

Research Achievements 2012

Contents

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

○ Basic Life Sciences

- [Department of Calcified Tissue Biology](#)
- Department of Oral Biology
- [Department of Physiology and Oral Physiology](#)
- [Department of Dental and Medical Biochemistry](#)
- [Department of Oral and Maxillofacial Pathobiology](#)
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- [Department of Cellular and Molecular Pharmacology](#)
- [Department of Biomaterials](#)
- [Department of Mucosal Immunology](#)

○ Applied Life Sciences

- [Department of Periodontal Medicine, and Department of Preventive and Restorative Dentistry \(Periodontics and Endodontics\)](#)
- Department of Molecular Oral Medicine & Maxillofacial Surgery, Department of Oral & Maxillofacial Surgery and Oral Medicine (Oral and Maxillofacial Surgery)
- Department of Oral and Maxillofacial Surgery, and Department of Oral & Maxillofacial Surgery and Oral Medicine (Oral and Maxillofacial Reconstructive Surgery)
- [Department of Advanced Prosthodontics, and Department of Preventive and Restorative Dentistry \(Implants and Prosthodontics\)](#)
- [Department of Advanced Prosthodontics, and Department of Preventive and Restorative Dentistry \(Prosthetic Dentistry\)](#)
- [Department of Orthodontics and Craniofacial Development Biology, and Department of Oral Health and Development \(Orthodontics\)](#)
- [Department of Oral & Maxillofacial Radiology, Department of Oral & Maxillofacial Surgery and Oral Medicine \(Oral and Maxillofacial Radiology\)](#)

○ Integrated Health Sciences

- [Department of Dental Science for Health Promotion, and Department of Preventive and Restorative Dentistry \(Operative and Conservative Dentistry\)](#)
- [Department of Pediatric Dentistry, and Department of Oral Health and Development \(Pediatric Dentistry\)](#)
- [Department of Dental Anesthesiology, and Department of Oral & Maxillofacial](#)

- Surgery and Oral Medicine (Dental Anesthesiology)
- Department of International Collaboration Development for Dentistry
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- Department of Maxillofacial Functional Development
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- Department of Anatomy and Functional Restorations
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- Central Research Laboratory
- Department of Advanced General Dentistry, General Dentistry
- Department of Oral Health and Development, Preventive Dentistry
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- Central Clinical Sections, Special Dental Clinic Section
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- Dental Clinic
- Dental Medical Information Section

※ New organization names based on the reorganization of graduate schools in April 2012 are used for Annual Report 2012.

Department of Calcified Tissue Biology, Basic Life Sciences

(1) Staffs and Students

Professor: Yuji Yoshiko (promoted from Associate Prof. on Oct. 1)

Associate Professor:

Assistant Professor: Tomoko Minamizaki, Hirotaka Yoshioka

Graduate Student: Yukiko Konishi (Pediatric Dentistry)

Undergraduate Student: Maya Mohri, Aoi Nozu, Yasumasa Irie, Azusa Ohnishi, Kiriko Kubo, Masahiro Nishimura

(2) Main Research Activities

1. Bone and tooth formation and mineralization.
2. Calcitropic and phosphotropic factors and mineral metabolism
3. Osteonetwork (Cross-talk between bone and other tissues/organs).

(3) Research Achievements

A) Original Papers (including Case Reports)

1. The EP4-ERK-dependent pathway stimulates osteo-adipogenic progenitor proliferation resulting in increased adipogenesis in fetal rat calvaria cell cultures.: Minamizaki T., Yoshiko Y., Yoshioka H., Kozai K., Aubin J.E., Maeda N. Prostaglandins Other Lipid Mediat., 2012 Mar;97(3-4):97-102.

B) Review

C) Publications

D) Other Publications

E) Presentation at Scientific Meeting

1. Phosphate regulates fibromodulin expression through the ERK pathway in ameloblasts. Yoshioka H., Yoshiko Y., Irie Y., Minamizaki T., Kato Y., Sugiyama T., Maeda N. American Association for Dental Research 2012 Annual Meeting (Tampa), 2012.
2. Transient but not constitutive activation of ERK is necessary for the unique action of FGF23 in Bone. Minamizaki T., Konishi Y., Yoshioka H., Kozai K., Yoshiko Y. American Society of Bone and Mineral

Research 2013 Annual Meeting (Minneapolis), 2012.

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

1. Grants-in-Aid for Young Scientists (B). Yoshioka H. The study of tooth morphogenesis from the aspect of local regulation of phosphate metabolism: An epigenomic approach. No. 24791962. ¥2,080,000.
2. Grants-in-Aid for Young Scientists (B). Minamizaki T. The study of mineral metabolism disorder in calcified tissue: Focus on de novo action of PTH. No. 23792105. ¥2,080,000.
3. Grants-in-Aid for Scientific Research (C). Yoshiko Y. The study of the inter-organ communication system via the FGF23-soluble Klotho axis in bone and dental diseases. No. 20263709. ¥1,690,000.
4. Ono pharmaceutical Co. Research Grant. Yoshiko Y. The unraveling of the molecular bases involved in mineralization. ¥3,000,000.
5. Raffinee International Co. Research Grant. Yoshiko Y. A search for mineralization- regulating factors. ¥3,600,000.
6. JST A-STEP. Yoshiko Y. Analysis of (p)ASARM as a regulator of the bone-vascular axis in a mouse model. No. AS232Z02363G ¥1,006,000.

(5) Academic Awards, etc.

(6) Patent.

1. PCT. Phosphorylated peptide, hard tissue and/or ectopic calcification inhibitor, antibody, and hard tissue and/or ectopic calcification promoter. Yoshiko Y., Minamizaki T., Yoshioka H., Hirata I., Kozai K., Maeda N., Kiyofuji T. JP2012/067351.

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Department of Physiology and Oral Physiology, Basic Life Sciences

(1) Staff s and Students

Professor : SUGITA, Makoto

Associate Professor : HIRONO, Chikara

Assistant Professor : KITAGAWA, Michinori

Research Assistant : YAMAMOTO, Kuniyo

Graduate Students : YAMAMOTO, Kuniyo

(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)

- 1 : Phf14, a Novel Regulator of Mesenchyme Growth via Platelet-derived Growth Factor (PDGF) Receptor- α : Kitagawa M., Takebe A., Ono Y., Imai T., Nakao K., Nishikawa SI., Era T. : J. Biol. Chem., 287(33), 27983-27996, 2012.

B) Review

C) Publications

D) Other publication

E) Presentation at Scientific Meeting

- 1 : Effects of sympathetic beta-1 and beta-2 agents on Cl⁻ secretion induced by the parasympathetic agent in rat submandibular acinar cells: Hirono C., Sugita M., Shiba Y.: The 54th Annual Meeting of Japanese Association for Oral Biology (Koriyama), 2012.
- 2 : Modification of parasympathomimetically induced Cl⁻ secretion by sympathomimetic β agonists in rat submandibular acinar cells: Hirono C., Sugita M., Shiba Y.: 2012 NIPS Research Meeting (Okazaki), 2012.
- 3 : Threonine 612 defines the putative pore-forming domain character of GDD1/Ano5/TMEM16E: Tran, T., Hirono, C., Fujimoto, S., Mizuta, K., Kubozono, K., Sugita, M., Kamata, N.: The 45th Annual Meeting of Hiroshima University Dental Society (Hiroshima), 2012.
- 4 : Identification and molecular analysis of Phf14, a novel regulator of mesenchyme growth: Kitagawa M., Takebe A., Ono Y., Imai T., Nakao K., Nishikawa SI., Era T.: The 85th Annual Meeting of Japanese Biochemical Society (Fukuoka), 2012.

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

- 1 : Grant-in-Aid for Scientific Research (Challenging Exploratory Research): Sugita M., The neuronal mechanisms underlying the taste-evoked emotional responses. 24659826. ¥1,200,000.
- 2 : Grant-in-Aid for Scientific Research (C): Kitagawa M., Functional analysis of Hippo signaling pathway on the formation and maintenance of salivary gland structure. 24592768. ¥1,700,000.

(5) Academic Awards, etc.

(6) Patents

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Department of Dental and Medical Biochemistry, Basic Life Sciences

(1) Staff and Students

Professor:	Yukio Kato
Associate Professor:	Mitsuhide Noshiro
Assistant Professor:	Takeshi Kawamoto , Katsumi Fujimoto
Assistant Professor (Special Appointment):	Kazuko Kitayama
International Student:	Veronica Ronald
Administrative Staff:	Misano Kuramoto

(2) Main Research Activities

- 1: Basic and clinical aspects of mesenchymal stem cells
- 2: Differentiation of chondrocytes
- 3: Molecular clocks

We cloned novel bHLH transcription factors (Dec1 and Dec2), which play roles in differentiation of mesenchymal stem cells (MSC) into chondrocytes, adipocytes, myoblasts and osteoblasts. Furthermore, Dec1 and 2 are involved in core feed back loops of the transcriptional and translational control in molecular clock systems (Honda-S et al. Nature, 2002). In addition, we developed the super-expansion method for MSC and found many molecular markers for MSC.

(3) Research Achievements

A) Original Papers (including Case Reports)

- 1: Regulation of basic helix-loop-helix transcription factors Dec1 and Dec2 by ROR α and their roles in adipogenesis(†). :Ozaki N, Noshiro M, Kawamoto T, Nakashima A, Honda K, Fukuzaki-Dohi U, Honma S, Fujimoto K, Tanimoto K, Tanne K, Kato Y. :Genes to Cells. 17,109-121,2012.
- 2: Feasibility and limitations of the round robin test for assessment of in vitro chondrogenesis evaluation protocol in a tissue-engineered medical product. :Yokoi M, Hattori K, Narikawa K, Ohgushi H, Tadokoro M, Hoshi K, Takato T, Myoui A, Nanno K, Kato Y, Kanawa M, Sugawara K, Kobo T, Ushida T. :J Tissue Eng Regen Med., Jul;6(7):550-8, 2012.
- 3: BHLH transcription factor DEC2 regulates pro-apoptotic factor Bim in human oral cancer HSC-3 cells.:Wu Y, Sato F, Bhawal UK, Kawamoto T, Fujimoto K, Noshiro M, Seino H, Morohashi S, Kato Y,

Kijima H.:Biomed Res.33(2):75-82, 2012.

- 4:The BHLH transcription factor DEC1 plays an important role in the epithelial-mesenchymal transition of pancreatic cancer.:Wu Y, Sato F, Yamada T, Bhawal UK, Kawamoto T, Fujimoto K, Noshiro M, Seino H, Morohashi S, Hakamada K, Abiko Y, Kato Y, Kijima H.:Int J Oncol. 41, 1337-1346,2012.
- 5:The basic helix-loop-helix transcription factor DEC2 inhibits TGF- β -induced tumor progression in human pancreatic cancer BxPC-3 cells.:Sato F, Kawamura H, Wu Y, Sato H, Jin D, Bhawal UK, Kawamoto T, Fujimoto K, Noshiro M, Seino H, Morohashi S, Kato Y, Kijima H.: Int J Mol Med. Sep;30(3):495-501, 2012.
- 6: English Collocation Learning through Corpus Data -- On-line Concordance and Statistical Information --.: Ohtake H, Fujita N, Kawamoto T, Ugawa Y, Morren B, Takeuchi H, Takekoshi M, Kaneko S. :Proceedings of World Conference on Educational Multimedia, Hypermedia and Telecommunications:1544-1549, 2012.

B) Review

C) Publications

D) Other Publications

E) Presentation at Scientific Meeting

- 1: Enhanced Proliferation of Stem Cells from Deciduous Teeth in Serum-free Media, STK1/STK2: Noriko Goto, Katsumi Fujimoto, Shin-ichi Hasegawa, Kazuko Kitayama, Veronica Sainik Ronald, Katsuyuki Kozai, Yukio Kato:8th Biennial Conference PDAA(Pediatric Dentistry Association of Asia) May 24 – 26 2012 Bali , Indonesia 1st winner of scientific competition in poster presentation The best winner of scientific competition poster presentation
- 2: Identification of marker genes expressed in human dental pulp cells: Fujii S., Fujimoto K., Srivatanakul P., Nishimura F., Kato Y.: 3rd Asian Cellular Therapy Organization meeting(Chiang Mai), November 14-17, 2012
- 3: Identification of marker genes expressed in human dental pulp cells: Fujii S., Fujimoto K., Srivatanakul P., Nishimura F., Kato Y.: 3rd Asian Cellular Therapy Organization meeting(Chiang Mai), November 14-17, 2012
- 4: Hiroshi Ohtake, Nobuyuki Fujita, Takeshi Kawamoto, Yoshihiro Ugawa, Brian Morren, Hiroaki Takeuchi, Masataka Takekoshi, Shuji Kaneko. English Collocation Learning through Corpus Data -- On-line Concordance and Statistical Information --. IADIS International Conference e-Learning2012, (Denver.), June26-29,2012

F) Special lectures in academic meetings

1:Chemical Optimization of Both Culture Surfaces and Media Markedly Enhances MSC Proliferation :
Yukio Kato, Tania Saskianti, Masami Kanawa, Takeshi Kawamoto, Koichi Kato, Isao Hirata : ISSCR
Annual Meeting (Yokohama, Japan) June 13-16,2012

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

- 1: Grant-in-Aid for Scientific Research (B): Yukio Kato, 10112062. 3,900 千円
- 2: Grant-in-Aid for challenging Exploratory Research: Yukio Kato, 23659918. 1,400 千円
- 3: Grant-in-Aid for Scientific Research (C):Katsumi Fujimoto, 22592067. 800 千円
- 4: Grant-in-Aid for Scientific Research (C): Mitsuhide Noshiro, 22590223. 900 千円
- 5: Grant-in-Aid for Scientific Research (C): Takeshi Kawamoto, 22592068. 800 千円
- 6: Grant-in-Aid for Young Scientists (B): Kazuko Kitayama, 23792096. 900 千円
- 7: Grant-in-Aid for Scientific Research (B): Masahiro Nishimura, Yukio Kato, 22390367. 100 千円
- 8: Grant-in-Aid for Scientific Research (C): Hiroshi Ohtake, Takeshi Kawamoto, 24590622. 80 千円

(5) Academic Awards, etc.

- 1: Indonesia 1st winner of scientific competition in poster presentation/The best winner of scientific competition poster presentation: Noriko Goto, Katsumi Fujimoto, Shin-ichi Hasegawa, Kazuko Kitayama, Veronica Sainik Ronald, Katsuyuki Kozai, Yukio Kato: Enhanced Proliferation of Stem Cells from Deciduous Teeth in Serum-free Media, STK1/STK2: 8th Biennial Conference PDAA(Pediatric Dentistry Association of Asia) May 24 – 26 2012 Bali, Indonesia

(6) Patents

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Department of Oral and Maxillofacial Pathobiology, Basic Life Sciences

(1) Staffs and Students

Professor : Takashi Takata

Associate Professor : Mutsumi Miyauchi

Assistant Professor : Toshihiro Inubushi, Hisako Furusho

Visiting Researcher : Nurina Febriyanti Ayuningtyas

Secretary: Yuko Masuda

Graduate Student : Intan Suraiya Merican Binti Aljunid Merican (D4), Takaaki Tsunematsu (D3), Mariko Ohbayashi (D3), Toshinori Ando (D2), Ajiravudh Subarnhesaj (D2), Nurina Febriyanti Ayuningtyas (D2), Syunryo Yanagisawa (D1), Chea Chanbora (D1)

(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 the mechanism of destruction of periodontal tissues
- 4 : Study on the criteria of diagnosis and cellular differentiation of odontogenic tumors and salivary gland tumors

(3) Research Achievements

A) Original Papers

1. Desrochers T.M., Shamis Y., Alt-Holland A., Kudo Y., Takata T., Wang G., Jackson-Grusby L., Garlick J.A. The 3D tissue microenvironment modulates DNA methylation and E-cadherin expression in squamous cell carcinoma. *Epigenetics*. 2012 Jan 1;7(1):34-46.
2. Kitagawa M., Ao M., Miyauchi M., Abiko Y., Takata T. F-spondin regulates the differentiation of human cementoblast-like (HCEM) cells via BMP7 expression. *Biochem Biophys Res Commun*. 2012 Feb 10;418(2):229-33.
3. Kadonishi Y., Deie M., Takata T., Ochi M. Acceleration of tendon-bone healing in anterior cruciate ligament reconstruction using an enamel matrix derivative in a rat model. *J Bone Joint Surg Br*. 2012 Feb;94(2):205-9.

4. Tuncel H., Shimamoto F., Kaneko H., Aoki E., Jikihara H., Nakai S., Takata T., Tatsuka M. Nuclear Aurora B and cytoplasmic Survivin expression is involved in lymph node metastasis of colorectal cancer. *Oncology Let.* 2012 May;3(5):1109-1114.
5. Hatano H., Shigeishi H., Kudo Y., Higashikawa K., Tobiume K., Takata T., Kamata N. Overexpression of receptor for hyaluronan-mediated motility (RHAMM) in MC3T3-E1 cells induces proliferation and differentiation through phosphorylation of ERK1/2. *J Bone Miner Metab.* 2012 May;30(3):293-303.
6. Okamoto M., Hirata S., Sato S., Koga S., Fujii M., Qi G., Ogawa I., Takata T., Shimamoto F., Tatsuka M. Frequent increased gene copy number and high protein expression of tRNA (cytosine-5-)-methyltransferase (NSUN2) in human cancers. *DNA Cell Biol.* 2012 May;31(5):660-71.
7. Inubushi T., Kawazoe A., Miyauchi M., Kudo Y., Ao M., Ishikado A., Makino T., Takata T. Molecular mechanisms of the inhibitory effects of bovine lactoferrin on lipopolysaccharide-mediated osteoclastogenesis. *J Biol Chem.* 2012 Jul 6;287(28):23527-36.
8. Kudo Y., Iizuka S., Yoshida M., Nguyen P.T., Siriwardena B.S.M.S., Tsunematsu T., Ohbayashi M., Ando T., Hatakeyama D., Shibata T., Koizumi K., Maeda M., Ishimaru N., Ogawa I., Takata T. Periostin Directly and Indirectly Promotes Tumor Lymphangiogenesis of Head and Neck Cancer. *PLoS ONE.* 2012 Aug 30;7(8):e44488.
9. Kudo Y., Iizuka S., Yoshida M., Tsunematsu T., Kondo T., Subarnbhesaj A., Deraz E.M., Siriwardena S.B., Tahara H., Ishimaru N., Ogawa I., Takata T. Matrix metalloproteinase-13 (MMP-13) directly and indirectly promotes tumor angiogenesis. *J Biol Chem.* 2012 Nov 9;287(46):38716-28.
10. Hatano H., Kudo Y., Ogawa I., Shimasue H., Shigeishi H., Ohta K., Higashikawa K., Takechi M., Kamata N. Establishment of Mesenchymal Cell Line Derived from Human Developing Odontoma. *Oral Diseases.* 2012 Nov;18(8):756-62.
11. Inoue A., Ohnishi M., Fukutomi C., Kanoh M., Miyauchi M., Takata T., Tsuchiya D., Nishio H. Protein kinase A-dependent substance P expression by pituitary adenylate cyclase-activating polypeptide in rat sensory neuronal cell line ND7/23 cells. *J Molecular Neuroscience,* 2012 Nov;48(3):541-9.
12. Oshiro A., Iseki S., Miyauchi M., Terashima T., Kawaguchi Y., Ikeda Y., Shinomura T. Lipopolysaccharide induces Rapid Loss of follicular dendritic cell-secreted protein in the Junctional Epithelium. *J Periodontal Res.* 2012 Dec;47(6):689-94.
13. Furusho H., Miyauchi M., Hyogo H., Inubushi T., Ao M., Ouhara K., Hisatune J., Kurihara H., Sugai M., C. Nelson Hayes, Nakahara T., Aikata H., Takahashi S., Chayama K., Takata T. Dental infection of *Porphyromonas gingivalis* exacerbates high fat diet-induced steatohepatitis. *J Gastroenterology.* (in press)
14. Murasaki K., Wanatabe M., Ito G., Takahashi K., Suekawa Y., Inubushi T., Hirose N., Uchida T., Tanne K. P2X7 receptor and cytokines contribute to extra-territorial facial pain. *J Dent Res.* (in press)

15. Kawazoe A., Inubushi T., Miyauchi M., Ishikado A., Tanaka E., Tanne K., Takata T. Orally administrated liposomal lactoferrin inhibits inflammation-related bone destruction without interrupting orthodontic tooth movement. *J Periodontol.* (in press)

B) Case reports

1. Yshioka Y., Ogawa I., Tsunematsu T., Sakaue T., Yamasaki S., Fukui Y., Hayashido Y., Toratani S., Okamoto T. Ectomesenchymal chondromyxoid tumor of the tongue: insights on histogenesis. *Oral Surg, Oral Med, Oral Pathol, Oral Radiol.* (in press)
2. Watanabe C., Watanabe Y., Miyauchi M., Fujita M., Watanabe Y. Multiple cemental tears. *Oral Surg Oral Med Oral Pathol Oral Radiol.* 2012 Sep;114(3):365-72.

C) Special lectures in academic meetings

1. Pathological diagnosis of salivary gland lesions and neoplasms. Ogawa I., Takata T. The 3rd Meeting of Kochi Conference of Diagnostic Pathology (Kochi), Mar.3.2012.
2. Companion meeting 6 [Pathology of salivary gland tumors - controversial points and recent topics], The diagnostic problems of malignant counterpart of pleomorphic adenoma. Ogawa I., Takata T. The 101st Annual Meeting of the Japanese Society of Pathology (Tokyo), Apr.26.2012.
3. Workshop [Pathobiology of bisphosphonate-related osteonecrosis of the jaw], Pathological characteristics of jaw bone of the patient treated with intravenous bisphosphonates. A case presentation: Ogawa I., Miyauchi M., Takata T. The 23rd Annual Meeting of the Japanese Society of Oral Pathology (Tokyo), Aug.29-30.2012.
4. Symposium 2 [Lactoferrin and Woman's Health], The molecular mechanisms of the inhibitory effects of bovine lactoferrin on osteoclastogenesis. Inubushi T., Mutsumi M., Min A., Atsushi I., Taketoshi M., Takashi T. The 5th Japanese association for lactoferrin (Tokyo), Oct.27.2012.
5. Symposium 1 [The relationship between periodontitis and systemic disease], Dental infection of *Porphyromonas gingivalis* exacerbates pathological progression of non-alcoholic steatohepatitis. Mutsumi M., Hisako F., Hyougo H., Toshihiro I., Ao M., Kazuhisa O., Junzou H., Cyayama K., Hidemi K., Motoyuki S., Takashi T. The 137th annual meeting of Japanese Society of Conservative Dentistry (Hiroshima), Nov.22.2012.

D) Presentation at International Scientific Meeting

1. Aurora-A controls pre-replicative complex formation and DNA replication by promoting the stabilization of geminin and Cdt1 in mitosis. Kudo Y., Tsunematsu T., Takata T. Cold Spring Harbor Meeting, The Cell Cycle (New York), May.16.2012.

2. Oral infection deteriorates endothelial dysfunction and lactoferrin shows therapeutic effect in obesity mouse. Ao M., Miyauchi M., Furusho H., Inubushi T., Kozai K., Takata T. The 1st China International Workshop on Pediatric Dentistry (CIWPD) (China), Jun.30.2012.
3. FGFR-1 inhibitor PD173074 induces mesenchymal-epithelial transition through suppression of AP-1 in Head and Neck Squamous Cell Carcinoma. Nguyen P.T., Inubushi T., Tsunematsu T., Kudo Y., Kamata N., Ogawa I., Takata T. Cold Spring Harbor Meeting, Models & Mechanisms of Cancer (New York), Aug.16.2012.

E) Presentation at Domestic Scientific Meeting

1. Dental infection of *Porphyromonas gingivalis* induces pathological progression of NASH. Furusho H., Miyauchi M., Inubushi T., Ouhara K., Hisatsune J., Hyogo H., Sugai M., Cyayama K., Takata T. The 2012 QOL International Symposium (Niigata), Feb.9.2012.
2. Dental infection of *P. gingivalis* induces progression of NASH Furusho H., Miyauchi M., Hyogo H., Cyayama K., Takata T. The 21st society for digestive organs and free radical research (Kyoto), Mar. 3. 2012.
3. Dental infection of *Porphyromonas gingivalis* exacerbates pathological progression of non-alcoholic steatohepatitis. Miyauchi M., Hyogo H., Cyayama K., Takashi T. The 98th general meeting of Japanese Society of Gastroenterology (Tokyo), Apr.19.2012.
4. The role as a tumor suppressor gene of Ameloblastin. Ando T., Tsunematsu T., Kudo Y., Ogawa I., Miyauchi M., Takata T. The 101st annual meeting of the Japanese Society of Pathology (Tokyo), Apr.28.2012.
5. The regulatory mechanism of DNA replication by mitotic kinase, Aurora-A. Tsunematsu T., Kudo Y., Takata T. The 101st Annual Meeting of the Japanese Society of Pathology (Tokyo), Apr.28.2012.
6. The role as a tumor suppressor gene and the expression of Ameloblastin in osteosarcoma. Ando T., Tsunematsu T., Kudo Y., Ogawa I., Miyauchi M., Takata T. The 66th annual meeting of the Japanese Stomatological Society (Hiroshima), May. 17. 2012.
7. A case of odontogenic clear cell carcinoma with formation of a large amount of osteodentin. Nakayama K., Tachimoto Y., Shimamoto H., Nomati A., Hara S., Tateishi Y., Ogawa I., Takata T. The 66th Annual Meeting of the Japanese Stomatological Society (Hiroshima), May. 17. 2012.
8. The molecular mechanisms of the inhibitory effects of bovine lactoferrin on osteoclastogenesis. Inubushi T., Miyauchi M., Ao M., Furusho H., Ishikado A., Makino T., Takata T. The 55th Spring Meeting of the Japanese Society of Periodontology (Sapporo), May. 18. 2012.
9. *P. gingivalis* dental infection is a risk factor for pathological progression of NASH. Furusho H., Miyauchi M., Ao M., Inubushi T., Ouhara K., Kurihara H., Takata T. The 55th Spring Meeting of the Japanese Society of Periodontology (Sapporo), May. 18. 2012.

10. Inhibitory Effect of Lactoferrin on *Porphyromonas gingivalis* Deteriorated Endothelial Dysfunction of Aorta in High Fat Diet Obese Mice. Ao M., Miyauchi M., Furusho H., Inubushi T., Kozai K., Takata T. The 55th Spring Meeting of the Japanese Society of Periodontology (Sapporo), May. 18. 2012.
11. Dental infection of *Porphyromonas gingivalis* is a risk factor of pathological progression of non-alcoholic steatohepatitis. Miyauchi M., Hyougo H., Takata T. The 48th annual meeting of Japanese Society of Hepatology (Kanazawa), Jun. 8. 2012.
12. The novel function of Ameloblastin as a tumor suppressor gene in osteosarcoma. Ando T., Tsunematsu T., Kudo Y., Ogawa I., Miyauchi M., Takata T. The 45th annual meeting of the Dental Association of Hiroshima University (Hiroshima), Jun. 9. 2012.
13. The molecular mechanisms of the inhibitory effects of bovine lactoferrin on osteoclastogenesis. Toshihiro Inubushi, Miyauchi M., Ao M., Ishikado A., Makino T., Takata T. The Society of Hard Tissue Regenerative Biology (Aichi), Aug. 25. 2012.
14. Dental infection of *P. gingivalis* induces pathological progression of NASH. Furusho H., Miyauchi M., Inubushi T., Ouhara K., Hisatsune J., Hyogo H., Kurihara H., Sugai M., Cyayama K., Takata T. First International Conference on *Porphyromonas gingivalis* and Related Bacterial Species (Nagasaki), Aug. 27-28. 2012.
15. *Porphyromonas gingivalis* deteriorate endothelial dysfunction in obese mice and bovine lactoferrin shows therapeutic effect. Ao M., Miyauchi M., Furusho H., Inubushi T., Kozai K., Takata T. First International Conference on *Porphyromonas gingivalis* and Related Bacterial Species (Nagasaki), Aug. 27-28. 2012.
16. The stabilization mechanism of Geminin by mitotic kinase, Aurora-A. Tsunematsu T., Kudo Y., Takata T. The 23rd Annual Meeting of the Japanese Society of Oral Pathology (Tokyo), Aug. 29-31. 2012.
17. Dental infection of *Porphyromonas gingivalis* induces pathological progression of non-alcoholic steatohepatitis. Furusho H., Miyauchi M., Ao M., Inubushi T., Ouhara K., Hisatsune J., Hyogo H., Kozai K., Kurihara H., Suagai M., Cyayama K., Takata T. The 23rd Meeting of the Japanese Society of Oral Pathology (Tokyo), Aug. 29-31. 2012.
18. FGFR-1 inhibitor PD173074 induces mesenchymal-epithelial transition through suppression of AP-1 in Head and Neck Squamous Cell Carcinoma. Nguyen P.T., Inubushi T., Tsunematsu T., Kudo Y., Kamata N., Ogawa I., Takata T. The 23rd Meeting of the Japanese Society of Oral Pathology (Tokyo), Aug. 29-31. 2012.
19. Cementoblasts control inflammation through f-spondin. Kitagawa M., Miyauchi M., Takata T. The 55th Autumn Meeting of the Japanese Society of Periodontology (Tsukuba), Sept. 23. 2012.
20. The ubiquitin mediated degradation mechanism of Geminin during mitosis and its novel role. Tsunematsu T., Kudo Y., Takata T. The 54th Annual Meeting of Japanese Association for Oral Biology (Fukushima), Sept. 15. 2012.
21. Geminin escapes from ubiquitin-mediated degradation by Aurora-A induced phosphorylation during

- mitosis. Tsunematsu T., Kudo Y., Takata T. The 71st Annual Meeting of the Japanese Cancer Association (Sapporo), Sept. 19-21. 2012.
22. Identification of microRNA-203 as an invasion in oral cancer. Obayashi M., Yoshida M., Kudo Y., Takata T. The 71st Annual Meeting of the Japanese Cancer Association (Sapporo), Sept 19-21. 2012.
 23. A case of adenocarcinoma of maxillary alveolar bone, undetectable primary lesion. Suematsu M., Nabeshima I., Tani R., Toratani S., Ando T., Ogawa I., Okamoto T. The 60th Chugoku-Shikoku Sectional Meeting of the Japanese Stomatological Society (Hiroshima), Oct. 6. 2012.
 24. A case of bilateral central giant cell lesions in mandible. Kimura N., Kanda T., Hara J., Ando T., Ogawa I., Toratani S., Okamoto T. The 57th Meeting of the Japanese Oral and Maxillofacial Surgery (Yokohama), Oct. 19-21. 2012.
 25. Lactoferrin inhibits TNF- α production. Nishiyama K., Inubushi T., Miyauchi M., Ao M., Ishikado A., Makino T., Takata T. The 5th Japanese association for lactoferrin (Tokyo), Oct. 27. 2012.
 26. Cementoblasts control inflammation through f-spondin. Kitagawa M., Tukimoto S., Miyauchi M., Takata T. The 51st Hiroshima Prefecture Dental Association Meeting/ The 96th Hiroshima University Dental School Meeting (Hiroshima city), Oct. 28. 2012.
 27. Inhibitory effect of lactoferrin on *Porphyromonas gingivalis*-deteriorated endothelial dysfunction of aorta in high fat diet-fed obese mice. Ao M., Miyauchi M., Furusho H., Inubushi T., Kozai K., Takata T. The 51st Hiroshima Prefecture Dental Association Meeting/ the 96th Hiroshima University Dental School Meeting (Hiroshima), Oct. 28. 2012.
 28. Periodontal disease is responsible for pathogenesis and progression of hepatitis. Matsuda R., Muroi N., Muroi M., Kodama A., Sakamoto S., Tsukimoto S., Nishiyama K., Furusho H., Inubushi T., Miyauchi M., Takata T. The 22nd General Meeting of the Japanese Association for Dental Science (Osaka), Nov. 10. 2012.
 29. A case of ectomesenchymal chondromyxoid tumor -Difference from myoepithelial carcinoma-. Ogawa I., Tsunematsu T., Ando T., Ohbayashi M., Yamazaki S., Takata T. The 57th Annual Meeting of the Japanese Salivary Gland Society (Tokyo), Dec. 14. 2012.
 30. Lactoferrin's therapeutic effect on *P. gingivalis* deteriorating endothelial dysfunction in obesity mice. Ao M., Miyauchi M., Furusho H., Inubushi T., Kozai K., Takata T. The 60th annual meeting of Japanese Association for Dental Research (Niigata), Dec.14.2012.
 31. The novel tumor suppressor function of Ameloblastin in osteosarcoma. Ando T., Tsunematsu T., Kudo Y., Ogawa I., Miyauchi M., Takata T. The 60th annual meeting of Japanese Association for Dental Research (Niigata), Dec. 14.2012.
 32. The effects and mechanisms of lactoferrin as an anabolic factor in osteoblasts. Inubushi T., Kosai A., Yanagisawa S., Nishiyama K., Furusho H., Ao M., Ishikado A., Miyauchi M., Takata T. The 60th annual meeting of Japanese Association for Dental Research (Niigata), Dec.14.2012.

