyo Ando, Koji Iwai, Azusa Onishi, Isamu Kado, Mami Takano, Yuka Yahima, Sakura Yamada, Hiroki So, Yuka Yamauchi, Tomoka Hiraki, Jin Izumino, Shota Ito, Haruka Kagawa, Yuma Koizumi, Ayaka Nakatani, Ayana Nakano, Sayumi Miura, Shyuzo Sakata, Sayuri Nishiyama, Kazutaka Ikeda, Eri Ishii, Tomohiro Ogasawara, Eri Tsuboi, Koudai Rikitake
Professor(part-time)	: Kazuo Tanne, Eiji Tanaka, Ichiro Takahashi
Research Associate	: Cynthia Concepción Medina
Registered Intern	: Kuniaki Tanaka, Kazunori Itatani, Eri Ohtani, Nanae Oki, Hirotaka Sugino, Tomomi Date, Yu Matsumura, Shoutoku Kojima, Saki Okita,
Dental Hygienist	: Miho Okada, Ikuho Yoshimi

(2) Main Research Activities

1. Elucidation of pathogenic mechanism in malocclusion and management of oral maxillofacial skeletal growth
2. Optimization of tooth movement by orthodontic force
3. Establishment of a new orthodontic treatment based on the image and biochemical diagnosis of temporomandibular disorders (TMD)
4. Application of regeneration medicine to orthodontic treatment
5. Suppression of caries risk in orthodontic treatment
6. Evaluation of the contribution of various oral functions to general fitness
7. Development of new instruments and materials for orthodontic treatment

## (3) Research achievements

## A) Original Papers (including Case Reports)

- 1 : Effects of loxoprofen on the apical root resorption during orthodontic tooth movement in rats. : Yamamoto T., Kaku M., Sumi H., Yashima Y., Izumino J., Tanimoto K.: PLoS One, 25 (13), e0194453, 2018.
- 2 : The effect of mesenchymal stem cells on chemotaxis of osteoclast precursor cells. : Sumi K., Abe T., Kunimatsu R., Oki N., Tsuka Y., Awada T., Nakajima K., Ando K., Tanimoto K.: J Oral Sci, 60 (2), 221-225, 2018.
- 3 : The C-terminus of the amelogenin peptide influences the proliferation of human bone marrow mesenchymal stem cells. : Kunimatsu R., Awada T., Yoshimi Y., Ando K., Hirose N., Asakawa-Tanne Y., Sumi K., Tanimoto K.: J Periodontol, 89 (4), 496-505, 2018.
- 4 : Comparison of the bone regeneration ability between stem cells from human exfoliated deciduous teeth, human dental pulp stem cells and human bone marrow mesenchymal stem cells. : Nakajima K., Kunimatsu R., Ando K., Ando T., Hayashi Y., Kihara T., Hiraki T., Tsuka Y., Abe T., Kaku M., Nikawa H., Takata T., Tanne K., Tanimoto K.: Biochemical and Biophys Res Commun, 497 (3), 876-882, 2018.
- 5 : Comparative characterization of stem cells from human exfoliated deciduous teeth, dental pulp, and bone marrow-derived mesenchymal stem cells. : Kunimatsu R., Nakajima K., Awada T., Tsuka Y., Abe T., Ando K., Hiraki T., Kimura A., Tanimoto K.: Biochem Biophys Res Commun, 501 (1), 193-198, 2018.
- 6 : Semaphorin 3A inhibits inflammation in chondrocytes under excessive mechanical stress. : Sumi C., Hirose N., Yanoshita M., Takano M., Nishiyama S., Okamoto Y., Asakawa Y., Tanimoto K.: Mediators Inflamm, 2018, 5703651, 2018.
- 7 : Effects of high-frequency near-infrared diode laser irradiation on the proliferation and migration of mouse calvarial osteoblasts. : Kunimatsu R., Gunji H., Tsuka Y., Yoshimi Y., Awada T., Sumi K., Nakajima K., Kimura K., Hiraki T., Abe T., Hirose N., Yanoshita M., Tanimoto K.: Lasers Med Sci, 33 (5), 959-966, 2018.
- 8 : Effects of Nd:YAG low-level laser irradiation on cultured human osteoblasts migration and ATP production: in vitro study. : Tsuka Y, Kunimatsu R, Gunji H, Nakajima K, Kimura A, Hiraki T, Nakatani A, Tanimoto K.: Lasers Med Sci, 34 (1), 55-60, 2018.
- 9 : Cyclic Tensile Strain Upregulates Pro-Inflammatory Cytokine Expression Via FAK-MAPK Signaling in Chondrocytes. : Yanoshita M., Hirose N., Okamoto Y., Sumi C., Takano M., Nishiyama S., Asakawa-Tanne Y., Horie K., Onishi A., Yamauchi Y., Mitsuyoshi T., Kunimatsu



- R., Tanimoto K.: *Inflamm*, 41 (5), 1621-1630, 2018.
- 1 0 : Effects of Human Full-length Amelogenin and C-terminal Amelogenin Peptide on the Proliferation of Human Mesenchymal Stem Cells Derived from Adipose Tissue. : Ando K., Kunimatsu R., Awada T., Yoshimi Y., Tsuka Y, Sumi K., Horie K., Abe T., Nakajima K., Tanimoto k.: *Curr Pharm Des*, 24 (25), 2993-3001, 2018.
- 1 1 : Histomorphometric evaluation of cortical bone surrounding micro-implant used as anchorage for orthodontic tooth movement: Why is the insertion torque critical for primary stability?. : Sunagawa H., Ohtani J., Kaku M., Tsubamoto N., Ishikawa E., Tanne K., Tanimoto K.: *Biomed Res*, 29 (14), 3028-3033, 2018.
- 1 2 : Effects of human full-length amelogenin on the proliferation of human osteoblasts. Kunimatsu R., Yoshimi Y., Awada T., Tanimoto K.: *Biomed Res (India)*, 29(12): 2609-14, 2018.
- 1 3 : Effect of high-Frequency near-Infrared diode laser irradiation on periodontal tissues during experimental tooth movement in rats. Gunji H., Kunimatsu R., Tsuka Y., Yoshimi Y., Sumi K., Awada T., Nakajima K., Kimura A., Hiraki T., Hirose N., Yanoshita M., Tanimoto K.: *Lasers Surg Med*, 50(7): 772-80, 2018.
- 1 4 : The role of vascular endothelial growth factor and mesenchymal stem cells during angiogenesis. Oki N., Abe T., Kunimatsu R., Sumi K., Awada T., Tsuka Y., Nakajima K., Ando K., Tanimoto K.: *Biomed Res (India)*, 29(15): 3079-84, 2018.
- 1 5 : Dynamic imaging of the effect of mesenchymal stem cells on osteoclast precursor cell chemotaxis for bone defects in the mouse skull. Abe T., Sumi K., Kunimatsu R., Oki N., Tsuka Y., Nakajima K., Tanimoto K.: *J Dent Sci.*, 13(4): 354-359, 2018.
- 1 6 : Baicalin promotes osteogenic differentiation of human cementoblast lineage cells via the Wnt/ $\beta$  catenin signaling pathway. Kimura A., Kunimatsu R., Yoshimi Y., Tsuka Y., Awada T., Horie K., Gunji H., Abe T., Nakajima K., Kitagawa M., Miyauchi M., Takata T., Tanimoto K.: *Curr Pharm Des.*, 24(33): 3980-3987, 2018.
- 1 7 : The effect of mesenchymal stem cells on osteoclast precursor cell differentiation. Abe T., Sumi K., Kunimatsu R., Oki N., Tsuka Y., Nakajima K., Ando K., Tanimoto K.: *J Oral Sci.*, 61(1), 30-35, 2018
- 1 8 : A comprehensive orthodontic-prosthetic treatment of crowding with loss of an upper central incisor and alveolar bone defect by an accident.: Hirose N, Yanoshita M, Sumi C, Onishi A, Yamauchi Y, Nishiyama S, Horie K, Ueda H, Abekura H, Tsuga K, Tanimoto K.: *J. Hiroshima Dent. Asso*, 45(1), 13-19, 2018.
- 1 9 : A Orthodontic Treatment for a Patient with Maxillary Protrusion and Fibrous Dysplasia. : Hirose N., Yanoshita M., Sumi C., Onishi A., Yamauchi Y., Nishiyama S., Horie K., Ueda H, Tanimoto K.: *J. Hiroshima Univ. Dent. Soc*, 50 (1), 15-20, 2018.
- 2 0 : A treatment case of maxillary protrusion with ankylosis of the impacted upper right canine:

- Sumi H., Kaku M., Yashima Y., Tanimoto K.: J. Chu-shi. Orthod. Soc, 30 (1), 11-22, 2018.
- 2 1 : Clinical investigation of patients with congenital diseases at the clinic for department of orthodontics in Hiroshima University Hospital during the 10-years. : Yanoshita M., Hirose N., Onishi A., Yamauchi Y., Tanimoto K.: J. Chu-shi. Orthod. Soc, 30 (1), 43-50, 2018.
- 2 2 : A case report of CHARGE syndrome with cleft palate and bimaxillary hypoplasia. : Nakao Y., Asakawa -Tanne Y., Koh M., Date T., Horie K., Ueda H., Tanimoto K.: J. Chu-shi. Orthod. Soc, 30 (1), 33-42, 2018.
- 2 3 : A case of Mandibular Prognathism with Crozonn Syndrome treated by Application of Maxillary Distraction Osteogenesis and Sagittal Split Ramus Osteotomy. : Kojima H., Ohtani J., Ueda Y., Iwai K., Ohta K., Ono S., Nakagawa T., Takechi M., Tanimoto K.: Jpn. J. Jaw Deform, 28(1):52-60, 2018.
- 2 4 : A Case of Pediatric Odontogenic Myxofibroma of the Mandible. : Kanda T., Nobumoto T., Hamada A., Satou S., Obayasi F., Yashima Y., Sakamoto S., Ogawa I., Toratani S., Okamoto T.: J.Hiroshima Univ.Dent. Soc, 50 (2), 77-83, 2018.

#### B) Review

#### C) Publications

#### D) Other Publications

#### E) Presentation at Scientific Meeting

- 1 : Engineering tissues that mimic natural cartilage microstructure. : Sugino H., Kanawa M., Tanimoto K., Kato K.: 7th Hiroshima Conference on Education and Science in Dentistry (Hiroshima), 2018.
- 2 : Effects of continuously compressive force on the expression of RANKL/OPG and VEGF in MLO-Y4 and MC3T3-E1 cells. : Yashima Y., Kaku M., Yamamoto T., Izumino J., Kagawa H., Tanimoto K.: The 51st Annual Meeting of the Hiroshima University Dental Society (Hiroshima), 2018.
- 3 : Development of peptide drug against bone destruction. : Yamada S., Chanbora C., Miyauchi M., Tanimoto K., Takata T.: The 51st Annual Meeting of the Hiroshima University Dental Society (Hiroshima), 2018.
- 4 : Effect of epidermal growth factor on the differentiation of mouse iPS cells into dental epithelial-like cells. : Onishi A., Aimi N., Tanimoto K., Kato K.: The 51st Annual Meeting of the Hiroshima University Dental Society (Hiroshima), 2018.

- 5 : A case of pediatric odontogenic myxofibroma of the mandible : Nobumoto T., Kanda T., Hamada A., Takahashi H., Satou S., Obayashi F., Tsushima K., Yashima Y., Sakamoto S., Ogawa I., Toratani S., Okamoto T.: The 51st Annual Meeting of the Hiroshima University Dental Society (Hiroshima), 2018.
- 6 : Baicalin stimulates bone metabolism of cementum and inhibits root resorption during tooth movement in a rodent model. : Kimura A.: Angle Orthodontic Seminar (Hiroshima), 2018.
- 7 : New therapeutic medicines for temporomandibular joint disorders. : Sumi C.: Angle Orthodontic Seminar (Hiroshima), 2018.
- 8 : A case of orthognathic surgery for an elderly mandibular prognathism patient with many missing teeth. : Yamamoto T., Kaku M., Ono S., Mizuta K., Uetsuki R., Takechi M., Tanimoto K.: The 28th Annual Meeting of the Japanese Society for Jaw Deformities (Osaka), 2018.
- 9 : A case of orthognathic surgical correction of mandibular prognathism with congenital myotonic dystrophy. : Fukui A., Ono S., Ohta K., Kunimatsu R., Sumi K., Oki N., Tanimoto K., Takechi M.: The 28th Annual Meeting of the Japanese Society for Jaw Deformities (Osaka), 2018.
- 10 : A case report of partial 1q duplication syndrome: features of disease containing general status. : Koizumi Y., Okita S., Abe T., Yoshimi Y., Awada T., Tsuka Y., Nakajima K., Kado I., Itou S., So H., Nakano A., Tanimoto K.: The 61st Annual Meeting of The Chu-Shikoku Orthodontic Society (Okayama), 2018.
- 11 : Development of lactoferrin-based peptide drug against bone destruction. : Yamada S., Chanbora C., Miyauchi M., Tanimoto K., Takata T.: The 8th Japanese association of lactoferrin (Hiroshima), 2018.
- 12 : The role of Semaphorin3A in chondrocyte. : Sumi C., Hirose N., Yanoshita M., Takano M., Nishiyama S., Tsuboi E., Asakawa Y., Tanimoto K.: The 77th Annual Meeting of the Japanese Orthodontic Society (Yokohama), 2018.
- 13 : Effects of baicalin on the metabolism of human cementoblasts lineage cells. : Kimura A., Kunimatsu R., Yoshimi Y., Tsuka Y., Awada T., Horie K., Gunji H., Nakajima K., Takata T., Tanimoto K.: The 77th Annual Meeting of the Japanese Orthodontic Society (Yokohama), 2018.
- 14 : A diode-laser irradiation enhances the proliferation and regeneration of osteoblasts and accelerates experimental tooth movement. : Gunji H., Kunimatsu R., Tsuka Y., Yoshimi Y., Awada T., Abe T., Kimura A., Nakajima K., Yamada S., Hiraki T., Nakatani A., Tanimoto K.: The 77th Annual Meeting of the Japanese Orthodontic Society (Yokohama), 2018.
- 15 : Effects of FAK inhibitor on condylar cartilage under the excessive mechanical stress. : Yanoshita M., Hirose N., Sumi C., Takano M., Nishiyama S., Tanimoto K.: The 77th Annual Meeting of the Japanese Orthodontic Society (Yokohama), 2018.
- 16 : Effect of non-steroidal anti-inflammatory drugs on the root resorption during experimental tooth movement. : Yamamoto T., Kaku M., Yashima Y., Izumino J., Kagawa H., Tanimoto K.: The 57th Hiroshima Prefecture Dental Association, The 102nd Hiroshima University Dental Society (Hiroshima), 2018.

- 1 7 : Analysis of neuroinflammation induced by the intraperitoneal injection of *Porphyromonas gingivalis* lipopolysaccharide in mice. : So H., Yamawaki Y., Tanimoto K., Kanematsu T.: The 57th Hiroshima Prefecture Dental Association, The 102th Hiroshima University Dental Society (Hiroshima), 2018.
- 1 8 : Effects of FAK inhibitor on condylar cartilage under the excessive mechanical stress. : Yanoshita M., Hirose N., Sumi C., Takano M., Nishiyama S., Tanimoto K.: The 57th Hiroshima Prefecture Dental Association, The 102th Hiroshima University Dental Society (Hiroshima), 2018.
- 1 9 : Effect of Nd:YAG laser irradiation and Mechanical force on osteoblast-like cells. : Tsuka Y., Kunimatsu R., Gunji H., Abe T., Concepcion MC., Nakajima K., Kimura A., Hiraki T., Nakatani A., Tanimoto K.: 2018 Taiwan International Orthodontic Forum (Taipei), 2018.
- 2 0 : Effects of high-frequency near-infrared diode laser irradiation on the proliferation and migration of mouse calvarial osteoblasts. : Kunimatsu R., Tsuka Y., Gunji H., Awada T., Tanimoto K.: 2018 Taiwan International Orthodontic Forum (Taipei), 2018.
- 2 1 : The C-terminus of the amelogenin peptide influences the proliferation of human bone marrow mesenchymal stem cells. : Awada T., Kunimatsu R., Tsuka Y., Tanimoto K.: 2018 Taiwan International Orthodontic Forum (Taipei), 2018.
- 2 2 : CT image evaluation on the morphological changes of pharyngeal airway space achieved after mandibular surgical set back. : Iwai K, Ueda H., Matsumura Y., Cynthia CM., Miura S., Tanimoto K.: American Academy of Dental Sleep Medicine 27th Annual Meeting (Baltimore), 2018.
- 2 3 : The effect of epidermal growth factor on oral epithelial-like cell induction from mouse iPS cells: Onishi A., Aimi N., Tanimoto K., Kato K.: 5th TERMIS World Congress (Kyoto), 2018.
- 2 4 : Culture Substrates for the Efficient Expansion of Neural Progenitor Cells Derived from iPS Cells. : Yamauchi Y., Hirata I., Tanimoto K., Kato K.: The 40th Annual Meeting of the Japanese Society for Biomaterials (Kobe), 2018.
- 2 5 : MiR-125b derived from osteoblasts confers on bone formation an advantage over bone resorption to maintain healthy bones. : Ito S., Minamizaki T., Yoshiko Y., Tanimoto K(non-member collaborator): The 60th Annual Meeting of Japanese association for oral biology (Fukuoka), 2018.
- 2 6 : CT image evaluation on the morphological changes of pharyngeal airway space achieved after mandibular surgical set back. : Iwai K., Ueda H., Matsumura Y., Cynthia Concepcion., Miura S., Nagasaki T., Tanimoto K.: The 61st Annual Meeting of The Chu-Shikoku Orthodontic (Okayama), 2018.
- 2 7 : Clinical survey on the association between root resorption incident to orthodontic treatment and host factors. : Nakatani A., Asakawa Y., Kunimatsu R., Date T., Nakao Y., Takano M., Tanimoto K.: The 61st Annual Meeting of the Chu-Shikoku Orthodontic Society (Okayama) , 2018.
- 2 8 : Statistical investigation of abnormalities of teeth in cleft lip and /or palate patients. : Kimura A., Kunimatsu R., Yoshimi Y., Awada T., Gunji H., Abe T., Tanimoto K.: The 61st Annual Meeting of The Chu-Shikoku Orthodontic Society (Okayama), 2018.

#### F) Special lectures in academic meeting

- 1 : Exploration of super-pulse diode laser to regeneration of periodontal tissue during tooth movement. : Kunimatsu R.: The 30th Annual Meeting OF Japan Laser Therapy Association (Tokyo), 2018.
- 2 : The future of oral appliance therapy for obstructive sleep apnea patients. : Ueda H.: The 13th expert seminar of Japanese Academy of Dental Sleep Medicine (Sapporo), 2018.

#### (4) Status of Receiving Grants-in Aid for Scientific Research, etc.

- 1 : Grant-in-aid for Scientific Research (C): Tanimoto K, Modulations of stem cells from exfoliated deciduous teeth (SHED) activity by construction of microenvironment and its application to bone regeneration of jaw cleft. 16K11788. 1430,000yen.
- 2 : Grant-in-aid for Scientific Research (C): Kunimatsu R, Application to root resorption prevention and elucidation of periodontal tissue metabolic activity mechanism by functionality amelogenin peptide and laser. 16K11790. 910,000yen.
- 3 : Grant-in-aid for Scientific Research (C): Hirose N, Elucidation of the mechanical stress receptive mechanism by integrins, and establishment of PCR prevention with a integrins inhibitor. 16K11789. 1300,000yen.
- 4 : Grant-in-aid for Scientific Research(C): Asakawa Y, Elucidation of the effect of Angptl2 on cartilage destruction of osteoarthritis and its application to novel therapies. 18K09833. 2210,000yen.
- 5 : Grant-in-aid for Scientific Research(B): Yoshimi Y, Application to prevent and treat root absorption using naturally derived flavonoids and amelogenin peptide drug discovery. 17K17330. 2080,000yen.
- 6 : Grant-in-aid for Scientific Research(B): Awada T, Application to periodontal tissue regeneration by a new amelogenin peptide combined with mesenchymal stem cells derived from dental pulp and adipose. 17K17328. 2080,000yen.
- 7 : Grant-in-aid for Scientific Research(B) : Tsuka Y, Elucidation of mandibular head cartilage destruction mechanism and establishment of treatment method for osteoarthritis of the temporomandibular joint using cold laser. 18K17256. 2200,000yen.
- 8 : Grant-in-aid for Scientific Research (B): Horie K, Effects and mechanism of withaferin A on extra-territorial facial pathological pain following a trigeminal nerve injury. 17K15790. 2210,000yen.
- 9 : Grant-in-aid for Scientific Research (B): Gunji H, Periodontal tissue metabolism activation and clinical application during tooth movement using cold laser. 18K17257. 2080,000yen.
- 10 : Grant-in-aid for Scientific Research (B): Sumi K, Development of the treatment for patients with jaw cleft by bone regenerative technologies using mesenchymal stem cells derived different origins

and semiconductor lasers. 17K17327. 2080,000yen.

- 1 1 : Grant-in-aid for Scientific Research (B): Sumi H, Effects of anti-inflammatory drugs on tooth movement and root resorption, and its application to periodontal absorption therapy. 17K17239, 780,000yen.
- 1 2 : Grant-in-aid for Scientific Research (B): Sugino H, The construction of two kinds of different cartilage with bioengineering and application to temporomandibular joint restoration. 17K17910. 2210,000yen.
- 1 3 : Grant-in-aid for Scientific Research (B): Date T, Designed SDF-1chimeric protein for bone tissue regeneration. 17K17914. 1820,000yen.
- 1 4 : Grant-in-aid for Scientific Research (B): Okita S, Activation of mature osteoblasts and an investigation of their bone regeneration ability. 18K17258. 1820,000yen.
- 1 5 : Support fund for study from Hiroshima university: Yamamoto T, Effect of anti-inflammatory drugs on the root resorption during experimental tooth movement. 500,000yen.
- 1 6 : Support fund for study from Hiroshima university : Kimura A, Elucidation of periodontal tissue metabolic activity and its application to root resorption treatment by baicalin, flavonoid. 500,000yen.
- 1 7 : Support fund for study from Hiroshima university : Abe T, Establishment of minimally invasive bone regeneration of jaw cleft with application of exosomes derived from stem cells from human exfoliated deciduous teeth. 500,000yen.
- 1 8 : Grant-in-Aid for Scientific Research (Support for Starting Research Activities): Sumi C, Examination of cartilage regeneration ability of Semaphorin3A. 18H06277. 1560,000yen.
- 1 9 : Grant-in-Aid for Scientific Research (Support for Starting Research Activities) : Yanoshita M, Establishment of effective treatment for temporomandibular joint disorders with Docosahexaenoic acid (DHA) and Resolvin. 18H06310. 1300,000yen.
- 2 0 : Grant-in-Aid for Scientific Research (Support for Starting Research Activities) : Nakajima K, Analysis of bone regeneration mechanism and verification of optimal transplant condition in stem cells from human exfoliated deciduous teeth. 18H06278. 1430,000yen.

#### (5) Academic Awards, etc.

- 1 : Sugino H : 7th Hiroshima Conference on Education and Science in Dentistry, Young Investigator Award and Poster Award 2018.
- 2 : Gunji H : 2nd Japanese Orthodontic Society Paper award
- 3 : Gunji H : 6th Japanese Society for Laser Dentistry Academic Encouragement Award
- 4 : Yamada S : 8th Japanese Association for Lactoferrin Academic Meeting (Hiroshima) 2018, Academic

Award Tomita award (Applied Department)

(6) Patents

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- **Department of Oral & Maxillofacial Radiology**
- **Division of Oral and Maxillofacial Surgery and Oral Medicine (Department of Oral and Maxillofacial Radiology)**

(1) Staff and Students

Professor	: Naoya Kakimoto
Associate Professor	: Minoru Fujita
Associate Professor/Lecturer	: Yoshikazu Suei, Takashi Nakamoto
Assistant Professor	: Toshikazu Nagasaki, Masahiko Ohtsuka, Masaru Konishi, Verdonschot R.G.
Part-time Professor	: Masahiko Sawajiri
Resident	: Kiichi Shimabukuro
Graduate Student	: Kiichi Shimabukuro, Pongsapak Wongratwanich

(2) Main Research Activities

- 1: Radiographic diagnosis of oral diseases
- 2: Radiographic study on mandibular osteomyelitis
- 3: Study of radiation dosimetry in X-ray region for diagnosis
- 4: Study on the videofluoroscopic examination of swallowing
- 5: Radiation effects of heavy ion particles on bone metabolism
- 6: Improvement of treatment results in the radiotherapy for oral cancers
- 7: Radiographic study to screen osteoporosis using panoramic radiographs of the jaw
- 8: Speech production in the human brain.
- 9: Adverse effects of radiotherapy for head and neck cancers
- 10: Quantitative analysis of temporomandibular joint on MRI

(3) Research Achievements

A) Original Papers (including Case Reports)

- 1: Improvement of region of interest extraction and scanning method of computer-aided diagnosis system for osteoporosis using panoramic radiographs: Nakamoto T., Taguchi A., Verdonschot R.G., Kakimoto N.: Oral radiology, in press, 2018.
- 2: Abnormal positioning of the common carotid artery clinically diagnosed as a submandibular mass:



- Nakamoto T., Suei Y., Konishi M., Kanda T., Verdonschot R.G., Kakimoto N.: Oral radiology, in press, 2018.
- 3: Candy eating behaviour to improve swallowing function in dementia subjects: Kawano H., Mori T., Kuroki A., Nagasaki T., Maruyama M., Yoshikawa M., Yoshida M., Tsuga K.: Arch Gerontol Geriatr 75:181-184, 2018.
  - 4: Effect of ozonated water on the surface roughness of dental stone casts: Nishikiori R, Sawajiri M, Okuda T, Otoshi A, Watanabe K, Hirata I, Nishijima W, Okazaki M.: Dent Mater J, 37(5):740-745, 2018
  - 5: A quantitative experimental phantom study on MRI image uniformity: Felemban D., Verdonschot R.G., Iwamoto Y., Uchiyama Y., Kakimoto N., Kreiborg S., Murakami S.: Dentomaxillofac Radiol. 47(6):20180077. doi: 10.1259/dmfr.20180077, 2018.
  - 6: Effectiveness of the periodically rotated overlapping parallel lines with enhanced reconstruction (PROPELLER) technique for reducing motion artifacts caused by mandibular movements on fat-suppressed T2-weighted magnetic resonance (MR) images.: Shimamoto H., Tsujimoto T., Kakimoto N., Majima M., Iwamoto Y., Senda Y., Murakami S.: Magn Reson Imaging, 54, 1-7. doi: 10.1016/j.mri.2018.07.015, 2018.
  - 7: The effectiveness of mouthwashes in alleviating radiation-induced oral mucositis in head and neck cancer patients: a systematic review: Konishi M., Verdonschot R.G., Shimabukuro K., Nakamoto T., Fujita M., Kakimoto N.: Oral Radiol, doi.org/10.1007/s11282-018-0361-9, 2018.
  - 8: Differences of Aspiration between Liquid and Solid Foods in Videofluoroscopic Swallowing Study: A Review of Literature: Konishi M., Yasuhara Y., Nagasaki T., Hossain A., Tanimoto K., Rohlin M.: Int J Phys Med Rehabil, 6(1), 2018.
  - 9: Central mucoepidermoid carcinoma arising from glandular odontogenic cyst confirmed by analysis of *MAML2* rearrangement: a case report: Nagasaki A., Ogawa I., Sato Y., Takeuchi K., Kitagawa M., Ando T., Sakamoto S., Shrestha M., Uchisako K., Koizumi K., Toratani S., Konishi M., Takata T.: Pathology International, 68, 31-35, 2018.
  - 10: Individual mentalizing ability boosts flexibility toward a linguistic marker of social distance: An ERP investigation: Kiyama, S., Verdonschot, R.G., Xiong, K., & Tamaoka, K.: Journal of Neurolinguistics. 47:1-15, 2018.
  - 11: Mora or more? The phonological unit of Japanese word production in the Stroop color naming task: Verdonschot, R.G. & Kinoshita, S.: Memory & Cognition: 46:410-425, 2018

## B) Review

- 1: High-Dose-Rate interstitial brachytherapy for oral cancer patients: Kakimoto N., Murakami S., Shimizutani K.: Journal of Japanese Society of Oral Oncology, 30, 116-122, 2018.

