

2015

**Hiroshima University Faculty of Dentistry, Hiroshima
University Hospital, Institute of Biomedical & Health Sciences**

Research Achievements

2015

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

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○ Applied Life Sciences

- [Department of Periodontal Medicine, and Division of Preventive and Restorative Dentistry \(Department of Periodontics and Endodontics\)](#)
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- Department of Oral and Maxillofacial Surgery, and Division of Oral and Maxillofacial Surgery and Oral Medicine (Department of Oral and Maxillofacial Reconstructive Surgery)
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○ Integrated Health Sciences

- [Department of Biological Endodontics, and Division of Preventive and Restorative Dentistry \(Department of Operative and Conservative Dentistry\)](#)
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- Department of Dental Anesthesiology, and Division of Oral & Maxillofacial Surgery and Oral Medicine (Department of Dental Anesthesiology and Orofacial Pain Management)
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Basic Life Sciences

Department of Calcified Tissue Biology

(1) Staff and Students

Professor: Yuji Yoshiko

Assistant Professor: Tomoko Minamizaki, Hirotaka Yoshioka, Yuichiro Takei

Research Assistant: Miho Kondo

Temporary Staff : Yayoi Sato

Graduate Student: Kaoru Sakurai (Pediatric Dentistry), Yoko Fujino (Special Care Dentistry), Kazuko Kagawa (Advanced Prosthodontics), Saki Okita (Orthodontic Dentistry), Yuko Nakao (Orthodontic Dentistry), Faisal Ahmed, Yasumasa Irie (Pediatric Dentistry)

International Research Student: Sarmin Nushrat

(2) Main Research Activities

- 1 : Bone and tooth formation and mineralization
- 2 : Calcitropic and phosphotropic factors and mineral metabolism
- 3 : Osteonetwork
- 4 : MicroRNA

(3) Research Achievements

A) Original Papers (including Case Reports)

- 1 : The dynamics of DNA methylation and hydroxymethylation during amelogenesis.: Yoshioka H, Minamizaki T, Yoshiko Y.: *Histochemistry and Cell Biology*, 144, 471-478, 2015

B) Reviews

- 1 : Functional diversity of fibroblast growth factors in bone formation.: Takei Y, Minamizaki T, Yoshiko Y.: *International Journal of Endocrinology*, 2015, 729352, 2015.
- 2 : The bioactive acidic serine- and aspartate-rich motif peptide.: Minamizaki T, Yoshiko Y.: *Current Protein & Peptide Science*, 16 (3): 196-202, 2015.

C) Books

D) Other Publications

- 1 : Bone-derived miRNA as a mediator of cell-cell communication.: Takei Y, Minamizaki T, Yoshioka H, Yoshiko Y.: Proceedings of 6th Hiroshima Conference on Education and Science in Dentistry, 71-72, 2015.

E) Presentation at Scientific Meeting

1) Invited lecture, Symposium, Workshop, etc.

- 1 : The FGF23-Klotho axis and bone mineralization.: Yoshiko Y. A Conference of International Collaboration between Hokkaido University and Shandong University (Sapporo), 2015.
- 2 : MicroRNA-mediated cell-cell communication in Bone.: A novel target for antiresorptive therapy. Yoshiko Y. The 3rd Joint Scientific Meeting in Dentistry (Surabaya), 2015.
- 3 : Bone-derived miRNA as a mediator of cell-cell communication.: Takei Y, Minamizaki T, Yoshioka H, Yoshiko Y.: 6th Hiroshima Conference on Education and Science in Dentistry (Hiroshima), 2015.

2) General

- 1 : The regulation of osteochondrogenesis by FGF10 and identification of a soluble form of FGFR2b.: Kagawa K.: Frontal Dental School 2015(Fukuoka) , 2015.
- 2 : The relevance of FGF21/ β Klotho, glucose and lipid metabolic mediators, in the balance between osteogenesis and adipogenesis.: Minamizaki T, Yoshioka H, Takei Y, Yoshiko Y.: The 57th Annual Meeting of the Japanese Society of Oral Biology (Niigata), 2015.
- 3 : Effect of D-Aspartate on mouse osteoblastic cells.: Arima Y, Yoshiko Y, Namera A, Murata M, Yoshimoto K, Nagao M.: BMB 2015 Biochemistry and Molecular Biology (Kobe), 2015.
- 4 : Effect of D-Aspartate on MC3T3-E1 osteoblasts.: Arima Y, Yoshiko Y, Namera A, Murata M, Yoshimoto K, Nagao M.: The 11th Conference of D-Amino Acid Research (Nagaoka), 2015.
- 5 : Matrix vesicles mediate the cell-to-cell transmission of MicroRNA-125b as an inhibitor of osteoclastic bone resorption.: Takei Y, Nakao Y, Minamizaki T, Irie Y, Ahmed F, Yoshioka H, Niida S, Tanimoto K, Yoshiko Y. : The American Society for Bone and Mineral Research 2015 Annual Meeting (Seattle), 2015.
- 6 : MicroRNAs involved in bone metabolism are transported into matrix vesicles during bone formation.: Nakao Y, Takei Y, Minamizaki T, Yoshioka H, Ahmed F, Tanimoto K, Niida S, Yoshiko

- Y.: The American Society for Bone and Mineral Research 2015 Annual Meeting (Seattle), 2015.
- 7 : Newly identified FGFR2 isoform modulates FGF10-FGFR signaling during osteochondrogenesis.: Kagawa K, Yoshioka H, Okita S, Kuremoto K, Takei Y, Minamizaki T, Tanimoto K, Tsuga K, Yoshiko Y.: The American Society for Bone and Mineral Research 2015 Annual Meeting (Seattle), 2015.
- 8 : Nano-CT analysis of osteocyte anomalies in Klotho-deficient mice.: Minamizaki T, Sakurai K, Yoshioka H, Takei Y, Kozai K, Yoshiko Y.: The American Society for Bone and Mineral Research 2015 Annual Meeting (Seattle), 2015.
- 9 : A Novel isoform of FGFR2 Modulates FGF10-FGFR Signaling in Osteochondrogenesis.: Yoshioka H, Kagawa K, Okita S, Kuremoto K, Takei Y, Minamizaki T, Tanimoto K, Tsuga K, Yoshiko Y.: 6th Hiroshima Conference on Education and Science in Dentistry (Hiroshima), 2015.
- 10 : MEPE-ASARM, a substrate of the neutral endopeptidase PHEX involved in rickets/osteomalacia, acts as an inhibitor of bone formation.: Sakurai K, Minamizaki T, Hayashi I, Yoshioka H, Takei Y, Kozai K, Yoshiko Y.: 6th Hiroshima Conference on Education and Science in Dentistry (Hiroshima), 2015.

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

- 1 : Grants-in-Aid for Young Scientists (B) Continuance: Takei Y., MicroRNA-mediated cellular network in calcified tissue. No.26861548. ¥1,300,000
- 2 : Grants-in-Aid for Scientific Research (C) Continuance: Yoshioka H., Development of bone regeneration strategies by controlling the epigenetic state of bone lining cells. No. 26462785, ¥1,690,000
- 3 : Grants-in-Aid for Scientific Research (C) Continuance: Minamizaki T., Study of regulation of bone/tooth mineralization via downstream factor(s) of Klotho derived from breast cancer cells. No. 25462858, ¥1,560,000
- 4 : Ono Pharmaceutical Co. Ltd.: Yuji Yoshiko. ¥2,000,000
- 5 : AMED, The Drug Discovery Support Network: Yuji Yoshiko. ¥38,260,000

(5) Academic Awards, etc.

- 1 : Kagawa K.: The highest award. Frontal Dental School 2015.
- 2 : Takei Y, Nakao Y, Minamizaki T, Irie Y, Ahmed F, Yoshioka H, Tanimoto K, Yoshiko Y.: 2015 ASBMR Plenary Poster Award, ASBMR 37th annual meeting.
- 3 : Takei Y, Nakao Y, Minamizaki T, Irie Y, Ahmed F, Yoshioka H, Tanimoto K, Yoshiko Y.: 2015

ASBMR Young Investigator Travel Grant, ASBMR 37th annual meeting.

- 4 : Kagawa K, Yoshioka H, Okita S, Kuremoto K, Takei Y, Minamizaki T, Tanimoto K, Tsuga K, Yoshioka Y.: 2015 ASBMR Plenary Poster Award, ASBMR 37th annual meeting.
- 5 : Kagawa K, Yoshioka H, Okita S, Kuremoto K, Takei Y, Minamizaki T, Tanimoto K, Tsuga K, Yoshioka Y.: 2015 ASBMR Young Investigator Travel Grant, ASBMR 37th annual meeting.
- 6 : Yoshioka H, Kagawa K, Okita S, Kuremoto K, Takei Y, Minamizaki T, Tanimoto K, Tsuga K, Yoshioka Y.: Poster Award, 6th Hiroshima Conference on Education and Science in Dentistry.

(6) Patents

- 1 : Yoshiko Y, Takei Y, Minamizaki T, Yoshioka H, Ochi Y.: Inhibitors of osteoclast formation and/or function, activators of osteoclast formation and/or function, and screening methods for inhibitors/activators of osteoclast formation and/or function. PCT/JP2015/162851, Applicants: Ono Pharmaceutical Co. Ltd. and Hiroshima University.

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Basic Life Sciences

Department of Physiology and Oral Physiology

(1) Staff s and Students

Professor : SUGITA, Makoto

Associate Professor : HIRONO, Chikara

Assistant Professor : KITAGAWA, Michinori

Research Assistant : YAMAMOTO, Kuniyo

Graduate Students : YAMAMOTO, Kuniyo, TERACHI, Momomi

(2) Main Research Activities

1 : Molecular physiological study on function of ion channels and ion transporters

2 : The neuronal mechanisms underlying the taste-evoked behavioral and emotional responses

3 : The role of cell communication in proliferation and differentiation of the oral epithelium and salivary glands

4 : Study on the system mechanisms of mastication and swallowing

(3) Research Achievements

A) Original Papers (including Case Reports)

B) Review

C) Publications

D) Other publication

E) Presentation at Scientific Meeting

1 : Genetic tracing reveals the architectural solution in the parabrachial nucleus that processes taste information and gates emotional memory : Sugita M., Yamamoto K., Hirono C., Shiba Y. : The 92th Annual Meeting of the Physiological Society of Japan (Kobe), 2015.

2 : Molecular ranges of reception and inhibition in mouse TAS2R bitter taste receptors : Matsumoto K., Hirono C., Okada M., Sugita M. : The 48th Annual Meeting of Hiroshima University Dental

Society (Hiroshima), 2015.

- 3 : Body homeostasis mechanisms revealed by visualizing and analyzing brainstem taste-relaying neurons : Sugita M., Yamamoto K., Hirono C., Shiba Y. : 2015 NIPS Research Meeting (Okazaki), 2015.

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

- 1 : Step-Up Support Program for KAKENHI (Grant-in-Aid for Scientific Research) FY2015: Kitagawa M., Visualization of Hippo signaling pathway by using bimolecular fluorescence complementation. ¥1,000,000.

(5) Academic Awards, etc.

(6) Patents

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Basic Life Sciences

Department of Molecular Biology and Biochemistry

(1) Staff and Students

Professor: Chisa Shukunami

Associate Professor: Mitsuhide Noshiro

Assistant Professor: Katsumi Fujimoto

Assistant Professor: Hiroshi Yamashita

Assistant Professor (Special Appointment): Yuki Yoshimoto

Researcher: Veronica Sainik Ronald (~June)

(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: Study on the regulatory mechanisms of lipid-metabolism and blood pressure control by clock proteins DEC1 and DEC2.
- 7: Mechanisms regulating differentiation of dental pulp stem cells

(3) Research Achievements

A) Original Papers (including Case Reports)

- 1: OASIS modulates hypoxia pathway activity to regulate bone angiogenesis: Cui, M., Kanemoto, S., Cui, X., Kaneko, M., Asada, R., Matsuhisa, K., Tanimoto, K., Yoshimoto, Y., Shukunami, C., Imaizumi, K.: *Scientific Reports*, 5, 16455, 2015.
- 2: Conservation of structure and function in vertebrate c-FLIP proteins despite rapid evolutionary change: Sakamaki, K., Iwabe, I., Iwata, H., Imai, K., Takagi, C., Chiba, K., Shukunami, C., Tomii, K., Ueno, N.: *Biochemistry and Biophysics Reports*, 3, 175-189, 2015.
- 3: FGF-2 stimulates the growth of tenogenic progenitor cells to facilitate the generation of Tenomodulin-positive tenocytes in a rat rotator cuff healing model: Tokunaga, TS., Shukunami, C., Okamoto, N., Okada, T., Taniwaki, T., Oka, K., Sakamoto, H., Mizuta, H., Hiraki, Y: *The American Journal of Sports Medicine*, 43(10), 2411-2422, 2015.
- 4: A functional SNP in BNC2 up-regulates BNC2 expression and increases the risk of adolescent idiopathic scoliosis: Ogura, Y., Kou, I., Takahashi, A., Miura, S., Xu, L., Takahashi, Y., Kono, K., Kawakami, N., Uno, K., Ito, M., Minami, S., Yonezawa, I., Yanagida, H., Taneichi, H., Zhu, Z., Tsuji, T., Suzuki, T., Sudo, H., Kotani, T., Watanabe, K., Hosogane, N., Okada, E., Sudo, A., Chiba, K.,

- Toyama, Y., Imai, Y., Sawasaki, T., Qiu, Y., Shukunami, C., Kubo, M., Matsumoto, M., Ikegawa, S.: *The American Journal of Human Genetics*, 97(2), 337-342, 2015.
- 5: Scleraxis and osterix antagonistically regulate tensile force-responsive remodeling of the periodontal ligament and alveolar bone: Takimoto, A., Kawatsu, M., Yoshimoto, Y., Kawamoto, T., Seiryu, M., Takano-Yamamoto, T., Hiraki, Y., Shukunami, C.: *Development*, 142, 787-796, 2015.
 - 6: Loss of tenomodulin results in reduced self-renewal and augmented senescence of tendon stem/progenitor cells: Alberton P, Dex S, Popov C, Shukunami C, Schieker M, Docheva D: *Stem Cells Dev*, 24, 597-609, 2015.
 - 7: Characteristic expression of MSX1, MSX2, TBX2 and ENTPD1 in dental pulp cells: Fujii S, Fujimoto K, Goto N, Kanawa M, Kawamoto T, Pan H, Srivatanakul P, Rakdang W, Pornprasitwech J, Saskianti T, Suardita K, Nishimura F, Kato Y: *Biomed. Rep.*, 3(4), 566-572, 2015.
 - 8: DEC2-E4BP4 Heterodimer Represses the Transcriptional Enhancer Activity of the EE Element in the Per2 Promoter: Tanoue S, Fujimoto K, Myung J, Hatanaka F, Kato Y, Takumi T: *Front. Neurol.*, 6, 166, 2015.
 - 9: Basic helix-loop-helix transcription factor DEC1 regulates the cisplatin-induced apoptotic pathway of human esophageal cancer cells: Seino H, Wu Y, Morohashi S, Kawamoto T, Fujimoto K, Kato Y, Takai Y, Kijima H: *Biomed. Res.*, 36(2), 89-96, 2015.
 - 10: Involvement of c-Myc in the proliferation of MCF-7 human breast cancer cells induced by bHLH transcription factor DEC2: Wu Y., Sato H., Suzuki T., Yoshizawa T., Morohashi S., Seino H., Kawamoto T., Fujimoto K., Kato Y., Kijima H: *Int. J. Mol. Med.*, 35(3), 815-820, 2015.
 - 11: Effects of fibronectin on spreading, proliferation, and differentiation of mesenchymal stem cells under serum-free conditions: Veronica Sainik Ronald: *The Journal of Hiroshima University Dental Society*, 47, 32-40, 2015.

B) Review

- 1: Tendons and epymisium that integrate the musculoskeletal components: Yoshimoto Y., Yamashita H., Shukunami C.: *THE BONE*. **29(3)**, 63-68, 2015
- 2: Development and integration of the musculoskeletal system: Takimoto A., Yoshimoto Y., Yamashita H., Shukunami C.: *Orthopaedic Surgery and Traumatology* **58(10)**, 1373-1379, 2015

C) Publications

- 1: Blood vessels and nerves in bone; Kotsupedia - Keyword dictionary for bone disease and bone metabolism: Shukunami C.: *YODOSYA (Tokyo)*, p 25-29, 2015.
- 2: Chondromodulin-I, Tenomodulin, Scleraxis; Keyword handbook for regenerative medicine: Shukunami C.: *Medical Tribune (Tokyo)*, p106-109, 2015.

D) Other Publications

E) Presentation at Scientific Meeting

- 1: *In vivo* screening of the element regulating cartilage-specific chm1 gene expression: Hiroshi Yamashita, Chisa Shukunami, Yuji Hiraki: 6th Bone Science workshop (Okayama), 2015.
- 2: The role of Scx in enthesis formation: Yuki Yoshimoto: The 16th Locomotor Science Meeting (Tokyo), 2015.
- 3: Regulation of dental pulp stem cell differentiation by the MSX1 homeobox transcription factor: Katsumi Fujimoto, Noriko Goto, Takeshi Kawamoto, Mitsuhide Noshiro, Chisa Shukunami, Katsuyuki Kozai, Yukio Kato: The 99th Regular Meeting of the Hiroshima University Dental Society (Hiroshima), 2015.
- 4: MSX1 down-regulates the expression of cholesterol synthesis-related genes in dental pulp stem cells: Noriko Goto, Katsumi Fujimoto, Sakiko Fuji, Hiroko Ida-Yonemochi, Hayato Ohshima, Takeshi Kawamoto, Mitsuhide Noshiro, Chisa Shukunami, Katsuyuki Kozai, Yukio Kato: Annual Meeting of the 88th Japanese Biochemical Society and 38th Molecular Biology Society of Japan (Kobe), 2015.
- 5: Establishment of an *in vivo* model for analysis of periodontal ligament formation: Yuki Sugimoto, Aki Takimoto, Yuji Hiraki, Chisa Shukunami: Phoenix Leader Education Program the 5th Retreat (Hiroshima), 2015.
- 6: Generation of Scx deficient mouse and Runx2 mutant mouse by TALEN mediated genome editing: Yuki Yoshimoto: The meeting of Research center for genome editing (Hiroshima), 2015.
- 7: Establishment of a ScxGFP mouse line for analysis of periodontal ligament formation: Yuki Sugimoto, Aki Takimoto, Yuji Hiraki, Chisa Shukunami: Hiroshima Peace seminar (Hiroshima), 2015.

F) Special lectures in academic meetings

- 1: Molecular mechanisms regulating enthesis formation: Chisa Shukunami: The 28th Annual Meeting of the Japanese Society of Cartilage Metabolism, 2015
- 2: Regulation of mechanical stress in the periodontal ligament: Chisa Shukunami: The 88th Meeting of the Japanese Tissue Culture Association, 2015.
- 3: Molecular mechanisms underlying the formation of tendons and ligaments: Chisa Shukunami: The 26th Bone Research Joint Meeting, 2015.
- 4: Scx is required for the formation of fibrocartilagenous enthesis: Yuki Yoshimoto: The 33rd Annual Meeting of the Japanese Society for Bone and Mineral Research, 2015.
- 5: Formation of tendons that integrate the musculoskeletal components: Chisa Shukunami: The 1st Meeting of Japan Muscle Society, 2015.
- 6: *In vivo* screening of the element regulating cartilage-specific chm1 gene expression.: Hiroshi Yamashita: The 12th Bone Biology Forum, 2015.

- 7: Contribution of the Scx+/Sox9+ cell population to the establishment of the junction between tendons/ligaments and cartilage: Chisa Shukunami: The 57th Annual Meeting of Japanese Association for Oral Biology, 2015.
- 8: The anti-angiogenic action of Tenomodulin, a specific marker for tendons and ligaments: Chisa Shukunami: 6th Hiroshima Conference on Education and Science in Dentistry Symposium, 2015.

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

- 1: Grant-in-Aid for Scientific Research (B): Chisa Shukunami, 26293395. ¥5,070,000
- 2: Grant-in-Aid for Scientific Research (B): Haruhiko Akiyama, Chisa Shukunami, 25293319. ¥100,000
- 3: Grant-in-Aid for Scientific Research (C): Katsumi Fujimoto, 25462889. ¥1,430,000
- 4: Grant-in-Aid for Young Scientists (B): Yuki Yoshimoto, 15K20373 ¥2,340,000
- 5: Hiroshima University Grant-in-Aid for Challenging Exploratory Research: Hiroshi Yamashita, ¥500,000
- 6: the Cooperative Research Program of the Institute for Frontier Medical Sciences, Kyoto University: Chisa Shukunami, ¥2,600,000

(5) Academic Awards, etc.

(6) Patents

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Basic Life Sciences

Department of Oral and Maxillofacial Pathobiology

(1) Staffs and Students

Professor : Takashi Takata

Associate Professor : Mutsumi Miyauchi

Assistant Professor : Hisako Furusho, Toshinori Ando (from March), Mariko Obayashi (until March)

Graduate Student : Chea Chanbora (D4), Nurina Febriyanti Ayuningtyas (D4 ; Graduated in September),

Shunryo Yanagisawa (D3), Atsuhiko Nagasaki (D2), Shinichi Sakamoto (D1),

Hiroki Tsuji (D1), Shrestha Madhu (D1), Naoki Sako (M1),

Sakura Yamada (D1, 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 : Dental infection of *Porphyromonas gingivalis* induces preterm birth in mice: Ao M., Miyauchi M., Furusho H., Inubushi T., Kitagawa M., Nagasaki A., Sakamoto S., Kozai K., Takata T.: PLoS One, 10(8), e0137249, 2015. doi: 10.1371/journal.pone.0137249.
- 2 : Osteodystrophy in cholestatic liver diseases is attenuated by anti- γ -glutamyl transpeptidase antibody: Kawazoe Y., Miyauchi M., Nagasaki A., Furusho H., Yanagisawa S., Chanbora C., Inubushi T., Hyogo H., Nakamoto T., Suzuki K., Moriwaki S., Tazuma S., Niida S., Takata T.: PLoS One, 10(9), e0139620, 2015. doi:10.1371/journal.pone.0139620.
- 3 : F-spondin inhibits differentiation of clastic precursors via lipoprotein receptor-related protein 8 (LRP8): Oka H., Kitagawa M., Takata T.: Journal of Periodontology, 86(3), 465-472, 2015. doi:

- 10.1902.2014.140419.
- 4 : The FGFR1 inhibitor PD173074 reduces osteoclastogenesis in gingival squamous cell carcinoma: Nguyen P. T., Ajiravudh S., Miyauchi M., Ogawa I., Takata T.: Oral Surgery, Oral Medicine, Oral Pathology and Oral Radiology. 119(3), e172, 2015.
- 5 : Phospholipase C-related catalytically inactive protein is a new modulator of thermogenesis promoted by β -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.: The Journal of biological chemistry, pii: jbc.M115.705723, 2015. [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.: Reproductive sciences, pii: 1933719115620497, 2015. [Epub ahead of print]
- 7 : Distinction between cell proliferation and apoptosis signals regulated by brain-derived neurotrophic factor in human periodontal ligament cells and gingival epithelial cells: Kashiwai K., Kajiya M., Matsuda S., Ouhara K., Takeda K., Takata T., Kitagawa M., Fujita T., Shiba H., Kurihara H.: Journal of Cellular Biochemistry, 2015. doi: 10.1002/jcb.25446. [Epub ahead of print]
- 8 : Novel biological activity of ameloblastin in enamel matrix derivative: Kuramitsu-Fujimoto S., Ariyoshi W., Saito N., Okinaga T., Kamo M., Isisaki A., Takata T., Yamaguchi K., Nisihara T.: Journal of applied oral science, 23(1), 49-55, 2015. doi: 10.1590/1678-775720140291.
- 9 : Bisphosphonate-related osteonecrosis of the jaw successfully treated with surgical resection and its histopathological features: A long-term follow-up report: Shintani T., Miyauchi M., Tani R., Yoshioka Y., Akagi E., Toratani S., Okamoto T.: Journal of Oral and Maxillofacial Surgery, Medicine and Pathology, 27(2), 283-286, 2015.
- 1 0 : 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.: Hepatology Research, 2015. doi:10.1111/hepr.12528.
- 1 1 : High-grade epithelial-myoeithelial carcinoma of the parotid gland with mucous cell differentiation: Sentani K., Ogawa I., Uraoka N., Ikeda M., Hayashi N., Hattori T., Hattori Y., Oue N., Takata T., Yasui W.: Pathology International, 65(9), 490-494, 2015.
- 1 2 : Peripheral ameloblastoma with histologically low-grade malignant features of the buccal mucosa: a case report with immunohistochemical study and genetic analysis: Goda H., Nakashiro K., Ogawa I., Takata T., Hamakawa H.: International Journal of Clinical and Experimental Pathology, 8(2), 2085-2089, 2015.
- 1 3 : The significance of titanium allergy test as preoperative examination of implant.: Kitagawa M., Ohbayashi M., Nagasaki A., Yanagisawa S., Shintani T., Kagawa K., Abekura H., Hiasa K., Kubo

T., Takechi M., Ogawa I., Kurihara H.: J JSEDP, 7(1), 31-34, 2015.

- 1 4 : A case of cystic mucoepidermoid carcinoma with *CRTC1-MAML2* fusion gene: Obayashi M., Nagasaki A., Mizuta K., Ogawa I., Takata T.: Japanese Journal of Diagnostic Pathology. 32(2), 327-330, 2015.
- 1 5 : Clinico-stastical Study of Prognostic Prediction using Pre-treatment PET/CT in Oral Cancer Patients: Mizuta K., Ohta K., Ono S., Shigeishi H., Nakagawa T., Fujimoto S., Uetsuki R., Obayashi M., Ogawa I., Takata T., Takechi M.: Journal of Hiroshima University Dental Society, 47(1), 8-12, 2015.
- 1 6 : A case of a large osteoma containing maxillary mucosa in the maxillary sinus: Okumura T., Ono S., Nakagawa T., Miyauchi M., Ogawa I., Takachi M.: Japanese Journal of Oral and Maxillofacial Surgery, 61(12), 673-677, 2015.
- 1 7 : A case of cherubism with bilateral central giant cell lesions of the mandible: Kanda T., Kimura N., Ando T., Toratani S., Hara J, Okamoto T.: Japanese Journal of Oral and Maxillofacial Surgery, 61(10), 543-547, 2015.
- 1 8 : A case of implant treatment and mandibular reconstruction using titanium mesh tray and autogenous iliac particulate cancellous bone in a patients with odontogenic myxofibroma: Ohta K., Takechi M., Shigeishi H., Okumura T., Miyauchi M., Takata T.: Japanese Journal of Oral and Maxillofacial Surgery, 64(3), 269-275, 2015.

B) Reviews

- 1 : Granular cell tumor, radicular cyst, adenomatoid odontogenic tumor, calcifying epithelial odontogenic tumor: Miyauchi M., Obayashi M.: Quick reference in pathological diagnosis. (by standard editorial committee) Pathology and Clinical Medicine Special issue, 48-49, 53-54, 2015.
- 2 : Power of Saliva : Ogawa I., Kitagawa M., Obayashi M., Hara K.: DHstyle, 9(3), 16-33, 2015.
- 3 : The relation between periodontal pathogenic bacteria and non-alcoholic steatohepatitis : Furusho H., Miyauchi M., Takata T.: MEDICAL TECHNOLOGY, 43(9), 902-904, 2015.

C) Publications

- 1 : Ameloblastoma, Squamous odontogenic tumor: Atlas of pathologically differential diagnosis of tumors. Head and neck tumors II (Morinaga S., Takata T., Nagao T. eds.): Takata T.: Bunkodo (Tokyo), 115-122,2015.
- 2 : Clear cell carcinoma, NOS, The differential diagnosis of salivary gland tumors composed of

clear cells: Atlas of pathologically differential diagnosis of tumors. Head and neck tumors I (Morinaga S., Takata T., Nagao T. eds.): Ogawa I.: Bunkodo (Tokyo), 50-53, 180-186, 2015.

3 : Precancerous lesions of squamous cell carcinoma in oral and oropharyngeal regions: Atlas of pathologically differential diagnosis of tumors. Head and neck tumors II (Morinaga S., Takata T., Nagao T. eds.): Ogawa I.: Bunkodo (Tokyo), 38-45, 2015.

4 : Cementoblastoma, ossifying fibroma, fibrous dysplasia : Atlas of pathologically differential diagnosis of tumors.

Head and neck tumors II (Morinaga S., Takata T., Nagao T. eds.): Miyauchi M.: Bunkodo (Tokyo), 158-163, 2015.

D) Other Publications

E) Presentation at Scientific Meeting

1) Special lectures in academic meetings

1 : The direction of the revised edition of WHO classification of odontogenic tumors : Takata T.: The 69th Annual Meeting of The Japanese Stomatological Society (Osaka), 2015.

2 : Liposomal lactoferrin regulates the progression of osteoclastic lesions such as periodontitis or rheumatoid arthritis: Takata T.: The 20th International Food Ingredients & Additives Exhibition and Conference (Tokyo), 2015.

3 : Exploitation of predictive and diagnostic method for preterm birth targeting serum Galectin-3 level: Miyauchi M., Kudo Y., Takata T.: Innovation Japan 2015 (Tokyo), 2015.

4 : Exploitation of predictive and diagnostic method for preterm birth targeting serum Galectin-3 level: Miyauchi M., Takata T.: New technology presentation meetings 2015 (Tokyo), 2015.

5 : Periodontitis exacerbates hepatitis: Sakamoto S.: Three minutes thesis competition 2015 (Hiroshima), 2015.

6 : Oral Pathology. IAP Slide Seminar: Ogawa I., Takata T.: Pathological Education Seminar 2015 (Tokyo), 2015.

7 : Prospective diagnostic of odontogenic tumor in dentistry: Takata T., Kumamoto Y., Miyauchi M.: Workshop national 1 ISPaMMI 2015 (Surabaya), 2015.

8 : The relation between oral health and whole body -Dental infection of *P. gingivalis* is a risk factor of non-alcoholic steatohepatitis (NASH)-: Takata T.: The meeting for the 50th anniversary of the foundation of Kanagawa Odontological Society (Yokosuka), 2015.

2) Presentation at International Scientific Meeting

- 1 : Ameloblastin induces tumor suppression and chemosensitivity in osteosarcoma: Ando T., Ogawa I., Miyauchi M., Takata T.: 93rd General Session & Exhibition of the International Association for Dental Research (Boston), 2015.
- 2 : Dental infection of *Porphyromonas gingivalis* (*P.g.*) exacerbates progression of non-alcoholic steatohepatitis –Effects of *P.g.* infection and *P.g.*-LPS on Hepatocytes –: Miyauchi M., Furusho H., Nagasaki A., Takata T.: 93rd General Session & Exhibition of the International Association for Dental Research (Boston), 2015.
- 3 : TLR2 plays a key role in *P.gingivalis*-induced NASH progression: Furusho H., Miyauchi M., Nagasaki A., Sakamoto S., Takata T.: 6th Hiroshima Conference on Education and Science in Dentistry (Hiroshima), 2015.
- 4 : Dental infection of *Porphyromonas gingivalis* exacerbates pathological progression of non-alcoholic steatohepatitis (NASH): Miyauchi M., Furusho H., Nagasaki A., Sakamoto S., Ouhara K., Kurihara H., Takata T.: 6th Hiroshima Conference on Education and Science in Dentistry (Hiroshima), 2015.
- 5 : Oral administration of liposomal bovine lactoferrin suppresses progression of rheumatoid arthritis: Yanagisawa S., Chea C., Ayuningtyas N. F., Tsuji H., Miyauchi M., Inubushi T., Ishikado A., Uesaki S., Imanaka H., Sugiyama E., Takata T.: 6th Hiroshima Conference on Education and Science in Dentistry (Hiroshima), 2015.
- 6 : Bovine lactoferrin inhibits oral cancer proliferation and bone invasion: Chea C., Ayuningtyas N. F., Inubushi T., Subarnbhesaj A., Miyauchi M., Ishikado A., Imanaka H., Takata T.: 6th Hiroshima Conference on Education and Science in Dentistry (Hiroshima), 2015.
- 7 : Oral administration of liposomal bovine lactoferrin suppresses progression of rheumatoid arthritis: Yanagisawa S., Chea C., Ayuningtyas N. F., Tsuji H., Miyauchi M., Inubushi T., Ishikado A., Uesaki S., Imanaka H., Sugiyama E., Takata T.: 12th International Conference on Lactoferrin: Structure, Function and Applications (Nagoya), 2015.
- 8 : Bovine lactoferrin attenuates growth and bone invasion of oral squamous cell carcinoma: Chea C., Ayuningtyas N. F., Inubushi T., Subarnbhesaj A., Miyauchi M., Ishikado A., Imanaka H., Takata T.: 12th International Conference on Lactoferrin: Structure, Function and Applications (Nagoya), 2015.
- 9 : Bovine Lactoferrin Specifically Inhibits Tumor Angiogenesis: Takata T., Ayuningtyas N. F., Chea C., Saninggar K. E., Miyauchi M., Maishi N., Hida K., Inubushi T., Shindoh M., Imanaka H., Ishikado A.: 12th International Conference on Lactoferrin: Structure, Function and Applications (Nagoya), 2015.

3) Presentation at Domestic Scientific Meeting

- 1 : Mouse with *Porphyromonas gingivalis*-odontogenic infection is a possible animal model for preterm birth and EGR: Konishi H., Miyoshi H., Miyauchi M., Urabe S., Takata T., Kudo Y.: The 67th

- Annual Congress of the Japan Society of Obstetrics and Gynecology (Yokohama), 2015.
- 2 : Ameloblastin enhances chemosensitivity to doxorubicin via Src-Stat3 inactivation in osteosarcoma: Ando T., Ogawa I., Miyauchi M., Takata T.: 104th annual meeting of the Japanese Society of Pathology (Nagoya), 2015.
- 3 : Stat3 feedback activation induces resistance to doxorubicin in osteosarcoma : Umehara H., Charindra D., Ando T., Takata T.: 48th annual meeting of the Dental Association of Hiroshima University (Hiroshima), 2015.
- 4 : Bovine lactoferrin inhibits growth and invasion of oral squamous cell carcinoma: Chea C., Ayuningtyas N. F., Inubushi T., Subarnbhesaj A., Miyauchi M., Ishikado A., Imanaka H., Takata T.: 48th annual meeting of the Dental Association of Hiroshima University (Hiroshima), 2015.
- 5 : Oral administration of liposomal bovine lactoferrin suppresses progression of rheumatoid arthritis: Yanagisawa S., Chea C., Ayuningtyas N. F., Tsuji H., Miyauchi M., Inubushi T., Ishikado A., Imanaka H., Takata T.: 48th annual meeting of the Dental Association of Hiroshima University (Hiroshima), 2015.
- 6 : Bovine lactoferrin selectively inhibits proliferation and differentiation of tumor endothelial cells: Ayuningtyas N F., Chea C., Tsuji H., Miyauchi M., Tanimoto K., Maishi N., Hida K., Shindoh M., Inubushi T., Imanaka H., Takata T. : 48th annual meeting of the Dental Association of Hiroshima University (Hiroshima), 2015.
- 7 : Large-scale collaborative survey study on odontogenic tumors in Asia: Takata T., Senba I., Maeda H., Takeda Y., Kumamoto H., Kuyama K., Toyosawa S., Nagatsuka H., Miyauchi M., Ikuko O.: The 26th Annual Meeting of the Japanese Society of Oral Pathology (Sapporo), 2015.
- 8 : Ameloblastin induces tumor suppressive phenotype and enhances chemoresistance to doxorubicin in osteosarcoma: Ando T., Umehara H., Ogawa I., Kudo Y., Takata T.: The 26th Annual Meeting of the Japanese Society of Oral Pathology (Sapporo), 2015.
- 9 : Feedback activation of Stat3 induces resistance to doxorubicin in osteosarcoma: Umehara H., Ando T., Takata T.: The 26th Annual Meeting of the Japanese Society of Oral Pathology (Sapporo), 2015.
- 1 0 : Characterization of Ameloblastoma cells on Human Ameloblastoma Cell Lines: Mikami T., Bologna-molina R., Kitagawa M., Takata T., Takeda Y.: The 26th Annual Meeting of the Japanese Society of Oral Pathology (Sapporo), 2015.
- 1 1 : Expression of Wilms' Tumor 1 (WT1) in Ameloblastoma: Bologna-molina R., Mikami T., Kitagawa M., Takata T., Takeda Y.: The 26th Annual Meeting of the Japanese Society of Oral Pathology (Sapporo), 2015.
- 1 2 : Odontogenic infection of *Porphyromonas gingivalis* exacerbates pathological progression of non-alcoholic steatohepatitis through activation of hepatic stellate cells by macrophages: Nagasaki A., Furusho H., Miyauchi M., Takata T.: The 57th Annual Meeting of Japanese Association for Oral Biology (Niigata), 2015.