33. Inhibitory effect of bLF on LPS-induced crosstalk among TLR pathways. Yanagisawa S., Inubushi T., Miyauchi M., Furusho H., Ao M., Ishikado A., Takata T. The 60th annual meeting of Japanese Association for Dental Research (Niigata), Dec.14.2012.

F) Case Reports at Scientific Meeting

1. Tumor of maxillary sinus (Dedifferentiated adenoid cystic carcinoma). Tsunematsu T., Ando T., Obayashi M., Ogawa I., Sui Y., Takata T. The 107th Slide Conference of the Japanese Society of Pathology (Tokushima), Feb. 18.2012.
2. Tumor of the buccal mucosa (Clear cell carcinoma, NOS). Furusho H., Ogawa I., Sakaida N., Nakano R., Takata T. The 108th Academic Meeting of Chugoku-Shikoku Branch of the Japanese Society of Pathology (Kurashiki), Jun. 23.2012.
3. Pigmented lesion of palate (Intramucosal melanocytic nevus). Obayashi M., Fujita Y., Fujihara M., Takata T. The 23rd Annual Meeting of the Japanese Society of Oral Pathology (Tokyo), Aug.30.2012.
4. Lesion of mandible (Thickened dental follicle). Ogawa I., Obayashi M., Fujita Y., Fujihara M., Takata T. The 58th Meeting of Hiroshima Pathological Conference (Hiroshima), Sept.15.2012.

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

1. Grants-in-Aid for Scientific Research (Scientific Research (A)) Continuance: Takashi Takata: The clarification of the mechanism of invasion and metastasis of oral cancer and its application to diagnosis of malignancy and gene therapy.
2. Grants-in-Aid for Scientific Research (Grant-in-Aid for Challenging Exploratory Research) New: Takashi Takata: Study on the application of liposomal lactoferrin for prevention of Rheumatoid arthritis.
3. Grants-in-Aid for Scientific Research (Grant-in-Aid for Research Activity start-up) New: Hisako Furusho
4. Donated fund from Ito ultrasound Ltd., Continuance: Takashi Takata: Study on the influence of ultrasonic irradiation on periodontal tissue.
5. Donated fund from Sanstar Co. Ltd. : Takashi Takata.
6. Donated fund from Sanstar Co. Ltd. : Takashi Takata.
7. Donated fund from Clinical laboratory center, Hiroshima city medical association. Continuance: Takashi Takata: Study on diagnosis for oral disease.
8. Donated fund from Mitsubishi-Mihara Hospital. Continuance: Takashi Takata: Study on diagnosis for oral disease.
9. Donated fund for Hiroshima Prefecture tumor registration business. Continuance: Takashi Takata
10. Grants-in-Aid for Scientific Research (Research fellowship for international scientists). Continuance: Phuong Thao Nguyen: Study on the development of novel treatment for targeting N-cadherin in oral

cancer.

11. Donated fund from Hiroshima University (Research fellowship for Young scientists). New: Toshihiro Inubushi
12. Grants-in-Aid for Scientific Research (Research fellowship for young scientists). Continuance: Takaaki Tsunematsu: The role and regulation of RUNX3 in oral squamous cell carcinoma.
13. Grants-in-Aid for Scientific Research(Research fellowship for young scientists) New: Toshinori Ando: The novel function of Ameloblastin as a tumor suppressor gene.
14. Hiroshima University Supporting Committee Grant for students. New: Min Ao
15. Grant from Hiroshima University Alumni Association. New: Obayashi Mariko
16. Ryoku Fuu Kai Research Grant for young investigators. New: Min Ao
17. Hiroshima University hospital grant funding for clinical research. New: Mutsumi Miyauchi: The effect of periodontitis on pathological progression of NASH -Study on relationship between infection of periodontal pathogen and clinical manifestation using liver biopsy materials-.

(5) Academic Awards, etc.

1. Toshihiro Inubushi. Oral presentation Award. The Society of Hard Tissue Regenerative Biology (Aichi), Aug.25. 2012.
2. Tsunematsu Takaaki. Poster Award. The 54th Annual Meeting of Japanese Association for Oral Biology (Fukushima), Sept.15.2012.
3. Kyoko Nishiyama. Excellent presentation award. The 5th Japanese association for lactoferrin (Tokyo), Oct.27.2012.
4. Toshiori Ando. Hatton Award finalist, JADR. Dec.14.2012.
5. Shinichi Sakamoto. 2013 IADR David B. Scott Fellowship

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Department of Bacteriology, Basic Life Sciences

(1) Faculty members and students

- Professor : Motoyuki Sugai
- Assistant Professor : Fuminori Kato, Shizuo Kayama, Junzo Hisatsune
- Co-Researcher : Keiko Tsuruta (Oral Health Care Major)
Ikue Hayashi (Faculty of Dentistry)
- Researcher : Chika Arai (From April)
Kazuhisa Koizumi M2 (Pharmacy, Kimura Eye & Int. Med. Hospital)
- Graduate Student : Shima Morioka D7, Kanao Kobayashi D5(From Dept. Urology), Wataru Shimizu D5 (From Dept. Surgery 1), Norifumi Shigemoto D3 (From Dept. Surgery 1), Itsugun Ko D4(From Pediatric Dentistry), Ryuichi Kuwabara D4, Taro Kojima D3, Yuko Iwamoto D3 (From Pediatric Dentistry), Nobuyuki Tatsukawa D2 (From Pediatric Dentistry), Yoshie Harino D2 (Clinical Laboratory, Hiroshima City Asa Hospital) , Shrestha Looniva D2, Yu Liansheng D1

(2) Main Research Interests

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

(3) Research Accomplishments

A) Original Papers (including Case Reports)

1. Tight junction dysfunction in the stratum granulosum leads to aberrant corneum barrier function in claudin-1-deficient mice. Tomoko Sugawara, Noriko Iwamoto, Masaya Akashi, Taro Kojima, Junzo Hisatsune, Motoyuki Sugai, Mikio Fuurse *Journal of Dermatological Science*. online, 2013
2. Dental infection of *Porphyromonas gingivalis* exacerbates high fat diet-induced steatohepatitis in mice. Hisako Furusho, Mutsumi Miyauchi, Hideyuki Hyogo, Toshihiro Inubushi, Min Ao, Kazuhisa Ouhara, Junzo Hisatsune, Hidemi Kurihara, Motoyuki Sugai, S. Nelson Hayes, Takashi Nakahara, Hiroshi

Aikata, Shoichi Takahashi, Kazuaki Chayama, Takashi Takata. *Journal of Gastroenterology*. online, 2013

3. The *Listeria monocytogenes* serotype 4b autolysin IspC has N-acetylglucosaminidase activity. Jennifer Ronholm, Linru Wang, Ikue Hayashi, Motoyuki Sugai, Zhiyi Zhang, Xudong Cao, Min Lin. *Glycobiology* 22(10), 1311-1320, 2012S
4. Rapid detection of *bla*_{IMP-6} by Amplification Refractory Mutation System. Shizuo Kayama, Norifumi Shigemoto, Ryuichi Kuwahara, Makoto Onodera, Michiya Yokozaki, Hiroki Ohge, Fuminori Kato, Junzo Hisatsune, Motoyuki Sugai. *Journal of Microbiological Methods* 88, 182-184, 2012
5. Emergence in Japan of an Imipenem-Susceptible Meropenem-Resistant *Klebsiella pneumoniae* (ISMRK) carrying *bla*_{IMP-6}. Norifumi Shigemoto, Ryuichi Kuwahara, Shizuo Kayama, Wataru Shimizu, Makoto Onodera, Michiya Yokozaki, Junzo Hisatsune, Fuminori Kato, Hiroki Ohge, Motoyuki Sugai. *Diagnostic Microbiology and Infectious Disease* 72, 109-112, 2012

C) Books

D) Other Publications

E) Presentation at Scientific Meeting

1. 広島県における Imipenem 感受性 Meropenem 耐性 *Klebsiella pneumoniae* (ISMRK) の出現と動向. 桑原隆一、繁本憲文、鹿山鎮男、小野寺一、横崎典哉、大毛宏喜、菅井基行. 第 23 回 日本臨床微生物学会総会 01/21 横浜
2. Imipenem 感受性 Meropenem 耐性 *Klebsiella pneumoniae* (ISMRK) の薬剤感受性迅速検査の落とし穴. 播野俊江、鹿山鎮男、桑原隆一、樫山誠也、繁本憲文、大毛宏喜、菅井基行. 第 23 回 日本臨床微生物学会総会 01/21 横浜
3. Imipenem 感受性 Meropenem 耐性 *Klebsiella pneumoniae* (ISMRK) が保有する耐性プラスミドの解析. 繁本憲文、桑原隆一、鹿山鎮男、大毛宏喜、菅井基行. 第 23 回 日本臨床微生物学会総会 01/21 横浜
4. 広島県における Imipenem 感受性 Meropenem 耐性 *Klebsiella pneumoniae* (ISMRK) の出現と検出方法. 桑原隆一、繁本憲文、鹿山鎮男、小野寺一、横崎典哉、大毛宏喜、菅井基行. 第 29

回 広島県医学検査学会 03/03 広島

5. 犬膿皮症由来 *Staphylococcus pseudintermedius* 表皮剥脱毒素 ExpB 産生株の全ゲノム配列解析. 久恒順三、平川英樹、伊從慶太、西藤公司、大島健志朗、服部正平、菅井基行. 第6回 日本ゲノム微生物学会年会 03/10 東京
6. The role in *Staphylococcus aureus* skin-infection, a novel cell wall protein Skip. 久恒順三、村上輝明、小島太郎、達川伸行、林幾江、山田作夫、加藤文紀、菅井基行. 第85回 日本細菌学会総会 03/27 長崎
7. SptA regulates pathogenicity in *Staphylococcus aureus*. 加藤文紀、菅井基行 第85回 日本細菌学会総会 03/27 長崎
8. Prevalence of the Imipenem-susceptible meropenem-resistant *K. pneumoniae* (ISM RK) in West Japan. Shizuo Kayama, Motoyuki Sugai. 第85回 日本細菌学会総会 03/27 長崎
9. Regulatory elements of *eta* gene expression in *Staphylococcus aureus*. Yuko Iwamoto, Fuminori Kato, Hitoshi Komatsuzawa, Katsuyuki Kozai, Motoyuki Sugai. 第85回 日本細菌学会総会 03/27 長崎
10. Effects of automutanolysin (Aml) on *Streptococcus mutans* infection in rats. Yiqun Hu, Yuko Iwamoto, Shizuo Kayama, Fuminori Kato, Hitoshi Komatsuzawa, Keiko Tsuruda, Katsuyuki Kozai, Motoyuki Sugai. 第85回 日本細菌学会総会 03/27 長崎
11. Characterization of toxin-antitoxin system in *Staphylococcus aureus*.. Yusuke Yabuno, Fuminori Kato, Motoyuki Sugai. 第85回 日本細菌学会総会 03/27 長崎
12. 西日本において初めて分離された *bla*_{NDM} 保有大腸菌の性状解析. 鹿山鎮男、桑原隆一、繁本憲文、小野寺一、横崎典哉、大毛宏喜、菅井基行. 第86回 日本感染症学会総会・学術講演会 04/25 長崎
13. 近畿地区で分離されたイミペネム感受性メロペネム耐性肺炎桿菌ならびに大腸菌の解析. 繁本憲文、鹿山鎮男、桑原隆一、三浦徹也、小野寺一、横崎典哉、大毛宏喜、菅井基行. 第86回 日本感染症学会総会・学術講演会 04/25 長崎
14. 表層蛋白質 Skip の *Staphylococcus aureus* 皮膚感染における役割. 久恒順三. 第6回 細菌学若手コロッセウム 08/08 八王子

15. 新規転写因子 SptA による黄色ブドウ球菌の病原性因子制御機構. 加藤文紀. 第6回 細菌学若手コロッセウム 08/08 八王子
16. Imipenem-susceptible Meropenem-resistant *Enterobacteriaceae* の出現. 鹿山鎮男. 第6回 細菌学若手コロッセウム 08/08 八王子
17. Effect of automutanolysin (Aml) on *Streptococcus mutans* infection in rats. Yiqun Hu, Shizuo Kayama, Fuminori Kato, Keiko Tsuruda, Yuko Iwamoto, Yuko Tomita, Panida Thanyasrisung, Hitoshi Komatsuzawa, Katsuyuki Kozai, Motoyuki Sugai. 第65回日本細菌学会中国・四国支部総会 10/20 徳島
18. IPM に感受性 (中間耐性) を示すメタロ- β -ラクタマーゼ産生 *Enterobacteriaceae* の出現. 鹿山鎮男、繁本憲文、桑原隆一、小野寺一、横崎典哉、大毛宏喜、菅井基行. 第41回 薬剤耐性菌研究会 10/25 岐阜
19. 広島県における ESBL 産生菌の分子疫学解析 (第3期調査). 桑原隆一、鹿山鎮男、菅井基行. 第60回日本化学療法学会西日本支部総会 11/05 福岡
20. Imipenem 感受性 Meropenem 耐性 *Klebsiella pneumoniae* (ISMRK) による肺炎で Arbekacin が有効であった1例. 桑原隆一、万力麻美、沖本真史、繁本憲文、鹿山鎮男、菅井基行. 第82回日本感染症学会西日本地方会学術集会 11/05 福岡
21. 広島県における Imipenem 感受性 Meropenem 耐性 *Klebsiella pneumoniae* (ISMRK) の検出増加. 鹿山鎮男、桑原隆一、繁本憲文、木場由美子、小野寺一、横崎典哉、大毛宏喜、菅井基行. 第82回日本感染症学会西日本地方会学術集会 11/05 福岡
22. IPM に中間耐性を示す *Klebsiella* 属が所有する新規メタロ- β -ラクタマーゼ *bla*_{IMP-34}. 繁本憲文、鹿山鎮男、桑原隆一、小野寺一、横崎典哉、大毛宏喜、菅井基行. 第60回日本化学療法学会西日本支部総会 11/05 福岡
23. 全身播種した市中感染型 MRSA 感染症由来株の解析. 久恒順三、萩谷英大、塩田澄子、菅井基行. 第32回 広島感染症研究会 11/10 広島
24. 西日本において初めて分離された *bla*_{NDM} 保有大腸菌の解析. 鹿山鎮男、桑原隆一、繁本憲文、小野寺一、横崎典哉、大毛宏喜、菅井基行. 第32回 広島感染症研究会 11/10 広島
25. 広島県における ESBL およびメタロ- β -ラクタマーゼ産生腸内細菌科の増加. 桑原隆一、繁本

憲文、鹿山鎮男、小野寺一、横崎典哉、大毛宏喜、菅井基行. 第32回 広島感染症研究会 11/10
広島

F) Invited speakers, Symposist and others

1. 「黄色ブドウ球菌の比較ゲノムからみえてきた皮膚疾患由来株の特徴」宮崎大学 IR 推進セミナー 若手細菌学者による病原性細菌研究の新展開

(4) Research grants.

- 1: Grant-in-Aid for Scientific Research C from the Ministry of Education, Science, Sports and Culture of Japan : Ssugai M. :Nucleolar effect of cell cycle specific inhibitor, CDT.
- 2 : Grant-in-Aid for Scientific Research for Young Investigator B from the Ministry of Education, Science, Sports and Culture of Japan : Kato, F.
- 3 : Grant-in-Aid for Scientific Research for Young Investigator B from the Ministry of Education, Science, Sports and Culture of Japan :Hisatsune, J.
- 4 : Grant-in-Aid for Scientific Research from the Ministry of Health and Labor of Japan : Sugai, M. (share holder) ∴
- 5 : lactobacillus study group scholarship : Sugai, M

(5) Awards

(6) Patents

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Department of Cellular and Molecular Pharmacology, Basic Life Sciences

(1) Staff and Students

Professor: Takashi Kanematsu

Associate professor: Katsuya Morita

Assistant professor: Tomoya Kitayama, Kae Harada

Research Associate: Satoshi Asano, Jun Zhang, Saori Yoneda

Graduate student: Toshiya Okumura, Hiroto Tanaka

Undergraduate student (Advanced Dental Research course): Yuya Ogawa (6th), Nami Kikushige (6th), Nozomi Hinada (6th), Kousuke Yokobayashi (5th), Tomohiro Mukai (5th), Seiya Hayashi (5th), Hanae Ikeda (5th), Sakura Yamada (5th), Takashi Ryoike (4th), Furutama Daisuke (4th), Sayaka Asano (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 molecular mechanisms controlling insulin secretion

3 : Studies on the regulatory mechanisms of food intake and energy metabolism

4 : Studies on the roles of a new autophagy-related molecule in autophagy pathway

5 : Physiological and pathophysiological roles of neurotransmitter transporters and nucleoside transporters.

6 : Studies on the mechanisms for neuropathic pain and the development of novel medicaments.

(3) Research Achievements

A) Original Papers

1 : Dysfunction of extrasynaptic GABAergic transmission in phospholipase C-related, but catalytically inactive protein 1 knockout mice is associated with an epilepsy phenotype. Zhu G, Yoshida S., Migita K., Yamada J., Mori F., Tomiyama M., Wakabayashi K., Kanematsu T., Hirata M., Kaneko S., Ueno S., Okada M. *J Pharmacol Exp Ther.* 340(3):520-528, 2012.

2 : Regulation of Cell Migration by Sphingomyelin Synthases: Sphingomyelin in Lipid Rafts Decreases Responsiveness to Signaling by the CXCL12/CXCR4 Pathway. Asano, S., Kitatani, K., Taniguchi, M., Hashimoto, M., Zama, K., Mitsutake, S., Igarashi, Y., Takeya, H., Kigawa, J., Hayashi, A., Umehara, H., Okazaki, T. *Mol Cell Biol.* 32:3242-3252, 2012.

- 3 : Regulation of autophagy and its associated cell death by "sphingolipid rheostat": reciprocal role of ceramide and sphingosine 1-phosphate in the mammalian target of rapamycin pathway. Taniguchi M., Kitatani K., Kondo T., Hashimoto-Nishimura M., Asano S., Hayashi A., Mitsutake S., Igarashi Y., Umehara H., Takeya H., Kigawa J., Okazaki T. *J Biol Chem.* 287:39898-39910, 2012.
- 4 : Inhibitory action of antidepressants on mouse betaine/GABA transporter (BGT1) heterologously expressed in cell cultures. Gerile, Sogawa C., Ohyama K., Masuko T., Kusama T., Morita K., Norio Sogawa N., Kitayama S. *Int. J. Mol. Sci.* 13(3): 2578-2589, 2012.
- 5 : Pain-releasing action of platelet-activating factor (PAF) antagonists in neuropathic pain animal models and the mechanisms of action. Motoyama N., Morita K., Kitayama T., Shiraishi S., Uezono Y., Nishimura F., Kanematsu T., Dohi T. *European Journal of pain.* In press.
- 6 : Changes of activity and structure of jaw muscles in Parkinson's disease model rats. Nakamura S., Kawai N., Ohnuki Y., Saeki Y., Korfage J., Langenbach G., Kitayama T., Watanabe M., Sano R., Tanne K., Tanaka E. *Journal of Oral Rehabilitation.* In press.
- 7 : Phospholipase C-related catalytically inactive protein, a novel microtubule-associated protein 1 light chain 3-binding protein, negatively regulates autophagosome formation. Umabayashi H., Mizokami A., Matsuda M., Harada K., Takeuchi H., Tanida I., Hirata M., Kanematsu T. *Biochem Biophys Res Commun.* In press.

B) Reviews

C) Publications

- 1 : Function and conformation of GABA_A receptor: Kitayama T., Kanematsu T.: *Clinical Neuroscience* **30**, 12 1346-1348. 2012.

D) Other Publications

E) Presentation at Scientific Meeting

- 1 : Analysis of PRIP roles in lipolysis: Okumura T., Harada K., Tanaka H., Mizokami A., Hirata M., Kamata N., Kanematsu T.; The 7th KOREA-JAPAN Conference on Cellular Signaling for Young Scientists, (UNIST, Korea), 2012
- 2 : PRIP1 and PRIP double knockout mice a different phenotype in the pain signaling: Kitayama T., Morita K., Kanematsu T.: The 85th Annual Meeting of The Japanese Pharmacological Society, (Kyoto), 2012.

- 3 : Delayed induction of anesthesia by propofol in mice deficient in phospholipase C-related but catalytically inactive protein type-1: Nikaido Y., Yamada J., Migita K., Shiba Y., Kushikata T., Hirota K., Kanematsu T., Hirata M., Ueno S.; Neuroscience Congress - FENS Forum 2012, (Barcelona, Spain), 2012
- 4 : Down-regulation of tonic GABAergic transmission upon PRIP-1 disruption in basolateral amygdala: Yamada J., Migita K., Shiba Y., Kanematsu T., Hirata M. Ueno S.; Neuroscience Congress - FENS Forum 2012, (Barcelona, Spain), 2012
- 5 : Taste responses in PRIP-1 and PRIP-2 double knock-out mice: Horio N., Kanematsu T., Hirata, M., Ninomiya Y.; The 16th International Symposium on Olfaction and Taste, (Stockholm, Sweden), 2012
- 6 : Hyperalgesia of phospholipase C-related but catalytically inactive protein type 1 knockout mice is induced by the impairment of GABAergic transmission in the spinal cord: Migita K., Tomiyama M., Yamada J., Nikaido Y., Kanematsu T., Hirata M., Ueno S.; The 35th Annual Meeting of the Japan Neuroscience Society, (Nagoya), 2012
- 7 : Enhancement of binge-like excessive sugar-taking behavior in mice carrying targeted deficiencies of phospholipase C-related catalytically inactivated protein-1/2 genes: Yasoshima Y., Tamura A., Yamaguchi E., Kanematsu T., Hirata M., Shimura T.; The 35th Annual Meeting of the Japan Neuroscience Society, (Nagoya), 2012
- 8 : Responses of propofol in PRIP-1 knockout mice : Nikaido Y., Ota J., Migita K., Yamada J., Shiba Y., Kushikata T., Hirota K., Kanematsu T., Hirata M., Ueno S. : The 19th Annual Meeting of the Japanese Society for Intravenous Anesthesia, 2012.
- 9: Role of GPR30, a novel estrogen receptor in the developing and established intractable pain: Motoyama N., Morita K., Kitayama T., Nishimura F., Kanematsu T., Dohi T.: Proceedings The 54th Annual Meeting of Japanese Association for Oral Biology, (Koriyama), 2012.
- 10 : PRIP regulates lipolysis and thermogenesis : Okumura T., Harada K., Kamata N. Kanematsu T. : The 54th Annual Meeting of Japanese Association for Oral Biology, (Koriyama), 2012.
- 11 : The role of N-acetylneuraminic acid on the cell surface of *Fusobacterium nucleatum* : Saori Y., : Proceedings The 54th Annual Meeting of Japanese Association for Oral Biology., (Koriyama), 2012.
- 12: Analysis of phospholipase C-related, but catalytically inactive protein-1 knockout mice : Ueno S., Yamada J., Migita K., Kanematsu T., Hirata M. : The 39th Annual Meeting of the Japan Brain Science Society (Kitakyushu), 2012.
- 13 : GABA_A receptor via phospholipase C-related but catalytically inactive protein type 1 in the spinal cord participate in abnormal pain sensation: Migita K., Tomiyama M., Yamada J., Nikaido Y., Kanematsu T., Hirata M., Ueno S.; Neuroscience 2012, (New Orleans, USA), 2012
- 14: PRIP regulates autophagosomal maturation containing *Staphylococcus aureus*.: Harada K., Hayashi S., Ikeda H., Kanematsu T.:. The 85th Annual Meeting of the Japanese Biomedical Society (Fukuoka), 2012.
- 15 : PRIP represses GABARAP-mediated interaction between KIF5 and insulin-containing vesicles : Asano S.,

Kitayama T., Kanematsu T. : The 85th Annual Meeting of the Japanese Biomedical Society (Fukuoka), 2012.

- 16 : Role of GPR30, a novel oestrogen receptor in the treatment of pain sensation: Motoyama N., Morita K., Nishimura F., Kanematsu T., Dohi.: The 32st Annual Meeting of the Japanese Society of Oral Therapeutics and Pharmacology (Osaka), June 30-July1, 2012.
- 17: Glycine transporter inhibitors as a potential therapeutic strategy for chronic orofacial pain. Motoyama N., Morita K., Nishimura F., Kanematsu T., Dohi T.: The 22st Genenal Meeting of the Japanese Association for Dental Science (Osaka), November 9-11, 2012.

F) Special lectures in academic meeting

- 1 : Modulation of autophagy in PRIP-KO cells : Harada K., Umebayashi H., Hirata M., Kanematsu T.; The 7th KOREA-JAPAN Conference on Cellular Signaling for Young Scientists, (UNIST, Korea), 2012
- 2 : Discovery of new gene involved in fat metabolism : Kanematsu T. : Hiroshima University Academic Meeting (Hiroshima), 2012.
- 3 : Intracellular mechanisms of lipolysis regulated by PRIP : Kanematsu T.: The 66th Annual Meeting of Japanese Society of Oral and Maxillofacial Surgeons, (Hiroshima), 2012.
- 4 : Novel mechanism of lipolysis regulated by PRIP : Kanematsu T. : Kanematsu T. : National Institute of Infectious Diseases Seminar (Tokyo), 2012.
- 5 : Discovery of a novel molecule regulating fat metabolism : Kanematsu T. : Hiroshima University Academic Meeting in 2012 (Higashi-hiroshima), 2012.
- 6 : A new modulator PRIP in fat metabolism regulates lipolysis : Kanematsu T.; The 60th Annual Meeting of Japanese Association for Dental Research, (Niigata), 2012

(4) Grants

- 1: Funding Program for Next Generation World-Leading Researchers: Kanematsu T., Research on functions of a new protein regulating energy metabolism and food intake. Project number LS087. Amount 33,001,800.
- 2: Grant-in-Aid for Scientific Research (C): Kitayama T., Modulation of pain signaling via novel molecule of trafficking of granules regulator. Project number 24592798. Amount 5,460,000. (2012-2014)
- 3: Grant-in-Aid for Scientific Research (B): Morita K., Development of mechanism-based novel medicaments to pain in advanced cancer. Project number 22390349. Amount 3,250,000 (2012); 19,760,000 (2010-2012).

(5) Academic Awards

1 : Okumura T., Harada K., Kamata N. Kanematsu T. : Excellent poster award, The 54th Annual Meeting of Japanese Association for Oral Biology.

(6) Patents

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Department of Biomaterials, Basic Life Sciences

(1) Staffs 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)
Undergraduate Student:	Mizuki Takahashi, Sho Nishimoto, Kotaro Watanabe, Chiharu Kubota, Hisanobu Kamio, Fumiko Nishio, Yuka Yamauchi, Satoshi Miyauchi (Dept. Oral Biol. & Eng.)

(2) Main Research Activities

- 1 : Technology development for the mass-production of cells used in stem cell-based regenerative medicine and for the standardization of the processes.
- 2 : Creation of tissue engineering scaffolds through designing protein molecules and their assembled structures.
- 3 : Modification of dental implants based on materials surface chemistry.
- 4 : Development of novel disinfectants for dental materials.

(3) Research Achievements

A) Original Papers

- 1 : Improvement of neural stem cell survival in collagen hydrogels by incorporating laminin-derived cell adhesive polypeptides: Nakaji-Hirabayashi T., Kato K., Iwata H.: *Bioconjugate Chem.*, 23 (2), 212-221, 2012.
- 2 : Fabrication of a highly deacetylated chitosan scaffold for tissue engineering: Ariani MD., Matsuura A., Hirata I., Kubo T., Okazaki M., Akagawa Y.: *Hiroshima Daigaku Shigaku Zasshi*, 44 (1), 10-15, 2012.
- 3 : A novel glass ionomer cement containing MgCO₃ apatite induced the increased proliferation and differentiation of human pulp cells in vitro: Laiteerapong A., Lochaiwatana Y., Hirata I., Okazaki M., Morp K., Murakami S., Poolthong S., *Dent. Mater. J.*, 31 (5), 772-778, 2012.
- 4 : Real time assessment of surface interactions with a titanium passivation layer by surface plasmon resonance: Hirata I., Yoshida Y., Nagaoka N., Hiasa K., Abe Y., Maekawa K., Kuboki T., Akagawa Y., Suzuki K., Van Meerbeek B., Messersmith PB, Okazaki M.: *Acta Biomaterialia*, 8 (3), 1260-1266,

2012.

B) Review

- 1 : Design of biointerfaces for regenerative medicine: Arima Y., Kato K., Teramura Y., Iwata H.: Adv. Polym. Sci., 247, 167-200, 2012.

C) Publications

- 1 : The forever challenge for artificial organs (2) - Replacement of biological functions - Artificial substances for medical use; Current Artificial Organs: Kato K.: Haru Publication.
- 2 : Artificial extracellular matrix for use in neural stem cell transplantation: Kato K.: Regulations for Biomedical Products for Regenerative Medicine and New Waves in Tissue Engineering (Iwata H., Matsuoka A., Kishida A.): Kato K.: CMC Press (Tokyo) 118-124, 2012.

D) Presentations at Scientific Meetings

- 1 : The antimicrobial effect of chlorine dioxide on *Candida albicans* biofilm: Hori T, Nomura Y., Kuremoto K., Sadamori S., Akagawa Y.: The 121st Scientific Meeting of Japan Prosthodontic Society (Yokohama), 2012.
- 2 : Irradiation effect on osteoclastogenesis stimulated by breast cancer cell: Sawajiri M., Nomura Y., Takinami S., Maruyama K., Tanimoto K.: The 55th Annual Meeting of The Japan Radiation Research Society (Sendai), 2012.
- 3 : Radiation effects of heavy ion particles on bone metabolism: Sawajiri M., Nomura Y., Takinami S., Maruyama K., Tanimoto K.: 2011 Annual Meeting of the Research Project with Heavy Ion at NIRS-HIMAC (Chiba), 2012.
- 4 : Improvement of mesenchymal stem cells proliferation using chemical defined culture medium and plate: Hirata I., Saskianti T., Kanawa M., Kawamoto T., Kato K., Kato Y.: The 25th Annual Meeting of the Japanese Society of Cartilage Metabolism (Nagoya), 2012.
- 5 : Evaluation between surface chemical composition and cell proliferation using mixed self-assembled monolayers: Hirata I., Saskianti T., Kanawa M., Kawamoto T., Kato K., Kato Y.: 9th World Biomaterials Congress (Chengdu, China), 2012.
- 6 : Enhancement of calcification on alkaline-heated titanium surface by DOPA contained phosphorylated peptide: Takahashi M., Hirata I., Kato K.: The 45th Hiroshima University dentistry society (Hiroshima), 2012.
- 7 : Effect of macromolecular crowding on antigen-antibody interactions at solid-liquid interfaces: Hirata

- I., Kato K.: Symposium 2012 of the Japanese Society for Biomaterials (Sendai), 2012.
- 8 : Encapsulation of human-iPS cell-derived dopamine neurons in agarose microcapsules: Konagaya S., Kato K., Iwata H.: 7th Kansai-Block Meeting for Young Investigators, Japanese Society for Biomaterials (Kobe), 2012.
- 9 : Effect of surface-immobilized extracellular matrices on the proliferation of neural progenitor cells: Konagaya S., Kato K., Takashi K., Iwata H.: 3rd TERMIS World Congress 2012 "Tissue Engineering and Regenerative Medicine" (Vienna, Austria), 2012.
- 10 : Antibody arrays for use in the quality control of mesenchymal stem cells: Nishikiori R., Watanabe K., Kato K.: 95th Annual Meeting of Hiroshima University Dental Society (Hiroshima), 2012
- 11 : Ozonated Water Application for Dental Materials (2nd report) : Evaluation with various dental gypsum casts.: Nishikiori R., Okuda T., Ootoshi A., Sawajiri M., Nishijima W.: 21st Annual Meeting of the Japan Ozone Association (Hiroshima), 2012.
- 12 : Identification of prospective surface markers of mesenchymal stem cells using antibody array.: Nishikiori R., Watanabe K., Kato K.: 96th Annual Meeting of Hiroshima University Dental Society (Hiroshima), 2012.