### C) Publications

- 1: 1. Maxillofacial Imaging Anatomy; Maxillofacial Imaging 2nd ed. (Larheim TA., Westesson PL.): Larheim TA., Westesson PL., Kakimoto N., Smith HJ.: Springer International Publishing AG (Switzerland), 1-21, 2018.
- 2: 7. Teeth and Dental Implant; Maxillofacial Imaging 2nd ed. (Larheim TA., Westesson PL.): Larheim TA., Westesson PL., Kakimoto N., Smith HJ.: Springer International Publishing AG (Switzerland), 271-286, 2018.
- 3: 9. Facial Growth Disturbance; Maxillofacial Imaging 2nd ed. (Larheim TA., Westesson PL.): Larheim TA., Westesson PL., Kakimoto N., Smith HJ.: Springer International Publishing AG (Switzerland), 313-347, 2018.
- 4: 13. Adjacent Structures: Cervical Spine, Neck, Skull Base, and Orbit; Maxillofacial Imaging 2nd ed. (Larheim TA., Westesson PL.): Larheim TA., Westesson PL., Kakimoto N., Smith HJ.: Springer International Publishing AG (Switzerland), 447-498, 2018.
- 5: Chapter 6 Radiation therapy for cancer 3. Practice of radiation therapy for head and neck; Oral and Maxillofacial Radiology 6 ed. (Okano T., Kobayashi K., Ariji E.): Kakimoto N.: Ishiyaku Publisher Inc. (Tokyo), 456-463, 2018.
- 6: Part V Head and Neck 18. High-dose-rate brachytherapy for oral cancer; Brachytherapy: Technique and Evidence (Yoshioka Y., Itami J., Oguchi M., Nakano T.): Kakimoto N.: Springer (Singapore), 245-260, 2018.
- 7: Morphological Theory and Neurolinguistics: Schiller, N.O., & Verdonschot, R.G.: Morphological Theory and Neurolinguistics. In Audring, J. & Masini, F. (Ed.), Oxford Handbook of Morphological Theory. Oxford University Press, 2018

### D) Other Publications

- 1: Image diagnosis 3 (Malignant tumor of oral and maxillofacial area, Soft tissue and neck lesion (including lymph node metastasis)); Advance Oral Radiology 2018 (Japanese Society for Oral and Maxillofacial Radiology ed.): Kakimoto N.: Japanese Society for Oral and Maxillofacial Radiology (Tokyo), 119-140, 2018.
- 2: Quantitative analysis of image diagnosis; Hiroshima City Dental General Incorporated Association Journal OTAGAWA: Kakimoto N.: Hiroshima City Dental General Incorporated Association (Hiroshima), 25, 5-9, 2018.
- 3: Knowledge of image diagnosis of oral and maxillofacial area 2. MRI; Clinical Imagiology Vol.34 No.11:Kakimoto N., Konishi M., Majima M.: Medical View (Tokyo), 1270-1277, 2018.

## E) Presentation at Scientific Meeting

- 1: Palate tumor: Furusho H., Oota K., Nakamoto T., Ogawa I., Takata T.: 70th Meeting of Hiroshima Pathological Conference (Hiroshima), 2018.
- 2: The availability of simultaneous examination of the swallowing videofluoroscopy and endoscopy.: a pilot study: Nagasaki T., Yoshida M., Yasuhara Y., Yoshikawa M., Suei Y., Kakimoto N.: The 59th annual meeting of Japanese Society of Oral and Maxillofacial Radiology (Yokosuga), 2018.
- 3: Deglutition change in the stage of Mucopolysaccharidosis type III : Nagasaki T., Yoshida M., Konishi M., Suei Y., Kakimoto N.: The 23th congress of clinical imaging of oral and maxillofacial Radiology (Tokyo), 2018.
- 4: Diffusion –weighted magnetic resonance images in the oral and maxillofacial regions: Investigation of optical fat suppression method: Shimamoto H., Tsujimoto T., Majima M., Senda Y., Iwamoto Y., Marutani K., Okahata R., Sumida I., Kakimoto N., Murakami S.: The 59<sup>th</sup> Annual meeting of Japanese Society for Oral and Maxillofacial Radiology (Yokosuka), 2018.
- 5: External beam radiotherapy for oral cancer -treatment results and adverse events of jaw bones-: FujitaM, Konishi M, Kakimoto N.: The 59th Annual meeting of Japanese Society for Oral and Maxillofacial Radiology (Yokosuka), 2018.
- 6: Diffusion-weighted Magnetic Resonance Images in the oral and maxillofacial regions: Investigation into the Choice of Optimal Fat Suppression Method.: Shimamoto H., Tsujimoto T., Majima M., Senda Y., Iwamoto Y., Cho T., Marutani K., Okahata R., Kataoka M., Tomita S., Sumida I., Kakimoto N., Murakami S.: 17th ECDMFR (Lucerne, Switzerland), 2018.
- 7: High-dose-rate brachytherapy using customized mold for mucoepidermoid carcinoma at hard palate.: Tsujimoto T., Iwamoto Y., Oda M., Shimamoto H., Sumida I., Tomita S., Kakimoto N., Ogawa K., Murakami S.: 17th ECDMFR (Lucerne, Switzerland), 2018.
- 8: Implementation of new treatment method safely and efficiently by team approach of various expertise:Miki K., Ohno Y., Nomura M., Murakami Y., Kimura T., Nishibuchi I., Takahashi I., Takeuchi Y., Imano N., Saito A., Nakashima T., Fujioka M., Kakimoto N., Nagata Y.: The 31<sup>st</sup> Annual Meeting of the Japanese Society for Radiation Oncology (Kyoto), 2018.
- 9: Oral conditions in special elderly nursing home : Konishi M., Kakimoto N. : The27th Annual meeting of Japanese association of oral infectious diseases (Hiroshima), 2018.
- 10: Oral conditions of elderly patients with advanced dementia in special elderly nursing home: Konishi M., Kakimoto N. : The joint meeting of The 57<sup>th</sup> annual meeting of Hiroshima Prefectural Dental Association and the 102<sup>th</sup> annual meeting of Hiroshima University Dental Society (Hiroshima), 2018.
- 11: Oral health care for head and neck cancer patients with radiotherapy: a systematic review: Konishi M., Fujita M., Kakimoto N.: The 56th annual meeting of Japan Society of Oral

and Maxillofacial Radiology (Yokosuka), 2018.

12: Long-Lag Morphological Picture-Picture Priming: Lensink, S., Verdonschot, R.G., & Schiller, N.O.: Psychonomics International (Amsterdam), 2018.

13: Identity priming effects are orthographic, not phonological: Evidence from English and Japanese: Kinoshita, S., Schubert, T., Verdonschot, R., & Norris, D.: 45th Annual Conference of the Australasian Society of Experimental Psychology (Hobart), 2018.

#### F) Special lectures in academic meetings

1: Interstitial Brachytherapy for oral cancer patients: Kakimoto N.: The 36<sup>th</sup> Annual Meeting of Japanese Society of Oral Oncology (Niigata), 2018.

2: Image diagnosis 3 (Malignant tumor of oral and maxillofacial area, Soft tissue and neck lesion (including lymph node metastasis)); Advance Oral Radiology 2018 (Japanese Society for Oral and Maxillofacial Radiology ed.): Kakimoto N.: Japanese Society for Oral and Maxillofacial Radiology Step Up Workshop (Osaka), 2018.

3: Advanced Imaging in Dentistry: Kakimoto N.: 7th Hiroshima Conference on Education and Science in Dentistry (Hiroshima), 2018.

4: Image diagnosis of Anti-resorptive agents-related Osteonecrosis of the Jaw: Kakimoto N.: The 27<sup>th</sup> Annual Meeting of Japanese Association of Oral Infectious Diseases (Hiroshima), 2018.

#### (4) Status of Receiving Grants-in Aid for Scientific Research, etc.

1: The Program of the network-type Joint Usage/Research Center for Radiation Disaster Medical Science of Hiroshima University, Nagasaki University, and Fukushima Medical University: Konishi M., Study on the mechanism of taste disorder by radiation, 130,000 JPY

2: General foundation Ryokufukai The year of 2018 education and research prize for encouragement (Grant for young researcher grant): Shimabukuro K., Quantitative evaluation of temporomandibular joint by MRI T2 mapping -comparison between devices-, 300.000 JPY

#### (6) Patents

1: Nomura Y., Sawajiri M.: Method for producing aqueous solution containing chlorine dioxide and steam generator. (P6359344) (Medical Environment Techno Co., Ltd., Mikasa Shoji Co., Ltd.)

2: Nomura Y., Sawajiri M.: Pharmaceutical composition for repairing and activating skin. (P6445879) (Medical Environment Techno Co., Ltd.)

**2018**

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- **Department of Biological Endodontics,  
Graduate School of Biomedical Sciences**
- **Department of Endodontics and Operative Dentistry,  
Division of Preventive and Restorative Dentistry**

(1) Staff and Students

Professor	: Hideki Shiba
Associate Professor, Lecturer	:
Assistant Professor	: Naoyo Motoyama, Shintaro Nagayasu, Shizu Tsuchiya, Satoru Shindo, Noriko Saito
Resident	: Keiichi Akutagawa
Graduate Student	: Jun Nakanishi, Kazuma Yoshida
Visiting Research Scholar	: Wang bo
Researcher	: Seiji Kobuke

(2) Main Research Activities

- 1: Studies on biological regeneration of dentin/pulp complex and periapical tissues
- 2: Studies on pulp regeneration by regulation of inflammation
- 3: Studies on biological obturation of root canals at apical areas
- 4: Studies on development of a new therapeutic agent for intractable pain

(3) Research Achievements

A) Original Papers (including Case Reports)

- 1: Useful immunochromatographic assay of Calprotectin in gingival crevicular fluid for diagnosis of diseased sites in patients with periodontal diseases: Kido J., Murakami S., Kitamura M., Yanagita M., Tabeta K., Yamazaki K., Yoshie H., Watanabe H., Izumi Y., Suda R., Yamamoto M., Shiba H., Fujita T., Kurihara H., Mizuno M., Mishima A., Kawahara N., Hashimoto K., Naruishi K., Nagata T.: J. Periodontol., 89: 67-75, 2018.
- 2: Genome-wide identification of chromatin-enriched RNA reveals that unspliced dentin matrix protein-1 mRNA regulates cell proliferation in squamous cell carcinoma: Suzuki S., Hoshino H., Yoshida K., Nakanishi J., Tsuchiya-Hirata S., Kobuke S., Haruyama N., Nishimura F., Shiba H.:

Biochem. Biophys. Res. Commun., 495: 2303-2309, 2018.

- 3: Combined endodontic and periodontal management of a class 3 invasive cervical resorption in a mandibular first molar: Nagahara T., Takeda K., Aida Y., Iwata T., Yagi R., Kurihara H., Shiba H.: Clin, Case Rep., 6: 2005-2010, 2018.
- 4: Interleukin (IL)-35 suppresses IL-6 and IL-8 production in IL-17A-stimulated human periodontal ligament cells: Shindo S., Hosokawa Y., Hosokawa I., Shiba H.: Inflammation, doi: 10.1007/s10753-018-0938-9, 2018.
- 5: A peptide that blocks the interaction of NF- $\kappa$ B p65 subunit with Smad4 enhances BMP2-induced osteogenesis: Urata M., Kokabu S., Matsubara T., Sugiyama G., Nakatomi C., Takeuchi H., Hirata-Tsuchiya S., Aoki K., Tamura Y., Moriyama Y., Ayukawa Y., Matsuda M., Zhang M., Koyano K., Kitamura C., Ejiro Jimi.: J Cell Physiol., 233, 7356-7366, 2018.
- 6: The induced RNA-binding protein, HuR, targets 3'-UTR region of IL-6 mRNA and enhances its stabilization in periodontitis.: Ouhara K, Munenaga S, Kajiya M, Takeda K, Matsuda S, Sato Y, Hamamoto Y, Iwata T, Yamasaki S, Akutagawa K, Mizuno N, Fujita T, Sugiyama E, Kurihara H: Clin Exp Immunol., 192(3):325-336, 2018.
- 7: Ishii T, Ruiz-Torruella M, Ikeda A, Shindo S, Movila A, Mawardi H, Albassam A, Kayal R. A, Al-Dharrab A. A, Egashira K, Wisitrasameewong W, Yamamoto K, Mira A. I, Sueishi K, Han X, Taubman M. A, Miyamoto T, Kawai T.: OC-STAMP promotes osteoclast fusion for pathogenic bone resorption in periodontitis via up-regulation of permissive fusogen CD9. The *FASEB Journal* 32(7):4016-4030, 2018

## B) Reviws

- 1: Regulation of defensive function on gingival epithelial cells can prevent periodontal disease.: Fujita T, Yoshimoto T, Kajiya M, Ouhara K, Matsuda S, Takemura T, Akutagawa K, Takeda K, Mizuno N, Kurihara H.: Jpn Dent Sci Rev., May;54(2):66-75. 2018

## C) Publications

- 1: Root canal irrigation with Sodium hypochlorite and EDTA: Nagahara T., Shiba H.: Must of initial treatment (edited by Kitamura K.): Dental Diamond Co (Tokyo), 110-117, 2018.

## D) Other Publications

## E) Presentation at Scientific Meeting

- 1: Dental hygienist's activities and the effects in dental clinical support for HIV-infected patients : Okada M, Matsui K, Iwata T, Sintani T, Kinoshita K, Miyahara A, Ikeda Y, Saitou S, Maruyama E, Hamamoto K, Yamasaki N, Hujii T, Shiba H. : The 19th Japanese HIV dental medical workshop (Tokyo), 2018.
- 2: IL-35 suppressed IL-6 and CXCL10 productions in TNF- $\alpha$ -stimulated human periodontal ligament cells. Shindo S., Shiba H. 7th Hiroshima Conference on Education and Science in Dentistry, 2018
- 3: Semaphorin3A inhibits IL-6 and CXCL10 production from TNF- $\alpha$ -stimulated human dental pulp cells. Shindo S., Saito N., Nakanishi J., Yoshida K., Kobuke S., Motoyama N., Nagayasu S., Shiba H. The 148th Japanese Society of Conservative Dentistry (Yokohama), 2018.
- 4: Effects of glycyrrhizin on ligature-induced periodontitis with Porphyromonas gulae infection in diabetes model mice.: Akutagawa K., Fujita T., Ouhara K., Kajiya M., Matsuda S., Mizuno N., Kurihara H.: The 148th Japanese Society of Conservative Dentistry (Yokohama), 2018.
- 5: Secreted extracellular miRNA, let-7b-5p causes neuropathic pain via TLR7 in peripheral nerve injury. Motoyama N., Morita K., Asano S., Jodo Y., Shigaki M., Sanai M and Dohi T. 18th World Congress of Basic and Clinical Pharmacology (WCP2018) Kyoto, 2018
- 6: Role of spinal LPCAT2, an inducible PAF synthesis enzyme on development and maintenance of painful peripheral neuropathy models in mice. Morita K., Motoyama N., Kitayama T., Sanai M., Hashimoto M., Tsuchii A., Kato K., Kawai Y and Dohi T. 18th World Congress of Basic and Clinical Pharmacology (WCP2018) Kyoto, 2018
- 7: Development of endodontic treatment through the anti-inflammation: Hirata-Tsuchiya S. : The 39<sup>th</sup> Annual scientific meeting of Japan Endodontic Association, Symposium II (Fukuoka), 2018.
- 8: Surgical endodontic treatment of huge periapical lesion around the maxillary lateral incisor: Nagahara T., Yamada Y., Iwata T., Takeda K., Shiba H. : The 39th Annual scientific meeting of Japan Endodontic Association (Fukuoka) , July, 2018.
- 9: Influence of Semaphorin7A on inflammatory cytokine expression. In human dental pulp cells : Saito N., Shindo S., Hirata-Tsuchiya S., Nakanishi J., Yoshida K., Shiba H. : . The 39th Annual Scientific Meeting of JFA (Fukuoka) , 2018.
- 10: Semaphorin3A inhibits IL-6 and CXCL10 production from TNF- $\alpha$ -stimulated human dental pulp cells. Shindo S., Shiba H. IADR general session, London, England, 2018
- 11: The importance of recognition of root canal anatomy: Nagahara T., Shiba H.: The 18th Annual scientific meeting of West Japan Endodontic Association (Osaka) , 2018.
- 12: Oral environment and taste function in HIV-positive patients: Shintani T., Yamasaki N., Iwatat T., Saito S., Kitagawa M., Ogawa I., Okada M., Hamamoto K., Fujii T., Kurihara H., Shiba H.: The 11<sup>th</sup> Annual meeting of Japanese Society for Evidence and the Dental Professional (Tokyo), 2018.
- 13: Supportive dental treatment of HIV-infected patients by dental hygienists: Okada M., Iwata T., Shinatani T., Nakaoka M., Shiba H. : The 13<sup>th</sup> corporation of Japan Dental Hygienists' association (Fukuoka), 2018.



- 14: Effects of Aspirin on BMP-induced osteoblastogenesis: Hirata-Tsuchiya S., Suzuki S., Saito N., Motoyama N., Shiba H.: The 149th Japanese Society of Conservative Dentistry (Kyoto), 2018.
- 15: Semaphorin7A promotes secretion of inflammatory cytokines from dental pulp cells during inflammation: Saito N., Shindo S., Hirata-Tsuchiya S., Nakanishi J., Yoshida K., Motoyama N., Shiba H.: The 149th Japanese Society of Conservative Dentistry (Kyoto), 2018.
- 16: Role of spinal LPCAT2, an inducible PAF synthesis enzyme on development and maintenance on chronic pain in mice models. Motoyama N., Morita K., Nagayasu S., Hirata-Tsuchiya S., Saito N., Shindo S., Shiba H., Dohi T. The 149th Japanese Society of Conservative Dentistry (Kyoto), 2018.
- 17: IL-35 inhibits IL-6 and IL-8 production in IL-17A-stimulated human periodontal ligament cells. Shindo S., Yoshida K., Nakanishi J., Saito N., Nagayasu S., Motoyama N., Shiba H. The 149th Japanese Society of Conservative Dentistry (Kyoto), 2018.
- 18: Case reports of root canal treatment of upper first premolar with three root canals and mesial root in the mandibular second premolar with three root canals: Nagahara T., Kurihara H., Shiba H.: 2018-year scientific meeting of dental medicine in Chuugoku-Shikoku district (Hiroshima), 2018.
- 19: A case report of infected root canal treatment of the mandibular first left molar with three root canals: Kobuke S., Nagayasu S., Shindo S., Shiba H.: 2018-year scientific meeting of dental medicine in Chuugoku-Shikoku district (Hiroshima), 2018.
- 20: Semaphorin3A suppresses IL-6 and CXCL10 production in TNF- $\alpha$ -stimulated human pulp cells: Shindo S., Saito N., Shiba H.: 2018-year scientific meeting of dental medicine in Chuugoku-Shikoku district (Hiroshima), 2018.
- 21: Causative bacteria of apical periodontitis and their susceptibility to antibiotics: Kozono C., Ouhara K., Kitagawa M., Ogawa I., Shindo S., Saito N., Akutagawa K., Nakaoka M., Mizuno N., Fujita T., Kurihara H.: 2018-year scientific meeting of dental medicine in Chuugoku-Shikoku district (Hiroshima), 2018.
- 22: Effect of anti-HIV drugs on oral environment and taste function: Shintani T., Yamasaki N., Iwata T., Saito S., Okada M., Matsui K., Unei H., Fujita K., Hamamoto K., Kinoshita K., Ikeda U., Fujii T., Shiba H. : The 32th Annual meeting of the Japanese Society for AIDS research (Osaka), 2018.

#### F) Special lectures in academic meetings

- 1: Infection control by Dental Departments of Hiroshima University Hospital: Shiba H.: Dental ICT seminar of Kagoshima University Hospital (Kagoshima), July, 2018.
- 2: Information concerning performance of countermeasure for HIV infection in the Chugoku and Shikoku areas: Shiba H.: The first liaison council of AIDS treatment among HIV/AIDS core hospitals in the Chugoku and Shikoku areas (Matsuyama), September, 2018.
- 3: Infection control: Shiba H.: Clinical workshop of Japan Endodontic Association (Osaka), December,

2018.

(4) Status of Receiving Grants-in Aid for Scientific Research, etc.

- 1: Research grants: Grants for research received from Hiroshima Prefecture: Shiba H.: Study on network-construction of dental practice for HIV infection: ¥3,000,000
- 2: Grant-in-Aid for Scientific Research (C): Motoyama N.: Role of the novel Platelet-Activating factor (PAF) synthetase LPCAT2 on chronic pain: No.16K11550, ¥1,430,000
- 3: Grants-in-Aid for Scientific Research (C): Tsuchiya S.: Development of endodontic treatment through the NF- $\kappa$ B inhibition by the NSAID repositioning: No.17K11706, ¥1,200,000.
- 4: Grants-in-Aid for Young scientists (B): Kobuke S.: Elucidation of the anti-inflammatory mechanism by Phosphophoryn: No.17K17135, ¥1,690,000
- 5: Grant-in-Aid for Research Activity start-up: Shindo S.: Elucidation of the inflammation control mechanism of IL-35 in apical periodontitis: No. 17H06896, ¥1,100,000
- 6: General foundation Ryokufukai The year of 2018 education and research prize for encouragement (Grant for young researcher grant): Akutagawa K: Fundamental research on therapeutic development targeting semaphorin 7A in chronic apical periodontitis.: ¥300,000

(5) Academic Awards, etc.

(6) Patents

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- **Department of Pediatric Dentistry**
- **Division of Oral Health and Development  
(Department of Pediatric Dentistry)**

## (1) Staff and Students

Professor	: Katsuyuki Kozai
Associate Professor	: Chieko Mitsuhata
Research Associate	: Yasutaka Kaihara(~March), Meiko Tachikake, Noriko Niizato : Yuko Iwamoto, Nobuyuki Tatsukawa, Kaoru Sakurai(April~)
Physician	: Kaoru Sakurai(~March)
Graduate Student	: Yasumasa Irie, Nao Kado, Tomoko Ogasawara, Misa Takeyasu, Masashi Nakano, Tatsuya Akitomo, Yuria Asao(~March)
Research Student	: Yukari Ohara
Clinical Trainee	: Akira Yamane, Fumiko Hayashi, Shoji Takahashi, Yukiko Konishi, Ryoko Hirata, : Noriko Goto, Seiko Watanabe

## (2) Main Research Activities

## (3) Research Achievements

## A) Original Papers (including Case Reports)

1 : Investigation of pediatric specifications for the Salivary Multi Test® saliva test system : Yasumasa Irie, Nobuyuki Tatsukawa, Yuko Iwamoto, Masashi Nakano, Tomoko Ogasawara, Kaoru Sakurai, Chieko Mitsuhata, Katsuyuki Kozai : Pediatric Dental Journal, 28(3)148-153, 2018

2 : Method of intraoral management for children with systemic disease based on the salivary test: Chieko Mitsuhata, Nobuyuki Tatsukawa, Yasumasa, Irie, Yuko Iwamoto, Kaoru, Sakurai, Katsuyuki Kozai: Jpn.J.D.W. 23 in printing

3 : Soluble Klotho causes hypomineralization in Klotho-deficient mice: Tomoko Minamizaki, Yukiko Konishi, Kaoru Sakurai, Hirotaka Yoshioka, Jane E Aubin, Katsuyuki Kozai and Yuji Yoshiko: Journal of Endocrinology, 237, 285-300, 2018

4 : An exploratory study of factors related to mouth breathing syndrome in primary school children: Issei Saitoh, Emi Inada, Yasutaka Kaihara, Yukiko Nogami, Daisuke Murakami, Naoko Kubota, Kaoru Sakurai, Yoshito Shirazawa, Tadashi Sawami, Miyuki Goto, Maki Nosou, Katsuyuki Kozai, Haruaki

Hayashi, Youishi Yamasaki: Archives of Oral Biology, 92, 57-61, 2018.

5 : Galectin-3 Plays an Important Role in preterm Birth Caused by Dental Infection of Porphyromonas gingivalis: Mutsumi Miyauchi, Min Ao, Hisako Furusho, Chanbora Chea, Atsuhiko Nagasaki, Shinnichi Sakamoto, Toshinori Ando, Toshihiro Inubushi, Katsuyuki Kozai, Takashi Takata: SCIENTIFIC REPORTS, 8, 2867, 2018.

6 : 身体症状と身体型妄想性障害を伴う患者の口腔内の疼痛と妄想症状改善に歯科衛生士が行う口腔ケア介入が有効であった1例 : Kanako Yano, Mitsuru Doi, Masahiro Irifune, Katsuyuki Kozai: Japanese journal of psychosomatic dentistry, 33(1), 15-20, 2018.

7 : A research of the Thrombocytopenia patient with Compound odontoma in the maxillary primary canine: Tachikake M., Mitsuhashi C., Iwamoto Y., Ono S., Tada M., Kozai K. : Japanese Journal of Dental Welfare, 23(1), 2018.

8 : Preliminary Survey to Establish Indicator for Screening of Primary School-age Children Who Require Welfare Assistance : Kaihara Y., Sasahara H., Kozai K., Niizato N., Sakurai K., Nikawa H., Hosohara K., Yamasaki K. : JpnJPediatrDent, 56(1) : 33-41, 2018.

## B) Review

## C) Publications

## D) Other Publications

1 : よくある疾患の診かたー他科からの助言-歯の放出障害: 香西克之: 小児科臨床, vol.71, 増刊号, 433-437, 2018.

2 : 子どもの口腔崩壊と歯科健康格差対策①: 香西克之: 大阪歯科保険医新聞, 第 1313 号, 2018.

3 : 子どもの口腔崩壊と歯科健康格差対策②: 香西克之: 大阪歯科保険医新聞, 第 1314 号, 2018.

4 : 子どもの口腔崩壊と歯科健康格差対策③: 香西克之: 大阪歯科保険医新聞, 第 1315 号, 2018.