- 1 3 : Study of the relationship between dental metal allergy and skin-mucosal disease.: Kitagawa M., Nagasaki A., Tsuji H., Shintani T., Ogawa I., Kurihara H., Shiba H.: The 8th Annual Meeting of Japanese Society for Evidence and the Dental Professional (Yokosuka), 2015
- 1 4 : Periodontitis exacerbate liver disease. -the importance of oral pathogens examination and periodontal therapy-: Miyauchi M., Furusho H., Nagasaki A., Shintani T., Kurihara H., Cyayama K., Takata T.: The 8th Annual Meeting of The Japanese Society for Evidence and the Dental Professional (Yokosuka), 2015.
- 1 5 : TLR2 plays a key role in *P. gingivalis*-induced NASH progeression: Furusho H., Miyauchi M., Nagasaki A., Sakamoto S., Takata T.: The 63rd Annual Meeting of JADR (Hakata), 2015.
- 1 6 : Comparative investigation of transcriptional regulatory mechanism of bone sialoprotein in osteoblast- and cementoblast-like cells: Noda K., Yamazaki M., Iwai Y., Matsui S., Kato A., Takai H., Nakayama Y., Kitagawa M., Takata T., Ogata Y.: The 63rd Annual Meeting of JADR (Hakata), 2015.
- 1 7 : Effects of inflammatory cytokines on human FDC-SP gene expression: Iwai Y., Noda K., Yamazaki M., Matsui S., Kato A., Takai H., Nakayama H., Kitagawa M., Takata T., Ogata Y.: The 63rd Annual Meeting of JADR (Hakata), 2015.
- 1 8 : Dental treatmrent can suppress the pathological progression of non-alcoholic steatohepatitis with odontogenic infection of *Porphyromonas gingivalis*: Nagasaki A., Sakamoto S., Furusho H., Miyauchi M., Takata T.: 54th Hiroshima Prefecture Dental Association 99th Hiroshima University Dental Society 10th Nippon Academy of Dental Technology Chugoku and Shikoku branch (Hiroshima), 2015.
- 1 9 : Significance of fusion gene analysis for the differential diagnosis of mucoepidermoid carcinoma: Nagasaki A., Ogawa I., Ouchi T., Nagao T., Takata T.: The 60th Annual Meeting of Japan Salivary Gland Society (Tokyo), 2015.

4) Case Reports at Scientific Meeting

- 1 : Palatal tumor (Epithelial-myoepithelial carcinoma with sebaceous differentiation) : Ogawa I., Nakano R., Sakaida N., Takata T.: 117th Academic Meeting of Chugoku-Shikoku Branch of the Japanese Society of Pathology (Yonago), 2015.
- 2 : A tumor of oral floor (Squamous cell carcinoma, poorly differentiated, clear cell dominant): Furusho H., Nagasaki A., Miyauchi M., Ogawa I., Tani R., Suei Y., Takata T.: 64th Meeting of Hiroshima Pathological Conference (Hiroshima), 2015.
- 3 : Multiple warty lesions of oral mucosa. (Cowden syndrome): Ogawa I., Obayashi M., Kanda T., Toratani S., Okamoto T., Takata T.: 26th Annual Meeting of Japanese Society of Oral Pathology (Sapporo), 2015.

- 4 : A tumor of mandible (Ameloblastoma with ectomesenchymal-like stroma) : Yada N., Miyamoto I., Kanako T, Yoshioka I., Ogawa I., Takata T., Matsuo K.: 26th Annual Meeting of Japanese Society of Oral Pathology (Sapporo), 2015.
- 5 : A case of histiocystic necrotizing lymphadenitis (Kikuchi's Disease) after the operation of neck dissection of lymph node metastasis of mucoepidermoid carcinoma of the palate: Higaki M., Kanda T., Yasui T., Ando T., R Tani., Toratani S., Okamoto T.: The 25th Annual meeting of the Japanese Society of Oral Medicine (Suita), 2015.
- 6 : A case of Cowden syndrome diagnosed with multiple warty lesions of oral mucosa: Hayashi S., Kanda T., Higaki M., Obayashi H., Nakatao H., Hamada M., Akagi E., Yamasaki S., Ando T., Ogawa I., Toratani S., Okamoto T.: The 25th Annual meeting of the Japanese Society of Oral Medicine (Suita), 2015.
- 7 : A recurrent case of ameloblastoma 20 years after enucleation: Kanda T., Nakatao H., Obayashi H., Yasui T., Ando T., Tani R., Ogawa I., Hayashido Y., Toratani S., Okamoto T.: The 63rd Meeting of Chugoku-Shikoku Branch of Japanese Stomatological Society (Okayama), 2015.
- 8 : A case of central mucoepidermoid carcinoma of the mandible: Kimura N., Suematsu M., Hayashido Y., Ando T., Ogawa I., Okamoto T.: The 63rd Meeting of Chugoku-Shikoku Branch of Japanese Stomatological Society (Okayama), 2015.
- 9 : A lesion of mandible (Cherubism) : Tsuji H., Ando T., Kanda T., Hara J., Yonehara S., Ogawa I., Takata T.: 65th Meeting of Hiroshima Pathological Conference (Hiroshima), 2015.
- 10 : A tumor of gallbladder (Carcinosarcoma) : Yamanaka Y., Kuraoka M., Shimamoto F., Tachiyama Y., Kushitani K., Ando T., Hattori Y., Oshita Y., Matsugu Y., Sakamoto T., Nishisaka T.: 65th Meeting of Hiroshima Pathological Conference (Hiroshima), 2015.

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

- 1 : Grants-in-Aid for Scientific Research (Scientific Research(B)) (Continuance): Takata T.: Control of proliferation and bone invasion of oral cancer by using liposomal lactoferrin. 25293373. 3,600,000 yen
- 2 : Grants-in-Aid for Scientific Research (Scientific Research(B)) (Continuance): 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
- 3 : Grants-in-Aid for Scientific Research (Challenging Exploratory Research) (Continuance): 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
- 4 : "Base of knowledge-Aichi" Joint research project of emphasis research program (Continuance): Takata T.: Development of gas sensing device and analysis of relationships between human

- respiratory/skin gas and diseases. 1,980,000 yen
- 5 : Grants-in-Aid for Scientific Research (Scientific Research(C)) (Continuance): Miyauchi M.: Clarification of pathological progression mechanisms nonalcoholic steatohepatitis caused by dental infection of periodontal pathogen. 25462855. 1,000,000 yen
- 6 : Grants-in-Aid for Scientific Research (Young Scientists (B)) (Continuance): Furusho H.: The role of TLR2 in NASH progression caused by *P. gingivalis* odontogenic infection. 26861574. 1,500,000 yen
- 7 : Grants-in-Aid for strengthening and accelerating of national university reform “Specific support type” (New): Ando T. 6,000,000 yen
- 8 : Donated fund from Sanstar Co. Ltd. (Continuance): Takata T. (Study on periodontitis)
- 9 : Donated fund for Hiroshima Prefecture tumor registration business (Continuance): Takata T.
- 10 : Donated fund from Mitsubishi-Mihara Hospital (Continuance): Takata T. (Study on diagnosis for oral disease)

(5) Academic Awards

- 1 : Hanako Umehara 48th annual meeting of the Dental Association of Hiroshima University
Encouragement Award
- 2 : Dyshafilia Charindra The award from the Dean of Hiroshima University
- 3 : Atsuhiro Nagasaki 6th Hiroshima Conference on Education and Science in Dentistry Poster
Award
- 4 : Shunryo Yanagisawa 6th Hiroshima Conference on Education and Science in Dentistry Poster
Award
- 5 : Hisako Furusho 6th Hiroshima Conference on Education and Science in Dentistry Poster
Award

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Basic Life Sciences

Department of Cellular and Molecular Pharmacology

(1) Staff and Students

Professor: Takashi Kanematsu

Assistant professor: Kae Harada, Satoshi Asano, Yousuke Yamawaki

Professor (Part-time): Katsuya Morita, Toshiyuki Sasaguri, Minoru Wakamori, Takayuki Tsukuba, Akira Toyofuku, Tetsu Okumura

Graduate student: Masaki Hayashiuchi, Yuka Maetani, Yuka Kikuchi

Collaborator: Kana Oue (Hiroshima University Hospital Medical Staff)

Undergraduate student (Advanced Dental Research course): Masaki Yokoyama (6th), Seiki Tomoyuki (6th), Sakiho Tsuyama (6th), Satomi Shirawachi (4th), Yuri Taniguchi (4th)

(2) Main Research Activities

- 1 : Studies on the molecular mechanisms of GABA_A 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 : Studies on the mechanisms for neuropathic pain and the development of novel medicaments.
- 5 : Studied on the mechanisms of cell migration regulated by a new molecule.
- 6 : Studies on the molecular mechanisms of thermogenesis in brown adipocytes.
- 7 : Studies on the relationship between immune systems and depression-like behavior.

(3) Research Achievements

A) Original Papers

- 1 : Selective blockade of N-methyl-D-aspartate channels in combination with dopamine receptor antagonism induces loss of the righting reflex in mice, but not immobility. Kikuchi N, Irifune M, Shimizu Y, Yoshida K, Morita K, Kanematsu T, Morioka N, Nakata Y, Sakai N. *Psychopharmacology (Berl)*. 2015;232(1):39–46.
- 2 : Enhanced lateral inhibition in the barrel cortex by deletion of phospholipase C-related catalytically inactive protein-1/2 in mice. Toyoda H, Saito M, Sato H, Kawano T, Kawakami S, Yatani H, Kanematsu T, Hirata M, Kang Y. *Pflugers Arch*. 2015;467(7):1445–1456.
- 3 : Enhanced desensitization followed by unusual resensitization in GABA_A receptors in phospholipase

C-related catalytically inactive protein-1/2 double-knockout mice. Toyoda H, Saito M, Sato H, Tanaka T, Ogawa T, Yatani H, Kawano T, Kanematsu T, Hirata M, Kang Y. *Pflugers Arch.* 2015;467(2):267–284.

4 : Evaluation of the efficiency of denture cleaners for removing denture adhesives. Harada-Hada K, Hong G, Abekura H, Murata H. *Gerodontology.* 2015 doi: 10.1111/ger.12183.

B) Reviews

1 : New molecular basis in the regulation of lipolysis via dephosphorylation. Oue K, Harada-Hada K, Kanematsu T. *Folia Pharmacologica Japonica*, 146: 93-97, 2015.

C) Publications

D) Other Publications

1 : Development of Study in PRIP. Kanematsu T. The Naito Foundation, *Current News* 95: 2015.

2 : Elucidation of roles of PRIP in autophagic elimination of *Staphylococcus aureus*. Kana Harada, Kae Harada-Hada, and Takashi Kanematsu. *Japanese Society for Proteases in Pathophysiology News Letter*, No.35, pp22–23, JAN. 2015.

3 : Molecular Basis Involved in Autophagy-Mediated Clearance of Intracellular Pathogens, Harada-Hada K, Kanematsu T: *Proc. 6th Hiroshima Conf. Educ. Sci. Dent.*, 2015, pp. 99~101, 2015.

E) Presentation at Scientific Meeting

1 : Molecular mechanisms of energy metabolism in Phospholipase C-related but catalytically inactive protein (PRIP) knockout mice: Oue K, Irifune M, Kanematsu T : *Seminar of Food and Health in 2015*, (Hiroshima), 2015.

2 : Sodium butyrate improved neuro-inflammation-induced depression-like behavior via inhibition of microglial activation: Yosuke Yamawaki, Norika Yoshioka, Misako Nishida, Ayaka Murai, Takanari Yoshino, Hiroyuki Akagi, The 135th Annual Meeting of Pharmaceutical Society of Japan (Kobe), 2015.

3 : Sodium butyrate ameliorates inflammation-induced depression-like behavior: Yosuke Yamawaki, Norika Yoshioka, Misako Nishida, Ayaka Murai, Kana Oue, Masaki Hayashiuchi, Takashi Kanematsu, Hiroyuki Akagi The 88th Annual Meeting of The Japanese Pharmacological Society (Nagoya), 2015.

4 : Phospholipase C-related catalytically inactive protein (PRIP) knockout mice show altered responses to propofol : Hayashiuchi M, Kitayama T, Yamawaki Y, Irifune M, Okada M, Kanematsu T. : The 88th

- Annual Meeting of The Japanese Pharmacological Society (Nagoya), 2015.
- 5 : Differential effects of propofol and etomidate on hypnotic electroencephalogram stage and sleep-wake cycle in mice: Yoshikazu Nikaido, Sachie Takada¹, Tomonori Furukawa¹, Keisuke Migita, Yuko Shiba, Junko Yamada, Tetsuya Kushikata, Kazuyoshi Hirota, Shuji Shimoyama, Taku Ozaki, Kazuhiko Nakamura, Takashi Kanematsu, Masato Hirata, Shinya Ueno: the 92 nd Annual Meeting of The Physiological Society of Japan, (Hobe), 2015.
 - 6 : Phospholipase C-related but catalytically inactive protein (PRIP) is involved in nonshivering thermogenesis in brown adipocytes: Kanematsu T, Oue K : The 127th Kinki Branch Meeting of Japanese Pharmacological Society (Gifu), 2015.
 - 7 : Regulatory mechanisms of GABA_A receptor trafficking through KIF5A-GABARAP via a novel molecule: Asano Satoshi: Japanese Association for Oral Biology, Grant for Young Researchers (Tokyo), 2015.
 - 8 : Regulation of cell migration by PRIP, PRIP regulates PI(3,4,5)P₃ synthesis on the plasma membrane: Asano Satoshi, Kanematsu Takashi: The 56th Annual Meeting of the Japanese Biochemical Society, Chugoku and Shikoku branch office regular meeting (Shimane), 2015.
 - 9 : *Salmonella Typhimurium* enclosed in p62/LC3-positive vacuoles is increased in *Prip*-knockout cells. Kae Harada-Hada and Takashi Kanematsu. The 48th Annual Meeting of the Hiroshima University Dental Society (Hiroshima), 2015.
 - 10 : Antidepressant-like effect of sodium butyrate relating to inhibition of microglial activation, Yosuke Yamawaki, Takashi Kanematsu: The 48th Annual Meeting of the Hiroshima University Dental Society (Hiroshima), 2015.
 - 11 : Phospholipase C-related but catalytically inactive protein (PRIP) modulates beta-adrenergic receptor-mediated thermogenesis in brown adipocytes : Oue K, Irifune M, Kanematsu T : The 48th The meeting of Hiroshima University Dental Society, (Hiroshima), June 27, 2015.
 - 12 : Suppression of breast cancer cell migration by PRIP, an upstream regulator of phosphoinositide 3-kinase signaling pathway : Asano Satoshi, Kanematsu Takashi : The 48th The meeting of Hiroshima University Dental Society, (Hiroshima), June 27, 2015.
 - 13 : Phospholipase C-related catalytically inactive protein (PRIP)modulates locomotor function after spinal cord injury in mice: Fujita T, Kumatani G, 劉希哲, Wada K, Tanaka T, 陳俊輔, Hirata M, Kanematsu T, Nikaido K, Ueno S, Ishibashi Y. : The 89th Annual Meeting of the Japanese Orthopaedic Association, (Kobe), 2015.
 - 14 : Sodium butyrate ameliorates inflammation-induced depression-like behavior via inhibition of microglial activation, Yosuke Yamawaki, Norika Yoshioka, Misako Nishida, Ayaka Murai, Takashi Kanematsu, Hiroyuki Akagi, CINP Dublin Thematic Meeting, (Dublin/Ireland), 2015.
 - 15 : Intracellular growth of *Salmonella Typhimurium* is inhibited by autophagic regulation of PLC-related catalytically inactive protein. Kae Harada-Hada and Takashi Kanematsu. The 57th Annual Meetings

of Japanese Association for Oral Biology (Nigata), 2015.

- 16 : Gene expression analysis in microglia related in antidepressant-like effect of sodium butyrate: Yosuke Yamawaki, Takashi, The 57th Annual Meeting of Japanese Association for Oral Biology, (Niigata), 2015.
- 17 : PRIP regulates bacterial elimination via autophagic pathway in non-professional phagocytes. Kae Harada-Hada, Takashi Kanematsu. Biochemistry and Molecular Biology 2015 (Kobe), 2015.
- 18 : Pharmacological effects of general anesthetics altered by the change of subunit composition of GABA_A receptors : Hayashiuchi M, Yamawaki Y, Oue K, Harada K, Asano S, Irifune M, Okada M, Kanematsu T. : 6th Hiroshima Conference on Education and Science in Dentistry (Hiroshima), 2015.
- 19 : General anesthetics actions and the subunit composition of GABA_A receptors : Hayashiuchi M, Yamawaki Y, Oue K, Harada K, Asano S, Maetani Y, Irifune M, Okada M, Kanematsu T. : The 54th Hiroshima Prefecture Dental Association Hiroshima University Dental Society (Nippon Academy of Dental Technology Chugoku and Shikoku branch) (Hiroshima), 2015.

F) Special lectures in academic meeting

- 1 : PRIP facilitates the autophagic elimination of *Staphylococcus aureus* in mouse embryonic fibroblasts. Takashi Kanematsu, Kae Harada, The 89th Annual Meeting of Japanese Society for Bacteriology (Gifu), 2015.
- 2 : PRIP regulates feeding behavior and energy metabolism. Takashi Kanematsu, Kana Oue, The International Symposium on Neuroscience in Orofacial sensory-motor functions (ISNO2015) (Osaka), 2015.
- 3 : Molecular Basis Involved in Autophagy-Mediated Clearance of Intracellular Pathogens. Harada-Hada K and Kanematsu T. 6th Hiroshima Conference on Education and Science in Dentistry (Hiroshima), 2015.

(4) Grants

- 1 : Grant-in-Aid for challenging Exploratory Research: Kanematsu T., Studies on molecular mechanisms in differentiation and dedifferentiation of adipocytes. Project number 26670809. Amount 2,800,000. (2014–2015)
- 2 : Grant-in-Aid for Scientific Research (C): Harada K, Elucidation of molecular mechanism in *Staphylococcus aureus* elimination via autophagic pathway. Project number 15K11039. Amount 4,810,000 (2015–2017).
- 3 : Grant-in-Aid for Young Scientists (B): Yamawaki Y.: Stress response mechanisms related in a treatment for major depression focused on microglia. Project number 15K197310. Amount 3,900,000. (2015–

2016)

4 : Grant-in-Aid for Young Scientists (B): Asano S., Regulatory mechanisms of cancer metastasis and growth via novel molecule. Project number 15K20372. Amount 3,900,000. (2015–2016)

(5) Academic Awards

Satoshi Asano, Phosphorylase C-related catalytically inactive protein (PRIP) controls KIF5B-mediated insulin secretion, the 18th Encouragement Prize of faculty of dentistry reunion in Hiroshima University

(6) Patents

1 : Harada K, Mimura S, and Nikawa H: Denture-adhesive remover and the removal methods (JP2016-012907) (Hiroshima University).

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Basic Life Sciences Department of Biomaterials

(1) Staff and Students

Professor: Koichi Kato

Assistant Professor: Yuji Nomura, Isao Hirata, Ryo Nishikiori

Graduate Student: Yusuke Aida (Dept. Periodontal Med.), Aimi Naim (Dept. Orthodontics),
Takahiro Sugino (Dept. Orthodontics), Tomomi Date (Dept. Orthodontics), Ky Try,
Shakya Ajay

(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 : Seeding of mesenchymal stem cells into inner part of interconnected porous biodegradable scaffold by a new method with a filter paper. : Yamanaka K, Yamamoto K, Sakai Y, Suda Y, Shigemitsu Y, Kaneko T, Kato K, Kumagai T, Kato Y. : Dental Materials Journal, 34(1), 78-65, 2015.
- 2 : The synthesis and characterization of a novel potassium chloride-fluoridated hydroxyapatite varnish for treating dentin hypersensitivity. : Lochaiwatana Y, Poolthong S, Hirata I, Okazaki M, Swasdison S, Vongsavan N. : Dental Materials Journal, 34(1), 31-40, 2015.
- 3 : Antibody arrays for quality control of mesenchymal stem cells: Nishikiori R, Watanabe K, Kato K.: ACS Appl. Mater. Interfaces, 7(30), 16828-16836, 2015.
- 4 : Optimization of surface-immobilized extracellular matrices for the proliferation of neural progenitor cells derived from induced pluripotent stem cells.: Komura T, Kato K, Konagaya S, Nakaji-Hirabayashi T, Iwata H. : Biotechnology and Bioengineering, 112(11), 2388-2396, 2015.

B) Review

- 1 : Biodental engineering.: Matumoto T, Egusa H, Kato K, Tuji T: Journal of oral biosciences, 57(2):

80-85, 2015.

C) Publications

- 1 : Protein chips for stem cells culture 『 Biochip Technologies -Principle and Applications-』(Part II Application and development of bio-chips, Chapter 2 Protein chips for stem cell culture) Ito Y (Share) : Kato K: CMC publishing, 76-83, 2015.

D) Other Publications

- 1 : Radiation effects of heavy ion particles on bone metabolism.: M.Sawajiri, Y Nomura, H Terato, K Maruyama: 2014 Annual Report of the Research Project with Heavy Ions at NIRS-HIMAC: 92-93, 2015.

E) Presentation at Scientific Meeting

- 1 : Differentiation control to the hyaline and fibrous cartilage of the mesenchymal stem cells.: Sugino H, Kanawa M, Tanimoto K, Kato K.: The 3rd Japanese Society for Biomaterials in Chugoku and Shikoku symposium (Okayama), 2015.
- 2 : Development of Culture Substrate for Mesenchymal Stem Cell Culture in Serum-Free Medium.: Yamauchi Y, Hirata I, Kanawa M, Kato Y, Kato K.: The 65th General Session of the Japanese Society for Dental Materials and Devices (Sendai), 2015.
- 3 : Fabrication of biodegradable scaffolds with fused deposition modeling: optimization of condition for precision 3D printing.: Try K, Fukuda H, Li Z, Hirata I, Kato K.: The 65th General Session of the Japanese Society for Dental Materials and Devices (Sendai), 2015.
- 4 : The effects of growth factors and collagen on the differentiation of mesenchymal stem cells into hyaline and fibrous cartilage.: Sugino H, Kanawa M, Tanimoto K, Kato K.: The 65th General Session of the Japanese Society for Dental Materials and Devices (Sendai), 2015.
- 5 : Spatially-controlled co-culture for analyzing epithelial-mesenchymal interactions.: Nishikiori R, Kubota C, Sakakitani S, Nikawa H, Kato K.: The 65th General Session of the Japanese Society for Dental Materials and Devices (Sendai), 2015.
- 6 : Bone tissue regeneration using SDF-1-loaded scaffolds.: Date T, Nakano A, Yamakado N, Hattori S, Hirata I, Tanimoto K, Kato K.: The 65th General Session of the Japanese Society for Dental Materials and Devices (Sendai), 2015.
- 7 : Development of Mesenchymal Stem Cell Culture Substrates Used in Serum-Free Medium.: Hirata I, Yamauchi Y, Kanawa M, Kato Y, Kato K.: The 88th Annual Meeting of Japanese Tissue Culture Association (Hiroshima), 2015.

- 8 : Development of a spatially-controlled co-culture method for analyzing epithelial-mesenchymal interactions.: Nishikiori R, Kubota C, Sakakitani S, Nikawa H, Kato K.: The 88th Annual Meeting of Japanese Tissue Culture Association (Hiroshima), 2015.
- 9 : The influence of polymerization temperature on the mechanical properties and the amount of residual monomer in self-cured resins.: Morita K, Tsuka H, Hirata I, Kato K, Tsuga K.: The 66th General Session of the Japanese Society for Dental Materials and Devices (Tokyo), 2015.
- 10 : Bone tissue regeneration using stromal cell-derived factor 1 capable of binding to biodegradable scaffolds.: Hattori S, Nakano A, Yamakado N, Date T, Hirata I, Tanimoto K, Kato K.: The 66th General Session of the Japanese Society for Dental Materials and Devices (Tokyo), 2015.
- 11 : Shape designing of cell aggregates using 3D printed polymer mold.: Hirata I, Okada Y, Try K, Sugino H, Kato K.: The 98th Annual Meeting of the Hiroshima University Dental Society (Hiroshima), 2015.
- 12 : Molecular Scale Analysis of Physical Property Change of PTFE by Irradiation of Co-60 Radiation.: Yoshida M, Matsugaki A, Nakano T, Hirata I, Kato K, Okazaki M.: The 37th Annual meeting of the Japanese Society for Biomaterials (Kyoto), 2015.
- 13 : Study of Mesenchymal Stem Cell Culture Substrate for Serum-free Medium – Self-Assembled monolayer -: Hirata I, Yamauchi Y, Tania S, Veronica SR, Kanawa M, Kato Y, Kato K.: The 37th Annual meeting of the Japanese Society for Biomaterials (Kyoto), 2015.
- 14 : Development of a spatially-controlled co-culture method for analyzing epithelial-mesenchymal interactions.: Nishikiori R, Kubota C, Sakakitani S, Nikawa H, Kato K.: The 37th Annual meeting of the Japanese Society for Biomaterials (Kyoto), 2015.
- 15 : Study of chemical interaction of phosphoric acid ester-based monomer induced primer on binding of noble metal alloy.: Nagadori H, Shimoe S, Hirata I, Koizumi M, Matsumura H, Satoda T.: Nippon Academy of Dental Technology 37th annual meeting (Fukuoka), 2015.
- 16 : NT-4 promotes differentiation of induced pluripotent stem cells into dental epithelial-like cells.: Abdullah A.N, Miyauchi S, Tanimoto K and Kato K.: 48th Hiroshima University Dental Society Congress (Hiroshima), 2015.
- 17 : Radiation effects of heavy ion particles on bone metabolism: M.Sawajiri, Y Nomura, H Terato, K Maruyama: 2014 Annual Report of the Research Project with Heavy particle Ions at NIRS-HIMAC (Chiba), 2015.

F) Special lectures in academic meetings

- 1 : A cell culture substrate with antibody micro pattern as an analytical platform for modeling epithelial-mesenchymal interactions: Kato K.: 5th Taiwan-Japan Symposium on Nanomedicine (Taipei), 2015.

- 2 : Microarrays for identifying biomolecules that have impacts on stem cell fate: Kato K.: Hiroshima university international workshop on nanodevice technologies (Higashi Hiroshima), 2015.
- 3 : Substrates with antibody micro patterns as a platform for analyzing tissue morphogenesis: Kato K, Sakakitani S, Kubota C, Nishikiori R: E-MRS (Lille), 2015.
- 4 : Biomaterials and bio devices for oral tissue engineering: Kato K.: Research Week 2015 Taiwan Medical University (Taipei), 2015.
- 5 : Prospect of 2 Dimensional antibody display as the cell analysis platform.: Kato K.: The 88th Annual Meeting of Japanese Tissue Culture Association (Hiroshima), 2015.
- 6 : A Substrate with Antibody Patterns for Modeling Epithelial-Mesenchymal Interactions: Kato K, Kubota C, Sakakitani S, Kashiwagi M, Nishikiori R: The 3rd China-Japan Symposium on Nanomedicine (Beijing), 2015.
- 7 : Bioengineering for the next generation of tissue engineering: Kato K.: The 5th Kyushu block lecture meeting of the Japanese society for biomaterials (Fukuoka), 2015.
- 8 : Improvement and enhancement of BioDental education and research in Hiroshima: Kato K, Sugai M: The 6th Hiroshima Conference on Education and Science in Dentistry (Hiroshima), 2015.
- 9 : Genetically-engineered proteins as functional building blocks for tissue engineering scaffolds: Kato K.: 63rd JADR (Fukuoka), 2015.
- 10 : Toward the realization of regenerative medicine: from the viewpoint of the bio-engineering: Kato K.: The 57th Hiroshima university Surgery II alumni association workshop (Hiroshima), 2015.
- 11 : Microarrays as high-throughput analytical platforms for identifying biomolecules that have impacts on the fate of stem cells: Kato K.: 9th International Symposium on Nanomedicine (Tsu), 2015.

(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 Hirata I.: Hirata I.: Development of chemical regulation of culture substrate that control cell growth and differentiation: No. 25293403. 900,000JPY.
- 2 : Grant-in-Aid for Scientific Research (B), Ministry of Education, Culture, Sports, Science and Technology, Representative Kato K.: Hirata I.: Creation of artificial extracellular matrix for biological similar tissue architecture: No.25293404. 50,000JPY.
- 3 : Grant-in-Aid for Scientific Research (B), Ministry of Education, Culture, Sports, Science and Technology, Representative Kato K.: Kato K.: Creation of artificial extracellular matrix for biological similar tissue architecture: No.25293404. 2,700,000JPY.

(5) Academic Awards, etc.

- 1 : Nishikiori R, Watanabe K, Kato K.: Antibody arrays for high-throughput assessment of surface markers expressed on mesenchymal stem cells.: Announcement excellence award of the 64th General Session of the Japanese Society for Dental Materials and Devices (Sendai), 2015
- 2 : Aimi Naim Abdullah: NT-4 promotes differentiation of induced pluripotent stem cells into dental epithelial-like cells: Incentive award of the 48th Hiroshima University Dental Society Congress, 2015

(6) Patents

- 1 : Nomura Y., Sawajiri M., Nii T., Kadotani k.: The pharmaceutical composition and production methods for skin repairing and activation.: (JP2015-13717) (Medical Environment Techno Co.,Ltd.)
- 2 : Nomura Y., Nii T., Sawajiri M., Shimizu K.: The pharmaceutical composition and production methods for skin repairing and activation. (JP2015-98767) (Medical Environment Techno Co., Ltd., Nii Toshiharu, Ikemotoshokuhin Co., Ltd.)
- 3 : Nomura Y., Sawajiri M.: The manufacturing method of an interchange electrolysis hydrogen water and the radiological substance discharge method in the living body. (JP2015-162269) (Medical Environment Techno Co., Ltd.), (Mikasa Shoji Co., Ltd.)
- 4 : Nomura Y., Umehara R., Sawajiri M.: The manufacturing method of an interchange electrolysis water and the removal method of the metal particles and metal ions. (JP2015-240630) (Medical Environment Techno Co., Ltd.)

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- **Applied Life Science Department of Periodontal Medicine**
- **Division of Preventive and Restorative Dentistry Department of Periodontics and Endodontics**

(1) Staffs and Students

Professor: Hidemi Kurihara

Associate Professor: Tsuyoshi Fujita

Associate Professor, Lecturer: Noriyoshi Mizuno

Assistant Professor: Yuushi Uchida, Katsuhiko Takeda, Tomoyuki Iwata,

Kazuhisa Ouhara, Mikihito Kajiya, Shinji Matsuda, Akihiro Konishi(May-August)

Assistant Professor (Special Appointment): Eri Kaneda (August-)

Resident: Yasuko Fumino Ogawa (-May), Mizuho Kittaka (studying abroad), Akihiro Konishi (January-April, September-), Tsuyoshi Miyagawa (-February), Haruka Imai (- March), Yusuke Obinata (- March), Eri Kaneda (-July), Takako Fujita, Ryoichi Yagi (- March), Shu Ishida, Kei Kashiwai, Masahiro Yamakawa, Tetsuya Yoshimoto

Graduate Student: Yoshie Niitani (under leave of absence), Yusuke Aida, Naoko Tokunaga, Keita Takahashi, Kei Takahashi, NGUYEN QUOC TRUONG (-May), Masahiko Suzukawa, Ai Okanobu, Manabu Takewaki, Shuichi Munenaga , Keichi Akutagawa, Nao Komatsu, Yoko Sato, Shinobu Matsui, Minami Yoshioka, Shinya Sasaki, Yuuta Hamamoto

Clinical Trainee: Takayoshi Nagahara, Takeshi Ueda (-May), Hiroshi Haraga

(2) Main Research Activities

- 1: Immunological 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 neurotrophines
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

Original Papers (including Case Reports)

1. Bone marrow transplantation improves autoinflammation and inflammatory bone loss in SH3BP2 knock-in cherubism mice.
Yoshitaka T, Kittaka M, Ishida S, Mizuno N, Mukai T, Ueki Y.

- Bone. 2015 Feb,71, 201-9. doi: 10.1016/j.bone.2014.10.021. Epub 2014 Oct 31.
2. Loss of SH3 domain-binding protein 2 function suppresses bone destruction in tumor necrosis factor-driven and collagen-induced arthritis in mice.
Mukai T, Gallant R, Ishida S, Kittaka M, Yoshitaka T, Fox DA, Morita Y, Nishida K, Rottapel R, Ueki Y.
Arthritis Rheumatol., 2015 Mar, 67(3), 656-67. doi: 10.1002/art.38975.
 3. The differential expression of mgl mRNA by *Porphyromonas gingivalis* affects the production of methyl mercaptan.
Kazuhisa Ouhara, Yoriko Iwasaki, Mikihiro Kajiya, Irma Josefina Savitri, Masae Kitagawa, Naoko Tokunaga, Tomoaki Shintani, Ikuko Ogawa, Takamune Hino, Tsuyoshi Fujita, Hideki Shiba, Hidemi Kurihara
Oral Diseases, 2015 July, 21(5), 626-33
 4. Clumps of a mesenchymal stromal cell/extracellular matrix complex can be a novel tissue engineering therapy for bone regeneration.
Kittaka M, Kajiya M, Shiba H, Takewaki M, Takeshita K, Khung R, Fujita T, Iwata T, Nguyen TQ, Ouhara K, Takeda K, Fujita T, Kurihara H.
Cytotherapy., 2015 Jul, 17(7), 860-873
 5. LL37 induces VEGF expression in dental pulp cells through ERK signaling,
Khung R., Shiba H., Kajiya M., Kittaka M., Ouhara K., Takeda K., Mizuno N., Fujita T., Komatsuzawa H., Kurihara H.
Int. Endod. J.,2015 Jul, 48(7), 673-679
 6. Interleukin-8 induces DNA synthesis, migration and down-regulation of cleaved caspase-3 in cultured human gingival epithelial cells.
Fujita T., Yoshimoto T., Matsuda S., Kajiya M., Kittaka M., Imai H., Iwata T., Uchida Y., Shiba H., Kurihara H.
J Periodontal Res., 2015 Aug, 50(4),479-485
 7. Brain-derived neurotrophic factor prevents the endothelial barrier dysfunction induced by interleukin-1 β and tumor necrosis factor- α
Matsuda S., Fujita T., Kajiya M., Kashiwai K., Takeda K., Shiba H., Kurihara H.
J Periodontal Res., 2015 Aug, 50(4),444-51
 8. Involvement of smad2 and Erk/Akt cascade in TGF-b1-induced apoptosis in human gingival epithelial cells
Yoshimoto T. Fujita T., Kajiya M., Matsuda S., Ouhara K., Shiba H., Kurihara H.
Cytokine, 2015 Sep, 75(1), 165-73
 9. *Houttuonia Cordata* suppressed the *Aggregatibacter actinomycetemcomitans*-induced increase of inflammatory-related genes in cultured human gingival epithelial cells.

Kabir MA., Fujita T., Ouhara K., Kajiya M., Matsuda S., Shiba H., Kurihara H.

J Dent Sci., 2015 Oct, 88-94

10. Distinction between Cell Proliferation and Apoptosis Signals Regulated by BDNF in Human Periodontal Ligament Cells and Gingival Epithelial Cells

Kashiwai K, Kajiya M, Matsuda S, Ouhara K, Takeda K, Takata T, Kitagawa M, Fujita T, Shiba H, Kurihara H.