E) Invited lectures

- 1 : Fundamental technologies for constructive networking of neurons: Kato K.: 17th Information Biotronics Meeting, Research Institute of Electrical Communication, Tohoku University (Sendai), 2012.
- 2 : Engineering challenges in regenerative medicine and the roles of materials research: Kato K.: Study Meeting of Association of Corporate Executives, Society of Polymer Science, Japan (Osaka), 2012.
- 3 : Antibody microarrays for stem cell immunophenotyping: Kato K.: 3rd Japan-Taiwan Symposium on Nanomedicine (Kyoto), 2012.
- 4 : Fabrication of antibody microarrays for the quality control of stem cells: Kato K.: 2012 International Symposium of Materials on Regenerative Medicine (Taipei, Taiwan), 2012.
- 5 : Technologies necessary for dissemination of regenerative medicine: From the biomaterials point of view: Kato K.: 3rd Scientific Meeting of Alumni of Faculty of Dentistry, Hiroshima University (Hiroshima), 2012.
- 6 : Engineering challenges in regenerative medicine and the roles of biodevices: Kato K.: 49th Annual Meeting of Japan Tissue Culture Society for Dental Research (Hiroshima), 2012.
- 7 : Toward dissemination of regenerative medicine - Biomaterials and biodevices for stem cell manipulation: Kato K.: Seminar at the Institute for Materials Chemistry and Engineering, Kyushu University (Fukuoka), 2012.
- 8 : Bioengineering approaches for stem cell-based regenerative medicine: Kato K.: Special lecture, China

Medical University (Taichung, Taiwan), 2012.

- 9 : Biomaterials and biodevices for stem cell regulation and analysis: Kato K.:1st Young Investigators' Meeting for Molecular Nanomedicine (Nagoya), 2012.
- 10 : Chase a dream for regenerative medicine: Kato K.: 45th Hiroshima University Kasumi Festival (Hiroshima), 2012.

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

- 1 : Grant-in-Aid for Scientific Research (C), Ministry of Education, Culture, Sports, Science and Technology: Nomura Y., Research and development of the dental material having a functional antibacterial action: No. 24592917. 1,900,00 JPY.
- 2 : Grant-in-Aid for Young Scientists (B), Ministry of Education, Culture, Sports, Science and Technology : Hirata I., Effect of self-assembled monolayers on the growth and differentiation of mesenchymal stem cells in a serum-free medium: No. 23792282. 1,400,000 JPY.
- 3 : Grant-in-Aid for Scientific Research (B), Ministry of Education, Culture, Sports, Science and Technology: Kato K., Designing modular biomaterials for functional regulation of neural progenitor cells. No. 2300164. 1,900,000 JPY
- 4 : Grant-in-Aid for Scientific Research, Scientific Research on Innovative Areas: Kato K., The effect of molecular crowding on the protein-protein interactions at interfaces: No. 24107517. 3,000,000 JPY.
- 5 : Grant-in-Aid for Scientific Research, Challenging Exploratory Research: Kato K., Designing protein-based scaffolds for periodontal tissue regeneration: No. 24659877. 2,900,000 JPY.
- 6 : Cooperative Research Program of Institute for Frontier Medical Sciences, Kyoto University, Japan: Kato K., Fabrication of micropatterned, cell culture substrates for studying epithelial- mesenchymal interactions. 2,000,000 JPY.
- 7 : S-Innovation (Strategic Promotion of Innovative Research and Development) : Kato. K., Creation of tissue engineering scaffolds for organ regeneration based on technologies for spatially-controlled positioning and induction of cells: 846,000 JPY.

(5) Patents

- 1 : Fujita K., Nomura Y., Nguyen Tran Nguyen: Composition for treating tumor and method for producing the same (JPA_2010043006) (Hiroshima University and Iryo Kankyo Techno, Co. Ltd.)
- 2 : Nomura Y., Nakamura M.: Disinfection-bleaching device and management system of the device (JPA_2010043006) (Nakamura M. and Nomura Y.)
- 3 : Nomura Y., Omura Y., Miyazawa K.: Simple liquid spray device (JPA_2011016554) (Iryo Kankyo Techno, Co. Ltd.)

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Department of Mucosal Immunology, Basic Life Sciences

(1) Staffs

Professor: Ichiro Takahashi

Associate Professor: Kei Tobiume

(2) Main Research Activities

- 1: Immunobiological analysis of the mucosal immune system
- 2: Molecular analysis of host defense against oxidized stress

(3) Research Achievements

A) Text book (in Japanese)

- 1: Takahashi, I. Mucosal Immunity. *In "Core-Lecture of Immunology"* pp.128-133, the third edition, Nanzan-Do, Tokyo, 2012.

D) Presentation at Scientific Meeting

- 1: Takahashi I. Molecular and cellular mechanisms for the creation and maintenance of the constitutive physiological inflammation driven by symbiotic environmental bacteria resident in the colonic macrophages. The CREST program "The Creation of Basic Medical Technology to Clarify and Control the Mechanisms Underlying Chronic Inflammation". The second fiscal year evaluation meeting organized by Professor Masayuki Miyasaka, an Executive Chief Program Director, October 10, 2012, Tokyo, Japan.

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

1. Grant for the Co-laboratory Research from the Institute of Medical Science, The University of Tokyo: Takahashi, I: Molecular and cellular mechanism for the induction and maintenance of mucosal memory T cells. (No. 2010-3-305) ¥ 1, 000, 000.
2. The CREST program "The creation of basic medical technology to clarify and control the mechanisms underlying chronic inflammation". Subject title "Understanding of chronic inflammation for the development of new therapeutic strategies for intestinal inflammatory diseases". Takahashi, I. Section

title “Molecular and Cellular Mechanisms for the Creation and Maintenance of the Constitutive Physiological Inflammation Driven by Symbiotic Environmental Bacteria Resident in the Colonic Macrophages.” sponsored by Japan Science and Technology Agency. (No. 1812JD7040) ¥13, 910, 000.

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Department of Periodontal Medicine, Applied Life Science Department of Preventive and Restorative dentistry (Periodontics and Endodontics)

(1) Staffs and Students

Professor: Hidemi: Kurihara

Associate Professor: Hiroyuki Kawaguchi (-March), Hideki Shiba (April-)

Associate Professor, Lecturer: Tsuyoshi Fujita (May-)

Assistant Professor: Noriyoshi Mizuno, Yuushi Uchida, Katsuhiko Takeda, Tomoyuki Iwata, Kazuhisa Ohara, Shinji Matsuda (studying abroad), Mikihiro Kajiya (May-)

Resident: Yasuko Kitamoto, Takayoshi Nagahara, Fumino Ogawa

Graduate Student: Yoriko Iwasaki, Yoshie Niitani, Takeshi Ueda, Tomoko Hatakeyama (under leave of absence), Naoko Katagiri, Mizuho Kittaka, Akihiro Konishi, Tsuyoshi Miyagawa, Kenji Wada, Kabir MD Ahamedul, Irma Josefine Savitri, Shu Ishida (under leave of absence and studying abroad), Haruka Imai, Yusuke Obinata, Eri Kaneda, Takako Fujita, Ryoichi Yagi, Khung Rathvisal, Daisuke Ito, Kei Kashiwai, Masahiro Yamakawa, Tetsuya Yoshimoto, Yusuke Aida, Naoko Tokunaga, Keita Takahashi, Kei Takahashi, NGUYEN, QUOC TRUONG

Clinical Trainee: Minako Ueshige (September-)

(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 physiological function and differentiation of the cells derived from periodontal ligament or dental pulp
- 5: Study on pathogenicity of periodontopathogenic bacteria
- 6: Study on interaction between periodontopathogenic bacteria and host cells
- 7: Clinical study on endodontal-periodontal therapy
- 8: Study on interaction between stress and periodontics

(3) Research Achievements

A) Original Papers (including Case Reports)

1. Min C, Ohta K, Kajiya M, Zhu T, Sharma K, Shin J, Mawardi H, Howait M, Hirschfeld J, Bahammam L, Ichimonji I, Ganta S, Amiji M, Kawai T. The antimicrobial activity of the appetite peptide hormone ghrelin. *Peptides*. 2012 Aug;36(2):151-6.

2. Kajiya M, Ichimonji I, Min C, Zhu T, Jin JO, Yu Q, Almazrooa SA, Cha S, Kawai T. Muscarinic type 3 receptor induces cytoprotective signaling in salivary gland cells through epidermal growth factor receptor transactivation. *Mol Pharmacol.* 2012 Jul;82(1):115-24.
3. Kawada-Matsuo M, Mazda Y, Oogai Y, Kajiya M, Kawai T, Yamada S, Miyawaki S, Oho T, Komatsuzawa H. GlmS and NagB regulate amino sugar metabolism in opposing directions and affect *Streptococcus mutans* virulence. *PLoS One.* 2012;7(3):e33382.
4. Silva MJ, Kajiya M, AlShwaimi E, Sasaki H, Hong J, Ok P, Rezende TM, Pagonis TC, White RR, Paster BJ, Stashenko P, Kawai T. Bacteria-reactive immune response may induce RANKL-expressing T cells in the mouse periapical bone loss lesion. *J Endod.* 2012 Mar;38(3):346-50.
5. Branco-de-Almeida LS, Franco GC, Castro ML, Dos Santos JG, Anbinder AL, Cortelli SC, Kajiya M, Kawai T, Rosalen PL. Fluoxetine inhibits inflammatory response and bone loss in a rat model of ligature-induced periodontitis. *J Periodontol.* 2012 May;83(5):664-71.
6. Expression levels of novel cytokine IL-32 in periodontitis and its role in the suppression of IL-8 production by human gingival fibroblasts stimulated with *Porphyromonas gingivalis*. Ouhara K, Kawai T, Silva MJ, Fujita T, Hayashida K, Karimbux NY, Kajiya M, Shiba H, Kawaguchi H, Kurihara H. *J Oral Microbiol.* 2012;4. doi: 10.3402/jom.v4i0.14832. Epub 2012 Mar 16.
7. Brain-derived neurotrophic factor induces migration of endothelial cells through a TrkB-ERK-integrin $\alpha_v\beta_3$ -FAK cascade.: Matsuda S, Fujita T, Kajiya M, Takeda K, Shiba H, Kawaguchi H, Kurihara H. [J Cell Physiol.](#) 2012 May;227(5):2123-9.
8. Smad2 is involved in the apoptosis of murine gingival junctional epithelium associated with inhibition of Bcl-2. Fujita T, Alotaibi M., Kitase Y., Kota Y., Ouhara K., Kurihara H., Shuler CF. *Arch. Oral Biol.* 57:1567-1573, 2012.
9. Loss of claudin-1 in lipopolysaccharide-treated periodontal epithelium. Fujita T., Firth JD., Kittaka M, Ekuni D, Kurihara H, Putnins EE. *J. Periodontal Res.* 47:222-227, 2012.
10. Irsogladine maleate regulates epithelial barrier function in tumor necrosis factor- α -stimulated human gingival epithelial cells. Fujita T., Yumoto H., Shiba H., Ouhara K., Miyagawa T., Nagahara T., Matsuda S., Kawaguchi H., Matsuo T., Murakami S., Kurihara H. *J. Periodontal Res.* 47:55-61, 2012.
11. Antimicrobial peptide LL37 promotes vascular endothelial growth factor-A expression in human periodontal ligament cells. Kittaka M, Shiba H, Kajiya M, Ouhara K, Takeda K, Kanbara K, Fujita T, Kawaguchi H, Komatsuzawa H, Kurihara H. *J Periodontal Res.* In press.

B) Review

1. Irsogladine maleate regulates gingival epithelial barrier function and intercellular communication in gingival epithelial cells. Fujita T., Shiba H., Kurihara H. *Inflammation and Regeneration.* 32 (3):107-111, 2012.

2. Irsogladine maleate regulates barrier function and neutrophil accumulation in gingival epithelium.
Fujita T., Shiba H., Kurihara H. ; Journal of Oral Bioscience. 54:79-82, 2012.

C) Publications

D) Other Publications

E) Presentation at Scientific Meeting

1. Neutrophils respond to hypoxia through NADPH oxidase and PI3K/AKT/HIF-1 α . : T. NAGAHARA, H. HASTURK, T.E. VAN DYKE, and A. KANTARCI ; American Association for Dental Research (Tampa, USA), March 2012
2. A case report of aggressive periodontitis with family history improved by flap operation and occlusal splint: N. Mizuno, H. Shiba, H. Kawaguchi, H. Kurihara; The 55th spring meeting of the Japanese society of Periodontology (Sapporo), May 2012
3. Interactive effect of undifferentiated and differentiated mesenchyme stem cells on bone regeneration: Kittaka M, Shiba H, Ouhara K, Iwata T, Takeda K, Fujita T, Fujita T, Kawaguchi H, Kurihara H.; The 55th spring meeting of the Japanese society of Periodontology (Sapporo), May 2012
4. Amphotericin B regulates the expression of inflammatory cytokines in human gingival epithelial cells : H. Imai, T. Fujita, K. Ouhara, S. Matsuda, Y. Uchida, T. Miyagawa, T. Yoshimoto, H. Shiba, H. Kawaguchi, H. Kurihara; The 55th spring meeting of the Japanese society of Periodontology (Sapporo), May 2012
5. Influence on osteogenesis in mesenchymal stem cells by humoral factor from gingival fibroblasts: E Kaneda, T Iwata, Tsuyoshi Fujita, S Ishida, H Shiba, H Kawaguchi, H Kurihara; The 55th spring meeting of the Japanese society of Periodontology (Sapporo), May 2012
6. *Aggregatibacter actinomycetemcomitans* induces the phosphorylation of smad2 and apoptosis in human gingival epithelial cells: T. Yoshimoto, T. Fujita, K. Ouhara, Y. Uchida, S. Matsuda, T. Miyagawa, H. Imai, H. Shiba, H. Kawaguchi, H. Kurihara; The 55th spring meeting of the Japanese society of Periodontology (Sapporo), May 2012
7. Irsogladine maleate inhibits Toll-like receptor 2 enhancement mediated by Porphyromonas gingivalis in human gingival epithelial cells: Savitri Irma Josefina, Kasuhisa Ouhara, Tsuyoshi Fujita, Tsuyoshi Miyagawa, Yuushi Uchida, Hideki Shiba, Kawaguchi Hiroyuki, Hidemi Kurihara; The 55th spring meeting of the Japanese society of Periodontology (Sapporo), May 2012
8. P. gingivalis dental infection is a risk factor for NASH: Furusho Hisako, Miyauchi Mutsumi, Aomin, Inubushi Toshihiro, Ouhara Kazuhisa, Kurihara Hidemi, Takata Takashi; The 55th spring meeting of the Japanese society of Periodontology (Sapporo), May 2012
9. Amphotericin B regulates the expression of inflammatory cytokines in human gingival epithelial

- cells: H. Imai, T. Fujita, K. Ouhara, Y. Uchida, T. Miyagawa, H. Shiba, H. Kurihara; The 45th meeting of The Hiroshima University Dental Society (Hiroshima), June 2012
10. Adhesion of Bone Marrow Stem Cells to Dentin surface.: Wada K, Uchida Y, Ueda T, Kawaguchi H, Kurihara H.; The 45th meeting of The Hiroshima University Dental Society(Hiroshima), June 2012
 11. Examination of experimental bacteria biofilm formation in a tube of dental unit waterline.: Y. Niitani, K. Ouhara, T. Hino, H. Shiba, H. Kurihara. ; The 45th meeting of The Hiroshima University Dental Society (Hiroshima), June 2012
 12. Outer membrane protein 29 from *Aggregatibacter actinomycetemcomitans* induces apoptosis and decrease the expression of E-cadherin in human gingival epithelial cells : T. Yoshimoto, T. Fujita, K. Ouhara, Y. Uchida, S. Matsuda, T. Miyagawa, H. Imai, H. Shiba, H. Kawaguchi, H. Kurihara ; The 136th spring meeting of the Japanese Society for Regenerative Medicine (Ginowan), June 2012
 13. The Antimicrobial Peptide LL37 Enhances the Expression of Vascular Endothelial Growth Factor-A in Human Pulp Cells: Rathvisal Khung, Hideki Shiba, Mizuho Kittaka, Kazuhisa Ouhara, Tsuyoshi Fujita and Hidemi Kurihara.; the 33rd Japan Endodontic Association (Tokyo), June 2012
 14. Azithromycin regulates the function of human gingival epithelial cells: T. Miyagawa, T. Fujita, H. Shiba, H. Kurihara; 33th The Japanese Society of Inflammation and Regeneration (Fukuoka), June 2012
 15. The examination of halitosis in the Hiroshima University Hospital: Kazuhisa Ouhara, Tetsuya Yoshimoto, Masae Kitagawa, Takako Fujita, Naoko Tokunaga, Ryouichi Yagi, Yoriko Iwasaki, Tomoaki Shintani, Ikuko Ogawa, Tsuyoshi Fujita, Hideki Shiba, Hidemi Kurihara; The 7th clinical meeting of the Japanese society of Periodontology (Matsue), July 2012
 16. A case report of aggressive periodontitis with family history improved by flap operation and occlusal splint: N. Mizono, H. Shiba, H. Kurihara.; The 7th clinical meeting of the Japanese society of Periodontology (Matsue), July 2012
 17. A case report of severe aggressive periodontitis improved periodontal tissue and occlusal force in short-term: K. Matsui, Y. Uchida, T. Fujita, M. Nakaoka, H. Kurihara ; The 7th clinical meeting of the Japanese society of Periodontology (Matsue), July 2012
 18. A case report of chronic periodontitis maintained good condition of periodontal tissue for 4 years and 6 months after shift to SPT by periodontal initial treatment and: A. Kouchi, N. Mizuno, M. Nakaoka, H. Kurihara;; The 7th clinical meeting of the Japanese society of Periodontology (Matsue), July 2012
 19. A case report of generalized aggressive periodontitis improved periodontal tissue by periodontal initial treatment: Y. Nagatani, N. Mizuno, M. Nakaoka, H. Kurihara; The 7th clinical meeting of the Japanese society of Periodontology (Matsue), July 2012
 20. The profiling of cytokine in the fluid from cystic periapical lesion: Kazuhisa Ouhara, Yasuko Kitamoto, Masae Kitagawa, Tomoaki Shinntani, Ikuko Ogawa Tsuyoshi Fujita, Hideki Shiba, Hidemi Kurihara.; 5th Japanese Society for Evidence and the Dental Professional meeting (Tokyo), August 2012

21. Treatment of Eating Disorder with Severe Chronic Periodontitis: A Case Report.: Uchida Y, Fujita T, Shintani T, Kitagawa M, Ogawa I, Shiba H, Kurihara H.; 5th Japanese Society for Evidence and the Dental Professional meeting (Tokyo), August 2012
22. Antimicrobial peptide LL37 promotes bone regeneration in rat calvarial bone defect: Kittaka M, Fujita T, Shiba H, Kurihara H.; The 54th Annual Meeting of Japanese Association for Oral Biology (Koriyama), September 2012
23. Effect of dokudami (*Houttuynia cordata*) on IL-8 expression in human gingival epithelial cells stimulated by *Aggregatibacter actinomycetemcomitans*: M. Kabir, T. Fujita, K. Ouhara, I. Savitri, T. Miyagawa, M. Kittaka, H. Imai, M. Kajiya, H. Shiba, H. Kurihara; The 55th autumn meeting of the Japanese society of Periodontology (Tsukuba), September 2012
24. Microarray analysis of microRNA in human gingival epithelial cell stimulated with *Porphyromonas gingivalis* : Kazuhisa Ouhara, Irma Josefina Savitri, Mizuho Kittaka, Mikihiro Kajiya, Masahiro Yamakawa, Tsuyoshi Fujita, Hideki Shiba, Hidemi Kurihara; The 55th autumn meeting of the Japanese society of Periodontology (Tsukuba), September 2012
25. The effect of BDNF on human gingival epithelial cells : K.Kashiwai, S.Matsuda, T.Fujita, M.Kajiya, K.Takeda, H.Shiba, H.Kurihara,; The 98th annual meeting of The American Academy of Periodontology (Los Angeles, USA), September 2012
26. Brain-derived neurotrophic factor (BDNF) enhances mRNA expressions of hyaluronic acid synthases through a trkB signaling pathway in HGF: N.Katagiri, K.Takeda, A.Konishi, M.Kittaka, T.Fujita, S.Matsuda, H.Shiba, H.Kurihara; The 96th meeting of Hiroshima University Faculty of Dentistry (Hiroshima), October 2012
27. Halitosis exam in Hiroshima University Hospital : N. Tokunaga, K. Ohara, M. Kitagawa, T. Yosimoto, T. Fujia, R. Yagi, Y. Iwasaki, T. Shintani, I. Ogawa, T. Fujita, H. Shiba, H. Kurihara; The 96th meeting of Hiroshima University Faculty of Dentistry (Hiroshima), October 2012
28. The profiling of cytokine in the fluid from cystic periapical lesion: Kazuhisa Ouhara, Yasuko Kitamotom, Masae Kitagawa, Tomoaki Shinntani, Ikuko Ogawa Tsuyoshi Fujita, Hideki Shiba, Hidemi Kurihara; The 96th meeting of Hiroshima University Faculty of Dentistry (Hiroshima), October 2012
29. Anti-inflammatory effects of amphotericin B in human gingival epithelial cells: H. Imai, T. Fujita, K. Ouhara, S. Matsuda, Y. Uchida, T. Miyagawa, T. Yoshimoto, H. Shiba, H. Kawaguchi, H. Kurihara; The 22nd general meeting of the Japanese association for Dental Science (Osaka), November 2012
30. Biological basic study on maintenance of multipotency in mesenchymal stem cell : Ishida S, Iwata T, Shiba H, Kaneda E, Kawaguchi H, Kurihara H; The 22nd general meeting of the Japanese association for Dental Science (Osaka), November 2012
31. Brain-derived neurotrophic factor (BDNF) enhances mRNA expressions of hyaluronic acid synthases through a trkB signaling pathway in HGF:N.Katagiri, K.Takeda, A.Konishi, M.Kittaka, T.Fujita, S.Matsuda, H.Shiba, H.Kurihara; The 22nd general meeting of the Japanese association for Dental

Science (Osaka), November 2012

32. The treatment by selective antibiotics against cystic periapical lesion: Kazuhisa Ouhara, Yasuko Kitamotom, Masae Kitagawa, Tomoaki Shinntani, Ikuko Ogawa Hideki Shiba, Kawaguchi, Hidemi Kurihara; The 22nd general meeting of the Japanese association for Dental Science (Osaka), November 2012
33. Affects of human α -defensin-2 and cathelicidin-type peptide LL-37 on biofilm formation by oral bacteria; S. Matsuda, MH. Napimoga, RB. Gonçaves, J Hirschfeld, Z Tongbo, J Sun and Toshihisa Kawai; The II International Conference on Antimicrobial Research - ICAR2012 (Lisbon, Portugal) , November 2012
34. The effect of BDNF on human gingival epithelial cells: K. Kashiwai, M. Kajiya, T. Fujita, S. Matsuda, K. Takeda, H. Shiba, H. Kurihara; The 137th autumn meeting of Japanese society of conservative dentistry (Hiroshima), November 2012
35. Action to dentistry for the HIV-positive patients in the Hiroshima University Hospital: Kanako Matsui, Hideki Shiba, Fumiko Kagiura, Kazue Kinoshita, Rie Nishisaka, Tomoyuki Iwata, Noboru Takada, Seiji Saito, Teruhisa Fujii; The 26th Annual Meeting of the Japanese Society for AIDS Research (Yokohama), November 2012
36. Effects of amphotericin B on cytokine expressions in human gingival epithelial cells: H. H. Imai, T. Fujita, K. Ouhara, Y. Uchida, M. Kajiya, H. Shiba, H. Kurihara; The 60th Annual Meeting of Japanese Association for Dental Research (Niigata), December 2012

F) Special lectures in academic meetings

1. Regulation of Gingival Epithelial Function for Prevention of Periodontal Disease; T. Fujita; The 28th annual meeting for academic science by Japanese association for dental science (Tokyo), January 2012
2. Periodontal initial treatment and Endodontic treatment -Periodontal regenerative therapy and Biological Endodontic treatment - : Hidemi Kurihara; Clinical conference for group of Hiroshima University Faculty of Dentistry, Department of Endodontics and Periodontology (Hiroshima), January 2012
3. Biological Endodontic treatment: Hidemi Kurihara; Dental clinical and scientific lecture for Sendai dental association(Sendai), January 2012
4. Relation to Diabetes mellitus of Periodontal disease: Hidemi Kurihara; Kissei Pharmaceutical Co., Ltd Meeting for Study of Diabetes mellitus and Periodontal disease(Hiroshima), February 2012
5. The study of the association with Osteoimmunology and Periodontitis in Boston.~The establishment of novel mouse periodontal disease model~: Mikihito Kajiya; 45th meeting of the Hiroshima University Dental Society (Hiroshima), June 2012
6. Recollection of Boston's life.~Neutrophils respond to hypoxia through NADPH oxidase and

- PI3K/AKT/HIF-1 α . ~ : T. NAGAHARA; 45th meeting of the Hiroshima University Dental Society (Hiroshima), June 2012
7. Regulation of Gingival Epithelial Function for Prevention of Periodontal Disease : T. FUJITA; Lunch & Learning, The 90th annual meeting of International Association for Dental Research (IGUACU FALLS, BRAZIL), June 2012
 8. HIV infection and dentistry: Hideki Shiba; The 7th clinical meeting of the Japanese society of Periodontology (Matsue), July 2012
 9. Development of Periodontal Regenerative therapy by BDNF: Hidemi Kurihara; The seminar for Okayama University Department of Pathophysiology- Periodontal Science (Okayama), July 2012
 10. Change of dentistry demanded in cooperation between medical department and dental department: Hidemi Kurihara; Kyushu - Ochanomizu meeting workshop (Fukuoka), July 2012
 11. Think about dentistry from the implant problem: Hidemi Kurihara; The seminar for Sasebo dental association(Sasebo), September 2012
 12. cellular therapy/introduce stem cell application : Hidemi Kurihara; The 98th annual meeting of The American Academy of Periodontology (Los Angeles, USA), September 2012
 13. Periodontal disease as Oral infection: Hidemi Kurihara; Hiroshima University Hospital Medical safety management staff workshop (Hiroshima), November 2012
 14. The New Strategy for the Treatment of Periapical Lesion as Host-Parasite Interaction: Kazuhisa Ouhara; The 137st autumn meeting of Japanese society of conservative dentistry (Hiroshima), November 2012

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

1. Grants-in aid for scientific research : Kazuhisa Ouhara : #22792085
2. Grants-in aid for scientific research: Hidemi Kurihara: #23592923
3. Grants-in aid for scientific research: Noriyoshi Mizuno #23593061
4. Grants-in aid for scientific research: Hidemi Kurihara: #23659978
5. Grants-in aid for scientific research :Tomoyuki Iwata: #23792478
6. Grants-in aid for scientific research: Hidemi Kurihara: #24390467
7. Grants-in aid for scientific research: Hideki Shiba: #24593122
8. Grants-in aid for scientific research : Tsuyoshi Fujita: #24593123
9. Grants-in aid for scientific research: Hidemi Kurihara: #24659877
10. Grants-in aid for scientific research: Yasuko Kitamoto: #24792026
11. Grants-in aid for scientific research: Shinji Matsuda: #24792330
12. Grants-in aid for scientific research: Mikihito Kajiya:#24890142
13. Japanese Society of Periodontology Encouragement research grants – in aid for Seeds foster young researcher (the year of 2012): Mikihito Kajiya

14. Hiroshima University Grant for portent research: Takayoshi Nagahara;

(5) Award.

1. The Japanese Society of Periodontology Hu-Friedy Award for encouragement (2012) :Shinji Matsuda; Brain-derived neurotrophic factor induces migration of endothelial cells through a TrkB-ERK-integrin $\alpha_v\beta_3$ -FAK cascade. [J Cell Physiol.](#) 2012 May;227(5):2123-9.
2. 12th academic award of Japanese society of Periodontology (2012): Tuyoshi. Fujita; Investigation of novel preventive method for periodontal disease by regulating gingival epithelial cell function.

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**Department of Advanced Prosthodontics,
Applied Life Sciences
Department of Preventive and Restorative Dentistry
(Implants and Prosthodontics)**

(1) Staff and Students

Professor : Yasumasa Akagawa
 Associate Professor : Kazuhiro Tsuga, Takayasu Kubo, Mineka Yoshikawa, Yasuhiko Abe, Kyou Hiasa
 Assistant Professor : Katsunori Koretake, Kazuhiko Hayashi, Yasunari Miyamoto, Kana Harada
 Resident : Maho Takeuchi, Ayumi Matsuura, Mariko Maruyama
 Graduate Student : Hiroshi Oue, Yohei Okazaki, Hirokazu Tsuchioka, Kazuhisa Ookura,
 Maretaningtias Dwi Ariani, Shinsuke Okada, Shiho Kajihara, Yusuke Makihara,
 Takahiro Mori, Chiaki Higa, Aya Hesaka, Kan kato, Keisuke Yasuda
 Administrative Staff : Rinko Kurumi

(2) Main Research Activities

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

(3) Research Achievements

A) Original Papers (including Case Reports)

- 1: Inorganic polyphosphates stimulate FGF23 expression through the FGFR pathway. : Sun N, Zou H, Yang L, Morita K, Gong P, Shiba T, Akagawa Y and Yuan Q : Biochem Biophys Res Commun, 428: 298-302, 2012.

- 2: Real time assessment of surface interactions with a titanium passivation layer by surface plasmon resonance. : Hirata I, Yoshida Y, Nagaoka N, Hiasa K, Abe Y, Maekawa K, Kuboki T, Akagawa Y, Suzuki K, Meerbeek B V, Messersmith P B, Okazaki M : *Acta Biomaterialia*, 8, 1260-1266, 2012.
- 3: Hydroxyapatite Complex as New Concept Graft Material. : Doi K, Oue H, Morita K, Kajihara S, Kubo T, Koretake K, Perrotti V, Iezzi G, Piattelli A, Akagawa Y : *PLOS ONE*, 7, e49051, 2012
- 4: Influence of formalin fixation on implant stability quotient and bone mechanical characteristics. : Morita K, Doi K, Oue H, Kajihara S, Hayashi K, Akagawa Y : *Br J Oral Maxillofac Surg*, in press, 2012.
- 5: A simple method for evaluating videofluorography following treatment for head and neck cancer. : Fujimoto Y, Yoshikawa M, Wakai K, Ozawa K, Kato, K, Maruo T, Sugiura J, Futamura M, Tajima A, Nakashima T : *Deglutition*, 1: 153-158, 2012.
- 6: Fabrication of a Highly Deacetylated Chitosan Scaffold for Tissue Engineering. : Maretaningtias Dwi Ariani, Matsuura A, Hirata I, Kubo T, Kato K, Okazaki M and Akagawa Y : *Hiroshima Univ. Dental Society Journal*, 44, 10-15, 2012.
- 7: A Case Report on Dental Implant Treatment for a Small Number of Missing Teeth : Hiasa K : *Journal of Japanese Society of Oral Implantology*, 25, 123-124, 2012.
- 8: A Survey of new program in dental clinical training at Hiroshima university hospital. : Nishi H, Tanaka Y, Obayashi T, Tsuga K, Kuremoto K, Arakawa M, Uchida Y, Koizumi K, Ono S, Yoshida K, Tachikake M, Okada M, Kawamura M, Nagasaki T, Ogawa I, Kajitani K, Okura H, Nakaoka M, Nishimura F and Ogawa T : *Hiroshima Univ. Dental Society Journal*, 44, in press, 2012.
- 9: A Case of Orbital Epithesis for Periorbital Defect after Sebaceous Carcinoma Resection : Taji T, Abe Y, Mrishita Y, Nagami M, Taguchi K, Mine Y, Akagawa Y and Nikawa H : *Hiroshima Univ. Dental Society Journal*, 44, in press, 2012.

B) Review

C) Publications

D) Other Publications

- 1: Q&A Clinical application of the tongue pressure measurement device : Yoshikawa M : *Dental Diamond*, 11: 153-158, 2012.