5 : デンタルネグレクトにより生じる子どもの口腔崩壊と健康格差: 香西克之: 地域保健, 49(2), 18-22, 2018.

6 : 今なぜ?子どもの口腔崩壊ー小児の口腔崩壊と健康格差ー: 香西克之: 日本歯科評論, 第 908 号, 2018.

## E) Presentations at Scientific Meetings

1 : Case report for prolonged retention of deciduous tooth with hyper-IgE syndrome : Misa T., Tatsukawa N., Nami M., Hirata R, Yuria A., Mitsuhata C, Kozai K. : The 37th Congress of Japanese Society of Pediatric Dentistry Chushikoku Branch (Tokushima), 2018.

1 : The study of the measured values of children in the multifactorial salivary test : Yuko Iwamoto, Yasumasa Irie, Nobuyuki Tatsukawa, Chieko Mitsuhata, Katsuyuki Kozai : The 56th Congress of Japanese Society of Pediatric Dentistry (Osaka), 2018.

2 : Examination for effectivity of Salivary Multi Test® in children by comparing with other methods of inspecting : Nobuyuki Tatsukawa, Yasumasa Irie, Yuko Iwamoto, Chieko Mitsuhata, Katsuyuki Kozai : The 56th Congress of Japanese Society of Pediatric Dentistry (Osaka), 2018.

3 : Improvement of Oral Health Conditions of Cambodian Children by Oral Health Education to Teachers : Iwamoto Yuko, Iwamoto Akiko, Tatsukawa Nobuyuki, Sakurai Kaoru, Kado Nao, Asao Yuria, Mitsuhata Chieko, Kozai Katsuyuki, The 13<sup>th</sup> International Conference of Asian Academy of Preventive Dentistry : Khon Kaen, Thailand, 2018

4 : Intraoral management using multifactorial saliva test to pediatric patient with general disease : Mitsuhata C., Tatsukawa N., Yasumasa I., Iwamoto Y., Kaoru S., Kozai K. : The 25th Congress of Japanese Society of Dental Welfare (Hyogo), 2018.

5 : A case report for intraoral management using SMT® on perioperative period to the pediatric patient with granulocytic sarcoma : Tatsukawa N., Tomoko O., Masashi N., Tatsuya A., Mitsuhata C., Kozai K. : The 37th Congress of Japanese Society of Pediatric Dentistry Chushikoku Branch (Tokushima)

6 : Adaptability to an environmental change affecting transmission of *Streptococcus mutans* : Chieko Mitsuhata, Mega M. Puteri, Nao Kado, Yuko Iwamoto, Katsuyuki Kozai: 96<sup>th</sup>IADR (Lodon), 2018

7 : Current trend of first-visit patients at Pediatric Dental Clinic of a University Hospital: Katsuyuki Kozai, Chieko Mitsuhata, Noriko Niizato, Meiko Tachikake, Yuko Iwamoto, Nobuyuki Tatsukawa, Kaoru Sakurai: 102nd meeting of Hiroshima University Dental Society (Hiroshima), 2018.

8 : Noncooperativity Down's syndrome 13 years old boy with a maxillary cyst-like lesion : A case report: Chieko Mitsuhata, Noriko Niizato, Koji Ota, Masaaki Takechi, Katsuyuki Kozai: 30<sup>th</sup> Annual meeting of Japanese society of pediatric oral and maxillofacial surgery (Kawagoe), 2018.

9 : 歯周病原細菌検出試薬を用いた視覚的口腔保健教育の1型糖尿病患者児への動機付け効果 : 渡真由子, 中岡 美由紀, 太刀掛 銘子, 岩本 優子, 新里 法子, 達川 伸行, 櫻井 薫, 中野 将志, 小笠原 朋子, 秋友 達哉, 光畑 智恵子, 岡田 芳幸, 香西 克之 : 第55回日本障害者歯科学会大会 (東京), 2018.

10 : 1型糖尿病患者児に対する口腔保健教育の取り組み : 江村 有紀, 長谷 由紀子, 小園 知佳, 沖園 桃子, 渡 真由子, 中岡 美由紀, 太刀掛 銘子, 岩本 優子, 光畑 智恵子, 香西 克之, 太刀掛 銘子, 光畑 智恵子, 香西 克之 : 日本歯科衛生学会第13回学術大会 (福岡), 2018.

11 : 小児歯科臨床実習における指導効果と受託実習生の学び : 沖園 桃子, 長谷 由紀子, 中岡 美由紀, 太刀掛 銘子, 達川 伸行, 光畑 智恵子, 河口 浩之, 香西 克之 : 日本歯科衛生学

会第 13 回学術大会（福岡），2018.

1 2 : Three-dimensional morphological analyses of primary dental arch of children with Down's syndrome : Riona Doi, Yasutaka Kaihara, Takuya Kihara, Satoko Iwamae, Chie Kanbe, Noriko Niizato, Meiko Tachikake, Katsuyuki Kozai, Hiroki Nikawa

1 3 : For improvement of undergraduate education in oral traumatic injuries: Tachikake M., Kozai K., Asao Y., Watanabe S., Mitsuhashi C.: The 18<sup>th</sup> Annual Meeting of Japan Association of Dental Traumatology (Fukuoka), 2018

1 4 : Better feeding~ approach of pediatric dentistry: Tachikake M.: The 47th meeting of the child health (Hiroshima), 2018.

1 5 : 知的能力障害を有する第一第二鰓弓症候群患者における鼻口蓋管嚢胞の 1 例 : 清水 千昌, 尾田 友紀, 森本 千智, 溝田 結日, 渡 真由子, 時数 智子, 和木田 敦子, 林 文子, 小田 綾, 向井 友宏, 向井 明里, 吉田 啓太, 海原 康孝, 入船 正浩, 岡田 芳幸 : 第 35 回日本障害者歯科学会大会（東京），2018.

1 6 : プロバイオティクス (L8020 菌) を用いた知的障害者の歯周病発症リスク軽減に関する研究 : 尾田 友紀, 清水 千昌, 溝田 結日, 森本 千智, 和木田 敦子, 渡 真由子, 中岡 美由紀, 時数 智子, 林内 優樹, 神田 拓, 林 文子, 海原 康孝, 岡田 芳幸 : 第 35 回日本障害者歯科学会大会（東京），2018.

1 7 : Development of the check sheet for early detection of child abuse in elementary schools: Kaihara Y., Sasahara H., Niizato N., Sakurai K., Hirata R., Yamasaki K., Hosohara K., Kozai K. : The 56th Annual Conference of the Japanese Society of Pediatric Dentistry (Osaka), 2018.

1 9 : Single-Cell RNA Sequencing uncovers the diversity of osteoblasts : Masashi Nakano, Yasumasa Irie, Katsuyuki Kozai : The 56th Congress of Japanese Society of Pediatric Dentistry (Osaka), 2018.

2 0 : Abused Children in Temporary Shelters in Hiroshima were raised in a poor living environment and had a high percentage of developmental disorders: Niizato N., Sakurai K., Kaihara Y., Nii N., Bansyodani A., Mitsuhashi C., Hosohara K., Yamazaki K., Kozai K.: The 3<sup>rd</sup> Japanese Dental Society for Prevention of Child Abuse and Neglect (Hiroshima), 2018.

## F) Special lectures in academic meeting

### 特別講演

1 : 平成 29 年度保健医療活動等技術研修会: 歯科で気付く子ども虐待—健診や診療での早期発見と防止—: 香西克之: 高知県歯科医師会館（高知市）, 2018.1.30

2 : 平成 29 年度親子で歯っぴ〜プロジェクト乳幼児健康診査従事者向け研修会: 子どもの齲蝕予防を生育環境から考える: 香西克之: 沖縄小児保健センター（南風原町）, 2018.2.19

3 : 東三河地区地区総会記念講演会: 子どもの口腔崩壊とデンタルネグレクト-その背景にあ

るものは: 香西克之: 豊橋商工会議所 (豊橋市) , 2018.3.10

4 : 第 56 回日本小児歯科学会研究倫理セミナー: JSPD 会員のための人を対象とする医学系研究の倫理: 香西克之: 大阪国際会議場 (大阪市) , 2018.5.10

5 : Lecture for Residence of Pediatric Dentistry: Tooth and Food Life in Children: 香西克之: Faculty of Dentistry, Airlangga University(Surabaya,Indonesia), 2018.8.10

6 : The international Symposium of Health Education management for Children: Prevention from Dental Caries in Japanese Children: 香西克之: Main Hall of Airlangga University (Surabaya,Indonesia), 2018.8.11

7 : 平成 30 年度岡山市学校保健会歯科研修会: 歯と口の健康は食育を支援する: 香西克之: 岡山県歯科医師会館 (岡山市) , 2018.8.22

8 : 平成 30 年度学校保健研修会: 子どもの歯・口の健康づくりについて: 香西克之: 広島市役所 (広島市) , 2018.9.21

9 : 大阪府歯科保険医協会 市民公開講座: 子供の口腔崩壊と歯科健康格差対策を考える: 香西克之: 大阪府歯科保険医協会 M&D ホール (大阪市) , 2018.10.13

10 : 日本子ども虐待防止歯科研究会: 子どもの口腔崩壊と生育環境-歯と口が発信する SOS-: 香西克之: 広島県歯科医師会館 (広島市) , 2018.11.11

#### (4) Status of Receiving Grants-in Aid for Scientific Research, etc.

1 : Grant-in-Aid for Scientific Research (C) : Relation of the dopamine nervous system to the influence that early stress gives for the brain development period (No.16K11803) 2016 direct expenses: ¥1000,000, indirect expenses: ¥300,000

2 : Scientific Research (C): Tachikake M.: Effectiveness of PAP and influence to give oral bacteria in children with dysphagia (No. 15K11367) , direct expenses: ¥500,000, indirect expenses: ¥150,000.

3 :Grant-in-Aid for Scientific Research (C) : Niizato N., Survey on oral health condition and dental health behavior of abused children in shelter. No 17K11962. direct expense ¥3600000, in direct expense ¥1080000(2018 direct expense ¥1200000)

#### (5) Academic Awards, etc.

#### (6) Patents

- **Department of Dental Anesthesiology,**
- **Department of Dental Anesthesiology and Orofacial Pain Management, Division of Oral & Maxillofacial Surgery and Oral Medicine**

(1) Staff and Students

Professor	: Irifune Masahiro, D.D.S., Ph.D.
Lecturer	: Yoshida Mitsuhiko, D.D.S., Ph.D.
Research Associate	: Shimizu Yoshitaka, D.D.S., Ph.D., Doi Mitsuru, D.D.S., Mukai Akari, D.D.S., Ph.D., Yoshida Keita, D.D.S.
Resident	: Oue Kana, D.D.S., Ph.D., Takahashi-Uno Tamayo, D.D.S., Ph.D., Yoshinaka Taiga, D.D.S., Ph.D., Kikuchi Yuka, D.D.S., Ph.D., Maetani Yuka, D.D.S., Ph.D., Oda Aya, D.D.S., Ph.D.
Graduate Student	: Mukai Tomohiro, D.D.S., Sasaki Utaka, D.D.S., Motoike-Imamura Serika D.D.S., Kochi Takahiro, D.D.S.
Clinical Trainee	: Kawahara Michio, M.D., Ph.D., Kawahara Toshiya, D.D.S., Yasusaka Masaki, D.D.S., Hama Yoko, D.D.S.

(2) Main Research Activities

- 1: Study on mechanisms of general anesthetic action
- 2: Development of a novel general anesthetic method applying enhancement of descending pain suppression system
- 3: Study on role of each neuron in an intravenous anesthetic agent-induced anesthetic factor
- 4: Study on a stage of delirium in general anesthesia
- 5: Study on involvement of dopamine neurons in awakening from general anesthesia
- 6: Study on antianxiety effects of sedative drugs
- 7: Study on effects of nitrous oxide on cardiovascular system
- 8: Study on chronic pain
- 9: Study on efficacy of chest compressions in cardiopulmonary resuscitation
- 10: Study on medical emergency during dental treatments

(3) Research Achievements

A) Original Papers (including Case Reports)



- 1: Propofol induced diverse and subtype-specific translocation of PKC families: Miyahara T, Adachi N, Seki T, Hide I, Tanaka S, Saito N, Irifune M, Sakai N: *J Pharmacol Sci.* 137(1), 20-29, 2018.
- 2: Effective postoperative analgesia using intravenous flurbiprofen and acetaminophen: Yoshida M, Shimizu Y, Yoshida K, Mukai A, Doi M, Irifune M: *J Oral Maxillofac Surg.* 76(9), 1869-1872, 2018.
- 3: Management of an internal carotid artery injury caused by a displaced titanium plate with a combination of interventional vascular radiology and surgery: Shimizu Y, Okazaki T, Hamana T, Irifune M: *J Oral Maxillofac Surg.* 76(6), 1377.e1-1377.e4, 2018.
- 4: Occurrence of paroxysmal atrial fibrillation at the beginning of an additional resection during neck dissection: Motoike S, Yoshida K, Sasaki U, Mukai T, Oda Y, Ogawa Y, Oue K, Mukai A, Irifune M: *Journal of Japanese Dental Society of Anesthesiology.* 46 (2), 74-76, 2018.
- 5: Dental hygienist intervention is an effective treatment for the oral symptoms with somatic symptom disorder and delusional disorder: A case report: Yano K, Doi M, Irifune M, Kozai K: *Journal of Psychosomatic Oral Medicine.* 33 (1), 15-20, 2018.
- 6: Perioperative management of a hospitalized patient with Williams syndrome undergoing teeth extraction under general anesthesia: Takahashi T, Oue K, Yoshida K, Mukai T, Oda A, Yoshinaka T, Mukai A, Irifune M: *Journal of the Japanese Society for Disability and Oral Health.* 39 (2), 137-142, 2018.
- 7: Perioperative management of a patient with a tongue tumor complicated by graft versus host disease: Shimizu Y, Motoike S, Oue K, Saeki N, Kochi T, Hama Y, Yoshida K, Yoshida M, Irifune M: *Journal of Japanese Dental Society of Anesthesiology.* 46 (3), 130-132, 2018.

## B) Review

## C) Publications

- 1: Hypertension; A how-to book on medicine used in dental treatments 2019-2022 (eds., Kaneko A, Tomino Y, Aoki Y, Sano K, Shibahara T, Kawabe R, Shinohara M): Irifune M: *Dental Diamonds Publisher (Tokyo)*, 282-283, 2018.
- 2: Ischemic heart disease; A how-to book on medicine used in dental treatments 2019-2022 (eds., Kaneko A, Tomino Y, Aoki Y, Sano K, Shibahara T, Kawabe R, Shinohara M): Irifune M: *Dental Diamonds Publisher (Tokyo)*, 284-285, 2018.

## D) Other Publications

## E) Presentation at Scientific Meeting

- 1: Prediction of prognosis following perioperative dental injury - comparison of anesthesiologists and dentists: Saeki N, Shimizu Y, Yoshida M, Yoshida K, Moriwaki N, Kawamoto M, Irifune M: The International Anesthesia Research Society (IARS) 2018 Annual Meeting and International Science Symposium, in Chicago, Illinois, April 28 – May 1, 2018.
- 2: PRIP modulates AKT-GSK3 $\beta$  signaling and regulates cell cycle progression: Maetani Y, Asano S, Irifune M, Kanematsu T: The 51th Scientific Meeting of Hiroshima University Dental Society (Hiroshima), 2018.
- 3: Dental treatment performed for Cornelia de Lange syndrome patient under intravenous sedation and physical restraint: Oda Y, Mizota Y, Shimizu C, Oda Y, Irifune M: The 24th International Association for Disability & Oral Health Congress, in Dubai, August 31, 2018.
- 4: A case of perioperative general anesthesia management during tooth extraction in a patient with mental retardation who was suffered from quasi-moyamoya disease and epilepsy: Takahashi T, Mukai A, Yoshida K, Mukai T, Oda A, Kochi T, Oue K, Shimizu Y, Yoshida M, Irifune M: The 33th Scientific Meeting of Dental Anesthesiology in Chugoku and Shikoku Branch (Okayama), 2018.
- 5: Involvement of noradrenergic neurons in analgesic effects of methamphetamine using a formalin test: Oda A, Irifune M: The 33th Scientific Meeting of Dental Anesthesiology in Chugoku and Shikoku Branch (Okayama), 2018.
- 6: General anesthetic management of a pregnant patient during oral surgery: a case report: Yoshida M, Ogawa Y, Oue K, Mukai A, Yoshida K, Doi M, Shimizu Y, Irifune M: The 33th Scientific Meeting of Dental Anesthesiology in Chugoku and Shikoku Branch (Okayama), 2018.
- 7: Involvement of dopaminergic and noradrenergic neurons in analgesic effects of methamphetamine using a formalin test and a brain microdialysis method: Oda A, Irifune M: The 57th Scientific Meeting of Hiroshima Prefecture Dental Association and 102th Scientific Meeting of Hiroshima University Dental Society (Hiroshima), 2018.
- 8: Efficacy of chest compressions performed on the dental chair as compared to that on a floor: Shimizu Y, Sadamori T, Yoshinaka T, Oue K, Kochi T, Mukai T, Uno T, Maetani Y, Oda A, Kikuchi Y, Motoike S, Sasaki U, Yoshida K, Doi M, Mukai A, Yoshida M, Irifune M: The 57th Scientific Meeting of Hiroshima Prefecture Dental Association and 102th Scientific Meeting of Hiroshima University Dental Society (Hiroshima), 2018.
- 9: Analysis of relationship between behavior and changes in EEG and EMG activity induced by various types of ligands: Kikuchi Y, Yoshinaka T, Irifune M: The 46th Annual Meeting of Japanese Dental Society of Anesthesiology (Nara), 2018.
- 10: Involvement of dopaminergic neurons in analgesic effects of methamphetamine using a formalin test: Oda A, Irifune M: The 46th Annual Meeting of Japanese Dental Society of Anesthesiology (Nara), 2018.
- 11: Volume of resting state saliva secretion is reduced by catastrophic thinking in glossodynia patients: Doi M, Sasaki U, Motoike S, Kochi T, Okada M, Yoshida M, Irifune M: The 46th Annual Meeting of the Japanese Dental Society of Anesthesiology (Nara), 2018.
- 12: A case of general anesthesia in a patient with tracheal tube was stoppered by driedmucus, which induced difficult ventilation: Hama Y, Miyauchi M, Oishi M, Okada S, Yamamoto M, Okino E, Ogawa Y, Irifune M: The 46th Annual Meeting of the Japanese Dental Society of Anesthesiology (Nara), 2018.
- 13: A case of oral surgery under general anesthesia for a patient with spino-cerebellar degeneration, hypertension and unruptured cerebral aneurysm: Takahashi T, Yoshida K, Kochi T, Motoike S, Sasaki

- U, Mukai T, Oda A, Kikuchi Y, Oue K, Mukai A, Shimizu Y, Irifune M: The 46th Annual Meeting of the Japanese Dental Society of Anesthesiology (Nara), 2018.
- 14: A case of tooth extraction under intravenous sedation for a hereditary angioedema patient who had intubation management history due to laryngeal edema after dental treatment: Mukai A, Ogawa Y, Kochi T, Mukai, T, Sasaki U, Motoike S, Maetani Y, Yoshida K, Yoshida M, Irifune M: The 46th Annual Meeting of the Japanese Dental Society of Anesthesiology (Nara), 2018.
- 15: A case report of dental treatment for an autistic spectrum disorder patient with morbid obesity under conscious intravenous sedation: Oda Y, Yoshida K, Oda A, Mukai T, Yoshinaka T, Takahashi T, Oue K, Mukai A, Irifune M, Okada Y: The 46th Annual Meeting of the Japanese Dental Society of Anesthesiology (Nara), 2018.
- 16: Clinico-statistic study on feeding condition in patients with mental retardation after dental treatment under general anesthesia: Takahashi T, Yoshida K, Mukai T, Oda A, Yoshinaka T, Oue K, Mukai A, Yoshida M, Shimizu C, Mizota Y, Watari M, Tokikazu T, Oda Y, Okada Y, Irifune M: The 35th Annual Meeting of the Japanese Society for Disability and Oral Health (Tokyo), 2018.
- 17: A case report of dental treatment experience for Joubert syndrome patient under physical behavior management avoiding general anesthesia: Oda Y, Shimizu C, Yoshida K, Oda A, Mukai T, Mukai A, Oishi M, Okada S, Yamamoto M, Hama Y, Miyauchi M, Shintani H, Mito A, Irifune M, Okada Y: The 35th Annual Meeting of the Japanese Society for Disability and Oral Health (Tokyo), 2018.
- 18: Oral hygiene in a patient with severe intellectual disabilities was improved by continuous modification of tooth brushing instruction: a case report: Mizota Y, Shimizu C, Wakida A, Watari M, Tokikazu, T, Morimoto C, Hayashi H, Oda A, Mukai T, Mukai A, Yoshida K, Nakaoka M, Oda Y, Irifune M, Okada Y: The 35th Annual Meeting of the Japanese Society for Disability and Oral Health (Tokyo), 2018.
- 19: A case of tooth extraction under intravenous sedation by dexmedetomidine and propofol for a patient with dementia and many systemic disease: Mukai A, Mukai T, Oda A, Kochi T, Takahashi T, Oue K, Yoshida K, Shimizu C, Oda Y, Okada Y, Irifune M: The 35th Annual Meeting of the Japanese Society for Disability and Oral Health (Tokyo), 2018.
- 20: Nasopalatine duct cyst in moderate intellectual disability patient with first and second branchial arch syndrome: a case report: Shimizu C, Oda Y, Morimoto C, Mizota Y, Watari M, Tokikazu, T, Wakida A, Hayashi H, Oda A, Mukai T, Mukai A, Yoshida K, Kaihara Y, Irifune M, Okada Y: The 35th Annual Meeting of the Japanese Society for Disability and Oral Health (Tokyo), 2018.
- 21: A case of dental treatment for a patient with autism spectrum disorder with a history of adverse reactions to local anesthetics: Mukai T, Yoshida K, Shimizu C, Mizota Y, Watari M, Oda A, Takahashi T, Yoshinaka T, Oue K, Mukai A, Tokikazu, T, Oda Y, Okada Y, Irifune M: The 35th Annual Meeting of the Japanese Society for Disability and Oral Health (Tokyo), 2018.

#### F) Special lectures in academic meetings

#### (4) Status of Receiving Grants-in Aid for Scientific Research, etc.

- 1: Grant-in-Aid No. 18K09812 for Scientific Research (C) from the Ministry of Education, Culture, Sports, Science, and Technology of Japan (New): Irifune M, Kanematsu T: Development of a novel general

anesthetic method of applying the enhancement of descending pain suppression system by stimulation of dopamine neurons in the nucleus accumbens. ¥2,000,000.

2: Grant-in-Aid No. 17K17254 for Young Scientists (B) from the Ministry of Education, Culture, Sports, Science, and Technology of Japan (Continued): Oue K: Study on brown adipocytes molecules mechanism for obesity control. ¥1,500,000.

3: Grant-in-Aid No. 17K11908 for Scientific Research (C) from the Ministry of Education, Culture, Sports, Science, and Technology of Japan (Continued): Doi M: Functional brain imaging evaluation of treatment effect of cognitive behavioral therapy and antidepressant drugs on glossodynia. ¥800,000.

(5) Academic Awards, etc.

(6) Patents

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## Department of Public Oral Health

### (1) Staff and Students

Professor : Masaru Sugiyama

Associate Professor : Hideo Shigeishi, Maki Nosou

Assistant Professor : Eri Fukada, Tomoko Maehara

Graduate Student : Yoshino Kaneyasu (D1), Cheng-Yih Su, Jan Chou, Rika Maruyama, Yuka Wakabayashi, Saki Matsuda, Ayaka Kai, Ayaka Takahashi(M2), Yoshimi Iwao, Momoko Ishikawa, Ayumu Saitou, Mariko Nakamura, Mari Matsumura (M1)

Undergraduate Student: Amane Oshima, Misaki Morooka, Mai Okawa, Ayaka Kimura, Moe Kawata, Miho Ikeda, Mikiho Ise, Asuka Takemoto, Ayana Shinozaki, Mayu Etsuki, Shoko Kimura, Suzuko Ishikawa(4<sup>th</sup> grade student)

### (2) Main Research Activities

- 1 : Study on oral care
- 2 : Study on oral functions in the elderly
- 3 : Study on human papillomavirus in oral squamous cell carcinoma
- 4 : Study on the activities of oral health at school

### (3) Research Achievements

#### A) Original Papers (including Case Reports)

- 1 : High HPV16 E6 viral load in the oral cavity is associated with an increased number of bacteria: A preliminary study. Shigeishi H., Sugiyama M., Ohta K., Yokoyama S., Sakuma M., Murozumi H., Kato H., Takechi M.: *Biomed Rep.* 8(1):59-64, 2018.
- 2 : Candida albicans  $\beta$ -Glucan-Containing Particles Increase HO-1 Expression in Oral Keratinocytes via a Reactive Oxygen Species/p38 Mitogen-Activated Protein Kinase/Nrf2 Pathway : Ishida Y., Ohta K., Naruse T., Kato H., Fukui A., Shigeishi H., Nishi H., Tobiume K., Takechi M.: *Infect Immun.* 22;86(4) pii: e00575-17, 2018.
- 3 : CD44<sup>high</sup>/ESA<sup>low</sup> squamous cell carcinoma cell-derived prostaglandin E2 confers resistance to 5-fluorouracil-induced apoptosis in CD44<sup>high</sup>/ESA<sup>high</sup> cells : Shigeishi H., Hashikata M., Yokoyama S., Sakuma M., Murozumi H., Kato H., Rahman MZ, Seino S., Ishioka Y., Ohta K., Takechi M., Sugiyama M. : *Int J Clin Exp Pathol* 11(5):2356-2363, 2018.
- 4 : Efficacy of cognitive-behavioral therapy for patients with temporomandibular disorder pain-systematic review of previous reports : Iwasaki S., Shigeishi H., Akita T., Tanaka J., Sugiyama M. : *Int J Clin Exp Med* 11(2):500-509, 2018.
- 5 : Human papillomavirus type 16 (HPV16) DNA copy number in oral rinse samples from oral cavity cancer patients : Shigeishi H., Yokoyama S., Ohta K., Takechi M., Sugiyama M. : *Translational*

- Research in Oral Oncology 3: 1–5, 2018.
- 6 : Usefulness of the Bacteria Counter Using the Dielectrophoretic Impedance Measurement Method (DEPIM) and the Salivary Multi-Test System (SMT) to Evaluate Oral Health Status. Jan C : Nishimura R., Shigeishi H., Sugiyama M., Amano H. : The Journal of Hiroshima University Dental Society. 50(2), 69-76, 2018.
- 7 : Self-check with plaque disclosing solution improves oral hygiene in schoolchildren living in a children's home : Nagashima Y., Shigeishi H., Fukada E., Amano H., Urade M., Sugiyama M. : Arch Public Health 76:50, 2018.
- 8 : Changes in bacterial number at different sites of oral cavity during perioperative oral care management in gastrointestinal cancer patients: preliminary study : Kawano T., Shigeishi H., Fukada E., Yanagisawa T., Kuroda N., Takemoto T., Sugiyama M. : J Appl Oral Sci. 11,26:e20170516, 2018.
- 9 : A study on eating behaviors in adolescence, students of school of dentistry : Maruyama R., Shigeishi H., Sugiyama M. : The Journal of Hiroshima University Dental Society. 50 (2), 61-68, 2018.
- 1 0 : Longitudinal study of risk factors for smoking among undergraduates from the first to fourth year of study. : Sasahara H., Maehara T., Nikawa H. : CAMPUS HEALTH, 55(2), 113-119, 2018.
- 1 1 : The Sense of Foreign Students from the Asian Countries About Beauty of Tooth Alignment and Orthodontic Treatment. : Sasahara H., Fukada E., Nishimura R., Maehara T., Hiroki N. : J. Hiroshima Univ. Dent. Soc., 50, 51-60, 2018.
- 1 2 : An exploratory study of the factors related to mouth breathing syndrome in primary school children : Saitoh I., Inada E., Kaihara Y., Nogami Y., Murakami D., Kubota N., Sakurai K., Shirazawa Y., Sawami T., Goto M., Nosou M., Kozai K., Hayasaki H., Yamasaki Y. : Archives of Oral Biology, 92, 57-61, 2018.
- 1 3 : Genetic Markers Can Predict Chondrogenic Differentiation Potential in Bone Marrow-Derived Mesenchymal Stromal Cells.: **Kanawa** M., Igarashi A., Fujimoto K., Higashi Y., Kurihara H., Sugiyama M., Saskianti T., Kato Y., Kawamoto T.: Stem Cells Int. 2018 Oct 10;2018:9530932. doi: 10.1155/2018/9530932. eCollection 2018.