Journal of Cellular Biochemistry, 2015 Nov 18., doi: 10.1002/jcb.25446. [Epub ahead of print]

B) Review

C) Publications

1. Periodontology, 2nd edition volume I, chapter 3 ③Periodontal medicine: Text for dental hygienists (supervised by Japanese Society for Dental Hygienist's Education), 37-38

Hidemi Kurihara, Tsuyoshi Fujita

Ishiyaku Publishers, Inc. (Tokyo), 2015

D) Other Publications

E) Presentation at Scientific Meeting

- Usability of AUDIT System of Hiroshima Safety Dental service Support network to improve the prevention step for nosocomial infection in the dental clinic
Tomoyuki Iwata, Noriyoshi Mizuno, Miyuki Nakaoka, Takayoshi Nagahara, Yumi Irie, Koji Ohta, Hideki Shiba, Akihiro Sawa, Kazuhiro Tsuga and Hidemi Kurihara
The 30th Annual meeting of the Japanese Society for Infection Prevention and Control (2015 February, Kobe)
- Porphyromonas gingivalis* infection exacerbates rheumatoid arthritis in mice model. Masahiro Yamakawa, Kazuhisa Ouhara, Mikihito Kajiya, Mizuho Kittaka, Katsuhiko Takeda, Takako Fujita, Hideki Shiba, Tsuyoshi Fujita and Hidemi Kurihara
The Japan Society for Clinical Immunology (2015 February, Okinawa)
- A Role of Receptor for Advanced Glycation Endproducts in Gingival Epithelial Cells
Yuushi Uchida, K. Akutagawa, K. Ouhara, T. Fujita, H. Shiba, J. Katz, S. Cha, H. Kurihara
The 93rd IADR general Session & Exhibition (2015 March, Boston/USA)
- The molecular analysis of Rheumatoid Arthritis-related gene LRG1 in periodontitis
Kazuhisa Ouhara, Syuichi Munenaga, Masahiro Yamakawa, Mikihito Kajiya, Satoshi Yamasaki, Tsuyoshi Fujita, Hideki Shiba, Eiji Sugiyama, Hidemi Kurihara
The 93rd IADR general Session & Exhibition (2015 March, Boston/USA)
- Porphyromonas gingivalis* infection exacerbates rheumatoid arthritis in mice model. Masahiro

- Yamakawa, Kazuhisa Ouhara, Mikihiro Kajiya, Mizuho Kittaka, Katsuhiro Takeda, Takako Fujita, Hideki Shiba, Tsuyoshi Fujita and Hidemi Kurihara
The 93rd IADR general Session & Exhibition (2015 March, Boston/USA)
6. BDNF Regulates p75-JNK Signaling Cascade to induce Gingival epithelial Cells Apoptosis.
Kei Kashiwai, Hidemi Kurihara, Mikihiro Kajiya, Shinji Matsuda, Katsuhiro Takeda, Tsuyoshi Fujita and Hideki Shiba
The 93rd IADR general Session & Exhibition (2015 March, Boston/USA)
 7. Evidence for Inflammatory Bone Resorption in Cherubism Mice Lacking c-Fos
Joshua Prather, Mizuho Kittaka, Yasuyoshi Ueki
The 93rd IADR general Session & Exhibition (2015 March, Boston/USA)
 8. The development of immunomodulatory Clumps of a MSC/ECM complex for novel allograft cell transplantation therapy
Kei Takeshita, Mikihiro Kajiya, Manabu Takewaki, Nao Komatsu, Kazuhisa Ouhara, Tomoyuki Iwata, Tsuyoshi Fujita, Hideki Shiba, Hidemi Kurihara
The 58th spring meeting of the Japanese society of Periodontology (2015 May, Chiba)
 9. Effects of activation of the canonical β -catenin/Wnt pathway on the differentiation of bone marrow-derived mesenchymal stem cells into cementoblast like cells
Yusuke Aida, Hidemi Kurihara Koichi Kato
The 58th spring meeting of the Japanese society of Periodontology (2015 May, Chiba)
 10. Therapy for furcation involvement with enamel projection
Tsuyoshi Fujita, Hidemi Kurihara
The 58th spring meeting of the Japanese society of Periodontology (2015 May, Chiba)
 11. To establish anti-inflammatory cytokine producing clumps of MSCs/ECM (C-MSCs) complex ex vivo
Kei Takeshita, Mikihiro Kajiya, Manabu Takewaki, Nao Komatsu, Kazuhisa Ouhara, Tomoyuki Iwata, Tsuyoshi Fujita, Hideki Shiba, Hidemi Kurihara
The 88th of Japan Tissue Culture Association (2015 May, Hiroshima)
 12. The oral infection of *Porphyromonas gingivalis* exacerbates the joint destruction in the model mice of rheumatoid arthritis
Syuichi Munenaga, Kazuhisa Ouhara, Masahiro Yamakawa, Mikihiro Kajiya, Katsuhiro Takeda, Yushi Uchida, Kei Takeshita, Noriyoshi Mizuno, Tsuyoshi Fujita, Hidemi Kurihara
The 142nd Meeting of the Japanese Society of Conservative Dentistry (2015 June, Kitakyusyu)
 13. Elucidation of the mechanisms of Calcineurin inhibitor-induced gingival hyperplasia
A. Okanobu, S. Matsuda, M. Kajiya, N. Mizuno, T. Fujita, and H. Kurihara
The 142nd Meeting of the Japanese Society of Conservative Dentistry (2015 June, Kitakyusyu)
 14. Effect on the expression and activity of histone deacetylase by humoral factors secreted by periodontal cells
Keita Takahashi, Tomoyuki Iwata, Eri Kaneda, Takayoshi Nagahara, Minami Yoshioka, Hidemi Kurihara
The 142nd Meeting of the Japanese Society of Conservative Dentistry (2015 June, Kitakyusyu)
 15. Behavior of clumps of mesenchymal stem cells against the stimulation of bacterial components and

inflammatory cytokines

Nguyen Quoc Truong, Mikihiro Kajiya, Manabu Takewaki, Kei Takeshita, Tsuyoshi Fujita, Hidemi Kurihara

The 48th meeting of the Hiroshima University Dental Society (2015 June, Hiroshima)

16. Wnt3a promoted cementoblast differentiation of bone-marrow derived mesenchymal stem cells through the activation of canonical β -catenin/Wnt pathway

Yusuke Aida, Hidemi Kurihara, Koichi Kato

The 48th meeting of the Hiroshima University Dental Society (2015 June, Hiroshima)

17. Bacteria-induced actin rearrangement of gingival epithelial cells activates latent TGF-beta from ECM

Tetsuya Yoshimoto, Tsuyoshi Fujita, Hidemi Kurihara

The 36th The Japanese Society of Inflammation and Regeneration (2015 July, Tokyo)

18. Bacteria-induced actin rearrangement of gingival epithelial cells activates latent TGF-beta from ECM

Tetsuya Yoshimoto

The 57th fall meeting of the Japanese society of Periodontology (2015 September, Hamamatsu)

19. The immunological analysis of rheumatoid arthritis model mouse with *Porphyromonas gingivalis* orally infection

Syuichi Munenaga, Kazuhisa Ouhara, Mikihiro Kajiya, Masahiro Yamakawa, Katsuhiko Takeda, Manabu Takewaki, Shu Ishida, Yushi Uchida, Noriyoshi Mizuno, Tsuyoshi Fujita, Hidemi Kurihara

The 57th fall meeting of the Japanese society of Periodontology (2015 September, Hamamatsu)

20. Elucidation of the mechanisms of Calcineurin inhibitor-induced gingival hyperplasia

A. Okanobu, S. Matsuda, M. Kajiya, Y. Uchida, N. Mizuno, T. Fujita, and H. Kurihara

The 57th fall meeting of the Japanese society of Periodontology (2015 September, Hamamatsu)

21. The clinical application of oriental medicine which can suppress the production of halitosis-related gas produced by *Porphyromonas gingivalis*

Kazuhisa Ouhara, Youko Sato, Syuichi Munenaga, Mikihiro Kajiya, Tomoaki Shintani, Masae Kitagawa, Ikuko Ogawa, Tsuyoshi Fujita, Hidemi Kurihara

The 31th The Japanese Society of Dental Sciences for young investigator (2015 September, Tokyo)

22. Distinction between Cell Proliferation and Apoptosis Signals Regulated by BDNF in Human Periodontal Ligament Cells and Gingival Epithelial Cells

Kei Kashiwai, Mikihiro Kajiya, Tsuyoshi Fujita, Shinji Matsuda, Katsuhiko Takeda, Hidemi Kurihara

The 6th Hiroshima Conference (2015 October, Hiroshima)

23. *Porphyromonas gingivalis* infection exacerbates rheumatoid arthritis in mice model.

Masahiro Yamakawa, Kazuhisa Ouhara, Mikihiro Kajiya, Mizuho Kittaka, Katsuhiko Takeda, Takako Fujita, Hideki Shiba, Tsuyoshi Fujita and Hidemi Kurihara

The 6th Hiroshima Conference (2015 October, Hiroshima)

24. Development of Calcineurin Inhibitor Induced Gingival Hyperplasia Mice Model

A. Okanobu S. Matsuda, M. Kajiya, N. Mizuno, T. Fujita, and H. Kurihara

The 6th Hiroshima Conference (2015 October, Hiroshima)

25. Component of periodontal pathogen stimulates TGF- β releasing from extracellular matrix to induce gingival epithelial cell apoptosis
Tetsuya Yoshimoto, Tsuyoshi Fujita, Mikihiro Kajiya, Kazuhisa Ouhara, Hidemi Kurihara
The 63rd Annual Meeting of Japanese Association for Dental Research (2015 October, Fukuoka)
26. *Porphyromonas gingivalis* infection exacerbates rheumatoid arthritis in mice model. Masahiro Yamakawa, Kazuhisa Ouhara, Mikihiro Kajiya, Mizuho Kittaka, Katsuhiro Takeda, Takako Fujita, Hideki Shiba, Tsuyoshi Fujita and Hidemi Kurihara
The 63rd Annual Meeting of Japanese Association for Dental Research Hatton Award Finalists 2015 (2015 October, Fukuoka)
27. Trial of Examination of several Oral Functions in Periodontal Patients
Yuushi Uchida, Noriyoshi Mizuno, Tsuyoshi Fujita, Hidemi Kurihara
Workshop by Chugoku-Shikoku regional 3 universities of the Japanese society of Periodontology/
Chugoku-Shikoku regional branch of the Japanese academy of clinical periodontology (2015 October, Tokushima)
28. *Porphyromonas gingivalis* infection exacerbates rheumatoid arthritis in mice model.
Masahiro Yamakawa, Kazuhisa Ouhara, Mikihiro Kajiya, Mizuho Kittaka, Katsuhiro Takeda, Takako Fujita, Hideki Shiba, Tsuyoshi Fujita and Hidemi Kurihara
The 11th Asian Pacific Society of Periodontology Meeting (2015 October, South Bali/ Indonesia)
29. Osteolytic Macrophages in Inflammatory Bone Resorption of Cherubism
Mice Lacking c-Fos.
Mizuho Kittaka, Joshua Prather, Tomoyuki Mukai, Teruhito Yoshitaka, Yasuyoshi Ueki
American Society for Bone and Mineral Research 2015 Annual meeting (2015 October, Seattle/USA)
30. The analysis of rheumatoid arthritis model mouse with *Porphyromonas gingivalis* orally infection
Syuichi Munenaga, Kazuhisa Ouhara, Mikihiro Kajiya, Masahiro Yamakawa, Katsuhiro Takeda, Manabu Takewaki, Shu Ishida, Yushi Uchida, Noriyoshi Mizuno, Tsuyoshi Fujita, Hidemi Kurihara
The 99th Hiroshima University Dental Society (2015 November, Hiroshima)
31. Elucidation of the mechanisms of Drug-induced gingival hyperplasia
A. Okanobu, S. Matsuda, T. Fujita, M. Kajiya, Y. Uchida, and H. Kurihara
The 99th Hiroshima University Dental Society (2015 November, Hiroshima)
32. *Porphyromonas gingivalis* infection exacerbates rheumatoid arthritis in mice model.
Masahiro Yamakawa, Kazuhisa Ouhara, Mikihiro Kajiya, Mizuho Kittaka, Katsuhiro Takeda, Takako Fujita, Hideki Shiba, Tsuyoshi Fujita and Hidemi Kurihara
The 44th Annual Meeting of Japanese Society for Immunology (2015 November, Sapporo)
33. Effort by Dental hygienists in dental support for HIV positive patients in Hiroshima University Hospital
Okada M, Matsui K, Iwata T, Shintani T, Ogawa Y, Ikeda Y, Kinoshita K, Takada N, Saito S, Yamasaki N, Fujii T, Shiba H
The 29th Annual meeting of the Japanese Society for AIDS research (2015 December, Tokyo)

F) Special lectures in academic meetings

1. New approach for Dental service safety: Hidemi Kurihara; Scientific lecture for Hiroshima branch in alumni association of Hiroshima University Faculty of Dentistry (2015 January, Hiroshima)
2. The effect of periodontopathogenic bacteriam, *Porphyromonas gingivalis*, against systemic diseases: Kazuhisa Ouhara; The 48th Annual Meeting of the Japanese Association of Gremfree Life and Gnotobiology (2015 January, Hiroshima)
3. New insight for response of host-versus-bacteriain clinical medicine and dentistry: Hidemi Kurihara; The 48th Japanese Association of Germfree Life and Gnotobiology (2015 January, Hiroshima)
4. New medical and dental cooperation with a focus on periodontal disease: Hidemi Kurihara; Izumo diabetes Joint conference (2015 March, Izumo)
5. Consider management for injured tooth in terms of oral medicine: Hidemi Kurihara; The 15th Japan Association of Dental Traumatology (2015 July, Kitakyusyu)
6. 3D culture techniques open up a new horizon for effective/safety tissue regenerative therapy: Mikihito Kajiya; The 88th of Japan Tissue Culture Association (2015 May, Hiroshima)
7. Pleiotropic consideration in dental care for aged persons: Hidemi Kurihara; The 57th fall meeting of the Japanese society of Periodontology (2015 September, Hamamatsu)
8. Periodontology in super-aging society: Hidemi Kurihara; The 57th fall meeting of the Japanese society of Periodontology (2015 September, Hamamatsu)
9. Consider necessity of clinical examination with medical and dental cooperation – Periodontal disease, diabetes mellitus and cardiovascular lesion - : Hidemi Kurihara; The 8th annual meeting of Japanese Society for Evidence and the Dental Professional (2015 October, Yokosuka)
10. The effect of periodontopathogenic bacteria, *Porphyromonas gingivalis*, against the onset of rheumatoid arthritis: Kazuhisa Ouhara, Masahiro Yamakawa, Syuichi Munenaga, Tsuyoshi Fujita, Hidemi Kurihara; The 6th Hiroshima Conference (2015 October, Hiroshima)
11. Investigation of specialty in dental conservative treatment: Hidemi Kurihara; The 143rd Meeting of the Japanese Society of Conservative Dentistry (2015 November, Tokyo)

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

1. Grants-in aid for scientific research: Hidemi Kurihara: #264630085
2. Grants-in aid for scientific research: Mikihito Kajiya:# 268618140
3. Grants-in aid for scientific research: Yuushi Uchida:# 254629600
4. Grants-in aid for scientific research: Katsuhiko Takeda:# 254632180
5. Grants-in aid for scientific research: Shinji Matsuda: #268618150
6. Grants-in aid for scientific research: Hidemi Kurihara: #15H05053

7. Grants-in aid for scientific research : Tsuyoshi Fujita: #15K11389
8. Grants-in aid for scientific research : Noriyoshi Mizuno: #15K11388
9. Grants-in aid for scientific research: Hidemi Kurihara:# 15K15766
10. Grants-in aid for scientific research :Tomoyuki Iwata: #15K11215
11. Grants-in aid for scientific research : Kazuhisa Ouhara : #15K11390
12. Grants-in aid for scientific research : Kei Kashiwai : #15H06437
13. Hiroshima University the year of 2015 Grant for portent research: Masahiro Yamakawa
14. Hiroshima University the year of 2015 Grant for portent research: Tetsuya Yoshimoto
15. Hiroshima University education and research support foundation The year of 2015 grants for education and research (Grants for scientific research by young researcher): Tetsuya Yoshimoto
16. General foundation Ryokufukai The year of 2013 education and research prize for encouragement (Grant for young researcher grant): : Tetsuya Yoshimoto
17. GSK Japan Research Grant 2014-2015: Noriyoshi Mizuno
18. Research grants: Grants for research received from Hiroshima Prefecture: Hideki Shiba and others, Study on network-construction of dental practice for HIV infection
19. Research Grants on BDNF project by DENTSPLY International Inc.: Hidemi Kurihara
20. 2015-2016 Grants on diagnosis for periodontitis by Shofu Co., Ltd.

(5) Award

1. Kazuhisa Ouhara

The 31th The Japanise Society of Dental Sciences for young investigator best presentation award
 “The clinical application of oriental medicine which can suppress the production of halitosis-related gas produced by *Porphyromonas gingivalis*”
2. Mikihiro Kajiya

The Japanese society of conservative dentistry encouragement award
 “BDNF mimetic compound LM22A-4 regulates cementoblast differentiation via the TrkB-ERK/Akt signaling cascade3.”
3. Masahiro Yamakawa
 - a) 6th Hiroshima Conference Young Scientist Award
 “*Porphyromonas gingivalis* infection exacerbates rheumatoid arthritis in mice model.”
 - b) The 63rd Annual Meeting of Japanese Association for Dental Research Hatton Award Finalists 2015
 “*Porphyromonas gingivalis* infection exacerbates rheumatoid arthritis in mice model.”
4. Kei Kashiwai

6th Hiroshima Conference on Education and Science in Dentistry poster award

“Distinction between cell proliferation and apoptosis signals regulated by BDNF in human periodontal ligament cells and gingival epithelial cells”

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and tooth through using undifferentiated pluripotent cells derived from *Xenopus* and mice. At present, we are conducting to regenerate a jaw, eye and tooth by using mouse ES cells, human mesenchymal stem cells and human iPS cells.

9. Molecular-epidemiological study on oral-maxillofacial disease of the resident in Semipalatinsk Nuclear Test Site area in Kazakhstan.

(3) Research Achievements

A) Original Papers (including Case Reports)

1. S. Toratani, R. Tani, T. Kanda, K. Koizumi, Y. Yoshioka, T. Okamoto. : Photodynamic therapy using Photofrin and excimer dye laser treatment for superficial oral squamous cell carcinomas with long-term follow up. : *Photodiagnosis Photodyn Ther.* , pii: S1572-1000(15)30060-0. doi:10.1016/j.pdpdt. 2015 Dec 30.
2. S. Yamasaki, A. Hamada, E. Akagi, H. Nakatao, M. Ohtaka, K. Nishimura, M. Nakanishi, T. Okamoto. : Generation of Cleidocranial dysplasia-specific induced pluripotent stem cells in integration-, feeder-, and serum-free culture. : *In Vitro Cellular & Developmental Biology-Animal*. DOI 10.1007/s11626-015-9968-x. 2015 Nov 11.
3. T. Shintani, S.N.Z. Rosli, F. Takatsu, Y.F. Choon, Y. Hayashido, S. Toratani, E. Usui, T. Okamoto. : Eldecalcitol (ED-71), an Analog of 1 α , 25-dihydroxyvitamin D3 as a Potential Anti-cancer Agent for Oral Squamous Cell Carcinomas. : *J Steroid Biochem Mol Biol*. 2015 Oct 9. pii: S0960-0760(15)30102-3. doi: 10.1016/j.jsbmb.2015.09.043
4. T. Shintani, Y. Hayashido, H. Mukasa, E. Akagi, M. Hoshino, Y. Ishida, T. Hamana, T. K. Okamoto, T. Kanda, K. Koizumi, Y. Yoshioka, R. Tani, S. Toratani, T. Okamoto. : Comparison of the prognosis of bisphosphonate-related osteonecrosis of the jaw caused by oral and intravenous bisphosphonates. : *Int J Oral Maxillofac Surg*. 2015 Jul;44(7):840-4. doi: 10.1016/j.ijom.2015.03.013. Epub 2015 Apr 8.
5. T. Shintani, M. Miyauchi, R. Tani, Y. Yoshioka, E. Akagi, S. Toratani, T. Okamoto. : Bisphosphonate-related osteonecrosis of the jaw successfully treated with surgical resection and its histopathological features. : A long-term follow-up report. : *J Oral Maxillofac Surg Med Pathol*. 2015 Mar;27(2):283-6.
6. Y. Yoshioka, S. Toratani, H. Nakatao, K. Koizumi, Y. Hayashido, T. Okamoto. : Weekly paclitaxel plus cetuximab reduces the lung metastasis of adenoid cystic carcinoma arising from the salivary gland. : *Oral Science International*. 12(2) 67-71, 2015.
7. Y. Huang, T. Hamana, J. Liu, C. Wang, L. An, P. You, J. Y.F. Chang, J. Xu, C. Jin, Z. Zhang, WL. McKeehan, F. Wang. : Type 2 fibroblast growth factor receptor signaling preserves stemness and prevents differentiation of prostate stem cells from the basal compartment. : *J Biol Chem*. 2015 Jul 17;290(29):17753-61. doi: 10.1074/jbc.M115.661066. Epub 2015 Jun 1.
8. Y. Huang, T. Hamana, J. Liu, C. Wang, L.An, P. You, J. Y. F. Chang, J. Xu , WL. McKeehan, F. Wang. : Prostate Sphere-forming Stem Cells Are Derived from the P63-expressing Basal

- Compartment. : *J Biol Chem*. 2015 Jul 17;290(29):17745-52. doi: 10.1074/jbc.M115.661033. Epub 2015 Jun 1.
9. Y. Huang, C. Jin, T. Hamana, J. Liu, C. Wang, L. An, WL. McKeehan, F. Wang. : Overexpression of FGF9 in Prostate Epithelial Cells Augments Reactive Stroma Formation and Promotes Prostate Cancer ProgressionInt. : *Int J Biol Sci*. 2015 Jun 11;11(8):948-60. doi: 10.7150/ijbs.12468. eCollection 2015.
 10. T. Shintani, M. Yoshikawa, K. Morita, T. Kanda, M. Kitagawa, I. Ogawa, M. Sugai, K. Tsuga, H. Kurihara.. : Evaluation of oral function and environment by screening examinations (maximum tongue pressure, occlusal force, the area of occlusal contact and the number of oral) bacteria targeted for healthy young adults. - correlation between maximum tongue pressure and other examinations. – . : *Journal of Japanese Society for Evidence and the Dental Professional*. 7(1), 42-46, 2015.
 11. T. Kanda, N. Kimura, T. Ando, S. Toratani, J. Hara, T. Okamoto. : A case of Cherubism with bilateral central giant cell lesion of the mandible. : *Jpn.j.Oral Maxillofac.Surg*. Vol.61(10) 543-547, 2015.
 12. Y. Kurakake, K. Sasahara, S. Toratani, H. Shimasue, S. Hirota, K. Ohta, Y. Hayashidou, H. Shigeishi, H. Nikawa, T. Okamoto, M. Takechi, H. Amano, M. Sugiyama. : A Survey of Quality of Life in the Patients undergoing Treatment for Oral Cancer. : J. Hiroshima Univ. Dental Society Vol.47(2)97-110, 2015.
 13. E. Akagi, S. Yamasaki, M. Hamada, H. Nakatao, M. Ohtaka, K. Nishimura, M. Nakanishi, T. Okamoto, Establishment and long-term culture of iPS cells from peripheral blood mononuclear cells with sendai virus vector in serum-, feeder cell-free complete defined medium, Journal of Japan Tissue Culture Society For Dental Research, Vol. 24, No.1, 51-52, 2015.
 14. M. Suematsu, Y. Hayashido, T. Sakaue, T. Fujii, T. Okamoto, Post translational modification of Integrin α v in squamous cell carcinoma cells by selective autophagy through sequestosome 1, Journal of Japan Tissue Culture Society For Dental Research, Vol. 24, No.1, 29-30, 2015.

B) Review

not applicable

C) Publications

not applicable

D) Other Publications

not applicable

E) Presentation at Scientific Meeting

1. T. Shintani, Rosli S.N.Z., F. Takatsu, S. Toratani, Choon Y.F., E. Usui, T. Okamoto. : Eldecalcitol (ED-71), an Analog of $1\alpha,25$ -dihydroxyvitamin D3 as a Potential Anti-Cancer Agent for Oral Squamous Cell Carcinomas (OSCC). : The 18th Workshop on Vitamin D (Delft, The Netherland), 2015.Apr.21-24.
2. E. Akagi, S. Yamasaki, A. Hamada, H. Nakatao, M. Otaka, K. Nishimura, M. Nakanishi, S. Toratani, T. Okamoto. : Generation and maintenance of human induced pluripotent stem cells from human peripheral blood mononuclear cells in serum-free and feeder-free culture condition with use of Sendai virus vectors. : The 69th The annual Meeting Japanese Stomatology Society (Osaka) , 2015.5.13-15.
3. T. Fujii, K. Okamoto, K. Koizumi, S. Toratani, T. Okamoto. : A case of malignant lymphoma revealed by post-extraction of the wisdom teeth. : A case report. : The 69th Annual Meeting of the Japanese Stomatological Society. (Osaka), 2015.5.13-15.
4. M. Suematsu, Y. Hayashido, T. Sakaue, T. Fujii, T. Okamoto. : Processing of integrin α v subunit by autophagy in squamous cell carcinoma cells. : The 69th Annual Meeting of the Japanese Stomatological Society. (Osaka), 2015.5.13-15.
5. H. Nakatao, S. Yamasaki, E. Akagi, A. Hamada, S. Toratani, T. Okamoto. : Exploration of rBC2LCN as the oral squamous cell carcinoma (OSCC) cancer stem cell marker. : The 69th Annual Meeting of the Japanese Stomatological Society. (Osaka), 2015.5.13-15.
6. F. Takatsu, T. Shintani, Rosli S.N.Z., S. Toratani, E. Usui T. Okamoto. : The study of Antitumor Activity using Eldecalcitol (ED-71), an Analog of $1\alpha,25$ -dihydroxyvitamin D3 in Oral Squamous Cell Carcinomas. : The 69th Annual Meeting of The Japanese Stomatological Society (Osaka), 2015. 5.13-15.
7. H. Nakatao, S. Yamasaki, E. Akagi, A. Hamada, M.Ohtaka, K. Nishimura, M. Nakanishi, S. Toratani, T. Okamoto. : Generation and maintenance of integration-free human induced pluripotent stem (hiPS) cells from peripheral blood mononuclear cells in serum- and feeder-free growth factor defined medium. : In Vitro Biology Meeting. (USA), 2015.5.30 -6.3.
8. Siti Nur Zawani Rosli, T. Shintani, F. Takatsu, S. Toratani, Choon Y.F., E. Usui, T. Okamoto. : Eldecalcitol (ED-71), an Analog of $1\alpha,25$ -dihydroxyvitamin D3 as a Potential Anti-Cancer Agent for Oral Squamous Cell Carcinomas (OSCC). : The 40th Malaysian Society of Biochemistry and Molecular Biology annual conference 2015. (Putrajaya), 2015.6.10-11.

9. T. Kanda, K. Takeda, K. Tsuga, H. Nikawa, H. Kurihara, M. Sugai. : Report of informed consent form of undergraduated clinical education in Dept. Faculty of Dentistry Hiroshima Univ. : The The 34th Annual Meeting of The Japanese Stomatological Society . (Kagoshima), 2015.7.10-11.
10. H. Hurusho, A. Nagasaki, M. Miyauchi, I. Ogawa, R. Tani, Y. Suei, T. Takata. : Tumor of the floor of mouth (Squamous cell carcinoma, poorly differentiated, clear cell dominant). : The 64th Meeting of Hiroshima Pathological Conference . (Hiroshima), 2015. 7.28.
11. I. Ogawa, M. Obayashi, T. Kanda, S. Toratani, T. Okamoto, T. Takata. : Multiple Multiple hamartoma lesions of oral mucosa (Cowden syndrome). : The 26th Annual Meeting of Japanese Society of Oral Pathology. (Sapporo), 2015.7.29-31.
12. S. Hayashi, T. Kanda, M. Higaki, H. Obayashi, H. Nakatao, A. Hamada, E. Akagi, S. Yamasaki, I. Ogawa, S. Toratai, T. Okamoto. : A Case of Cowden syndrome diagnosed with multiple verrucas lesions of oral mucosa. : The 25th Annual meeting of the Japanese Society of Oral Medicine. (Osaka), 2015.9.18-19.
13. M. Higaki, T. Kanda, T. Yasui, T. Ando, R. Tani, I. Ogawa, S. Toratai, T. Okamoto. : A case of histiocystic necrotizing lymphadenitis (Kikuchi's Disease) after the operation of neck dissection of lymph node metastatis of mucoepidermoid carcinoma of the palate. : The 25th Annual meeting of the Japanese Society of Oral Medicine. (Osaka), 2015.9.18-19.
14. T. Sakaue, K. Koizumi, Y. Nakase, I. Ogawa, S. Toratani, T. Okamoto. : A case of multiple myeloma with extramedullary disease in the submandibular region. : The 60th annual meeting of the Japanese Society of Oral and Maxillofacial surgeons. (Nagoya), 2015.10.16-18.
15. N. Kimura, M. Suematsu, Y. Hayashido, T. Ando, I. Ogawa. T. Okamoto. : A case of central mucoepidermoid carcinoma of the mandible. : The 63th Japanese Stomatological Society. (Okayama), 2015.11.7.
16. T. Kanda, H. Nakatao, H. Obayashi, T. Yasui, T. Ando, R. Tani. I. Ogawa, Y. Hayashido, S. Toratani, T. Okamoto. : A recurrent case of ameloblastoma after 20 years of tumor enucleation. : The 63th Japanese Stomatological Society. (Okayama), 2015.11.7.
17. A. Hamada, H. Nakatao, H. Obayashi, T. Yasui, E. Akagi, S. Yamasaki, S. Toratani, T. Okamoto. : Generation of disease specific human induced pluripotent stem cells in integration-, serum- and feeder-free culture. : The 52th Annual meeting Japanese Tissue culture Association. (Tokushima), 2015.11.21.
18. E. Akagi, S. Yamasaki, A. Hamada, H. Nakatao, F. Obayashi, T. Yasui, Y. Taguchi, M. Otaka, K. Nishimura, M. Nakanishi, R. Tani, S. Toratani, T. Okamoto. : Generation and maintenance of

- human induced pluripotent stem cells in serum-free and feeder-free culture condition-comparison of various target cells and virus vectors. : The 52th Annual Meeting of Japan Tissue Culture Society For Dental Research.(Tokushima), 2015.11.21.
19. F. Takatsu, T. Shintani, Rosli S.N.Z., S. Toratani, E. Usui, T. Okamoto T. : A study of Antitumor Activity using Eldecalcitol (ED-71), an Analog of $1\alpha,25$ -dihydroxyvitamin D3 in Oral Squamous Cell Carcinomas. : The 52th Annual Meeting of Japan Tissue Culture Society For Dental Research.(Tokushima), 2015.11.21.
 20. Rosli S.N.Z., T. Shintani, F. Takatsu, Choon Y.F., E. Usui E, Y. Hayashido, S. Toratani, Zain R.B., T. Okamoto. : Growth inhibitory effects in vivo of Eldecalcitol (ED-71), an analog of $1\alpha,25$ (OH) $2D_3$ on oral squamous cell carcinomas through down-regulation of Heparin-Binding Protein 17/Fibroblast Growth Factor-Binding Protein 1. : BMB2015 Biochemistry and Molecular Biology. (Kobe), 2015.12.1-4.
 21. H. Tsuji, T. Ando T, T. Kanda, J. Hara, S. Yonehara, I. Ogawa, T. Takata. : Mandibular lesion (Cherubism). : The 65th Meeting of Hiroshima Pathological Conference (Hiroshima), 2015.12.19.

F) Special lectures in academic meetings

1. Tetsuji Okamoto, Cellular Endocrinological Study of Oral Cancer Stem Cells, University of Pennsylvania School of Dental Medicine, 28 January, 2015.
2. Yasutaka Hayashido, Special lecture dental association in Yamagata County, Hiroshima, Diagnosis and therapy of Oral Mucosa tumor and disease, 2015.3.14.
3. Tetsuji Okamoto, Industry-academia-regional cooperation, and Human resource development of Hiroshima University, human resources of Hiroshima Univ. How to promote regional revitalization as a Center of Community, The 13th Open Forum Univ. Bunkyo-gakuin Hongou (Tokyo), 2015.3.19.
4. Tetsuji Okamoto, Special lecture: Hiroshima Genome-Initiative for Medical Engineering Liaison festival, Hiroshima City Univ. (Hiroshima), 2015.9.10

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

1. Grants-in aid for scientific research (B) : Tetsuji Okamoto :# 15H05043

2. Grant-in-Aid for challenging Exploratory Research : Tetsuji Okamoto :#26670865.
3. Grants-in aid for scientific research (C) : Tomoaki Hamana :#26463044.
4. Grants-in aid for scientific research (C) : Kohsei Okamoto :#26463008.
5. Grants-in aid for scientific research (C) : Yukio Yoshioka :#26463006.
6. Grant-in-Aid for Young Scientists (B) : Sachiko Yamasaki :#26861723.
7. Grant-in-Aid for Young Scientists (B) : Yasutaka Ishida :#24792221.
8. Grant-in-Aid for Research Activity start-up : Taishi Sakaue :#26893166.
9. Grant-in-Aid for Research Activity start-up : Takahiko Fujii :#26893167.
10. A-STEP (Adaptable and Seamless Technology Transfer Program through Target-driven R&D): Sachiko Yamasaki :#AS262Z01770P.
11. Grants-in aid for scientific research (C) : Toratani Shigeaki:#15K11251
12. Grants-in aid for scientific research (C): Tomoaki Shintani :#25463109.
13. Grant-in-Aid for Research Activity start-up. : Mirei Suematsu :#15H06434
14. Grant-in-Aid for Research Activity start-up: Atsuko Hamada:# 15H06435

(5) Academic Awards, etc.

- 1: Tetsuji Okamoto, The Japanese Tissue Culture Association, Life time Achievement Award, May, 2015
- 2: Hirotaka Nakatao (Sachiko Yaamasaki, Eri Akagi, Atsuko Hamada, Shigeaki Toratani, Tetsuji Okamoto) : Poster award of the annual meeting Japanese stomatology society 2015.(Osaka)

(6) Patents

Patent

1. Liver dysfunction preventive agent , Inventors: Tetsuji Okamoto, Ryouji Tani, Kouichirou Tokumaru (Hiroshima Univ, Nihon kefir Co., Ltd) : Dec 3,(2008), 2008-308559 2015.9.28.

Patent application

1. (WO2015098111) METHOD FOR ESTABLISHING iPS CELLS AND METHOD FOR LONG-TERM MAINTENANCE OF STEM CELLS, No:PCT/JP2014/006454、 Inventors: Tetsuji Okamoto, Sachiko Yamasaki, et al. Applicant: Hiroshima University, Date: December 25, (2014)

- **Applied Life Sciences 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: Kyou Hiasa, Katsunori Koretake

Assistant Professor: Hiroshi Oue, Yohei Okazaki, Okada Shinsuke

Research Associate: Maho Takeuchi, Mariko Maruyama, Takahiro Mori

Graduate Student: Chiaki Higa, Aya Hiraoka, Kan kato, Keisuke Yasuda, Yoshifumi Oki, Hiromichi

kawano, Yukari Kinoshita, Masako Kobayashi, Yoko Shiotani, Yosuke Takeda, Azusa

Kuroki, Miyuki Yokoi, Kawano Akira, Doi Kensuke

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 : Application of simple swallowing provocation test with fiberoptic endoscopic evaluation of swallowing in a cross-sectional study: Tejima C, Kikutani T, Takahashi N, Tamura F, Yoshida M .: BMC Geriatrics, 16,15:48. doi: 10.1186/s12877-015-0049-5, 2015.
- 2 : Influence of implant surface topography on primary stability in a standardized osteoporosis rabbit model study: Oue H, Doi K, Oki Y, Makihara Y, Kubo T, Perrotti V, Piattelli A, Akagawa Y, Tsuga K.: Journal of Functional Biomaterials, 6, 143-152, 2015.
- 3 : The Effect of Superstructures Connected to Implants with Different Surface Properties on the Surrounding Bone: Koretake K, Oue H, Okada S, Takaeda Y, Doi K, Akagawa Y, Tsuga K.: Journal of Functional Biomaterials , 6, 623-33, 2015.

B) Review

C) Publications

D) Other Publications

E) Presentation at Scientific Meeting

- 1 : Effect of intermittent parathyroid hormone (PTH) administration on osseointegration aspects in rabbit osteoporosis model: Doi K, Kubo T, Oki Y, Makihara Y, Tsuga K.: European Association for Osseointegration The 24th annual scientific meeting (Stockholm) , 2015.
- 2 : A Novel isoform of FGFR2 Modulates FGF10-FGFR Signaling in Osteochondrogenesis: Yoshioka H, Kagawa K, Okita S, Kuremoto K, Takei Y, Minamizaki T, Tanimoto K, Tsuga K, Yoshiko Y : 6th Hiroshima Conference on Education and Science in Dentistry (Hiroshima) , 2015.
- 3 : Intermittent parathyroid hormone administration enhances primary stability and osseointegration on glucocorticoid induced osteoporosis: Doi K, Kubo T, Oki Y, Makihara Y, Tsuga K.: 6th Hiroshima Conference on Education and Science in Dentistry (Hiroshima) , 2015.
- 4 : Newly Identified FGFR2 Isoform Modulates FGF10-FGFR Signaling During Osteochondrogenesis: Kagawa K, Yoshioka H, Okita S, Kuremoto K, Takei Y, Minamizaki T, Tanimoto K, Tsuga K, Yoshiko : The American Society for Bone and Mineral Research 2015 (Seattle), 2015.