E) Presentation at Scientific Meeting

- 1: Development of composite of poly(P) and bFGF with interconnected porous calcium hydroxyapatite :

- Morita K, Doi K, Kubo T, Kajihara S, Takeshita R, Quan Y, Ping G and Akagawa Y : 2012 Sino-Japan Dental Conference (Chengdu), 2012.
- 2: Influence of formalin fixation on implant stability quotient and bone mechanical characteristics : Morita K, Doi K, Oue H, Kajihara S, Makihara Y, Hayashi K, Harada K, Matsuura A, Kubo T and Akagawa Y : The 20th meeting of European Association For Osseointegration (Copenhagen), 2012.
 - 3: Development of Implant/Interconnected Porous Hydroxyapatite Complex as New Concept Graft Material. : Doi K, Oue H, Morita K, Kajihara S, Kubo T, Perrotti V, Iezzi G, Piattelli A and Akagawa Y : The 20th meeting of European Association For Osseointegration (Copenhagen), 2012.
 - 4: The influence of formalin fixation on implant stability quotient in an animal model. : Morita K, Doi K, Kajihara S, Makihara Y and Akagawa, Y : The 8th Congress of the Asian Academy of Osseointegration (Taipei), 2012.
 - 5: Increased C/I is not risk factor of implant failure under proper plaque control : Okada S, Koretake K, Miyamoto Y, Oue H and Akagawa Y : 40th Indian Prosthodontics Society Conference & 8th Biennial Meeting of Asian Academy of Prosthodontics (Chennai), 2012.
 - 6: The underlying mechanism of how poly(P) suppresses lipopolysaccharide-induced nitric oxide release in macrophages : Narasimha J, Harada K and Akagawa Y : 40th Indian Prosthodontics Society Conference & 8th Biennial Meeting of Asian Academy of Prosthodontics (Chennai), 2012.
 - 7: Quantitative evaluation of forced candy-sucking function. : Tsuchioka H, Mori T, Makihara Y, Tetsumori K, Fukada E, Nishimura R, Maruyama M, Okada G, Morikawa H, Hayashi R, Kohada A, Sasaki H, Takagi M, Hara K, Yoshikawa M, Yoshida M, Tsuga K and Akagawa Y : The 48th Scientific Meeting of the Japanese Society of Stomatognathic Function(Shiojiri), 2012.
 - 8: Can the multidirectional lip-closing force be measured with measuring probe gripped by subjects? : Mori T, Katayama K, Kubo H, Kousaka T, Kon H, Saito M, Tsuchioka H, Makihara E, Mukudai H, Morino T, Watanabe K, Yamaguchi M, Kuroiwa A, Yoshikawa M, Tsuga K and Masuda Y : The 48th meeting of Japanese Society of Stomatognathic Function (Shiojiri), 2012.
 - 9: A successful case report of the team approach for the acquisition of oral intake without meal assistance in the patient with persistent disturbance of consciousness : Fukumoto F, Hirayama J, Ueno H, Shimada N, Yamane N, Yoshimura A, Nagao A, Kajitani K, Yoshikawa M, Mori T, Nakamori M, Hosomi N, Matsumoto M and Sato Y : The 17th & 18th annual meeting of The Japan Society of Dysphagia Rehabilitation (Sapporo), 2012.
 - 10: The effects of using self-help eating utensils suggested in multi-disciplinary dysphagia conference : Nagao A, Yamane N, Nakamori M, Aoki S, Ueno K, Kakuda A, Amano K, Mori T, Yoshikawa M, Fukumoto F, Maeoki M, Hirayama J, Shimada N, Yoshimura A, Nagano Y, Oka T, Hosomi N and Matsumoto M : The 17th & 18th annual meeting of The Japan Society of Dysphagia Rehabilitation (Sapporo), 2012.
 - 11: Advantageous effects of the multi-disciplinary dysphagia conference in the acute neurological ward :

- Hirayama J, Aoki S, Nakamori M, Ueno H, Mori T, Yoshikawa M, Fukumoto F, Maeoki M, Kajitani K, Nagao A, Yamane N, Shimada N, Nagano Y, Yoshimura A, Hosomi N, Matsumoto M and Sato Y : The 17th & 18th annual meeting of The Japan Society of Dysphagia Rehabilitation (Sapporo), 2012.
- 12: Development of the new rehabilitation method for oral function using lollipop-candy : Maruyama M, Mori T, Tsuchioka H, Yamawaki K, Yoshikawa M, Yamamoto S, Okane H, Oda M, Matuda K, Tsuga K and Akagawa Y : Heisei 24 scientific meeting of the Japan Prosthodontic Society Chugoku & Shikoku Branch and kyushu Branch (Hirishima), 2012.
- 13: Effects of polyphosphates on inflammation and their possible application for peri-implantitis treatment: Harada K, Doi K, Kubo T and Akagawa Y: The 42nd Japanese Society of Oral Implantology (Osaka), 2012.
- 14: Response analysis of osteoblast on activated surface of hydroxyapatite : Okazaki Y, Abe Y, Hiasa K and Akagawa Y : The 42nd meeting of Japanese Society of Oral Implantology (Osaka), 2012.
- 15: Bone formation ability of basic fibroblast growth factor and polyphosphate composite artificial bone : Makihara Y, Kubo T, Doi K, Kajihara S and Akagawa Y : The 42nd meeting of Japan Society of Oral Implantology (Osaka), 2012.
- 16: Development of a quantitative test for oral function to use lollipop-candy. : Tsuchioka H, Mori T, Maruyama M, Yoshikawa M, Tsuga K and Akagawa Y : The 60th meeting of Japanese Stomatological Society Chugoku-Shikoku Branch (Hiroshima), 2012.
- 17: Influence of formalin fixation on implant stability quotient and bone mechanical characteristics : Tsuga K, Yoshikawa M: The 22nd General Meeting of the Japanese Association for Dental Science (Osaka), 2012.
- 18: A case report of application of implant GBR with newly developed interconnected porous hydroxyapatite for peri-implant bone defect : Makihara Y, Doi K, Kajihara S, Kubo T and Akagawa Y : The 42nd meeting of Japan Society of Oral Implantology Chugoku and Shikoku Branch (Kochi), 2012.
- 19: The effects of formalin fixation on implant stability quotient ; Evaluation by resonance frequency analysis and examination of mobility : Kajihara S, Doi K, Makihara Y, Kubo T and Akagawa Y : The 42nd meeting of Japan Society of Oral Implantology Chugoku Shikoku Branch (Kochi), 2012.

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

- 1: Ministry of Education, Culture, Sports, Science and Technology (MEXT) Grant-in Aid for challenging Exploratory Research : Akagawa Y : Molecular basis of association mechanism between Alzheimer's disease and tooth loss/occlusion. (Grant No. 236599D000). ¥1,000,000
- 2: MEXT Grant-in Aid for scientific Research (B) : Akagawa Y : Development of functional intelligent implant complex using bio-processing. (Grant No. 243904350A). ¥2,600,000
- 3: MEXT Grant-in Aid for scientific Research (B) : Kubo T: Invention of a newly artificial bone used by

- molecular pharmacology processed with the NF- κ B decoy. (Grant No. 23390443). ¥2,300,000
- 4: MEXT Grants-in-Aid for Scientific Research (C) : Tsuga K: Development of rader-chart for enhancing the anti-aging effect of prosthodontic treatments. (Grant No. 23592850). ¥900,000
 - 5: MEXT Grants-in-Aid for Scientific Research (C) : Abe Y : Development of high-functioning nanobio-interface control method of apatite surface by ultraviolet (UV). (Grant No. 245929150A). ¥1,700,000
 - 6: MEXT Grants-in-Aid for Scientific Research (C) : Hiasa K: Development of diagnosis system of dental implant immediate load indicated with bone strength. (Grant No. 23502887). ¥1,000,000
 - 7: MEXT Grants-in-Aid for Scientific Research (C) : yoshikawa M: Assessment of the oral and pharyngeal functions for decision making of the ideal thickness of liquid. (Grant No. 23592849). ¥1,000,000
 - 8: MEXT Grants-in-Aid for Young Scientists (B) : Hayashi K : Development of new bone augmentation using a bFGF/poly(P)/IP-CHA Complex. (Grant No. 247921430). ¥1,400,000
 - 9: MEXT Grants-in-Aid for Young Scientists (B) : Morita K: Bone regeneration ability of inorganic hydroxyapatite adsorbed long chain polyphosphate. (Grant No. 23792228). ¥1,700,000
 - 10: MEXT Grants-in-Aid for Young Scientists (Start-up) : Harada K: A study for the application of inorganic polyphosphate in peri-implantitis. (Grant No. 23890134). ¥1,200,000
 - 11: MEXT Grants-in-Aid for Encouragement of Scientists : Maruyama M: Development of a new rehabilitation method for oral function using candy. (Grant No. 23932011). ¥600,000

(5) Academic Awards, etc.

- 1: Poster Presentation Award on International Seminar of the 2nd Joint scientific Meeting in Dentistry : Maretaningtias AD
- 2: Poster Award on 4th Hiroshima Conference on Education Science in Dentistry : Maretaningtias AD

(6) Patents

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**Department of Advanced Prosthodontics, Applied Life Sciences
Department of Preventive and Restorative Dentistry
(Prosthetic Dentistry)**

(1) Staff and Students

Professor : Yasumasa Akagawa
 Associate Professor : Shinsuke Sadamori, Hitoshi Abekura
 Assistant Professor : Koh-ichi Kuremoto, Kazuya Doi, Kouji Morita
 Administrative staff : Michiko Miyagawa
 Resident : Kazuko Kagawa, Wataru Mizumachi, Kouichi Kamada, Hiroki Tsuka,
 Masahiro Tsuboi, Tomoharu Hori
 Graduate Student : Tomohisa Okura, Keisuke Nogami, Kazuko Kagawa(Since April)
 Research Student : Toru Akutsu
 Clinical Trainee : Isao Fujihara

(2) Main Research Activities

- 1 : The study of relationship between oral habits and psychosomatic stress responses measured by salivary chromogranin A.
- 2 : The antimicrobial efficacy of chlorine dioxide element to add to dental material.
- 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 : Psychiatric disorders in dental practice.
- 8 : Establishment of bone regeneration by using interconnected porous hydroxyapatite and biopolymeric material

(3) Research Achievements

A) Original Papers (including Case Reports)

- 1 : Dementia care and denture : Sadamori S : Journal of Japanese Society for Dementia Care, 11, 635-641, 2012.
- 2 : A Survey of new program in dental clinical training at Hiroshima university hospital : Nishi H.,

- Tanaka Y., Obayashi T., Tsuga K., Kuremoto K., Arakawa M., Uchida Y., Koizumi K., Ono S., Yoshida K., Tachikake M., Okada M., Kawamura M., Nagasaki T., Ogawa I., Kajitani K., Okura H., Nakaoka M., Nishimura F., Tetsuji Ogawa T.: *Journal of Hiroshima University Dental Society*, 44(2), 107-111, 2012.
- 3 : Trend of dental metal allergy -Analysis of data about the patients examined by patch test in Dental Departments, Hiroshima University Hospital during past ten years- : Kitagawa M., Ando T., Obayashi M., Furusho H., Shintani T., Ogawa I., Kagawa K., Takechi M., Kurihara H.: *Journal of Japanese Society for Evidence and the Dental Professional* , 4(1), 23-29, 2012.
- 4 : A case report of sinus floor augmentation using lifting drill: Takechi M., Nonimiya Y., Ono S., Shimasue H., Ohta K., Nakagawa T., Yamamoto K., Tada M., Kagawa K., Abekura H., Takamoto A., Akagawa Y., Kamata N.: *The Journal of Hiroshima University Dental Society*, 44(2), 123-126, 2012.
- 5 : Nutritional status and oral status of the elderly with dementia: a 2-year study: Sadamori S., Hayashi S., Fujihara I., Abekura H., Hamada T., Akagawa Y.: *Gerodontology*, 29, e756-760, 2012.
- 6 : Relationship between behavioral and psychological systems of dementia and oral health status in the elderly with vascular dementia: Fujihara I., Sadamori S., Abekura H., Akagawa Y.: *Gerodontology*, in press, 2012.
- 7 : Radiographic evaluation of peri-implant bone resorption and assessment of survival rates of 113 dental implants: a 10-year prospective multicenter study: Ricci L., Barbieri F., Chimento G., Doi K., Fanelli G et al.: *Implantologia* , 3, 37-44, 2012.
- 8 : Comparative study on the influence of formalin fixation for the measurement of implant stability using resonance frequency analysis and Periotest: An animal study: Doi K., Kajihara S., Morita K., Makihara Y., Okada S., Akagawa Y.: *Br J Oral Maxillofac Surg* , in press , 2013.
- 9 : The dynamic viscoelasticity and water absorption characteristics of soft acrylic resin materials containing adipates and a maleate plasticizer: G. Hong, H. Tsuka, T. Maeda, Y. Akagawa, K. Sasaki.: *Dental Materials Journal*, 31, 139-149, 2012.
- 1 0 : Development of novel implant/interconnected porous calcium hydroxyapatite complex as new concept graft material: Doi K., Oue H., Morita K., Kajihara S., Kubo T., Koretake K., Perrotti V., Iezzi G., Piattelli A., Akagawa Y.: *PLoS One*, 7(11), e49051, 2012.
- 1 1 : Inorganic polyphosphates stimulate FGF23 expression through the FGFR pathway: Sun N., Zou H., Yang L., Morita K., Gong P., Shiba T., Akagawa Y., Yuan Q.: *Biochem Biophys Res Commun*, 428(2), 298-302, 2012.
- 1 2 : Influence of formalin fixation on implant stability quotient and bone mechanical characteristics: Morita K., Doi K., Oue H., Kajihara S., Hayashi K., Akagawa Y.: *Br J Oral Maxillofac Surg*, 2012. (Epub ahead of print)
- 1 3 : Occlusal-supporting ability of individual maxillary and mandibular teeth: Abe Y., Nogami K., Mizumachi W., Tsuka H., Hiasa K.: *J Oral Rehabil.*, 39(12), 923-930, 2012.

B) Review

C) Publications

- 1 : Working model : Prosthodontics 1: (Yatani H., Matsumura H.) Hamada T., Sadamori S., Kato R. Nagasue syoten, 249-254, 2012.

D) Other Publications

E) Presentation at Scientific Meeting

- 1 : Basic properties of chlorine dioxide as a dental antimicrobials : Maeda T., Hori T., Nomura Y., Sadamori S., Kuremoto K., Nisizaki H., Okazaki J., Akagawa Y.: The Japan Denture Care Society (Nagasaki), 2012.
- 2 : Study of antifungal effect of polyphosphate against *Candida* species : Doi K., Hori T., Morita K., Kajiwara S., Kubo T., Kuremoto K., Sadamori S., Akagawa Y.: Annual Scientific Meeting of Japan Prosthodontic Society Kansai Chapter (Kobe), 2012.
- 3 : The validity of the sleep time bruxism evaluation using questionnaire method : Okura T., Abekura H., Tsuboi S., Kagawa K., Sasaki M., Sadamori S., Akagawa Y.: The 121st Scientific Meeting of Japan Prosthodontic Society (Yokohama), 2012.
- 4 : High technology modern medicine : Hybrid resin crown restoration made by dental CAD/CAM system : Abekura H., Mizumachi W., Tuka H., Tsuboi M., Kubo T., Hiasa K., Maruyama M., Akagawa Y., Sadamori S., Doi K., Oue H., Oukura K., Iwaguro M., Tamamoto M.: The 51th Scientific Meeting of Hiroshima Prefecture Dental Association in conjunction with The 96th Hiroshima University Dental Society (Hiroshima), 2012.
- 5 : Nano-architecture formation on the surface of Ti-based metals by solution chemical processing in room temperature : Kaga K., Sekino T., Nishida H., Kuremoto K., Tanaka S.: The Ceramic Society of Japan Annual Meeting 2012(Kyoto), 2012.
- 6 : Low-dimensional nanostructure formation on metal surface via room-temperature solution chemical reaction field : Kaga K., Sekino T., Nishida H., Kuremoto K., Tanaka S.: The Japan Institute of Metals Annual Spring Meeting 2012 (150th) (Yokohama), 2012.
- 7 : The Antimicrobial effect of chlorine dioxide on *Candida albicans* biofilm : Hori T., Nomura Y., Kuremoto K., Sadamori S., Akagawa Y.: The 121th Commemorative Scientific Meeting of Japan Prosthodontic Society (Yokohama), 2012.

- 8 : Nano-architecture formation on the surface of Ti-based metals by solution chemical processing : Kaga K., Sekino T., Tanaka S., Nishida H., Kuremoto K.: Ceramics Society of Japan The 25th Fall Meeting (Nagoya), 2012.
- 9 : Development of the novel abutment for implant supported removable partial dentures : Kuremoto K., Maeda T., Tamada Y., Inoue M., Etoh T., Akagawa Y., Okazaki J.: The 22nd General Meeting of the Japanese Association for Dental Science (Osaka), 2012.
- 1 0 : Low-dimensional oxide nanostructures formation on metal surface via low-temperature eco-processing : Sekino T., Kaga K., Nishida H., Kuremoto K., Tsukuda S., Tanaka S.: International Union of Materials Research Society–International Conference in Asia (Busan), 2012.
- 1 1 : Development of implant/interconnected porous calcium hydroxyapatite complex : Doi K., Oue H., Morita K., Kajihara S., Kubo T., Akagawa Y.: 90th International Association for Dental Research (Foz do Iguazu, Brazil), 2012.
- 1 2 : Development of implant/interconnected porous hydroxyapatite complex as new concept graft material : Doi K., Oue H., Morita K., Kajihara S., Kubo T., Perrotti V., Iezzi G., Piattelli A., Akagawa Y.: European association for Osseointegration; 20th anniversary meeting (Copenhagen, Denmark), 2012.
- 1 3 : Development of composite of poly(P) and bFGF with interconnected porous calcium hydroxyapatite : Morita K., Doi K., Kubo T., Kajihara S., Takeshita R., Quan Y., Ping, G., Akagawa, Y.: 2012 Sino-Japan Dental Conference (Chengdu, China), 2012.
- 1 4 : Influence of formalin fixation on implant stability quotient and bone mechanical characteristics : Morita K., Doi K., Oue H., Kajihara S., Makihara Y., Hayashi K., Harada K., Matsuura A., Kubo T., Akagawa Y.: European Association For Osseointegration (Copenhagen, Denmark), 2012.
- 1 5 : The influence of formalin fixation on implant stability quotient in an animal model : Morita K., Doi K., Kajihara S., Makihara Y., Akagawa Y.: The 8th Congress of the Asian Academy of Osseointegration (Taipei, Taiwan), 2012.
- 1 6 : Nano-architecture formation on the surface of Ti based metals by solution chemical processing : Kaga K., Sekino T., Nishida H., Honda Y., Kuremoto K., Tanaka S.: The 5th International Symposium Functional Materials (Perth), 2012.

F) Special lectures in academic meetings

- 1 : High technology modern medicine: Hybrid resin crown restoration made by dental CAD/CAM system in Hiroshima university hospital. : Abekura H : Annual Scientific Meeting of Japan Prosthodontic Society Chugoku and Shikoku Branch(Hiroshima), 2012.9.2

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

- 1 : Grant-in-Aid for Scientific Research (C) : Sadamori S, The relation between breathing and denture wearing and not wearing during sleep. (No. 23592848). 3,380 thousand yen.
- 2 : Grant-in-Aid for Scientific Research (C) : Abekura H, Participation of lifestyle in relationship between oral habits and psychological stress. (No.22592152). 1,040 thousand yen.
- 3 : Grant-in-Aid for Scientific Research (C) : Kuremoto K, Acquirement of amelogenic stem/progenitor cells for tissue-engineered tooth. (No.23592875). 1,100 thousand yen.
- 4 : Grant-in-Aid for Scientific Research (C) : Doi K, Bio-active effect of inorganic polyphosphate for bone quality improvement. (No.24592918). 1,170thousand yen.
- 5 : Grant-in-Aid for Scientific Research (C) : Mizumachi W, Development of occlusal support ability system in residual teeth based on clinical data processing. (No.23592847). 1,430 thousand yen.
- 6 : Grant-in-Aid for Young Scientists (B) : Morita K : Bio-active effect of inorganic polyphosphate for bone quality. (No.23792228). 2,210 thousand yen.
- 7 : Grant-in-Aid for Young Scientists (B) : Kamada K, Creation of magnetic separation high self-bone differentiation cell content artificial bone. (No. 24792088). 1,200 thousand yen.
- 8 : Grant-in-Aid for Young Scientists (B) : Hiroki Tsuka : Development of the high durability tissue conditioner which has the self-cleansing action suitable for home dentistry medical examination. (No. 24792087). 2,100 thousand yen.

(5) Academic Awards, etc.

(6) Patents

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Department of Orthodontics and Craniofacial Development for Dentistry, Applied Life Sciences Department of Oral Health and Development (Orthodontics)

(1) Staffs and students

Professor	: Kazuo Tanne
Associate Professor	: Toshitsugu Kawata
Lecturer	: Hiroshi Ueda, Kotaro Tanimoto,
Assistant Professor	: Masato Kaku, Tadashi Fujita, Junji Ohtani, Masahide Motokawa, Myongsun Koh, Yuki Tanne
Intern	: Ryo Kunitatsu, Hiroko Sunagawa, Naoto Hirose, Atsushi Horihata, Motoko Yoshioka, Hidetaka Hayashi, Yayoi Matsuda, Tomomi Mitsuyoshi,
Graduate Student	: Syunichi Kojima, Keisuke Sumi, Noriko Tsubamoto, Akiko Terao, Yuki Yoshimi, Emi Ishikawa, Kyoko Murasaki, Yuji Tsuka, Su Shao Ching, Hiromi Sumi, Kaori Takahashi, Tetsuya Awada, Nanae Oki, Hanaka Shikata, Eri Fujii, Fang Zhao, Yuki Okamoto, Tahsin Raquib Abonti, Kazuko Irome, Hirotaka Sugino, Tomomi Date, Yu Matsumura
Research Student	: Shoutoku Kojima
Professor (part-time)	: Kazuhiro Ueki, Toshitsugu Kojima, Hiroharu Tsuka, Hiroshi Hanaoka, Junichiro Iida
Registered Intern	: Kuniaki Tanaka, Kazunori Itatani, Hiroko Kamada, Youhei Suekawa, Ryoko Yamamoto, Natsumi Tsuka, Satoru Ohkuma, Kouji Takahashi, Yasunori Iwabuchi, Genki Watanabe, Goshi Ito, Noritsugu Ozaki, Aki Kawazoe, Hiroyuki Koseki, Tomoko Sasamoto, Masahiko Michida,
Dental Hygienist	: Yano Kanako

(2) Main academic activity

- 1: Viscoelastic property of temporomandibular joint disks.
- 2: Effects of growth factors on the proliferation and differentiation of condylar cartilage and the disk cells.
- 3: Biomechanical investigation of TMJ loading and assessment of lubricating function.
- 4: Mechanisms of pain transmission during experimental tooth movement and clarification of pain control.
- 5: Changes in stomatognathic functions from orthodontic surgery.
- 6: Association between nasal respiratory disturbances and craniofacial morphology and masticatory and respiratory functions.

- 7: Influences of mechanical stimuli on the proliferation and differentiation of chondrocytes.
- 8: Clarification of PDL regeneration mechanism.
- 9: Metabolism of hyaluronan in TMJ synovial fluid.
- 10: Influences of food consistency on neuropathological changes in the cerebral cortex.
- 11: Regeneration of bone and cartilage with mesenchymal stem cells.
- 12: Control mechanism of bone growth and development with sex hormone.
- 13: Long term cryopreservation of various tissues and cells
- 14: Development of biomineralization therapy for damaged tooth enamel using enamel matrix proteins
- 15: Utility of amelogenin peptides for bone regeneration

(3) Research achievement

A) Original article

1. Effects of DMSO (Dimethyl sulfoxide) free cryopreservation with program freezing using a magnetic field on periodontal ligament cells and dental pulp tissues: Kawata T., Abedini S., Kaku M., Koseki H., Kojima S., Sumi H., Motokawa M., Fujita T., Ohtani J., Ohwada N., Tanne K.: *Biomedical Research* 23: 437-442, 2012.
2. Electric and magnetic fields in cryopreservation: A response: Kaku M., Kawata T., Abedini S., Koseki H., Kojima S., Sumi H., Shikata H., Motokawa M., Fujita T., Ohtani J., Ohwada N., Kurita M., Tanne K.: *Cryobiology* 64: 304-305, 2012.
3. Association between root resorption incident to orthodontic treatment and treatment factors: Motokawa M., Sasamoto T., Kaku M., Kawata T., Matsuda Y., Terao A., Tanne K.: *European Journal of Orthodontics* 34: 350-356, 2012.
4. Differential effects of amelogenin on mineralization of cementoblasts and periodontal ligament cells: Tanimoto K., Kunimatsu R., Tanne Y., Huang Y.C., Michida M., Yoshimi Y., Miyauchi M., Takata T., Tanne K.: *Journal of Periodontology* 83: 672-679, 2012.
5. Age-related production of osteoclasts and the changes of serum levels of vascular endothelial growth factor (VEGF) and receptor activator for nuclear factor (NF)- κ B ligand (RANKL) in osteopetrotic (op/op) mice: Motokawa M., Tsuka N., Kaku M., Kawata T., Fujita T., Ohtani J., Matsuda Y., Terao A., Tanne K.: *Archives of Oral Biology* 57: 352-356, 2012.
6. Gummy smile and facial profile correction using miniscrew anchorage: Kaku M., Kojima S., Sumi H., Koseki H., Abedini S., Motokawa M., Fujita T., Ohtani J., Kawata T., Tanne K.: *Angle Orthodontist* 82: 170-177, 2012.
7. Construction of orthodontic setup models on a computer: Kihara T., Tanimoto K., Michida M., Yoshimi Y.,

- Nagasaki T., Murayama T., Tanne K., Nikawa H.: *American Journal of Orthodontics and Dentofacial Orthopedics* 141: 806-813, 2012.
8. Bone regeneration in artificial jaw cleft by use of carbonated hydroxyapatite particles and mesenchymal stem cells derived from iliac bone: Yoshioka M., Tanimoto K., Tanne Y., Sumi K., Awada T., Oki N., Sugiyama M., Kato Y., Tanne K.: *International Journal of Dentistry*. 2012;2012:352510.
 9. Regulation of basic helix-loop-helix transcription factors Dec1 and Dec2 by ROR α and their roles in adipogenesis: Ozaki N., Noshiro M., Kawamoto T., Nakashima A., Honda K., Fukuzaki-Dohi U., Honma S., Fujimoto K., Tanimoto K., Tanne K., Katos Y.: *Genes to Cells* 17: 1091-21. 2012.
 10. Differential effects of amelogenin on mineralization of cementoblasts and periodontal ligament cells: Tanimoto K., Kunimatsu R., Tanne Y., Huang Y.C., Michida M., Yoshimi Y., Miyauchi M., Takata T., Tanne K.: *Journal of Periodontology* 83: 672-679, 2012.
 11. Association between root resorption incident to orthodontic treatment and treatment factors: Motokawa M., Sasamoto T., Kaku M., Kawata T., Matsuda Y., Terao A., Tanne K.: *European Journal of Orthodontics* 34: 350-356, 2012.
 12. Uprighting of severely impacted mandibular second molars: a case report: Fujita T., Shirakura M., Hayashi H., Tsuka Y., Fujii E., Tanne K.: *Australian Orthodontic Journal* 28:258–264, 2012.
 13. Amelogenin enhances the osteogenic differentiation of mesenchymal stem cells derived from bone marrow: Tanimoto K., Huang Y.C., Tanne Y., Kunimatsu R., Michida M., Yoshioka M., Ozaki N., Sasamoto T., Yoshimi Y., Kato Y., Tanne K.: *Cells Tissues Organs* 196: 411-419, 2012.
 14. Tissue regeneration in dentistry: Tanne K., Papagerakis P., Papaccio G., Kitamura C., Tanimoto K.: *International Journal of Dentistry* 2012; 2012: 586701.
 15. Current Status of Low Intensity Pulsed Ultrasound for Dental Purposes: Rego E.B., Takata T., Tanne K., Tanaka E.: *Open Dentistry Journal* 6: 220-225, 2012.
 16. Short-term change in occlusal function after using mandibular advancement appliance for snoring: A pilot study: Ueda H., Watanabe G., Horihata A., Koh M., Tanne K.: *Sleep Disorders*, vol. 2012, 7 pages, 2012.
 17. Changes in the bilateral balance of masticatory muscle activity after surgical correction of mandibular lateral shift: report of 2 cases: Ueda H., Kato M., Watanabe G., Horihata A., Tanne K.: *Orthopedic & Muscular System: Current Research*, vol. 2012, e117, 2012.
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 19. Changes in the crown angulation and dental arch widths after non extraction orthodontic treatment: Model analysis of mild crowding with high canines: Masunaga M., Ueda H., Tanne K.: *Open Journal of Stomatology* 2:188-194, 2012.
 20. P2X(7) receptor in the trigeminal sensory nuclear complex contributes to tactile allodynia/hyperalgesia

- following trigeminal nerve injury: Ito G, Suekawa Y, Watanabe M, Takahashi K, Inubushi T, Murasaki K, Hirose N, Hiyama S, Uchida T, Tanne K.: *European Journal of Pain* 17: 185-199, 2012.
21. Effects of vascular endothelial growth factor-C and -D on osteoclast differentiation and function in human peripheral blood mononuclear cells: Motokawa M, Tsuka N, Kaku M, Kawata T, Fujita T, Ohtani J, Matsuda Y, Terao A, Tanne K.: *Archives of Oral Biology* 58: 35-41, 2012.
 22. Effects of long-term occlusal hypofunction and its recovery on the morphogenesis of molar roots and the periodontium in rats: Motokawa M., Terao A., Karadeniz E.I., Kaku M., Kawata T., Matsuda Y., Gonzales C., Darendeliler M.A., Tanne K.: *Angle Orthodontist*, in press 2012.
 23. Orally Administered Liposomal Lactoferrin Inhibits Inflammation-Related Bone Destruction Without Interrupting Orthodontic Tooth Movement: Kawazoe A., Inubushi T., Miyauchi M., Ishikado A., Tanaka E., Tanne K., Takata T.: *Journal of Periodontology*, in press 2012.
 24. Best facial proportion look from dentistry The limitation of operation and the wall of the skeletal pattern which must not exceed: Ozaki N., Kawata T., Kaku M., Fujita T., Tanne K.: *DENTAL DIAMOND*, 37, 142-149, 2012.
 25. A treatment case of open bite using mini-screw anchorage: Horinouchi M., Kaku M., Sugiyama M., Shimazu A., Motokawa M., Kawata T., Tanne K.: *The Journal of Hiroshima Dental Association* 39, 28-32, 2012.
 26. Evaluation of the lip posture with the changes in anterior tooth inclination: Shimizu Y., Kaku M., Sugiyama M., Amano H., Satoda T., Motokawa M., Kawata T., Tanne K.: *The Journal of Hiroshima Dental Association* 39, 22-27, 2012.
 27. A newly instrument of tooth cleaning eliminate coloring without scraping: Ozaki N., Kawata T., Kaku M., Honda K., Fujita T., Motokawa M., Ohtani J., Tanne K.: *DENTAL DIAMOND*, 37, 150-154, 2012.
 28. Reconsideration of autotransplantation for the treatment of first molar deflection: Kawata T., Motokawa M., Matsuda Y., Terao A., Kaku M., Fujita T., Ohtani J., Ozaki N., Tanne K.: *DENTAL DIAMOND*, 37, 146-151, 2012.
 29. Association between severity of crowding and teeth size in elementary school children: Ito G., Koh M., Ueda H., Watanabe G., Horihata A., Murasaki K., Tanne K.: *The journal of Hiroshima university dental society* 44, 40-45, 2012.
 30. A case of obstructive sleep apnea with improved cardiac function by oral appliance therapy: Horihata A., Ueda H., Watanabe G., Koh M., Murasaki K., Tanne K.: *The journal of Hiroshima university dental society* 44: 80-84, 2012.
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 32. A treatment case of crowding with distal movement of lower molars by use of micro-implant: Suekawa Y., Ohtani J., Watanabe M., Fujita T., Sunagawa H., Tsubamoto N., Ishikawa E., Oki N., Tanne K.:

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 35. Influences of abnormal root shape and the amount of tooth movement on the prevalence of root resorption in open bite: Terao A., Motokawa M., Kaku M., Kawata T., Sasamoto T., Ozaki N., Matsuda Y., Tanne K.: Orthodontic Waves-Japanese Edition 71: 178-186, 2012.
 36. Occlusal assessment with Golson Yardstick in unilateral cleft lip and palate patients: Ohtani J., Ishikawa E., Ueda H., Sano R., Fujita T., Sunagawa H., Tsubamoto N., Oki N., Kawata T., Kaku M., Motokawa M., Tanne K.: The journal of Chu-Shikoku orthodontic society 24: 21-26, 2012.
 37. A treatment case of deep bite with severe scissors bite using mini-screw anchorage: Sumi H., Kaku M., Koseki H., Kawazoe A., Kojima S., Shikata H., Motokawa M., Ohtani J., Fujita T., Kawata T., Tanne K.: The journal of Chu-Shikoku orthodontic society 24: 73-80, 2012.
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 39. A case of temporomandibular joint osteoarthritis with mandibular recession and open bite : onset after the orthodontic treatment in adolescence: Hirose N., Tanimoto K., Tanne Y., Sumi K., Tanne K.: The journal of Hiroshima university dental society 44: in press, 2012.
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B) General remarks

C) Books

D) Other publications

E) Presentation at Scientific Meeting

1. Evaluation of the course work education employing Cognitive Behavior Therapy: Shirakura M., Oka H., Kamiya T., Suehiro F., Shirasuna K., Sugai M., Kobayashi M.: The 15th Ottawa Conference