## B) Review

## C) Publications

## D) Other Publications

## E) Presentations at Scientific Meetings

- 1 : The effect of self-checking of oral health using plaque disclosing solution in schoolchildren living in a children's home: Sugiyama M., Shigeishi H., Fukada E. : The 67th General Meeting of Japanese Society for Oral Health (Sapporo), 2018.
- 2 : Changes in bacterial number of oral cavity during perioperative oral care management in

- gastrointestinal cancer patients: Shigeishi H., Sugiyama M. : The 67th General Meeting of Japanese Society for Oral Health (Sapporo), 2018.
- 3 : Risk factors for oral HPV infection and molecular biological features of HPV-positive oral cancers: Shigeishi H., Ohta K., Sugiyama M. : The 67th General Meeting of Japanese Society for Oral Health (Sapporo), 2018.
- 4 : Analysis of Human Papillomavirus (HPV) DNA positivity using oral rinse samples: Shigeishi H., Ohta K., Higashikawa K., Takechi M., Sugiyama M. : The 47th annual local meeting of Chugoku-Shikoku Branch, Japanese Society of Oral and Maxillofacial Surgeons (Okayama), 2018.
- 5 : Association of human papillomavirus (HPV) with oral cavity cancers. Review of recent research: Shigeishi H. : The 62th Congress of the Japanese Society of Oral and Maxillofacial Surgeons (Chiba), 2018.
- 6 : Oral HPV infection and features of HPV-positive oral cancers: Shigeishi H. : Oncology meeting (Hiroshima University Hospital) , 2018.
- 7 : Attitude and consciousness of nursing-care facility staffs for elderly persons in meal assistance and Oral care : Maehara T., Hamamura Y. : The 102th Regular Meeting of Hiroshima University Dental Society (Hiroshima), 2018.
- 8 : Study conditions in Oral Health Science Major, Graduate School of Biomedical and Health Sciences, Hiroshima university and courses of its graduates : Maehara T., Matsumoto A., Nishimura R., Niitani Y., Naito M., Sugiyama M., Takemoto T. : The 9th Annual Conference of the Japan society of Dental Hygiene Education (Niigata), 2018.
- 9 : A new objective method to evaluated the degree of wear of worn toothbrushes: Kaneyasu Y., Shigeishi H., Fukada E., Amano H., Sugiyama M.: 7th Hiroshima Conference on Education and Science in Dentistry (Hiroshima), 2018.
- 1 0 : An objective investigation of bristles' wear in manual toothbrushes during 3 months: Kaneyasu Y., Shigeishi H., Fukada E., Amano H., Sugiyama M.: The 51th Annual Meeting of the Hiroshima University Dental Society. June 9, 2018.
- 1 1 : Development of evaluation method for bristles' wear in manual toothbrushes and change of bristles' wear after use: Kaneyasu Y., Shigeishi H., Fukada E., Sugiyama M. : The 67th General Meeting of Japanese Society for Oral Health (Sapporo), 2018.
- 1 2 : Changes of bristles' wear and plaque removal ability of manual toothbrushes after use: Kaneyasu Y., Shigeishi H., Maehara T., Fukada E., Amano H., Sugiyama M. : 29th Annual Meeting of the Society for Kinki-Chugoku-Shikoku Oral Health (Ehime), 2018.
- 1 3 : Study of students' consciousness and comprehension before and after clinical practice: Matsuda S., Matsumoto A., Nishimura R., Amano H.: The 13th Annual Meeting of the Japan Society for Dental Hygiene (Fukuoka), 2018.
- 1 4 : Effect of care prevention program including physical exercise, oral health instruction and nutritional

- guidance : Iwao Y., Uchida S., Takahashi S., Kawano S.: The 13th Annual Meeting of the Japan Society for Dental Hygiene (Fukuoka), 2018.
- 1 5 : Study on detection method of Streptococcus mutans using FACScan : Matsumura M., Shigeishi H., Sugiyama M. : The 13th Academic Conference of the Japanese Dental Hygiene Association (Fukuoka), 2018.
- 1 6 : A study of the association between dental caries and oral and lifestyle factors: Nakamura M., Fukada E., Shimazu A., Sugiyama M. : The 28th Annual Meeting of The Japan Society of Dental Equipments, 2018.
- 1 7 : Changes in bacterial number at different sites of oral cavity during perioperative oral care management in gastrointestinal cancer patients: Preliminary study: Kawano T., Shigeishi H., Fukada E., Yanagisawa T., Kuroda N., Sugiyama M. : The 51th Annual Meeting of the Hiroshima University Dental Society, 2018.
- 1 8 : Relationship between oral function and participation period in community salon in elderly women: Miyoshi S., Fukada E., Shigeishi H., Sugiyama M. : The 67th General Meeting of Japanese Society for Oral Health (Sapporo), 2018.
- 1 9 : Association of Kihon Checklist and Dysphagia Risk Assessment for the Community-dwelling Elderly with oral function of independent elderly people: Miyoshi S., Yamane T., Miyamoto Y., Fukada E., Shigeishi H., Sugiyama M. : The 13th Academic Conference of the Japanese Dental Hygiene Association (Fukuoka), 2018.
- 2 0 : Relationship between oral function and participation period in community salon in elderly women: Miyoshi S., Shigeishi H., Fukada F., Nosou M., Sugiyama M. : The 51th Annual Meeting of the Hiroshima University Dental Society, 2018.
- 2 1 : Self-check with plaque disclosing solution improves oral hygiene in schoolchildren living in a children's home: Nagashima Y., Shigeishi H., Fukada E., Amano H., Urade M., Sugiyama M. : The 51th Annual Meeting of the Hiroshima University Dental Society, 2018.
- 2 2 : A program of simulated discharge conference practical training: Nishimura R., Matsumoto A., Niitani Y., Mahara T., Naito M.: The 102th Regular Meeting of Hiroshima University Dental Society (Hiroshima), 2018.
- 2 3 : Report of the teaching materials making for dental health guidance particularly for children with special needs: Adachi M., Nosou M., Mahara T., Nishimura R., Amano H.: The 25th Annual Conference of the Japanese Dental Welfare (Kobe), 2018.

#### F) Special lectures in academic meetings

#### G) Contribution to Community

- 1 : Sugiyama M.: a member of Hiroshima Prefectural Dental Hygiene Council.



- 2 : Sugiyama M.: The 27<sup>th</sup> Annual Meeting of the Japanese Association for Oral Infectious Diseases. Chairman, Hiroshima University (Hiroshima), 2018, 10, 13-14.
- 3 : Nosou M. : Secretary at Hiroshima Branch of Children's Cancer Association of Japan, Hiroshima.
- 4 : Nosou M., Maehara T. : Dental health activity in special needs schools of Hiroshima city, Hiroshima, 2018.
- 5 : Maehara M. : Dental hygienist collaboration committee member of the Japanese Society for Disability and Oral Health, 2018.
- 6 : Maehara M. : Program for Midorimachi junior high-school students: Hiroshima University Faculty of Dentistry : Hiroshima University(Hiroshima) ,2018.6.22.
- 7 : Nishimura R., Maehara T. : Assessment of oral function at special nursing home “Kosei-En” (Hiroshima), 2018.
- 8 : Nishimura R. , Maehara T. : Program for junior high-school student : Hiroshima University Faculty of Dentistry: Hiroshima University (Hiroshima),2018.8.21.
- 9 : Nishimura R., Maehara T.: Program for kids from elementary schools, Dental Kids : Hiroshima University Faculty of Dentistry : Hiroshima University (Hiroshima), 2018.8.22.
- 10 : Maehara .T : Oral Health Promotion for citizens of Hiroshima city(Hiroshima), 2018.
- 11 : Maehara T. : The 32nd Annual Meeting of the Japanese Society for Disability and Oral Health, committee program management, 2018.11.17.
- 12 : Kaneyasu Y. : Hiroshima University (HU) Open Campus 2018, Hiroshima University (Hiroshima) , 2018. 08.21
- 13 : Kaneyasu Y. : Hiroshima University (HU) Open Campus 2018, Hiroshima University (Hiroshima) , 2018. 08.22

#### (4) Status of Receiving Grants-in Aid for Scientific Research, etc.

- 1 : Grants-in-Aid for Scientific Research (Scientific Research (C)) : Shigeishi H (Main researcher) : Study on the mechanisms of regulation of cancer stem cell properties via mechanical stress in oral squamous cell carcinomas. (Continuing project, No. 17K11837).
- 2 : Grants-in-Aid for Scientific Research (Scientific Research (C)) : Sugiyama M. (Main researcher) , Study on the mechanisms of malignant transformation via gene methylation in HPV16-positive oral squamous cell carcinomas. (New project, No. 18K097910A) .
- 3 : Grants-in-Aid for Scientific Research (Scientific Research (C)) : Sugiyama M (Main researcher) , Study on the mechanisms of acquiring cancer stem cell-like characteristics related with HPV-16 E6 gene in oral squamous cell carcinomas. (Continuing project, 15K11290). (Extended project)
- 4 : Grants-in-Aid for Scientific Research (Scientific Research (C)) : Sugiyama M. (Co-researcher) , Control of dynamics of stem cells from human exfoliated deciduous teeth (SHED) through construction of micro-environment and application of SHED to bone re-generation in cleft palate. (Continuing project, 16K117885B) .

#### (5) Academic Awards, etc.

- 1 : Shigeishi H : Encouragement Award : Alumni association of Hiroshima University Faculty of Dentistry, 2018.
- 2 : Kaneyasu yoshino : A new objective method to evaluated the degree of wear of worn toothbrushes: 7th Hiroshima Conference on Education and Science in Dentistry Poster Award, Hiroshima, 2018.
- 3 : Nakamura M: Effort Award: The 28th Annual Meeting of The Japan Society of Dental Equipments.

(6) Patents

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## Department of Oral Epidemiology

### (1) Staff and Students

Professor : NAITO Mariko (since April 2018)

Research Associate : TSURUDA Keiko

NISHIMURA Rumi

Graduate Student : MAEHARA Tomoko

HIGASHI Mayuka

MATSUDA Saki

CHOU JAN

### (2) Main Research Activities

- 1 : Study on the activation of the function of salivary glands
- 2 : Study on the methods for Oral health care
- 3 : Study on the education program for Oral health
- 4 : Study on the development of oral function
- 5 : Study on the intra-oral pressure for swallowing
- 6 : Study on education program for graduate dental hygienists
- 7 : Study on the Mechanism of Aggregatibacter actinomycetemcomitans-CDT complex formation and secretion
- 8 : Epidemiological studies regarding associations between oral health and general health
- 9 : Molecular epidemiology and gene-environmental interaction
- 10 : Associations between health screening behavior, health status and lifestyle
- 11 : Research for dysphagia patients and their caregivers
- 12 : QOL/PRO research

### (3) Achievements

#### A) Original Papers (including Case Reports)

- 1 : Factors related to masticatory performance in healthy elderly individuals.: Morita K., Tsuka H., Kato K., Mori T., Nishimura R., Yoshida M., Tsuga K.: Journal of Prosthodontic Research, 62, 432-435, 2018.
- 2 : A Study on the Assignment of Dental Students as Census Takers –From Experience as a Census Taker

- of the 20th National Census in 2015-: Sasahara H., Fukada E., Nishimura R., Nikawa H.: *The Journal of Hiroshima University Dental Society*, 50(1), 1-8, 2018.
- 3 : The Sense of Foreign Students from the Asian Countries About Beauty of Tooth Alignment and Orthodontic Treatment.: Sasahara H., Fukada E., Nishimura R., Maehara T., Nikawa H.: *The Journal of Hiroshima University Dental Society*, 50(2), 51-60, 2018.
- 4 : Usefulness of bacteria count with Dielectrophoretic Impedance Measurement Method and Salivary Multi-Test System for Evaluate of Oral Health Status.: Jan Chou., Nishimura R., Shigeishi H., Amano H., Sugiyama M.: *The Journal of Hiroshima University Dental Society*, 50(2), 69-76, 2018.
- 5 : Longitudinal study of risk factors for smoking among undergraduates from the first to fourth year of study.: Sasahara H., Maehara T., Nikawa H.: *CAMPUS HEALTH*, 55(2), 113-119, 2018.
- 6 : CdtC-induced processing of membrane-bound CdtA is a crucial step in *Aggregatibacter actinomycetemcomitans* cytolethal distending toxin holotoxin formation.: Tsuruda K., Matangkasombut O., Ohara M., Sugai M.: *Infect Immun*, 86 (3): e00731-17. 2018.
- 7 : Palatal augmentation prosthesis (PAP) can improve swallowing function for the patients in rehabilitation hospital : Yoshida M., Endo Y., Nishimura R., Masuda S., Amano J., Tsuga K.: *Journal of Prosthodontic Research*, Available online 13 December 2018(In Press).
- 8 : Genome-wide association study identifies seven novel susceptibility loci for primary open-angle glaucoma.: Shiga Y, Akiyama M, Nishiguchi KM, Sato K, Shimozawa N, Takahashi A, Momozawa Y, Hirata M, Matsuda K, Yamaji T, Iwasaki M, Tsugane S, Oze I, Mikami H, Naito M, Wakai K, Yoshikawa M, Miyake M, Yamashiro K; Japan Glaucoma Society Omics Group (JGS-OG), Kashiwagi K, Iwata T, Mabuchi F, Takamoto M, Ozaki M, Kawase K, Aihara M, Araie M, Yamamoto T, Kiuchi Y, Nakamura M, Ikeda Y, Sonoda KH, Ishibashi T, Nitta K, Iwase A, Shirato S, Oka Y, Satoh M, Sasaki M, Fuse N, Suzuki Y, Cheng CY, Khor CC, Baskaran M, Perera S, Aung T, Vithana EN, Cooke Bailey JN, Kang JH, Pasquale LR, Haines JL; NEIGHBORHOOD Consortium, Wiggs JL, Burdon KP, Gharraikhani P, Hewitt AW, Mackey DA, MacGregor S, Craig JE, Allingham RR, Hauser M, Ashaye A, Budenz DL, Akafo S, Williams SEI, Kamatani Y, Nakazawa T, Kubo M.: *Hum Mol Genet.* 27(8):1486-1496. 2018.
- 9 : Modification of the Associations of Alcohol Intake With Serum Low-Density Lipoprotein Cholesterol and Triglycerides by ALDH2 and ADH1B Polymorphisms in Japanese Men.: Sasakabe T, Wakai K, Kawai S, Hishida A, Naito M, Suzuki S, Nindita Y, Arisawa K, Kita Y, Hara M, Kuriyama N, Hirata A, Mikami H, Oze I, Kubo M, Tanaka H, Hamajima N.: *J Epidemiol.* 28(4):185-193. 2018.
- 1 0 . Tooth loss and pneumonia mortality: A cohort study of Japanese dentists.: Suma S, Naito M, Wakai K, Naito T, Kojima M, Umemura O, Yokota M, Hanada N, Kawamura T.: *PLoS One.* 13(4):e0195813. 2018.
- 1 1 : GWAS identifies two novel colorectal cancer loci at 16q24.1 and 20q13.12.: Tanikawa C, Kamatani Y, Takahashi A, Momozawa Y, Leveque K, Nagayama S, Mimori K, Mori M, Ishii H, Inazawa J,

- Yasuda J, Tsuboi A, Shimizu A, Sasaki M, Yamaji T, Sawada N, Iwasaki M, Tsugane S, Naito M, Wakai K, Koyama T, Takezaki T, Yuji K, Murakami Y, Nakamura Y, Kubo M, Matsuda K. *Carcinogenesis*. 2018 May 3;39(5):652-660.
- 1 2 : Kashino I, Akter S, Mizoue T, Sawada N, Kotemori A, Matsuo K, Oze I, Ito H, Naito M, Nakayama T, Kitamura Y, Tamakoshi A, Tsuji I, Sugawara Y, Inoue M, Nagata C, Sadakane A, Tanaka K, Tsugane S, Shimazu T; Research Group for the Development and Evaluation of Cancer Prevention Strategies in Japan. Coffee drinking and colorectal cancer and its subsites: A pooled analysis of 8 cohort studies in Japan.: *Int J Cancer*. 143(2):307-316. 2018.
- 1 3 : Genome-Wide Association Study of Renal Function Traits: Results from the Japan Multi-Institutional Collaborative Cohort Study.: Hishida A, Nakatochi M, Akiyama M, Kamatani Y, Nishiyama T, Ito H, Oze I, Nishida Y, Hara M, Takashima N, Turin TC, Watanabe M, Suzuki S, Ibusuki R, Shimoshikiryo I, Nakamura Y, Mikami H, Ikezaki H, Furusyo N, Kuriki K, Endoh K, Koyama T, Matsui D, Uemura H, Arisawa K, Sasakabe T, Okada R, Kawai S, Naito M, Momozawa Y, Kubo M, Wakai K; Japan Multi-Institutional Collaborative Cohort (J-MICC) Study Group.: *Am J Nephrol*. 47(5):304-316. 2018.
- 1 4 : Association of exposure level to passive smoking with hypertension among lifetime nonsmokers in Japan: a cross-sectional study.: Tamura T, Kadomatsu Y, Tsukamoto M, Okada R, Sasakabe T, Kawai S, Hishida A, Hara M, Tanaka K, Shimoshikiryo I, Takezaki T, Watanabe I, Matsui D, Nishiyama T, Suzuki S, Endoh K, Kuriki K, Kita Y, Katsuura-Kamano S, Arisawa K, Ikezaki H, Furusyo N, Koyanagi YN, Oze I, Nakamura Y, Mikami H, Naito M, Wakai K; Japan Multi-Institutional Collaborative Cohort (J-MICC) Study.: *Medicine (Baltimore)*. 97(48):e13241. 2018.
- 1 5 : Genome-wide association study (GWAS) of ovarian cancer in Japanese predicted regulatory variants in 22q13.1.: Yodsurang V, Tang Y, Takahashi Y, Tanikawa C, Kamatani Y, Takahashi A, Momozawa Y, Fuse N, Sugawara J, Shimizu A, Fukushima A, Hishida A, Furusyo N, Naito M, Wakai K, Yamaji T, Sawada N, Iwasaki M, Tsugane S, Hirata M, Murakami Y, Kubo M, Matsuda K.: *PLoS One*. 13(12):e0209096. 2018.
- 1 6 : The association between self-rated health and high-sensitivity C-reactive protein level: a cross-sectional and 5-year longitudinal study.: Tamura T, Naito M, Maruyama K, Tsukamoto M, Sasakabe T, Okada R, Kawai S, Hishida A, Wakai K.: *BMC Public Health*. 18(1):1380. 2018.
- 1 7 : Genome-wide association study identifies gastric cancer susceptibility loci at 12q24.11-12 and 20q11.21.: Tanikawa C, Kamatani Y, Toyoshima O, Sakamoto H, Ito H, Takahashi A, Momozawa Y, Hirata M, Fuse N, Takai-Igarashi T, Shimizu A, Sasaki M, Yamaji T, Sawada N, Iwasaki M, Tsugane S, Naito M, Hishida A, Wakai K, Furusyo N, Murakami Y, Nakamura Y, Imoto I, Inazawa J, Oze I, Sato N, Tanioka F, Sugimura H, Hirose H, Yoshida T, Matsuo K, Kubo M, Matsuda K.: *Cancer Sci*. 109(12):4015-4024. 2018.
- 1 8 : Longitudinal changes in the quality of life of oral cancer patients during the perioperative period.:

Aoki T, Ota Y, Suzuki T, Denda Y, Aoyama KI, Akiba T, Naito M, Arai T.: *Int J Clin Oncol.* 23(6):1038-1045. 2018.

- 19 : Genomewide Association Study of Leisure-Time Exercise Behavior in Japanese Adults.: Hara M, Hachiya T, Sutoh Y, Matsuo K, Nishida Y, Shimanoe C, Tanaka K, Shimizu A, Ohnaka K, Kawaguchi T, Oze I, Matsuda F, Ito H, Kawai S, Hishida A, Okada R, Sasakabe T, Hirata A, Ibusuki R, Nindita Y, Furusyo N, Ikezaki H, Kuriyama N, Ozaki E, Mikami H, Nakamura Y, Suzuki S, Hosono A, Katsuura-Kamano S, Arisawa K, Kuriki K, Endoh K, Takashima N, Kadota A, Nakatochi M, Momozawa Y, Kubo M, Naito M, Wakai K.: *Med Sci Sports Exerc.* 50(12):2433-2441. 2018.

## B) Review

None

## C) Publications

None

## D) Other Publications

- 1 : ORAL REHABILITATION: 저자, 현숙, 김창숙, 오상환, 이미옥, 이선미, 이정화, 장경애, 조미숙, Masaru Sugiyama, Rumi Nishimura : Jee Sung Publishing, 2018.

## E) Presentations at Scientific Meetings

- 1 : Processing enzyme involved in *Aggregatibacter actinomycetemcomitans*-CDT holotoxin maturation.: Tsuruda K., Ohara M., Sugai M.: The 91st Annual meeting of Japanese Society for Bacteriology with The 14th Japan-Korea international Symposium on Microbiology (Fukuoka), 2018.
- 2 : A Program for Preventive Approach in Long Term Care.: Nishimura R., Fukada E., Matsumoto A., Amano H.: 7th Hiroshima Conference on Education and Science in Dentistry (Hiroshima), 2018.
- 3 : Project for problem-Solving Oriented Training Program for Advanced Medical Personnel.: Matsumoto A., Nishimura R., Taji T., Fukada E., Niitani Y., Nikawa H., Sugiyama M, Takemoto T.: 7th Hiroshima Conference on Education and Science in Dentistry (Hiroshima). 2018.03.30
- 4 : Association with oral status and oral health assessment. Jan Chou1, Rumi Nishimura, Hideaki Amano. 7th Hiroshima Conference on Education and Science in Dentistry (Hiroshima), 2018.
- 5 : Examination of saliva test with quickness and convenience targeting *S.mutans* : Shimazu A.,

- Tsuruda K., Fukada E., Nishimura R., Naito M., Watanabe T., Taniguchi N., Sugiyama M., Hanioka T.: The 67<sup>th</sup> General Meeting of Japanese Society for Oral Health (Sapporo), 2018.
- 6 : The case report of non-surgical treatment of periodontal pocket using interdental brush: Sasahara H., Nishimura R., Fukada E., Nikawa H.: The 67<sup>th</sup> General Meeting of Japanese Society for Oral Health (Sapporo), 2018.
- 7 : Association between health behaviors and oral health status in community-dwelling adults: Nishimura R., Naito M., Hirose S., Fukazawa E., Nakamura M., Tsuchida D., Segawa N., Ogawa N., Sato T., Uchibori N., Watanabe M., Kuroyanagi Y., Usami T., Kondo Y., Wakai K.: The 51<sup>th</sup> Annual Meeting of Hiroshima University Dental Society (Hiroshima), 2018.
- 8 : A program to cultivate advanced medical personnel : "Cultivation of dental personnel contributing healthy longevity in a specialist team" : Nishimura R., Matsumoto A., Taji T., Nikawa H., Sugiyama M.: The 25<sup>th</sup> Annual Conference of the Japanese Dental Welfare (Kobe), 2018.
- 9 : Report of the teaching materials making for dental health guidance particularly for special support children: Adachi M., Nosou M., Mahara T., Nishimura R., Amano H.: The 25<sup>th</sup> Annual Conference of the Japanese Dental Welfare (Kobe), 2018.
- 1 0 : Study on the relationship between the Splash Bean Test and oral function in Young Women: Higashi M., Nishimura R., Fukada E., Hama Y., Kanehisa Y., Hara K.: The 25<sup>th</sup> Annual Conference of the Japanese Dental Welfare (Kobe), 2018.
- 1 1 : Study of students' consciousness and comprehension before and after clinical practice: Matsuda S., Matsumoto A., Nishimura R., Amano H.: The 13<sup>th</sup> Annual Meeting of the Japan Society for Dental Hygiene (Fukuoka), 2018.
- 1 2 : Changes of bristles' wear and plaque removal ability of manual toothbrushes after use: Kaneyasu Y., Shigeishi H., Maehara T., Fukada E., Amano H., Sugiyama M.: The 29<sup>th</sup> general meeting of Kinki, Chugoku, Shikoku Society for Oral Health(Ehime), 2018.
- 1 3 : A program of simulated discharge conference practical training: Nishimura R., Matsumoto A., Niitani Y., Mahara T., Naito M.: The 102<sup>th</sup> Regular Meeting of Hiroshima University Dental Society (Hiroshima), 2018.
- 1 4 : Evaluation of Problem-Solving Oriented Training Program for Advanced Medical Personnel: Operation support program by the dental technician.: Kanda M., Taji T., Nishimura R., Fukada E., Matsumoto A., Sugiyama M., Nikawa H.: The 102<sup>th</sup> Regular Meeting of Hiroshima University Dental Society (Hiroshima), 2018.
- 1 5 : Attitude and consciousness of nursing-care facility staffs for elderly persons in meal assistance and Oralcare: Maehara T., Hamamura Y.: The 102<sup>th</sup> Regular Meeting of Hiroshima University Dental Society (Hiroshima), 2018.
- 1 6 : Investigation of the oral function to affect the flying distance of the Splash Bean Test:2nd Report, Focusing on Young Men: Higashi M., Nishimura R., Sambuichi E., Hama S., Kanehisa Y., Hara K.:

The 7th Kobe Tokiwa Academic Forum(Kobe), 2018.