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): Tsuga K: Development of functional oral rehabilitation by sucking candy. (Grant No. 26462951). ¥1,300,000
- 2 : MEXT Grant-in-Aid for Scientific Research (C): Koretake K: Treatment planning for edentulous patients applied over denture on single standing implant. (Grant No. 25462998). ¥2,300,000
- 3 : MEXT Grant-in-Aid for Young Scientists (B): Oue H: Molecular biological elucidation for learning and memory impairment by tooth loss. (Grant No.26861641). ¥1,950,000
- 4 : MEXT Grant-in-Aid for Research Activity Start-up: Mori T: Relationship between candy-sucking function and nutritional status in elderly patients with dementia. (Grant No.26861641). ¥520,000
- 5 : Ministry of Economy, Trade and Industry Small and Medium Enterprise Agency Strategic Core Technology Advancement Program (Supporting Industry Program): Abe Y.: Development of antimicrobial rechargeable fiber for medical and nursing supporter. ¥97,275,000
- 6 : Japan Agency for Medical Research and Development (AMED) Development of Medical Devices through Collaboration between Medicine and Industry: Abe Y.: Development and industrialization of antimicrobial tissue conditioner for prevention of oral infection and aspiration pneumonitis in home care dentistry. (Grant No. 27-027). ¥160,000,000

(5) Academic Awards, etc.

(6) Patents

- **Applied Life Sciences**
- **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
Assistant Professor	: Koh-ichi Kuremoto, Kazuya Doi, Kouji Morita, Hiroki Tsuka (since April)
Administrative staff	: Michiko Miyagawa
Resident	: Sinsuke Okada(until May), Keisuke Nogami, Yusuke Makihara (since April), Akira Kawano (since April)
Graduate Student	: Kazuko Kagawa, Chiaki Higa, Keisuke Yasuda, Yosifumi Oki, Hiromichi Kawano, Miyuki Yokoi , Akira Kawano (since April)
Clinical Trainee	: Tomoharu Hori (since April)

(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 : Evaluation of oral function and environment by screening test intended for the healthy young adult (maximum tongue pressure, occlusal force, occlusal contact area, number of oral bacteria) - maximum tongue pressure and comparison with other test results -: Shintani T., Yoshikawa M.,

- Morita K., Kanda T., Kitagawa M., Ogawa I., Sugai M., Tsuga K., Kurihara H: Japanese Society for Evidence and the Dental Professional, 7, 42-46, 2015.
- 2 : Significance of titanium allergy as preoperative test of implant: Kitagawa M., Obayashi M., Nagasaki A., Yanagisawa S., Shintani T., Kagawa K., Abekura H., Hiasa K., Kubo T., Takechi M., Ogawa I., Kurihara H.: Japanese Society for Evidence and the Dental Professional, 7, 31-34, 2015.
- 3 : Reference Model for Rapid Diagnosis and Treatment in the Aspiration and Accidental Swallowing of Dental Prostheses: Takeuchi M., Iwaguro S., Kato R., Hiasa K., Kubo T., Abekura A., Abe Y., Tsuga K.: The Journal of Hiroshima University Dental Society, 47, 159-162, 2015.
- 4 : Evaluation of the efficiency of denture cleaners for removing denture adhesives: Harada-Hada K., Hong G., Abekura H., Murata H.: Gerodontology, doi:10.1111/ger.12183, 2015.
- 5 : Correlation between the bone density recorded by a computerized Implant motor and by a histomorphometric analysis: A preliminary in vitro study on bovine ribs.: Iezzi G., Scarano A., Di Stefano D., Arosio P., Doi K., Ricci L., Piattelli A., Perrotti V.: Clin Implant Dent Relat Res, 1, e35-44, 2015 (in press).
- 6 : Radiographic comparison of periimplant bone resorption and assessment of survival rates of 2 implant systems: a 10-year prospective multicenter study.: Perrotti V., Ravera L., Ricci L., Doi K., Piattelli A., Shibli J., Iezzi G.: Implant Dent, 24, 77-82, 2015 (in press).
- 7 : Influence of implant surface topography on primary stability in a standardized osteoporosis rabbit model study.: Oue H., Doi K., Oki Y., Makihara Y., Kubo T., Perrotti V., Piattelli A., Akagawa Y., Tsuga K.: J Funct Biomater, 6, 143-52, 2015 (in press).
- 8 : The Effect of Superstructures Connected to Implants with Different Surface Properties on the Surrounding Bone.: Koretake K., Oue H., Okada S., Takeda Y., Doi K., Akagawa Y., Tsuga K.: J Funct Biomater, 6, 623-633, 2015 (in press).
- 9 : Runx/Cbfb signaling regulates postnatal development of granular convoluted tubule in the mouse submandibular gland.: Islam M.N., Itoh S., Yanagita T., Sumiyoshi K., Hayano S., Kuremoto K., Kurosaka H., Honjo T., Kawanabe N., Kamioka H., Sakai T., Ishimaru N., Taniuchi I., Yamashiro T.: Dev Dyn, 244(3): 488-496, 2015.

B) Review

C) Publications

D) Other Publications

E) Presentation at Scientific Meeting

1. The aspect of implant-bone support ability in the reconstructed bone with interconnected porous calcium hydroxyapatite: Makihara Y., Doi K., Kubo T., Kaziwara S., Kato K., Oki Y., Akagawa Y., Tsuga K.: The 124th Scientific Meeting of Japan Prosthodontic Society (Omiya), 2015.
2. The regulation of osteochondrogenesis by FGF10 and identification of a soluble form of FGFR2b: Kagawa K.: Frontal Dental School 2015 (Fukuoka), 2015.
3. Effects of FGF signaling on tooth root formation: Yokoi M., Kuremoto K., Oue H., Kubo T., Abe Y., Nikawa H., Tsuga K.: The 88th Annual Meeting Japanese Tissue Culture Association (Hiroshima), 2015.
4. Osteoblast-like cell response to inorganic polyphosphate-adsorbed hydroxyapatite: Kato K., Morita K., Yasuda K., Koretake K., Abe Y., Nikawa H., Tsuga K.: The 88th Annual Meeting Japanese Tissue Culture Association (Hiroshima), 2015.
5. Effect of intermittent parathyroid hormone administration on primary stability and osseointegration in rabbit osteoporosis model: Oki Y., Doi K., Makihara Y., Kubo T., Tsuga K.: The 45th Conference of Japanese Society of Oral Implantology (Okayama), 2015.
6. High-performance nano/bio interface control of hydroxyapatite using UV/ozone treatment: Yasuda K., Okazaki Y., Hiasa K., Abe Y., Tsuga K.: The 45th Conference of Japanese Society of Oral Implantology (Okayama), 2015.
7. The relationship between oral tori and oral function among the younger group: Morita K., Tsuka H., Kato K., Mori T., Doi K., Okazaki Y., Koretake K., Yoshikawa M., Tsuga K.: Annual Scientific meeting of Japan Prosthodontic Society Chugoku and Shikoku Branch (Matsue), 2015.
8. The influence of polymerization temperature environment for the polytechnic property and residual monomer of self-cured resin: Tsuka H., Morita K., Kato K., Abekura H., Tsuga K.: Annual Scientific meeting of Japan Prosthodontic Society Chugoku and Shikoku Branch (Matsue), 2015.
9. The influence of molar loss and diet property on learning and memory: Takeda Y., Oue H., Koretake K., Okada S., Kawano A., Kuremoto K., Yamanaka T., Moriya N., Akagawa Y., Tsuga K.: Annual Scientific meeting of Japan Prosthodontic Society Chugoku and Shikoku Branch (Matsue), 2015.
10. The influence of polymerization temperature on the mechanical properties and the amount of residual monomer in self-cured resins: Morita K., Tsuka H., Hirata I., Kato K., Tsuga K.: The 66th Conference of the Japanese society of dental materials and devices (Tokyo), 2015.
11. Application of the tongue pressure inspection in care prevention's class: Tsuga K., Mori T., Morita K., Yoshikawa M., Nakagawa M., Hirai Y., Fujita T., Maeda Y., Wakabayashi D., Tani M., Kagawa J., Morimoto S., Arima T., Nomi K., Ueda Y., Komatsu T., Kawahara M., Doe K.: The 99th Conference of the Hiroshima University Dental Society (Hiroshima), 2015.
12. Novel functional oral rehabilitation by sucking lollipops: Kawano H., Kuroki A., Higa C., Hiraoka A., Mori T., Maruyama M., Tanaka K., Sasamura K., Takagi S., Kuremoto K., Yoshikawa M.,

- Tsuga K.: 54th Scientific meeting of the Japanese Society of Stomatognathic Function (Kagoshima), 2015.
13. Effect of intermittent parathyroid hormone administration on osseointegration aspects in rabbit osteoporosis model: Oki Y., Doi K., Makihara Y., Kubo T., Tsuga K.: 6th Hiroshima Conference on Education Science in Dentistry (Hiroshima), 2015.
 14. A Novel isoform of FGFR2 Modulates FGF10-FGFR Signaling in Osteochondrogenesis: Yoshioka H., Kagawa K., Okita S., Kuremoto K., Takei Y., Minamizaki T., Tanimoto K., Tsuga K., Yoshiko Y.: 6th Hiroshima Conference on Education and Science in Dentistry (Hiroshima), 2015.
 15. Newly Identified FGFR2 Isoform Modulates FGF10-FGFR Signaling During Osteochondrogenesis: Kagawa K., Yoshioka H., Okita S., Kuremoto K., Takei Y., Minamizaki T., Tanimoto K., Tsuga K., Yoshiko Y.: The American Society for Bone and Mineral Research 2015 (Seattle), 2015.
 16. Effect of intermittent parathyroid hormone (PTH) administration on osseointegration aspects in rabbit osteoporosis model: Doi K., Kubo T., Oki Y., Makihara Y., Tsuga K.: The 24th European Association for Osseointegration (Stockholm), 2015.

F) Special lectures in academic meetings

- 1 : Correspondence to hybrid resin CAD/CAM crown: Hitoshi Abekura: Annual Scientific Meeting of Japan Prosthodontic Society East Kanto branch (Mito), 2015.2.22
- 2 : Intermittent parathyroid hormone administration enhances primary stability and osseointegration on glucocorticoid induced osteoporosis: Doi K., Kubo T., Oki Y., Makihara Y., Tsuga K.: 6th Hiroshima Conference on Education Science in Dentistry, Peace seminar 2015 (Hiroshima), 2015.10.26

G) Others

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

- 1 : Grant-in-Aid for Scientific Research (C): Tsuga K: Development of functional oral rehabilitation by sucking candy. No. 26462951. 1,300 thousand yen
- 2 : Grant-in-Aid for Scientific Research (C) (2) from the Japan Society for the Promotion of Science: Abekura H.: Covariance structure analysis of sleep, diurnal bruxism, sociopsychological and TMD. No. 254629990005. 900 thousand yen
- 3 : MEXT Grant-in-Aid for Scientific Research (C): Doi K.: Establishment of bone improvement therapy using intelligent artificial bone. No. 15K11160. 1,200 thousand yen

- 4 : Grant-in-Aid for Young Scientists (B): Tsuka H.: Development of a new adhesive primer with 3,4-dihydroxyphenylalanine. No. 15K20441. 1,900 thousand yen
- 5 : Grant-in-Aid for Young Scientists (B): Nogami K.: Surface structural fabrication of highly functional dental implant with catalytic activity under visible light. No. 15K20442. 1,950 thousand yen
- 6 : Grant-in-Aid for Research Activity start-up: Makihara Y.: Bone regeneration therapy with bone remodeling-controlled artificial bone for osteoporosis. No. 15660607. 1,430 thousand yen
- 7 : Step-Up Support Program for KAKENHI (Grant-in-Aid for Scientific Research) FY2014: Kuremoto K.: Mechanistic exploration for the odontogenic differentiation and regeneration of stem cells from human apical papilla. No. 189072. 1,000 thousand yen

(5) Academic Awards, etc.

- 1 : Kagawa K.: The regulation of osteochondrogenesis by FGF10 and identification of a soluble form of FGFR2b: Advanced Dental Research School 2015 The highest award, 2015.
- 2 : Kagawa K., Yoshioka H., Okita S., Kuremoto K., Takei Y., Minamizaki T., Tanimoto K., Tsuga K., Yoshiko Y.: Newly Identified FGFR2 Isoform Modulates FGF10-FGFR Signaling During Osteochondrogenesis: 2015 ASBMR Plenary Poster Award, 2015.
- 3 : Kagawa K., Yoshioka H., Okita S., Kuremoto K., Takei Y., Minamizaki T., Tanimoto K., Tsuga K., Yoshiko Y.: Newly Identified FGFR2 Isoform Modulates FGF10-FGFR Signaling During Osteochondrogenesis: 2015 ASBMR Young Investigator Travel Grant, 2015.
- 4 : Yoshioka H., Kagawa K., Okita S., Kuremoto K., Takei Y., Minamizaki T., Tanimoto K., Tsuga K., Yoshiko Y.: A Novel isoform of FGFR2 Modulates FGF10-FGFR Signaling in Osteochondrogenesis: 6th Hiroshima Conference on Education and Science in Dentistry Poster Award, 2015.
- 5 : Oki Y.: Effect of intermittent parathyroid hormone administration on osseointegration aspects in rabbit osteoporosis model: 6th Hiroshima Conference on Education and Science in Dentistry Poster Award, 2015.

(6) Patents

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- **Applied Life Sciences, Department of Orthodontics and Craniofacial Development Biology**
- **Department of Oral Health and Development (Orthodontics)**

(1) Staffs and students

Professor	: Kotaro Tanimoto
Lecture	: Hiroshi Ueda, Masato Kaku
Assistant Professor	: Myongsun Koh, Yuki Asakawa, Ryo Kunimatsu, Naoto Hirose, Tomomi Mitsuyoshi, Syunichi Kojima, Keisuke Sumi
Intern	: Yuki Yoshimi, Yuji Tsuka, Hiromi Sumi, Tetsuya Awada, Nanae Oki, Hanaka Shikata, Eri Fujii
Graduate Student	: Yuki Okamoto, Tahsin Raquib Abonti, Hirotaka Sugino, Tomomi Date, Kayo Horie, Yu Matsumura, Aimi Naim Bindi Abdulah, Takaharu Abe, Saki Okita, Hidemi Gunji, Shoutoku Kojima, Chikako Sumi, Yuko Nakao, Cynthia Concepcion Medina, Aya Kimura, Kengo Nakajima, Makoto Yanoshita, Taeko Yamamoto, Kazuyo Ando, Kouji Iwai, Azusa Onishi, Isamu Kado, Mami Takano, Yuka Yashima, Sakura Yamada
International Student	: Wu Fang-Chun
Professor (part-time)	: Kazuo Tanne, Eiji Tanaka, Ichiro Takahashi
Registered Intern	: Kuniaki Tanaka, Kazunori Itatani, Eri Ohtani, Noriko Sano, Emi Ishikawa, Kyoko Mizukami
Dental Hygienist	: Miho Okada, Kanako Matsui, Tomoko Tokikazu

(2) Main academic activity

- 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: Long term cryopreservation of various tissues and cells

8: Development of new instruments and materials for orthodontic treatment

(3) Research achievement

A) Original article

1. Cranial suture-like gap and bone regeneration after transplantation of cryopreserved MSCs by use of a programmed freezer with magnetic field in rats : Kojima SI, Kaku M, Kawata T, Motokawa M, Sumi H, Shikata H, Abonti TH, Kojima ST, Yamamoto T, Tanne K, Tanimoto K.: *Cryobiology* Jun;70(3):262-8, 2015.
2. Effect of a simplified two-piece mandibular advancement appliance for obstructive sleep apnea : Matsumura Y, Ueda H, Concepcion C, Koh M, Tanimoto K.: *J Sleep Med Disord* 2; 1025-1026, 2015.
3. Effects of enzymatic degradation after loading in temporomandibular joint : Asakawa-Tanne Y, Su S, Kunimatsu R, Hirose N, Mitsuyoshi T, Okamoto Y, Tanaka E, Tanne K, Tanimoto K.: *J Dent Res* 294(2); 337-343, 2015.
4. A case of tooth autotransplantation after long-term cryopreservation using a programmed freezer with magnetic field : Kaku M, Shimasue H, Ohtani J, Kojima S-I, Sumi H, Shikata H, Abonti TR, Kojima S-T, Kawata T, Tanne K, Tanimoto K.: *Angle Orthod* 85:518-524, 2015.
5. Effect of occlusal hypofunction and its recovery on PDL structure and expression of VEGF and bFGF in rats : Motokawa M, Kaku M, Matsuda Y, Kojima S, Sumi C, Kimura A, Tanimoto K.: *Clin. Oral Investig*, 19: 929-935, 2015.
6. Accuracy of a three-dimensional dentition model digitized from an interocclusal record using a non-contact surface scanner : Kihara T, Yoshimi Y, Taji T, Murayama T, Tanimoto K, Nikawa H.: *Eur J orthod*. In press
7. Effect of Nd:YAG laser irradiation on bone metabolism during tooth movement : Tsuka Y, Fujita T, Shirakura M, Kunimatsu R, Shao-Ching Su, Fujii E, Tanimoto K.: *Journal of Laser in Medical Sciences*. In press
8. Reply: To PMID 23307804: Motokawa M, Kaku M, Matsuda Y, Oki N, Sugino H, Sumi C, Darendeliler MA, Tanimoto K.: *Eur J Orthod*. 37(1): 119, 2015.
9. A patient with maxillary protrusion accompanied with open bite treated by bimaxillary orthognatic surgery : Kunimatsu R., Asakawa Y, Mitsuyoshi T, Oki N, Okamoto Y, Gunji H, Ohtani J, Tanimoto K.: *The Journal of chu-shikoku orthodontic society* 27(1); 61-72, 2015.
10. A case of edge-to-edge occlusion with congenital missing of the maxillary premolars treated with auto-transplantation of the mandibular premolars : Watanabe A, Kaku M, Hiromi S, Tanne K, Tanimoto K, Tanaka E.: *The Journal of chu-shikoku orthodontic society* 27(1); 23-30, 2015.

11. A treatment case of the relapse after 22 years of retention : Okamoto Y, Asakawa Y, Kunimatsu R, Mitsuyoshi T, Su SC, Gunji H, Tanne K, Tanimoto K.: *The Journal of chu-shikoku orthodontic society* 27(1); 49-60, 2015.
12. A case of Crouzon syndrome applied by two-jaw surgery : Yoshimi Y, Sumi K, Awada T, Abe T, Okita S, Nakajima K, Tanimoto K.: *The Journal of chu-shikoku orthodontic society* 27(1); 73-82, 2015.
13. Effects of Low-level Diode Laser Treatment on the Metabolism of Human Dental Pulp Cells : Kunimatsu R, Tsuka Y, Gunji H, Yoshimi Y, Nakajima K, Tanimoto K.: *Journal of Japanese Society for Laser Dentistry* 26(1); 1-9, 2015.
14. An orthodontic treatment case of maxillary protrusion with ankylosed upper central incisor : Kojima SI, Kaku M, Koseki H, Sumi H, Shikata H, Abonti TH, Kojima ST, Yamamoto T, Tanimoto K.: *The Journal of Hiroshima Dental Association* 42(1):6-10, 2015.
15. An orthodontic case of skeletal Class III malocclusion with internal derangement of temporomandibular joint : Shinohara T, Watanabe K, Mori H, Izawa S, Horiuchi S, Kuroda S, Tanimoto K, Tanaka E.: *The Journal of chu-shikoku orthodontic society* 27(1); 39-48, 2015.
16. Teeth bank for autotransplantation.: Kawata T., Kaku M.: *Journal of the Japan Lingual Orthodontic Association* 25: 13-19, 2015.

B) General remarks

1. Tanimoto K.: Bone Regeneration by use of Mesenchymal Stem Cells for Treatment of Jaw Cleft – Utility and present issue - . *The Journal of chu-shikoku orthodontic society* 27(1); 1-6, 2015.

C) Books

D) PhD Thesis

E) Other publications

F) Presentation at Scientific Meeting

1. Irradiation effects of newly developed low temperature multi gas plasma jet on oral bacteria: Tahsin Raquib A, Kaku M., Kojima S., Sumi H., Shikata H., Kojima S., Tanimoto K.: 50th Year Anniversary Celebration-6th Hiroshima Conference on Education and Science in Dentistry (Hiroshima), 2015.
2. A Novel isoform of FGFR2 Modulates FGF10-FGFR Signaling in Osteochondrogenesis: Yoshioka H., Kagawa K., Okita S., Kuremoto K., Takei Y., Minamizaki T., Tanimoto K., Tsuga

- K., Yoshiko Y.: 50th Year Anniversary Celebration-6th Hiroshima Conference on Education and Science in Dentistry (Hiroshima), 2015.
3. Changes of the airway and sleep-breathing patterns of skeletal Class II children undergoing Activator therapy: Concepcion C., Ueda H., Koh M., Matsumura Y., Iwai K., Tanimoto K.: 50th Year Anniversary Celebration-6th Hiroshima Conference on Education and Science in Dentistry (Hiroshima), 2015.
 4. MicroRNAs involved in bone metabolism are transported into matrix vesicles during bone formation: Nakao Y., Takei Y., Minamizaki T., Yoshioka H., Ahmed F., Tanimoto K., Niida S., Yoshiko Y.: American Society for Bone and Mineral Research (Seattle), 2015.
 5. Newly identified FGFR2 isoform modulates FGF10-FGFR signaling during osteochondrogenesis: Kagawa K., Yoshioka H., Okita S., Kuremoto K., Takei Y., Minamizaki T., Tanimoto K., Tsuga K., Yoshiko Y.: The American Society for Bone and Mineral Research 2015(Seattle), 2015.
 6. Changes of the airway and sleep-breathing patterns of skeletal class II children undergoing activator therapy : Concepcion C, Ueda H, Matsumura Y, Tanimoto K.: The 28th TAO Annual Meeting & 2015 APOS Resident Forum (Taichung), 2015.
 7. Effect of enzymatic degradation in temporomandibular joint under mechanical loading : Su SC, , Tanimoto K.: The 28th TAO Annual Meeting & 2015 APOS Resident Forum (Taichung), 2015.
 8. Irradiation effects of newly developed multigas plasma jet on oral bacteria : Tahsin RA, Kaku M, Kojima SI, Sumi H, Shikata H, Kojima ST, Tanimoto K.: The 28th TAO Annual Meeting & 2015 APOS Resident Forum (Taichung), 2015.
 9. Clinical investigation into patients with Angle Class I malocclusion by the Orthodontics Department of Hiroshima University Hospital: Sumi C., Ueda H., Hirose N., Sumi H., Tanimoto K.: The 28th TAO Annual Meeting & 2015 APOS Resident Forum (Taichung), 2015.
 10. Statistical analysis of familial occurrence of cleft lip and/or palate in Hiroshima University Hospital: Okita S., Mitsuyoshi T., Sumi K., Tanne K., Tanimoto K.: The 28th TAO Annual Meeting & 2015 APOS Resident Forum (Taichung), 2015.
 11. The effect of Bone marrow-derived Mesenchymal Stem Cells on Osteoclast precursor for bone regeneration of Jaw Cleft: Abe T., Sumi K., , Kazuo T., Tanimoto K.: The 28th TAO Annual Meeting & 2015 APOS Resident Forum (Taichung), 2015.
 12. Changes of tongue position in patients with skeletal mandibular protrusion after orthognathic surgery by an electropalatographic analysis: Shotoku K., Kaku M., , Kojima S., Sumi H., Shikata H., Yamamoto T., Yamamoto I., Tanimoto K.: The 28th TAO Annual Meeting & 2015 APOS Resident Forum (Taichung), 2015.
 13. An orthodontic case report of a skeletal Class II patient with temporomandibular disorder, mandibular recession and open bite: Hirose N., Matsumura Y., Sumi C., Cynthia Concepcion.,

- Makoto Yanoshita., Hiroshi Ueda., Kotaro Tanimoto.: 8th International Orthodontic Congress(London), 2015.
14. Amelogenin isoforms effect the proliferation in human periodontal tissue cells: Yoshimi Y., Kunimatsu R., Hirose N., Awada T., Mitsuyoshi T., Gunji H., Takata T., Tanne K., Tanimoto T.: 8th International orthodontic congress (London), 2015.
 15. Effects of Low molecular weight hyaluronan on the expression of PRG4 through CD44 in synovial membrane cells: Mitsuyoshi T, Asakawa Y , Hirose N, Okamoto Y, Yanoshita M, Tanne k, Tanimoto K.: 8th international orthodontic congress(London), 2015.
 16. Irradiation effects of newly developed low temperature multi gas plasma jet on oral bacteria: Tahsin A, Kaku M, Kojima S, Sumi H, Shikata H, Kojima S, Yamamoto T, Tanimoto K.: The 48th Annual Meeting of the Hiroshima University Dental Society (Hiroshima), 2015.
 17. NT-4 promotes differentiation of induced pluripotent stem cells into dental epithelial progenitor-like cells.: Abdullah AN., Miyauchi S., Tanimoto K., Kato K.: The 48th Annual Meeting of the Hiroshima University Dental Society (Hiroshima), 2015.
 18. High-frequency low-level diode laser irradiation enhances the proliferation of cementoblast lineage cells: Gunji H., Kunimatsu R., Tsuka Y., Awada T., Okamoto Y., Tanimoto K.: American association of orthodontists meeting (SanFrancisco, CA, USA), 2015.
 19. Amelogenin enhances the proliferation of cementoblast lineage cells: Kunimatsu R., Yoshimi Y., Awada T.,Tanimoto K.: American association of orthodontists meeting (SanFrancisco, CA, USA), 2015.
 20. A case of autotransplantation of a cryopreserved tooth with magnetic field programmed freezer: Shikata H., Kaku M., Motokawa M., Kojima S., Sumi H., Kojima S., Tanne K., Tanimoto K.: American association of orthodontists meeting (SanFrancisco, CA, USA), 2015.
 21. Irradiation effects of newly developed low temperature multi gas plasma jet on oral bacteria: Tahsin A, Kaku M, Kojima S, Sumi H, Shikata H, Kojima S, Yamamoto T, Tanimoto K.: American association of orthodontists meeting (SanFrancisco, CA, USA), 2015.
 22. Influences of pulpectomy on root resorption during experimental tooth movement: Sumi H, Kaku M, Motokawa M, Matsuda Y, Kojima S, Shikata H, Tanimoto K.: American association of orthodontists meeting (SanFrancisco, CA, USA), 2015.
 23. Changes of the airway and sleep-breathing patterns of skeletal Class II children undergoing activator therapy: Concepcion C., Ueda H., Koh M., Matsumura Y., Tanimoto K.: The 74th Annual Meeting of the Japanese Orthodontic Society (Fukuoka), 2015.
 24. Amelogenin variants increased the proliferation of HCEM through the MAPK-ERK signaling pathway: Yoshimi Y., Kunimatsu R., Awada T., Hirose N., Mitsuyoshi T., Sumi K., Gunji H., Nakajima K., Kimura A., Miyauchi M., Takata T., Tanimoto K.: The 74th Annual Meeting of the Japanese Orthodontic Society (Fukuoka), 2015.

25. Effects of human full length amelogenin on the proliferation of human osteoblasts: Kunimatsu R., Yoshimi Y., Awada T., Asakawa Y., Hirose N., Mitsuyoshi T., Sumi K., Gunji H., Tsuka Y., Tanne K., Tanimoto K.: The 74th Annual Meeting of the Japanese Orthodontic Society (Fukuoka), 2015.
26. Bone tissue regeneration using SDF-1-loaded scaffolds : Date T, Nakano A, Yamakado N, Hirata I, Tanimoto K, Kato K .: The 65th General Session of the Japanese Society for Dental Materials and Devices (Sendai), 2015.
27. The effects of growth factors and collagen on the differentiation of mesenchymal stem cells into hyaline and fibrous cartilage : Sugino H, Kanawa M, Tanimoto K, Kato K.:The 65th General Session of the Japanese Society for Dental Materials and Devices (Sendai),2015.
28. Effects of low level diode laser irradiation on the proliferation of human periodontal ligament cells : Gunji H, Kunimatsu R, Yoshimi Y, Tsuka Y, Nakajima K, Tanimoto K.: The 27th Annual Meeting of the Japanese Society for Laser Dentistry (Sapporo), 2015.
29. Effects of low level Nd:YAG laser irradiation on the proliferation of human osteoblasts : Tsuka Y, Kunimatsu R, Yoshimi Y, Gunji H, Nakajima K, Tanimoto K.: The 27th Annual Meeting of the Japanese Society for Laser Dentistry (Sapporo), 2015.
30. A Mandibular Prognathism With Open Bite Case Re-treated with Glossectomy After Orthognathic Treatment: Date T, Koh M, Nakao Y, Hirose N, Ueda H, Ono S, Tanimoto K.: The 25th Annual Meeting of the Japanese Society for Jaw Deformities(Tokyo), 2015.
31. Two-jaw osteotomy following high condylectomy for treatment of a patient with facial asymmetry caused by unilateral condylar hyperplasia: Nakagawa T, Ono S, Kaku M, Kojima S, Sumi H, Uetsuki R, Tanimoto K, Takechi M.: The 25th Annual Meeting of the Japanese Society for Jaw Deformities(Tokyo), 2015
32. A case of orthognathic surgical correction of mandibular prognathism with loss of molar occlusion: Ono S, Nakagawa T, Ohtani J, Ishikawa E, Oki N, Tanimoto K, Takechi M.: The 25th Annual Meeting of the Japanese Society for Jaw Deformities(Tokyo), 2015.
33. An orthodontic treatment case of mandibular protrusion with asymmetry of the mandible: Kojima S, Kaku M, Toratani S, Okamoto K, Sumi H, Kogima S, Tanimoto K.: The 25th Annual Meeting of the Japanese Society for Jaw Deformities(Tokyo), 2015.
34. Statistical analysis of cleft lip and palate association with family history in Hiroshima university hospital: Okita S, Sumi K, Mitsuyoshi T, Yoshimi Y, Tsuka Y, Awada T, Fujii E, Abe T, Nakajima K, Tanimoto K.: The 57th Annual Meeting of Chu-Shikoku Orthodontic Society (Takamatsu) ,2015.
35. An orthodontic treatment case with Noonan syndrome: Yamamoto T, Kojima S-I, Kaku M, Sumi H, Shikata H, Kojima S-T, Tanimoto K. .: The 57th Annual Meeting of Chu-Shikoku Orthodontic Society (Takamatsu) ,2015.

36. Statistical analysis of patients with congenital disorder attending the orthodontic clinic at Hiroshima University Hospital : Yanoshita M, Koh M, Hirose N, Matsumura Y, Concepcion C, Sumi C, Ueda H, Tanimoto K. .: The 57th Annual Meeting of Chu-Shikoku Orthodontic Society (Takamatsu) ,2015.
37. A case report of severe skeletal mandibular protrusion : a 25-year follow-up study after orthognathicsurgery: Nakajima K, Yoshimi Y, Sumi K, Tsuka Y, Awada T, Fuji E, Sugino H, Abe T, Okita S, Tanimoto K. .: The 57th Annual Meeting of Chu-Shikoku Orthodontic Society (Takamatsu) ,2015.
38. Effect of Cilengitide on the metabolism of chondrocytes under excessive mechanical stimuli : Okamoto Y, Hirose N, Asakawa Y, Kunimatsu R, Mitsuyoshi T, Sumi C, Yanoshita M, Tanne K, Tanimoto K.: The 27th Annual Meeting of the Society for the Temporomandibular Joint (Nagoya), 2015.
39. Effect of hyaluronan on the expression of superficial zone protein through CD44 in synovial membrane cells : Mitsuyoshi T, Asakawa Y, Hirose N, Awada T, Okamoto Y, Yanoshita M, Tanimoto K.: The 27th Annual Meeting of the Society for the Temporomandibular Joint (Nagoya), 2015.
40. The effect of bone marrow-derived MSCs on osteoclast precursor for bone regeneration of Jaw Cleft : Abe T, Sumi K, Oki N, Kunimatsu R, Sugiyama M, Tanimoto K.:The 39th Annual Meeting of Japanese Cleft Palate Association(Tokyo), 2015.
41. Bone regeneration in artificial jaw cleft by use of MSCs-The role of MSCs in angiogenesis- : Oki N, Sumi K, Abe T, Sugiyama M, Tanimoto K.:The 39th Annual Meeting of Japanese Cleft Palate Association(Tokyo), 2015.
42. Cryopreservation of mesenchymal stem cells by a programmed freezer with a magnetic field : Shikata H, Tanimoto K.: The 39th Annual Meeting of Japanese Cleft Palate Association(Tokyo), 2015.
43. Immunohistochemical examination of pulp tissue during experimental tooth movement.: Sumi H., Kaku M., Kojima S., Shikata H., Tahsin A., Kojima S., Yamamoto T., Tanne K., Tanimoto K.: The 74th Annual Meeting of the Japanese Orthodontic Society (Fukuoka), 2015.
44. Tongue palate contact changes in clients with skeletalmandibular protrusion after SSRO by electropalatography.: Kojima S., Kaku M., Kojima S., Sumi H., Shikata H., Yamamoto T., Yasuhara Y., Yamamoto I., Tanimoto K., Tanimoto K.: The 74th Annual Meeting of the Japanese Orthodontic Society (Fukuoka), 2015.
45. Bone regeneration after transplantation of cryopreserved MSCs by a programmed freezer with a magnetic field.: Shikata H., Kaku M., Kojima S., Sumi H., Kojima S., Yamamoto T., Kawata T., Tanne K., Tanimoto K.: The 74th Annual Meeting of the Japanese Orthodontic Society (Fukuoka), 2015.

46. Experimental study for safe and efficient orthodontic tooth movement in middle and advanced age : Fujii E., Tsuka Y., Kunimatsu R., Hirose N., Tanimoto K.: The 74th Annual Meeting of the Japanese Orthodontic Society (Fukuoka), 2015.
47. Evaluation of the cleaning effect of tooth surface by use of nano particales from shell: Sumi K., Kunimatsu R., Hirose N., Yoshimi Y., Awada T., Abe T., Okita S., Nakao Y., Tanimoto K.: The 74th Annual Meeting of the Japanese Orthodontic Society (Fukuoka), 2015.
48. Promoted bone regeneration through recruitment endogeneous cells: Date T., Nakano A., Yamakado N., Hattori S., Hirata I., Kihara T., Tanimoto K., Katou K.:The 74th Annual Meeting of the Japanese Orthodontic Society (Fukuoka), 2015.
49. Evaluation of the mechanical and physical property of sapphire crystal ceramic bracket in orthodontic treatment: Nakajima K., Kunimatsu R., Sumi K., Yoshimi Y., Okamoto Y., Gunji H., Hirose N., Mitsuyoshi T., Kimura A., Tanimoto K.: The 74th Annual Meeting of the Japanese Orthodontic Society (Fukuoka), 2015.
50. Statistical investigation of Cleft Lip and/or Palate patients at Department of Orthodontics Hiroshima University: Abe T, Yoshimi Y, Kunimatsu R., Sumi K., Oki N.,Awada T., Hirose N., Mitsuyoshi T., Tanimoto K.: The 74th Annual Meeting of the Japanese Orthodontic Society (Fukuoka), 2015.
51. An Orthodontic treatment case with orthognatic surgery applied to an adult patient with maxillary protrusion: Kimura A., Kunimatsu R., Ohtani J., Asakawa Y., Mitsuyoshi T., Oki N., Okamoto Y., Gunji H., Tanimoto K.: The 74th Annual Meeting of the Japanese Orthodontic Society (Fukuoka), 2015.
52. Development of bone regeneration using a new amelogenin peptide: Awada T., Kunimatsu R., Yoshimi Y., Hirose N., Hirata I., Kato K., Tanimoto K.: The 74th Annual Meeting of the Japanese Orthodontic Society (Fukuoka), 2015.
53. An diode-laser irradiation enhances the proliferation and regeneration of osteoblasts and accelates experimental tooth movement : Gunji H., Kunimatsu R.,Tsuka Y., Yoshimi Y., Sumi K., Awada T., Hirose N., Mitsuyoshi T., Tanimoto K.: The 74th Annual Meeting of the Japanese Orthodontic Society (Fukuoka), 2015.
54. Effects of Nd;YAG and Er;YAG laser irradiation on the proliferation of Human Periodontal Ligament Cell. : Tsuka Y., Kunimatsu R., Gunji H., Fujii E., Yoshimi Y., Nakajima K., Tanimoto K.: The 74th Annual Meeting of the Japanese Orthodontic Society (Fukuoka), 2015.
55. Effects of bovine lactoferrin on extra-territorial facial pathological pain following a trigeminal nerve injury.:Horie K., Watanabe M., Awada T., Kunimatsu R., Murasaki K., Takata T., Uchida T., Tanimoto K.: The XII international conference on Lactoferrin, Structure, Function, and Applications (Nagoya), 2015.