- (Ottawa), 2012.
2. A newly developed short micro-implant, available or not: Sunagawa H., Ohtani J., Fujita T., Tsubamoto N., Ishikawa E., Oki N., Kawata T., Kaku M., Motokawa M., and Tanne K.: The 4th World Implant Orthodontic Conference (Sydney), 2012.
 3. Periotest® value reflect primary stability of micro-implant: Oki N., Ohtani J., Sunagawa H., Watanabe G., Kaku M., Tsubamoto N., Ishikawa E., Fujita T., Motokawa M., Tanne K.: The 4th World Implant Orthodontic Conference (Sydney), 2012.
 4. Influence of micro-implants on root resorption in open bite: Motokawa M., Kaku M., Kawata T., Ohtani J., Matsuda Y., Terao A., Kojima S., Sumi H., Tanne K.: The 4th world implant orthodontic conference (Sydney), 2012.
 5. Effects of cyclic tensile forces on the expression of cytokines in human pulp cells: Sumi H., Kaku M., Kojima S., Shikata H., Motokawa M., Kawata T., Tanne K.: 45th Annual Scientific Congress Korean Association of Orthodontists 4th Joint Symposium of KAO and JOS (Seoul), 2012.
 6. Root resorption in hypofunction and recovered teeth during orthodontic tooth movement in rats.: Terao A., Motokawa M., Kaku M., Kawata T., Matsuda Y., Tanne K.: The 45th Annual Scientific Congress Korean Association of Orthodontists (Seoul), 2012.
 7. Ameloblastin regulates proliferation and differentiation of ameloblasts and maintains morphology of Hertwig's root sheath Naoto Hirose, Atsushi Shimazu, Mineo Watanabe, Kotaro Tanimoto, Yuki Yoshimi, Tetsuya Awada, Takashi Uchida, Kazuo Tanne.: The 45th Annual Scientific Congress of KAO, 2012
 8. Immunohistochemical analysis of root resorption by jiggling force: Matsuda Y., Motokawa M., Kaku M., Kawata T., Terao A., Tanne K.: The 45th Annual Scientific Congress of Korean Association of Orthodontists, The 4th Joint Symposium of KAO and JOS (Seoul), 2012
 9. TNF- α in the trigeminal subnucleus caudalis contributes to extra-territorial allodynia/hyperalgesia following a trigeminal nerve injury: Murasaki K., Watanabe M., Takahashi K., Ito G., Suekawa Y., Inubushi T., Hirose N., Uchida T., Tanne K.: The 45th Scientific Congress of Korean Association of Orthodontists 4th Joint Symposium of KAO and JOS (Seoul), 2012
 10. Influences of sex hormones disturbance on the memory and learning ability in growing mice.: Ishikawa E., Ohtani J., Sunagawa H., Tsubamoto N., Fujita T., Kawata T., Kaku M., Motokawa M., Tanne K.: The 45th Annual scientific congress of Korean association of orthodontists (Seoul),2012
 11. A case of autotransplantation of a cryopreseved tooth with magnetic field programmed freezer.: Shikata H., Kaku M., Kawata T., Ohtani J., Fujita T., Motokawa M., Kojima S., Sumi H., Tanne K.: The 45th Scientific Congress of Korean Association of Orthodontists 4th Joint Symposium of KAO and JOS (Seoul), 2012
 12. Effects of COX-2 inhibitor on the metabolism of extracellular matrix in stressed TMJ chondrocyte: Su S.C., Tanimoto K., Tanne Y., Mitsuyoshi T., Sumi K., Okamoto Y., Tanne K.: The 45th Scientific

- Congress of Korean Association of Orthodontists 4th Joint Symposium of KAO and JOS (Seoul), 2012.
13. Changes in the size of pharyngeal airway after mandibular advancement appliance in Class II children: Horihata A., Ueda H., Koh M., Matsumura Y., Tanne K.: The 45th Scientific Congress of Korean Association of Orthodontists 4th Joint Symposium of KAO and JOS (Seoul), 2012.
 14. Effect of Celecoxib on extracellular matrix metabolism in mandibular condyle chondrocytes under excessive mechanical stress: Tanne Y.: 8th Asian Pacific Orthodontic Conference 47th Indian Orthodontic Conference (New Delhi), 2012.
 15. Changes in pharyngeal airway space after mandibular setback surgery for skeletal III patients compared to patients with obstructive sleep apnea: Koh M.: 8th Asian Pacific Orthodontic Conference 47th Indian Orthodontic Conference (New Delhi), 2012.
 16. Bone regeneration by use of mesenchymal stem cells for treatment of jaw cleft: Part I, Evaluation of a new carbonated-hydroxyapatite scaffold: Tanimoto K.: 8th Asian Pacific Orthodontic Conference 47th Indian Orthodontic Conference (New Delhi), 2012.
 17. Bone regeneration by use of mesenchymal stem cells for treatment of jaw cleft: Part II, Orthodontic tooth movement in to the regenerated bone area: Yoshioka M.: 8th Asian Pacific Orthodontic Conference 47th Indian Orthodontic Conference (New Delhi), 2012.
 18. Regeneration of condyle by use of a functional appliance: Fujita T.: 8th Asian Pacific Orthodontic Conference 47th Indian Orthodontic Conference (New Delhi), 2012.
 19. Modulation of PRG4 expression by hyaluronan through CD44 receptor and ERK: Mitsuyoshi T.: 8th Asian Pacific Orthodontic Conference 47th Indian Orthodontic Conference (New Delhi), 2012.
 20. Cryopreservation of periodontal ligament cells with magnetic field for tooth banking: Kawata T.: 8th Asian Pacific Orthodontic Conference 47th Indian Orthodontic Conference (New Delhi), 2012.
 21. Effect of enzymatic degradation on frictional coefficient and tissue change in temporomandibular joint: Su S.C., Tanimoto K., Tanne K., Hirose N., Mitsuyoshi T., Tanaka E., Tanne K.: 24th Taiwan Association of Orthodontists Annual Conference (Taipei), 2012.
 22. Habitual oral breathing influences on memory and learning ability in growing rat: Tsubamoto N., Ohtani J., Sunagawa H., Ishikawa E., Fujita T., Ueda H., Kawata T., Motokawa M., Tanne K.: 24th Taiwan Association of Orthodontists Annual Conference (Taipei), 2012.
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 24. An establishment of jaw cleft treatment with bone regeneration by use of bone marrow -derived mesenchymal stem cells: Sumi K., Tanimoto K., Tanne Y., Yoshioka M., Oki N., Tanne K.: 24th Taiwan Association of Orthodontists Annual Conference (Taipei), 2012.
 25. Treatment of jaw cleft by bone regeneration with MSCs: availability of jaw bone marrow.: Oki N, Tanimoto K, Yoshioka M, Sumi K, Yoshimi Y, Sugiyama M, Tanne Y, Tanne K.: The 36th Annual

- Meeting of Japanese Cleft Palate Association (Kyoto), 2012.
26. Clinico-statistical analysis of congenitally-missing permanent teeth and enamel hypoplasia in patients with CLP: Yoshimi Y, Tanimoto K, Kunimatsu R, Hirose N, Awada T, Oki N, Yoshioka M, Sumi K, Tanne K.: The 36th Annual Meeting of Japanese Cleft Palate Association (Kyoto), 2012.
 27. An establishment of jaw cleft treatment with bone regeneration by use of bone marrow -derived mesenchymal stem cells - Examination for the metabolism of scaffold-: Sumi K, Tanimoto K, Tanne Y, Yoshioka M, Matsuda Y, Yoshimi Y, Oki N, Sugiyama M, Tanne K.: The 35th Annual Meeting of Japanese Cleft Palate Association (Kyoto), 2012.
 28. An establishment of jaw cleft treatment with bone regeneration by use of bone marrow-derived mesenchymal stem cells.: Sumi K., Tanimoto K., Tanne Y., Yoshioka M., Oki N., Sugiyama M., Tanne K.: The 44th Dental meeting of Hiroshima University(Hiroshima), 2012.
 29. Effect of Celecoxib[®] on extracellular matrix metabolism in mandibular condyle chondrocytes under excessive mechanical stress.: Su S.C., Tanimoto K., Tanne Y., Hirose N., Mitsuyoshi T., Yoshimi Y., Okamoto Y., Tanne K.: The 44th Dental meeting of Hiroshima University(Hiroshima), 2012.
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 31. Consideration of standardization of the treatment course for the patient with defective of the first molar- Medical treatment which the dentist itself an orthodontist thinks wants to undergo-: Kawata T., Motokawa M., Kaku M., Fujita T., Ohtani J., Tanne K.: The 44th Dental meeting of Hiroshima University(Hiroshima), 2012.
 32. Evaluation of the course work education employing Cognitive Behavior Therapy at Hiroshima University, Graduate School of Biomedical Sciences.: Shirakura M., Oka H., Kamiya T., Suehiro F., Shirasuna K., Sugai M., Kogayashi M.: The 44th Dental meeting of Hiroshima University(Hiroshima), 2012.
 33. Changes of pharyngeal airway in patients with skeletal 3 patients compared to patients with sleep apnea.: Horihata A., Koh M., Ueda H., Watanabe G., Ito G., Fujita T., Tanne K.: The 22th Annual Meeting of the Society for Jaw Deformities(Fukuoka), 2012.
 34. A case of remarkable mandibular growth after orthodontic treatment resulted in orthognathic surgery: Fujii E., Shirakura M., Fujita T., Hayashi H., Tsuka Y., Tanne K.: The 22nd Annual Meeting of the Japanese Society for Jaw Deformities (Fukuoka), 2012.
 35. Case report of orthodontic treatment for inverse impacted teeth in follicular cyst: Hayashi H., Fujita T., Shirakura M., Tsuka Y., Fujii E., Tanne K.: 55th Annual Meeting of Chu-Shikoku Orthodontic Society (Hiroshima), 2012.
 36. A recovery case of adult bimaxillary protrusion exposing anterior teeth root treated with non-extraction: Takahashi K., Watanabe M., Motokawa M., Ito G., Murasaki K., Tanne K.: 55th Annual

- Meeting of Chu-Shikoku Orthodontic Society (Hiroshima), 2012.
37. A study of prognosis for autotransplantation of cryopreserved teeth: Kohno S., Kawata T., Kaku M., Tanne K.: 55th Annual Meeting of Chu-Shikoku Orthodontic Society (Hiroshima), 2012.
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 39. Importance of cephalometric and facial photo analyses for facial proportion: Tohma Y., Ozaki N., Kawata T., Hirose N., Kaku M., Motokawa M., Tanne Y., Tanne K.: 55th Annual Meeting of Chu-Shikoku Orthodontic Society (Hiroshima), 2012.
 40. Prevalence of enamel hypoplasia in orthodontic clinic Hiroshima University Hospital: Oki N., Tanimoto K., Yoshioka M., Sumi K., Yoshimi Y., Tanne K.: 55th Annual Meeting of Chu-Shikoku Orthodontic Society (Hiroshima), 2012.
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 42. Important role of articular disk in mandibular growth: Fujita T., Hayashi H., Fang Z., Shirakura M., Tsuka Y., Fujii E., Tanne K.: The 25th Annual Meeting of the Japanese Society for Temporomandibular Joint (Sapporo), 2012.
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 44. A case of temporomandibular joint osteoarthritis with mandibular retrusion and open bite: onset after the orthodontic treatment in adolescence: Hirose N., Tanimoto K., Tanne Y., Sumi K., Tanne K.: The 25th Annual Meeting of the Japanese Society for Temporomandibular Joint (Sapporo), 2012.
 45. A statistical survey for patients with TMD in orthodontic clinic, Hiroshima University Dental Hospital -Osteoarthrosis of temporomandibular joint: Awada T., Tanimoto K., Tanne Y., Hirose N., Mitsuyoshi T., Sumi K., Su S.C., Tanne K.: The 25th Annual Meeting of the Japanese Society for Temporomandibular Joint (Sapporo), 2012.
 46. Effects of cyclic tensile forces on the expression of inflammatory cytokine in human pulp cell: Sumi H., Kaku M., Kojima S., Shikata H., Abonti T.R., Fujita T., Ohtani J., Motokawa M., Kawata T., Tanne K.: The 71st Annual Meeting of the Japanese Orthodontic Society (Morioka), 2012
 47. Two treatment cases of obstructive sleep apnea with severe general symptoms by oral appliance therapy: Horihata A., Ueda H., Watanabe G., Murasaki K., Koh M., Tanne K.: The 71st Annual Meeting of the Japanese Orthodontic Society (Morioka), 2012
 48. A case of Crouzon's syndrome treated by maxillary distraction osteogenesis with use of RED system: Sunagawa H., Ohtani J., Sano R., Fujita T., Ishikawa E., Tsubamoto N., Oki N., Tanne K.: The 71st

- Annual Meeting of the Japanese Orthodontic Society (Morioka), 2012
49. Two treatment cases of crowding with distal movement of loser molars by use of implant-anchor: Ohtani J., Sunagawa H., Sano R., Tsubamoto N., Ishikawa E., Oki N., Fujita T., Kawata T., Kaku M., Motokawa M., Tanne K.: The 71st Annual Meeting of the Japanese Orthodontic Society (Morioka), 2012
 50. Influence of Begg type retainer on the durability of tooth coating material: Yano K., Shirakura M., Tanaka N., Tanne K.: The 71st Annual Meeting of the Japanese Orthodontic Society (Morioka), 2012
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 54. Histochemical analysis for the influences of occlusal recovery on the structure of periodontal tissues: Terao A., Motokawa M., Kaku M., Kawata T., Fujita T., Ohtani J., Sunagawa H., Matsuda Y., Hayashi H., Kojima S., Tsubamoto N., Tanimoto K., Tanne K.: The 71st Annual Meeting of the Japanese Orthodontic Society (Morioka), 2012
 55. The role of microglia in extra-territorial allodynia/hyperalgesia following a trigeminal nerve injury: Murasaki K., Watanabe M., Ito G., Takahashi K., Uchida T., Tanne K.: The 71st Annual Meeting of the Japanese Orthodontic Society (Morioka), 2012
 56. Influences of jiggling forces on the onset of root resorption in rats: Matsuda Y., Motokawa M., Kaku M., Kawata T., Fujita T., Ohtani J., Terao A., Tanimoto K., Tanne K.: The 71st Annual Meeting of the Japanese Orthodontic Society (Morioka), 2012
 57. Influence of habitual oral breathing on memory and learning ability: Tsubamoto N., Ohtani J., Sunagawa H., Ishikawa E., Fujita T., Ueda H., Kawata T., Kaku M., Motokawa M., Hayashi H., Matsuda Y., Kojima S., Terao A., Tanne K.: The 71st Annual Meeting of the Japanese Orthodontic Society (Morioka), 2012
 58. Histological study in regeneration of the mandibular condyle with the use of a functional appliance: Hayashi H., Fujita T., Shirakura M., Tsuka Y., Fang X., Fujii E., Tanne K.: The 71st Annual Meeting of the Japanese Orthodontic Society (Morioka), 2012
 59. Long-term cryopreservation of rat MSCs by use of a programmed freezer with magnetic field: Kojima

- S., Kaku M., Kawata T., Motokawa M., Fujita T., Ohtani J., Sumi H., Shikata H., Tanne K.: The 51th Hiroshima Prefecture Dental Association • The 96th Hiroshima University Dental Society (Hiroshima), 2012.
60. Effects of FKO on enlargement of pharyngeal airway: Matsumura Y., Horihata A., Koh M., Ueda H., Tanne K.: The 51th Hiroshima Prefecture Dental Association • The 96th Hiroshima University Dental Society (Hiroshima), 2012.
61. Influences of sex hormones disturbance on the memory and learning ability in growing mice: Ishikawa E., Ohtani J., Fujita T., Sunagawa H., Tsubamoto N., Kawata T., Kaku M., Motokawa M., Hayashi H., Matsuda Y., Kojima S., Tsuka Y., Sumi H., Shikata H., Tanne K.: The 96th Annual meeting of Hiroshima university dental society (Hiroshima), 2012
62. Re-evaluation of informational management- Analysis of usage in operation: Hiasa K., Tanaka T., Tanne K.: H24 University Hospital informational management liaison conference

F) Academic society symposium and special lecture

1. Tanne K.: Insight in to the orthodontic treatment of jaw deformity: The 22th Annual Meeting of the Society for Jaw Deformities (Fukuoka), 2012.
2. Tanne K.: 20 years took charge of the Hiroshima University department-of-dentistry dental orthopaedics lecture: 55th Annual Meeting of Chu-Shikoku Orthodontic Society (Hiroshima), 2012.
3. Tanne K.: Food and healthy: Dietary education from dental medication: Cooperation symposium on Hiroshima University and Prefectural Hiroshima University 「Let's think! Food and healthy」 (Hiroshima), 2012.
4. Tanne K.: Current status of TMD: 8th Asian Pacific Orthodontic Conference 47th Indian Orthodontic Conference (New Delhi), 2012.
5. Kawata T.: The Teeth Bank in Japan: The annual meeting of Taiwan Association of Orthodontics (Taipei), 2012.
6. Kawata T.: Tooth bank and orthodontic treatment: Kagawa Dental Association (Takamatsu), 2012.
7. Kawata T.: Tooth banking: The Hiroshima revitalization-of-the-economy promotion The 18th entrepreneur investment and specialist meeting (Hiroshima), 2012.
8. Kawata T.: CAS(Cell Alive System) and tissue engineering: The 39th Annual Meeting of the Japan Society for Low Temperature Medicine (Tokyo), 2012.
9. Kawata T.: The research which gives a student and a researcher a dream is tissue engineering with indispensable cooperation with the fundamental research and clinical medicine - I would like to consider both the futures of the "oral medicine" about tissue engineering by a tooth bank and you, Fukuoka Dental College: The 8th Fukuoka Dental College Symposium (Fukuoka), 2012.
10. Kawata T.: The cell banking system for the tissue engineering in a pre-symptomatic patient -Propose from realizable tooth reproduction to medical treatment-: The 19th Japan Mibyou System Association

(Kanazawa), 2012.

11. Ueda H.: -Association between neuroscience and teeth, oral function, and the whole body.- The 9th symposium of neuroscience in Mihara (Hiroshima), 2012.
12. Ueda H.: -An approach of treatment for obstructive sleep apnea patients in Hiroshima University Hospital:- The 56th joint meeting of Chugoku & Shikoku regions for occupational health (Hiroshima), 2012.
13. Kaku M.: Teeth bank with Activities of periodontal ligament: 2012 Kagawa Dental Study Club (Takamatsu), 2012.
14. Kaku M.: Teeth bank for cell and tissue cryopreservation: 2012 Johoku Medical and Dental Association (Hiroshima), 2012.
15. Ohtani J.: A limitation of molar distal movement: CBCT study: 4th World Implant Orthodontic Conference (Sydney), 2012.
16. Ohtani J.: Clinical technique for enhancing the success rate of micro-implant: 10th Japan Implant Orthodontic Conference (Osaka), 2012.

(4) Scientific research grant -in-aid

1. Grant-in-aid for Clinical Research in Hiroshima University: Tanne K.: 500,000yen
2. Grant-in-aid for Scientific Research (B): Tanne K.: Effectiveness of improvement of lubrication and condylar cartilage regeneration in temporomandibular joints with osteoarthritis. No. 23390474. 4,500,000 yen
3. Grant-in-aid for Scientific Research (C): Ueda H.: Comprehensive clinical development in newly oral appliance for obstructive sleep apnea syndrome. No.20304446. 1,500,000yen
4. Grant-in-aid for Scientific Research (C): Tanimoto K.: Optimization of bone regeneration by transplantation of mesenchymal stem cells and application to the closure of jaw cleft. No. 23593029. 1,700,000 yen
5. Grant-in-aid for Scientific Research (C): Fujita T.: Mechanism of the condylar regeneration with orthopedic force.: No. 23593030. 1,300,000yen.
6. Grant-in-Aid for Scientific Research: Motokawa M.: Availability of low-pulse ultrasound stimulation for temporomandibular joint dysfunction.: No. 22592285. 700,000yen
7. Grant-in-Aid for Scientific Research: Shirakura M.: Molecular mechanisms of chondroclastogenesis in temporomandibular joint – osteoarthrosis; clarification of the hypoxia-inducible factor-1 activity. : No. 22792053. 1400,000yen.
8. Grant-in-Aid for Scientific Research: Ohtani J.: Influences of sex hormones and growth factors on craniofacial growth.: No. 23792430. 1,600,000yen.

9. Grant-in-Aid for Scientific Research: Tanne Y.: Elucidation of the mechanism of cartilage destruction induced by COX-2 and the establishment of anti-inflammatory drugs treatment in TMJ osteoarthritis.: No. 23792429. 1,100,000yen.
10. Grant-in-Aid for Scientific Research: Kunimatsu R.: Effects of enamel matrix protein on the metabolism of periodontal tissue and application of enamel matrix protein for orthodontic treatment. No. 23792428. 1,950,000yen.
11. Grant-in-Aid for Scientific Research: Yoshioka M.: Analysis of bone induction ability of bone marrow-derived mesenchymal stem cells from jaw and application for jaw cleft: No. 23890136. 1,300,000yen.
12. Grant-in-Aid for Scientific Research: Hirose N.: Elucidation of the mechanism of promoting dentin formation by ameloblastin and application to dental treatment for tooth root resorption: No. 24792286. 1,500,000yen.
13. Grant-in-Aid for Scientific Research: Mitsuyoshi T.: Clarification of SZP expression mechanism and development of novel therapeutic agents for the treatment of temporomandibular disorder: No.24890140. 1,200,000yen
14. Grant-in-Aid for Scientific Research: Hayashi H.: Condylar regeneration leading to cranifacial growth by the use of orthopedic force: No.24890141. 1,100,000yen
15. Ryokufukai Research Award for Young Scientists: Fujii E.: Orthodontic tooth movement on ovariectomized rats induced experimental periodontitis: 500,000yen.
16. New Energy and Industrial Technology Development Organization (NEDO), P10027, Kawata T., Kaku M.: A development of safety culture and preservation technology of human stem cells.: 3,360,000yen.

(5) Commendation

1. Tanne Y: Expression and activity of Runx2 mediated by hyaluronan during chondrocyte differentiation: Incentive award for Alumni Association of Hiroshima University Faculty of Dentistry.
2. Oki N.: Treatment of jaw cleft by bone regeneration with MSCs: availability of jaw bone marrow.: The 36th Annual Meeting of Japanese Cleft Palate Association: Best presentation award.
3. Matsuda Y.: Clinical survey of the association between root resorption incident to orthodontic treatment and host factors.: The 15th Japanese Orthodontic Society: Academic incentive award
4. Hayashi H.: Histological study in regeneration of the mandibular condyle with the use of a functional appliance: The 71th Annual Meeting of the Japanese Orthodontic Society: Best presentation award.
5. Sumi H.: Effects of cyclic tensile forces on the expression of inflammatory cytokine in human pulp cell: The 71st Annual Meeting of the Japanese Orthodontic Society: Best presentation award.
6. Fujita T.: Important role of articular disk in mandibular growth: The 25th Annual Meeting of the

- Japanese Society for Temporomandibular Joint: Best presentation award.
7. Hirose N.: Ameloblastin regulates proliferation and differentiation of ameloblasts and maintains morphology: The 45th Annual Scientific Congress of Korean Association of Orthodontists, The 4th Joint Symposium of KAO and JOS (Seoul), 2012, Best poster presentation award
 8. Sumi H.: Effects of cyclic tensile forces on the expression of cytokines in human pulp cells: The 45th Annual Scientific Congress Korean Association of Orthodontists, The 4th Joint Symposium of KAO and JOS (Seoul), 2012, Poster presentation award.
 9. Terao A.: Root resorption in hypofunction and recovered teeth during orthodontic tooth movement in rats: The 45th Annual Scientific Congress Korean Association of Orthodontists, The 4th Joint Symposium of KAO and JOS (Seoul), 2012, Poster presentation award.
 10. Matsuda Y.: Immunohistochemical analysis of root resorption by jiggling force: The 45th Annual Scientific Congress Korean Association of Orthodontists, The 4th Joint Symposium of KAO and JOS (Seoul), 2012, Poster presentation award.
 11. Murasaki K.: TNF- α in the trigeminal subnucleus caudalis contributes to extra-territorial allodynia/hyperalgesia following a trigeminal nerve injury: The 45th Annual Scientific Congress Korean Association of Orthodontists, The 4th Joint Symposium of KAO and JOS (Seoul), 2012, Poster presentation award.
 12. Ishikawa E.: Influences of sex hormones disturbance on the memory and learning ability in growing mice: The 45th Annual Scientific Congress Korean Association of Orthodontists, The 4th Joint Symposium of KAO and JOS (Seoul), 2012, Poster presentation award.
 13. Shikata H.: A case of autotransplantation of a cryopreserved tooth with magnetic field programmed freezer: The 45th Annual Scientific Congress Korean Association of Orthodontists, The 4th Joint Symposium of KAO and JOS (Seoul), 2012, Poster presentation award.
 14. Su S.C.: Effects of COX-2 inhibitor on the metabolism of extracellular matrix in stressed TMJ chondrocyte: The 45th Annual Scientific Congress Korean Association of Orthodontists, The 4th Joint Symposium of KAO and JOS (Seoul), 2012, Poster presentation award.
 15. Horihata A.: Changes in the size of pharyngeal airway after mandibular advancement appliance in Class II children: The 45th Annual Scientific Congress Korean Association of Orthodontists, The 4th Joint Symposium of KAO and JOS (Seoul), 2012, Poster presentation award.

(6) Patent

**Department of Oral and Maxillofacial Radiology,
Applied Life Sciences
Department of Oral and Maxillofacial Surgery and Oral
Medicine (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 : Masaru Konishi, Yukimi Yasuhara, Mitsuko Shimizu,
Kiyohito Ota, Md Mahmud Uz Zaman, Satsuki Minamitani,
Atia Hossain, Kimio Okada, Preeyaporn Srimawong, Keiji Harada

(2) Main Research Activities

- 1: Radiographic study to screen osteoporosis using panoramic radiographs of the jaw
- 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: Study on improvement of radiotherapy for oral cancers

(3) Research Achievements

A) Original Papers

- 1: Multiple cemental tears Watanabe C, Watanabe Y, Miyauchi M, Fujita M, Watanabe Y. Oral Surg Oral Med Oral Pathol Oral Radiol. 114(3):365-72, 2012.
- 2: Important technical parameters are not presented in reports of intraoral digital radiography in endodontic treatment: recommendations for future studies: Konishi M, Lindh C, Nilsson M, Tanimoto K, Rohlin M: Oral Surgery, Oral Medicine, Oral Pathology and Oral Radiology, 114(2), 254-258, 2012

- 3: Bone mass of the mandible and the risk of breast cancer among Japanese postmenopausal women: Taguchi A., Ohtsuka M., Nakamoto T., Suei Y., Tanimoto K., Kataoka T.: *The Breast Journal* 18(1), 93–94, 2012

D) Other Publications

- 1: Radiation effects of heavy ion particles on bone metabolism: M.Sawajiri, Y Nomura, K Maruyama: 2011 Annual Report of the Research Project with Heavy Ions at NIRS-HIMAC: 102-104, 2012

E) Presentation at Scientific Meeting

- 1: Long-term results and late effects of hyperfractionated radiotherapy for oral cancers : Fujita M, Murakami Y, Kimura T, Kenjyo M, Kaneyasu Y, Nagata Y. : 25th annual meeting of Japanese Society for Therapeutic Radiology and Oncology(Tokyo), 2012.
- 2 : A study to detect sclerotic changes of alveolar bone on intraoral radiographs of bisphosphonate used patients using digital subtraction technique : Zaman M., Nakamoto T., Tanimoto K. : The 17th congress of clinical imaging for oral and maxillofacial lesions (Osaka), 2012.
- 3: An experience of osteoporosis screening system using panoramic radiographs of the jaw: Takenaka T., Nakamoto T., Zaman M., Taguchi A., Hattori M., Tanimoto K. : The 96th Scientific meeting of Hiroshima University Dental Society (Hiroshima), 2012
- 4: Irradiation Effect on Osteoclastogenesis Stimulated by Breast Cancer Cell: Sawajiri M., Nomura Y., Takinami S., Maruyama K., Tanimoto K: The 55th Annual Meeting of The Japan Radiation Research Society (Sendai), 2012.
- 5: Radiation effects of heavy ion particles on bone metabolism: Sawajiri M., Nomura Y., Takinami S., Maruyama K., Tanimoto K.: 2011 Annual meeting of the research project with heavy ion at NIRS-HIMAC (Chiba), 2012.
- 6: Ozonated Water Application to Dental Materials: Evaluation with various dental gypsum casts. R Nishikiori, T Okuda, A Oohtoshi, M Sawajiri, W Nishijima. 21th Annual Meeting of the Japan Ozone Association (Hiroshima), 2012
- 7: Materials of videofluoroscopic swallowing study. A systematic review. : Konishi M, Yasuhara Y, Nagasaki T, Tanimoto K. : 13th European Congress of Dentomaxillofacial Radiology, Leipzig, 2012.6.13-16
- 8: Fundamental studies of cooked rice including contrast media: Konishi M, Nagasaki T, Yasuhara Y, Tanimoto K: 17th & 18th annual meeting of the Japanese Society of Dysphagia Rehabilitation , Sapporo, 2012.8.31-9.1

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

- 1: Grant-in-aid for scientific research from the Japan Society for the Promotion of Science: Sawajiri M. : Radioprotective assay on bone metabolism with Japanese Medaka (*Oryzias latipes*). (no. 23592765) ¥1,100,000
- 2: Research Grant (Mikasa Shoji Co., Ltd): Sawajiri M. : The effect of electrolysed water on radioactive extraction from internal exposure animal. (no. 7109) ¥4,950,000
- 3: Grant-in-aid for scientific research from the Japan Society for the Promotion of Science: Sawajiri M. : Research and development of the dental material having a functional antibacterial action. (no. 24592917): ¥1,900,000

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**Department of Dental Science for Health Promotion,
Integrated Health Sciences
Department of Preventive and Restorative Dentistry
(Operative and Conservative Dentistry)**

(1) Staff and Students

Professor : Fusanori Nishimura

Associate Professor :

Associate Professor : Masashi Fujii

Assistant Professor : Makoto Arakawa, Shigeki Suzuki, Naoyo Motoyama, Akane Mineoka, Akiko Yamashita, Misaki Iwashita

Resident : Hideo Nakarai, Shintara Nagayasu, Sakiko Fujii

Graduate Student : Takanori Shinjo, Seiji Kobuke, Sano (Ganse) Tomomi, Atsushi Hashikata, Hiroaki Hoshino

(2) Main Research Activities

- 1: Studies on host factors associated with caries susceptibility
- 2: Studies on relationship between dental disease and systematic diseases
- 3: Studies on association between nutrients and dental diseases
- 4: Development of new laboratory tests for diagnosis of dental diseases
- 5: Development of new preventive therapies for dental diseases based on new laboratory tests
- 6: Development of biocompatible materials and their clinical application
- 7: Pathology of discolored teeth and development of new therapy
- 8: Development of new host-noninvasive therapies using lasers
- 9: Biological regeneration of dentin/pulp complex

(3) Research Achievements

A) Original Papers (including Case Reports)

- 1: Adipocyte-macrophage interaction may mediate LPS-induced low-grade inflammation: potential link with metabolic complications.: Nakarai H., Yamashita A., Nagayasu S., Iwashita M., Kumamoto S., Ohyama H., Hata M., Soga Y., Kushiyama A., Asano T., Abiko Y., Nishimura F.: *Innate Immunity*, 18(1), 164-170, 2012.
- 2: Angiotensin receptor 1 blocker valsartan normalizes gene expression profiles of 3T3-L1 adipocytes altered by co-culture with LPS-treated RAW264.7 macrophages: Sonoko Kumamoto, Akifumi

- Kushiyaama, Yusuke Nakatsu, Hideyuki Sakoda, Midori Fujishiro, Misaki Iwashita, Haruya Ohno, Jun Zhang, Ying Guo, Hiroyuki Aburatani, Hideaki Kamata, Fusanori Nishimura, Tomoichiro Asano : *Obesity Research & Clinical Practice*, 6, e288-e297, 2012.
- 3: Dentin sialophosphoprotein and dentin matrix protein-1: Two highly phosphorylated proteins in mineralized tissues. Suzuki S, Haruyama N, Nishimura F, Kulkarni AB. *Arch Oral Biol.* 57(9): 1165-75, 2012.
 - 4: Xanthine oxidoreductase is involved in macrophage foam cell formation and atherosclerosis development : Kushiyaama A., Okubo H., Sakoda H., Kikuchi T., Fujishiro M., Sato H., Kushiyaama S., Iwashita M., Nishimura F., Fukushima T., Nakatsu Y., Kamata H., Kawazu S., Higashi Y., Kurihara H., Asano T. : *Arterioscler Thromb Vasc Biol*, 32, 291-298, 2012.
 - 5: Adipocyte-macrophage interaction may mediate LPS-induced low-grade inflammation: potential link with metabolic complications.: Nakarai H., Yamashita A., Nagayasu S., Iwashita M., Kumamoto S., Ohyama H., Hata M., Soga Y., Kushiyaama A., Asano T., Abiko Y., Nishimura F.:*Innate Immunity*, [E-pub ahead of print: 2010]18: 164-170, 2012.
 - 6: Valsartan, independently of AT1 receptor or PPAR γ , suppresses LPS-induced macrophage activation and improves insulin resistance in co-cultured adipocytes. Iwashita M, Sakoda H, Kushiyaama A, Fujishiro M, Ohno H, Nakatsu Y, Fukushima T, Kumamoto S, Tsuchiya Y, Kikuchi T, Kurihara H, Akazawa H, Komuro I, Kamata H, Nishimura F, Asano T. *Am J Physiol - Endocrinol Metab*, 302:E286-296, 2012.
 - 7: Xanthine oxidoreductase is involved in macrophage foam cell formation and atherosclerosis development. Kushiyaama A, Okubo H, Sakoda H, Kikuchi T, Fujishiro M, Sato H, Kushiyaama S, Iwashita M, Nishimura F, Fukushima T, Nakatsu Y, Kamata H, Kawazu S, Higashi Y, Kurihara H, Asano T. *Arterioscler Thromb Vasc Biol*, 32:291-298, 2012.
 - 8: Smoking and adipose tissue inflammation suppress leptin expression in Japanese obese males: Potential mechanism of resistance to weight loss among Japanese obese smokers. Nagayasu S, Suzuki S, Yamashita A, Taniguchi A, Fukushima M, Nakai Y, Nin K, Watanabe N, Nagasaka S, Yabe D, Nishimura F. *Tob Induc Dis*, in press, 2012.
 - 9: Establishment of ex vivo pulpitis model by co-culturing immortalized dental pulp cells and macrophages. Yonehiro J, Yamashita A, Yoshida Y, Yoshizawa S, Ohta K, Kamata N, Okihara T, Nishimura F. *Int Endod J*, 45:1103-1108, 2012.
 - 10: Flavonol-containing phosphorylated pullulan may attenuate pulp inflammation. Yonehiro J, Yoshida Y, Yamashita A, Yoshizawa S, Ohta K, Kamata N, Okihara T, Nishimura F. *Int Endod J*, 46:119-127, 2013.
 - 11: Valsartan Restores Inflammatory Response by Macrophages in Adipose and Hepatic Tissues of LPS-infused Mice. Iwashita M, Nakatsu Y, Sakoda H, Fujishiro M, Kushiyaama A, Fukushima T, Kumamoto S, Kamata H, Nishimura F, Asano T. *Adipocyte*, in press, 2012.