- 1 7 : Investigation of the relationship between oral function and eating habits in college students: Kanehisa Y., Sambuichi E., Higashi M., Nishimura R., Hama S., Hara K.:The 7th Kobe Tokiwa Academic Forum(Kobe), 2018.
- 1 8 : Examination whether or not mouth cleaning has an influence on the number of bacteria in saliva: Hara K., Higashi M., Hama S., Kanehisa Y.: The 7th Kobe Tokiwa Academic Forum(Kobe), 2018.
- 1 9 : Investigation of the relevant factors for self-esteem and consciousness of others in adolescence: Hama Y., Hama S., Higashi M., Hara K.: The 7th Kobe Tokiwa Academic Forum(KObe), 2018.
- 2 0 : Study on the oral health issues of people with intellectual disabilities living in the local community: Okawa N., Hara K., Adachi R., Miyode M., Hama Y., HigashiM.: The 7th Kobe Tokiwa Academic Forum(Kobe), 2018.
- 2 1 : Study Conditions in Oral Health Science Major, Graduate School of Biomedical and Health Sciences: Maehara T., Matsumoto A., Niitani Y., Naito M., Sugiyama M., Takemoto T.: The 9th Annual Meeting of the Japan Society for Dental Hygiene Education (Niigata), 2018.
- 2 2 : Determinants of using Interdental brush : From the perspective of the theory of planned behavior: Higashi M., Sambuichi E., Nishimura R., Kanehisa Y., Kajita K., Hara K.:The 9th Annual Meeting of the Japan Society for Dental Hygiene Education (Niigata), 2018.
- 2 3 : Practical medical personnel development to contribute health and longevity : Effects of learning tools shared between cooperation universities using the computer assisted education software: Ohara Y., Nishimura R., Hikiji H., Matsumoto A., Nakamichi A., Sugiyama M., Akifusa S., Kinoshita A., Arakawa S., Okiji T.: The 9th Annual Meeting of the Japan Society for Dental Hygiene Education (Niigata), 2018.
- 2 4 : Effects of joint practice of interprofessional education for dental hygiene students and nursing students: From learning of dental hygiene students on professional cooperation after joint practice: Sawada M., Taniguchi Y., Higashi M., Ako K., Hara K.:The 9th Annual Meeting of the Japan Society for Dental Hygiene Education (Niigata), 2018.
- 2 5 : Analysis of national examination measures survey using Text-Mining: Attempt to visualize free descriptive answer by Co-occurrence Network: Fukuda M., Hatayama C., Higashi M., Yokoyama M.: The 9th Annual Meeting of the Japan Society for Dental Hygiene Education (Niigata), 2018.
- 2 6 : Association between the cancer incidence and morningness-eveningness types.: Morita E, YamadaN, Kadotani H, Wakai K, Kawai S, Okada R, Tamura T, Sasakabe T, Naito M. The 43rd Annual Meeting of Annual Meeting of Japanese Society of Sleep Research (Sapporo), 2018.
- 2 7 : Weight gain in adulthood and parental hypertension as the risk of hypertension: from the J-MICC Study. Okada R, Naito M, Maruyama K, Tsukamoto M, Sasakabe T, Tamura T, Kawai S, Hishida A, Wakai K, J-MICC Study Group. The 27th Scientific Meeting of the International Society of Hypertension, Beijing (China), 2018.



- 2 8 : The association of PSCA gene and H. Pylori-related gastric atrophy risk detected by GWAS and SKAT.: Hishida A, Fujii R, Nakatochi M, Kawai S, Ito H, Matsuo K, Watanabe M, Suzuki S, Kuriyama N, Naito M, Wakai K.: The 77th Annual Meeting of the Japanese Cancer Association (Osaka), 2018.
- 2 9 : Change of serum uric acid and the incidence of chronic kidney diseases: J-MICC Daiko Study. Fujii R, Kondo T, Hishida A, Onishi J, Naito M, Hamajima N, Wakai K.: The 77th Annual Meeting of Annual Meeting of Japanese Society of Public Health (Koriyama), 2018.
- 3 0 : Association between Alcohol Consumption and health check-up data: a cross-sectional study from The Japan Multi-Institutional Collaborative Cohort (J-MICC) Study.: Shimoshikiryo I, Ibusuki R, Nishimoto D, Naito M, Wakai K, Takezaki T, J-MICC Study Group.: The 77th Annual Meeting of Annual Meeting of Japanese Society of Public Health (Koriyama), 2018.
- 3 1 : Quality of life assessment in oral health research.: Naito M.: The 61st Spring Meeting of the Japanese Society of Periodontology (Symposium) (Tokyo), 2018.

#### F) Lectures

- 1 : Higashi M.: Open lecture” Introduction to medical care” : 2018 summer open school in Kobe Tokiwa girls' high school (Hyogo), 2018.
- 2 : Higashi M.: Higashi: Special lecture ” Collecting and recording of oral information: Method of collecting, oral photographs, and work journals ”: Career Development Program of Recurrent Education for dental hygienists in Kobe Tokiwa University (Hyogo), 2018.
- 3 : Higashi M.: Special lecture ” Dental hygienists protect the lives and support healthy longevity ! ”: Cooperation of high schools and universities in Kobe Suzurandai high school (Hyogo), 2018.
- 4 : Nishimura R.: Oral care for cerebral infarction patients, Antismoking education: Refresher course for dental hygienists (Hiroshima) ,2018.
- 5 : Nishimura R.: Aspiration prevention and oral care: Ujina Area Comprehensive Support Center (Hiroshima) ,2018.
- 6 : Nishimura R.: Lecture for the class for diabetics : Hiroshima Teishin Hospital(Hiroshima) ,2018.
- 7 : Nishimura R.: ”Project for Developing a Program for Cultivating Global Dental Care Professionals: Refresher course for dental hygienists (Hiroshima) ,2018.
- 8 : Maehara T.: Oral Health Promotion for citizens of Hiroshima city(Hiroshima), 2018.

#### G) Social Contributions

- 1 : Higashi M.: Experience-based class for Kobe Tokiwa girls' high school students: Department of Oral Health, Kobe Tokiwa Junior College:Kobe Tokiwa University (Hyogo) ,2018.

- 2 : Higashi M.: KOBE TOKIWA Kenko-Fureai Festa2018: Assessment of oral function at Kobe Tokiwa University (Hyogo) ,2018.
- 3 : Higashi M.: Experience-based training for the purpose of the improvement of the oral function ” Kuchi-Building Championship Training Program” : Design Creative Center (Hyogo) ,2018.
- 4 : Higashi M.: The 46th Inamino Festival : Assessment of oral function at Inamino Campus (Hyogo) ,2018.
- 5 : Maehara T.: Dental hygienist collaboration committee member of the Japanese Society for Disability and Oral Health, 2018.
- 6 : Maehara T.: The 32nd Annual Meeting of the Japanese Society for Disability and Oral Health, committee program management, 2018.
- 7 : Maehara T., Nishimura R.: Program for junior high-school student : Hiroshima University Faculty of Dentistry: Hiroshima University (Hiroshima),2018.
- 8 : Maehara T., Nishimura R.: Program for kids from elementary schools, Dental Kids : Hiroshima University Faculty of Dentistry : Hiroshima University (Hiroshima),2018.
- 9 : Maehara T., Nishimura R.: Assessment of oral function at special nursing home “Kosei-En”(Hiroshima), 2018.
- 1 0 : Nishimura R.: The oral care of persons requiring nursing care at Hiroshima University Hospital,2018.
- 1 1 : Nishimura R.: Program for high school students: Hiroshima University Faculty of Dentistry: Hiroshima University(Hiroshima), 2018.

#### (4) Status of Receiving Grants-in Aid for Scientific Research, etc.

- 1 : Research grant(Kobe Tokiwa Junior College research expenses): Higashi M.: Study on the factors affecting the retention rate of using Interdental brush : A study from the materials of the Interdental brush: ¥280,000
- 2 : Grant-in-Aid for Young Scientists: Nishimura R (Principal Investigator).: Is quantitative perceptual testing a screening test for dysphagia?. No. 18K17121. ¥1,100,000.
- 3 : Grant-in-Aid for Scientific Research (C): Naito M (Principal Investigator). No. 18K09908. ¥180,000.
- 4 : Grant-in-Aid for Scientific Research (C): Naito M (Co-Investigator). No. 17K09221. ¥50,000.
- 5 : Grant-in-Aid for Scientific Research (C): Naito M (Co-Investigator). No. 17K12001. ¥300,000.
- 6 : Grant-in-Aid for Scientific Research (C): Naito M (Co-Investigator). No. 16K01576. ¥200,000.
- 7 : Grant-in-Aid for Scientific Research (C): Naito M (Co-Investigator). No. 16K09032. ¥30,000.
- 8 : Grant-in-Aid for Scientific Research (B): Naito M (Co-Investigator). No. 15H04748. ¥400,000.
- 9 : Research grant 2018 for The Japan Foundation for Aging and Health: Naito M (Co-Investigator). ¥900,000.
- 1 0 : Research grant 2018 for National Cancer Center Japan: Naito M (Co-Investigator). ¥700,000.

(5) Academic Awards, etc.

None

(6) Patents

None

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## Department of Anatomy and Functional Restorations

### (1) Staff and Students

Professor	: Takahiro Satoda
Associate Professor	: Saiji Shimoe
Graduate Students	: Tzu-Yu Peng(Taiwan), Miyu Taniguchi, Haruki Syouga, Yuki Wakabayashi, Yousuke Imaizumi,
Undergraduate Student	: Mio Matsumura, Kouhei Matsusima, Rinka Takahasi, Kanako Fujita, Nana Sunahata, Yumi Yasuyoshi, Saki Okamoto, Ryouhei Yamamoto, Teruo Kobayashi, Yuka,Kawasaki, Kanade Morimoto, Ayaka Koizumi, Yuka Nishi
Research Student	: Shogo Iwaguro

### (2) Main Research Activities

- 1 : Development of Effective model for anatomy education
- 2 : Morphological Research on masticatory neuronal network
- 3 : Study on dental materials for esthetic
- 4 : Study on new clinical application using novel dental ceramic
- 5 : Study on objective evaluation using the three-dimensional image

### (3) Research Achievements

#### A) Original Papers (including Case Reports)

- 1 : Analyze tooth of morphology recognition in beginning and in intermediate posterior tooth carving using three-dimensional digital image : Haruki Shoga, Saiji Shimoe, Takuya Kihara, Mayaka Ide, Tzu-Yu Peng, Ayaka Kihara, Takahiro Satoda, Journal of Nippon Academy of Dental Technology, Vol.39, (1), pp.1-7, 2018.
- 2 : Effect of performing time on polishing to Y-TZP zirconia ceramic : Taniguchi Miyu, Saiji Shimoe, Yusuke Kobayashi, Tzu-Yu Peng, Hiroki Nishida, Takahiro Satoda, Journal of Nippon Academy of Dental Technology, Vol.39, (1), pp.8-13, 2018.
- 1 : Formation of chemical bonds on zirconia surfaces with acidic functional monomers : Shimoe S, Hirata I, Otaku M, Matsumura H, Kato K, Satoda T : J Oral Sci, 60(2), 187-193, 2018.

## B) Review

- 1 : A discussion on infection control measures for dental impression : Masakazu Oonishi, Saiji Shimoe: The Journal of the Japanese Society for Dental Materials and Device , 37(4), 211-214, 2018.

## C) Publications

- 1 : The newest series of textbooks for dental technologist-Oral and Maxillofacial Anatomy : 112-160, II Oral Anatomy, Takahiro Satoda, Ishiyaku Publishers, Inc, Tokyo, 2016~
- 2 : The newest series of textbooks for dental technologist-Dental Materials Science: Takayuki Yoneyama, Nikawa Hiroki, Saiji Shimoe, Hideo Matsumura, Hideyuki Imai et al, Ishiyaku Publishers, Inc (Tokyo), 201, 2016~.
- 3 : The newest series of textbooks for dental technologist-Dental Technology for Fixed Dental Prostheses and Restoration: Hideo Matsumura, Yasushi Kumono, Saiji Shimoe, Kazuhiko Suese et al, Ishiyaku Publishers, Inc (Tokyo), 181, 2017~.
- 4 : The newest series of textbooks for dental technologist-Practice of Dental Technology: Tateo Ozaki, Masahiro Kuwata, Saiji Shimoe, Hiroyuki Miura, Takeshi Murayama et al, Ishiyaku Publishers, Inc (Tokyo), 215, 2017~.

## D) Other Publications

## E) Presentation at Scientific Meeting

- 1 : Influence of Micro Retention with Diode Three-Dimensional Laser Beam : Yuki Wakabayashi, Saiji Shimoe, Shogo Iwaguro, Isao Hirata, Takeshi Murayama, Takahiro Satoda T: The 51<sup>th</sup> Annual Meeting of Hiroshima University Dental Society (Hiroshima), 2018.
- 2 : Effects of polishing duration on nano-zirconia ceramic : Takahashi R, Shimoe S, Taniguchi M, Satoda T : The 40<sup>th</sup> the meeting of the Nippon Academy of Dental Technology (Tokyo), 2018.
- 3 : A questionnaire survey on infection prevention measures for dental technicians in Hiroshima Prefecture : Saki Okamoto, Saiji Shimoe, Masakazu Onishi, Takahiro Satoda : The 40<sup>th</sup> the meeting of the Nippon Academy of Dental Technology (Tokyo), 2018.
- 4 : Effects of different surface treatments between PEEK and composite resin : Kouhei Matsushima, Saiji Shimoe, Mai Otaku, Takahiro Satoda : The 40<sup>th</sup> the meeting of the Nippon Academy of Dental Technology (Tokyo), 2018.
- 5 : The effect of atmospheric pressure, vacuum on the shear bond strength of indirect composite resin to zirconia : Yasuyoshi Y, Shimoe S, Hirata I, Satoda T : The 40<sup>th</sup> the meeting of the Nippon Academy of Dental Technology (Tokyo), 2018.
- 6 : Effects of polymerization under atmosphere, pressure and vacuum on the physical properties of indirect composite resin : Nana Sunahata, Saiji Shimoe, Isao Hirata, Takahiro Satoda : The 40<sup>th</sup> the meeting of the Nippon Academy of Dental Technology (Tokyo), 2018.
- 7 : Effect of combine use of micro slits and alumina-blasting on the bond strength between zirconia and

porcelain : Syogo Iwaguro, Saiji Shimoe, Takeshi Murayama, Yuki Wakabayashi, Takahiro Satoda :  
The 40<sup>th</sup> the meeting of the Nippon Academy of Dental Technology (Tokyo), 2018.

- 8 : Effects of ultraviolet irradiation on adhesion between zirconia having micro-slits and dental resin :  
Ryouhei Yamamoto, Saiji Shimoe, Yuki Wakabayashi, Syougo Iwaguro, Takahiro Satoda : The  
40<sup>th</sup> the meeting of the Nippon Academy of Dental Technology (Tokyo), 2018.
- 9 : The Educational model for premolar teeth carving : Teruo Kobayasi, Mio Matsumura, Kanako  
Fujita, Saiji Shimoe, Takahiro Satoda : The 57<sup>th</sup> Scientific Meeting of Hiroshima Prefecture Dental  
Association, The 102<sup>nd</sup> Hiroshima University Dental Society (Hiroshima), 2018. (canceled due to  
typhoon)
- 1 0 : The embryological model of Tribosphenic teeth : Mio Matsumura, Kanako Fujita, Teruo  
Kobayashi, Saiji Shimoe, Takahiro Satoda : The 57<sup>th</sup> Scientific Meeting of Hiroshima Prefecture  
Dental Association, The 102<sup>nd</sup> Hiroshima University Dental Society (Hiroshima), 2018. (canceled  
due to typhoon)
- 1 1 : The occlusal relation model of premolar and molar : Kanako Fujita, Mio Matsumura, Teruo  
Kobayashi, Saiji Shimoe, Takahiro Satoda : The 57<sup>th</sup> Scientific Meeting of Hiroshima Prefecture  
Dental Association, The 102<sup>nd</sup> Hiroshima University Dental Society (Hiroshima), 2018. (canceled  
due to typhoon)

#### (4) Status of Receiving Grants-in Aid for Scientific Research, etc.

- 1 : Grant-in-Aid for Scientific Research(C): (representative) Saiji Shimoe, (member) Takahiro Satoda,  
Isao Hirata: Development of the new micro-retention for expansion of clinical application of zirconia.  
(No.16K11593), ¥900,000

#### (5) Academic Awards, etc.

- 1 : Hiroto Takenaka : The 19<sup>th</sup> Student's Carving Contest, Gold Award, 2018.3.23
- 2 : Yuki Wakabayashi : The 19<sup>th</sup> Student's Carving Contest, Silver Award, 2018.3.23
- 3 : Risa Ito : The 19<sup>th</sup> Student's Carving Contest, Bronze Award, 2018.3.23
- 4 : Kana Kobayashi : The 19<sup>th</sup> Student's Carving Contest, Fighting-spirit Award, 2018.3.23
- 5 : Midori Kawamura, Saiji Shimoe, Mai Otaku, Shogo Iwaguro, Takahiro Satoda : The Nippon Academy  
of Dental Technology Young Researcher's Best Paper Award in 2017 「Effect of different surface  
treatment containing MDP monomer on bonding between zirconia and dental resin」, 2018. 9. 23
- 6 : Haruki Shoga, Saiji Shimoe, Takuya Kihara, Mayaka Ide, Tzu-Yu Peng, Ayaka Kihara,  
Takahiro Satoda : The Nippon Academy of Dental Technology Young Researcher's Best Paper Award  
in 2018 「Analyze tooth of morphology recognition in beginning and in intermediate posterior tooth  
carving using three-dimensional digital image」, 2018. 9. 23

#### (6) Patents

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## Department of Medical System Engineering

### (1) Staff and Students

Professor	: Takeshi Murayama
Lecturer	: Yuichi Mine
Graduate Student	: Memori Minoda, Shunsuke Suzuki, Hiroki Yanase
Graduation Research Students	: Kousei Tabira, Kentaro Nakamura, Riho Kawaguchi, Fuuka Saibara, Rikuto Yamada, Sazanami Sasaki, Saori Takeda, Aya Kawasaki, Mana Ishioka, Karin Okuda, Kohei Enomoto, Natsuki Fujiyoshi, Akane Hatsuzaki, Reina Yoshioka, Mari Fujii

### (2) Main Research Activities

- 1: Application of manufacturing system technologies (e. g., CAD/CAM, 3-d printing) to dentistry
- 2: Application of artificial intelligence to dentistry
- 3: 3-d modeling and computer simulation in dentistry
- 4: Simulation-based analysis of work processes in dental technology
- 5: Study on mechanisms of anti-resorptive agents-related osteonecrosis of the jaw (ARONJ)
- 6: Anti-resorptive agents for postmenopausal breast cancer
- 7: Translational research

### (3) Research Achievements

#### A) Original Papers (including Case Reports)

- 1: Roles of ephrinB2 and EphB4 in alveolar bone under initial compressive mechanical stress of dental implant replacement: Kitamura K, Mine Y, Koto W, Wachi T, Shinohara Y, Makihira S, Koyano K: Journal of Dentistry & Oral Disorders, 4 (1), id 108 1, 1-7, 2018.
- 2: An efficient scheduling method for job shop with the constraint of the number of operators: Eguchi T, Yamashita S and Murayama T: Proceedings of the ISFA 2018 International Symposium on Flexible Automation, ID 86, 1-4, 2018.
- 3: Assembly Sequence Planning by Probabilistic Tree Transformation: Murayama T, Mine Y, Fujinaka T, Eguchi T: EMITTER International Journal of Engineering Technology, 6 (2), 354-368, 2018.

#### B) Review

## C) Publications

## D) Other Publications

## E) Presentation at Scientific Meeting

- 1: Translational Science and Medicine Training Program (TSMTP), an education program for translational research promoter; Initiative and achievement: Mine Y, Yumine A, Adachi H, Sato T, Kimura H, Nakanishi Y, Sugiyama D: The 9th Academic Meeting of Japan Society of Clinical Trials and Research (Sendai), 2018.
- 2: Summary of initiative for innovative researcher education program in Kyushu University: Mine Y, Yumine A, Swain A, Kulkeaw K, Ando Y, Kishimoto A, Sugiyama D, Nakanishi Y: The 9th Academic Meeting of Japan Society of Clinical Trials and Research (Sendai), 2018.
- 3: Automatic Bending of Wired Surgical Masks using Face Models: Tabira K: The 7th Science Intercollege (Tokyo), 2018.
- 4: Job shop scheduling with capacity adjustment with consideration to the constraint of the number of operators - Optimization with workload balancing on shift - : Ohama Y, Eguchi T, Murayama T: 2018Annual Conference of Manufacturing Systems Division, The Japan Society of Mechanical Engineers (Tokyo), 2018.
- 5: Oral Engineering and Digital Dentistry: Kihara T, Ogawa T, Murayama T, Nikawa H: The 7th Hiroshima Conference on Education and Science in Dentistry (Hiroshima), 2018.
- 6: AI-based Determination of Blending Ratio of Colors for Epitheses: Suzuki S, Murayama T, Mine Y, Eguchi T: The 9th Scientific Meeting of Japan Academy of Digital Dentistry (Morioka), 2018.
- 7: Current Status of Translational Research for Development of Pharmaceutical and Regenerative Medical Products in Academia: Mine Y, Murayama T: The 51st General Meeting of Hiroshima University Dental Society (Hiroshima), 2018.
- 8: AI-based Determination of Blending Ratio of Colors for Epitheses: Suzuki S, Mine Y, Eguchi T, Murayama T: The 51st General Meeting of Hiroshima University Dental Society (Hiroshima), 2018.
- 9: Influence of Micro Retention with Diode Three-Dimensional Laser Beam Machine on the Bond Strength of Acrylic Resin cured to Zirconia: Wakabayashi Y, Shimoe S, Iwaguro S, Hirata I, Murayama T, Satoda T: The 51st General Meeting of Hiroshima University Dental Society (Hiroshima), 2018.
- 10: Impact of brushing with various dentifrice on titanium surface: Shuto T, Makihira S, Mine Y, Wachi T, Nikawa H, Kakimoto K: The 127th Annual Meeting of the Japan Prosthodontic Society (Okayama), 2018.
- 11: An efficient scheduling method for job shop with the constraint of the number of operators: Eguchi T, Yamashita S and Murayama T: ISFA 2018 (Kanazawa), 2018.
- 12: Translational Science and Medicine Training Program (TSMTP), an education program for translational research promoter; Initiative and achievement: Nii T, Uemura M, Mine Y, Asano S, Ichiki T, Kawahara N, Nakanishi Y, Sugiyama D: ARO Council the 6<sup>th</sup> Annual Meeting (Fukuoka), 2018.
- 13: Summary of activities of Kyusyu University Medical Innovation Club (2016-2018): Fujishima Y, Yamamoto M, Koide K, Imamura N, Kaneko K, Imajima S, Hisagaki K, Hara K, Mine Y, Tsuruya N, Nakanishi Y, Sugiyama D: ARO Council the 6<sup>th</sup> Annual Meeting (Fukuoka), 2018.
- 14: Application of dispatching rules for dental technical work and evaluation by discrete-event simulation: The second report: Yanase H, Yamada R, Mine Y, Eguchi T, Murayama T: The 40th Meeting of the Nippon Academy of Dental Technology (Tokyo), 2018.
- 15: Machine Learning-based Determination of Blending Ratio of Colors for Epitheses: Saibara F, Mine Y, Eguchi T, Murayama T: The 40th Meeting of the Nippon Academy of Dental Technology (Tokyo), 2018.
- 16: Facial prostheses production method for parts where mirroring cannot be applied: Kawaguchi R, Mine Y, Eguchi T, Murayama T: The 40th Meeting of the Nippon Academy of Dental Technology (Tokyo), 2018.



- 17: Fitting of Surgical Masks by using Face Models: Tabira K, Mine Y, Eguchi T, Murayama T: 102nd Regular Meeting of Hiroshima University Dental Society (Hiroshima), 2018.
- 18: Relationship between bacterial infection of toothbrush and morphology of bristles -Recognition of toothbrush contamination in dental students-: Arimoto N, Sasahara H, Mine Y, Taji T, Nikawa H: 102nd Regular Meeting of Hiroshima University Dental Society (Hiroshima), 2018.
- 19: Application of Dispatching Rules to Dental Technical Work and its Evaluation by Discrete-event Simulation: Yanase H, Mine Y, Eguchi T, Murayama T: The 1st Meeting of the International Oral Engineering Consortium (Tokyo), 2018.
- 20: Introduction of Course for Oral Engineering, Hiroshima University: Nikawa H, Taji T, Shimoe S, Mine Y, Sasahara H, Tamamoto M, Satoda T, Murayama T: The 1st Meeting of the International Oral Engineering Consortium (Tokyo), 2018.
- 21: The role of CTGF in cancer cells: Hoang T. D. Nguyen, Mine Y, Sekido Y, Fujii M: The 77th Annual Meeting of the Japanese Cancer Association (Osaka), 2018.
- 22: Study on simultaneous optimization of release time and scheduling: Eguchi T, Omae K, Murayama T: 2018 Annual Congress of The Japan Society of Mechanical Engineers, No. 18- 1, S 1420005 (Osaka), 2018.
- 23: Job shop scheduling with capacity adjustment (Optimization with consideration to group work by multiple operators): Eguchi T, Yamashita T, Murayama T: 2018 Annual Congress of The Japan Society of Mechanical Engineers, No. 18- 1, S 1420006 (Osaka), 2018.
- 24: Evaluation of dentifrice-brushed titanium surface and its cytocompatibility: Shuto T, Mine Y, Wachi T, Nikawa H, Kakimoto K: The 72nd Academic Meeting of The Japanese Society for Dental Materials and Devices, 2018.

#### F) Special Lectures in Academic Meetings

- 1: Murayama T.: Fundamentals of dental CAD/CAM systems (2018 Workshop on Dental Technique Practices for Trainers, Japan Society for Education of Dental Technology) (Osaka), 2018.
- 2: Mine Y: The Japanese Tissue Culture Association Cell culture basic technology course I (Hiroshima), 2018.
- 3: Mine Y: The Japanese Tissue Culture Association Cell culture basic technology course I (Tsukuba), 2018.

#### (4) Status of Receiving Grants-in Aid for Scientific Research, etc.

- 1: KAKENHI Grant-in-Aid for Young Scientists (B): (Principal Investigator) Mine Y, Development of presymptomatic diagnosis for anti-resorptive agents-related osteonecrosis of the jaw (ARONJ), Grant Number 17K17181. ¥1, 000,000
- 2: KAKENHI Grant-in-Aid for Scientific Research (B): (Co-Investigator) Mine Y, Development of safety evaluation system for dental new materials using human pluripotent stem cell derived neural crest cells, Grant Number 16H05535. ¥1, 400,000
- 3: KAKENHI Grant-in-Aid for Scientific Research (C): (Co-Investigator) Mine Y, Investigation of inhibitors for bone resorption caused by excess occlusal load, Grant Number 15K11162. ¥50,000
- 4: AMED Practical Research Project for Rare / Intractable Diseases: (Co-Investigator) Mine Y,

Development of an anti-calcification agent, Grant Number 17ek0109242h0001

(5) Academic Awards, etc.