56. Amelogenin/LAMP 1 interaction enhances the proliferation of NHOst cells, through signaling pathway.: Kunimatsu R, Tsuka Y, Tanimoto K.: The 35 th Annual Meeting of Kinki-Hokuriku of Society of Oral Implantology (Kanazawa), 2015.
57. Effects of low level Nd:YAG laser irradiation on the proliferation of human osteoblasts.:Tsuka Y, Kunimatsu R, Tanimoto K.:The 35th Kinki Hokuriku Annual Meeting of the Japanese society of oral implantology (Kanazawa), 2015.
58. Histological evaluation of safe and efficient orthodontic tooth movement in middle and advanced age : Fujii E., Fujita T., Shirakura M., TsukaY., Tanimoto K.: The 54th Hiroshima University Dental Society (Hiroshima), 2015.
59. A treatment of an adult crowding case with periodontal disease and temporomandibular disorders :Awada T., Kunimatsu R., Ohkuma S., Ozaki N., Tanimoto K.: The 54th Hiroshima University Dental Society (Hiroshima), 2015.
60. Two-jaw osteotomy following high-condylectomy for treatment of facial asymmetry patient caused by condylar hyperplasia: Nakagawa T, Ono S, Kaku M, Kojima S-I, Sumi H, Uetsuki R, Tanimoto K, Takechi M.: The 48th Annual Meeting of the Hiroshima University Dental Society (Hiroshima), 2015.
61. Differentiation control to the hyaline / fibrocartilage of the mesenchymal stem cell : Sugino H, Kanawa M, Tanimoto K, Kato k.: The 3rd Japanese society for Biomaterials Cyu-Shikoku Symposium (Okayama), 2015.
62. Bone tissue regeneration using SDF-1-loaded scaffolds : Date T, Nakano A, Yamakado N, Tanimoto K, Hirata I, Kato K.: The 3rd Japanese society for Biomaterials Cyu-Shikoku Symposium (Okayama), 2015.

F) Academic society symposium and special lecture

1. Tanimoto K.: Detection of malocclusion in dental checkup – The points of exploration -. Hiroshima City Dental General Incorporated Association (Hiroshima), 2015.
2. Regeneration medicine and Orthodontic Treatment – Utility of Mesenchymal Stem Cells and Current Problems -: Hiroshima Shudo Dental Association (Hiroshima), 2015.
3. Tanimoto K.: Orthodontics and Regeneration Medicine -A New Strategy of Bone Regeneration by use of Mesenchymal Stem Cells for Treatment of Jaw Cleft-: DiesForum 2015 (Bandung), 2015.
4. Tanimoto K.: Orthodontic Treatment for Patients with Temporomandibular Disorders —Systematic Approach Based on the Basic Research—.: DiesForum 2015, (Bandung), 2015.
5. Tanimoto K.: Temporomandibular Disorders and Orthodontic Treatment —Diagnosis and Systematic Approach —.: Joint Scientific Meeting Dental Medicine UNAIR (Surabaya), 2015.

6. Sumi K: The orthodontic approach for the patients with Turner syndrome. ~In order to know the orthodontic treatment~Turner syndrome Japanese group Hiroshima Branch (Hiroshima), 2015

(4) Scientific research grant -in-aid

1. Grant-in-aid for Scientific Research, Challenging Exploratory Research: Tanimoto K.: Restoration of tooth enamel by biomineralization with oyster shell nano-powder and enamel matrix proteins. No. 26670885, 1,100,000yen
2. Grant-in-aid for Scientific Research, (C): Tanimoto K. (contributory): Creation of artificial extracellular matrix for tissue engineering similar to vital body, 100,000yen
3. Grant-in-aid for Scientific Research (C): Kaku M.: Long term cryopreservation of mesenchymal stem cells. 1,300,000yen
4. Grant-in-aid for Scientific Research (B): Kojima S.: Long-term cryopreservation of MSCs derived from human umbilical cord blood by use of a programmed freezer with a magnetic field. 2,340,000yen.
5. Grant-in-Aid for Scientific Research (B): Hirose N.: Elucidation of the mechanical stress receptive mechanism by integrins, and establishment of PCR prevention with a integrins inhibitor. 2,900,000 yen
6. Grant-in-Aid for Scientific Research (B): Yoshimi Y.: Application to root resorption prevention and elucidation of periodontal tissue metabolic activity mechanism by drug discovery using amelogenin peptide and Platelet Rich Plasma. 1,500,000yen
7. Grant-in-Aid for Scientific Research: Sumi K.: The application to jaw cleft treatment by establishment of bone regeneration by use of mesenchymal stem cells and laser. 1,500,000yen.
8. Grant-in-Aid for Scientific Research (B): Sumi H.: Effects of anti-inflammatory drugs and pulpectomy on root resorption during orthodontic tooth movement: 2,300,000yen
9. Grant-in-Aid for Scientific Research: Sumi H.: Effects of anti-inflammatory drugs and pulpectomy on root resorption during orthodontic tooth movement: 500,000yen.
10. Grant-in-Aid for Scientific Research (B): Mitsuyoshi T.: Clarification of the temporomandibular joint disease and the establishment of new therapeutic method using mechanical stress and high molecular HA to the three-dimensional culture cells. 1300,000yen
11. Collaborative research with Sanster Co., Ltd: Kunimatsu R.: Statistical investigation of Oral care in orthodontic patients. 11 0,000 yen.
12. Grant-in-aid Fujii of Hiroshima University : Kunimatsu R.: Bone regeneration in the treatment of bone defect in the cleft lip and palate by use of deciduous dental pulp stem cells and diode laser. 1000,000 yen

13. Collaborative research with Unitak Co., Ltd : Kunimatsu R.: Effects of metabolism on the specialized hybrid-diode-laser for orthodontic treatment. 385,000 yen.

(5) Commendation

1. Abe T.: The effect of bone marrow-derived MSCs on osteoclast precursor for bone regeneration of Jaw Cleft: The 39th Annual Meeting of Japanese Cleft Palate Association. Excellence Award, 2015.
2. Horie K.: Effects of bovine lactoferrin on extra-territorial facial pathological pain following a trigeminal nerve injury : The XII international conference on Lactoferrin, Structure, Function, and Applications. Excellence Award, 2015.
3. Sugino H.: Differentiation control to the hyaline / fibrocartilage of the mesenchymal stem cell : The 3rd Japanese society for Biomaterials Cyu-Shikoku Symposium. Excellence Award, 2015.
4. Concepcion C.: Changes of the airway and sleep-breathing patterns of skeletal Class II children undergoing activator therapy: The 74th Annual Meeting of the Japanese Orthodontic Society. Oral presentation Award.
5. Su SC.: Effects of enzymatic degradation in temporomandibular joint under mechanical loading: The 28th TAO Annual Meeting & 2015 APOS Resident Forum. Oral presentation Award.

(6) Patent

1. Kazuo Tanne, Myongsun Koh: Development of sterilize fluid for oral bacteria and of production methods: (No:5828383)
2. 谷本幸太郎, 丹根一夫, 國松 亮, 神谷貴志: エナメル質再生液及びエナメル質再生キット: 特許第 5757612 号 (平成 27 年 6 月 21 日登録)

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- **Applied Life Sciences Department of Oral and Maxillofacial Radiology**
- **Division of Oral and Maxillofacial Surgery and Oral Medicine Department of Oral and Maxillofacial Radiology**

(1) Staff and Students

Professor :Keiji Tanimoto

Associate Professor :Minoru Fujita

Associate Professor/Lecturer :Yoshikazu Suei, Takashi Nakamoto

Assistant Professor :Toshikazu Nagasaki, Masahiko Ohtsuka, Masahiko Sawajiri,
Masaru Konishi

Graduate Student : Yukimi Yasuhara, Mitsuko Shimizu, Kiyohito Ota, Atia Hossain,
Preeyaporn Srimawong, Keiji Harada

(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

(3) Research Achievements

A) Original Papers

- 1: Fundamental studies of cooked rice made by non-ionic water-soluble Iodine contrast medium (Visipaque320®) with videofluoroscopic examination of swallowing: Konishi M.: The Japanese journal of dysphagia rehabilitation, 19(1), 3-10, 2015.
- 2: Relationships between oral conditions and physical functions in special elderly nursing home : Konishi M.: The journal of Hiroshima University dental society, 47(2), 90-96, 2015.

- 3: A case of the dementia patient accidentally ingesting PTP: Konishi M., Fujita M., Tanimoto K.: *Dental Radiology*, 55(2), accepted at 2015.4.13.

C) Publications

- 1 : Radiation Protection on Dental Practice 2nd ed.: Editor, Takehito Sasaki : Minoru Fujita : ISHIYAKU Publishers(Tokyo), 71-80, 2015.

D) Other Publication

- 1: Radiation effects of heavy ion particles on bone metabolism: M.Sawajiri, Y Nomura, H Terato, K Maruyama: 2014 Annual Report of the Research Project with Heavy Ions at NIRS-HIMAC: 92-93, 2015

E) Presentation at Scientific Meeting

- 1 : Regional lymph node metastases following interstitial brachytherapy for Stage I and II tongue cancer: Fujita M, Konishi M, Tanimoto K.: The 56th annual meeting of Japanese Society for Oral and Maxillofacial Radiology(Sendai), 2015.
- 2: Radiation effects of heavy ion particles on bone metabolism: M.Sawajiri, Y Nomura, H Terato, K Maruyama: 2014 Annual Report of the Research Project with Heavy Ions at NIRS-HIMAC: 92-93, 2015
- 3 : ^{198}Au grain brachytherapy for oral cancer patients at Hiroshima University Hospital: Konishi M., Fujita M., Tanimoto K.: The 56th annual meeting of Japan Society of Oral and Maxillofacial Radiology (Sendai), 2015.
- 4 : Effectiveness of patient movie on videofluoroscopic swallowing study : Konishi M., Nagasaki T., Hossain A., Yasuhara Y., Tanimoto K.: The 20th congress of clinical imaging for oral and maxillofacial lesions(Fukuoka), 2015.
- 5: Radiographic findings in a patient on Denosumab: Konishi M., Nishi H., Fujita M., Tanimoto K.: The 35th annual joint meeting of Kansai and Kyushu of Japan Society of Oral and Maxillofacial Radiology (Gifu), 2015.
- 6: Brachytherapy for oral cancer patients at Hiroshima University Hospital: Konishi M., Fujita M., Tanimoto K.: 170th annual meeting of oral and maxillofacial surgery at Kyoto (Kyoto), 2015.
- 7 : Creating the fusion movies, both the videofluoroscopic swallowing images and the inspection images of patient: Nagasaki T., Konishi M., Tanimoto K.: The 56th annual meeting of Japan

Society of Oral and Maxillofacial Radiology (Sendai), 2015.

- 8: Compared the two directions patient pictures during VF examinations: Nagasaki T., Konishi M., Takagi S., Hiraoka A., Suei Y., Yoshikawa M., Tanimoto K.: The 20th congress of clinical imaging for oral and maxillofacial lesions(Fukuoka), 2015.
- 9: A patient with swallowing disorder became the diagnosis by adding the esophageal perspective in VF examination: Nagasaki T., Yoshikawa M., Yasuhara Y., Konishi M., Suei Y., Tanimoto K.: The 20th congress of clinical imaging for oral and maxillofacial lesions(Fukuoka), 2015.
- 10: A PAP adaptive study for the bulbar symptoms in ALS patients: Takagi S., Yoshikawa M., Hiraoka A., Nagasaki T., Oda Y., Itou H., Yoshida M., Tsuga K., Izumi Y.: The 3th annual meeting of the Japanese Medical Network for Seriously Intractable Disease(Sendai), 2015.
- 11: Maximum tongue pressure is associated with swallowing dysfunction in ALS patients: Hiraoka A., Yoshikawa M., Nakamori M., Nagasaki T., Hosomi N., Oda Y., Tsuga K.: The 20th annual meeting of the Japanese Society of Dysphagia Rehabilitation(Kyoto), 2015.
- 12: An experience of using a computer-aided screening system of osteoporosis for detecting linearly eroded endsteal margine of the mandible lower border on panoramic radiograph : Nakamoto T., Takenaka T., Taguchi A., Nobuzane T., Hattori M., Tanimoto K. : The 56th annual meeting of Japan Society of Oral and Maxillofacial Radiology (Sendai), 2015.

F) Lecture

- 1: Past and the Future of Radiotherapy for Oral Cancers in Hiroshima University: Fujita M., The 69th Annual Meeting of The Japanese Stomatological Society (Osaka), 2015.

(6) Patents

- 1: Nomura Y., Sawajiri M., Nii T., Kadotani k.: A pharmaceutical formulation to restore and activate skin and the manufacturing method: (JP2015-13717) (Medical Environment Techno Co.,Ltd.)
- 2: Nomura Y., Nii T., Sawajiri M., Shimizu K.: A pharmaceutical formulation to restore and activate skin and the manufacturing method (JP2015-98767) (Medical Environment Techno Co., Ltd., Nii Toshiharu, Ikemotoshokuhin Co., Ltd.)
- 3: Nomura Y., Sawajiri M.: The manufacturing method of an interchange electrolysis hydrogen water and the radiological discharge method in the living body (JP2015-162269) (Medical Environment Techno Co., Ltd., Mikasa Shoji Co., Ltd.))
- 4: Nomura Y., Umehara R., Sawajiri M.: The manufacturing method of an interchange electrolysis water and the removal method of the metal particles and metal ions. (JP2015-240630) (Medical Environment Techno Co., Ltd.)

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- **Department of Biological Endodontics,
Integrated Health Sciences and**
- **Department of Endodontics and Operative Dentistry,
Division of Preventive and Restorative Dentistry**

(1) Staff and Students

Professor : Hideki Shiba

Assistant Professor : Makoto Arakawa, Shigeki Suzuki, Shintaro Nagayasu, Akane Mineoka, Naoyo Motoyama

Resident : Seiji Kobuke

Graduate Student : Tomomi Sano, Atsushi Hashikata, Hiroaki Hoshino, Jun Nakanishi, Kazuma Yoshida

(2) Main Research Activities

- 1: Studies on biological regeneration of dentin/pulp complex and periapical tissues
- 2: Studies on biological obturation of root canals at apical areas
- 3: Relationship between HIV infection and dental caries
- 4: Development of new therapeutic agent for intractable pain
- 5: Studies on relationship between dental disease and systematic diseases

(3) Research Achievements

A) Original Papers (including Case Reports)

- 1: LL37 induces VEGF expression in dental pulp cells through ERK signaling : Khung R., Shiba H., Kajiya M., Kittaka M., Ouhara K., Takeda K., Mizuno N., Fujita T., Komatsuzawa H., Kurihara H. : Int. Endod. J., 48, 673-679, 2015.
- 2: Irsogladine maleate inhibits *Porphyromonas gingivalis*-mediated expression of toll-like receptor 2 and interleukin-8 in human gingival epithelial cells : Savitri I.J., Ouhara K., Fujita T., Kajiya M., Miyagawa T., Kittaka M., Yamakawa M., Shiba H., Kurihara H. : J. Periodont. Res., 50, 486-493, 2015.
- 3: Interleukin-8 induces DNA synthesis, migration and down-regulation of cleaved caspase-3 in cultured human gingival epithelial cells : Fujita T., Yoshimoto T., Matsuda S., Kajiya M., Kittaka M., Imai H., Iwata T., Uchida Y., Shiba H., Kurihara H. : J. Periodont. Res., 50, 479-485, 2015.

- 4: Brain-derived neurotrophic factor prevents the endothelial barrier dysfunction induced by interleukin-1 β and tumor necrosis factor- α : Matsuda S., Fujita T., Kajiya M., Kashiwai K., Takeda K., Shiba H., Kurihara H. : J. Periodont. Res., 50, 444-451, 2015.
- 5: The differential expression of *mgl* mRNA by *P.gingivalis* affects the production of methyl mercaptan : Ouhara K., Iwasaki Y., Kajiya M., Savitri I.J., Kitagawa M., Tokunaga N., Shintani T, Ogawa I., Hino T., Fujita T., Shiba H., Kurihara H. : Oral Dis.21, 626-633, 2015.
- 6: Introduction of a mixture of β -tricalcium phosphate into a complex of bone marrow mesenchymal stem cells and type I collagen can augment the volume of alveolar bone without impairing cementum regeneration : Nagahara T., Yoshimatsu S., Shiba H., Kawaguchi H., Takeda K., Iwata T., Mizuno N., Fujita T., Kurihara H. : J Periodontol., 86, 456-464, 2015.
- 7: Clumps of a mesenchymal stromal cell/extracellular matrix complex can be a novel tissue engineering therapy for bone regeneration : Kittaka M., Kajiya M., Shiba H., Takewaki M., Takeshita K, Khung R., Fujita T., Iwata T., Nguyen TQ., Ouhara K., Takeda K., Fujita T., Kurihara H. : Cytotherapy, 17, 860-873, 2015.
- 8: Involvement of smad2 and Erk/Akt cascade in TGF- β 1-induced apoptosis in human gingival epithelial cells : Yoshimoto T., Fujita T., Kajiya M., Matsuda S., Ouhara K., Shiba H., Kurihara H. : Cytokine, 75, 165-173, 2015.
- 9: *Houttuonia Cordata* suppressed the *Aggregatibacter actinomycetemcomitans*-induced increase of inflammatory-related genes in cultured human gingival epithelial cells : Kabir MA., Fujita T., Ouhara K., Kajiya M., Matsuda S., Shiba H., Kurihara H. : J. Dent. Sci., 88-94, 2015.
- 10: Relationship between length variations in Ser/Asp-rich repeats in phosphophoryn and in vitro precipitation of calcium phosphate : Kobuke S., Suzuki S., Hoshino H., Haruyama N., Nishimura F, Shiba H. : Arch. Oral Biol., 60, 1263-1272, 2015.
- 11: Protection from diet-induced obesity and insulin resistance in mice lacking CCL19-CCR7 signaling : Sano T., Iwashita M., Nagayasu S., Yamashita A., Shinjo T., Hashikata A., Asano T., Kushiyama A., Ishimaru N., Takahama Y., Nishimura F. : Obesity, 23 , 1460-71, 2015.
- 12: DPP-4 inhibitor anagliptin exerts anti-inflammatory effects on macrophages, adipocytes, and mouse livers by suppressing NF- κ B activation : Shinjo T., Nakatsu Y., Iwashita M., Sano T., Sakoda H., Ishihara H., Kushiyama A., Fujishiro M., Fukushima T., Tsuchiya Y., Kamata H., Nishimura F, Asano T. : Am. J. Physiol. Endocrinol. Metab., 309, E214-23, 2015.
- 13: High-fat diet feeding significantly attenuates anagliptin-induced regeneration of islets of Langerhans in streptozotocin-induced diabetic mice : Shinjo T., Nakatsu Y., Iwashita M., Sano T., Sakoda H., Ishihara H., Kushiyama A., Fujishiro M., Nishimura F, Asano T. : Diabetol. Metab. Syndr., 7, 50, 2015.
- 14: Wnt Acts as a Pro-Survival Signal to Enhance Dentin Regeneration : Hunter D.J., Bardet C., Mouraret S., Liu B., Singh G., Sadoine J., Dhamdhare G., Smith A., Tran X.V., Joy A., Rooker S.,

Suzuki S., Vuorinen A., Miettinen S., Chaussain C., Helms J.A. : J. Bone Miner. Res., 30, 1150-1159, 2015.

B) Review

- 1: Pain relieving effect of platelet-activating factor (PAF) antagonists in a bone cancer pain model : Morita K., Motoyama N., Kitayama T., Shiraishi S., Dohi T. : Folia Phamacol. Jpn., 146, 87-92, 2015.
- 2: The usefulness of LL37, an antimicrobial peptide and dentin phosphoprotein/phosphophoryn in biological endodontics: Shiba H.: J. Hiroshima Univ. Dent. Soc., 47, 83-89, 2015.

C) Publications

D) Other Publications

- 1: Establishment of the network between hospitals and dental offices in order to refer the HIV infected patients for dental treatments : Maeda N., Kitagawa Y., Nagasaka H., Takagi R., Ohtawa Y., Usami Y., Arika T., Miyata M., Shiba H., Yoshikawa H., Akino K., Mizobe J., Ikeda M. : J. AIDS Res., 17, 179-183, 2015.

E) Presentation at Scientific Meeting

- 1: Dental treatment support of HIV-positive inpatients in Hiroshima University Hospital : Okada M., Mastui K., Iwata T., Shintani T., Ogawa R., Ikeda Y., Kinoshita K., Takata N., Saito S., Yamasaki N., Fujii T. Shiba H. : The 29th Annual meeting of the Japanese Society for AIDS research (Tokyo), 2015.
- 2: Evaluation of the oral environment and taste function of the patients who take anti-HIV medicine : Shintani T., Yamasaki N., Iwata T., Saito S., Kitagawa M., Ogawa I., Okada M., Mastui K., Hamamoto K., Unei H., Fujita K., Ogawa R., Kinoshita K., Ikeda Y., Fujii T. Shiba H. : The 29th Annual meeting of the Japanese Society for AIDS research (Tokyo), 2015.
- 3: Survey on shade taking of dental residents -Comparison between usual color matching and dental spectrophotometer- : Yano K., Mineoka A. : The 26th Japan Academy of Esthetic Dentistry (Tokyo), 2015.
- 4: Influences of CCL19-CCR7 pathway on energy metabolism : Tomomi S., Misaki I., Atsushi H., Takanaori S., Shintaro N., Akiko Y., Tomoichiro A., Nishimura F. : The 58th annual meeting of the

japanese society of periodontology (Chiba), 2015.

- 5: Relationship between length variations of Ser/Asp-rich repeats in phosphophoryn and in vitro precipitation of calcium phosphate : Kobuke S., Suzuki S., Hoshino H., Shiba H. : The 142th Japanese Society of Conservative Dentistry (Kitakyusyu), 2015.
- 6: Role of the novel Platelet-Activating factor (PAF) synthetase LPCAT2 on chronic pain models in mice : Motoyama N., Morita K., Kitayama T., Shiba H., Dohi T. : The 142th Japanese Society of Conservative Dentistry (Kitakyusyu), 2015.
- 7: Exploration of a TNF- α -inducing factor produced by pulp cells : Nagayasu S., Suzuki S., Kobuke S., Shiba H. : The 143th Japanese Society of Conservative Dentistry (Tokyo), 2015.
- 8: Glycine transporter inhibitors relieve bone cancer pain : Dohi T., Morita K., Motoyama N., Shiraishi S. : The 58th Annual Meeting of the Japanese Society for Neurochemistry (Omiya), 2015.

F) Special lectures in academic meetings

- 1: Information concerning performance of countermeasure for HIV infection in the Chugoku and Shikoku areas : Shiba H. : The first Liaison Council of AIDS treatment between AIDS core hospitals in the Chugoku and Shikoku areas (Hiroshima), 2015.
- 2: Overview: Think about DSPP study through morphological and functional perspectives, The usefulness of the modified recombinant DPP proteins in the hard tissue regeneration : Suzuki S. : The 56th Annual Meeting of the Japanese Society of Oral Biology, Satellite Symposium 12 (Niigata), 2015.

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

- 1: Grant-in-Aid for Scientific Research (B) : Shiba H., Usefulness of the complex of the three regenerative elements as a therapeutic agent for regeneration against endodontic diseases : No. 15H05022, ¥ 6,500,000.
- 2: Research grants: Grants for research received from Hiroshima Prefecture : Shiba H., Study on network-construction of dental practice for HIV infection : ¥3,000,000.
- 3: 2015 Hiroshima University Grant-in-Aid for Exploratory Research (Support for Young Scientists) : Mineoka A., Establishment of a new endodontic treatment with recombinant protein derived from teeth : ¥500,000.
- 4: Grants-in-Aid for Young scientists (B) : Suzuki S., Induction of pulpal wound healing by enhanced integrin-mediated signaling brought about by the amino acid cleavage at the sites close to the integrin-binding domain : No. 268615950, ¥ 1,400,000.
- 5: Grants-in-Aid for Young scientists (B) : Kobuke S., Development of hard tissue regeneration using

recombinant DPP : No. 15K20405, ¥1,700,000.

- 6: Grants-in-Aid for Young scientists (B) : Nagayasu S., Exploration of a TNF- α -inducing factor produced by pulp cells : 268615961A, ¥1,950,000.
- 7: General foundation Ryokufukai The year of 2015 education and research prize for encouragement (Grant for young researcher grant): Kobuke S., Anticancer function of non-coding RNA for regulation Dentin matrix protein-1 gene expression: ¥500,000

(5) Academic Awards, etc.

- 1: Motoyama N. : Relief of Cancer Pain by Glycine Transporter Inhibitors. The 18th prize for encouragement by Hiroshima University school of dentistry class reunion, 2015.

(6) Patents

- 1: Kurihara H., Kawaguchi H., Takeda K., Shiba H., Mizuno N., Yoshino H., Hasegawa N., Shinohara H. : Remedy and therapeutic method for periodontal diseases and pulpal diseases (Registration number ZL201210032750.8 (CN) and 9089606 (US)) (Patent applicant, TWO CELLS Co., Ltd., Kurihara H.)

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Integrated Health Sciences
Department of Pediatric Dentistry
Department of Oral Health and Development
(Pediatric Dentistry)

(1) Staff and Students

Professor	: Katsuyuki Kozai
Associate Professor	: Chieko Mitsuhata
Research Associate	: Yasutaka Kaihara, Meiko Tachikake, Noriko Niizato (April~) :, Yukari Ohara, Yukiko Konishi, Ayumi Shimada (~March)
Physician	: Ryoko Hirata, Nami Miyake, Ayumi Shimada (April~) : Yuko Iwamoto, Noriko Goto, Nobuyuki Tatsukawa (April~)
Graduate Student	: Nobuyuki Tatsukawa(~March), Kaoru Sakurai, Nao Kado, Yasumasa Irie
Research Student	: Akira Yamane
Clinical Trainee	: Fumiko Hayashi, Masafumi Kitamoto (~March), Maho Takasaki

(2) Main Research Activities

- 1 : Bacteriological research of onset mechanism and prevention of dental caries in children
- 2 : Research in oral environment and dental diseases in abused children
- 3 : Clinical research in oral care in children suffered from systematic diseases
- 4 : Evaluation of psychological stress in dental treatment in children
- 5 : 3-D analysis of dentition and occlusion in children
- 6 : Bacteriological research in periodontal diseases in children
- 7 : Investigation of oral status of Cambodian children

(3) Research Achievements

A) Original Papers (including Case Reports)

- 1 : Ao M., Miyauchi M., Furusho H., Inubushi T., Kitagawa M., Nagasaki A., Sakamoto S., Kozai K., Takata T.: Dental Infection of *Porphyromonas gingivalis* Induces Preterm Birth in Mice.: PLoS

- One.: 2015 Aug 31;10(8):e0137249, 2015.
- 2 : Shimada A., Noda M., Matoba Y., Kumagai T., Sugiyama M., Kozai K.: Oral lactic acid bacteria related to the occurrence and/or progression of dental caries in Japanese preschool children: *Biosci Microbiota Food Health*, 34(2):29-36, 2015.
 - 3 : Fujii S, Fujimoto K., Goto N., Kanawa M., Kawamoto T., Pan H., Srivatanakul, R. W., Pornprasitwech J., Saskianti T., Suardita K., Nishimura F., Kato Y.: Characteristic expression of MSX1, MSX2, TBX2, and ENTPD1 in dental pulp cells *Biomedical Reports*, 3, 566-572, 2015.
 - 4 : Goto N, Ohara Y, Niizato N, Kawagoe M, Furusho H, Mitsuhata C, Takata T, Kozai K.: A Case of Long-term Management for a Patient with Donohue Syndrome, *The Journal of Hiroshima University Dental Society*, 47(2), 163-169, 2015.
 - 5 : Tatsukawa N., Iwamoto Y., Irie Y., Kado N., Sakurai K., Mitsuhata C., Kozai K.: An overview of the public event for children's oral health care: *The Journal of Japanese Society of Dental Welfare*, 20(1), 20-27, 2015.
 - 6 : Konishi Y., Mitsuhata C., Iwamoto Y., Tatsukawa T., Kozai K.: Medical cooperation between pediatrics and pediatric dentistry in our university hospital for 14 years: *The Journal of Japanese Society of Dental Welfare*, 20(1), 2015.
 - 7 : Fujiwara N., Tsuruda K., Iwamoto Y., Kato F., Odaki T., Yamane N., Hori Y., Harashima Y., Sakoda A., Tagaya A., Komatsuzawa H., Sugai M., Noguchi M.: Significant increase of oral bacteria in the early pregnancy period in Japanese women: *Journal of Investigative and Clinical Dentistry*, 0, 1-8, 2015.

B) Review

- 1 : Kozai K.: Ethics in clinical research -Ethics review system for private dental practitioners-, *Japanese Journal of Clinical Dentistry for Children*, 20(7), 54-58, 2015.
- 2 : Kozai K.: The mission of pediatric dentistry —The report of holding of the 53rd Congress of Japanese Society of Pediatric Dentistry—, *Japanese Journal of Clinical Dentistry for Children*, 20(9), 10-13, 2015.

C) Publications

- 1 : Today's Therapy in Pediatrics, 16th Edition • Chapter 27 pediatric dental disease • oral surgery disease: Kozai K., IGAKU-SHOIN, 914-915, 2015.

D) Other Publications

- 1 : Kozai K.: Ethics in clinical research -Ethics review system for private dental practitioners-, Japanese Journal of Clinical Dentistry for Children, 20(7), 54-58, 2015.
- 2 : Kozai K.: The mission of pediatric dentistry —The report of holding of the 53rd Congress of Japanese Society of Pediatric Dentistry—, Japanese Journal of Clinical Dentistry for Children, 20(9), 10-13, 2015.
- 3 : Kozai K.: The seminar on prevention of neglect – Early detection of child abuse and neglect by dentists –, Awareness of children and neglect by dental practitioners, 20(9), 10-13, 2015.
- 4 : Saitoh I., Inada E., Kaihara Y., Hayasaki H.: Overview on the result of the awareness survey of mouth breathing and lip among children., Japanese Journal of Clinical Dentistry for Children, 20(7), 23-30, 2015.
- 5 : Mitsuhashi C.: Improving skills of dental treatment and effective communication for pediatric patients, HYORON, 30-33, 2015

E) Presentation at Scientific Meeting

- 1 : Analysis of effectiveness of triterpenoid compounds for prevention of dental caries: Mitsuhashi C., Tatsukawa N., Ohara Y., Iwamoto Y., Kozai K.: The 25th Congress of International Association of Paediatric dentistry (Glasgow), 2015.
- 2 : Improvement of oral health conditions of school children in Cambodia by oral health education: Iwamoto Y., Iwamoto A., Niizato N., Goto N., Kozai K.: The 25th International Association of Paediatric Dentistry (Glasgow), 2015
- 3 : Dental support activities for Cambodian children to establish the dental services supplied by Cambodian: Iwamoto Y., Iwamoto A., Goto N., Sakurai K., Niizato N., Amano H., Kozai K. : The 53rd Congress of Japanese Society of Pediatric Dentistry (Hiroshima), 2015.
- 4 : A study of the related factors lip closure force in school age : Kimi M., Saito I., Inada E., Kaihara Y., Murakami D., Sawami T., Sakurai K., Naitou A., Nosou, M., Kozai K., Yamasaki Y., Hayasaki H.: The 53rd Congress of Japanese Society of Pediatric Dentistry (Hiroshima), 2015.
- 5 : Three dimensional analyses of palates and alveolar ridges from pre-dentition period: Iwamae S., Kaihara Y., Kambe C., Kihara T., Niizato N., Kuwahara M., Amano H., Nikawa H., Kozai K.: The 53rd Congress of Japanese Society of Pediatric Dentistry (Hiroshima), 2015.

- 6: Inhibitory effect of strained wine lees extraction on cariogenic bacteria in human oral cavity: Ohara Y., Konishi T., Shimazu K., Aida K., Mitsuhata C., Kozai K.: The 53rd Congress of Japanese Society of Pediatric Dentistry (Hiroshima), 2015.
- 7: Oral health condition and Periodontopathic Bacteria in Children with type 1 diabetes mellitus: Tachikake M., Mitsuhata C., Tatsukawa N., Niizato N., Kozai K.: The 53rd Congress of Japanese Society of Pediatric Dentistry (Hiroshima), 2015.
- 8: Expression mechanism of the surface protein Skip in *S. aureus*: Tatsukawa N., Iwamoto Y., Kozai K.: The 53rd Congress of Japanese Society of Pediatric Dentistry (Hiroshima), 2015
- 9: A case report of long term observation of orthodontic repositioning treatment for an immature intruded permanent central incisor: Tachikake M., Yoshimura G., Tatsukawa N., Mitsuhata C., Kozai K.: The 5th Congress of the Japan association of dental traumatology West Japan Branch(Takamatsu), 2015.
- 10: Oral health condition in children with type 1 diabetes mellitus: Tachikake M., Mitsuhata C., Tatsukawa N., Niizato N., Miyagawa S., Jinno K., Kozai K. The 53rd Congress of the Japan Diabetes Society Chushikoku Branch (Yonago), 2015.
- 11: A case of Leigh disease suspected early root resorption of deciduous teeth: Shimada A., Kaihara Y., Irie Y., Konishi Y., Tatsukawa N., Iwamoto Y., Mitsuhata C., Kozai K.: The 32nd Annual Meeting of The Japanese Society for Disability and Oral Health (Nagoya), 2015.
- 12: MSX1 down-regulates the expression of cholesterol synthesis-related genes in dental pulp stem cells.: Goto N., Fujimoto K., Fujii S., Ida-Yonemochi H., Ohshima H., Kawamoto T., Noshiro M., Shukunami C., Kozai K., Kato Y.: BMB2015 Biochemistry and Molecular Biology (Kobe), 2015.
- 13: Regulation of dental pulp stem cell differentiation by the MSX1 homeobox transcription factor: Fujimoto K., Goto N., Kawamoto T., Noshiro M., Shukunami C., Kozai K., Kato Y.: The 99th Regular Meeting of the Hiroshima University Dental Society (Hiroshima), 2015.
- 14: Factors associated with the mouth breathing of primary school children: Kaihara Y., Sakurai K., Nosou M., Kozai K.: The 99th Regular Meeting of the Hiroshima University Dental Society(Hiroshima), 2015.
- 15: MEPE-ASARM, a substrate of PHEX, decreases bone volume independently of serum phosphate levels: Sakurai K., Minamizaki T., Yoshioka H., Takei Y., Kozai K., Yoshiko Y.: The 48th Hiroshima University Dental Society (Hiroshima) , 2015.
- 16: MEPE-ASARM, a substrate of the neutral endopeptidase PHEX involved in rickets/osteomalacia, acts as an inhibitor of bone formation: Sakurai K., Minamizaki T., Hayashi M., Yoshioka H., Takei Y., Kozai K., Yoshiko Y.: The 6th Hiroshima Conference on Education and Science in Dentistry (Hiroshima), 2015.

- 17: Injury situation and prognosis of traumatic teeth in our department: Tatsukawa N., Hirata R., Tachikake M., Mitsuhata C., Kozai K.: The 34th Congress of Japanese Society of Pediatric Dentistry Chushikoku Branch (Kouchi), 2015.
- 18: Tooth anomalies following treatment for hematologic disease and solid tumors in children: Shimada A., Goto N., Tatsukawa N., Ohara Y., Mitsuhata C., Kozai K.: The 34th Congress of Japanese Society of Pediatric Dentistry Chushikoku Branch (Kochi), 2015.
- 19: Unique hyaluronidase of Staphylococcus aureus isolated from furunculosis: Kubota S., Tatsukawa N., Hisatsune J., Kaneko J., Sugai M.: The 88th Annual Meeting of Japanese Society for Bacteriology (Gifu), 2015.
- 20: Report of dental support activities in Cambodia: Irie Y., Iwamoto Y., Iwamoto A., Shimada A., Amano H., Sugai M., Nakaoka M., Kurihara H., Kozai K.: 10th annual meeting of the Japan Society for Dental Hygiene (Sapporo), 2015.
- 21: Medical treatment cooperation of two departments (pediatric dentistry and pediatrics) in the Hiroshima University Hospital~Trial in the specialized periodical medical examination for Hemophilia~: Niizato N., Mitsuhata C., Ohara Y., Konishi Y., Iwamoto Y., Sakurai K., Kozai K.: 2015 Congress of Japanese Society of Pediatric Oral and Maxillofacial Surgery (Miyazaki), 2015.

F) Special lectures in academic meetings

- 1: The Influence of traumatized deciduous teeth on the development of permanent teeth: The seminar for certifying physician of the Japan Association of Dental Traumatology: The Influence of traumatized deciduous teeth on the development of permanent teeth: Kozai K.: Hiroshima University (Hiroshima), 2015.
- 2: The 53rd Congress of Japanese Society of Pediatric Dentistry —Presidential lecture— Dental care considering social environment surrounding children: Kozai K.: The International Conference Center Hiroshima (Hiroshima), 2015.
- 3: The seminar for certifying physician of the Japan Association of Dental Traumatology: Injury types and treatment for traumatized deciduous teeth: Kozai K.: Hiroshima University (Hiroshima), 2015.
- 4: The 27th Japanese Society of Pediatric Oral and Maxillofacial Surgery: The 2nd Educational lecture for application or renewal of licenses of specialist and experienced specialist of oral surgery: The practice for abused children in temporary shelters —Prevention of child abuse and neglect by dentists—: Kozai K.: Sheraton Grande Ocean Resort (Miyazaki), 2015.
- 5: Sectional meeting for nurse-teachers of the Gakko shika hoken-kai of Toyoda and Takehara: Dental and oral health promotion for children —Dental and oral status of children and school dental health programs in the future —Kozai K.: Takehara Shiminkan (Takehara), 2015.