- 12: Role of Pin1 in the pathogenesis of non-alcoholic steatohepatitis in a rodent model. Nakatsu Y, Otani Y, Sakoda H, Zhang J, Guo Y, Okubo H, Kushiya A, Fujishiro M, Kikuchi T, Fukushima T, Ohno H, Tsuchiya Y, Kamata H, Nagamachi A, Inaba T, Nishimura F, Katagiri H, Takahashi SI, Kurihara H, Uchida T, Asano T. *J Biol Chem*, 287:44526-44535, 2012.
- 13: Circulating TNF receptor 2 is associated with the development of chronic kidney disease in non-obese Japanese patients with type 2 diabetes. Izumi Y, Yabe D, Taniguchi A, Fukushima M, Nakai Y, Hosokawa M, Okumura T, Nin K, Matsumoto K, Nishimura F, Nagasaka S, Seino Y. *Diabetes Res Clin Pract*. 2013 Jan 30. doi:pii: S0168-8227(12)00424-X. 10.1016/j.diabres.2012.11.002. [Epub ahead of print]

B) Review

- 1: Suzuki S, Haruyama N, Nishimura F, Kulkarni AB. Dentin Sialophosphoprotein and Dentin Matrix Protein-1: Two Highly Phosphorylated Proteins in Mineralized Tissues. *Archive Oral Biol*, in press, 2012

C) Publications

- 1: The relationship of Diabetes and periodontal disease. P.88-104. (Yoshio Nomura): Akiko Yamashita, Fusanori Nishimura, :Dental diamond (Tokyo), 2012
- 2: Diabetes and Periodontal disease.- the medical guideline of metabolic and endocrine disease.(Kadowaki T, Shimomura I), Fusanori Nishimura P. 104-106.So-go igaku Co (Tokyo), 2012
- 3: Lessons Learned from Mouse Models of DSPP, DSP, and DPP: Shigeki Suzuki and Ashok Kulkarni: Bentham Science Publishers., 221-230 (10), 2012

D) Other Publications

- 1: The relation between systemic disorder and periodontitis: Akiko Yamashita, Fusanori Nishimura. *Nihon Shika Hyoron (Tokyo)* ,72:146-148, 2012.
- 2: Diabetes and Periodontal disease: Fusanori Nishimura. *Nihonijishinpo (Tokyo)* No. 4591: 50-51, 2012.
- 3: Diabetes and Periodontal disease: Fusanori Nishimura. *Kosyueisei, Igakusyoin* 783-786, 2012.

E) 学会発表

- 1: Identification of marker genes in human dental pulp cells: Fujii S., Oda R., Nishimura F.: The 136th Japanese Society of Conservative Dentistry (Okinawa), June 28-29, 2012.
- 2: Identification of marker genes expressed in human dental pulp cells: Fujii S., Fujimoto K., Srivatanakul P., Nishimura F., Kato Y.: 3rd Asian Cellular Therapy Organization meeting (Chiang Mai), November 14-17, 2012
- 3: Establishment and effect of the serum free culture method in human dental pulp cells: Fujii S., Oda R.,

- Nishimura F.: The 137th Japanese Society of Conservative Dentistry (Hiroshima), November 22-23, 2012.
- 4: Role of GPR30, a novel oestrogen receptor in the treatment of pain sensation: Motoyama N., Morita K., Nishimura F., Kanematsu T., Dohi.: The 32st Annual Meeting of the Japanese Society of Oral Therapeutics and Pharmacology (Osaka), June 30-July1, 2012.
 - 5: Role of GPR30, a novel estrogen receptor in the developing and established intractable pain: Motoyama N., Morita K., Kitayama T., Nishimura F., Kanematsu T., Dohi T.: The 54rd Annual Meeting of Japanese Association for Oral Biology (Fukushima), September 14-16, 2012.
 - 6: Glycine transporter inhibitors as a potential therapeutic strategy for chronic orofacial pain: Motoyama N., Morita K., Nishimura F., Kanematsu T., Dohi T.: The 22st General Meeting of the Japanese Association for Dental Science (Osaka), November 9-11, 2012.
 - 7: Role of GPR30, a novel plasma membrane localized oestrogen receptor on pain sensation: Motoyama N., Nishimura F.: The 137th Meeting of the Japanese Society of Conservative Dentistry (Hiroshima), November 22-23, 2012.
 - 8: Report on Dental Check-up in Los Angeles –Influence of westernization of lifestyle on dental status–: Mineoka A., Ogawa F., Arakawa M., Kurihara H., Nishimura F.: The 137th Japanese Society of Conservative Dentistry (Hiroshima), November 22-23, 2012.
 - 9: Comprehensive analyses of chemokines expressed in adipocytes co-cultured with macrophages in the presence of TLR4 ligand : Tomomi Ganse, Shintaro Nagayasu, Akiko Yamashita, Shigeki Suzuki, Yoshimitu Abiko, Fusanori Nishimura : The 55th Meeting of the Japanese Society of Periodontology (Sapporo), May 18-19, 2012
 - 10: Study on inhibitory effects of Cacao flavonol on arteriosclerosis by its anti-inflammatory action : Shintaro Nagayasu, Akiko Yamashita, Shigeki Suzuki , Yoshimitu Abiko, Fusanori Nishimura :The 55^h Spring Meeting of the Japanese Society of Periodontology (Hokkaido): May 17-19, 2012
 - 11: Investigation of TNF- α inducing factor produced by dental pulp cells : Shintaro Nagayasu, Shigeki Suzuki , Seiji Kobuke, Yoshimitu Abiko, Fusanori Nishimura. : The 137th Japanese Society of Conservative Dentistry (Hiroshima), November 22-23, 2012.
 - 12: Dentin Sialophosphoprotein Cleavage is Critical for Its Functional Expression :Suzuki S., Nishimura F.: The 90th IADR General Session and Exhibition, (Iguassu Falls), 2012
 - 13: The basic study for investigation between periodontitis and diabetic nephropathy: Akiko Yamashita, Atsushi Hashikata, Shigeki Suzuki, Misaki Iwashita, Fusanori Nishimura : The 55th autumn Meeting of the Japanese Society of Periodontology (Tsukuba), September 23 , 2012.
 - 14: The comprehensive analysis of miRNA involved in metabolic syndrome such as insulin resistance induced local chronic inflammation: Akiko Yamashita, Shigeki Suzuki, Yoshimitu Abiko, Fusanori Nishimura : the 55th Annual Meeting of the Japan Diabetes Society (Yokohama)、 May 17~19.2012
- (4) Status of Receiving Grants-in Aid for Scientific Research, etc.

- 1: Grant-in-Aid for Scientific Research(C): Arakawa M., The analysis of congenital gingival enlargement complicated with hypertrichosis. No. 23593059 ¥ 780,000
- 2: Grant-in-Aid for Scientific Research: Mineoka A., Development of photosensitizer with urea-Establishment of periodontal treatment combined with Er:YAG laser. No. 24792329. ¥ 1,100,000
- 3: Grant-in-Aid for Scientific Research(C) :Nagayasu S. Detailed clarification of the molecule machine beginning of cardiovascular event controlling effect by EC and examination of action in living body,. No.2489014300 ¥ 2,660,000
- 4: Grants-in-Aid for Scientific Research: Iwashita M, Elucidation of amelioration mechanisms of metabolic endotoxemia-induced insulin resistance by valsartan. No. 24792328. ¥ 1,800,000
- 5: Grant-in-Aid for Scientific Research: Suzuki S., The establishment of ameloblast cell line from adult stem cells and of the method of tooth germ regeneration. No. 23792176. ¥ 700,000
- 6: Grant-in-Aid for Scientific Research :Challenging Exploratory Research :Nishimura F, Global analysis of molecules the expression is fluctuated in pulp cell cultured with macrophage. No. 23659889. ¥1,560,000
- 7: Grant-in-Aid for Scientific Research (B)(general): Nishimura F, Collaborative Basic Research on Periodontal Medicine and Geriatric medicine. No. 80208222. ¥2,990,000
- 8: Grant-in-Aid for Scientific Research (C)(general): Fujii M, Development of non-serum culture medium for selective proliferation of pulp stem cell. 21592422, ¥1,300,000
- 9: Grants-in-Aid for Scientific Research: Yamashita A., Basic study aimed at the control of insulin resistance induced periodontal inflammation that target miRNA. No. 24792331.\ 2,860,000

(5) Academic Awards, etc.

- 1: Misaki Iwashita : Japanese Society of Periodontology : Fiscal year 2011 Young Periodontist Research Award : **May 18, 2012**

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

(1) Staff and Students

Professor	: Katsuyuki Kozai.
Associate Professor	: Chieko Mitsuhata
Research Associate	: Yasutaka Kaihara, Goh Yoshimura(~March), Meiko Tachikake : Noriko Niizato (childcare leave, January, 2012 ~ March, 2013) : Ryoko Hirata (substitute teacher, January, 2012 ~ March, 2013) : Aya Tsuboi, Yukari Ohara (April~)
Physician	: Mihaya Arika (~September), Ryoko Hirata (~January) Satoko Otani (~March), Nami Miyake, Masafumi Kitamoto
Graduate Student	: Yukari Ohara (~March), Hu Yiqun (~September), Yukiko Konishi : Ayumi Shimada, Aomin , Yuko Iwamoto, Noriko Goto : Nobuyuki Tatsukawa, Kaoru Sakurai (April~)
Visiting Research Scholar:	Hu Yiqun (October~)
Research Student	: Akira Yamane
Clinical Trainee	: Fumiko Hayashi, Mihaya Arika (October~), Mie Hirakawa

(2) Main Research Activities

- 1 : Bacteriological research in dental caries in children
- 2 : Molecular biological research of mutans streptococci
- 3 : Research in oral environment and dental diseases in abused children
- 4 : Clinical research in oral care in children suffered from systematic diseases
- 5 : Evaluation of psychological stress in dental treatment in children using chromogranin A
- 6 : Evaluation of dentitional development and 3-D analysis of diagnosis
- 7 : Bacteriological research in periodontal diseases in children
- 8 : Seeking for anti-cariogenic substances extracted from natural sources

(3) Research Achievements

A) Original Papers (including Case Reports)

- 1 : F-spondin regulates the differentiation of human cementoblast-like (HCEM) cells via BMP7 expression: Kitagawa M., Ao M., Miyauchi M., Abiko Y., Takata T.: *Biochem Biophys Res Commun.*, 418(2), 229-233, 2012.
- 2 : Molecular mechanisms of the inhibitory effects of bovine lactoferrin on lipopolysaccharide-mediated Osteoclastogenesis: Inubushi T., Kawazoe A., Miyauchi M., Kudo Y., Ao M., Ishikado A., Makino T., Takata T.: *J Biol Chem.*, 287(28), 23527-23536, 2012.
- 3 : Effectiveness of salivary chromogranin A as a stress index in young children during dental treatment: Mitsuhashi C., Ohara Y., Tachikake M., Kozai K.: *Pediatric Dental Journal*, 22(2), 163-169, 2012.
- 4 : Prevalence of *Porphyromonas gingivalis* fimA genotypes in Japanese children: Hayashi F., Okada M., Oda Y., Kojima T. Kozai K.: *Journal of Oral Science*, 54(1), 77-83, 2012.
- 5 : The Oral Health Condition of Abused Children in Temporary Shelters in Japan: Niizato N., Bannsyodani A., Otani S., Goto N., Iwamoto Y., Yamasaki K., Kozai K.: *Jpn J Ped Dent*, 50(3), 237-242, 2012.
- 6 : A case report of Dysphagia patient with mental retardation and Fallot treated effectively with Mandibular oral appliance: Tachikake M., Ohara Y., Masuda S., Niizato N., Hayashi F., Mitsuhashi T., Kozai K.: *Jpn.J.D.W.*, 17(1), 17-22, 2012.
- 7 : Requirement for Improved Undergraduate Education in Orel Traumatic Injuries: Hirata R., Kaihara Y., Miyake N., Iwahara K., Tsuzuki T., Mitsuhashi C., Kozai K.: *Journal of Japan Association of Dental Traumatology*, 8 (1), 50-56, 2012.
- 8 : A survey of new program in dental clinical training at Hiroshima University Hospital: Nishi H., Tanaka R., Obayashi T., Tsuga K., Kuremoto K., Arakawa M., Uchida Y., Koizumi K., Ono S., Yoshida K., Tachikake M., Okada M., Kawamura M, Nagasaki S., Ogura I., Kajitani K., Okura H., Nakaoka M., Nishimura F., Ogawa T.: *The Journal of Hiroshima University Dental Society*, 44(2) , 107-111, 2012.
- 9 : The Current Status of Dental Caries Unified Lower and Upper Secondary School of Students: Sasahara H., Hayashi F., Kitamoto M., Shimazu A., Kozai K.: *J Dent Hlth* 62(5), 473-477, 2012.

B) Review

- 1 : The important point of growth and development of oral cavity: Kozai K., *The Journal of Child Health*, 71(2), 199, 2012.

C) Publications

- 1 : Wishing filioparental healthy growth Guidebook of dental checkup of infants, Second Edition: Ishiyaku Publisher, Inc., 25, 29, 33, 2012.
- 2 : Present treatment guidelines 15th Edition: Pediatric dentistry and oral surgery: Teeth maxillo-facial injuries: Kozai K. (Coauthor): IGAKU-SHOIN (Tokyo), 853-855, 2012.
- 3 : The book for well-trained pediatric dentists: Temporomandibular disorders in children : Kimura M. (General editor), Takagi Y., Maeda T., Tamura Y. (Editor), Kozai K. (Coauthor): Quintessence Publishing (Tokyo), 384-390, 2012.

D) Other Publications

- 1 : The 8th Biennial Conference PDAA (Pediatric Dentistry Association of Asia) in Bali, Indonesia -report- The first international conference with nervousness, surprise and happiness: Goto N.: Japanese Journal of Clinical Dentistry for Children, 17(10), 7-10, 2012.
- 2 : For Dentists who want to achieve Board certified pediatric dentists in Japan: Overview of Board Examination for Pediatric Dentists: Japanese Journal of Clinical Dentistry for Children, 17(12), 35-39, 2012.
- 3 : Relationship between cardiovascular disease and periodontal disease —Management in childhood—: Kozai K.: Japanese Journal of Pediatrics, 65(7), 1635-1640, 2012.
- 4 : Ask the Doctor: How long should parents brush their children?: Kozai K.: The Chugoku Shimbun, 2012.
- 5 : Ask the Doctor: My daughter who is elementary school student is unwilling to brush her teeth: Kozai K.: The Chugoku Shimbun, 2012.
- 6 : Ask the Doctor: Health care for Children's disease: Should I quit sucking my child finger?: Kozai K.: The Chugoku Shimbun, 2012.

E) Presentation at Scientific Meeting

- 1 : Comparison between the caries severity and property of *Streptococcus mutans* isolated from children: Ohara Y., Yoshimura G., Kozai K.: The 50th Congress of Japanese Society of Pediatric Dentistry (Tokyo), 2012.
- 2 : Effective cell culture methods of stem cells from deciduous teeth: Goto N., Kozai K.: The 50th Congress of Japanese Society of Pediatric Dentistry (Tokyo), 2012.

- 3: Oral condition of participants of educational summer camps for young type 1 diabetic patients: Ariki M., Mitsuhata C., Nakaoka M., Kozai K.: The 50th Congress of Japanese Society of Pediatric Dentistry (Tokyo), 2012.
- 4: Usefulness of the Periodontal Tissue Monitor Kit in clinical pediatric dentistry: Irie Y., Mitsuhata C., Nakaoka M., Kozai K.: The 50th Congress of Japanese Society of Pediatric Dentistry (Tokyo), 2012.
- 5: Evaluation of accuracy on digital study models: Kaihara Y., Katayama A., Amano H., Nikawa H., Kozai K.: The 50th Congress of Japanese Society of Pediatric Dentistry (Tokyo), 2012.
- 6: An preliminary investigation of associated factors of mouth breathing in children: Murakami D., Inada E., Saitoh I., Kaihara Y., Oku T., Iwasaki T., Hasegawa H., Hukami A., Sato H., Takemoto Y., Kubota N., Ito C., Tohiki N., Tanaka M., Igata N., Oshima K., Hayasaki H.: The 50th Congress of Japanese Society of Pediatric Dentistry (Tokyo), 2012.
- 7: Analysis of three dimensional change of children's palates and alveolar ridges in pre-dentition period: Katayama A., Kaihara Y., Amano H., Nikawa H., Kozai K.: The 50th Congress of Japanese Society of Pediatric Dentistry (Tokyo), 2012.
- 8: Three-dimensional evaluation of changes of mandibular dentoalveolar region in infancy: Iwamae S., Kuwahara M., Kanbe C., Kaihara Y., Katayama A., Amano H., Nikawa H., Kozai K.: The 50th Congress of Japanese Society of Pediatric Dentistry (Tokyo), 2012.
- 9: Relationship between dental caries oral Lactic acid bacteria isolated from preschool children: Shimada A., Noda M., Matoba Y., Kumagai T., Kozai K., Sugiyama M.: The 26th Research presentation meeting of Biotechnological results (Hiroshima), 2012.
- 10: Isolation and identification of oral lactic acid bacteria from pre-school children: Shimada A., Noda M., Matoba Y., Kumagai T., Kozai K., Sugiyama M.: The 45th Congress of The Hiroshima University Dental Society (Hiroshima), 2012.
- 11: Dental caries caused by oral lactic acid bacteria from pre-school children: Shimada A., Noda M., Matoba Y., Kumagai T., Kozai K., Sugiyama M.: Japan Society for Lactic Acid Bacteria meeting (tsukuba), 2012.
- 12: Genome-wide analysis of MSX1 target gene in dental pulp cells: Goto N., Fujimoto K., Fujii S., Kozai K., Kato Y.: The 85th Annual meeting of the Japanese biochemical society (Fukuoka), 2012.
- 13: Enhanced proliferation of stem cells from deciduous teeth in serum-free media, STK1/STK2: Goto N., Fujimoto K., Hasegawa S., Kitayama K., Veronica Sainik Ronald., Kozai K., Kato Y.: 8th Biennial Conference PDAA (Pediatric Dentistry Association of Asia), 2012.
- 14: Effects of oral appliance for dysphagia in our University Clinic: Tachikake M., Masuda S., Niizato N., Ohara Y., Hayashi F., Mitsuhata C., Kozai K.: The 17 -18th Annual Meeting of the Japanese Society of Dysphagia Rehabilitation (Sapporo), 2012.
- 15: An investigation on tendency for first-visit patients at the department of Pediatric Dentistry Hiroshima University Hospital –Regional treatment cooperation with case reports–: Mitsuhata C., Ohara Y.,

- Tsuboi A., Hirata R., Tachikake M., Kaihara Y., Kozai K.: The 96th congress of The Hiroshima University Dental Society(Hiroshima), 2012.
- 16: Individualized visual support for developmental disability children for dental practice: Sakurai K., Kaihara Y., Miyake N., Ariki M., Hirata R., Kitamoto M., Amano H., Kozai K.: The 31th Congress of Japanese Society of Pediatric Dentistry Chushikoku Branch (Takamatsu), 2012.
- 17: A case of dentigerous cystectomy during long-term steroid and bisphosphonate therapy: Tsuboi A., Kaihara Y., Niizato N., Mitsuhata C., Kozai K.: The 31th Congress of Japanese Society of Pediatric Dentistry Chushikoku Branch (Takamatsu), 2012.
- 18: Two cases of replantation of deciduous anterior teeth during eruption: Miyake N., Tachikake M., Hirata R., Mitsuhata C., Kozai K.: The 11th Annual Meeting of Japan Association of Dental Traumatology (Gifu), 2012.
- 19: The role in *Staphylococcus aureus* skin-infection, a novel cell wall protein Skip: Hisatsune J., Murakami T., Kojima T., Tatsukawa N., Hayashi I., Yamada S., Kato F., Sugai M.: The 85th annual meeting of Japanese Society for Bacteriology (Nagasaki), 2012.
- 20: Regulatory elements of eta gene expression in *Staphylococcus aureus*: Iwamoto Y., Kato F., Komatsuzawa H., Kozai K., Sugai M.: The 85th Annual Meeting of Japanese Society for Bacteriology (Nagasaki), 2012.
- 21: Effects of automutanolysin (Aml) on *Streptococcus mutans* infection in rats: Hu Y., Iwamoto Y., Kayama S., Kato F., Komatsuzawa H., Tsuruda K., Kozai K., Sugai M.: The 85th Annual Meeting of Japanese Society for Bacteriology (Nagasaki), 2012.
- 22: Effects of Automutation (AML) on *Streptococcus mutans* infection in rats.: Hu Y., Kayama S., Kato F., Kozai K., Sugai M.: The First China International Workshop of Pediatric Dentistry (Xi'an), 2012.
- 23: Oral Infection Deteriorates Endothelial Dysfunction and Lactoferrin Shows Therapeutic Effect in obesity Mouse Model: Ao M., Miyauchi M., Furusho H., Inubushi T., Kozai K., Takata T.: The First China International Workshop of Pediatric Dentistry (Xi'an), 2012.
- 24: Effect of automutanolysin (Aml) on *Streptococcus mutans* infection in rats: Hu Y., Kayama S., Kato F., Tsuruda K., Iwamoto Y., Tomita Y., Thanyasrisung P., Komatsuzawa H., Kozai K., Sugai M.: The 65th Chugoku-Shikoku Branch Meeting of Japanese Society of Bacteriology (Tokushima), 2012
- 25: Inhibitory effect of lactoferrin on *Porphyromonas gingivalis*-deteriorated endothelial dysfunction of aorta in high fat diet-fed obese mice: Ao M., Miyauchi M., Furusho H., Inubushi T., Kozai K., Takata T. : The 55th Spring Meeting of the Japanese Society of Periodontology (Sapporo), 2012.
- 26: *Porphyromonas gingivalis* Deteriorates Endothelial Dysfunction in Obese Mice and Bovine Lactoferrin Shows Therapeutic Effect.: Ao M., Miyauchi M., Furusho H., Inubushi T., Kozai K., Takata T.: First International Conference on *Porphyromonas gingivalis* and Related Bacterial Species. Aug. (Nagasaki), 2012.

- 27: Lactoferrin's Therapeutic Effect on *P. gingivalis* Deteriorating Endothelial Dysfunction in Obesity : Ao M., Miyauchi M., Furusho H., Inubushi T., Kozai K., Takata T.: The 60th Annual Meeting of Japanese Association for Dental Resarch (Niigata), 2012.

F) Special lectures in academic meetings

- 1 : The seminar for public health nurses and nurses in the nurseries: First aid prevention for the dental trauma in nursery schools: Kozai K.: Municipal Abeno Citizen's Learning Center (Abeno), 2012.
- 2 : The Lecture organized by Mihara Nursery League: Relationship between infant development of oral function and eating habits: Kozai K.: Mihara shi Fukushi Kaikan (Mihara), 2012.
- 3 : Education Seminar of Oral and Maxillofacial Radiology: Hints for Dentists: Kozai K.: Hiroshima University (Hiroshima), 2012.
- 4 : The 2nd Annual Meeting of Japan Association of Dental Traumatology Western Japan Branch.: Treatment for oral trauma: Kozai K.: General Lifelong Learning Center (Kitakyusyu), 2012.
- 5 : 2012 Recurrent seminar for dental hygienist: Development of occlusion in children.: Kozai K.: Faculty of Dentistry Hiroshima University (Hiroshima) , 2012.
- 6 : The 20th Annual Meeting of Oral Health Promotion for School Children in Hiroshima Prefecture School dental health activity for creating: Oral and tooth injury ~from a professional point of view~: Kozai K.: Center of Hiroshima Prefecture Dental Association (Hiroshima), 2012.
- 7 : The 59th Annual Meeting of the Japanese Society of Child Health: Symposium: Take care our teeth, eyes, and ears from dating childhood~ for our happy old age Why should we brush our teeth? -Teeth are my life treasure-: Kozai K.: Okayarma Convention Center (Okayama), 2012.
- 8 : The Lecture meeting Hiroshima lifelong learning program: Keys to good teeth and mouth from the infant period: Kozai K.: Hiraiwa Community Center (Higashihiroshima), 2012.
- 9 : The Educational Lecture in the 31th Congress of Japanese Society of Pediatric Dentistry Chushikoku Branch: Approach of the oral appliance for dysphagia in our University Clinic: Tachikake M.: Sunport hall Takamatsu (Takamatsu), 2012.
- 10 : The lecture meeting in Ogaki High School: Oral care for prevention of lifestyle-related disease —To lead our healthy life—: Kozai K.: Ogaki High School (Kure), 2012.
- 11 : Training program for clinical trial specialist to evaluate functional foods: Lecture for talent training, Oral Health Care: Kozai K.: Hiroshima University (Hiroshima), 2012.

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

- 1 : Grant-in-Aid for Challenging Exploratory Research: Kozai K., Contribution to adaptability of novel protein component degradosome produced by Cariogenic Bacteria, 2012: direct expenses: ¥1,400,000, indirect expenses: ¥420,000.
- 2 : Grant-in-Aid for Scientific Research (B): Kozai K., Effects of plaque-eco system on gene of cariogenic bacteria. (No. 2239039), 2011 direct expenses: ¥3,800,000, indirect expenses: ¥1,140,000, 2012: direct expenses: ¥3,600,000, indirect expenses: ¥1,080,000.
- 3 : Grant-in-Aid for Challenging Exploratory Research: Kozai K., Effects of removal of oral biofilm to improve of factors of diabetes in children (No. 21659475) , 2011 direct expenses: ¥900,000, indirect expenses: ¥270,000.
- 4 : Grant-in-Aid for Scientific Research (C): Mitsuata C., Effects of endocrine disorders on developing dopaminergic system in Brain (No.19592354), 2011 direct expenses: ¥1,700,000, indirect expenses: ¥510,000, 2012: direct expenses: ¥1,200,000, indirect expenses: ¥360,000.
- 5 : Grant-in-Aid for Scientific Research (B): Kadomoto N., Development of oral care program using dental drug delivery system for patients who underwent hematopoietic stem cell transplantation (No.21792073), 2011 direct expenses: ¥1,400,000, indirect expenses: ¥420,000.
- 6 : Grant-in-Aid for Scientific Research (B): Tachikake M., Elucidation of the mechanism of the inhibition of the differentiation of osteoblasts by LPS from *A.a.* (No. 21792074), 2011 direct expenses: ¥1,000,000, indirect expenses: ¥300,000.
- 7 : Grant-in-Aid for Scientific Research (B): Tsuboi A., Development of the new valuation basis of mouth complications and oral care program, who underwent medical treatment of childhood cancer.(No. 247922870004), 2012 direct expenses: ¥1,100,000, indirect expenses: ¥300,000.
- 8 : Grant-in-aid Scientific Research (C): Yoshimura G., Oral health intervention for pediatric patients with hematopoietic stem cell transplantation. (No.22592286), 2011: direct expenses: ¥710,000 , indirect expenses: ¥200,000.
- 9 : Ryoku Fuu Kai Research Grant for young investigators: 2012,Ao M., ¥ 500,000.
- 10 : Hiroshima University Supporting Committee Grant for students: 2012: Ao M., ¥ 200,000.

(5) Academic Awards, etc.

- 1 : Yukari Ohara: 2012 JSPD Distinguished Scientists Awards at the 50th Congress of Japanese Society of Pediatric Dentistry (JSPD), 2012.
- 2 : Noriko Goto: The first winner of scientific competition in poster presentation: 8th Biennial Conference PDAA (Pediatric Dentistry Association of Asia), 2012.
- 3 : Noriko Goto: The best winner of scientific competition poster presentation: 8th Biennial Conference PDAA(Pediatric Dentistry Association of Asia), 2012.

(6) Patents

- 1 : Patent application: The preventive agent for dental caries and composition for oral health, No. 2011-144421, Kozai K., Yoshimura G.

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**Department of Dental Anesthesiology,
Integrated Health Sciences
Department of Oral & Maxillofacial Surgery and Oral
Medicine (Dental Anesthesiology)**

(1) Staff and Students

Professor	: Irifune Masahiro, 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., Oue Kana, D.D.S.
Graduate Student	: Ishii Hiroaki, D.D.S., Yamashita Mieko, D.D.S., Yoshinaka Taiga D.D.S., Uno Tamayo D.D.S.
Clinical Trainee	: Kawahara Michio, M.D., Ph.D., Katayama Sohtarō, D.D.S., Ph.D., Kawahara Toshiya, D.D.S., Kawamoto Yasuo, D.D.S., Nishinakamura Ryo, D.D.S., Fukushima Reiko D.D.S., Miyauchi Miwa D.D.S., Ph.D.

(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 antianxiety effects of sedative drugs
- 5: Study on effects of nitrous oxide on cardiovascular system
- 6: Study on chronic pain
- 7: Study on efficacy of chest compressions in cardiopulmonary resuscitation
- 8: Acute medicine for emergency during dental treatments

(3) Research Achievements

A) Original Papers (including Case Reports)

- 1: A way to make a mouthguard for a patient undergoing surgery using transcranial muscle evoked potential monitoring under general anesthesia: the significance of cooperation between medical and dental doctors: Fukushima R, Shimizu Y, Saeki N, Ishii H, Nishinakamura R, Irifune M: Journal of Japanese Dental Society of Anesthesiology, 40 (3), 309-311, 2012.

- 2: General anesthetic management of a patient underwent dental treatment with fibrodysplasia ossificans progressiva: Mukai A, Shimizu Y, Irifune M: Journal of Japanese Dental Society of Anesthesiology, 40 (3), 324-325, 2012.

B) Review

C) Publications

D) Other Publications

- 1: New hope -Hiroshima University-: Ishii H: Journal of Japanese Dental Society of Anesthesiology, 40 (2), 265-266, 2012.