(6) Patents

1: Nikawa H, Mine Y, et al.: Implant and method for manufacturing the same (Patent No. 6371611)

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## Department of Oral Biology & Engineering

### (1) Staff and Students

Professor : Hiroki Nikawa

Associate Professor : Tsuyoshi Taji

Lecturer : Hisako Sasahara

Assistant Professor : Sumiyo Mimura(-2018.3)

(Special Appointment)

Education and Research Support Staff : Kaori Taguchi, Marika Kanda ,

Research Student : Kazuko Kawahara

Graduate Student : Yukihiro Takayama, Satoshi Miyauchi, Sakura Omori, Marika Kanda, Riona Doi,  
Nishiki Arimoto, Tomoya Suehiro, Kazuki Sanetoshi, Yurina Akita, Kimika Endo,  
Mina Ishida, Mako Shinoda,

Undergraduate Student : Rei Ito, Honami Oki, Akari Kumagai, Ouchi Noriko, Sumire Miyawaki, Atsushi  
Takata

### (2) Main Research Activities

- 1 : Study on candidal biofilms and denture plaque
- 2 : Study on dental caries and probiotics
- 3 : Design for cationic antimicrobial peptides
- 4 : Study on mechanisms of the alveolar bone resorption
- 5 : Development of bone-resorption inhibitors
- 6 : Study on dental implant materials
- 7 : Collaborative research about allergy
- 8 : Study on digital dentistry
- 9 : Collaborative research about aortic aneurysm
- 10 : Development of oral function devices
- 11 : Analysis of food texture

### (3) Research Achievements

#### A) Original Papers (including Case Reports)

- 1 : Comparison of the bone regeneration ability between stem cells from human exfoliated deciduous teeth, human dental pulp stem cells and human bone marrow mesenchymal stem cells: Nakajima K,

Kunimatsu R, Ando K, Ando T, Hayashi Y, Kihara T, Hiraki T, Tsuka Y, Abe T, Kaku M, Nikawa H, Takata T, Tanne K, Tanimoto K: *Biochem Biophys Res Commun*, 497(3),876-882,2018.

- 2: To add the statistical data: Nikawa H: *J Investig Clin Dent*, 9(2),e12301,2018.
- 3: Pathological factors involved in local failure in squamous cell carcinoma of the oral cavity: retrospective study and proposal of a new clinical classification : Toratani S, Ogawa I, Sasahara H, Yoshioka Y, Kanda T, Tani R, Okamoto T: *Int J Oral Maxillofac Surg*, 2018

#### B) Review

#### C) Publications

#### D) Other Publications

#### E) Presentation at Scientific Meeting

- 1: Gene Expression of *Candida albicans* during Biofilm Formation : Kazuki Sanetoshi, Tatsumi Hashida, Sumiyo Mimura, Tsuyoshi Taji, Hiroki Nikawa : The 51th Meeting of The Hiroshima University Dental Society (hiroshima),2018

#### F) Symposium and special lecture

- 1: Introduction of Course for Oral Engineering in Hiroshima University: Hiroki NIKAWA: Memorandum of consortium for universities having 4-year education system for oral health engineering (Tokyo) 2018
- 2: Application of Probiotics strain *Lactobacillus rhamunusosus* L8020 to oral health: Hiroki NIKAWA: HEALTHCARE & NUTRACEUTICALS SEMINAR 2018 (Singapore) 2018

#### (4) Status of Receiving Grants-in Aid for Scientific Research, etc.

- 1 : Grants-in-Aid for Scientific Research (Scientific Research (B)) : Hiroki Nikawa (Co-investigators), Research Project Number: 16H0553501. ¥1,000,000
- 2 : Grants-in-Aid for Scientific Research (Scientific Research (C)) : Hiroki Nikawa (Co-investigators), Research Project Number: 17K009440B. ¥30,000
- 3 : Grants-in-Aid for Scientific Research (Scientific Research (C)) : Tsuyoshi Taji (Head), Hiroki Nikawa (Co-investigators), Research Project Number: 17K11752. ¥600,000
- 4 : Donation from JEX CO.,Ltd to Hiroki Nikawa. ¥2000,000
- 5 : Collaborative Research budget from Chugoku Regional Innovation Research Center to Hiroki

Nikawa. ¥1,000,000

- 6 : Collaborative Research budget from Tokyo Electronics Co.,Ltd to Hiroki Nikawa. ¥1,500,000
- 7 : Collaborative Research budget from Bizen Chemical Co.,Ltd to Hiroki Nikawa. ¥300,000
- 8 : Collaborative Research budget from Nature Holdings Co to Hiroki Nikawa. ¥100,000
- 9 : Collaborative Research budget from Earth Pet Co.,Ltd to Hiroki Nikawa. ¥1,000,000
- 10 : Donation from Shikoku nyugyou corporation to Hiroki Nikawa. ¥300,000
- 11 : Donation from ROHTO Pharmaceutical Co., Ltd. to Hiroki Nikawa. ¥300,000

(5) Academic Awards, etc.

(6) Patents

- 1 : Hiroki Nikawa : (EUROPEAN Patent) BACTERIOCIN DERIVED FROM LACTOBACILLUS RHAMNOSUS(NO. 2682463) (Hiroshima University)
- 2 : Hiroki Nikawa : (US Patent) Prophylactic, ameliorating or therapeutic agent for oral diseases(NO. 10143712) (Hiroshima University)

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## Central Research Laboratory

### (1) Staff and Students

Director : Chisa Syukunami (by-work)

Assistant Professor : Ikue Hayashi

### (2) Main Research Activities

- 1 : Proteomic analysis using mass spectrometry
- 2 : Structural analysis of biologically active substances

### (3) Research Achievements

#### A) Original Papers (including Case Reports)

- 1 : A novel structure of exopolysaccharide produced by a plant-derived lactic acid bacterium  
*Lactobacillus paracasei* IJH-SONE68 : Noda M, Sugimoto S., Hayashi I, Danshiitsoodol N., Fukamachi M., Sugiyama M. : The journal of Biochemistry, 164(2) : 87-92 (2018).
- 2 : Influenza Vaccine Response among Hiroshima Atomic-bomb Survivors : Hayashi T., Lynch HE, Geyer S., French B., Yoshida K., Furudo K., Sasaki K., Morishita Y., Nagamura H., Maki M, Hu Y., Hayashi I., Kyoizumi S., Kusunoki Y., Ohishi W., Fujiwara S., Shterev I., Nikolich-Zugich J., Murasko D., Sempowski G.D., Nakachi K : J Hiroshima Med Assoc. 71(4):278-81 (2018)
- 3 : Impact of early life exposure to ionizing radiation on influenza vaccine response in an elderly Japanese cohort : Hayashi T., Lynch H.E., Geyer S., Yoshida k., Furudo K., Sasaki K, Morishita Y., Nagamura H, Maki M, Hu Y, Hayashi I, Kyoizumi S, Kusunoki Y, Ohishi W, Fujiwara S, Misumi M, Shterev I, Nikolich-Zugich J, Murasko D, Hale P.D, Sempowski G.D, J, Nakachi K: Vaccine. 36(45):6650-6659 (2018)

#### B) Review

#### C) Publications

#### D) Other Publications

E) Presentation at Scientific Meeting

- 1: Removal of mutans streptococci from saliva by flow cytometry and cell sorting -A first step on exploring a new method to establish non-cariogenic oral flora- : Ohara M., Hayashi I., Kawaguchi H., Maurelli T. A. : EPI Research Meeting (Florida) 2018.

(4) Status of Receiving Grants-in Aid for Scientific Research, etc.

- 1: Research project, Grant-in-Aid for Scientific Research (C): Hayashi I: Functional analysis of novel acetyltransferase derived from cariogenic bacteria and application to the caries prevention: (No. 15 K 110110A) 350,000JPY
- 2: Smoking Research Foundation: Hayashi I : Molecular epidemiological study of cigarette smoking effects on metabolome and inflammation-related biomarkers: 2,000,000JPY.

(5) Academic Awards, etc.

(6) Patents

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## Graduate School of Biomedical and Health Sciences

### (1) Staff and Students

Assistant Professor: KATO, Fuminori

### (2) Main Research Activities

- 1 : Transcriptional regulation of pathogenic genes in *Staphylococcus aureus*
- 2 : Toxin-antitoxin system in bacteria
- 3 : Development of protein expression and fluorescent protein in bacteria

### (3) Research Achievements

#### A) Original Papers (including Case Reports)

#### B) Review

#### C) Publications

#### D) Other Publications

#### E) Presentations at Scientific Meetings

- 1 : A search for novel toxin-antitoxin system in *Staphylococcus aureus*: The 12nd Annual Meeting of Japanese Society of Genome Microbiology, (Kyoto), 2018
- 2 : A search for novel toxin-antitoxin systems in *Staphylococcus aureus*: The 91st Annual Meeting of Japanese Society for Bacteriology (Fukuoka), 2018
- 3 : A novel *Staphylococcus aureus* toxin-antitoxin targeting DNA gyrase: Fuminori Kato: The 41st Annual Meeting of the Molecular Biology Society of Japan (Kanagawa), 2018
- 4 : Functional analysis of novel toxin-antitoxin system in *Staphylococcus aureus*: Fuminori Kato, Yoshihiro Yamaguchi, Masayori Inouye: The 71st Annual Meeting of Japanese Society for Bacteriology,



Chugoku-Shikoku Branch (Ehime), 2018

(4) Status of Receiving Grants-in Aid for Scientific Research, etc.

1 : JSPS Grant-in-Aid For Scientific Research(C) (Continuance) :*Staphylococcus aureus* toxin-antitoxin system controlling DNA topology: Fuminori Kato, Grant Number JP16K08776, 1,430,000 yen

(5) Academic Awards, etc.

(6) Patents

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## Center for Cause of Death Investigation Research & Education

### (1) Staff and Students

Associate Professor/Lecturer: Hiroko Oka (Specially appointed)

### (2) Main Research Activities

- 1 : Cuses of death and oral findings
- 2 : Age prediction using oral specimen and findings
- 3 : Personal identification system
- 4 : Education method and assessment on forensic odontology

### (3) Research Achievements

#### A) Original Papers (including Case Reports)

- 1 : Hiroko Oka et al. Perceptions of dental students in Japanese national universities about studying abroad. *European Journal of Dental Education*, 22:e1-e6, 2018. (Accept: 2016)
- 2 : Hiroko Oka et al. Study of factors related to the attitudes toward studying abroad among preclinical/clinical undergraduate dental students at three dental schools in Japan. *Clinical and Experimental Dental Research*, 4:119-124, 2018.
- 3 : Hiroko Oka et al. Japanese dental students' perceptions of videoconferencing lectures in the global classroom, *MedEdPublish*, 2018.
- 4 : Hiroko Oka et al. An Assessment of Dual Linguistic Education system at School of Dentistry, Hiroshima University -The Shifts of Students' Understanding on Class Contents and Recognition on the Meaning of the System-, *Journal of Japanese Dental Education Association*, 34(2):49-54, 2018.

#### B) Review

#### C) Publications

#### D) Other Publications

#### E) Presentations at Scientific Meetings

- 1 : A comparison of the dental DVI system among twelve countries and Japan : Hiroko Oka et al.: The 7<sup>th</sup> Hiroshima Conference (Hiroshima), 2018.
- 2 : An approach and assessment of the DVI tabletop exercise for undergraduate dental students : Hiroko Oka et al. : The 37th Annual Academic Meeting of Japanese Dental Education Association (Koriyama), 2018.
- 3 : What is the impression of dental students on the international dentists?- Evaluation by the World Cafe in the three universities program- : The 37th Annual Academic Meeting of Japanese Dental Education Association (Koriyama), 2018.
- 4 : A tabletop exercise for interprofessional work on DVI (Disaster Victim Identification) in Japan : Hiroko Oka: The 50<sup>th</sup> Annual Meeting of Japan Society for Medical Education (Tokyo), 2018.
- 5 : Study on Development of Asian age prediction method based on DNA methylation DNA : Hiroko Oka: The 12<sup>th</sup> Annual Meeting of Japanese Society of Forensic Dental Science (Chiba), 2018.

#### F) Special lectures in academic meetings

- 1 : The dental identification work and the collaboration with Hiroshima University  
Hiroko Oka: APAN45 Program of Teledentistry (Forensic Dentistry), (Singapore via teleconference system of Kyushu University), 2018.
- 2 : A Tabletop training using ICPO DVI post mortem record format  
Hisako Saitoh, Yumiko Ohbayashi, Seiko Katsumura, Akiko Kumagai, Hiroko Oka: The 2<sup>nd</sup> Seminar of the Cause of Death Investigation Research & Education, Hiroshima, 2018.
- 3 : "Current Status of Personal Identification using dental findings – 7. Hiroshima University  
Hiroko Oka: The Second Meeting of Death Investigation Personal Identification System Society, Tokyo, 2018.
- 4 : Illness starts in the mouth -Relationship between Diabetes and Periodontitis  
Hiroko Oka: The Diabetes Seminar of Iwakuni Medical Association, Iwakuni, 2018.

#### (4) Status of Receiving Grants-in Aid for Scientific Research, etc.

- 1 : Grants-in-Aid for Scientific Research (Scientific Research(C)) : Hiroko Oka, Development of Asian age prediction method based on DNA methylation DNA. No.18K09910
- 2 : The Murata Science Foundation : Hiroko Oka, 岡 広子, Construction of Japanese DVI system in the international community - Comparison of current status and verification by tabletop training -

#### (5) Academic Awards, etc.

#### (6) Patents

## Division of General Dentistry

### Department of General Dentistry

#### (1) Staff and Students

Professor :Hiroyuki Kawaguchi

Assistant Professor : Hiromi Nishi, Taiji Obayashi, Masaru Ohara

Graduate Student : Nami Kikushige

#### (2) Main Research Activities

1. Research in patient-centered dentistry based on narrative approach
2. Research in general dentistry
3. Examination of postgraduate dental training program
4. Research in health communication strategy
5. Research in clinical education
6. Research in assessment of clinical skills
7. Research in development and standardization of simulated patients
8. Research in taste disorder of patients receiving chemotherapy

#### (3) Research Achievements

##### A) Original Papers (including Case Reports)

1. *Candida albicans*  $\beta$ -glucan-containing particles increase HO-1 expression in oral keratinocytes via ROS/p38MAPK/Nrf2 pathway. : Ishida Y, Ohta K, Naruse T, Kato H, Fukui A, Shigeishi H, Nishi H, Tobiume K, Takechi M. : *Infection and Immunity*, 86, 4, 2018
2. Dental trainees reflect more critically on negative experiences: portfolio analysis using a pragmatic approach and a rubric in Japan : Obayashi T, Oto T, Nagatani Y, Taguchi N, Kawaguchi H, Ogawa T. : *BMC Med Educ.*, 18(1):292. 2018
3. CdtC-Induced processing of membrane-bound CdtA is a crucial step in *Aggregatibacter actinomycetemcomitans* Cytotoxic distending toxin holotoxin formation. Tsuruda K, Matangkasombut O, Ohara M, Sugai M: *Infection and Immunity*, 86 (3), e00731-17, 2018

##### B) Review

1. Novel evaluations of periodontal disease severity – communication tool of medical and dental

collaboration. : Kawaguchi H, Nishi H, Obayashi T, Ohara M, Fujita T, Kurihara H: Hiroshima Dental General Incorporated Association Journal Otagawa 25:2-4,2018.

### C) Publications

1 : Problem Solving through oral care ~Oral care basics~ : Hiromi Nishi : Ishiyaku Publishers,Inc.(Tokyo), Dental Hygiene 38(8) p.866-870, 2018.

2 : Problem Solving through oral care ~Oral assessment basics~ : Hiromi Nishi : Ishiyaku Publishers,Inc.(Tokyo), Dental Hygiene 38(9) p.996-1000, 2018.

3 : Problem Solving through oral care ~poor oral hygiene and xerostomia~ : Hiromi Nishi : Ishiyaku Publishers,Inc.(Tokyo), Dental Hygiene 38(10) p.1112-1116, 2018.

4 : Problem Solving through oral care ~Stomatitis and bleeding~ : Hiromi Nishi : Ishiyaku Publishers,Inc.(Tokyo), Dental Hygiene 38(11) p.1230-1234, 2018.

5 : Problem Solving through oral care ~Dysphagia and involuntary movement, trismus~ : Hiromi Nishi : Ishiyaku Publishers,Inc.(Tokyo), Dental Hygiene 38(12) p.1350-1353, 2018.

6 : Infection prophylaxis measures, Sterilization, disinfection, irrigation handbook. Author ICHG group. 2018.

### D) Other Publications

### E) Presentations at Scientific Meetings

1. Serum IgG titer of periodontal disease pathogen predicts 3-month outcome in patients with cerebral infarction : ○Aoki S, Hosomi N, Nishi H, Nakamori M, Nezu T, Shitamura R, Araki M, Kinoshita N, Kawaguchi H, Maruyama H: The 43rd Annual Meeting Of Japan Stroke Society (Fukuoka), 2018/03/15.
2. The periodontal disease-causing bacteria serum IgG antibody titers predicts an outcome for three months of patients with cerebral hemorrhage. : ○Nakamori M, Hosomi N, Nishi H, Aoki S, Imamura E, Ishikawa K, Matsushima H, Maetani Y, Wakabayashi S, Kawaguchi H, Maruyama H. : The 43rd Annual Meeting of Japan Stroke Society (Fukuoka), 2018/03/15.
3. Serum IgG titer of periodontal disease pathogen predicts 3-month outcome in patients with cerebral hemorrhage. : ○Masahiro Nakamori, Naohisa Hosomi, Hiromi Nishi, Shiro Aoki, Tomohisa Nezu, Eiji Imamura, Kenichi Ishikawa, Shinichi Wakabayashi, Hiroyuki Kawaguchi, Hirofumi Maruyama. : International Stroke Conference. (Los Angeles, Calif.) Jan 24-26, 2018.

4. Association between oral care standardization and intraoral bacterial count of the nurse in the critical region. ○Morishita H, Okamoto M, Yano K, Sarada K, Kirishima A, Miura M, Kawabori M, Nishi H, Kurihara H, Iboshi R. : The 45<sup>th</sup> Annual Meeting of the Japanese Society of Intensive Care Medicine (Makuhari) ,2018/02/21.
5. An index and the periodontal pathogens which are related to an outcome for three months of patients with stroke patient. : ○Nishi H, Ohta K, Shigeishi H, Shintani T, Obayashi T, Kurihara H, Kawaguchi H.: The 15<sup>th</sup> Annual Meeting of the Japanese Society of Oral Care (Fukuoka) , 2018/04/28.
6. Clinical training workshops for self-regulated learning : Obayashi T, Nishi H, Ohara M, Tajiri T, Kawaguchi H.: 37<sup>th</sup> Meeting of Japanese Dental Education Association, (Fukushima) 2018/07/27.
7. Febrile neutropenia in the breast cancer postoperative TC therapy and intraoral environment : ○Miyadi Y, Sasada S, Nishi H, Suzuki E, Sueoka S, Gouda N, Kajitani K, Emi J, Haruta R, Kadoya M, Kawaguchi H, Kataoka K, Okada M. : The 93<sup>rd</sup> Annual Meeting of the Chugoku Shikoku Associations of Surgery, The 23<sup>rd</sup> Annual Meeting of the Chugoku Shikoku Associations of Endoscopic Surgery Meeting. (Hiroshima), 2018/09/06.
8. The serum IgG antibody titers for Fusobacterium is associated with an outcome for three months of patients with stroke. : ○Nishi H, Ohta K, Shigeishi H, Shintani T, Obayashi T, Kurihara H, Kawaguchi H. : The 28<sup>th</sup> Annual Meeting of The Japanese Society of Oral Medicine, The 31<sup>st</sup> Annual Meeting of The Japanese Society of Oral Diagnosis / Oral Medicine.(Yokohama), 2018/09/15.
9. The case report : Oral care was difficult by stomatitis after renal transplant : ○Tokui A, Nishi H, Yano K, Nakaoka M, Kawaguchi H, Kurihara H. : The 13<sup>rd</sup> Annual Meeting of The Japanese Society for dental hygiene.(Fukuoka), 2018/09/15.
10. Approach of the dental hygienist in the palliative care event. : ○Ino N, Yano K, Kuramoto Y, Takano E, Nishi H, Nakaoka M, Kegoya S, Kawaguchi H, Kurihara H. : The 13<sup>rd</sup> Annual Meeting of the Japanese Society for dental Hygiene. (Fukuoka), 2018/09/15.
11. Oral bacteria is associated with complications in the chemotherapy. : ○Nishi H, Obayashi T, Shintani T, Kitagawa M, Ogawa I, Kurihara H, Kawaguchi H. : The 102<sup>nd</sup> Hiroshima Conference on Education and Science in Dentistry. (Hiroshima),18/09/30.
12. Association between oral bacteria and chemotherapy complications : ○Nishi H, Shintani T, Kitagawa M, Ohta K, Obayashi T, Ogawa I, Kurihara H, Kawaguchi H. The 27<sup>th</sup> Annual Meeting of the Japanese Society for Oral Infectious Disease. (Hiroshima), 2018/10/14.
13. Removal of mutans streptococci from saliva by flow cytometry and cell sorting -A first step on exploring a new method to establish non-cariogenic oral flora- Masaru Ohara, Ikue Hayashi, Hiroyuki Kawaguchi 2), Anthony T. Maurelli: Research Day, University of Florida EPI, (Gainesville, FL. USA) Feb 18, 2018.

## F) Implementation of Seminars / Workshops

### G) Lecturer • Symposiast

1. Lecturer : Nishi H. : Regional alliances. ~ Points requiring attention in systemic disease ~. Hiroshima Dental Association. (Hiroshima), 2018/01/28.
2. Lecturer : Nishi H. : Infection prevention with the oral bacteria control – oral care training-. Hiroshima dental medical safety support mechanism(Hiroshima), 2018/03/04
3. Lecturer : Nishi H. : Oral care of the pneumonia prevention: Hiroshima University Hospital nursing intervention education training center workshop(Hiroshima), 2018/9/27.
4. Lecturer : Nishi H. : Infection prevention in Chronic stage ward and elderly people institution. (Hiroshima), 2018/10/6.
5. Lecturer : Nishi H. : "The complications of cancer patients" The oral assessment that is effective for prevention and treatment.: The 10<sup>th</sup> Dentistry, oral surgery intensive course. – Chugoku Shikoku cancer pro training consortium- (Okayama), 2018/12/09.
6. Symposiast : Nishi H. : Let's reduce the risk of the stroke by oral health. ~Bacterial story which is scattered from mouth by a blood vessel.~: Hiroshima Stroke mass meeting. Hiroshima), 2018/12/22.
7. Lecturer : Kawaguchi H. : Medical safety in hospital dentistry. Workshop of Hiroshima Safety Dental Service Support Network (Hiroshima), 2018/3/4.
8. Lecturer : Kawaguchi H. : Skills for patient safety. Academic lecture of Hiroshima University School of Dentistry, Department of Conservative Dentistry 2 (Hiroshima), 2018/5/27.
9. Lecturer : Kawaguchi H. : Identification of bacteria in apical periodontitis and antimicrobial susceptibility. 44<sup>th</sup> Hiroshima research group on infectious diseases. (Hiroshima), 2018/11/24.
10. Lecturer : Kawaguchi H. : Skill up story of patient safety. Academic lecture of Hiroshima University Faculty of Dentistry, the Alumni Association, Ehime Branch. (Matsuyama), 2018/12/1.

### H) Attending of Lectures, Seminars, and Workshops

1. Nishi H. : Japanese Association for Dental Science, the Council of Japan Dental Science of Societies cosponsorship seminar "promotion of the dental practice study trusted by the nation" (Tokyo) ,2018/02/10.
2. Nishi H. : The 275th ICD class (Tokyo) ,2018/02/24.
3. Nishi H. : Esumi statistics seminar: Introduction to questionnaire questionnaire design

(Tokyo), 2018/05/29.

4. Nishi H. : OSCE outside evaluation Okayama University, 2018/07/20-21
5. Nishi H. : An information mechanism: Questionnaire statistical analysis (Tokyo) , 2018/8/21
6. Nishi H. : Wakara Company : multiple regression analysis(Tokyo) , 2018/12/01.
7. Obayashi T : The 9<sup>th</sup> follow-up session for medical communication facilitators (Fukushima) , 2018/7/26
8. Obayashi T : Research meeting to discuss dental education research (Fukushima) , 2018/7/26
9. Kawaguchi H. : Clinical dental seminar of AMR action plan (Tokyo), 2018/2/4
10. Kawaguchi H. : Training session for instructor of dental trainee in Kyusyu university hospital. (Fukuoka), 2018/2/10~11.
11. Kawaguchi H. : Workshop for instructor of medical and/or dental education. (Tokyo), 2018/7/25.
12. Kawaguchi H. : Training session for program manager. (Shonan), 2018/9/9~12.

#### D) Implementation of OSCE, CSA

1. 2<sup>nd</sup> Advanced OSCE for Postgraduate Trainees 2017-2018
2. 1<sup>st</sup> Advanced OSCE for Postgraduate Trainees 2018-2019

#### (4) Status of Receiving Grants-in Aid for Scientific Research, etc.

1. Nishi H. Grant-in-Aid Scientific Research, Scientific Research (C). 4,420,000Yen. 17K11839  
「Inflammatory mechanisms in oral mucous membrane by *H. pylori* cells and oral flora change in gastric cancer patients」
2. Nishi H. Grant-in-Aid Scientific Research, Scientific Research (Joint research with Sunstar Japan Inc). 1,754,000Yen. 3017KA7144  
「A study on the usefulness of oral management in systemic diseases involving periodontal pathogenic bacteria」
3. Kawaguchi H. Grant-in-Aid Scientific Research, Scientific Research (C). 4,030,000Yen. 18K09880  
「Utility of perioperative oral care by the probiotics 」

#### (5) Academic Awards, etc.

- 1 : Nishi H : Prize for the 15<sup>th</sup> Annual Meeting of the Japanese Society of Oral Care. : An index and the periodontal pathogens which are related to an outcome for three months of patients with stroke



patient., 2018/04/28

(6) Patents

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## **Division of Oral Health and Development Department of Oral Health,**

### (1) Staff and Students

Professor: Hideaki Amano, Masaru Sugiyama, Toshinobu Takemoto, Hiroki Nikawa, Mariko Naito

(\* ) Chief: Masaru Sugiyama (by-work)

Associate Professor: Tsuyoshi Taji, Mitsuhiro Tamamoto

Associate Professor/Lecturer: Hisako Sasahara, Hideo Shigeishi, Atsue Matsumoto

Assistant Professor: Yoshie Niitani, Rumi Nishimura, Eri Fukada, Tomoko Maehara

Education and Research Support Staff: Minako Ogawa, Naomi Nakashima, Sanae Miyoshi, Yuko Kurawaki, Ayaka Takahashi, Rina Tsurumi, Momoko Ishikawa, Mariko Nakamura, Mari Matsumura

Please refer to the research achievements of the following each department.