- 6: The 74th Annual Meeting of the Japanese Orthodontic Society: Satellite Seminar: Ethics review system of the Japanese society of pediatric dentistry: Kozai K.: Fukuoka International Congress Center (Fukuoka), 2015.
- 7: Hiroshima Prefecture Association of Women Dentists: Trend of pediatric dentistry: Kozai K.: ANA Crowne Plaza Hiroshima (Hiroshima), 2015.
- 8: The 78th meeting for Medical ethics: Pediatric dentistry and ethics: Kozai K.: Hiroshima University (Hiroshima), 2015.
- 9: Training program for clinical trial specialist to evaluate functional foods: Lecture for talent training, Oral Health Care: Kozai K.: Faculty of Pharmaceutical Sciences, Hiroshima University (Hiroshima), 2015.
- 10: Oral and dental care treatment for children of cancer~Specialized approach by the pediatric dentists ~: Niizato N.: Chugoku and Shikoku block childhood cancer nursing workshop, Hiroshima University Hospital (Hiroshima), 2015.

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

- 1 : Grant-in-Aid for Scientific Research (Challenging Exploratory Research): Kozai K.: Effects of endocrine disorders on developing dopaminergic system in Brain (No. 24659911), 2014 direct expenses: ¥700,000, indirect expenses: ¥210,000.
- 2 : Grant-in-Aid for Scientific Research (B): Ohara Y.: Investigation of exacerbation of risk factor to the development of new methods of caries prevention of children. (No. 25862020) , 2014 direct expenses: ¥1,600,000, indirect expenses: ¥480,000.
- 3 : Grant-in-Aid for Scientific Research (B): Niizato N.: Clinical evaluation and Explication of mechanism of the Prevention program adapting 3DS from the systemic bacterial infection. (No. 26861789), 2014 direct expenses: ¥1, 500,000, indirect expenses: ¥450,000.
- 4 : Ryokufu Association Education and Research Award (young researchers grant): Tatsukawa N., Isolation and Characterization of *Staphylococcus aureus* from pediatric oral, 2014: ¥500,000.
- 5 : Grant-in-Aid for Scientific Research (Challenging Exploratory Research): Kozai K.: Effects of endocrine disorders on developing dopaminergic system in Brain (No. 24659911), 2014 direct expenses: ¥700,000, indirect expenses: ¥210,000.
- 6 : Scientific Research (C): Tachikake M.: Effectiveness of PAP and influence to give oral bacteria in children with dysphagia (No. 15K11367) , 2015 direct expenses: ¥1, 500,000, indirect expenses: ¥450,000.

- 7 : Grant-in-Aid for Scientific Research (B): Goto N.: Regulation of osteogenic and odontogenic differentiation in dental pulp stem cells by the MSX1 homeobox transcription factor. (No. 15K20592) , 2015 direct expenses: ¥2,000,000, indirect expenses: ¥600,000.

(5) Academic Awards, etc.

- 1 : Tachikake M.: 2015 JSPD Distinguished Scientists Awards at the 53rd Congress of Japanese Society of Pediatric Dentistry (JSPD), 2015.

(6) Patents

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- **Department of Dental Anesthesiology,
Integrated Health Sciences and**
- **Department of Dental Anesthesiology,
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	: Miyahara Takeshi, D.D.S., Ph.D., Oue Kana, D.D.S., Ph.D., Ishii Hiroaki, D.D.S., Ph.D.
Graduate Student	: Yoshinaka Taiga, D.D.S., Uno Tamayo, D.D.S., Ogawa Yuya, D.D.S., Kikuchi Yuka, D.D.S., Oda Aya, D.D.S., Mukai Tomohiro, D.D.S., Maetani Yuka, D.D.S. (temporary withdrawal), Yamashita Mieko, D.D.S. (temporary withdrawal)
Clinical Trainee	: Kawahara Michio, M.D., Ph.D., Katayama Sohtarō, D.D.S., Ph.D., Kawahara Toshiya, D.D.S., Nishinakamura Ryo, D.D.S., Yasusaka Masaki, D.D.S., Miyauchi Miwa, D.D.S., Ph.D., Nakajyo Akiko, D.D.S.

(2) Main Research Activities

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

(3) Research Achievements

A) Original Papers (including Case Reports)

- 1: Selective blockade of N-methyl-D-aspartate channels in combination with dopamine receptor antagonism induces loss of the righting reflex in mice, but not immobility: Kikuchi N, Irifune M, Shimizu Y, Yoshida K, Morita K, Kanematsu T, Morioka N, Nakata Y, Sakai N: *Psychopharmacology (Berl)*. 232(1), 39-46, 2015.
- 2: Dental 3% mepivacaine was useful in extracting tooth of a patient with allergy suspicion against additives of local anesthetics: Yoshinaka T, Yoshida K, Oda A, Kikuchi Y, Maetani Y, Uno T, Miyahara T, Mukai A, Doi M, Shimizu Y, Yoshida M, Irifune M: *Journal of Japanese Dental Society of Anesthesiology*, 47 (1), 41-44, 2015.
- 3: A case with deteriorating palmo-plantar pustulosis and hyperthyroidism after simultaneous bimaxillary orthognathic surgery: Oda A, Yoshida K, Uno T, Yoshinaka T, Mukai A, Irifune M: *Journal of Japanese Dental Society of Anesthesiology*, 43 (5), 667-669, 2015.

B) Review**C) Publications****D) Other Publications****E) Presentation at Scientific Meeting**

- 1: Effects of oral bacterial flora in patients with stroke: Nishi H, Hosomi N, Aoki S, Nezu T, Takamoto A, Shin-tani T, Irifune M, Ohge H, Matsumoto M, Kurihara H: The 40th Annual Meeting of the Japan Society for Stroke (Hiroshima), 2015.
- 2: PRIP modulates β -adrenergic receptor-mediated thermogenesis in brown adipocytes: Oue K, Irifune M, Kanematsu T: The 48th Scientific Meeting of Hiroshima University Dental Society (Hiroshima), 2015.
- 3: Analyses of systemic inflammatory responses in Prip-knockout mice: Maetani Y, Yamawaki Y, Irifune M, Kanematsu T: The 48th Scientific Meeting of Hiroshima University Dental Society (Hiroshima), 2015.
- 4: Analysis of isolation of oral *Candida* in patients treated by Cooperative Oral Care Support Team: Takamoto A, Nishi H, Ota K, Konishi M, Yoshioka Y, Sugiyama M, Nakaoka M, Ohge H, Irifune M, Kurihara H: The 12th Annual Meeting of the Japanese Society of oral Care (Shimonoseki), 2015.
- 5: A case whom a dentist could do infiltration anesthesia for a patient with needle phobia under oral midazolam and nitrous oxide inhalational sedation: Oda A, Yoshida K, Mukai A, Kikuchi Y, Ishii H,

- Doi M, Yoshida M, Irifune M: The 30th Scientific Meeting of Dental Anesthesiology in Chugoku and Shikoku branch (Okayama), 2015.
- 6: A case of extraction of a tooth under intravenous sedation for a elderly patient who was previously taken an emergency transport system due to syncope after oral local anesthesia: Yoshinaka T, Yoshida K, Miyahara T, Ogawa Y, Uno T, Mukai A, Doi M, Shimizu Y, Yoshida M, Irifune M: The 30th Scientific Meeting of Dental Anesthesiology in Chugoku and Shikoku branch (Okayama), 2015.
 - 7: A case of extirpation of mandibular ameloblastoma under general anesthesia before coil embolization treatment of a cerebral aneurysm: Mukai T, Yoshida K, Maetani Y, Kikuchi Y, Oue K, Mukai A, Doi M, Shimizu Y, Yoshida M, Irifune M: The 30th Scientific Meeting of Dental Anesthesiology in Chugoku and Shikoku branch (Okayama), 2015.
 - 8: A case of improving symptoms, such as somatic delusion and somatoform disorders, after oral cavity hygiene improvement: Yano K, Doi M, Yoshino A, Kanda T, Nagayasu S, Nakaoka M, Irifune M: The 10th Annual Meeting of Japan Dental Hygienists' Association (Sapporo), 2015.
 - 9: Pharmacological effects of general anesthetics altered by the change of subunit composition of GABA_A receptors: Hayashiuchi M, Yamawaki Y, Oue K, Harada K, Asano S, Irifune M, Okada M, Kanematsu T: The 6th Hiroshima Conference on Education and Science in Dentistry, Hiroshima, Japan, 2015.
 - 10: The differences of electroencephalogram (EEG) pattern during sleep between human beings and mice: Yoshinaka T, Irifune M: The 6th Hiroshima Conference on Education and Science in Dentistry, Hiroshima, Japan, 2015.
 - 11: Effects of propofol on EEG and EMG in mice: Yoshinaka T, Irifune M: The 43th Annual Meeting of Japanese Dental Society of Anesthesiology (Tokyo), 2015.
 - 12: A case of general anesthesia for a patient with neurofibromatosis type 1 who suffered from left recurrent laryngeal nerve palsy, deformational face and tracheal displacement: Oue K, Shimizu Y, Irifune M: The 43th Annual Meeting of Japanese Dental Society of Anesthesiology (Tokyo), 2015.
 - 13: Hypersensitivity of body perception is one of risk factors for chronic pain: Doi M, Yoshimura S, Sasahara H, Ishii H, Irifune M: The 43th Annual Meeting of Japanese Dental Society of Anesthesiology (Tokyo), 2015.
 - 14: A clinic-statistical study of the relationship between autologous blood transfusion preparation and perioperative anesthesia management in the patients performed orthognathic surgery in the University Hospital: Uno T, Yoshida K, Oda A, Kikuchi Y, Yoshinaka T, Yamashita M, Mukai A, Shimizu Y, Yoshida M, Irifune M: The 43th Annual Meeting of Japanese Dental Society of Anesthesiology (Tokyo), 2015.
 - 15: Traumatic aneurism of the internal carotid artery repaired by IVR operation: A case report: Shimizu Y, Oda A, Saeki N, Oue K, Miyahara T, Doi M, Mukai A, Yoshida K, Yoshida M, Irifune M: The 43th Annual Meeting of Japanese Dental Society of Anesthesiology (Tokyo), 2015.

- 16: The evaluation of pre-anesthetic screening test in dental patients with intellectual disability: Yoshida K, Mukai A, Oda A, Uno T, Yamashita M, Yoshinaka T, Kanda T, Yoshida M, Irifune M: The 32nd Annual Meeting of the Japanese Society for Disability and Oral Health (Nagoya), 2015.
- 17: Anesthetic management for a morbidly obese patient with mental retardation: Mukai A, Oda A, Mukai T, Uno T, Yoshinaka T, Yoshida K, Yoshida M, Irifune M: The 32nd Annual Meeting of the Japanese Society for Disability and Oral Health (Nagoya), 2015.
- 18: The change of subunit composition of GABA_A receptors and its relationship with general anesthetic effects: Hayashiuchi M, Yamawaki Y, Oue K, Harada K, Asano S, Maetani Y, Irifune M, Okada M, Kanematsu T: The 54th Scientific Meeting of Hiroshima Prefecture Dental Association and 99th Scientific Meeting of Hiroshima University Dental Society (Hiroshima), 2015.
- 19: Modulation by cAMP of the function of $\alpha 3\alpha 5$ type nicotinic receptors: Uno T, Tanaka S, Miyagi T, Hide I, Shirafuji T, Sakai N, Irifune M: The 54th Scientific Meeting of Hiroshima Prefecture Dental Association and 99th Scientific Meeting of Hiroshima University Dental Society (Hiroshima), 2015.
- 20: A clinic-statistical study of the relationship between autologous blood transfusion preparation and hypotensive anesthesia management in the patients performed orthognathic surgery in the Department of Dental Anesthesiology: Yoshida K, Uno T, Mukai T, Oda A, Kikuchi Y, Ogawa Y, Maetani Y, Yoshinaka T, Ishii H, Oue K, Miyahara T, Mukai A, Doi M, Shimizu Y, Yoshida M, Irifune M: The 54th Scientific Meeting of Hiroshima Prefecture Dental Association and 99th Scientific Meeting of Hiroshima University Dental Society (Hiroshima), 2015.

F) Special lectures in academic meetings

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

- 1: Grant-in-Aid No. 26463073 for Scientific Research (C) from the Ministry of Education, Culture, Sports, Science, and Technology of Japan (Continued): Yoshida M: Clarification of mechanisms of orofacial neuropathic pain and establishment of its treatment. ¥1,100,000.
- 2: Grant-in-Aid No. 15K11313 for Scientific Research (C) from the Ministry of Education, Culture, Sports, Science, and Technology of Japan (New): Irifune M: Development of a novel general anesthetic method applying enhancement of descending pain inhibitory system: application of 5-HT receptor ligands. ¥2,500,000.
- 3: Grant-in-Aid No. 60760329 for Start-up Research from the Ministry of Education, Culture, Sports, Science, and Technology of Japan (New): Oue K: Study of brown adipocyte to control obesity. ¥1,100,000.

(5) Academic Awards, etc.

(6) Patents

Integrated Health Sciences

Department of Public Oral Health

(1) Staffs and Students

Professor : Masaru Sugiyama
Associate Professor : Maki Nosou, Atsushi Shimazu (Department)
Assistant Professor : Eri Fukada, Yuko Kurawaki
Graduate Student : Yuka Wakabayashi, Maruyama rika, Tomoko Kawano
Undergraduate Student: Yoshino Kaneyasu, Nanami Hirano, Chiharu Fujimoto, Sayaka Abe, Nozomi Katou, Miyako Sasaki, Emi Yamashiro, Rina Hayashi (4th grade student) , Natsuki Orishige, Ai Matsusige, Rina Akagi, Momoko Okizono, Yuki Akimori, Yui Shiraoka, Ayaka Takahashi, Kaede Takeuchi , Chika Kuwahara, (3rd grade student)

(2) Main Research Activities

- 1 : Study on oral care
- 2 : Study on the oral functions in the elderly
- 3 : Experimental study on the mechanism of growth and regeneration of periodontal tissues
- 4 : Study on the activities of oral health at school

(3) Research Achievements

A) Original Papers (including Case Reports)

- 1 : A Survey of Quality of Life in the Patients undergoing Treatment for Oral Cancer. Kurawaki Y, Sasahara H, Toratani S, Shimasue H, Hirota S, Ohta K, Hayashido Y, Shigeishi H, Nikawa H, Okamoto T, Takechi M, Amano H, Sugiyama M : J.Hiroshima Univ. Dent. Soc. 47(2), 97-110, 2015.
- 2 : A Survey of Graduates from Hiroshima University, Faculty of Dentistry, School of Oral Health Science, Course of Oral Science Relating to Education, Skills and Job Searches.: Rumi Nishimura, Eri Takano, Kumiko Hara, Atsue Matsumoto, Yoshie Niitani, Atsushi Shimazu, Akiko Iwamoto, Eri Fukada, Toshinobu Takemoto, Hideaki Amano and Masaru Sugiyama: J. Hiroshima Univ.Dent. Soc. 47(1), 1-7, 2015.
- 3 : Effect of tongue pressure and the average bolus volume for Jelly drink by among community-dwelling healthy elderly individuals.: Hiromi Ezaki, Yukiko Ogawa, Rumi Nishimura, Eri Fukada, Yoshiko Hatanaka, Mitinori Kurokawa, Ayaka Yazawa and Yukie Yoshida: J Anal

Bio-Sci, 38(2), 119-124, 2015.

- 4 : Effect of the individual non-smoking education in regular health check up and relationship between smoking and academic performance : Sasahara H., Ando Y., Shimazu A., Yanagawa K., Nikawa H. : Campus Health. 52(2):77-82, 2015.
- 5 : CD44^{high}/ALDH1^{high} head and neck squamous cell carcinoma cells exhibit mesenchymal characteristics and GSK3 β -dependent cancer stem cell properties.: Seino S, Shigeishi H, Hashikata M, Higashikawa K, Tobiume K, Okui G, Yamamoto K, Uetsuki R, Ishida Y, Sasaki K, Naruse T, Rahman MZ, Nimiya A, Ono S, Ohta K, Sugiyama M, Takechi M. J Oral Pathol Med. 2015 Sep 24. doi: 10.1111/jop.12348. [Epub ahead of print]
- 6 : Clinicopathological analysis of salivary gland carcinomas and literature review.: Shigeishi H, Ohta K, Okui G, Seino S, Hashikata M, Yamamoto K, Ishida Y, Sasaki K, Naruse T, Rahman MZ, Uetsuki R, Nimiya A, Ono S, Shimasue H, Higashikawa K, Sugiyama M, Takechi M. Mol Clin Oncol. 3(1):202-206, 2015.
- 7 : Elevation in 5-FU-induced apoptosis in Head and Neck Cancer Stem Cells by a combination of CDHP and GSK3 β inhibitors.: Shigeishi H, Biddle A, Gammon L, Rodini CO, Yamasaki M, Seino S, Sugiyama M, Takechi M, Mackenzie IC. J Oral Pathol Med. 44(3):201-207, 2015.

B) Review

C) Publications

D) Other Publications

- 1 : Hygiene/Public Health, Practicum of Hygiene/Public Health; Environmental Education: Sugiyama M: Hiroshima University, Hiroshima, p11, 2015.

E) Presentation at Scientific Meeting

- 1 : New Training Program for Developing Global Dental Care Professionals: Iwamoto A, Nishimura R, Mimura S, Kurawaki Y, Kurihara H, Nikawa H, Sugai M : 26th Annual Scientific Meeting South-East Asia Association for Dental Education (Bali)
- 2 : Analysis of intra-oral pressure for swallowing :Eri Fukada:Food & Healthcare Seminar in FY2014(Hiroshima),2015.2.14.
- 3 : Changes of the average bolus volume for Jelly drink and intraindividual variability by age : Hiromi Ezaki1, Yukiko Ogawa, Rumi Nishimura, Eri Fukada, Yoshiko Hatanaka, Kumiko Hara and Yukie Yoshida: 21th annual meeting of Japanese Society of Dysphagia Rehabilitation (Kyoto), 2015.9.12.

- 4 : Examination of the possibility of the Splash Bean Test as the screening method of the oral function by elderly : Mayuka Higashi, Rumi Nishimura, Eri Fukada, Tomoko Maehara, Kumiko Hara.: The 10th Annual Meeting of the Japan Society for Dental Hygiene (Hokkaido), 2015.9.20-22.
- 5 : Problem-Solving Oriented Training Program for Advanced Medical Personnel: The “Cultivating Practical Medical Personnel Team Contributing Healthy Longevity” Initiative. : Rumi Nishimura, Eri Fukada, Takuya Kihara, Natsumi Ino, Yuuka Wakabayashi, Yoshiya Fujikawa, Yumi Hamamoto, Tsuyoshi Taji, Atsue Matsumoto, Sumio Akifusa, Keiko Endo, Yuki Ohara, Natsuki Kishimoto, Shinichi Arakawa, Keiji Moriyama, Hiroki Nikawa, Masaru Sugiyama and Motoyuki Sugai: 6th Hiroshima Conference on Education and Science in Dentistry (Hiroshima, Japan.), 2015.10.23-25.
- 6 : Objective assessment for the hardness of the toothbrush : Yoshino Kaneyasu, Eri Fukada, Rumi Nishimura, Hideaki Amano and Masaru Sugiyama:54th Hiroshima Prefecture Dental Association(Hiroshima), 2015.11.08.
- 7 : Relationship between consciousness and action of Junior high school students and their parents based on health diagnosis result.: Shimazu A., Nosou M., Nishimura R., Kato N., Sasahara H., Sugiyama M.: 64th general meeting of Japanese Society for Oral Health (Tsukuba), 2015.
- 8 : Study of the expression of Semaphorin 3A in mouse pulp tissue : Yoshimura R., Fujimoto C., Shimazu A., Uchida T., Nikawa H., Sugiyama M. : 88th Annual Meeting, Japanese Tissue Culture Association (Hiroshima), 2015.
- 9 : Relationship between consciousness and action of Junior high school students based on health diagnosis result.: Kato N., Shimazu A., Fukada E., Nosou M., Sugiyama M.: 99th Hiroshima University Dental Society. (Hiroshima), 2015.
- 10 : Study of the expression and function of Semaphorin 3A in mouse pulp and periodontal tissues: Fujimoto C., Yoshimura R., Shimazu A., Sugiyama M: 24th Annual Meeting of the Chugoku-Shikoku-Kinki Branch in the Japanese Society of Oral Health. (Yamaguchi), 2015.
- 11 : Create Your Ideal Smile : Yoshimura R. : 6th Hiroshima Conference on Education and Science in Dentistry (Hiroshima), 2015.
- 12 : Efforts in the junior high school that aims to establish a school emergency system : Shimazu A., Nosou M., Sakai A., Fukada E., Sufiyama M.: 62th Annual Meeting of the School Health (Okayama), 2015.
- 13 : A study of lip closure force and the related factors in primary school children : Kun M., Saitou I., Inada E., Kaihara Y., Murakami D., Fukami T., Sakurai K., Naitou A., Nosou M., Kouzai K., Yamasaki Y., Hayasaki H.: 53th Annual Conference of the Japanese Society of Pediatric Dentistry. (Hiroshima), 2015.
- 14 : Study on factor in conjunction with the oral respiration in the primary school children : Kaihara Y., Sakurai K., Nosou M., Kouzai K. : 54th Hiroshima Prefecture Dental Association(Hiroshima), 2015.11.08.

- 15 : Clinical examination before and after the oral assessment use in acute care hospital NST : Tomoko Kawano, Hitomi Kanemura, Kaori Kasuga, Miyuki Thuji, Maiko Yuasa, Eri Hiranaka: The 10th Annual Meeting of the Japan Society for Dental Hygiene (Sapporo), 2015.9.20-22.
- 16 : Activity report for regional alliances of acute care hospital NST: Hashiguchi Tomoyo, Junko Ono, Junko Yokota, Tomoko Kawano, Keiko Nakahashi, Inobe Nahomi, Shoudou Kojima, Kuwahara Masaatsu : The 30th Japan society for Parenteral and Enteral Nutrition (Kobe), 2015.2.12-13
- 17 : Action and use of dentistry in the stroke regional alliances clinical pass : Tomoko Kawano: The 10th Annual Meeting of the Japan Society for Dental Hygiene concurrent national hospital dental hygienist Council (Sapporo), 2015.9.20-22
- 18: A case of the mandibular ramus part impacted tooth doubting tooth migration : Susumu Hashitani , Sakyu Kino, Midori Fujii , Tomoko Kawano, Takamichi Yanagisawa : The 60th (public corporation) Japanese Society of Oral and Maxillofacial Surgeons general meeting, academic meeting, 2015.10.17 (Nagoya)
- 19: A case of metal prosthesis containing a hesitation to buccal mucosa : Sakyu Kino, Susumu Hashitani, Midori Fujii , Tomoko Kawano, Takamichi Yanagisawa: The 46th (public corporation) Japanese Society of Oral and Maxillofacial Surgeons Kinki Branch arts and sciences meeting, 2015.6.13 (Hyogo)
- 20 : Association of clinicopathological factors with HPV infection in oral cavity. Shigeishi H¹, Sugiyama M², Seino S¹, Hashikata M¹, Ohta K¹, Takechi M¹ : The 8th Annual Scientific Meeting of Japanese Society for Evidence and the Dental Professional (Yokosuka), 2015.
- 21: Background factor of Candidiasis in the perioperative patients received oral care. Takamoto A, Nishi H, Ohta K, Konishi M, Yoshioka Y, Sugiyama M, Nakaoka M, Ohge H, Irifune M, Kurihara H. : The 12th Annual Scientific Meeting of the Japanese Society of Oral Care (Yamaguchi), 2015.

F) Contribution to Community

- 1 : Sugiyama M : Dental Examination for the staff of Hiroshima University, Hiroshima, 2015.
- 2 : Sugiyama M : Kick-off event of the program to foster highly educated medical professions, granted by Ministry of Education, Sports, Science and Technology; Lecture “Our Trial in the School of Oral Health Sciences, Hiroshima University”, Tokyo, 2015.
- 3 : Sugiyama M : The 465th of Clinical Conference in the Alumni Association of Osaka University Faculty of Dentistry; Lecture “Oral Health Science and Public Health; Dentistry in Preventive Medicine”, Suita, 2015.
- 4 : Sugiyama M : Annual meeting of the Hiroshima/Yamaguchi branch of the Alumni Association of Osaka University Faculty of Dentistry; Lecture “Contribution of Oral Health Science to Medicine”, Hiroshima, 2015.
- 5 : Sugiyama M : Annual meeting of school education for dental hygienists in Hiroshima Prefecture;

- Lecture “Evidences of Dental Care and Oral Health Contributing to Healthy Longevity”, Hiroshima, 2015.
- 6 : Sugiyama M : Annual meeting of the Alumni Association of the First Department of Oral and Maxillofacial Surgery, Osaka University Faculty of Dentistry; Special Lecture “Trials of Hiroshima University; To reach a higher level in education and research”, Osaka, 2015.
- 7 : Sugiyama M : member of planning and managing committee: The 25th Annual Meeting of Occupational Doctors and Nurses of Japan Society for Occupational Health, 2015
- 8 : Shimazu A : Dental Support Activity in Cambodia (Cambodia), 2015.
- 9 : Shimazu A : Aki-ku School Health Meeting; Lecture “The difference of the guardian of awareness and consultation actions by birth order of grade progression and children” (Hiroshima), 2015.
- 10 : Shimazu A : Oral health activity in Junior High School Students in Hiroshima (Hiroshima), 2015.
- 11 : Shimazu A : Dental Examination for Acidity and Alkalinity (Hiroshima), 2015.
- 12 : Shimazu A : Dental Examination for Infants (Higashi-Hiroshima), 2015.
- 13 : Nosou M, Fukada E : Dental health activity in special needs schools of Hiroshima city, Hiroshima, 2015.
- 14 : Nosou M, Fukada E : Dental health activity in junior high schools of Hiroshima city, Hiroshima, 2015.
- 15 : Nosou M, Fukada E : Dental health activity in elementary schools of Hiroshima city, Hiroshima, 2015.
- 16 : Nosou M, : Secretary at Hiroshima Branch of Children's Cancer Association of Japan, Hiroshima, 2015.
- 17 : Fukada E • Kurawaki Y, : Assessment of oral function at special nursing home “Kosei-En” ,2015.
- 18 : Fukada E, : The oral care of persons requiring nursing care at Hiroshima University Hospital, 2015.
- 19 : Fukada E, : 2015 1st Summer International Communication Program : Taipei Medical University (Taipei),2015.7.20-24.
- 20 : Fukada E, : Lecture for the class for diabetics : Hiroshima Teishin Hospital(Hiroshima),2015.10.15.
- 21 : Kurawaki Y : Refresher course for dental hygienists, Hiroshima, 2015. 12.10.
- 22 : Kurawaki Y : Refresher course for dental hygienists, Hiroshima, 2015. 12.17.
- 23 : Kawano T : Lecturer at Hyogo dental hygienist society postgraduate training required subject program basic course "infection measures and environmental maintenance"(Hyogo), 2015.10.25
- 24 : Kawano T : Elderly people in social welfare corporation Takarazuka Japan National Council of Social Welfare independence support open space, (Hyogo), 2015.6.27
- 25 : Kawano T : FM Takarazuka "periodontal disease and systemic disease" (Hyogo), 2015.4.22

G) Others

- 1 : The 2th Hyogo dental health arts and sciences forum: Tomoko Kawano: Chairperson of symposium,

cooperation of approach of the dental hygienist in the area comprehensive medical care and problem
- seamless mouth care to cooperation 2015.10.15 (Hyogo)

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

- 1 : Grants-in-Aid for Scientific Research (Scientific Research (C)) : Sugiyama M : Study on the mechanisms of acquisition of stem cell characters in cancer cells related to HPV-16 E6. (No. 15K11290). ¥1,200,000.
- 2 : Grants-in-Aid for Scientific Research (Scientific Research (C)) : Shimazu A : Study for pathology and expression of semaphorin in periodontal tissue. (No. 25463245). ¥1,300,000.

(5) Academic Awards, etc.

(6) Patents

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Integrated Health Sciences

Department of Maxillofacial Functional Development

(1) Staff and Students

Professor : AMANO Hideaki

Research Associate : TSURUDA Keiko

NISHIMURA Rumi

IWAMOTO Akiko

Graduate Student : MAEHARA Tomoko

(2) Specialized Fields

- 1: Clinical research of the growth and development of dento-maxillofacial complex in children
- 2: Study on the Dentistry for children and disabilities
- 3: Study on the activation of the function of salivary glands
- 4: Study on the methods for Oral health care
- 5: Study on the education program for Oral health
- 6: Study on the development of oral function
- 7: Study on education program for graduate dental hygienists
- 8: Study on the Mechanism of Aggregatibacter actinomycetemcomitans-CDT complex formation and secretion

(3) Achievements

A) Original Papers (including Case Reports)

- 1 : Significant increase of oral bacteria in the early pregnancy period in Japanese women.:Fujiwara N, Tsuruda K, Iwamoto Y, Kato F, Odaki T, Yamane N, Hori Y, Harashima Y, Sakoda A, Komatsuzawa H, Sugai M and Noguchi M.: J Investig Clin Dent. 2015 Sep 8. doi: 10.1111/jicd.12189. [Epub ahead of print]
- 2 : A Survey of Graduates from Hiroshima University, Faculty of Dentistry, School of Oral Health Science, Course of Oral Science Relating to Education, Skills and Job Searches.: Rumi Nishimura, Eri Takano, Kumiko Hara, Atsue Matsumoto, Yoshie Niitani, Atsushi Shimazu, Akiko Iwamoto, Eri Fukada, Toshinobu Takemoto, Hideaki Amano and Masaru Sugiyama.: J. Hiroshima Univ.Dent. Soc. 47(1), 1-7, 2015.
- 3 : Effect of tongue pressure and the average bolus volume for Jelly drink by among community-dwelling healthy elderly individuals.: Hiromi Ezaki, Yukiko Ogawa, Rumi Nishimura, Eri Fukada, Yoshiko Hatanaka, Mitinori Kurokawa, Ayaka Yazawa and Yuki Yoshida.: J Anal Bio-Sci, 38(2), 119-124, 2015

- 4 : A Case of Visual Support for an Autistic Child to Teach Tooth Brushing Behavior :
Tomoko Maehara, Misato Ogita, Kumiko Inada, Sakurako Marumoto, Midori Murata,
Takane Aritomo and Hiroya Kawamoto.: J. Jpn. Soc. Disability Oral Health, 36(4), 637-642, 2015.
- 5 : Special support for patients in need of behavior adjustment in the clinic : Hiroya
Kawamoto, Hirohisa Okuda, Kumiko Inada, Midori Murata, Tomoko Maehara,
Sakurako Marumoto, Misato Ogita and Yumiko Machida.: J. Hiroshima Dent. Asso,
42(1), 32-34, 2015.
- 6 : A Survey of Quality of Life in the Patients undergoing Treatment for Oral Cancer : Yuko Kurawaki,
Hisako Sasahara, Shigeaki Toratani, Hiroshi Shimatani, Suguru Hirota, Kouji Ohta, Yasutaka
Hayashido, Hideo Shigeishi, Hitroki Nikawa, Tetsuji Okamoto, Masaki Takechi, Hideaki Amano and
Masaru Sugiyama

B) Review

C) Publications

D) Other Publications

E) Presentation at Scientific Meeting

- 1 : Dental Support activities for Cambodian children to establish the dental services
supplied by Cambodian, Yuko Iwamoto, Akiko Iwamoto, Noriko Goto, Kaoru Sakurai,
Noriko Niizato, Hideaki Amano, Katsuyuki Kozai.: 53rd Annual Conference of the
Japanese Society of Pediatric Dentistry (Hiroshima), 2015.5.21-22.
- 2 : Changes of oral environment factors affect taste sensitivity : Tsuruda K, Emura Y,
Hara K.: The 65th Japanese Society for Oral Health (Ibaraki), 2015.5.28.
- 3 : Relationship between oral health status and behavior in the birth order of the school
children : Atsushi Shimazu, Maki Nosou, Nozomi Katou, Hisako Sasahara, Masaru
Sugiyama.: The 65th Japanese Society for Oral Health (Ibaraki), 2015.5.28.
- 4 : Improvement of oral health conditions of school children in Cambodia by oral health
Education : Yuko Iwamoto, Akiko Iwamoto, Noriko Niizato, Noriko Goto and
Katsuyuki Kozai.: 25th Congress of the International Association of Paediatric
Dentistry (Glasgow, UK), 2015.7.1-7.4.

- 5 : Inhibitory effects of Antibiofilm compound-1 on *Staphylococcus aureus* biofilm :
Looniva Shrestha, Shizuo Kayama, Michiko Sasaki, Fuminori Kato, Junzo Hisatsune,
Keiko Tsuruda, Kazuhisa Koizumi, Noboyuki Tatsukawa, Kei Takeda and Motoyuki
Sugai : The 29th Meeting of Japanese Society for Biofilm Research(Aichi), 2015.7.10.
- 6 : New Training Program for Developing Global Dental Care Professionals : Akiko
Iwamoto, Rumi Nishimura, Sumiyo Mimura, Yuko Kurawaki, Hidemi Kurihara,
Hiroki Nikawa and Motoyuki Sugai. : 26th SEAADE Annual Scientific Meeting
(Bali, Indonesia), 2015.8.12-13.
- 7 : Changes of the average bolus volume for Jelly drink and intraindividual variability
by age : Hiromi Ezaki1, Yukiko Ogawa, Rumi Nishimura, Eri Fukada, Yoshiko
Hatanaka, Kumiko Hara and Yukie Yoshida: 21th annual meeting of Japanese Society
of Dysphagia Rehabilitation (Kyoto), 2015.9.12
- 8 : Inhibitory effects of Antibiofilm compound-1 on *Staphylococcus aureus* biofilm :
Looniva Shrestha, Shizuo Kayama, Michiko Sasaki, Fuminori Kato, Junzo Hisatsune,
Keiko Tsuruda, Kazuhisa Koizumi, Noboyuki Tatsukawa, Kei Takeda and Motoyuki
Sugai.: The 60th Annual Meeting of Japanese Symposium on Staphylococci and
Staphylococcal Infections (Tokyo), 2015.9.19.
- 9 : Examination of the possibility of the Splash Bean Test as the screening method of the
oral function by elderly : Mayuka Higashi, Rumi Nishimura, Eri Fukada, Tomoko
Maehara, Kumiko Hara.: The 10th Annual Meeting of the Japan Society for Dental
Hygiene (Hokkaido), 2015.9.20-22.
- 10 : Report of dental support activities in Cambodia: Yumi Irie, Yuko Iwamoto, Akiko
Iwamoto, Ayumi Shimada, Hideaki Amano, Motoyuki Sugai, Miyuki Nakaoka,
Hidemi Kurihara, Katsuyuki Kozai.: The 10th annual meeting of the Japan Society
for Dental Hygiene (Hokkaido), 2015.9.20-22.
- 11 : Effects of saliva amount and tongue coating removal on the taste threshold : Tsuruda
K, Emura Y.: 26th Meeting of the Society for Oral Health in Kinki, Chugoku and
Shikoku (Yamaguti), 2015. 9.27
- 12 : Inhibitory effects of Antibiofilm compound-1 on *Staphylococcus aureus* biofilm. :
Looniva Shrestha, Shizuo Kayama, Michiko Sasaki, Fuminori Kato, Junzo Hisatsune,
Keiko Tsuruda, Kazuhisa Koizumi, Noboyuki Tatsukawa, Kei Takeda and Motoyuki
Sugai.: 6th Hiroshima Conference on Education and Science in Dentistry (Hiroshima),
2015.10.23-25.
- 13 : Problem-Solving Oriented Training Program for Advanced Medical Personnel: The
“Cultivating Practical Medical Personnel Team Contributing Healthy Longevity”
Initiative. : Rumi Nishimura, Eri Fukada, Takuya Kihara, Natsumi Ino, Yuuka

Wakabayashi, Yoshiya Fujikawa, Yumi Hamamoto, Tsuyoshi Taji, Atsue Matsumoto, Sumio Akifusa, Keiko Endo, Yuki Ohara, Natsuki Kishimoto, Shinichi Arakawa , Keiji Moriyama, Hiroki Nikawa, Masaru Sugiyama and Motoyuki Sugai.: 6th Hiroshima Conference on Education and Science in Dentistry (Hiroshima), 2015.10.23-25

- 14 : Oral care efforts for the decrease in the number of visits to a dental clinic in facilities for persons with intellectual disabilities: Tomoko Maehara, Midori Murata, Sakurako Marumoto, Misato Ogita, Takane Aritomo and Hiroya Kawamoto.: The 32nd Annual Meeting of the Japanese Society for Disability and Oral Health(Nagoya), 2015.11.6-8.
- 15 : Construction of oral care program for special needs education 2. Effect inspection of the program : Mutsumi Tsutsui, Naoko Yodogawa, Tomoko Yamamoto, Aya Matsuo, Yumi Kondou, Tomoko Maehara and Masahiro Kitada.: The 32nd Annual Meeting of the Japanese Society for Disability and Oral Health(Nagoya), 2015.11.6-8.
- 16 : Objective assessment for the hardness of the toothbrush : Yoshino Kaneyasu, Eri Fukada, Rumi Nishimura, Hideaki Amano and Masaru Sugiyama:54th Hiroshima Prefecture Dental Association(Hiroshima), 2015.11.08.