E) Presentation at Scientific Meeting

- 1: General anesthetic management of a systemic amyloidosis patient undergoing oral surgery with chronic renal failure and cardioamyloidosis: Ishii H, Shimizu Y, Uno T, Yamashita M, Yoshinaka T, Oue K, Nishinakamura R, Miyahara T, Mukai A, Yoshida K, Doi M, Irifune M: The 27th Scientific Meeting of Dental Anesthesiology in Chugoku and Shikoku branch (Okayama), 2012.
- 2: A case of myofascial pain diagnosed after tooth extraction: Yoshinaka T, Doi M, Uno T, Yamashita M, Ishii H, Oue K, Nishinakamura R, Miyahara T, Mukai A, Yoshida K, Shimizu Y, Irifune M: The 27th Scientific Meeting of Dental Anesthesiology in Chugoku and Shikoku branch (Okayama), 2012.
- 3: A study of cuff damage during naso-tracheal intubation –analysis of cause about current 3 cases-: Uno T, Shimizu Y, Yoshida K, Kanda T, Minami M, Doi M, Irifune M: The 27th Scientific Meeting of Dental Anesthesiology in Chugoku and Shikoku branch (Okayama), 2012.
- 4: A clinicostatistical study on intravenous sedation using midazolam in combination with propofol in stress-free dental clinic, Hiroshima University Hospital: Yamashita M, Yoshida K, Uno T, Yoshinaka T, Ishii H, Oue K, Nishinakamura R, Miyahara T, Mukai A, Doi M, Shimizu Y, Irifune M: The 27th Scientific Meeting of Dental Anesthesiology in Chugoku and Shikoku branch (Okayama), 2012.
- 5: Efficacy of MR test for diagnosis of idiopathic trigeminal neuralgia: Ishii H, Doi M, Uno T, Yamashita M, Yoshinaka T, Oue K, Irifune M: The 40th Annual Meeting of Japanese Dental Society of Anesthesiology (Fukuoka), 2012.
- 6: General anesthetic management of a patient underwent dental treatment with fibrodysplasia ossificans progressiva: Mukai A, Shimizu Y, Miyahara T, Oue K, Ishii H, Uno T, Yamashita M, Yoshinaka T, Yoshida K, Doi M, Irifune M: The 40th Annual Meeting of Japanese Dental Society of Anesthesiology (Fukuoka), 2012.

- 7: Lung recruitment improved oxygenation of arterial blood during general anesthesia in a patient: Shimizu Y, Kanda T, Miyahara T, Oue K, Yoshinaka T, Yamashita M, Uno T, Yoshida K, Doi M, Irifune M: The 40th Annual Meeting of Japanese Dental Society of Anesthesiology (Fukuoka), 2012.
- 8: Psychosedative management of a patient with Ehlers-Danlos syndrome underwent third molar extraction: Doi M, Mukai A, Oue K, Miyahara T, Ishii H, Yoshida K, Shimizu Y, Irifune M: The 40th Annual Meeting of Japanese Dental Society of Anesthesiology (Fukuoka), 2012.
- 9: Role of C1 domain in propofol-induced ϵ PKC translocation: Miyahara T, Irifune M, Sakai N, Saito N: The 40th Annual Meeting of Japanese Dental Society of Anesthesiology (Fukuoka), 2012.
- 10 : Feasibility study for performing effective chest compressions according to the American Heart Association 2010 Guidelines for CPR : Yoshitaka Shimizu, Koichi Tanigawa, Masami Ishikawa, Masahiro Irifune : American Heart Association 2012 Resuscitation Science Symposium, Los Angeles, U.S.A., 2012.
- 11 : Two cases of symptomatic trigeminal neuralgia induced by epidermoid cyst : Ishii H, Doi M, Uno T, Yamashita M, Yoshinaka T, Oue K, Mukai A, Irifune M: The 17th Scientific Meeting of the Japanese Society of Orofacial Pain (Tokyo), 2012.

F) Special lectures in academic meetings

- 1: Minimum knowledge requirements concerning vital sign in dental clinic: Irifune M: The vital sign seminar of Japanese Dental Society of Anesthesiology and Hiroshima Prefecture Dental Association in 2012 (Hiroshima), 2012.
- 2: Change of CPR guideline affects to chest compression quality –G2010 vs. G2005-: Shimizu Y, Tanigawa K, Ishikawa M, Yoshinaka T, Irifune M: The 5th Japan Resuscitation Science & Symposium (Kobe), 2012.

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

- 1: Grant-in-Aid No. 23592992 for Scientific Research (C) from the Ministry of Education, Culture, Sports, Science, and Technology of Japan (Continued): Irifune M: Elucidation of the role of pain and motor neurons of the spinal cord in antinociception, muscle relaxation, and immobility as general anesthetic components. ¥800,000.
- 2: Grant-in-Aid No. 23792348 for Young Scientists (B) from the Ministry of Education, Culture, Sports, Science, and Technology of Japan (Continued): Doi M: To diagnose lingual pain by imaging: by use of brain functional imaging. ¥600,000.
- 3: Grant-in-Aid No. 24593056 for Scientific Research (C) from the Ministry of Education, Culture, Sports, Science, and Technology of Japan (New): Shimizu Y: Development of a novel general anesthetic method applying selective dopamine receptor subtype ligands. ¥2500,000.

(5) Academic Awards, etc.

- 1: Shimizu Yoshitaka: Excellent Poster Presentation: Change of CPR guideline affects to chest compression

quality –G2010 vs. G2005-: The 5th Japan Resuscitation Science & Symposium (Kobe), 2012.

2: Oue Kana: Matsuda Academic Encouragement Award of Japanese Dental Society of Anesthesiology, 2012.

(6) Patents

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Department of International Collaboration Development for Dentistry, Integrated Health Sciences

(1) Staffs and Students

Professor: Takashi Takata (Chair of ICDD Committee)

Associate Professor: Udiyanto Tedjosongko (Specially appointed; -September)

Ketut Suardita (Specially appointed; October-)

Assistant Professor: Hiroko Oka (Specially appointed)

(2) Main Research Activities

- 1 : Development and evaluation of dental education program cooperated with Asian countries
- 2 : Development and evaluation of Japanese-English dual linguistic education system
- 3 : Study on international exchange program
- 4 : Study on contribution to international community through dentistry
- 5 : Research on the specific mechanisms of destruction in periodontal tissue

(3) Research Achievements

A) Original Papers (including Case Reports)

- 1 : Oral administration of prostaglandin E(2)-specific receptor 4 antagonist inhibits lipopolysaccharide-induced osteoclastogenesis in rat periodontal tissue : Hiroko Oka, Mutsumi Miyauchi, Hisako Furusho, Tatsuji Nishihara, Takashi Takata : Journal of Periodontology, 83, 506-513, 2012.
- 2 : Assessment of a Pilot Collaboration of Trainee Dentists and Undergraduate International Exchange Programs : Hiroko Oka, Udiyanto Tedjosongko, Tetsuji Ogawa, Takashi Takata : Journal of Japanese Dental Education Association, 28, 175-183, 2012.

B) Review

C) Publications

D) Other Publications

E) Presentation at Scientific Meeting

- 1 : Innovation of educational program for undergraduate dental students at Hiroshima University : Hiroko Oka, Yuichi Mine, Udijanto Tedjosasongko, Takashi Uchida, Kazuo Tanne, Hidemi Kurihara, Takashi Takata : 15th Ottawa Conference (Kuala Lumpur, Malaysia) , 2012.
- 2 : BioDental education at Faculty of Dentistry Hiroshima University, Japan-To produce new generation : Yuichi Mine, Takashi Uchida, Fusanori Nishimura, Hiroki Nikawa, Katsuhiko Kozai, Takashi Kanematsu, Takashi Takata : 15th Ottawa Conference (Kuala Lumpur, Malaysia) , 2012.
- 3 : Evaluation of the course work education employing Cognitive Behavior Therapy : Maya Shirakura, Hiroko Oka, Takashi Kamiya, Fumio Suehiro, Motoyuki Sugai, Masao Kobayashi : 15th Ottawa Conference (Kuala Lumpur, Malaysia), 2012.
- 4 : Comparison and synchronization of the dental education system between Airlangga University and Hiroshima University for the International Dental Course Program in Hiroshima University : Udijanto Tedjosasongko, Hiroko Oka, Takashi Uchida, Takashi Takata : The 45th Congress of The Hiroshima University Dental Society (Hiroshima), 2012.
- 5 : Assessment on a pilot collaborating seminar between dental clinical training course and undergraduate international exchange programs at Hiroshima University: Hiroko Oka, Udijanto Tedjosasongko, Tetsuji Ogawa, Takashi Takata : The 45th Congress of the Hiroshima University Dental Society (Hiroshima), 2012.
- 6 : Evaluation of the course work education employing Cognitive Behavior Therapy at Hiroshima University, Graduate School of Biomedical Sciences : Maya Shirakura, Hiroko Oka, Takashi Kamiya, Fumio Suehiro, Kanemitsu Shirasuna, Motoyuki Sugai, Masao Kobayashi : The 45th Congress of The Hiroshima University Dental Society (Hiroshima), 2012.
- 7 : The Hiroshima Univ. International Dental Course : Udijanto Tedjosasongko, Hiroko Oka, Takashi Uchida, Takashi Takata : The 31th Annual Academic Meeting of Japanese Dental Education Association (Okayama), 2012.
- 8 : Assessment on a pilot collaborating seminar between dental clinical training course and undergraduate international exchange programs : Hiroko Oka, Udijanto Tedjosasongko, Tetsuji Ogawa, Takashi Takata : The 31th Annual Academic Meeting of Japanese Dental Education Association (Okayama), 2012.
- 9 : International Programs at HUD 2012 –The International Dental Course and other International Exchange Programs : Hiroko Oka, Udijanto Tedjosasongko, Takashi Takata, Motoyuki Sugai : The 96th Regular Meeting of the Hiroshima University Dental Society (Hiroshima), 2012.
- 10 : THE INTERNATIONAL DENTAL COURSE : A SYNCHRONIZATION OF THE DENTAL EDUCATION FOR JOINT DEGREE PROGRAM : Motoyuki Sugai, Udijanto Tedjosasongko, Hiroko Oka, Takashi Takata : South East Asia Association for Dental Education 23rd Annual Scientific Meeting (HONG KONG), 2012.
- 11 : F-spondin Protects the Root Surface from Resorption. Hiroko Oka, Masae Kitagawa, Takashi Takata : The 60th Annual Meeting of Japanese Association for Dental Research (Niigata), 2012.

F) Special lectures in academic meetings and extension lectures

- 1 : Go through International : Udijanto Tedjosasongko, Hiroko Oka : 2012 Hiroshima University Open Lecture for High School-Students : Hiroshima University School of Dentistry (Hiroshima), 2012

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

- 1 : Grant-in-Aid for Young Scientists (B) : Hiroko Oka : Mechanism of hard tissue destruction controlled by F-spondin via LDL receptor family. (No. 23792103). ¥1,000,000.
- 2 : Hiroshima University Educational research 2012 C : Miyuki Goto, Hiroko Oka, Shinichi Amano, Udijanto Tedjosasongko, Takashi Takata : Development of New Oral Health Program for Elementary School Students which Collaborates to International Communications -Through the Exchange Program with International Dental Course Students-. (No. 13) ¥212,625.

(5) Academic Awards, etc.

- 1 : Hiroko Oka : Incentive Award for the Presentation at international Academic Meetings, Japanese Dental Education Association

(6) Patents

(7) Others

A) The number of the foreign students for the international exchange program

- 1 : The international short exchange program 2012 January: 19 students (Taipei Medical University, 4th-year, Taiwan) : 5 days, 2012.
- 2 : Short Stay Program (JASSO) : 3 students (2 students; University of Washington, United States: 1 students; University of British Columbia, Canada) : 7 days, 2012.
- 3 : The international short exchange program 2012 August: 20 students (Taipei Medical University, 4th-year, Taiwan) : 5 days, 2012.
- 4 : Short Stay Program (JASSO) : 6 students (3 students; Airlangga University, Indonesia: 3 students; University of Medicine and Pharmacy at HoChiMinh City, Vietnam) 6 months, 2012.
- 5 : Short Stay Program (JASSO) : 12 students (2 students; Airlangga University, Indonesia: 2 students; Chulalongkorn University, Thailand: 2 students, Khon Kaen University, Thailand: 2 students; University of Medicine and Pharmacy at HoChiMinh City, Vietnam: 2 students; University of Health

Science, Cambodia) : 10 days, 2012.

6 : International Dental Course 2013: 3 students (Airlangga University, Indonesia; University of Medicine and Pharmacy at HoChiMinh City, Vietnam; University of Health Science, Cambodia), 2012.

7 : International Dental Course 2012: 3 students (Airlangga University, Indonesia; University of Medicine and Pharmacy at HoChiMinh City, Vietnam; University of Health Science, Cambodia), 2012.

B) Homepage of International Program

1 : <http://icdd.hiroshima-u.ac.jp/>

C) Conclusion of Memorandum of Agreement of International Exchange Programs (Support)

1 : Faculty of Odonto-Stomatology, University of Health Science, Cambodia

D) Conclusion of Memorandum of Agreement of International Exchange Programs (Support)

1 : Airlangga University, Indonesia

E) Supporting the International Research Exchange Program

1 : Preparing the documents for sending the research equipment grant from Hiroshima University Faculty of Dentistry to Airlangga University Faculty of Dentistry

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Department of Public Oral Health, Integrated Health Sciences

(1) Staffs and Students

Professor : Masaru Sugiyama
Associate Professor : Maki Nosou, Atsushi Shimazu (Department)
Assistant Professor : Akemi Naitou
Graduate Student : Rumi Nishimura

(2) Main Research Activities

- 1 : Study on oral care
- 2 : Study on the relationship between oral sensitivity and oral functions in elders
- 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 : The green tea polyphenol (-)-epigallocatechin gallate precipitates salivary proteins including alpha-amylase: implications for oral health. : Kumiko Hara, Masaru Ohara, Ikue Hayashi, Takamune Hino, Rumi Nishimura, Yoriko Iwasaki, Tetsuji Ogawa, Yoshihiko Ohyama, Masaru Sugiyama, Hideyuki Amano : Eur J Oral Sci 120(2): 132–139,2012.
- 2 : Research on the Relationship between Dental Health Behavior and Health Consciousness in Junior High School Students: Shimazu A., Makita Y., Sasahara H., Naitou A., Nosou M., Sugiyama M.: J Hiroshima Dent Soc: 44(1), 46-52, 2012.
- 3 : A Study on the Improvement of Dental Health Education Methods for Junior High School Students: Sasahara H., Shimazu A., Kawamura M., Taguchi N., Ogawa T.: J Dent Hlth 62:53-60, 2012.
- 4 : The Current Status of Dental Caries of Unified Lower and Upper Secondary School Students: Sasahara H., Hayashi F., Kitamoto M., Shimazu A., Kouzai K.: J Dent Hlth 62: 473–477, 2012.
- 5 : Bone regeneration in artificial jaw cleft by use of carbonated hydroxyapatite particles and mesenchymal stem cells derived from iliac bone: Yoshioka M, Tanimoto K, Tanne Y, Sumi K, Awada T, Oki N, Sugiyama M, Kato Y, Tanne K: International Journal of Dentistry 2012, Article ID 352510, 8 pages, 2012.

- 6 : Involvement of HMGB1 and RAGE in IL-1 β -induced gingival inflammation: Ito Y, Bhawal UK, Sasahira T, Toyama T, Ato T, Matsuda D, Nishiliori H, Kobayashi M, Sugiyama M, Hamada N, Arakawa H, Kuniyasu H: Archives of Oral Biology 57, 73-80, 2012.
- 7 : A treatment case of skeletal mandibular protrusion with congenital missing of upper right lateral incisor and root resorption of upper left lateral incisor : Iwabuchi Y, Tanimoto K, Hirose N, Sugiyama M, Tanne K : The Journal of Hiroshima University Dental Society 44, 53-60, 2012.

B) Review

C) Publications

- 1 : Chapter 8 5-7. Caries activity tests : Preventing cavities for Dental Hygienist (ed. By Nakagaki H, Katou K, Ishitobi K and Kousaka T) : Niitani Y, Nishimura R : Ishiyaku Publishers, Inc (Tokyo) p114-118, 2012.

D) Other Publications

E) Presentation at Scientific Meeting

- 1 : Research on the relationship between awareness and consultation behavior of various diseases and subjective symptoms in junior high school students.: Shimazu A., Sasahara H., Ogawa T., Nosou M., Sugiyama M.: The 61th Japanese Society for Dental Health (Yokosuka), 2012.
- 2 : Relationship between health consciousness and health behavior related with dentistry in junior high school students.: Shimazu A., Makita Y., Sasahara H., Nosou M., Naitou A., Sugiyama M.: The 23rd the Kinki-Chugoku-Shikoku Branch of the Japanese Society for Dental Health (Otsu), 2012.
- 3 : Comparison of anti-oxidative potency in saliva in age groups by oral massage relaxation.: Nakano Y., Matsumoto A., Niitani Y., Tsuzuki H., Tetsumori K., Shimazu A., Takemoto T.: The 23rd the Kinki-Chugoku-Shikoku Branch of the Japanese Society for Dental Health (Otsu), 2012.
- 4 : The application of practical postgraduate training -The second report of questionnaire investigation- : Hara K, Nishimura R, Fukada E, Tetsumori K, Ikeda M : The 55th Spring Meeting of Japanese Society of Periodontology.(Hokkaido),2012.
- 5 : Validity of the lecture and working of autism, making pictogram in dental hygienist students:Wakita A, Kawai C,Fujino Y, Hayashiuthi Y, Kojima T, Ootsuka Y, Iwamoto M, Yasuzaka M, Matsumoto K, Oda Y, Nishimura R, Fukada E, Hara K,Hayashi F, Okada M:The 29 th Japan Society for Disability and Oral Health.(Hokkaido),2012.
- 6 : Age-related changes of oral sensation and the relationship between oral sensation, and dysphagia and denture-use in elderly : Nishimura R, Yamashita K, Hara K, Amano H, Sugiyama M. : The 60th NPO

Association for Japanese Stomatological Society Cho-shikoku Conference (Hiroshima), 2012.

- 7 : The green tea polyphenol (-)-epigallocatechin gallate precipitates salivary proteins including alpha-amylase : Ohara M, Hara K, Nishimura R, Sugiyama M, Amano H. : The 60th NPO Association for Japanese Stomatological Society Cho-shikoku Conference (Hiroshima), 2012.
- 8 : Study on opportunistic microorganisms in the oral cavity after oral cancer therapy : Sugiyama M, Yamashita K, Nishimura R, Ohara M : The 66th Annual Meeting of the Japanese Stomatological Society (Hiroshima), 2012.
- 9 : CD44-related molecular events underline the choice between self-renewal and differentiation of cancer stem cells in OSCC : Shigeishi H, Higashikawa K, Ono S, Sugiyama M, Kamata N : The 71st Annual Meeting of the Japanese Cancer Association (Sapporo), 2012.

F) Contribution to Community

- 1 : Nishimura R : Assessment of oral function at special nursing home.(2012)
- 2 : Nishimura R : The services to improve oral function are provided in Hatsukaichi city.(2012)
- 3 : Nishimura R : The services to improve oral function are provided in Saka town.(2012)
- 4 : Nishimura R : The oral care of persons requiring nursing care at Hiroshima University Hospital.(2012)
- 5 : Nishimura R : Refresher course for dental hygienists (Step up course) “Study Abroad programs at UCLA”, Hiroshima, 2012.7.12.
- 6 : Nishimura R : Teaching nurses proper oral hygiene techniques to maintain healthy teeth and gums at Kusatsu Hospital, Hiroshima, 2012.7.19.
- 7 : Shimazu A : Dental Support Activity in Cambodia (Cambodia) , 2012.
- 8 : Shimazu A : Oral health activity in Junior High School Students in Hiroshima (Hiroshima) , 2012.
- 9 : Shimazu A : Dental Examination for Acidity and Alkalinity (Hiroshima) , 2012.
- 10 : Shimazu A : Dental Examination for Infants (Higashi-Hiroshima) , 2012.
- 11 : Sugiyama M : Refresher course for dental hygienists (Step up course), Hiroshima, 2012.11.22.

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

1 : Grants-in-Aid for Scientific Research (Scientific Research (C)) : Sugiyama M: Optimization of the bone regeneration method in transplantation of mesenchymal stem cells and its application for closure of alveolar cleft. (No. 23593029). ¥200,000.

(5) Academic Awards, etc.

(6) Patents

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Department of Maxillofacial Functional Development, Integrated Health Sciences

(1) Staff and Students

Professor : AMANO Hideaki

Lecturer : HARA Kumiko

Assistant Professor : TSURUDA Keiko

Graduate Student : IWAMOTO Akiko, FUKADA Eri, TETSUMORI Kotomi, SATO Manami

(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

- 1 : The green tea polyphenol (-)-epigallocatechin gallate precipitates salivary proteins including alpha-amylase: implications for oral health. : Kumiko Hara, Masaru Ohara, Ikue Hayashi, Takamune Hino, Rumi Nishimura, Yoriko Iwasaki, Tetsuji Ogawa, Yoshihiko Ohyama, Masaru Sugiyama, Hideaki Amano : Eur J Oral Sci 120: 132-139, 2012
- 2 : The Directionality of the Education for Oral Care - Based on an analysis of the workshop for Practice Oral Care - : Ayako Sakoda, Ryouichi Yasui, Kumiko Hara : Oral Care Mate No.6, 8-12, 2012.6.30.
- 3 : About some Convenient Toothpastes and Mouth rinses : Hiroya Kawamoto, Takane Maruyama, Midori Shikada, Asako Maehara, Kumiko Hara : Oral Care Mate No.6, 19-24, 2012.6.30.

B) Reviews

C) Books

D) Other Publications

E) Presentations

- 1 : Effects of automutanolysin (Aml) on Streptococcus mutans infection in rats. :Yiqun Hu¹, Yuko Iwamoto¹, Shizuo Kayama¹, Fuminori Kato¹, Hitoshi Komatsuzawa, Keiko Tsuruda¹, Katsuyuki Kozai, Motoyuki Sugai¹: The 85th annual meeting of Japanese Society for Bacteriology (Nagasaki)2012. 3.27.
- 2 : An Assessment of the three-dimensional growth changes of the oral morphology with plaster models of the infants. – Based on the Observation records of the Lower Jaws of the infants up to 1 year 6 months - :Satoko Iwamae, Miyoko Kuwahara, Chie Kanbe, Yasutaka Kaihara, Asami Katayama, Hiroki Nikawa, Hideaki Amano, Katsuyuki Kozai : 50th Annual Meeting of Japanese Society of Pediatric Dentistry (Tokyo),2012.5.13
- 3 : An Assessment of Reproducibility of the Digital Study Models : Yasutaka Kaihara, Asami Katayama, Hideaki Amano, Hiroki Nikawa, Katsuyuki Kozai : 50th Annual Meeting of Japanese Society of Pediatric Dentistry (Tokyo), 2012.5.13
- 4 : An availability study of the practical postgraduate training. 1.Introduction of the program : Masami Sato, Takashi Matsumoto, Kumiko Hara, Masahiko Ikeda : The 55th Spring Meeting of the Japanese Society of Periodontology (Sapporo) 2012.5.19.
- 5 : An availability study of the practical postgraduate training. 2. Questionnaire study : Rumi Nishimura, Kumiko Hara, Eri Fukada, Kotomi Tetsumori, Masami Sato, Masahiko Ikeda : The 55th Spring Meeting of the Japanese Society of Periodontology (Sapporo) 2012.5.19.
- 6 : An availability study of the coursework making the cards with picture - Change in student attitudes for disabled- : Atsuko Wakita, Chieko Kawai, Youko Fujino, Yuki Rinnai, Tarou Kojima, Yasue Otsuka, Megumi Iwamoto, Masaki Yasuzaka, Kouichirou Matsumoto, Yuki Oda, Rumi Nishimura, Eri Fukada, Kumiko Hara, Fumiko Hayashi, Mitsugi Okada : The 29th annual meeting of the Japanese Society for Disability and Oral Health (Sapporo) 2012.9.18.
- 7 : The interaction between the green tea polyphenol (-)-epigallocatechin gallate and the salivary proteins : Masaru Ohara, Kumiko Hara, Rumi Nishimura, Masaru Sugiyama, Hideaki Amano : The 60th Chyu-shikoku annual meeting of the Japanese Stomatological Society(Hiroshima) 2012.10.06
- 8 : A Study of the relationship between the age- related changes of sensory thresholds in the oro-facial region and the feeding disorder, dysphagia and denture wearer. : Rumi Nishimura, Kaoru Ymashita, Kumiko Hara, Hideaki Amano, Masaru Sugiyama : The 60th Chyu-shikoku annual meeting of the Japanese Stomatological Society(Hiroshima) 2012.10.06
- 9 : A Study of the diagnostic method of suckling and swallowing functions from measurement of internal

pressure of oral cavity : Eri Fukada, Masaru Sugiyama, Hideaki Amano : The 60th Chyu-shikoku annual meeting of the Japanese Stomatological Society(Hiroshima) 2012.10.06

- 10 : Some vision-aided methods fitted with the specific characteristics of each disabled child in the dental treatments : Kaoru Sakurai, Yasutaka Kaihara, Nami Miyake, Mihaya Arika, Ryouko Hirata, Masasi Kitamoto, Hideaki Amano, Katsuyuki Kozai : 31th Chyu-Shikoku Annual Meeting of Japanese Society of Pediatric Dentistry (Takamatsu)2012.11.4
- 11 : A study on the understandings of the dental hygiene instructors and issues of the education method of Dental Hygiene Process in Dental Hygiene Education : Emiko Nakano, Hisako Wada, Yoshie Niitani, Yumi Hoshino, Yukiko Murakoshi, Chieko Nagano, Kumiko Hara, Naomi Yoshida, Aiko Fujiwara, Keiko Endo : The 3rd annual meeting of the Japanese Society Of Dental Hygiene Education (Nagoya) 2012.12.01

F) Lectures

- 1 : Hara K. : Let's try to do the training for improvement of oral function in your clinic : Recurrent Workshop for dental hygienists (Hiroshima), 2012.2.23
- 2 : Hara K. : Lecture for the class for diabetics : Hiroshima Teishin Hospital (Hiroshima), 2012.6.14.
- 3 : Hara K. : Workshop of oral care for nurse : Kusatsu Hospital (Hiroshima), 2012.7.19.
- 4 : Hara K. : Lecture for the step-up seminar : The Study Group for Oral Care in Hiroshima (Hiroshima), 2012.11.7-8.

G) Social Contributions

- 1 : Program for kids from elementary schools, Dental Kids, "Let's Be a Dentist!": Hiroshima University Faculty of Dentistry, 2012.
- 2 : Program for high school students, Dental Kids: Hiroshima University Faculty of Dentistry, 2012.
- 3 : Cooperate to the assessment of the Program for improvement of oral function in the ambulatory care facility "Kosei-En", 2012.

(4) Grant-in-Aid for Scientific Research

- 1 : 2012th grant-in-aid for scientific research : AMANO H.: A Study of Intraoral pressure Change for the Clinical Diagnosis System of Ability to Swallow. (No. 24593093)
- 2 : 2012th grant-in-aid for scientific research : Tsuruda K. : Development of the method of preventing infection under control of the mucosal genes. (No.22592333)

(5) Awards

1 : HARA K. : Commendation for person of merit of dental hygienist by the Minister of Health, Labour and Welfare, 2012.

(6) Patents

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Department of Oral Health Management, Integrated Health Sciences

(1) Staffs

Professor: Toshinobu TAKEMOTO

Assistant professor: Atsue MATSUMOTO

Research associate: Yoshie NIITANI

Graduate student: Hinako TSUZUKI, Takafumi OCHIAI (From April)

Graduation thesis student: Kaori OZEKI, Haruno HAMASUNA, Miho TOYOTA, Yui KOTAKE, Saki OGURA, Chisato OHSHITA, Miho KUME, Kotoko HIROSE, Midori KOHMURA, Akiko OHARA, Manami TATSUMOTO, Yukiko YAMANOI, Kiyomi HARAJIRI, Shoko KATAYAMA

(2) Research Fields

- 1 : Dental hygienists education
- 2 : Research about dental hygienists occupation
- 3 : Career formation of students
- 4 : 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 : [Investigation on the consciousness about male dental hygienists by dentists –Analysis of cross sectional research to director of private dental clinic in Hiroshima prefecture][ja]. Imari N., Takemoto T., Tsuzuki H., Niitani Y., Matsumoto A.: J. Hiroshima Univ. Dent. Soc., 43(2), 2011-2012.

2 : [Research on effects of oral relaxation in finger venous blood vessel width and antioxidative potency][ja]: Matsumoto A., Niitani Y., Tsuzuki H., Tetsumori K., Fukada E., Tamura A., Iwamoto A., Nishimura R., Morioka S., Shimazu A., Takemoto T.: JJSDH, Vol.6 No.2, 49-54,2012.

C) Books

1 : [Prophylactic treatment of dental caries for dental hygienists][ja]: The newest series of textbook for dental hygienists (Matsumoto A.: Contributor): (Niitani Y.: Contributor) , Editors: Nakagaki H., et al, Ishiyaku Publishers (Tokyo) 2012.

2 : [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 Hygienist Education, Ishiyaku Publishers (Tokyo) 2012.

3 : [Basic theory and practical process for prothodontic dentistry][ja]: The newest series of textbook for dental hygienists (Matsumoto A.: Contributor): Edited by the Japan Association for Dental Hygienist Education, Ishiyaku Publishers (Tokyo) 2012.

E) Presentations at Scientific Meeting

1 : [Practice and Evaluation of PBL tutorial for first-year dental students over three years][ja]: Taji T., Taguchi N., Takemoto T., Tamamoto M., Miyauchi M., Watanabe M., Mizuta K., Ueda H., Shimazu A., Ogawa T., Uchida T. : The 31th Annual Meeting of Japanese Dental Education Association (Okayama), 2012.

2 : [Comparison of anti-oxidative potency in saliva by oral relaxation in various age groups][ja]: Nakano Y., Matsumoto A., Niitani Y., Tsuzuki H., Tetsumori K., Shimazu A., Takemoto T.: The 23rd Annual Meeting of the Kinki-Chugoku-Shikoku Branch of the Japanese Society for Dental Health (Shiga), 2012.

3 : [Experimental assessment of bacterial biofilm formation in the water tube of dental unit chair][ja]: Niitani Y., Ouhara K., Hino T., Shiba H., Kurihara H.: The 45th Annual meeting of the Hiroshima University Dental Association (Hiroshima), 2012.

4 : [Current education needs of undergraduate dental hygiene education regarding dental hygiene process][ja]: Nagano E., Wada H., Niitani Y., Hoshino Y., Murakoshi Y., Nagano C., Hara K., Yoshida N., Fujihara A., Endo K.: The 3rd Annual Meeting of Japan Society of Dental Hygiene Education (Aichi), 2012.

5 : [Survey about the factors which determines the one's easiness for communication][ja]: Ogura S., Ogawa T., Takemoto T.: The 14th Annual Meeting of Chugoku-Shikoku Chapter of Communication Association of Japan (CAJ) • The 6th Seminar of Medical Communication Education and Research (Hiroshima), 2011.

6 : [Research about the factors which determines the easiness of communication][ja]: Ogura S., Ogawa T., Takemoto T.: The 15th Annual Meeting of Chugoku-Shikoku Chapter of Communication Association of Japan (CAJ) • The 7th Seminar of Medical Communication Education and Research (Hiroshima), 2012.

7 : [Research about getting one's "consent"][ja]: Ohara S., Ogawa T., Takemoto T.: The 15th Annual

Meeting of Chugoku-Shikoku Chapter of Communication Association of Japan (CAJ) • The 7th Seminar of Medical Communication Education and Research (Hiroshima), 2012.

○Presentation of Graduation Thesis 2012 (Hiroshima), 2012.

1. [The relation between oral uncomfortable feeling and stress factors.][ja]: Ozeki K.
2. [Survey about factors affecting the progress in the technique of glass ionomer cement preparation of dental hygienist students.][ja]: Ohshita C.
3. [Research about the factors which determines the easiness of communication –A questionnaire paper survey to 3rd and 4th grade dental hygienists students and dental hygienists in university hospitals.][ja]: Ogure S.
4. [The relation between the infection control and “Organizational Climate Scale” of private dental clinic and department of dentistry in general hospitals.][ja]: Hamasuna Y.
5. [The present situation of dental implant and the role of dental hygienists.][ja]: Kotake Y.
6. [The consciousness of private dental clinics about protection against disasters and its regional difference.][ja]: Kume M.
7. [The consciousness of Oral Health Science students about tobacco smoking and smoking prohibition.][ja]: Toyoda M.

F) Lectures

- 1:[The image of dental hygienist students to each other –The result of cross-sectional survey to the students-][ja]: Takemoto T., Nakamori T.: Annual meeting of Hiroshima Association of Dental Hygienist Education (Hiroshima), 2012.
- 2:[Lecture about mouth, group instruction of tooth][ja]: Matsumoto A.: Child-care course of a community program of the nursery school, Danbara Mimyo Nursery School (Hiroshima) : 2012.
- 3:[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) : 2012.
- 4:[Oral care for pregnant woman and new born infant][ja]: Matsumoto A., School for pregnant women in Gynecology department of Hiroshima University Hospital (Hiroshima) , 2012.
- 5:[Outpatient Preventive Care Project for Specified elderly person at Hatsukaichi city][ja]:Matsumoto A.: Held at Tsuda, Miyazono, Ajina-dai, Ohno, Asahara,(Hiroshima), 2012.
- 6:[Dental Hygiene 2][ja]: Niitani Y,: JADHE program I for teachers in dental hygienists schools (Aichi) 2012.