- Department of Public Oral Health: Masaru Sugiyama, Hideo Shigeishi, Eri Fukada, Tomoko Maehara, Minako Ogawa, Naomi Nakashima, Sanae Miyoshi, Yuko Kurawaki, Ayaka Takahashi, Momoko Ishikawa, Mariko Nakamura, Mari Matsumura
- Department of Oral Epidemiology: Mariko Naito, Hideaki Amano, Rumi Nishimura
- Department of Oral Health Management: Toshinobu Takemoto, Atsue Matsumoto, Yoshie Niitani, Rina Tsurumi
- Department of Medical System Engineering: Mitsuhiro Tamamoto
- Department of Oral Biology & Engineering: Hiroki Nikawa, Tsuyoshi Taji, Hisako Sasahara

### (2) Main Research Activities

### (3) Research Achievements

A) Original Papers (including Case Reports)

B) Review

C) Publications

D) Other Publications

E) Presentation at Scientific Meeting

F) Special lectures in academic meetings

(4) Status of Receiving Grants-in Aid for Scientific Research, etc.

(5) Academic Awards, etc.

(6) Patents

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## Division of Oral Health and Development Department of Special Care Dentistry

### (1) Staff and Students

Professor : Yoshiyuki Okada(March~), Katsuyuki Kozai(~February)  
 (\*) Chief: Yoshiyuki Okada(March~), Katsuyuki Kozai(~February) (by-work)  
 Associate Professor/Lecturer : Yuki Oda (lecturer in Hospital)  
 Clinical Staff : Chiaki Furutani  
 Research Student : Chiaki Furutani  
 Clinical Trainee : Chisato Morimoto, Fumiko Hayashi, Masaki Hayashiuchi, Hiroshi Ootsubo (~March)

### (2) Main Research Activities

- 1: Evaluation of the circulatory systems in patients with cardiovascular and congenital heart diseases.
- 2: Effects of vasoconstrictor in local anesthesia on baroreflex sensitivity.
- 3: Relationship between central arterial stiffness and periodontal diseases, and the influence on baroreflex sensitivity.
- 4: Influences of sleep bruxism in hypoxia on the central cardiovascular control system.
- 5: Underlying mechanisms of suppressed pressor responses to pain stimulation by N2O.
- 6: Alterations of pulse wave reflection by sedative agents.
- 7: A study on risk of dental caries and periodontal disease in patients with disabled
- 8: A study about the influence of L. Rhamnosus on caries and periodontal risk with disabled patients
- 9: A study on PBL task for dental problem of patients with mental retardation

### (3) Research Achievements

#### A) Original Papers (including Case Reports)

- 1: Time course of changes in maternal left ventricular function during subsequent pregnancy in women with a history of gestational hypertensive disorders : Hieda M, Yoo JK, Sun DD, Okada Y, Parker RS, Roberts-Reeves MA, Adams-Huet B, Nelson DB, Levine BD, Fu Q : *Am J Physiol Regul Integr Comp Physiol.* 315(4): R587-R594, 2018
- 2: Rapid saline infusion and/or drinking enhance skin sympathetic nerve activity components reduced by hypovolaemia and hyperosmolality in hyperthermia : Kamijo YI, Okazaki K, Ikegawa S, Okada Y, Nose

- H. : *J Physiol.* 596(22): 5443-5459, 2018
- 3: Left ventricular remodeling and arterial afterload in older women with uncontrolled and controlled hypertension : Yoo JK, Okada Y, Best SA, Parker RS, Hieda M, Levine BD, Fu Q : *Menopause.* 25(5): 554-562, 2018
  - 4: Effects of nitrous oxide sedation on sympathetic baroreflex sensitivity : Isono K, Mitsui T, Higuchi Y, Furutani C, Ogasawara T, Okada Y : *JJSDH* 39 (4), 395-401 2018
  - 5: Factor of increased propofol dosage during dental treatment under intravenous anesthesia : Iwasaki H, Iwasaki H, Izawa M, Isono K, Mochizuki M, Matsumura K, Okada Y and Ogasawara T : *Matsumoto Shigaku* 44 (1) 1-6 2018
  - 6: Readiness for Understanding Behavior Management in Intellectually Disabled Parsons: Supporting Decision-making: Suzuki T, Ogasawara T, Isono K, N Mochizuki Otsuki Y, Ogata K, and Okada Y : *JJSDH* 39 (1), 8-15 2018

#### B) Review

#### C) Publications

- 1: 障害者の歯科治療: Yoshiyuki Okada (coauthored): Nagasue-syoten (Kyoto), p85, p104-107, 2018.
- 2: よくわかる高齢者歯科学: Yoshiyuki Okada (coauthored): Nagasue-syoten (Kyoto), p18-20, 2018.
- 3: 有病者歯科学: Yoshiyuki Okada (coauthored): Nagasue-syoten (Kyoto), p76-79, 2018.
- 4: 障害者の歯科治療: Yuki Oda (coauthored): Nagasue-syoten (Kyoto), p12, p46-47, p94-95, p104-107, 2018.

#### D) Other Publications

#### E) Presentations at Scientific Meetings

1. Time course of changes in arterial and venous function during normal and hypertensive pregnancies in humans: Jeung-Ki Yoo, Mark B. Badrov, Owais Syed, Rosemary S. Parker, Abigail S. Stickford, Yoshiyuki Okada, Stuart A. Best, Benjamin D. Levine, Qi Fu: *FASEB JOURNAL* 32(1) 2018.
2. Role of Corin in Neuro-Circulatory and Renal-Adrenal Control during Pregnancy in Humans : Mark B. Badrov, Sunyoung Park, Jeung-Ki Yoo, Michinari Hieda, Yoshiyuki Okada, Sara S. Jarvis, Abigail S. Stickford, Stuart A. Best, Qi Fu : *FASEB JOURNAL* 32(1) 2018.
3. Research on the effect of bovine milk fermented with *Lactobacillus rhamnosus* L8020 on periodontal disease in individuals with an intellectual disability: Yuki Oda, Chiaki Furutani, Yuika Mizota, Aya Oda, Keita Yoshida: 24th Congress of International Association for Disability & Oral Health (Dubai),

2018.

4. A case report of Lesch-Nyhan syndrome in which self-mutilation behavior improved after continuous mouth-guard use for 12 years: Yuki Oda, Chiaki Furutani, Yuika Mizota, Aya Oda, Yasutaka Kaihara: 24th Congress of International Association for Disability & Oral Health (Dubai), 2018.
5. Effects of individualized continuous tooth brushing instruction for patient with severe intellectual disability: Yuika Mizota, Chiaki Furutani, Aya Oda, Yuki Oda Yuki Oda, Chiaki Furutani, Yuika Mizota, Aya Oda, Keita Yoshida: 24th Congress of International Association for Disability & Oral Health (Dubai), 2018.
6. Dental treatment performed for Cornelia de Lange syndrome patient under intravenous sedation and physical restraint: Aya Oda, Yuika Mizota, Chiaki Shimizu, Yuki Oda, Masahiro Irifune: 24th Congress of International Association for Disability & Oral Health (Dubai), 2018.
7. Down syndrome patient able to use denture without complications: a case report: Chiaki Shimizu, Yuika Mizota, Aya Oda, Akari Mukai, Yuki Oda: 24th Congress of International Association for Disability & Oral Health (Dubai), 2018.
8. Nasopalatine duct cyst in moderate intellectual disability patient with first and second branchial arch syndrome: a case report: Chiaki Shimizu, Yuika Mizota, Aya Oda, Yuki Oda: 24th Congress of International Association for Disability & Oral Health (Dubai), 2018.
9. A case report of dental treatment for an Autistic Spectrum Disorder patient with morbid obesity under conscious intravenous sedation.: Yuki Oda, Keita Yoshida, Aya Oda, Tomohiro Mukai, Taiga Yoshinaka, Tamayo Takahashi, Kana Oue, Akari Mukai, Mayuko Watari, Masahiro Irifune, Yoshiyuki Okada.: The 46th Annual Meeting of the Japanese Dental Society of Anesthesiology (Nara), 2018.
10. Learning effect of making daily goal and case list on practice education in students at special needs dentistry: Mayuko Watari, Yuika Mizota, Chiaki Furutani, Yuki Oda, Yoshiyuki Okada.: The 13 Annual Meeting of Japan Dental Hygienist's Association (Fukuoka), 2018.
11. Research of the effect of bovine milk fermented with *Lactobacillus rhamnosus* L8020 on periodontal disease in intellectually disabled patients: Yuki Oda, Chiaki Shimizu, Yuika Mizota, Chisato Morimoto, Atsuko Wakita, Mayuko Watari, Miyuki Nakaoka, Tomoko Tokikazu, Masaki Hayashiuchi, Taku Kanda, Fumiko Hayashi, Yasutaka Kaihara, Yoshiyuki Okada: The 35th Japanese Society for Disability and Oral Health (Nakano), 2018.
12. Clinico-statistic study on feeding condition in patients with mental retardation after dental treatment under general anesthesia: Tamayo Takahashi, Keita Yoshida, Tomohiro Mukai, Aya Oda, Taiga Yoshinaka, Kana Oue, Akari Mukai, Mitsuhiro Yoshida, Chiaki Shimizu, Yuika Mizota, Mayuko Watari, Tomoko Tokikazu, Yuki Oda, Yoshiyuki Okada, Masahiro Irifune: The 35th Japanese Society for Disability and Oral Health (Nakano), 2018.
13. A case report of dental treatment experience for Joubert syndrome patient under physical behavior management avoiding general anesthesia: Yuki Oda, Chiaki Shimizu, Keita Yoshida, Aya Oda,

- Tomohiro Mukai, Akari Mukai, Mizuzki Oishi, Sayo Okada, Maki Yamamoto, Yoko Fujino, Miwa Miyauchi, Hiroki Shinntani, Atsushi Mito, Masahiro Irifune, Yoshiyuki Okada: The 35th Japanese Society for Disability and Oral Health (Nakano), 2018.
14. Oral hygiene in a patient with severe intellectual disabilities was improved by continuous modification of tooth brushing instruction: a case report: Yuika Mizota, Chiaki Shimizu, Atsuko Wakita, Mayuko Watari, Tomoko Tokikazu, Chisato Morimoto, Fumiko Hayashi, Aya Oda, Tomohiro Mukai, Akari Mukai, Keita Yoshida, Miyuki Nakaoka, Yuki Oda, Masahiro Irifune, Yoshiyuki Okada: The 35th Japanese Society for Disability and Oral Health (Nakano), 2018.
  15. A case of tooth extraction under intravenous sedation by dexmedetomidine and propofol for a patient with dementia and many systemic diseases: Akari Mukai, Tomohiro Mukai, Aya Oda, Takahiro Kochi, Tamayo Takahashi, Kana Oue, Keita Yoshida, Chiaki Shimizu, Yuki Oda, Yoshiyuki Okada, Masahiro Irifune: The 35th Japanese Society for Disability and Oral Health (Nakano), 2018.
  16. Nasopalatine duct cyst in moderate intellectual disability patient with first and second branchial arch syndrome: a case report: Chiaki Shimizu, Yuki Oda, Chisato Morimoto, Yuika Mizota, Mayuko Watari, Tomoko Tokikazu, Atsuko Wakita, Fumiko Hayashi, Aya Oda, Tomohiro Mukai, Akari Mukai, Keita Yoshida, Yasutaka Kaihara, Masahiro Irifune, Yoshiyuki Okada: The 35th Japanese Society for Disability and Oral Health (Nakano), 2018.
  17. Long term oral hygiene management for the patient who received treatment of bone anchored device for wide edentulous area: a case report: Tomoko Tokikazu, Taku Kanda, Atsuko Wakita, Miyuki Nakaoka, Tamayo Takahashi, Keita Yoshida, Chiaki Shimizu, Yuki Oda, Yoshiyuki Okada: The 35th Japanese Society for Disability and Oral Health (Nakano), 2018.
  18. A case of dental treatment for a patient with autism spectrum disorder with a history of adverse reactions to local anesthetics: Tomohiro Mukai, Keita Yoshida, Chiaki Shimizu, Yuika Mizota, Mayuko Watari, Aya Oda, Tamayo Takahashi, Taiga Yoshinaka, Kana Oue, Akari Mukai, Tomoko Tokikazu, Yuki Oda, Yoshiyuki Okada, Masahiro Irifune: The 35th Japanese Society for Disability and Oral Health (Nakano), 2018.
  19. Current state of and the issues regarding oral care evaluated from questionnaire to the staffs in facilities for the disabled: Atsuko Wakita, Tomoko Tokikazu, Mayuko Watari, Yuika Mizota, Chiaki Shimizu, Yuki Oda, Miyuki Nakaoka, Yoshiyuki Okada: The 35th Japanese Society for Disability and Oral Health (Nakano), 2018.
  20. Motivational effects of visual oral health education with reagent in the detection of periodontal pathogenic bacteria in children with type 1 diabetes: Mayuko Watari, Miyuki Nakaoka, Meiko Tachikake, Yuko Iwamoto, Noriko Niizato, Nobuyuki Tatsukawa, Kaoru Sakurai, Masashi Nakano, Tomoko Ogasawara, Tatsuya Akitomo, Chieko Mitsuata, Yoshiyuki Okada, Katsuyuki Kozai: The 35th Japanese Society for Disability and Oral Health (Nakano), 2018.
  21. Pulse wave indices in central artery are involved in blood pressure reductions during intravenous

sedation with propofol: Yudai Higuchi, Kazushige Isono, Noriaki Asahina, Noriaki Ishihara Masayuki Izawa, Hiroomi Kojima, Takahiro Nishiyama, Yoshiyuki Okada, Tadashi Ogasawara : *Jpn. J. Gerodont.* 33 (2) 106-107 2018.

22. Relationship between oral bacterial flora and membranous substances on the palates of bedridden elderly people with tube feeding – 16S rRNA metagenomics analysis with Next Generation Sequencing : Toshie Akieda, Kohei Matsumura, Kota Miyahara, Tuneyuki Takai, Hisanori Okada, Shigeru Shimada, Yasuaki Kakinoki, Yoshiyuki Okada, Tadashi Ogasawara: *Jpn. J. Gerodont.* 33 (2) 127, 2018

#### F) Special lectures in academic meetings

1. Yoshiyuki Okada: Special Needs in Dentistry for Disabled Individuals: Maranatha Christ. Univ. Acceleration in Dental Technology, 2018.
2. Yoshiyuki Okada: 広島での地域連携をどうするか-障害者歯科-:広島大学同窓会 (Hiroshima), 2018.
3. Yoshiyuki Okada: 障害者・児の口腔状態および歯科治療の格差 : 広島県歯科衛生連絡協議会 8020 運動推進 子どもの歯と口の健康格差解消事業 (Hiroshima) , 2018.
4. Yoshiyuki Okada: 災害支援シンポジウム 障害者歯科学会 (Tokyo) , 2018
5. Yuki Oda: Basic knowledge and management for special needs dentistry: 広島県歯科保健医療サービス提供困難者相談医養成研修会 (Hiroshima) , 2018.

#### (4) Status of Receiving Grants-in Aid for Scientific Research, etc.

1. Grants-in-Aid for scientific research (C) (New): Yoshiyuki Okada, Underlying mechanisms and predictive factors for reduction in blood pressure during intravenous sedation with propofol in patients with arteriosclerosis. 18K09927. 4,420,000yen.
2. Grants-in-Aid for scientific research (C) (Continuance): Yoshiyuki Okada, Effects of the carotid-artery stiffness related with periodontitis on baroreflex control. 15K11460. 4,680,000yen.
3. Grants-in-Aid for scientific research (C) (New): Yoshiyuki Okada (Co-investigator), 22. Analysis of oral bacterial flora and membranous substances on the palates by using Next Generation Sequencing in bedridden elderly people with tube feeding. 18K09897. 4,290,000yen.
4. Grants-in-Aid for young scientists : Yuki Oda, Research of the effect of bovine milk fermented with *Lactobacillus rhamnosus* L8020 on periodontal disease in intellectually disabled patients. No. 18K17285. 1,690,000 yen.
5. General foundation Ryokufukai. The year of 2018 education and research prize for encouragement (Grant for young researcher grant): Chiaki Furutani. Effects of local anesthetic agents on sympathetic



baroreflex sensitivity. 300.000yen.

(5) Academic Awards, etc.

1 : Yuki Oda: Excellent Presentation Award, The 35th Japanese Society for Disability and Oral Health (Nakano), 2018.

2 : Chiaki Furutani: The year of 2018 education and research prize for encouragement, General foundation Ryokufukai (Hiroshima), 2018.

(6) Patents

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## Central Clinical Divisions Special Dental Clinic Section

### (1) Staff and Students

Chief Professor : Kotaro Tanimoto  
Assistant Professor : Yukimi Yasuhara  
Research Associate : Sachiko Yamada

### (2) Main Research Activities

- 1: Perceptual Evaluation of Cleft Palate Speech
- 2: Clinical Application of Electropalatography
- 3: Research for improvement in articulation problem
- 4: Research for relation between lingual pressure and the function of speech/swallowing

### (3) Research Achievements

#### A) Original Papers (including Case Reports)

#### B) Review

#### C) Publications

#### D) Other Publications

#### E) Presentation at Scientific Meeting

- 1: The availability of simultaneous examination of the swallowing videofluoroscopy and endoscopy.:  
a pilot study: Nagasaki T., Yoshida M., Yasuhara Y., Yoshikawa M., Sui Y., Kakimoto N.:  
The 59th annual meeting of Japanese Society of Oral and Maxillofacial Radiology (Yokosuka), 2018.
- 2: The factors involved for dependent feeding levels among elder inpatients and residents in a long-term  
care facility:Yamada S.,Kitagawa N.,Muramatsu M.,Handa Y.,Yamori M.:The 19th Japanese  
Association of Speech-Language-Hearing Therapists(Toyama), 2018

F) Special lectures in academic meetings

Lecture

- 1: Assessment and actuality of Dysphagia Rehabilitation: Yasuhara Y.: Hiroshima pref. community-based health care and nursing mutual security project: Workshop of the swallowing functional training (Hiroshima), Jan. 7. 2018.
- 2: Assessment and actuality of Dysphagia Rehabilitation: Yasuhara Y.: Hiroshima pref. community-based health care and nursing mutual security project: Workshop of the swallowing functional training (Fukuyama) ,Jan.21.2018.
- 3: Rehabilitation of Dysphagia: Yasuhara Y.: Hiroshima International University Civil seminar. (Higashi Hiroshima), Nov.10.2018.
- 4: Assessment and actuality of Dysphagia Rehabilitation: Yasuhara Y.: Hiroshima pref. community-based health care and nursing mutual security project: Workshop of the swallowing functional training (Fukuyama) , Nov.11.2018.
- 5: Assessment and actuality of Dysphagia Rehabilitation: Yasuhara Y.: Hiroshima pref. community-based health care and nursing mutual security project: Workshop of the swallowing functional training (Kure) , Dec. 2.2018.

(4) Status of Receiving Grants-in Aid for Scientific Research, etc.

(5) Academic Awards, etc.

(6) Patents

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## Central Clinical Divisions

### Center of Oral Clinical Examination

#### (1) Staffs and Students

Director: Hidemi Kurihara  
Associate Professor: Ikuko Ogawa (Clinic)  
Lecturer: Masae Kitagawa (Clinic)  
Research Associate: Tomoaki Shintani  
Technician: Rie Miyata, Marie Hayakawa

#### (2) Main Research Activities

- 1 : Diagnostic pathological study on head and neck lesions.
- 2 : Study on test and treatment of metal allergy and dry mouth.
- 3 : Molecular pathological study on development and progression of oral squamous cell carcinoma.
- 4 : Study on molecular target therapy to oral cancer targeted with HBp17/FGFBP.

#### (3) Research Achievements

##### A) Original Papers (including Case Reports)

- 1 : Involvement of *Porphyromonas gingivalis* in the progression of non-alcoholic fatty liver disease.: Nakahara T., Hyogo H., Ono A., Nagaoki Y., Kawaoka T., Miki D., Tsuge M., Hiraga N., Hayes CN., Hiramatsu A., Imamura M., Kawakami Y., Aikata H., Ochi H., Abe-Chayama H., Furusho H., Shintani T., Kurihara H., Miyauchi M., Takata T., Arihiro K., Chayama K.: Journal of Gastroenterology, 53 (2), 269-280, 2018.
- 2 : Baicalin Promotes Osteogenic Differentiation of Human Cementoblast Lineage Cells Via the Wnt/ $\beta$  Catenin Signaling Pathway.: Kimura A., Kunimatsu R., Yoshimi Y., Tsuka Y., Awada T., Horie K., Gunji H., Abe T., Nakajima K., Kitagawa M., Miyauchi M., Takata T., Tanimoto K.: Curr Pharm Des, 24(33), 3980-3987, 2018.
- 3 : Effects of interleukin-1 $\beta$  on human follicular dendritic cell-secreted protein gene expression in periodontal ligament cells.: Iwai Y., Noda K., Yamazaki M., Mezawa M., Takai H., Nakayama Y., Kitagawa M., Takata T., Ogata Y.: J Oral Sci, 60(4), 601-610, 2018.

- 4 : Pathogenesis of primordial odontogenic tumour based on tumourigenesis and odontogenesis.: Mikami T., Bologna-Molina R., Mosqueda-Taylor A., Ogawa I., Pereira-Prado V., Fujiwara N., Pires FR., Carlos R., Takata T., Takeda Y.: *Oral Dis*, 24(7), 1226-1234, 2018.
- 5 : Detection of MAPK/ERK pathway proteins and KRAS mutations in adenomatoid odontogenic tumors.: Bologna-Molina R., Ogawa I., Mosqueda-Taylor A., Takata T., Sánchez-Romero C., Villarroel-Dorrego M., Takeda Y., Mikami T.: *Oral Dis*, 25(2), 481-487, 2018.
- 6 : Reparative bone-like tissue formation in the tooth of a systemic sclerosis patient.: Matsuda S., Memida T., Mizuno N., Ogawa I., Ouhara K., Kajiya M., Fujita T., Sugiyama E., Kurihara H.: *Int Endod J*, 51(9), 1059-1066, 2018.
- 7 : Tissue inhibitor of metalloproteinase-1 promotes cell proliferation through YAP/TAZ activation in cancer.: Ando T., Charindra D., Shrestha M., Umehara H., Ogawa I., Miyauchi M., Takata T.: *Oncogene*, 37(2), 263-270, 2018.
- 8 : Central mucoepidermoid carcinoma arising from glandular odontogenic cyst confirmed by analysis of MAML2 rearrangement.: A case report.: Nagasaki A., Ogawa I., Sato Y., Takeuchi K., Kitagawa M., Ando T., Sakamoto S., Shrestha M., Uchisako K., Koizumi K., Toratani S., Konishi M., Takata T.: *Pathol Int*, 68(1):31-5, 2018.
- 9 : A case of pediatric odontogenic myxofibroma of the mandible.:Kanda T., Nobumoto T., Hamada A., Satou S., Obayashi F., Yashima Y., Sakamoto S., Ogawa I., Toratani S., Okamoto T.: *J. Hiroshima Univ Dent Soc*, 50(20), 77-83, 2018.
- 10 : A case of tongue cancer with late recurrence after the development of therapy-related myelodysplastic syndrome induced by interstitial brachytherapy.: Nakagawa T., Ohta K., Ninomiya Y., Uetsuki T., Ogawa I., Takechi M.: *Jpn J Oral Maxillofac Surg*, 64(2), 68-72, 2018.

## B) Review

- 1 : Evaluation of *Porphyromonas gingivalis* infection using serum antibody titer : Shintani T., Kitagawa M., Ogawa I., Kurihara H.: *Journal of Japanese Society for Evidence and the Dental Professional*. 10(1), 39-43, 2018.
- 2 : Tumor-like lesions of salivary glands:Head and Neck Tumors I (Nagatsuka H., Toyosawa S. ed.): Ogawa I. *Pathology and Clinical Medicine* 36(3), 229-234, 2018.
- 3 : Salivary gland tumors- Basis of pathological diagnosis and the Milan System for reporting salivary gland cytopathology-: Ogawa I.: *J Nara Soc Clin Cytol*.19(1), 41-43, 2018.