F) Special lectures in academic meetings and extension lectures

- 1 : Akiko Iwamoto, Rumi Nishimura.: Refresher course for dental hygienists(Hiroshima), 2015.12.10.
- 2 : Akiko Iwamoto, Rumi Nishimura.: Refresher course for dental hygienists(Hiroshima), 2015.12.17.
- 3 : Rumi Nsihimura.: Lecture for the class for diabetics : Hiroshima Teishin Hospital (Hiroshima),2015.10.15.

G) Contribution to Community

- 1 : Akiko Iwamoto.: 8th Dentistry Activity Support in Cambodia, 2015.3
- 2 : Akiko Iwamoto, Rumi Nishimura.: Program for high school students: Hiroshima University Faculty of Dentistry, 2015.8.3.
- 3 : Akiko Iwamoto, Rumi Nishimura.: Program for junior high-school student: Hiroshima University Faculty of Dentistry, 2015.8.18.
- 4 : Keiko Tsuruda, Akiko Iwamoto, Rumi Nishimura.: Program for kids from elementary schools, Dental Kids, "Let's Be a Dentist!": Hiroshima University Faculty of Dentistry, 2015.8.19.

- 5 : Rumi Nishimura.: Assessment of oral function at special nursing home “Kosei-En”, 2015.
- 6 : Rumi Nishimura.: The oral care of persons requiring nursing care at Hiroshima University Hospital, 2015.
- 7 : Rumi Nishimura.: 2015 1st Summer International Communication Program : Taipei Medical University (Taipei),2015.7.20-24.

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

(5) Academic Awards, etc.

(6) Patents

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Integrated Health Sciences

Department of Oral Health Management

(1) Staffs

Professor: Toshinobu TAKEMOTO

Lecturer: Atsue MATSUMOTO

Research associate: Yoshie NIITANI

Graduate student

Doctor course: Yukiko NAGATANI

Master course: Miho KUME (Until March), Natsumi INO (From Apr.), Aki UEMUKAI (From Apr.), Yuki EMURA (From Apr.)

Graduation thesis student: Miku ISHIKAWA, Mayu FUJISHIRO, Yuika MIZOTA, Reina YANAGI
Yumi OHSUGI (From Oct.), Mamiko KUSUNOKI (From Oct.), Mio
TERAMOTO (From Oct.), Yuuka NAKAMURA (From Oct.), Tomomi
MURAKAWA (From Oct.), Haruka YASUDA (From Oct.)

(2) Research Fields

- 1 : Dental hygienists education
- 2 : Research about dental hygienists occupation
- 3 : Career formation of students
- 4 : The efficacy of oral relaxation method
- 5 : Relation between saliva flow and emotion
- 6 : Education about counseling
- 7 : Infection control in dentistry
- 8 : Research about halitosis

(3) Achievements

A) Original Articles

- 1 : [A Survey of graduates from Hiroshima University, Faculty of Dentistry, School of Oral Health Science, Course of Oral Science relating to education, skills and job searches][ja] : Nishimura R, Takano E, Hara K, Matsumoto A, Niitani Y, Shimazu A, Iwamoto A, Fukada E, Takemoto T, Amano H, Sugiyama M: J. Hiroshima Univ. Dent. Soc., 47, 1-7, 2015.

D) Other Publications

- 1 : [Oral prophylaxis and oral health instruction][ja]: The newest series of textbook for dental hygienists (Matsumoto A: Contributor): Edited by the Japan Association for Dental hygienists Education, Ishiyaku Publishers (Tokyo), 2015.
- 2 : [Basic theory and practical process for prosthodontics dentistry][ja]: The newest series of textbook for dental hygienists (Matsumoto A.: Contributor): Edited by the Japan Association for Dental hygienists Education, Ishiyaku Publishers (Tokyo), 2015.
- 3 : [The Patient who uses tobacco] [ja]: Niitani Y (translator), Clinical Practice Of The Dental Hygienist 11th Edition, Endou K, Nakagaki H, Nishi M, Maki Y, Matsui K, Yamane H, Wakabayashi N (Supervisor of translation) : Ishiyaku Publishers (Tokyo), 433-452, 2015.
- 4 : [New Infection Control of Sterilization and Disinfection Handbook for Dentistry][ja]: Kurihara H, Niitani Y, Nishi H, Arai Y, Sugiyama K, Murayama I, Fujita N, Yamanoue H, Yura H, Hatae S, Ishiyaku Publishers (Tokyo), 68-86, 2015.

E) Presentations at Scientific Meeting

1) Symposium and special lecture

- 1 : [Development of theatrical interprofessional education program for “IPW-Dental hygiene Care”][ja]: Nagatani Y. (symposiast) : Aiming at the education to exert IPW -4-year research result and future problem-, The 55th seminars & workshop on medical education (Gifu), 2015.

2) Presentations at scientific meeting

- 1 : [Reality shock of new dental hygienists and their willingness to stop working][ja]: Takemoto T: 33th Annual meeting of Hiroshima Association of Dental Hygienist Education (Hiroshima), 2015.
- 2 : [A study of the professionalism model required in the future of dental hygienist][ja]: Nagatani Y, Obayashi T, Takemoto T, Ogawa T: The 6th Annual Conference of Japan Primary Care Association (Tsukuba), 2015.
- 3 : [A study of health professional identity development in interprofessional collaboration: from views of dental hygienists in a hospital setting][ja]: Imahuku R, Nagatani Y, Ogawa T: The 34th Conference of Japan dental Education Association (Kagoshima), 2015.
- 4 : [The examination of face expression in communication][ja]: Uemukai S, Takemoto T, Nagatani Y, Ogawa T, Niitani Y, Matsumoto A: The 34th Conference of Japan dental Education Association(Kagoshima), 2015.
- 5 : [Professionalism and communication of Dental training doctors][ja]: Oto T, Obayashi T, Nagatani Y,

- Taguti N: The 7th Annual Conference of Japan Health Communication Association(Fukuoka), 2015
- 6 : Problem-Solving Oriented Training Program for Advanced Medical Personnel: The “Cultivating Practical Medical Personnel Team Contributing Healthy Longevity” Initiative: Nishimura R, Fukada E, Kihara T, Ino N, Wakabayashi Y, Fujikawa Y, Hamamoto Y, Taji T, Matsumoto A, Akifusa S, Endo K, Ohara Y, Kishimoto N, Arakawa S, Moriyama K, Nikawa H, Sugiyama M, Sugai M: 6th Hiroshima Conference on Education and Science in Dentistry, 2015.
- 7 : [The effect of the change in oral environment to the taste sensitivity][ja]: Tsuruda K, Emura Y, Hara K: The 64th general meeting of Japanese Society for Oral Health (Tsukuba), 2015.
- 8 : [The effect of increase in saliva and tongue plaque removal on the threshold value of taste][ja]: Emura Y, Tsuruda K: The 26th Annual Meeting of the Kinki-Chugoku-Shikoku Branch of the Japanese Society for Dental Health (Yamaguchi), 2015.

3) Other Presentations

○Graduation thesis presentation of School of Oral Health Science 2015 (Hiroshima), 2015.

- 1 . [Research about the mouth guard -the consciousness of football players in medical colleges and universities][ja]: Ishikawa M.
- 2 . [Bibliographic survey about hormone-related gingivitis.][ja]: Fujishiro M.
- 3 . [The effect of dental support against a rural primary school in Cambodia.][ja]: Mizota Y.
- 4 . [A preliminary study about the color of tongue plaque using color index paper.][ja]: Yanagi R.

F) Lectures

- 1 : [Lecture about mouth, group instruction of tooth][ja]: Matsumoto A.: Child-care course of a community program of the nursery school, Mimyo Nursery School (Hiroshima) : 2015.
- 2 : [Oral care for pregnant woman and new born infant][ja]: Matsumoto A.: School for pregnant women in Gynecology department of Hiroshima University Hospital (Hiroshima) , 2015.
- 3 : [Dental Hygiene Education][ja]: Niitani Y: JADHE program 2nd for teachers in dental hygienists schools (Gifu), 2015.

G) Social Contributions

- 1 : Program for kids from elementary schools, Dental Kids, “Let’s Be a Dentist!”: Hiroshima University Faculty of Dentistry (Hiroshima), 2015.
- 2 : Program for junior from Junior high schools, Dental Junior, “Let’s Be a Dentist!”: Hiroshima University Faculty of Dentistry (Hiroshima), 2015.
- 3 : Renewal seminar for teacher’s license: Takemoto T, Hiroshima University (Hiroshima), 2014.

- 4 : High school student open class: Matsumoto A, 2015.
- 5 : Secretary of the regional association of Kinki , Chugoku and Shikoku area for Japanese Society for Dental Health: Matsumoto A (Yamaguchi), 2015.
- 6 : Editorial committee of The Journal of Japan Society for Dental Hygiene.: Matsumoto A, Japan Society for Dental Hygiene (Tokyo), 2015.
- 7 : Editorial board of The Journal of Japan Society for Dental Hygiene.: Matsumoto A, Japan Society for Dental Hygiene (Tokyo), 2015.
- 8 : Peer review of The Journal of Japan Society for Dental Hygiene.: Matsumoto A, Japan Society for Dental Hygiene (Tokyo), 2015.
- 9 : Commendation selection commissioner of art and science of The Journal of Japan Society for Dental Hygiene.: Matsumoto A, Japan Society for Dental Hygiene (Tokyo), 2015.
- 10 : Member of Dental Hygienists' Examination committee: Niitani Y: Foundation of Promoting Dental Care and Training (Tokyo), 2015.
- 11 : Educational committee of Japanese Association for Dental Hygienists Education, Niitani Y : JADHE (Tokyo), 2015.

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Integrated Health Sciences

Department of Anatomy and Functional Restorations

(1) Staff and Students

Professor : Takahiro Satoda

Associate Professor : Saiji Shimoe

Graduate Students : Shougo Iwaguro, Hidehito Nagadouri

Graduate Students : Hidehito Nagadouri, Mai Ohtaku, Yusuke Kobayashi, Akane Taniguchi,

Undergraduate Student: Mayaka Ide, Yuka Miyata, Aoi Kawamura, Ayaka Kihara

Miyu Taniguchi, Aya Sakai, Honoka Igawa, Haruki Syouga, Chinatu Fukuoka

Research Student: Tzu-Yu Peng (Taiwan)

(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 : Memori Minoda, Natsumi Ikuta, Saiji Shimoe, Takahiro Satoda Functional model of Inner Ear, Morphotogical Sciences, 18(2)65–74, 2015

B) Review

- 1 : Bonding between zirconia and indirect composite resin: Shimoe S, Journal of Nippon Academy of Dental Technology, Vol.36, (1), pp.45–47, 2015.

C) Publications

- 1 : The glossary of Dental technology terms : Takahiro Satoda. (member of editorial board) : Ishiyaku Publishers, Inc ,Tokyo, 2011～.
- 2 : Netter's Head and Neck Anatomy for Dentistry: Ishiyaku Publishers Inc, Tokyo, chapter 19, Eye , Takahiro Satoda, translation 2012～.
- 3 : Understanding the Eating and Swallowing and Accidental Swallowing Mechanisms Seeing Computer Graphics and the Model showing a function : Takahiro Satoda, Haruka Tohara : Ishiyaku Publishers Inc, Tokyo, 2013.3～
- 4 : Understanding Anatomical and Functional Disorder on Eating and Swallowing Mechanisms Referring to Computer Graphics and the Model Showing a Function :Takahiro Satoda, Haruka Tohara : Ishiyaku Publishers Inc, Tokyo, 2014.8～
- 5 : Encyclopedia of Face, Japanese Academy of Facial studies, Maruzen Publishers Inc, Tokyo,2015～ Chapter3,face for life, Muscles for Mastication, 157—159(Takahiro Satoda)
- 6 :The new series of textbooks for dental technologist-Dental technology of restoration : Kazuhiko Suese, Hideo Matsumura, Yoshizi Marumo, Yasushi Kumono, Saiji Shimoe : Ishiyaku Publishers, Inc , Tokyo, 174, 2007～.
- 7 : The new series of textbooks for dental technologist-Dental technology practical training : Masayuki Kanai, Masahiro Kuwata, Saiji Shimoe, Yoshinobu Maeda, Hideo Matsumura, Hiroyuki Miura et al : Ishiyaku Publishers, Inc ,Tokyo, 207, 2008～.

D) Other Publications

- 1 : Takahiro Satoda: How is Mechanism of Eating system ? Nutrition Care , Vol.67, pp.14—17, Medica publisher, Osaka, 2014, (in Japanese)
- 2 : Takahiro Satoda: How is Mechanism of Swallowing system ? Nutrition Care , Vol.67, pp.14—17, Medica publisher, Osaka, 2014, (in Japanese)
- 3 : Takahiro Satoda: Anatomy Education using handmade models—Functional models of Ear ossicles and Swallowing— Hiroshima University Technical Center Annual Report, 11,1-8, 2015

E) Presentation at Scientific Meeting

- 1 : Functional model of Swallowing, Satoda T, Ikuta N,Minoda M, Shimoe S,The120th Annual Meeting of Japanese Association of Anatomists, 2015. 3.21—23. (Kobe)
- 2 : Amendments of rules of the National Personnel Authority for Dental technicians : Shimoe S, The 17th annual Meetings of The Japanese Academy of Oral and Maxillofacial Rehabilitation Technology (Hiroshima), 2015.
- 3 : Analysis of change of dimension of dental materials in inlay fabrication using a three-dimensional

- image : Kihara A, Shimoe S, Khara T, Ide M, Kawamura M, Taniguchi A, Satoda T, The 37th the meeting of the Nippon Academy of Dental Technology (Fukuoka), 2015.
- 4 : Effect of primers containing phosphate monomer on bonding between zirconia and indirect composite resin : Miyata Y, Shimoe S, Kawamura M, Ide M, Otaku M, Iwaaguro S, Satoda T, The 37th the meeting of the Nippon Academy of Dental Technology (Fukuoka), 2015.
- 5 : Effect of primers containing phosphate monomer on bonding between zirconia and denture base resin : Kawamura M, Shimoe S, Miyata Y, Kihara A, Nagadori S, Iwaguro S, Satoda T, The 37th the meeting of the Nippon Academy of Dental Technology (Fukuoka), 2015.
- 6 : Influence of micro mechanical retention with diode laser beam machine on bond strength of zirconia and base resin : Iwaguro S, Shimoe S, Nagadori S, Murayama T, Satoda T, The 37th the meeting of the Nippon Academy of Dental Technology (Fukuoka), 2015.
- 7 : Analysis of chemical interaction on bonding between noble metal and phosphate monomer containing primer : Nagadoori Y, Simoe S, Hirata I, Koizumi H, Matsumura H, Satoda T, The 37th the meeting of the Nippon Academy of Dental Technology (Fukuoka), 2015.
- 8 : Analysis of tooth morphology recognition in beginning tooth carving using the three-dimensional image : Ide M, Shimoe S, Kihara T, Kihara A, Miyata Y, Kobayashi Y, Satoda T, The 37th the meeting of the Nippon Academy of Dental Technology (Fukuoka), 2015.
- 9 : Analysis of aggregate results of dental technician's workers notice in Hiroshima prefecture : Matsui T, Fujita I, Shimoe S, Miyata K, Hiram Y, The 54nd annual meeting of Hiroshima Prefecture Dental Association and The 99th annual meeting of Hiroshima University Dental Society, The 10th the meeting of the Nippon Academy of Dental Technology, Cyugoku-Shikoku regional meeting (Hiroshima), 2015.
- 10 : A handmade modeos for Tooth carving, Arima M, Kihara A, Shimoe S, Satoda T, The 54nd annual meeting of Hiroshima Prefecture Dental Association and The 99th annual meeting of Hiroshima University Dental Society, The 10th the meeting of the Nippon Academy of Dental Technology, Cyugoku-Shikoku regional meeting (Hiroshima), 2015.

F) Special lectures in academic meetings

- 1 : Takahiro Satoda : Mechanism of Mastication and Swallowing, The 17th Annual Meeting of Japanese Academy of Oral and Maxillofacial Rehabilitation Technonology (Hiroshima) 2015. 9. 26
- 2 : Takahiro Satoda: Anatomy and Mechanism of Mastication and Swallowing, The 5th Annual Meeting of Japanese Association of Rehabilitation Nutrition Association, (Hiroshima) 2015. 11. 28
- 3 : Surface preparation for adhesive bonding of porcelain laminate veneers fabricated with feldspathic porcelain : Shimoe S, The 34th the meeting of the Japan Society for Adhesive Dentistry (Tokyo),

2015.

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

(5) Academic Awards, etc.

1 : Natsumi Ikuta: The 17th Student Carving Contest, Gold Award 2015.3

2 : Yusuke Kobayashi: The 17th Student Carving Contest, Silver Award 2015.3

3 : Akane Taniguchi: The 17th Student Carving Contest, Bronze Award 2015.3

(6) Patents

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Integrated Health Sciences

Department of Medical System and Biomaterial Engineering

(1) Staff and Students

Professor : Takeshi Murayama
Associate Professor : Mitsuhiro Tamamoto
Graduate Student : Memori Minoda
Graduation Research Students : Yuya Ishida, Yuuta Masuhara, Shouta Fujimoto, Rina Niioka,
Moe Matsuo, Yuto Tanaka, Shou Higuchi, Waka Harada,
Moemi Nishida, Yuuki Higashiura, Shunsuke Suzuki, Hiroki Yanase

(2) Main Research Activities

- 1: Application of manufacturing system technologies (e. g., CAD/CAM, 3-d printing) to dentistry
- 2: 3-d modeling and computer simulation in dentistry
- 3: Simulation-based analysis of work processes in dental technology
- 4: Development and clinical applications of oral appliances for treatment and protection
- 5: Study on esthetic dentistry
- 6: Study on dental education
- 7: Study on sports dentistry (mouthguards)

(3) Research Achievements

A) Original Papers (including Case Reports)

- 1: Computer-Aided Design and Fabrication of Finger Prosthesis: Murayama T., Oono K., Tada M., Eguchi T., Nagami M., Tamamoto M.: Journal of Biomedical Science and Engineering, Vol. 8, pp. 98-103, 2015.
- 2: Job shop scheduling with alternative machines –Experimental evaluation of the scheduling method using a genetic algorithm incorporating heuristic rules-: Eguchi T., Kawegitbundit P., Hoshino N., Daido T., Murayama T.: Proceedings of 2015 Annual Conference of Manufacturing Systems Division, The Japan Society of Mechanical Engineers, No. 05-25, pp. 95-96, 2015.
- 3: Optimization of Job Shop Scheduling with Automatic and Manual Operations: Daido T., Eguchi T., Murayama T.: Proceedings of 53rd Annual Conference of Chugoku-Shikoku Branch, The Japan

- Society of Mechanical Engineers, No. 151-1, 402, pp. 1-2, 2015.
- 4: Grouping of Tasks for Cooperative Product Development: Murayama T., Eguchi T., Ogawa A.: International Journal of Engineering and Technology, Vol. 7, Issue 2, pp. 568-576, 2015.
 - 5: Active Schedule Generation Algorithm that Makes Decisions According to Time Progress: Eguchi T., Hoshino N., Murayama T.: Proceedings of the 59th Annual Conference of the Institute of Systems, Control and Information Engineers, No. 122-6, pp. 1-4, 2015.
 - 6: Performance Evaluation of Novel Active Schedule Generation Algorithm: Iio S., Kishimoto T., Hoshino N., Eguchi T., Murayama T.: Proceedings of Annual Conference of Japan Society for Design Engineering Chugoku Branch, No. 32, pp. 17-20, 2015.
 - 7: Development of mask-fitting piece using 3-d scanner and 3-d printer: Murayama T., Niioka R., Umesaki S., Kawahara K., Eguchi T., Tamamoto M.: Proceedings of LIFE2015, 2D1-03, pp. 1-2, 2015.
 - 8: Optimization of Job Shop Scheduling with Automatic and Manual Operations (2nd Report): Daido T., Eguchi T., Murayama T.: Proceedings of 2015 Annual Congress of The Japan Society of Mechanical Engineers, No. 15-1, S1440103, pp. 1-5, 2015.
 - 9: Lead Time Minimization using a Release Time Decision Method Based on Scheduling: Togo N., Eguchi T., Murayama T.: Proceedings of 2015 Annual Congress of The Japan Society of Mechanical Engineers, No. 15-1, S1440104, pp. 1-5, 2015.
 - 10: Active Schedule Generation Algorithm that Makes Decisions According to Time Progress: Eguchi T., Hoshino N., Kishimoto T., Iio T., Murayama T.: Proceedings of the 8th International Conference on Leading Edge Manufacturing in 21st Century (LEM21), C43, pp. 1-4, 2015.
 - 11: Study on schematic evaluation and objective assessment of dental laboratory techniques practices: Ozaki Y., Suese K., Tamamoto M., Ichikawa M., Koizumi J., Morikawa R., Sugita J.: Journal of Nippon Academy of Dental Technology, 36 (1), pp. 27-35, 2015.

B) Review

C) Publications

- 1: The Glossary of Prosthodontic Terms 4th ed.: Tamamoto M. (Edited by Japan Prosthodontic Society): Ishiyaku Pub., Inc., 2015.
- 2: Collection of the state examination and key for dental technicians (2016 edition): Tamamoto M. (Edited by Japan Society for Education of Dental Technology): Ishiyaku Pub., Inc., 2015.

D) Other Publications

E) Presentation at Scientific Meeting

- 1: Job shop scheduling with alternative machines –Experimental evaluation of the scheduling method using a genetic algorithm incorporating heuristic rules-: Eguchi T., Kaweegitbundit P., Hoshino N., Daido T., Murayama T.: 2015 Annual Conference of Manufacturing Systems Division, The Japan Society of Mechanical Engineers (Yokohama), 2015.
- 2: Optimization of Job Shop Scheduling with Automatic and Manual Operations: Daido T., Eguchi T., Murayama T.: 53rd Annual Conference of Chugoku-Shikoku Branch, The Japan Society of Mechanical Engineers (Higashi-hiroshima), 2015.
- 3: Active Schedule Generation Algorithm that Makes Decisions According to Time Progress: Eguchi T., Hoshino N., Murayama T.: The 59th Annual Conference of the Institute of Systems, Control and Information Engineers (Osaka), 2015.
- 4: Performance Evaluation of Novel Active Schedule Generation Algorithm: Iio S., Kishimoto T., Hoshino N., Eguchi T., Murayama T.: Annual Conference of Japan Society for Design Engineering Chugoku Branch (Hiroshima), 2015.
- 5: Development of mask-fitting piece using 3-d scanner and 3-d printer: Murayama T., Niioka R., Umesaki S., Kawahara K., Eguchi T., Tamamoto M.: LIFE2015 (Fukuoka), 2015.
- 6: Optimization of Job Shop Scheduling with Automatic and Manual Operations (2nd Report): Daido T., Eguchi T., Murayama T.: 2015 Annual Congress of The Japan Society of Mechanical Engineers (Sapporo), 2015.
- 7: Lead Time Minimization using a Release Time Decision Method Based on Scheduling: Togo N., Eguchi T., Murayama T.: 2015 Annual Congress of The Japan Society of Mechanical Engineers (Sapporo), 2015.
- 8: Investigation on the application of additive manufacturing to facial prostheses: Nishida M., Murayama T., Tamamoto M., Eguchi T.: 37th Meeting of the Nippon Academy of Dental Technology (Fukuoka), 2015.
- 9: Insurance of micro mechanical retention with diode laser beam machine on bond strength of zirconia and base resin: Iwaguro S., Shimoe S., Nagadori H., Murayama T., Satoda T.: 37th Meeting of the Nippon Academy of Dental Technology (Fukuoka), 2015.
- 10: Active Schedule Generation Algorithm that Makes Decisions According to Time Progress: Eguchi T., Hoshino N., Kishimoto T., Iio T., Murayama T.: 8th International Conference on Leading Edge Manufacturing in 21st Century (LEM21) (Kyoto), 2015.
- 11: Development of Device for Fitting a Mask to Face: Niioka R., Murayama T., Yamawaki M., Eguchi T., Tamamoto M.: 99th Regular Meeting of Hiroshima University Dental Society (Hiroshima), 2015.

F) Special Lectures in Academic Meetings

- 1: Murayama T.: Fundamentals of Dental CAD/CAM Systems (2015 Workshop on Dental Technique Practices for Trainers, Japan Society for Education of Dental Technology) (Osaka), 2015.
- 2: Murayama T.: Application of 3-d printers to dentistry and medicine, 17th Annual Conference of The Japanese Academy of Oral and Maxillofacial Rehabilitation Technology (Hiroshima), 2015.
- 3: Murayama T.: Fundamentals of CAD/CAM (2015 Workshop on Manufacturing in Medical Engineering, CAD/CAM/CAE/VE Practical Training) (Hiroshima), 2015.

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

(5) Academic Awards, etc.

(6) Patents

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Integrated Health Sciences

Department of Oral Biology & Engineering

(1) Staff and Students

Professor : Hiroki Nikawa

Associate Professor : Tsuyoshi Taji

Lecturer : Hisako Sasahara

Assistant Professor : Kazuko Kawahara

Assistant Professor : Takuya Kihara, Sumiyo Mimura, Takahiro Shuto

(Special Appointment)

Education and Research Support Staff : Kaori Taguchi, Yumi Hamamoto (H27.11-) ,

Yoshiya Fujikawa (H27.11-)

Graduate Student : Sachiko Sawa, Yukihiko Takayama, Minako Okamura, Reiko Aimi,
Chika Umemoto, Chiaki Okada, Yumi Hamamoto, Satoshi Miyauchi,
Shun Ichikawa, Tatsumi Hashida, Yoshiya Fujikawa, Satoru Yaguchi,

Undergraduate Student : Risa Akagi, Shizuka Gion, Miyu Kiyama, Mizuki Kodama,
Natsumi Saizaki, Saori Sueyama, Konomi Hirota, Ari Fukano,
Ai Fujii, Keisuke Fujita, Yumi Ueta, Sakura Omori, Marika Kanda,
Mai Tsuyama, Riona Doi, Maki Hashimoto, Risako Hiura, Miori Fujii,
Misa Matsumura, Satoko Yamada

(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 : Synergistic effects of FGF-2 and Activin A on early neural differentiation of human pluripotent stem cells : Mimura S, Suga M, Liu Y, Kinehara M, Yanagihara K, Ohnuma K, Nikawa H, Furue MK : *In Vitro Cellular & Developmental Biology – Animal*, 51, 769-775, 2015.
- 2 : Accuracy of a three-dimensional dentition model digitized from an interocclusal record using a non-contact surface scanner : Kihara T, Yoshimi Y, Taji T, Murayama T, Tanimoto K, Nikawa H : *The European Journal of Orthodontics*, 2015 (in press)
- 3 : Inhibition of RANKL-dependent cellular fusion in pre-osteoclasts by amiloride and a NHE10-specific monoclonal antibody : Mine Y, Shuto T, Nikawa H, Kawai T, Ohara M, Kawahara K, Ohta K, Kukita T, Terada Y, Makihira S : *Cell Biology International*, 39(6), 696-709, 2015.
- 4 : An Analysis of background factors influencing selection of residency facility for dental students in universities located in rural areas in Japan : H. Kono, H. Sasahara, S. Furukawa and N. Taguchi : *The Open Dentistry Journal*, 9,159-167,2015.

B) Review

C) Publications

D) Other Publications

E) Presentation at Scientific Meeting

- 1: Difference in dental trainees' reflections between the university hospital and the community dental clinic by Significant Event Analysis : Kono H, Sasahara H, Oto T, Furukawa S, Taguchi N:41th ADEE ANNUAL MEETING 2015.Szeged(Hungary),2015
- 2: Inter-University Collaborative Educational Project of Clinical Informatics and Technology : Kihara T, Tsunematsu M, Fujikawa Y, Nikawa H, Yasui W:6th Hiroshima Conference on Education and Science in Dentistry (hiroshima), 2015
- 3: Implementation of BioDental Education in Program for Promoting Inter-University Collaborative Education from MEXT : Mimura S, Nikawa H, Taji T, Ishida Y, Takeishi R, Tenkumo T, Takeuchi Y, Shuto T, Sasaki K, Maeda T, Sugai M: 6th Hiroshima Conference on Education and Science in Dentistry (hiroshima), 2015
- 4: Achievement of sophisticate dental education program in collaboration with Niigata, Tohoku and Hiroshima Universities : T. Tenkumo, Y. Takeuchi, G. Hong, Y. Ishida, R. Takeishi, S. Mimura, T. Shuto, H. Oka, K. Yoshiba, N. Fujii, K. Ono, K. Tsuga, T. Taji, N. Takahashi, K. Uoshima, H. Nikawa, K. Sasaki, M. Sugai, T. Maeda : 6th Hiroshima Conference on Education and Science in Dentistry (hiroshima), 2015
- 5: Problem-Solving Oriented Training Program for Advanced Medical Personnel: The “Cultivating Practical Medical Personnel Team Contributing Healthy Longevity” Initiative : R. Nishimura, E. Fukada, T. Kihara, N. Ino, Y. Wakabayashi, Y. Fujikawa, Y. Hamamoto, T. Taji, A. Matsumoto, S.

Akifusa, K. Endo, Y. Ohara, N. Kishimoto, S. Arakawa, K. Moriyama, H. Nikawa, M. Sugiyama, M. Sugai : 6th Hiroshima Conference on Education and Science in Dentistry (hiroshima), 2015

F) Symposium and special lecture

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

- 1: Grants-in-Aid for Scientific Research(Scientific Research(B)) : Hiroki Nikawa (Head), Tsuyoshi Taji (Co-investigators), Research Project Number: 15H05027. ¥9,880,000
- 2: Challenging Exploratory Research: Hiroki Nikawa, Research Project Number: 26670838. ¥780,000
- 3: Grants-in-Aid for Scientific Research(Scientific Research(C)) : Tsuyoshi Taji (Head), Hiroki Nikawa (Co-investigators), Research Project Number: 26462921. ¥800,000
- 4: Donation from Shikoku nyugyou corporation to Hiroki Nikawa. ¥300,000
- 5: Donation from Media Inc. to Hiroki Nikawa. ¥300,000
- 5: Donation from Manac Inc. to Hiroki Nikawa. ¥500,000
- 8: Donation from ROHTO Pharmaceutical Co., Ltd.to Hiroki Nikawa. ¥300,000
- 9: Donation from Daiwa Heavy Industry Co.,Ltd. to Hiroki Nikawa. ¥100,000

(5) Academic Awards, etc.

- 1: Sumiyo Mimura: 18th Hiroshima university dental alumni association incentive award
「Growth factor-defined culture medium for human mesenchymal stem cells.」

(6) Patents

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Central Research Laboratory

(1) Staff and Students

Director : Koichi Kato (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: CD14 and IL18 gene polymorphisms associated with colorectal cancer subsite risks among atomic bomb survivors : Y. Hu, K. Yoshida, J. B. Cologne, M Maki, Y. Morishita, K Sasaki, I. Hayashi, W. Ohishi, A Hida, S. Kyoizumi, Y. Kusunoki, K. Tokunaga, K. Nakachi, T. Hayashi: Human Genome variation, 2, 15035 (2015).

B) Review

C) Publications

D) Other Publications

E) Presentation at Scientific Meeting

- 1: Utility of the MALDI-TOF MS method to identify nontuberculous mycobacteria: I. Hayashi, M. Onodera, S. Kayama, T. Hara, Y. Koba, M. Yokozaki, H. Ohge, M. Sugai :The 89th Annual Meeting of the Japanese Association for Infectious Diseases (Kyoto) 2015.
- 2: ATM genotyping modulates the risk of radiation-associated breast cancer among atomic-bomb survivors : T. Hayashi, Y. Hu, K. Yoshida, W. Ohishi, A. Hida, I. Hayashi, S. Kyoizumi, Y. Kusunoki, K. Nakachi : 106th Annual Meeting of the American Association for Cancer Research (Philadelphia)

2015.

- 3: Two cases of *Clostridium tertium* infection and successful identification of the organism by matrix-assisted laser desorption –ionization time of mass spectrometry analysis: Y.Zyoichi, M. Onodera, M. Furushimo, Y. Koba, S. Kayama, I. Hayashi, M. Sugai, M. Yokozaki, H. Ohge :The 89th Annual Meeting of the Japanese Association for Infectious Diseases (Kyoto) 2015.
- 4 : Functional significance of ATM genotypes and radiation-associated breast cancer risk by genotype among atomic-bomb survivors : Hayashi T, Hu Y, Yoshida K, Ohishi W, Hida A, Hayashi I, Kyoizumi S, Kusunoki Y, Nakachi K: Scientific Meeting for Cancer Prevention (Saitama) 2015.
- 5: Identification of Nontuberculous Mycobacteria Using Matrix-Assisted Laser Desorption/Ionization-Time of Flight Mass Spectrometry as Rapid Diagnostic Tool: I. Hayashi, M. Onodera, S. Kayama, T. Hara, Y. Koba, M. Yokozaki, H. Ohge, M. Sugai: 2015 International Chemical Congress of Pacific Basin Societies, (Hawaii) 2015.
- 6: Age, smoking and radiation effects on the production of reactive oxygen species in blood cells of atomic-bomb survivors and their association with immune-related biomarkers :T. Hayashi, F. Furukawa, W. Ohishi, I. Hayashi, K. Yoshida, S. Kyoizumi, Y. Kusunoki, K. Nakachi : 2015 International Chemical Congress of Pacific Basin Societies, (Hawaii) 2015.
- 7: One case of the infective endocarditis, simultaneously detected *R. dentocariosa* and *R. musilaginosa* by MALDI mass spectrometry and gene analysis: K. Obama, J. Hisatsune, I. Hayashi, M. Sugai: 85th Japanese Association for Infection Disease (Nara) 2015
- 8: MEPE-ASARM, a substrate of PHEX, decreases bone volume independently of serum phosphate levels: K. Sakurai, T. Minamizaki, I. Hayashi, H. Yoshioka, Y. Takei, K. Kozai and Y. Yoshiko:6th Hiroshima Conference on Education and Science in Dentistry (Hiroshima) 2015.
- 9 : Functional significance of IL6R genotypes with special reference to radiation-associated cancer risks among atomic-bomb survivors : T. Hayashi, Y. Hu, K. Yoshida, W. Ohishi, A. Hida, I. Hayashi, S. Kyoizumi, Y. Kusunoki, K. Nakachi: 15th International Congress of Radiation Research (Kyoto) 2015.

(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. 15K11011) 1,500,000JPY
- 2: Research project, Grant-in-Aid for Scientific Research (B): Hayashi I (share holder): Elucidation of the restoration control structure of the radiation-induced DNA damage through the chromatin remodeling :(No.15H02819) 500,000JPY.
- 3: Japan Society for the Promotion of science, Interchange business between two countries: I. Hayashi: Comparative molecular epidemiology study of inflammation-related disease development between radiation-exposed populations in Latvia and Japan (15039901-000134)

(5) Academic Awards, etc.

(6) Patents

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Division of General Dentistry

Department of General Dentistry

(1) Staff and Students

Professor :

Assistant Professor : Masaru Ohara, Hiromi Nishi, Taiji Obayashi

Graduate Student : Takayuki Ooto, 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. Itraconazole inhibits TNF- α -induced CXCL10 expression in oral fibroblasts. Ohta K, Ishida Y, Fukui A, Nishi H, Naruse T, Takechi M, Kamata N. *Oral Disease*, 21(1), 106-12. 2015.
2. Study of factors related to the reflection abilities of dental trainees. OTO Takayuki, OBAYASHI Taiji, OGAWA Tetsuji, TAGUCHI Norihiro: *European Journal of Dental Education*, in press, 2015.
3. Analyse of learning for dental trainees on the difference of training environment-A qualitative approach of reflection-. OTO Takayuki: *The Journal of Japanese Society of the General Dentistry*, 7(1), 30-35, 2015.
4. Inhibition of RANKL-dependent cellular fusion in pre-osteoclasts by amiloride and a NHE10-specific monoclonal antibody. Mine Y, Shuto T, Nikawa H, Kawai T, Ohara M, Kawahara K, Ohta K, Kukita T, Terada Y, Mikihiro S.: *Cell Biol Int*: 39(6), 696-709. 2015.