## C) Publications

- 1 : Odontogenic Pathology: Contemporary Oral Medicine Contemporary Oral Medicine: (Camile SF,

- Eds.) Takata T., Miyauchi M., Ogawa I., Mighell A.: Springer (Switzerland AG), p.1-80, 2018.
- 2 : Digestive system (2) Salivary gland:Color Atlas of Histopathology and Differential Diagnosis, 6th ed.:(Akagi T., Matsubara O., Manabe T. Supervision. Yoshino T., Oda Y., Sakamoto M., Morii E. Eds.) :Nagao T., Takata T., Ogawa I.:Ishiyaku Publishers Inc. (Tokyo), p.181-189, 2018.
  - 3 : Chapter19 Salivary gland tumor: New Oral Pathology, 2nd ed. (Shimono M., Takata T., Tanuma J., Toyosawa S. Eds.): Ogawa I., Takata T.: Ishiyaku Publishers Inc. (Tokyo), p.257-270, 2018.
  - 4 : Salivary gland tumor: Atlas of Oral Pathology, 3rd ed. (Takagi M. Supervision. Takata T., Toyosawa S. Eds.): Ogawa I., Kuyama K., Takata T.: Bunkodo (Tokyo), p.305-331, 2018

#### D) Other Publications

#### E) Presentations at Scientific Meetings

- 1 : The influence of anti-HIV drug on oral environment and taste function. : Shintani T., Yamasaki N., Iwata T., Saitou S., Okada M., Mastui K., Unei H., Fujita K., Hamamoto K., Kinoshita K., Ikeda Y., Fujii T., Shiba H. : The 32th Annual Meeting of Japanese Society for AIDS Research (Osaka), 2018.
- 2 : The oral environment and taste function in HIV-positive patients : Shintani T., Yamasaki N., Iwata T., Saitou S., Kitagawa M., Ogawa I., Okada M., Mastui K., Unei H., Fujita K., Hamamoto K., Kinoshita K., Ikeda Y., Fujii T., Kurihara H., Shiba H. : 29th Annual Meeting of Japanese Society of Oral Pathology and 11th Annual Meeting of Japanese Society for Evidence and the Dental Professional (Tokyo), 2018.
- 3 : Serum antibody titer of periodontal bacteria against *Porphyromonas gingivalis* infection focusing on genotype of fimbria.: Shintani T., Ouhara K., Kitagawa M., Ogawa I., Kurihara H : 29th Annual Meeting of Japanese Society of Oral Pathology and 11th Annual Meeting of Japanese Society for Evidence and the Dental Professional (Tokyo), 2018.
- 4 : Analysis of actual condition of *cnm*-positive *Streptococcus mutans* carriers: A preliminary study.: Kitagawa M., Ouhara K., Nagamine K., Shintani T., Ogawa I., Kurihara H.: 29th Annual Meeting of Japanese Society of Oral Pathology and 11th Annual Meeting of Japanese Society for Evidence and the Dental Professional (Tokyo), 2018.
- 5 : Odontogenic tumors revisited: Analysis over a period of 40 years in Hiroshima University based on WHO-2017 classification; probing into the “cyst versus tumor controversies” from WHO-2005 until -2017: Shrestha M., Ogawa I., Miyauchi M., Takata T.: 29th Annual Meeting of Japanese Society of Oral Pathology and 11th Annual Meeting of Japanese Society for Evidence and the Dental Professional (Tokyo), 2018..
- 6 : A questionnaire survey on the current state of genetic diagnosis in oral pathology of dental school.: Okada Y., Inoue T., Ogawa I., KitagawaM., Kumamoto H., Sakamoto K., Senba I., Takata T., Takeda

- Y., Mikami T.: 29th Annual Meeting of Japanese Society of Oral Pathology and 11th Annual Meeting of Japanese Society for Evidence and the Dental Professional (Tokyo), 2018.
- 7 : Dental hygienist's activities and the effects in dental clinical support for HIV-infected patients. : Okada M., Matsui K., Iwata T., Shintani T., Kinoshita K., Miyahara A., Ikeda Y., Saitou S., Maruyama E., Hamamoto K., Yamasaki N., Fujii T., Shiba H. : The 19th Japanese HIV dental medical workshop (Tokyo), 2018.
- 8 : Activity report on the support that dental hygienists provide in the dental clinical practice for people infected with HIV. : Okada M., Nakaoka M., Iwata T., Shintani T., Shiba H. : The 13 Annual Meeting of the Japan Dental Hygienists Association (Fukuoka), 2018.
- 9 : An index and the periodontal pathogens which are related to an outcome for three months of patients with stroke patient. : Nishi H., Ohta K., Shigeishi H., Shintani T., Obayashi T., Kurihara H., Kawaguchi H. : The 15th Annual Meeting of the Japanese Society of Oral Care (Fukuoka), 2018.
- 10 : The serum IgG antibody titers for Fusobacterium is associated with an outcome for three months of patients with stroke. : Nishi H., Ohta K., Shigeishi H., Shintani T., Obayashi T., Kurihara H., Kawaguchi H. : The 28th Annual Meeting of The Japanese Society of Oral Medicine, The 31st Annual Meeting of The Japanese Society of Oral Diagnosis / Oral Medicine (Fukuoka), 2018.
- 11 : Oral bacteria is associated with complications in the chemotherapy. : Nishi H., Obayashi T., Shintani T., Kitagawa M., Ogawa I., Kurihara H., Kawaguchi H. : The 102nd Hiroshima Conference on Education and Science in Dentistry (Hiroshima), 2018.
- 12 : Association between oral bacteria and chemotherapy complications. : Nishi H., Shintani T., Kitagawa M., Ohta K., Obayashi T., Ogawa I., Kurihara H., Kawaguchi H. : The 27th Annual Meeting of the Japanese Society for Oral Infectious Disease (Hiroshima), 2018.
- 13 : A case of adenomatoid odontogenic tumor: Sharyo M., Sato S., Usami Y., Hirose K., Ogawa I., Miyauchi M., Takata T., Oya K., Fukuda Y., Tayosawa S.: 107th Annual Meeting of the Japanese Society of Pathology (Sapporo), 2018.
- 14 : Maxillary tumor (Primordial odontogenic tumor): Ogawa I., Shrestha M., Yamazaki S., Nakamoto T., Takata T.: 125th Academic Meeting of Chugoku-Shikoku Branch of the Japanese Society of Pathology (Hiroshima), 2018.
- 15 : Tongue tumor (Ectomesenchymal chondromyxoid tumor): Sakamoto S., Ogawa I., Kiriya K., Nishisaka T., Takata T.: 69th Meeting of Hiroshima Pathological Conference (Hiroshima), 2018.
- 16 : Palatal tumor (Mucoepidermoid carcinoma): Furusho H., Ohta K., Nakamoto T., Ogawa I., Takata T.: 70th Meeting of Hiroshima Pathological Conference (Hiroshima), 2018.
- 17 : Mandibular tumor (Sclerosing odontogenic carcinoma): Sakamoto S., Ogawa I., Soda M., Sano T., Takayama Y., Yokoo S., Takata T.: 29th Annual Meeting of Japanese Society of Oral Pathology and 11th Annual Meeting of Japanese Society for Evidence and the Dental Professional (Tokyo), 2018.

F) Special lectures in academic meetings (Symposium)

- 1 : Lecture on Diagnosis sponsored by The Japanese Society of Pathology. “Pathology and Clinical Medicine of Head and Neck Tumors” Pathology of Odontogenic Tumors: Ogawa I., Takata T.:12th Summer Fest of Diagnostic Pathology. (Tokyo), 2018.
- 2 : Companion meeting “WHO Classification of salivary gland tumors, 4th edition (2017). To know the newly described entities” Polymorphous adenocarcinoma –Disease concept and differential diagnosis.: Ogawa I., Takata T. 107th Annual Meeting of the Japanese Society of Pathology (Sapporo), 2018.

F) Special lectures in academic meetings

(4) Status of Receiving Grants-in Aid for Scientific Research, etc.

- 1 : Grants-in-Aid for Scientific Research (C): Shintani T.: Developmental study on treatment for oral cancer treated with ED-71, vitamin D analog, which is a therapeutic agent for osteoporosis. 16K11723, 900,000 yen
- 2 : Grants-in-Aid for Scientific Research (C): Ogawa I.: Pathological and Molecular diagnosis of salivary gland and odontogenic tumors. 17K11614, 1,300, 000 yen.

(5) Academic Awards, etc.

(6) Patents

1. Kitagawa M., Nagamine K., Kurihara H.: Time shortening detection method of *Streptococcus mutans* (2018-293498) (Hiroshima University • Hiroshima International University)

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## Central Clinical Divisions Dental Technicians Section

### (1) Staff and Students

Director of Dental Technicians Section : Hiroki Nikawa (Prof.)  
Assistant Chief Dental Technician : Ryoji Kato  
Supervisor Dental Technician : Yoshihiro Otani  
Dental Technician : Eisaku Habu, Shogo Iwaguro, Yukihiro Takayama,  
Mai Otaku

### (2) Main Research Activities

- 1 : Management of the patients' information by the use of implanted devices in the denture.
- 2 : Radioprotective prostheses for irradiation therapies
- 3 : Clinical analysis of superstructure of implant.
- 4 : Esthetic dentistry
- 5 : Accuracy of castings
- 6 : Information processing in the dental laboratory
- 7 : Study on dental composite materials for esthetic

### (3) Research Achievements

#### A) Original Papers (including Case Reports)

- 4 : Formation of chemical bonds on zirconia surfaces with acidic functional monomers : Shimoe S, Hirata I, Otaku M, Matsumura H, Kato K, Satoda T : J Oral Sci, 60(2), 187-193, 2018.

#### B) Review

#### C) Publications

#### D) Other Publications

#### E) Presentation at Scientific Meeting

- 1: Influence of Micro Retention with Diode Three-Dimensional Laser Beam : Yuki Wakabayashi, Saiji Shimoe, Shogo Iwaguro, Isao Hirata, Takeshi Murayama, Takahiro Satoda T: The 51<sup>th</sup> Annual Meeting of Hiroshima University Dental Society (Hiroshima), 2018.
- 2: Effects of different surface treatments between PEEK and composite resin : Kouhei Matsushima, Saiji Shimoe, Mai Otaku, Takahiro Satoda : The 40<sup>th</sup> the meeting of the Nippon Academy of Dental Technology (Tokyo), 2018.
- 3: Effect of combine use of micro slits and alumina-blasting on the bond strength between zirconia and porcelain : Shogo Iwaguro, Saiji Shimoe, Takeshi Murayama, Yuki Wakabayashi, Takahiro Satoda :

- The 40<sup>th</sup> the meeting of the Nippon Academy of Dental Technology (Tokyo), 2018.
- 4: Effects of ultraviolet irradiation on adhesion between zirconia having micro-slits and dental resin : Ryouhei Yamamoto, Saiji Shimoe, Yuki Wakabayashi, Shogo Iwaguro, Takahiro Satoda : The 40<sup>th</sup> the meeting of the Nippon Academy of Dental Technology (Tokyo), 2018.
  - 5: Medical applications of 3D printing based on CT and MRI images in Hiroshima University Hospital : Shogo Iwaguro : 7th Hiroshima Conference on Education and Science in Dentistry (Hiroshima), 2018

(4) Status of Receiving Grants-in Aid for Scientific Research, etc.

(5) Academic Awards, etc.

(6) Patents

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## Central Clinical Divisions

### Dental Hygiene Section

#### (1) Staff and Students

Director of Dental Hygiene Section : Hidemi Kurihara

Chief Dental Hygienist : Miyuki Nakaoka

Dental Hygienists : Kanako Mtsui(In Childcare leave ), Atsuko Wakita, Yukiko Nagatani, Kanako Yano, Tomoko Tokikazu, Miho Okada, Kana Dainobu,, Yurie Nakano, Maiko Kawagoe, Chika Kozono, Yuri Kuramoto, Eri Takano(In Childcare leave from August), Yuki Emura, Yuka Wakabayashi, Fumi Tokui, Natsumi Ino, Miku Ishikawa, Yuika Mizota, Ayaka Kai(Till March), Mayuko Watari, Momoko Okizono, Ayaka Yoshimoto,Saori Ikeda(From April),Ikuho Yoshimi(From April)

Dental Assistants : Yuka Tamamoto, Keiko Kodani, Yuko Matsuda, Saori Nagamine

#### (2) Main Research Activities

#### (3) Research Achievements

##### A) Original Papers (including Case Reports)

- 1 : Dental trainees reflect more critically on negative experiences: portfolio analysis using a pragmatic approach and a rubric in Japan : Obayashi T., Oto T., Nagatani Y., Taguchi N., Kawaguchi H., Ogawa T. : BMC Medical Education ,18:292,2018.
- 2 : Professionalism education in dental education - strategy and perspective - "Perspective from dental hygienist's professionalism research":Konoo T., Hirata S., Sumi T., Nagatani Y. (Participation writing): The Journal of Japanese Dental Education Association, 34(3)87-91, 2018.
- 3 : Dental hygienist intervention is an effective treatment for the oral symptoms with somatic symptom disorder and delusional disorder: A case report:Yano K., Doi M., Irifune M., Kozai K.:Journal of Psychosomatic Oral Medicine,33,15-20,2018.

##### B) Review

##### C) Publications

##### D) Other Publications

- 1 : 20 questions to become professional dentist and dental staff and Ethical review case collection (2018 edition): Konoo T., Asao N., Ozaki T., Katagi N., Sumi T., Nagatani Y., Hirata S., Hoshino Y., Yamamoto R., Wada N. : Ethics / professionalism Education Committee of Japanese Dental Education Association. 2018.
- 2 : Periodontal disease is diabetes in your mouth: Ishikawa M.:Touen ,2018.

#### E) Presentation at Scientific Meeting

- 1 : In critical domain,relationship of standardizing nurses' oral care to bacterial count in oral cavity: Morishita T., Okamoto M., Yano K., Sarada K., Kirishima A., Miura M., Kawahori M., Nishi H., Kurihara H., Iiboshi R.:The 45<sup>th</sup> Annual Meeting of the Japanese society of Intensive Care Medicine (Chiba),2018.
- 2 : Good patient satisfaction was obtained as a result of using a tooth surface coating material after office whitening: A case report : Yano K., Kunimatsu R., Shibata S.: The 27th annual meeting of Japan Academy of Esthetic Dentistry (Kawagoe),2018.
- 3 : Current state of and the issues regarding oral care evaluated from questionnaire to the stuffs in facilities for the disabled.:Wakita A., Tokikazu T.,Watari M.,Mizota Y.,Shimizu C.,Oda Y.,Nakaoka M., Okada Y.:The 35st Japanese Society for Disability and Oral Health (Tokyo), 2018.
- 4 : Long term oral hygiene management for the patient who received treatment of hone anchored device for wide edentulous area: a case report: Tokikazu T., Kanda T., Wakita A., Nakaoka M., Takahashi T., Yoshida K., Shimizu T., Oda Y., Okada Y. :The 35st Japanese Society For Disability and Oral Health (Tokyo), 2018.
- 5 : Efforts of oral health education for children with Type 1 Diabetes : Emura Y.,Nagatani Y.,Kozono C., Okizono M.,Watari M.,Nakaoka M.,Tachikake M.,Iwamoto Y.,Mitsuhata C.,Kozai K.:The 13th Annual Meeting of the Japan Society for Dental Hygiene(Fukuoka),2018.
- 6 : Dental hygienist's activities and the effects in dental clinical support for HIV-infected patients : Okada M.,Matsui K.,Iwata T.,Sintani T.,Kinoshita K.,Miyahara A.,Ikeda Y.,Saitou S.,Maruyama E., Hamamoto K.,Yamasaki N.,Hujii T.,Shiba H.:The 19th Japanese HIV dental medical workshop (Tokyo), 2018.
- 7 : Activity report on the support that dental hygienists provide in the dental clinical practice for people infected with HIV.:Okada M.,Nakaoka M.,Iwata T.,Sintani T., Shiba H.: The 13th Annual Meeting of the Japan Society for Dental Hygiene(Fukuoka),2018.
- 8 : The oral environment and taste function in HIV—positive patients:Shintani T., Yamasaki N., Iwata T., Saitou S., Kitagawa M., Ogawa I., Okada M., Mastui K., Unei H., Fujita K., Hamamoto K., Kinoshita K., Ikeda Y., Fujii T., Kurihara H., Shiba H.:The 11th Annual Meeting of Japanese Society for

- Evidence and the Dental Professional (Tokyo), 2018.
- 9 : The influence of anti-HIV drug on oral environment and taste function:Shintani T., Yamasaki N., Iwata T., Saitou S., Okada M., Mastui K., Unei H., Fujita K., Hamamoto K., Kinoshita K., Ikeda Y., Fujii T., Shiba H.:The 32th Annual Meeting of Japanese Society for AIDS Research (Osaka), 2018.
  - 10 : A study on the effect of dental hygienist qualification selection motives on postgraduate course of oral science:Ishikawa M.,Matsumoto A.,Niitani Y.,Takemoto T.:The 13th Annual Meeting of the Japan Society for Dental Hygiene(Fukuoka),2018.
  - 11 : The improvement of periodontal tissue lead to improved eating habit and HbA1c patient with diffuse chronic periodontitis with type 2 diabetes:Ishikawa M.,Takahashi K.,Kozono C.,Nakaoka M.,Kajiya M.,Kurihara H.:The 61 Japanese society of periodontology Meeting(Tokyo),2018.
  - 12 : Teaching effect in clinical practice in pediatric dentistry and learning of interns:Okizono M.,Nagatani Y.,Nakaoka M.,Tachikake M.,Tatsukawa N.,Mitsuhata C.,Kawaguchi H.,Kozai K.: The 13th Annual Meeting of the Japan Society for Dental Hygiene(Fukuoka),2018.
  - 13 : Effects of individualized continuous tooth brushing instruction for patient with severe intellectual disability:Mizota Y.,Furutani C.,Oda A.,Oda Y.: 24th Congress of International Association for Disability & Oral Health (Dubai), 2018.
  - 14 : Oral hygiene in a patient with severe intellectual disabilities was improved by continuous modification of tooth brushing instruction: a case report:Mizota Y.,Shimizu C., Wakita A., Watari M., Tokikazu T.,Morimoto C.,Hayashi F.,Oda A.,Mukai T.,Mukai A.,Yoshida K.,Nakaoka M.,Oda Y.,Irifune M.,Okada Y. :The 35th Japanese Society for Disability and Oral Health (Tokyo), 2018.
  - 15 : Learning effect of making daily goal and case list on practice education in students at special needs dentistry:Watari M.,Mizota Y.,Furutani C.,Oda Y.,Okada Y. :The 13th Annual Meeting of the Japan Society for Dental Hygiene(Fukuoka),2018.
  - 16 : Motivational effects of visual oral health education with reagent in the detection of periodontal pathogenic bacteria in children with type 1 diabetes: Watari M., Nakaoka M., Tachikake M., Iwamoto Y., Niizato N., Tatsukawa N., Sakurai K., Nakano M., Ogasawara T., Akitomo T., Mitsuhata C., Okada Y., Kozai K. :The 35th Japanese Society for Disability and Oral Health (Tokyo), 2018.
  - 17 : Attempt of SP participatory communication training at a certain university hospital dental hygienist : Nakaoka M., Nagatani Y., Yoshida T., Maeda J., Kozai K. :The 13 Annual Meeting of the Japan Dental Hygienists Association (Fukuoka), 2018
  - 18 : Dental treatment performed for Cornelia de Lange syndrome patient under intravenous sedation and physical restraint:Oda A., Mizota Y., Shimizu C., Oda Y., Irifune M. :24th Congress of International Association for Disability & Oral Health (Dubai), 2018.
  - 19 : Down syndrome patient able to use denture without complications: a case report: Shimizu C., Mizota Y., Oda A., Mukai A., Oda Y. :24th Congress of International Association for Disability & Oral Health (Dubai), 2018.

- 20 : Nasopalatine duct cyst in moderate intellectual disability patient with first and second branchial arch syndrome: a case report: Shimizu C., Mizota Y., Oda A., Oda Y. :24th Congress of International Association for Disability & Oral Health (Dubai), 2018.
- 21 : Research of the effect of bovine milk fermented with *Lactobacillus rhamnosus* L8020 on periodontal disease in intellectually disabled patients: Oda Y., Shimizu C., Mizota Y., Morimoto C., Wakita A., Watari M., Nakaoka M., Tokikazu T., Hayashiuchi M., Kanda T., Hayashi F., Kaihara Y., Okada Y. :The 35<sup>th</sup> Japanese Society for Disability and Oral Health(Tokyo),2018.
- 22 : Clinico-statistic study on feeding condition in patients with mental retardation after dental treatment under general anesthesia: Takahashi T., Yoshida K., Mukai T., Oda A., Yoshinaka T., Oue K., Mukai A., Yoshida M. Shimizu C., Mizota Y., Watari M., Tokikazu T., Oda Y., Okada Y., Irifune M. :The 35th Japanese Society for Disability and Oral Health (Tokyo), 2018.
- 23 : Nasopalatine duct cyst in moderate intellectual disability patient with first and second branchial arch syndrome: a case report: Shimizu C., Oda Y., Morimoto C., Mizota Y., Watari M., Tokikazu T., Wakita A., Hayashi F., Oda A., Mukai T., Mukai A., Yoshida K., Kaihara Y., Irifune M., Okada Y. :The 35th Japanese Society for Disability and Oral Health (Tokyo), 2018.
- 24 : A case of dental treatment for a patient with autism spectrum disorder with a history of adverse reactions to local anesthetics: Mukai T., Yoshida K., Shimizu C., Mizota Y., Watari M., Oda A., Takahashi T., Yoshinaka T., Oue K., Mukai A., Tokikazu T., Oda Y., Okada Y., Irifune M. :The 35th Japanese Society for Disability and Oral Health (Tokyo), 2018.
- 25 : Investigation for usability of AUDIT System of Hiroshima Safety Dental service Support network to improve the countermeasure against dental safety in the dental clinic  
Tomoyuki Iwata, Noriyoshi Mizuno, Miyuki Nakaoka, Hiroyuki Kawaguchi, Kazuhiro Tsuga, Hidemi Kurihara The 13th Annual Congress of Japanese Society for Quality and Safety in Healthcare (Nagoya), 2018.

## F) Lecture

- 1 : Current status of infection control of dental outpatient clinical practice : Yukiko Nagatani, Miyuki Nakaoka, Hidemi Kurihara. The 33th Annual Meeting of Japanese Society for Infection Prevention and Control (Tokyo), 2018.
- 2 : Symposium : Professionalism education in dental education - strategy and perspective - "Perspective from dental hygienist's professionalism research": Yukiko Nagatani : The 37<sup>th</sup> general and Scientific Meeting of the Japanese Dental Education Association (Fukushima), 2018.
- 3 : Oral care in Special care dentistry:Yano K.:Hiroshima prefecture regional medical care nursing comprehensive securing business Education at Hiroshima Oral Health Center· Research function development project Hiroshima prefecture dental health care service provision difficult person consultation physician training workshop (Hiroshima), 2018.
- 4 : Oral care:Yano K. :NST Education Certified Facility Training (Hiroshima), 2018.
- 5 : Perioperative oral management required for dental hygienists: Kuramoto Y. :The 36th Annual Meeting

- of the Japanese Academy of Clinical Periodontology DH Case Presentation [Can periodontal disease treatment intervention control aspiration pneumonia?] (Hiroshima), 2018.
- 6 : To perform oral management based on evidence; The utility of the oral environment evaluation: Kuramoto Y.:27<sup>th</sup> Annual Meeting of Japanese Association for Oral Infectious Diseases Symposium [Oral hygiene management method based on evidence] (Hiroshima), 2018.
- 7 : Oral care in Special care dentistry, Wakita A. :Hiroshima prefecture regional medical care nursing comprehensive securing business Education at Hiroshima Oral Health Center· Research function development project Hiroshima prefecture dental health care service provision difficult person consultation physician training workshop (Hiroshima), 2018.
- 8 : Actual Oral care in implant treatment patients : Tokikazu T. :The 12st Oral Implant Center Workshop (Hiroshima), 2018.
- 9 : Periodontal disease is diabetes in your mouth:Ishikawa M. :The 292 Diabetes conference (Hiroshima), 2018
- 10 : Learn from case examples Oral Care Q&A: Nakano Y. :Network of Infection Control in Hiroshima (Hiroshima), 2018.

(4) Status of Receiving Grants-in Aid for Scientific Research, etc.

(5) Academic Awards, etc.

- 1 : Yukiko Nagatani: Excellent paper award of Japanese Dental Education Association (Overseas journal section): 「Dental hygienists' perceptions of professionalism are multidimensional and context-dependent : a qualitative study in Japan: BMC Medical Education, 17:267, 2017.」
- 2 : Tomoyuki Iwata, Noriyoshi Mizuno, Miyuki Nakaoka, Hiroyuki Kawaguchi, Kazuhiro Tsuga, Hidemi Kurihara: The 13th Annual Congress of Japanese Society for Quality and Safety in Healthcare Best practice award first place “Investigation for usability of AUDIT System of Hiroshima Safety Dental service Support network to improve the countermeasure against dental safety in the dental clinic.”

## Dental Clinic

### (1) Staff and Students

Director : Takamune Hino

### (2) Main Research Activities

- 1 : Pathogenesis of the periodontal diseases
- 2 : Studies on the scientific technology for public dental health

### (3) Research Achievements

#### A) Original Papers (including Case Reports)

#### B) Review

#### C) Publications

#### D) Other Publications

#### E) Presentation at Scientific Meeting

#### F) Seminar, Workshop, etc.

1. The schizophrenia disease lecture of the psychiatry emergency hospital, June. 5, 2018 in Hiroshima
2. Hospital infection prevention system and the latter-stage elderly dental checkup project. The Seminar of Higashihiroshima City Dental Association, June. 20, 2018
3. The Oral health project for elderly day care. The seminar of Hiroshima Aki Dental Association, July. 14, 2018
4. The emergency correspondence for the accidental symptom and [medical equipment for emergency](#) use. The Seminar of Hiroshima Prefectural Dental Association, August. 5, 2018
5. The Annual Meeting of Hospital Dentistry of Hiroshima Prefecture, September. 22, 2018
6. The Annual Meeting of Dental Science Society of Chugoku-Shikoku in Hiroshima, September. 30, 2018



7. The 61st Autumn Meeting of the Japanese Society of Periodontology, October. 26-27, 2018 in Osaka

8. The seminar to responsible person for prevention against unfair demand by Hiroshima prefectural police, December. 20, 2018

9. The guidance for residents: 2 (Mon)/4/2018

(4) Status of Receiving Grants-in Aid for Scientific Research, etc.

(5) Academic Awards, etc.

(6) Patents

1. Utility Model Registration: RN:3182420, Takamune Hino

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## Dental Medical Information Section

### (1) Staff and Students

Director : Katsuyuki Kozai(Co.)  
Assistant Professor : Masahiko Ohtsuka (Co.), Takeshi Tanaka  
Technician : Tokue Yanagida (Co.)

### (2) Main Research Activities

1 : Research on development and management of healthcare and welfare information system.  
2 : Research on Medical Informatics.

### (3) Research Achievements

#### A) Original Papers (including Case Reports)

1 : Tanaka T et al: A Proposal of Standard Requirements for A Medical Institution Website Taking Web Accessibility of Visually Impaired Persons into Account: IEICE Technical Report SP2018-46, WIT2018-34 (2018-10): 73-78, 2018.  
2 : Tanaka T et al: Information and functions required for a medical institution webpage which is accessible for both visually impaired persons and nonhandicapped persons: Japan Journal of Medical Informatics, 38 (Suppl.): 1118-1123, 2018.  
3 : Tsukuma H et al: S Derivation of a Conceptual Model for Systematically Grasping Risks Hidden in Differences in Clinical Support Functions Between Hospital Information Systems: Japan Journal of Medical Informatics, 38 (Suppl.): 1056-1061, 2018.  
4 : Sudo M et al: Survey on “Rewriting Study Date of DICOM Image at the time of Storing DICOM Images from Other Institution” targeted at Medical Imaging Information Specialist: Japan Journal of Medical Informatics 38 (Suppl.): 376-379, 2018.

#### B) Review

1 : Tsukuma H et al: Philological Study on Activities Related to Healthcare Information Technologist in Japan Association of Medical Informatics: Japan Journal of Medical Informatics, 38 (2): 81-104, 2018.

#### C) Publications

None.

#### D) Other Publications

None.

#### E) Presentation at Scientific Meeting

1 : Tanaka T et al: Validating a Tentative Set of Standard Requirements for an Accessible Webpage of Medical Institution for Visually Impaired Persons: Japan Association for Medical Informatics Spring Conference 2018 (Niigata, Japan), 2018.

2 : Tsukuma H et al: Philological Study on Activities Related to Healthcare Information Technologist in Japan Association of Medical Informatics: Japan Association for Medical Informatics Spring Conference 2018 (Niigata, Japan), 2018.

3 : Tanaka T et al: A Proposal of Standard Requirements for A Medical Institution Website Taking Web Accessibility of Visually Impaired Persons into Account: The 97<sup>th</sup> Well-being Information Technology Meeting WIT2018-34 (2018-10) (Kitakyushu, Japan), 2018.

4 : Tanaka T et al: Information and functions required for a medical institution webpage which is accessible for both visually impaired persons and nonhandicapped persons: The 38th Joint Conference on Medical Informatics (Fukuoka, Japan), 2018.

5 : Tsukuma H et al: S Derivation of a Conceptual Model for Systematically Grasping Risks Hidden in Differences in Clinical Support Functions Between Hospital Information Systems: The 38th Joint Conference on Medical Informatics (Fukuoka, Japan), 2018.

6 : Sudo M et al: Survey on “Rewriting Study Date of DICOM Image at the time of Storing DICOM Images from Other Institution” targeted at Medical Imaging Information Specialist: The 38th Joint Conference on Medical Informatics (Fukuoka, Japan), 2018.

#### F) Special lectures in academic meetings

None.

#### (4) Status of Receiving Grants-in Aid for Scientific Research, etc.

1 : MEXT KAKENHI Grant-in-aid for Scientific Research(C), No. 18K115480. 500 thousand JPY.

2 : MEXT KAKENHI Grant-in-aid for Scientific Research(C), No. 16K004610. 100 thousand JPY.

(5) Academic Awards, etc.

None.

(6) Patents

None.

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