B) Review

C) Publications

D) Other Publications

E) Presentation at Scientific Meeting

1. Analysis of the Professionalism of Dental trainees in Japan.: ○Oto T, Obayashi T, Nagatani Y, Taguchi N.: The 41th Association for Dental Education in Europe (Szeged), 2015.
2. Professionalism and Communication of Dental trainees.: ○Oto T, Obayashi T, Nagatani Y, Taguchi N.: The 6th Meeting of Japanese Association of Health Communication (Fukuoka), 2015.
3. Where is the trainee's 'Yaruki'Switch?: ○Ata M, Shimoda K, Oto T, Taguchi N.: The 8th Meeting of Japanese Society of the General Dentistry. (Tokyo), 2015.
4. Pathogenicity of oral bacteria in stroke patients.: ○Nishi H, Hosomi N, Aoki S, Nezu T, Takamoto M, Shintani T, Irihune M, Ohge H, Matsumoto M and Kurihara H.: The 40th Annual Meeting of the Japan Stroke Society. (Hiroshima), 2015.
5. Correlation of the oral environment and H. pylori infection in gastric cancer. ○Nishi H, Tanabe K, Ohta K, Takamoto M, Shintani T, Hotta R, Ohge H, Ohdan H, Kurihara H.: The 38th Hiroshima Clinical Infectious Diseases conference.(Hiroshima), 2015.
6. The expression and the CXCL10 recognition through the intracellular receptors derived from Herpes DNA in oral mucosal cells. : ○Naruse T, Ohta K, Ishida Y, Fukui A, Nishi H, Shigeishi H, Takechi M : The 69th Annual Meeting of the Japanese Stomatological Society. (Osaka), 2015.
7. The expression and the CXCL10 recognition through the intracellular receptors derived from Herpes DNA in oral mucosal cells. : ○Naruse T, Ohta K, Ishida Y, Fukui A, Nishi H, Shigeishi H, Takechi M : The 88th Annual Meeting of Japanese Tissue Culture Association. (Hiroshima), 2015.
8. Induction of CXCL10 by double-stranded DNA derived from herpes virus via intercellular receptor in oral mucosal cells.: ○Naruse T, Ohta K, Ishida Y, Fukui A, Nishi H, Shigeishi H, Takechi M : Hiroshima dental Conference. (Hiroshima), 2015.
9. The Recognition and NF-κB through the intracellular receptors derived from Herpes DNA in oral mucosal cells. : ○Naruse T, Ohta K, Ishida Y, Fukui A, Nishi H, Shigeishi H, Takechi M : The 25th Annual Meeting of the Japanese Society of Oral Medicine. (Osaka), 2015.
10. Expression induction of hemeoxygenase-1 due to Candida albicans in oral mucosal epithelial cells.: ○Ishida Y, Ohta K, Naruse T, Fukui A, Nishi H, Takechi M : The 25th Annual Meeting of the Japanese Society of Oral Medicine. (Osaka), 2015
11. Inflammation control of hemeoxygenase-1 due to Candida albicans in oral mucosal epithelial cells.: ○Ishida Y, Ohta K, Naruse T, Fukui A, Nishi H, Takechi M : The 60th Congress of the Japanese Society of Oral and Maxillofacial Surgeons.(Nagoya), 2015.

12. Recognition and inflammation regulation mechanism derived from herpes DNA in oral mucosal cells. : ○Naruse T, Ohta K, Ishida Y, Fukui A, Nishi H, Shigeishi H, Takechi M : The 60th Congress of the Japanese Society of Oral and Maxillofacial Surgeons.(Nagoya), 2015.
13. Recognition derived from herpes DNA and TNF- α Regulation in oral mucosal cells. : ○Naruse T, Ohta K, Ishida Y, Fukui A, Nishi H, Shigeishi H, Takechi M : The 52st Annual Meeting of Japan Tissue Culture Society for Dental Research. (Tokushima), 2015.
14. Establishment and Characterization of immortalized ameloblastoma. : ○Naruse T, Ohta K, Ishida Y, Fukui A, Nishi H, Shigeishi H, Takechi M : The 33rd Annual Meeting of Japan Society for Oral Tumors All Right Reserved. (Nara), 2015.
15. The expression and function of Hemeoxygenase-1 through ROS / p38 / MAPK / Nrf2 due to *Candida albicans* in oral mucosal epithelial cells. : ○Ishida Y, Ohta K, Naruse T, Fukui A, Nishi H, Okui G, Takechi M : The 69th Annual Meeting of the Japanese Stomatological Society. (Osaka), 2015.
16. Study of background factors of oral candidiasis in the perioperative oral care patients: ○Takamoto M, Nishi H, Ohta K, Konishi M, Yoshioka Y, Sugiyama M, Nakaoka M, Ohge H, Irifune M, Kurihara H : The 12th Annual Meeting of the Japanese Society of Oral Care.(Yamaguchi), 2015.
17. Expression of green fluorescent protein in *Lactobacillus rhamnosus*.: ○Ohara M: The 8th Meeting of Japanese Society of the General Dentistry, (Tokyo), 2015.

F) Implementation of Seminars / Workshops

1. Oral care training seminar. 2015 (Hiroshima)
2. The 5st Oral care seminar According to the disease. 2015 (Hiroshima)
3. The 6st Oral care seminar According to the disease. 2015 (Hiroshima)
4. The 7st Oral care seminar According to the disease. 2015 (Hiroshima)

G)Lecturer • Symposiast

1. Systemic management and the role of dental for the elderly. Hiromi Nishi: 2014 Regional Medical care business, The 4th itemized workshop. (Hiroshima), 2015
2. Prevention in cancer treatment complications based on the bacteriological evaluation. Hiromi Nishi: The 108th Hiroshima cancer Treatment Study Group. (Hiroshima), 2015
3. Infection prevention by oral bacteria control. Hiromi Nishi: The 1st Prevention of hospital infection Workshop. (Hiroshima), 2015
4. Oral care required of the dentist. Hiromi Nishi: The 85th Regional Congress of the Japanese Society for

Bacteriology/The 58th Regional Congress of the Japanese Society for Bacteriology/The 63th Regional Congress of the Japanese Society of Chemotherapy. (Nara), 2015

5. Infection prevention by oral bacteria control. Hiromi Nishi: The Annual Meeting of the Pediatric Oncology Nursing. (Hiroshima), 2015
6. In order to advance the systemic disease treatment smoothly requires management of your mouth. Hiromi Nishi: The 50th Anniversary of Hiroshima University School of Dentistry. (Hiroshima), 2015

H) Attending of Lectures, Seminars, and Workshops

1. Assessment program for Japan Society for Medical Education Certified Medical Education Specialist: Attendant: Taiji Obayashi.at university of Tokyo. (Tokyo), 2015
2. Curriculum development program for Japan Society for Medical Education Certified Medical Education Specialist: Attendant : Taiji Obayashi.at university of Tokyo. (Tokyo), 2015
3. Seminar & Workshop on Qualitative Research & SCAT.: Attendant : Taiji Obayashi, Takayuki Oto.at Kagoshima Univ. (Kagoshima), 2015
4. The 55th seminar and workshop on medical education: Attendant : Takayuki Oto.at Gifu Univ. Medical Education Center. (Gifu), 2015
5. Kansentaisaku Kyougikai 15' : Attendant : Nishi Hiromi. at Okayama Univ. (Okayama),2015.

I) Implementation of OSCE, CSA

1. 2nd Advanced OSCE for Postgraduate Trainees 2014-2015
2. 1st Advanced OSCE for Postgraduate Trainees 2015-2016

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

Grant-in-Aid Scientific Research, Young Scientists (B). Nishi H. : Analysis of Toll-like receptor in oral mucosal disease . Program No. 23792346. 1,200,000yen

(5) Academic Awards, etc.

1. Takayuki Oto: Incentive Award for the Presentation at international Academic Meetings, Japanese Dental Education Association, 2015.
2. Takayuki Oto: Hiroshima University Excellent Student Scholarship, 2015.

(6) Patents

Division of Oral Health and Development Department of Special Care Dentistry

(1) Staffs and Students

Professor	: Mitsugi Okada	(※) Head of Dentistry
Assistant Professor	: Yuki Oda	
Resident	: Taro Kojima	
Clinical Staff	: Masaki Hayashiuchi, Yoko Fujino, Koichiro Matsumoto,	
Research Student	: Masaki Hayashiuchi, Yoko Fujino, Koichiro Matsumoto	
Clinical Trainee	: Megumi Iwamoto, Fumiko Hayashi, Chisato Mantoku, Hiroshi Ootsubo,	

(2) Main Research Activities

- 1: A study on caries risk of patients with disabled
- 2: A study on risk of periodontal disease of patients with disabled
- 3: A study on dental problems of patients with disabled
- 4: A study on PBL task for dental problem of patients with mental retardation

(3) Research Achievements

A) Original Papers (including Case Reports)

- 1: Longitudinal study of dental caries incidence associated with *Streptococcus mutans* and *Streptococcus sobrinus* in patients with intellectual disabilities. Oda Y, Hayashi F, Okada M. BMC Oral Health. 2015 Sep 2;15:102. doi: 10.1186/s12903-015-0087-6.

B) Review

C) Publications

D) Other Publications

E) Presentation at Scientific Meeting

1. Five-year longitudinal study of dental caries risk associated with *Streptococcus mutans* and *Streptococcus sobrinus* in individuals with intellectual disabilities. Oda Y, Okada M: 48th meeting of the Hiroshima University Dental Society (Hiroshima), June 27, 2015.
2. Molecular ranges of reception and inhibition in mouse TAS2R bitter taste receptors. Matsumoto K, Hirono C, Okada M, Sugita M: 48th meeting of the Hiroshima University Dental Society (Hiroshima), June 27, 2015.
3. Longitudinal study of dental caries risk associated with *Streptococcus mutans* and *Streptococcus sobrinus* in individuals with intellectual disabilities. Oda Y, Hayashi F, Kojima T, Okada M: The 32nd Annual Meeting of Japanese Society for Disability and Oral Health (Nagoya), 2015.
4. Custom-made tooth brushing instruction using visual support for students in special support school. Wakita A, Oda Y, Kojima T, Nakaoka M, Fujita T, Ueda Y, Okada M: The 32nd Annual Meeting of Japanese Society for Disability and Oral Health (Nagoya), 2015.
5. Pharmacological effects of general anesthetics altered by the change of subunit composition of GABA_A receptors : Hayashiuchi M, Yamawaki Y, Oue K, Harada K, Asano S, Irifune M, Okada M, Kanematsu T : 6th Hiroshima Conference on Education and Science in Dentistry (Hiroshima), 2015.
6. Phospholipase C-related catalytically inactive protein (PRIP) knockout mice show altered responses to propofol: Hayashiuchi M, Kitayama T, Yamawaki Y, Irifune M, Okada M, Kanematsu T: The 88th Annual Meeting of The Japanese Pharmacological Society (Nagoya), 2015.
7. Sodium butyrate ameliorates inflammation-induced depression-like behavior: Yosuke Yamawaki, Norika Yoshioka, Misako Nishida, Ayaka Murai, Kana Oue, Masaki Hayashiuchi, Takashi Kanematsu, Hiroyuki Akagi: The 88th Annual Meeting of The Japanese Pharmacological Society (Nagoya), 2015.
8. General anesthetics actions and the subunit composition of GABA_A receptors: Hayashiuchi M, Yamawaki Y, Oue K, Harada K, Asano S, Maetani Y, Irifune M, Okada M, Kanematsu T: The 54th Hiroshima Prefecture Dental Association Hiroshima University Dental Society (Nippon Academy of Dental Technology Chugoku and Shikoku branch) (Hiroshima), 2015.

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

(5) Academic Awards, etc.

(6) Patents

Central Clinical Divisions Special Dental Clinic Section

(1) Staff and Students

Chief Professor : Keiji Tanimoto

Assistant Professor : Yukimi Yasuhara

(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. A patient with swallowing disorder became the diagnosis by adding the esophageal perspective in VF examination: Nagasaki T., Yoshikawa M., Yasuhara Y., Konishi M., Suei Y., Tanimoto K.: The 20th congress of clinical imaging for oral and maxillofacial lesions (Fukuoka), 2015.

(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 (until March), Hideki Shiba (from April)

Associate Professor: Ikuko Ogawa (Clinic)

Lecturer: Masae Kitagawa (Clinic)

Research Associate: Tomoaki Shintani

Technician: Yuhna Tanaka (until March), Rie Miyata (from April)

(2) Main Research Activities

- 1 : Diagnostic pathological study on head and neck lesions.
- 2 : Study on test and treatment in 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.
- 5 : Study on function of cementoblast specific genes in human cementoblast.

(3) Research Achievements

A) Original Papers (including Case Reports)

1. Bisphosphonate-related osteonecrosis of the jaw successfully treated with surgical resection and its histopathological features. A long-term follow-up report. Shintani T., Miyauchi M., Tani R., Yoshioka Y., Akagi E., Toratani S., Okamoto T.: *Journal of Oral and Maxillofacial Surgery, Medicine, and Pathology*. 27(2):283-286. 2015.
2. Comparison of the prognosis of bisphosphonate-related osteonecrosis of the jaw caused by oral and intravenous bisphosphonates: Shintani T., Hayashido Y., Mukasa H., Akagi .E, Hoshino M., Ishida Y., Hamana., T. Okamoto K., Kanda T., Koizumi K., Yoshioka Y., Tani R., Toratani S., Okamoto T.: *International Journal of Oral and Maxillofacial Surgery*. 44(7):840-844. 2015.
3. F-spondin inhibits differentiation of clastic precursors via lipoprotein receptor-related protein 8 (LRP8): Oka H., Kitagawa M., Takata T.: *Journal of Periodontology*. 86(3):465-472. 2015.

4. The differential expression of mgl mRNA by *Porphyromonas gingivalis* affects the production of methylmercaptan: Ouhara K., Iwasaki Y., Kajiya M., Savitri I.J., Kitagawa M., Tokunaga N., Shintani T., Ogawa I., Hino T., Fujita T., Shiba H., Kurihara H.: Oral Disease. 21:626-633. 2015.
5. High-grade epithelial-myoepithelial carcinoma of the parotid gland with mucous cell differentiation: Sentani K., Ogawa I., Uraoka N., Ikeda M., Hayashi N., Hattori T., Hattori Y., Oue N., Takata T., Yasui W.: Pathology International. 65(9):490-494. 2015.
6. Peripheral ameloblastoma with histologically low-grade malignant features of the buccal mucosa: a case report with immunohistochemical study and genetic analysis: Goda H., Nakashiro K., Ogawa I., Takata T., Hamakawa H.: International Journal of Clinical and Experimental Pathology. 8(2):2085-2089. 2015.
7. Dental Infection of *Porphyromonas gingivalis* Induces Preterm Birth in Mice: Ao M., Miyauchi M., Furusho H., Inubushi T., Kitagawa M., Nagasaki A., Sakamoto S., Kozai K., Takata T.: PLoS One. 10(8): e0137249, 2015.
8. The FGFR1 inhibitor PD173074 reduces osteoclastogenesis in gingival squamous cell carcinoma: Nguyen P.T., Ajiravudh S., Miyauchi M., Ogawa I., Takata T.: Oral Surgery, Oral Medicine, Oral Pathology and Oral Radiology. 119(3):e172. 2015.
9. Distinction between cell proliferation and apoptosis signals regulated by brain-derived neurotrophic factor in human periodontal ligament cells and gingival epithelial cells: Kashiwai K., Kajiya M., Matsuda S., Ouhara K., Takeda K., Takata T., Kitagawa M., Fujita T., Shiba H., Kurihara H.: Journal of Cellular Biochemistry. 2015 Nov 18. doi: 10.1002/jcb.25446. [Epub ahead of print]
10. The significance of titanium allergy test as preoperative examination of implant: Kitagawa M., Obayashi M., Nagasaki A., Yanagisawa S., Shintani T., Kagawa K., Abekura H., Hiasa K., Kubo T., Takechi M., Ogawa I., Kurihara H.: Journal of Japanese Society for Evidence and the Dental Professional, 7(1):31-34, 2015.
11. Evaluation of oral function and environment by screening examinations (maximum tongue pressure, occlusal force, the area of occlusal contact and the number of oral) bacteria targeted for healthy young adults. - correlation between maximum tongue pressure and other examinations –: Shintani T., Yoshikawa M., Morita K., Kanda T., Kitagawa M., Ogawa I., Sugai M., Tsuga K., Kurihara H.: Journal of Japanese Society for Evidence and the Dental Professional. 7(1):42-46, 2015.

12. A case of cystic mucoepidermoid carcinoma with *CRTC1-MAML2* fusion gene: Obayashi M., Nagasaki A., Mizuta K., Ogawa I., Takata T.: Japanese Journal of Diagnostic Pathology. 32(2):327-330, 2015.
13. Clinico-stastical Study of Prognostic Prediction using Pre-treatment PET/CT in Oral Cancer Patients: Mizuta K., Ohta K., Ono S., Shigeishi H., Nakagawa T., Fujimoto S., Uetsuki R., Obayashi M., Ogawa I., Takata T., Takechi M.: Journal of Hiroshima University Dental Society. 47(1):8-12, 2015.
14. A case of a large osteoma containing maxillary mucosa in the maxillary sinus: Okumura T., Ono S., Nakagawa T., Miyauchi M., Ogawa I., Takachi M.: Japanese Journal of Oral and Maxillofacial Surgery. 61(12):673-677, 2015.
15. A case of papillary adenoma of the lung: Maruhashi Y., Arihiro K., Shimizu T., Oda M., Kaneko Y., Oda M., Ogawa K., Haratake D., Siroma N., Tanaka Y., Kushitani K., Takeshima Y.:Journal of Hiroshima Society of Clinical Cytology. 36:68-72, 2015.

B) Review

1. Ameloblastoma, Ameloblastic fibroma, Keratocystic odontogenic tumor: Pathological Diagnosis, Quick reference (Hukayama M., et al. eds.): Ogawa I., Yoshida M.: Pathology and Clinical Medicine. 33(Supple):50-52, 2015.
2. Power of Saliva: Ogawa I., Kitagawa M., Obayashi M., Hara K.: DHstyle. 9(3):16-33, 2015.

C) Publication

1. Clear cell carcinoma, NOS, The differential diagnosis of salivary gland tumors composed of clear cells: Atlas of pathologically differential diagnosis of tumors. Head and neck tumors I (Morinaga S, Takata T, Nagao T. eds.): Ogawa I., Bunkodo (Tokyo), 50-53, 180-186, 2015.
2. Precancerous lesions of squamous cell carcinoma in oral and oropharyngeal regions: Atlas of pathologically differential diagnosis of tumors. Head and neck tumors II (Morinaga S, Takata T, Nagao T. eds.). Ogawa I., Bunkodo (Tokyo), 38-45, 2015.
3. Salivary lesions, Osteosarcoma: JSCC Atral and Guidelines for Cytopathological Diagnosis. 5.Digestive system (The Japanese Society of Clinical Cytology, ed.): Ogawa I., Kanehara-shuppan (Tokyo), 49, 50, 53, 54, 67, 68, 73-76. 2015..

D) Other Publications

E) Presentation at Scientific Meeting

1. Eldecalcitol (ED-71), an Analog of $1\alpha,25$ -dihydroxyvitamin D₃ as a Potential Anti-Cancer Agent for Oral Squamous Cell Carcinomas (OSCC): Shintani T., Rosli S.N.Z., Takatsu F., Toratani S., Choon Y.F., Usui E., Okamoto T.: The 18th Workshop on Vitamin D (Delft, The Netherland) 2015.
2. Comparative investigation of transcriptional regulatory mechanism of bone sialoprotein in osteoblast- and cementoblast-like cells: Noda K., Yamazaki M., Iwai Y., Matsui S., Kato A., Takai H., Nakayama Y., Kitagawa M., Takata T., Ogata Y.: The 63rd Annual Meeting of Japanese Association for Dental Research (Hakata), 2015.
3. Effects of inflammatory cytokines on human FDC-SP gene expression: Iwai Y., Noda K., Yamazaki M., Matsui S., Kato A., Takai H., Nakayama H., Kitagawa M., Takata T., Ogata Y.: The 63rd Annual Meeting of Japanese Association for Dental Research (Hakata), 2015.
4. Growth inhibitory effects in vivo of Eldecalcitol (ED-71), an analog of $1\alpha,25(\text{OH})_2\text{D}_3$ on oral squamous cell carcinomas through down-regulation of Heparin-Binding Protein 17/Fibroblast Growth Factor-Binding Protein 1: Rosli S.N.Z., Shintani T., Takatsu F., Choon Y.F., Usui E., Hayashido Y., Toratani S., Zain R.B., Okamoto T.: BMB2015 Biochemistry and Molecular Biology (Kobe), 2015.
5. The evaluation of the oral environment and the taste function in patients treated with anti-HIV agents: Shintani T., Yamasaki N., Iwata T., Saitou S., Kitagawa M., Ogawa I., Okada M., Matsui K., Hamamoto K., Unei H., Fujita K., Ogawa Y., Kinoshita K., Ikeda Y., Fujii T., Shiba H.: The 29th Annual Meeting of the Japanese Society for AIDS research (Tokyo), 2015.
6. The evaluation of the oral environment and the taste function in patients treated with anti-HIV agents: Shintani T., Yamasaki N., Iwata T., Saitou S., Kitagawa M., Ogawa I., Okada M., Matsui K., Hamamoto K., Unei H., Fujita K., Ogawa Y., Kinoshita K., Ikeda Y., Kurihara H., Fujii T., Shiba H.: The 8th Annual Meeting of Japanese Society for Evidence and the Dental Professional (Yokosuka), 2015.
7. Study of the relationship between dental metal allergy and skin-mucosal disease: Kitagawa M., Nagasaki A., Tsuji H., Shintani T., Ogawa I., Kurihara H., Shiba H.: The 8th Annual Meeting of Japanese Society for Evidence and the Dental Professional (Yokosuka), 2015.
8. Ameloblastin enhances chemosensitivity to doxorubicin via Srd-Stat3 inactivation in osteosarcoma: Ando T., Ogawa I., Miyauchi M., Takata T.: The 104th annual meeting of the Japanese Society of Pathology (Nagoya), 2015.
9. Large-scale collaborative survey study on odontogenic tumors in Asia: Takata T., Semba I., Maeda H., Takeda Y., Kumamoto H., Kuyama K., Toyosawa S., Nagatsuka H., Miyauchi M., Ogawa I.:

- The 26th Annual Meeting of Japanese Society of Oral Pathology (Sapporo), 2015.
10. Ameloblastin induces tumor suppressive phenotype and enhances chemoresistance to doxorubicin in osteosarcoma: Ando T., Umehara H., Miyauchi M., Ogawa I., Kudo Y., Takata T.: The 26th Annual Meeting of Japanese Society of Oral Pathology (Sapporo), 2015.
 11. Characterization of Ameloblastoma cells on Human Ameloblastoma Cell Lines: Mikami T., Bologna-molina R., Kitagawa M., Takata T., Takeda Y.: The 26th Annual Meeting of Japanese Society of Oral Pathology (Sapporo), 2015.
 12. Expression of Wilms' Tumor 1 (WT1) in Ameloblastoma: Mikami T., Bologna-molina R., Mikami T., Kitagawa M., Takata T., Takeda Y.: The 26th Annual Meeting of Japanese Society of Oral Pathology (Sapporo), 2015.
 13. Significance of fusion gene analysis for the differential diagnosis of mucoepidermoid carcinoma: Nagasaki A., Ogawa I., Ohuchi T., Nagao T., Takata T.: The 60th Meeting of Japanese Salivary Gland Society (Tokyo), 2015.
 14. The study of Antitumor Activity using Eldecalcitol (ED-71), an Analog of 1 α ,25-dihydroxyvitamin D3 in Oral Squamous Cell Carcinomas: Takatsu F., Shintani T., Rosli S.N.Z., Toratani S., Usui E., Okamoto T.: The 69th Annual Meeting of The Japanese Stomatological Society (Osaka), 2015.
 15. The study of Antitumor Activity using Eldecalcitol (ED-71), an Analog of 1 α ,25-dihydroxyvitamin D3 in Oral Squamous Cell Carcinomas: Takatsu F., Shintani T., Rosli S.N.Z., Toratani S., Usui E., Okamoto T.: The 52nd Annual Meeting of Japan tissue culture Society For Dental Research (Tokushima), 2015.
 16. Dental treatment support for HIV-infected inpatients in Hiroshima University Hospita:. Okada M., Matsui K., Iwata T., Shintani T., Ogawa Y., Ikeda Y., Kinoshita K., Takata N., Saitou S, Yamasaki N, Fujii T, Shiba H.: The 29th Annual Meeting of the Japanese Society for AIDS research (Tokyo), 2015.
 17. Parotid tumor (Epithelial-myoepithelial carcinoma with sebaceous differentiation): Ogawa I., Nakano R., Sakaida N., Takata T.: The 117th Academic Meeting of Chugoku-Shikoku Branch of the Japanese Society of Pathology (Yonago), 2015.
 18. Multiple warty lesions of oral mucosa: Ogawa I., Obayashi M., Kanda T., Toratani S., Okamoto T., Takata T.: The 26th Annual Meeting of Japanese Society of Oral Pathology (Sapporo), 2015.
 19. A case of the mandibular tumor (Ameloblastoma with ectomesenchymal-like stroma): Yada N., Miyamoto I., Kaneuji T., Yoshioka I., Ogawa I., Takata T., Matsuo K.: The 26th Annual Meeting of Japanese Society of Oral Pathology (Sapporo), 2015.
 20. Mandibular lesion (Cherubism): Tsuji H., Ando T., Kanda T., Hara J., Yonehara S., Ogawa I., Takata T.: The 65th Meeting of Hiroshima Pathological Conference (Hiroshima), 2015.
 21. Tumor of mouth floor (Squamous cell carcinoma, poorly differentiated, clear cell dominant): Furusho H., Nagasaki A., Miyauchi M., Ogawa I., Tani R., Suei Y., Takata T.: The 64th Meeting of

Hiroshima Pathological Conference (Hiroshima), 2015.

22. A case of histiocystic necrotizing lymphadenitis (Kikuchi's Disease) after the operation of neck dissection of lymph node metastasis of mucoepidermoid carcinoma of the palate: Higaki M., Kanda T., Yasui T., Ando T., Tani R., Toratani S., Okamoto T.: The 25th Annual meeting of the Japanese Society of Oral Medicine (Suita), 2015.
23. A case of Cowden syndrome diagnosed with Multiple warty lesions of oral mucosa: Hayashi S., Kanda T., Higaki M., Obayashi H., Nakatao H., Hamada M., Akagi E., Yamasaki S., Ando T., Ogawa I., Toratani S., Okamoto T.: The 25th Annual meeting of the Japanese Society of Oral Medicine (Suita), 2015.
24. A recurrent case of ameloblastoma 20 years after enucleation: Kanda T., Nakatao H., Obayashi H., Yasui T., Ando T., Tani R., Ogawa I., Hayashido Y., Toratani S., Okamoto T.: The 63rd Meeting of Chugoku-Shikoku Branch of Japanese Stomatological Society (Okayama), 2015.
25. A case of central mucoepidermoid carcinoma of the mandible: Kimura N., Suematsu M., Hayashido Y., Ando T., Ogawa I., Okamoto T.: The 63rd Meeting of Chugoku-Shikoku Branch of Japanese Stomatological Society (Okayama), 2015.

F) Special lectures in academic meetings

1. New entities of salivary gland neoplasms: Ogawa I.: Oral Disease Update Meeting 2015 (Kuala Lumpur), 2015.
2. Sclerosing polycystic adenosis and ectomesenchymal chondromyxoid tumor: Ogawa I.: Oro-Maxillofacial Pathology Slide Seminar 2015 (Kuala Lumpur), 2015.
3. The current classification, guidelines and controversial Issue. Symposium: Standardization of the diagnosis of superficial cancer, especially Tis cancer, of oral cavity: Ogawa I.: The 33rd Annual Meeting of Japan Society for Oral Tumors (Nara), 2015.
4. The pathological diagnostic problems of the epithelial dysplasia of oral mucous epithelium. Symposium: Reconsideration about epithelial dysplasia of oral mucous epithelium: Ogawa I.: The 56th Annual Meeting of the Japanese Society of Clinical Cytology (Matsue), 2015.
5. Oral Pathology. IAP Slide Seminar: Ogawa I., Takata T.: Pathological Education Seminar 2015 (Tokyo), 2015.

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

- 1 : Grants-in-Aid for Scientific Research (C): Kitagawa M.: Examination about inhibition of alveolar bone resorption by F-spondin, 25462854, 1,000,000 yen.
- 2 : Grants-in-Aid for Scientific Research (C): Shintani T.: The development of the molecular target

diagnosis and therapy HBp17/FGFBP protein to oral cancer. 25463109, 900,000 yen

- 3 : Grants-in-Aid for Scientific Research (C):Ogawa I.: Analysis of pathological and biomolecular factors related to the biological behaviors of salivary gland tumors. 25462857, 1,400,000 yen.

(5) Academic Awards, etc.

(6) Patents

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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 : Eisaku Habu, Yoshihiro Otani, Meiji Yamamoto,
Dental Technician : Hirotaka Okura, Syogo Iwaguro, Masanobu Yamamoto

(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)

- 5 : Reference model for rapid diagnosis and treatment in the aspiration and accidental swallowing of Dental prostheses : Takeuchi M, Iwaguro S, Kato R, Hiasa K, Kubo T, Abekura H, Abe Y, Tsuga K : The Journal of Hiroshima University Dental Society, 47(2), 159-162, 2015.
- 6 : Accuracy of a three-dimensional dentition model digitized from an interocclusal record using a non-contact surface scanner : Kihara T, Yoshimi Y, Taji T, Murayama T, Tanimoto K, Nikawa H : The European Journal of Orthodontics, 2015 (in press)

B) Review

C) Publications

D) Other Publications

E) Presentation at Scientific Meeting

- 1 : Influence of micro mechanical retention with diode laser beam machine on bond strength of zirconia and base resin : Iwaguro S, Shimoe S, Nagadori Y, Murayama T, Satoda T : The 37th the meeting of the Nippon Academy of Dental Technology (Fukuoka), 2015.

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

(5) Academic Awards, etc.

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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 : Yoriko Iwasaki, Megumi Takamoto, Kanako Matsui, Yumi Irie, Atsuko Wakita, Yukiko Nagatani, Kanako Yano, Tomoko Tokikazu, Kana Dainobu, Miho Okada, Chieko Kawai, Maiko Kawagoe, Ayano Tomoike, Kotomi Tetsumori, Tomomi Okino, Ayumi Nakai, Chika Kozono, Yuri Kuramoto, Eri Takano, Ayano Ito(Childcare leave Alternate,Till March), Yuki Emura(From April)

Dental Assistants : Keiko Kodani, Kazue Hamamoto(From June), Yuko Matsuda(From August)

(2) Main Research Activities

(3) Research Achievements

A) Original Papers (including Case Reports)

1: A Case of Long-term Management for a Patient with Donohue Syndrome: Noriko Goto, Yukari Ohara, Noriko Niizato, Maiko Kawagoe, Hisako Furusho, Chieko Mitsuhashi, Takashi Takata and Katsuyuki Kozai: The Journal of Hiroshima University Dental Society, Vol.47 No.2, P163-169, 2015

B) Review

C) Publications

D) Other Publications

1: IC diary Approach in infection prevention measures of Dental field : INFECTION CONTROL : Nakaoka Miyuki : Medical publishing (Hyogo), Vol.24 no.11, P66, 2015.

E) Presentation at Scientific Meeting

1: Clinical analysis of back ground factor for oral candidiasis in perioperative patients : Takamoto M, Nishi H, Ohta K, Konishi M, Yoshioka Y, Sugiyama M, Nakaoka M, Ohge H, Kurihara H: The 12 th

Japanese Society of Oral Care (Shimonoseki), 2015.

2: Custom-made tooth brushing instruction using visual support for students in special support school: Atsuko Wakita, Yuki Oda, Taro Kojima, Miyuki Nakaoka, Tomoaki Fujita, Yuji Ueda, Mitsugi Okada: Department of Clinical Support Dental Hygiene Section, Hiroshima University Hospital, Hiroshima, Japan: The 32st Japanese Society for Disability and Oral Health (NAGOYA), 2015.

3: Study on the effect of custom-made tooth brushing instruction using picture cards -Case Reports in Hiroshima Special Support Education School-: Yuji Ueda, Takashi Arima, Yoshinori Hada, Yumi Hirai, Tomoaki Fujita, Taizou Komatsu, Kazuki Noumi, Atsuko Wakita, Yuki Oda, Taro Kojima, Mitsugi Okada: Hiroshima City Dental Association, Hiroshima Prefecture Dental Association Hiroshima University Dental Society, 2015.

4: Relaxation of symptoms of delusional disorders and somatoform disorders accompanied with the improvement of oral hygiene: a case report.: Yano K, Doi M, Yoshino A, Kanda T, Nagayasu S, Nakaoka M, Irifune M: The 10th Annual Meeting of the Japan Dental Hygienists Association(Sapporo), 2015.

5: Survey on shade taking of dental residents-Comparison between visual color matching and dantel spectrophotometer- : Yano K, Mineoka A: The 26th annual meeting of Japan Academy of Esthetic Dentistry(Tokyo), 2015.

6: Effort by Dental hygienists in dental support for HIV positive patients in Hiroshima University Hospital: Okada M, Matsui K, Iwata T, Shintani T, Ogawa Y, Ikeda Y, Kinoshita K, Takada N, Saito S, Yamasaki N, Fujii T, Shiba H: The 29th Annual meeting of the Japanese Society for AIDS research(Tokyo), 2015.

7: Activities of Oral Care Support Team in Hiroshima University Hospital: Kotomi Tetsumori: Hiroshima Conference (Hiroshima), 2015.

8: A case of effectiveness of repetitive toothbrushing instruction by using picture cards in a patient with intellectual disability: Ayumi Nakai, Atsuko Wakita, Yuki Oda, Miyuki Nakaoka, Mitsugi Okada: The 10th Annual Meeting of The Japan Society for Dental Hygiene(Hokkaido) , 2015.

9: Usability of AUDIT System of Hiroshima Safety Dental service Support network to improve the prevention step for nosocomial infection in the dental clinic: Tomoyuki Iwata, Noriyoshi Mizuno, Miyuki Nakaoka, Takayoshi Nagahara, Yumi Irie, Koji Ohta, Hideki Shiba, Akihiro Sawa, Kazuhiro Tsuga and

Hidemi Kurihara: The 30th Annual meeting of the Japanese Society for Infection Prevention and Control (Kobe), 2015

F) Lecture

1: Self-care for improving the periodontitis: yukiko nagatani: Hiroshimaminami and Aki section 8th diabetes educator seminars (Hiroshima), 2015.

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

(5) Academic Awards, etc.

(6) Patents

(7) Work shop

1: Towards the establishment of education and training of infection prevention measures: Miyuki Nakaokab: The 30st Annual Meeting of Japanese Society for Infection Prevention and Control(Hyogo),2015

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Dental Clinic

(1) Staff and Students

Director : Takamune Hino

Assistant Professor : Masaru Ohara

(2) Main Research Activities

1 : Pathogenesis of the periodontal diseases

2 : A study on the drug-resistant bacteria from nosocomial infection

(3) Research Achievements

A) Original Papers (including Case Reports)

1. The differential expression of *mgl* mRNA by *Porphyromonas gingivalis* affects the production of methyl mercaptanpages, K Ouhara, Y Iwasaki, M Kajiya, IJ Savitri, M Kitagawa, N Tokunaga, T Shintani, I Ogawa, T Hino, T Fujita, H Shiba and H Kurihara, Oral Diseases, 21, pages 626-633, 2015
2. Inhibition of RANKL-dependent cellular fusion in pre-osteoclasts by amiloride and a NHE10-specific monoclonal antibody, Yuichi Mine, Takahiro Shuto, Hiroki Nikawa, Toshihisa Kawai, Masaru Ohara, Kazuko Kawahara, Kouji Ohta, Toshio Kukita, Yoshihiro Terada and Seicho Makihira, Cell Biology International, 39(6), pages 696-709, 2015
3. Effect of theatrical interprofessional education program, Oto Takayuki, Obayashi Taiji, Nagatani Yukiko, Nishi Hiromi, Ohara Masaru, Ogawa Tetsuji, European Journal of Dental Education Wiley, 19(1),pages e64, 2015

B) Review

C) Publications

D) Other Publications

E) Presentation at Scientific Meeting

1. Expression of green fluorescent protein in *Lactobacillus rhamnosus*. Masaru Ohara. The 8th Research Seminar in General Dental Medicine. (Tokyo), Nov. 2015.

F) Seminar, Workshop, etc.

1. Advanced OSCE for residents: 2015/1/28(Wed) • 2/4(Wed)
2. Advanced OSCE for residents: 2015/9/11(Fri) • 9/12(Sat)

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

(5) Academic Awards, etc.

(6) Patents

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

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