G) Social Contributions

- 1 :Program for kids from elementary schools, Dental Kids, “Let’s Be a Dentist!”: Hiroshima University Faculty of Dentistry, 2012.
- 2 :Renewal seminar for teacher’s license: Takemoto T, Hiroshima University (Hiroshima), 2012.
- 3 :Member of Dental Hygienists’ National Examination Committee: Matsumoto A., Niitani Y.: Foundation of Promoting Dental Care and Training, 2012.
- 4 :Secretary of the regional association of Kinki , Chugoku and Shikoku area for Japanese Society for Dental Health: Matsumoto A, 2012.
- 5 : Editorial committee of The Journal of Japan Society for Dental Hygiene.: Matsumoto A, Japan Society for Dental Hygiene (Tokyo), 2012.
- 6 :Editorial board of The Journal of Japan Society for Dental Hygiene.: Matsumoto A, Japan Society for Dental Hygiene (Tokyo), 2012.
- 7 :Educational committee of Japanese Association for Dental Hygienists Education, Niitani Y, JADHE (Tokyo), 2012.
- 8 :Member of dental working group in committee of National University Hospital infection control association: Niitani Y., Training seminar at Chugoku-Shikoku Block in 2011(Okayama), 2012

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

- 1 :Grant-in-Aid for Scientific Research (C): Takemoto T.: The analysis of factors indicating the quit of dental hygienist and settling a plan for the prevention. (No.23593090). ¥650,000
- 2 :Grant-in-Aid for Scientific Research (C): Matsumoto A.: Study about the efficacy of ‘oral relaxation method’ in the prevention of mental stress. (No.21592649).

(5) Academic Awards

1 :Matsumoto A.: The 7th Sunstar award for scientific article (Encouragement award) of the Japanese society of dental health

Prize winning article:

[Research on effects of oral relaxation in finger venous blood vessel width and antioxidative potency] [ja]: Matsumoto A., Niitani Y., Tsuzuki H., Tetsumori K., Fukada E., Tamura A., Iwamoto A., Nishimura R., Morioka S., Shimazu A., Takemoto T.: JJSDH, Vol.6 No.2, 49-54,2012.

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Department of Anatomy and Functional Restorations, Integrated Health Sciences

(1) Staff and Students

Professor : Takahiro Satoda

Associate Professor : Saiji Shimoe

Graduate Students : Shougo Iwaguro, Yuji Chiba, Syouji Matsushita, Hiroki Nishida,
Kanao Touma

(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 : A hand-made model for embryological instruction of the branchial cartilages : Arima Y, Honda H, Hirose K, Shimoe S, Satoda T : Structure and Function, Vol.11(1), pp.10-15, 2012.
- 2 : Influence of surface treatments on bonding between zirconia ceramic material and denture base resin : Chiba Y, Shimoe S, Iwaguro S, Satoda T : Journal of Nippon Academy of Dental Technology, Vol.33, (1), pp.1-5, 2012.
- 3 : Influence of air-abrasion and subsequent heat treatment on bonding between zirconia framework material and indirect composites : Shimoe S, Tanue N, Kusano K, Okazaki M, Satoda T : Dental Materials Journal, Vol.31(5), pp.751-757, 2012.

B) Review

C) Publications

- 1 : Netter's Head and Neck Anatomy for Dentistry : Ishiyaku Publishers Inc, Tokyo, chapter 19, Eye , Satoda T, translation 2012～.
- 2 : The new series of textbooks for dental technologist-Dental technology of restoration : Suese K, Matsumura H, Marumo Y, Kumono Y, Shimoe S : Ishiyaku Publishers, Inc , Tokyo, 174, 2007～.
- 3 : The new series of textbooks for dental technologist-Dental technology practical training : Kanai M, Kuwata M, Shimoe S, Maeda Y, Matsumura H, Miura H et al : Ishiyaku Publishers, Inc ,Tokyo, 207, 2008～.

D) Other Publications

E) Presentation at Scientific Meeting

- 1 : A hand-made functional model of the forearm : Satoda T, Mitsugi J, Arima Y, HiroseK, Shimoe S: The 117th Annual meeting of Japanese Association of Anatomists (Yamanashi), 2012,3,26-28.
- 2 : Development of 3DCG for easy understanding of swallowing : Michiwaki Y, Itho N, Sumida K, Kitamura S, : The 117th Annual meeting of Japanese Association of Anatomists (Yamanashi), 2012,3,26-28.
- 3 : Objective evaluation of posterior tooth carving using three-dimensional images-Comparision with subject evaluation- : Yamamoto S, Shimoe S, Satoda T, Tamamoto M, Kihara T, Murayama T, Nikawa H : The 34^h Annual Meeting of Nippon Academy of Dental Technology (Okayama), 2012.9.15,16.
- 4 : Effect of alumina-blasting on bonding of composit resin to P-NANOZR : Takagi Y, Shimoe S, Kisaka T, Yamamoto S, Tiba Y, Iwaguro S, Satoda T : The 34^h Annual Meeting of Nippon Academy of Dental Technology (Okayama), 2012.9.15,16.
- 5 : Effect of surface treatments on bonding of denture base resin to Ce-TZP/alumina nanocomposite : Kisaka T, Shimoe S, Satoda T, Iwaguro S, Chiba Y, Takagi Y, Yamamoto S : The 34^h Annual Meeting of Nippon Academy of Dental Technology (Okayama), 2012.9.15,16.
- 6 : Functional model of Shoulder joint : Takabayashi K, Yamamoto S, Takagi Y, Kisaka T, Shimoe S, Satoda T: The 34^h Annual Meeting of Nippon Academy of Dental Technology (Okayama), 2012.9.15,16.
- 7 : Functional model of Shoulder Joint : Satoda T, Takabayashi K, Yamamoto S, Takagi Y, KisakaT, Shimoe S : The 11th Annual meeting of Co-medicalFunction and Structure Association (Tokyo) 2012,9,22.
- 8 : Functional model of Shoulder Joint : Takabayashi K, Yamamoto S, Takagi Y, Kisaka T, Shimoe S, Satoda T : The 67th Annual Meeting of Japanese Association of Anatomist, Cyugoku-Shikoku regional meeting (Yamaguchi)2012,10,20-21.
- 9 : Functional model of Shoulder Joint : Takabayashi K, Yamamoto S, Takagi Y, Kisaka T, Shimoe S, Satoda T : The 51st annual meeting of Hiroshima Prefecture Dental Association and The 96th annual meeting of Hiroshima University Dental Society (Hiroshima) 2012,10,28.

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

- 1: Grant-in-Aid for Scientific Research(C): Shimoe S: Development of tooth-friendly zirconia crown restorations optimized polymer composite resins for the clinical application. (No.24592916).
¥1,600,000

(5) Academic Awards, etc.

(6) Patents

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Yoshimi Y, Nagasaki T, Murayama T, Tanne K, Nikawa H: Am J Orthod Dentofacial Orthop 141(6), 806-13, 2012.

- 3: Development of a system for evaluating abutment teeth: Murayama T, Kawakami M, Miyamamoto K, Eguchi T, Tamamoto M: Advanced Biomedical Engineering, Vol.1, pp.23-26, 2012.

B) Review

C) Publications

- 1: CAD/CAM Dental Technology: Suese K, Murayama T et al.: Ishiyaku Pub, Inc.(Tokyo), pp.14-39, 2012.

D) Other Publications

- 1: Application of estimation of distribution algorithms for job shop scheduling: Eguchi T, Fujimoto M, Murayama T: ACTIVITY REPORT 2011 of Technical Committee on Integrated Manufacturing Systems, The Japan Society of Precision Engineering, pp.19-24, 2012.

E) Presentation at Scientific Meeting

- 1: Development of a system for evaluating abutment teeth for CAD/CAM: Masu S, Murayama T, Kawakami M: Japan 3rd Meeting of Academy of CAD/CAM Dentistry(Tokyo), 2012.
- 2: Development of a system of evaluating tooth preparation: Masu S, Kawakami M, Murayama T, Eguchi T, Tamamoto M: 34th Meeting of the Nippon Academy of Dental Technology (Okayama), 2012.
- 3: Research on prostheses for animals: Nagata A, Murayama T, Tamamoto M: 34th Meeting of the Nippon Academy of Dental Technology (Okayama), 2012.
- 4: Objective evaluation of posterior tooth carving using three-dimensional images -Comparison with subject evaluation-: Yamamoto S, Shimoe S, Satoda T, Tamamoto M, Kihara T, Murayama T, Nikawa H: 34th Meeting of the Nippon Academy of Dental Technology (Okayama), 2012.
- 5: A study on objective and schematic assessment of practice by dental technicians -Assessment of students one year before graduated in 2-, 3- and 4-year dental technicians schools-: Ozaki J, Suese K, Tamamoto M, Sugita J, Ichikawa M, Koizumi J: 34th Meeting of the Nippon Academy of Dental Technology (Okayama), 2012.
- 6: Development of a system for evaluating abutment teeth: Murayama T, Kawakami M, Miyamoto K, Eguchi T, Tamamoto M: 2012 Symposium on Biomedical Engineering(Osaka), 2012.
- 7: Health monitoring system using wearable sensors involved in dentures: : Murayama T, Houchi H, Eguchi

- T, Shimoe S, Tamamoto M: 2012 Symposium on Biomedical Engineering(Osaka), 2012.
- 8: Dynamic Job Shop Scheduling with Sequence Dependent Setup Times: Nishi K, Eguchi T, Murayama T: 2012 Annual Congress of The Japan Society of Mechanical Engineers(Kanazawa), Proceedings of JSME No.12-1, pp.1-5, 2012.
- 9: Study on methods of cleaning mouth guards: Fujimoto N, Nakanodo M, Nishikawa M, Tamamoto M, Murayama T: Chugoku-Shikoku Meeting of The Japanese Stomatological Society(Hiroshima), 2012.
- 10: Effects of water immersion on the physical properties of maxillofacial prosthetic silicone materials: Nishikawa M, Fujimoto N, Nakanodo M, Tamamoto M, Murayama T: Chugoku-Shikoku Meeting of The Japanese Stomatological Society(Hiroshima), 2012.
- 11: Scheduling to meet due date with capacity adjustment –An efficient search method using the mixture of GA and priority rule-: Yoda M, Eguchi T, Murayama T: the 55th Japan Joint Automatic Control Conference(Kyoto), 1C207, pp.182-186, 2012.

F)Special Lectures in Academic Meetings

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

- 1: Grants-in-Aid for Scientific Research (Challenging Exploratory Research): Murayama T (Representative), Health monitoring system using wearable sensors involved in dentures. No. 23650352.600, 000yen
- 2: JST A-STEP(Adaptive and Seamless Technology Transfer Program through Target-driven R&D) FS-stage: Murayama T(Cooperation), Development of high-precision pressing system for dental titanium mesh and band. No.AS232Z02507F. 400, 000yen

(5) Academic Awards, etc.

(6) Patents

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Department of Oral Biology & Engineering, Integrated Health Sciences

(1) Staff and Students

Professor : Hiroki Nikawa

Lecturer : Hisako Sasahara, Tsuyoshi Taji

Assistant Professor : Kazuko Kawahara

Assistant Professor : Yuichi Mine, Kaori Taguchi (H24.10-)

(Special Appointment)

Administrative Staff : Miki Onji (-H24.8), Haduki Yamaguchi (H24.9-)

Education and Research Support Staff : Kaori Taguchi

Graduate Student : Takuya Kihara, Yuichi Mine, Sumiyo Mimura, Yukihiro Takayama,
Sachie Hogaki, Minako Okamura, Yuko Katabuchi, Minako Shinkawa,
Tomoya Tamura, Minako Hiramatsu, Rie Fukuda, Eri Morooka, Yu Yamaguchi,
Kaori Yushita, Asami Katayama, Megumi Kurose, Yu Tomiyama,
Natsumi Yamamoto,

Undergraduate Student : Mikiko Kurose, Mari Sakata, Ayumi Sato, Kentaro Takagi, Xiaoxu Zhang,
Kento Nakashima, Yosuke Hikichi, Mayumi Fukuda, Shizuka Horibe,
Ayaka Ando, Chika Umemoto, Masahiro Okuni, Chiaki Okada,
Miku Kuimoto, Eri Tanaka, Tetsuo Hatanaka, Yumi Hamamoto,
Megumi Hirooka, Ryutarō Fujimura, Ai Manabe, Satoshi Miyauchi

(2) Main Research Activities

- 1 : Mechanisms on allergy caused by dental materials
- 2 : Study on candidal biofilms and denture plaque
- 3 : Study on dental caries and probiotics
- 4 : Design for cationic antimicrobial peptides
- 5 : Study on large-scale proliferation of the mesenchymal stem cells using antimicrobial peptides
- 6 : Study on mechanisms of the alveolar bone resorption and on bone - resorption inhibitors
- 7 : Study on dental implant materials

(3) Research Achievements

A) Original Papers (including Case Reports)

- 1 : Biomimetic diamond-like carbon coated titanium inhibits RANKL-dependent osteoclast differentiation in vitro. : Mine Y, Nakatani T, Okamoto K, Makihira S, Iwata S, Nikawa H.: Journal of Photopolymer Science and Technology 25(4):523-528. 2012
- 2 : Construction of orthodontic setup model on a computer. :Kihara T, Tanimoto K, Michida M, Yoshimi Y, Nagasaki T, Murayama T, Tanne K, Nikawa H.: American Journal of Orthodontic and Dentofacial Orthopedics. 141(6):806-813. 2012

B) Review

C) Publications

D) Other Publications

E) Presentation at Scientific Meeting

- 1: Innovation of educational program for undergraduate dental students at Hiroshima University : Oka H, Mine Y, Tedjosasongko U, Uchida T, Tanne K, Kurihara H, Takata T : 15th Ottawa Conferences Malaysia H24.3.9-13
- 2: BioDental education at Faculty of Dentistry Hiroshima University, Japan —To produce new generation of leaders in dentistry— : Mine Y, Uchida T, Nishimura F, Nikawa H, Kozai K, Kanematsu T, Takata T : 15th Ottawa Conferences Malaysia H24.3.9-13
- 3: Direct and indirect effects of Interleukin-33 on osteoclast differentiation in vitro : Mine Y, Yamaguchi Y, Makihira S, Tanaka H, Furue MK, Nikawa H :2012 World Congress of In vitro Biology U.S.A. H24.6.3-7
- 4: Prospect of neural cells derived from human pluripotent stem cells for application of in vitro developmental toxicity test : Mimura S, Suga M, Kinehara M, Tateyama D, Hirata M, Nikawa H, Yanagihara K, Furue MK : 2012 World Congress of In vitro Biology U.S.A. H24.6.3-7
- 5: Verifying the accuracy of a dental fiberscope navigation system : Ikawa T, Yamazaki Y, Yamamoto T, Kihara T, Shigeta Y, Momoi Y, Hosoya N, Ogawa T : 90th General Session & Exhibition of the International Association for Dental Research H24.6.20-23
- 6: The development of an innovative analysis device for occlusal contacts : Ogawa T, Kihara T, Ikawa T, Hirabayashi R, Shigeta Y, Ando E, Hirai S, Moriyama T, Kitamura T, Suzuki S, Hayakawa T : 90th General Session & Exhibition of the International Association for Dental Research H24.6.20-23

(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, Yuichi Mine (Co-investigators) : Research Project Number:24390434
- 2: Grants-in-Aid for Scientific Research (Scientific Research (C)) : Tsuyoshi Taji (Head), Hiroki Nikawa (Co-investigators) : Research Project Number:23592851
- 3: Grants-in-Aid for Scientific Research (Scientific Research (C)) : Kazuko Kawahara (Head) , Hiroki Nikawa (Co-investigators) : Research Project Number:22592334
- 4: Grants-in-Aid for Scientific Research (Scientific Research (B)) :Yuichi Mine (Co-investigators) : Research Project Number: 24390437

(5) Academic Awards, etc.

- 1: Sumiyo Mimura : The 2012 World Congress on In Vitro Biology Wilton R. Earle Award, SIVB Student Travel Award 2012.6

(6) Patents

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Central Research Laboratory

(1) Staff and Students

Director : Fusanori Nishimura(～3, 31), Kouichi Kato (4, 1～) (by-work)

Assistant Professor : Ikue Hayashi

(2) Main Research Activities

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

(3) Research Achievements

A) Original Papers (including Case Reports)

- 1: The *Listeria monocytogenes* serotype 4b autolysin IspC has *N*-acetylglucosaminidase activity: Ronholm J., Wang L., Hayashi I., Sugai M., Zhang Z., Cao X., Lin M. : *Glycobiology*, 22(10), 1311-1320, 2012
- 2: Nucleolin Participates in DNA Double-Strand Break-Induced Damage Response through MDC1-Dependent Pathway : Kobayashi J., Fujimoto H., Sato J., Hayashi I., Burma S., Matsuura S., Chen J. D., Komatsu K.: *PLOS ONE*, 7 (11), e49245, 2012.
- 3: Evaluation of systemic markers of inflammation in atomic-bomb survivors with special reference to radiation and age effect: Hayashi T., Morishita Y., Khattree R., Misumi M., Sasaki K., Hayashi I., Yoshida K., Kajimura J., Kyoizumi S., Imai K., Kusunoki Y., Nakachi K. : *The FASEB journal*, 26, 4765-4773, 2012.

B) Review

C) Publications

D) Other Publications

E) Presentation at Scientific Meeting

- 1: The role in *Staphylococcus aureus* skin-infection, a novel cell wall protein Skip: Hisatsune J., Murakami

T., Kojima T., Tatsukawa N., Hayashi I., Yamada S., Kato F., Sugai M.: 85th Annual Meeting for Japanese Society for Bacteriology, (Nagasaki) 2012.

2: Nucleolin participates in MDC1-related DNA damage response : Kobayashi J., Fujimoto H., Hayashi I., Komatsu T., The 35th Annual Meeting of the Molecular Biology Society of Japan (Fukuoka) 2012.

3: 「MALDI TOF/MS」 ～Identification of bacteria by mass spectrometry～: Hayashi I., 32nd Hiroshima Infection Forum (Hiroshima) 2012.

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

1: Research project, Grant-in-Aid for Scientific Research (C): Hayashi I: Mechanism of automutanolysin (Aml) for the specific selectivity toward cariogenic bacteria:(No. 23592702), ¥1,430,000

(5) Academic Awards, etc.

(6) Patents

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Department of Advanced General Dentistry, General Dentistry

(1) Staff and Students

Professor :Tetsuji Ogawa

Lecturer :Yoshihara Tanaka, Masaru Ohara, Hiromi Nishi

Graduate Student :Taiji Obayashi, Kayo Kajitani, Yukiko Nagatani

(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

(3) Research Achievements

A) Original Papers (including Case Reports)

1. The green tea polyphenol (-)-epigallocatechin gallate precipitates salivary proteins including alpha-amylase : Hara K, Ohara M, Hayashi I, Hino T, Nishimura R, Iwasaki Y, Ogawa T, Ohyama Y, Sugiyama M, Amano H. : biochemical implications for oral health. *European Journal of Oral Science*. 120, 132-139, 2012.
2. A Study on the Improvement of Dental Health Education Methods for Junior High School Students. : Sasahara H, Shimazu A, Kawamura M, Taguchi N, Ogawa T. : *J Dent Hlth*, 62(1), 53-60, 2012
3. A case of SAPHO syndrome with diffuse sclerosing osteomyelitis of the mandible treated Successfully with prednisolone and bisphosphonate.: Hatano H, Shigeishi H, Higashikawa K, Shimasue H, Nishi H, Oiwa H, Shindo H, Takechi M, Ohge H, Kamata N. : *J Oral Maxillofac Surg*. 2012 Mar;70(3) : 626-631, 2012.
4. A case of chondrosarcoma arising in the temporomandibular joint with a point mutation in EXT1 : Nishi H, Ohta K, Shimasue H, Ogawa I, Tohmori, H. : *Japanese Journal of Oral & Maxillofacial Surgery* : 58(6), 357-361, 2012.

- Interleukin-8 and CXCL10 expressions in oral keratinocytes and fibroblasts via Toll-like receptors. : Fukui A, Ohta K, Nishi H, Shigeishi H, Tobiume K, Takechi M, Kamata N. : *Microbiol Immunol*, 2012.

B) Review

- Invitation to medical communication research. Part1: Overview and quantitative research: Kazuhiko Fujisaki, Ikuko Noro, Hirono Ishikawa, Norihiro Taguchi, Tetsuji Ogawa. : *the Journal of the Japanese Association of Health Communication* : 2 (1), 5-11, 2012.
- Invitation to medical communication research. Part2: Qualitative research.: Shinichiro Aoki, Seiji Saito, Shigeru Takanaga, Norihiro Taguchi, Tetsuji Ogawa. : *the Journal of the Japanese Association of Health Communication* : 2 (1), 50-58, 2012.

C) Publications

D) Other Publications

- Community based education: Tetsuji Ogawa: Dental educational white paper ver 2011 (2009~2011) : *Journal of JDEA vol. 28 suppl.*, 78–81, edited by committee of white paper creation in Japanese Dental Education, Association, 2012.
- Tutorial education: Dental educational white paper ver 2011 (2009~2011) : *Journal of JDEA vol. 28 suppl.*, 88 – 90, edited by committee of white paper creation in Japanese Dental Education, Association, 2012.
- Simulation education (simulated and virtual patients) : Dental educational white paper ver 2011 (2009~2011) : *Journal of JDEA vol. 28 suppl.*, 91–94, edited by committee of white paper creation in Japanese Dental Education, Association, 2012.
- Education of professionalism: Tetsuji Ogawa : Dental educational white paper ver 2011 (2009~2011) : *Journal of JDEA vol. 28 suppl.*, 95–97, edited by committee of white paper creation in Japanese Dental Education, Association, 2012.

E) Presentation at Scientific Meeting

- Learning of Professionalism through Dental Clinical Training Course in Hiroshima University Hospital : ○Tetsuji Ogawa, Mitsugi Okada, Kazuhiro Tsuga, Makoto Kawamura, Hiroshi Shimasue, Kazuya Doi, Meiko Tachikake, Toshikazu Nagasaki, Ikuko Ogawa, Miyuki Nakaoka, Yoshiharu Tanaka. : 31th Meeting of Japanese Dental Education Association, Okayama, 2012.
- A Consideration about Education of Professionalism by Case Study : ○Tetsuji Ogawa, T Taiji Obayashi, Hiromi Nishi, Masaru Ohara, Yoshiharu Tanaka, Tetsuro Konoo, Hiroataka Onishi. : 31th

- Meeting of Japanese Dental Education Association, Okayama, 2012.
3. Survey of new dental clinical training course in Hiroshima university hospital : ○Hiromi Nishi, Yoshiharu Tanaka, Taiji Obayashi, Masaru Ohara, Tetsuji Ogawa. : 31th Meeting of Japanese Dental Education Association, Okayama, 2012.
 4. Web Course Tool for Dental Training Course in Hiroshima University Hospital : ○Kazuhiro Tsuga, Makoto Kawamura, Hiroshi Shimasue, Kazuya Doi, Koh-ichi Kuremoto, Meiko Tachikake, Toshikazu Nagasaki, Ikuko Ogawa, Miyuki Nakaoka, Mitsugi Okada, Tetsuji Ogawa : 31th Meeting of Japanese Dental Education Association, Okayama, 2012.
 5. Building a system for mutual training of the endoscopy swallowing in dental residency training, and heart variability of subjects during the training : ○Toshikazu Nagasaki, Tetsuji Ogawa, Keiji Tanimoto. : 31th Meeting of Japanese Dental Education Association, Okayama, 2012.
 6. Assessment on a pilot collaborating seminar between dental clinical training course and undergraduate international exchange programs : ○Hiroko Oka, Udijanto Tedjosongko, Tetsuji Ogawa, Takashi Takata. : 31th Meeting of Japanese Dental Education Association, Okayama, 2012.
 7. Practice and Evaluation of PBL tutorial for first-year dental students over three years : ○Tsuyoshi Taji, Norihiro Taguchi, Toshinobu Takemoto, Mitsuhiro Tamamoto, Miwa Miyauchi, Mineo Watanabe, Kuniko Mizuta, Hiroshi Ueda, Atsushi Shimazu, Tetsuji Ogawa, Takashi Uchida. : 31th Meeting of Japanese Dental Education Association, Okayama, 2012.
 8. Current situation of general dentistry in the university – report1:the organization and the task - : ○Noritaka Fujii, Norihiro Taguchi, Takuji Hasegawa, Tetsuro Konoo, Mitsuhiro Ohta, Tetsuji Ogawa, Yoshinori Higuchi, Takanori Ito. : 31th Meeting of Japanese Dental Education Association, Okayama, 2012.
 9. Current situation of general dentistry in the university – report2 : the theme of general dentistry - : ○Tetsuro Konoo, Takuji Hasegawa, Noritaka Fujii, Norihiro Taguchi, Mitsuhiro Ohta, Tetsuji Ogawa, Yoshinori Higuchi, Takanori Ito. : 31th Meeting of Japanese Dental Education Association, Okayama, 2012.
 10. Current situation of general dentistry in the university – report3 : Recognition in foreign countries about general dental practitioner - : ○Mitsuhiro Ohta, Noritaka Fujii, Norihiro Taguchi, Takuji Hasegawa, Tetsuro Konoo, Tetsuji Ogawa, Yoshinori Higuchi, Takanori Ito. : 31th Meeting of Japanese Dental Education Association, Okayama, 2012.
 11. Attempt to establish Behavioral Science in Nihon University School of Dentistry at Matsudo : ○Takanori Ito, Shinichiro Aoki, Seiko Osawa, Kazutaka Kasai, Masaharu Makimura, Tetsuji Ogawa. 31th Meeting of Japanese Dental Education Association, Okayama, 2012.
 12. Anti-inflammatory effect of itraconazole in oral keratinocytes and fibroblasts. : ○Kouji Ohta, Akiko Fukui, Hiromi Nishi, Yoko Ishida, Masaaki Takechi, Nobuyuki Kamata : The 66th Annual meeting of the Japanese Stomatological society. Hiroshima, 2012.

13. The inhibitory effect of itraconazole on induction of inflammatory cytokines in oral fibroblasts : ○ Kouji Ohta, Akiko Fukui, Hiromi Nishi, Yoko Ishida, Masaaki Takechi, Nobuyuki Kamata : The 22th Annual meeting of Japanese Society of Oral Medicine, Tokyo, 2012.
14. The intracellular signaling pathway of Retinoic acid inducible gene-I in oral keratinocytes and fibroblasts : ○Fukui A, Ohta K , Shigeisi H ,Nishi H ,Takechi M and Kamata N. : The 22th Annual meeting of Japanese Society of Oral Medicine, Tokyo, 2012
15. What kind of effect does the deep reflection of the dental trainee bring about? : ○Taiji Obayashi, Kayo Kajitani, Yukiko Nagatani, Hiromi Nishi, Norihiro Taguchi, Tetsuji Ogawa. : The 44th Annual Meeting of Japan Society for Medical Education, Tokyo, 2012.
16. Medical profession of Dental Hygienist : ○Yukiko Nagatani, Kayo Kajitani, Taiji Obayashi, Yoshiharu Tanaka, Hiromi Nishi, Shigeru Takanaga, Tadayuki Waki, Miyuki Nakaoka, Tetsuji Ogawa. : The 44th Annual Meeting of Japan Society for Medical Education, Tokyo, 2012.
17. Useful communicational education to dental hygienists working at hard clinical situation : ○Kayo Kajitani, Yukiko Nagatani, Taiji Obayashi, Yoshiharu Tanaka, Hiromi Nishi, Shigeru Takanaga, Tadayuki Waki, Miyuki Nakaoka, Tetsuji Ogawa. : The Meeting of Japanese Association of Health Communication, Kanagawa, 2012.
18. Medical profession of Dental Hygienist in hospital : ○Yukiko Nagatani, Kayo Kajitani, Taiji Obayashi, Yoshiharu Tanaka, Hiromi Nishi, Shigeru Takanaga, Tadayuki Waki, Miyuki Nakaoka, Tetsuji Ogawa. : The 7th meeting of the Japan Dental Hygienists association, Iwate, 2012.
19. Prevalence of drug-resistant nosocomial microorganisms in oral cavity after oral cancer therapy. ○ Masaru Ohara, Masaru Sugiyama, Taiji Obayashi, Hiromi Nishi, Yoshiharu Tanaka, Tetsuji Ogawa. : Research Seminar in General Dental Medicine, Osaka, 2012.
20. One case that was not able to build the good human relations. : ○Kayo Kajitani, Yukiko Nagatani, Taiji Obayashi, Junko Maeda, Tomoe Sasaki, Tadayuki Waki, Shigeru Takanaga, Tetsuji Ogawa. : Communication Association in Japan Chugoku-Shikoku branch, Educational Research Seminar in Health Communication, Hiroshima, 2012.
21. Follow-up session for participants of seminar on the implementation of a communication training for faculty members in dental education institutions. Suzuki K., Konoo T., Ito T., Chiba I., Yoshida T., Ogawa T., Oishi M., Tsuruta J., Aoki S., Mataka S., and Kasai K. 38th ADEE Annual Meeting in Lyon, 2012.
22. Seminar on the communication training implementation for faculties in dental educational institutions. Yoshida T., Suzuki K., Oishi M., Ogawa T., Mataka S., and Kasai K. AMEE Conference 2012, in Lyon, 2012.
23. The inhibitory effect of itraconazole on induction of inflammatory cytokines in gingival fibroblasts. ○ Ishida Y, Ohta K , Fukui A ,Nishi H ,Takechi M and Kamata N. : The 48th congress of Japan tissue culture society for dental research Hiroshima, 2012.

F) Implementation of Seminars / Workshops

1. Workshop for postgraduate trainees 2012 (Hiroshima)
2. Communication Association in Japan Chugoku-Shikoku branch, Educational Research Seminar in Health Communication, Hiroshima, 2012.
3. “Seminar on Oral Care” to the workers at Hiroshima University Hospital ①lecture ②practice, Hiroshima, 2012.

G)Lecturer • Symposiast

1. Education and evaluation of clinical capability: a lecturer Tetsuji Ogawa : The FD seminar of Kagoshima University Faculty of Dentistry held in Kagoshima, ,2012.
2. Relation of professionalism and outcome-Based education: a lecturer Tetsuji Ogawa : The FD seminar of Hokkaido University Faculty of Dentistry held in Sapporo, 2012.
3. Recommendation of the bidirectional lesson which utilized e-Learnig (WebCT): a symposiast: Tetsuji Ogawa,;Educational information promotion forum.-e-learning support in a university ,turn to tomorrow's education held in Higashihiroshima,2012.
4. The communication power UP lecture of dental office directors and the staffs for medical safety. a lecturer Tetsuji Ogawa, : The Lecture Meeting for Ehime-Ken Brunch of the Class Reunion of Faculty of Dentistry in Hiroshima University held in Matsuyama,2012.
5. SP simulation from the position in dental education : a symposiast : The 15th anniversary symposium of a registration simulated patient in Kyushu University, held in Fukuoka, 2012.
6. Active learning and PBL-tutorial education : a lecturer Tetsuji Ogawa : The FD seminar in Kyushu University Faculty of Dentistry Science, held in Fukuoka, 2012.
7. Simulated patient in dental education -What is it? : a lecturer Tetsuji Ogawa : The simulated patient skill-up seminar in Okayama University, held in Okayama, 2012.
8. Current situations of oral managements in medical-dental corporation : symposiast Hiromi Nishi : 7th meeting of Japanese society of periodontal diseases, Shimane, 2012.
9. Medical-dental corporation for oral management: Operation of oral management team, now and future : a lecturer Hiromi Nishi, A training course of medical safety management, Hiroshima, 2012.
10. The practical oral managements on Geriatric care –Case reports of medical-dental corporation in Hiroshima University Hospital- : symposiast Hiromi Nishi : 137th autumn meeting of Japanese society of conservative dentistry, Hiroshima, 2012.

H) Attending of Lectures, Seminars, and Workshops

1. The 45th seminar and workshop on medical education: Attendant : Tetsuji Ogawa, Taiji Obayashi, at Gifu Univ. Medical Education Center. (Gifu), 2012.

2. The 2st workshop (H24) on dental OSCE on medical communication : Attendant: Yoshiharu Tanaka. Coordinator: OSCE committee (Okayama), 2012.
3. 3nd Health Science Educational Research Skill Workshop : Attendant: Masaru Ohara, Coordinator: Japanese Dental Education Association. (Shizuoka), 2012.
4. The 2th EBM workshop : Attendant : Taiji Obayashi,. Faculty of Medicine, Kyushu University. (Fukuoka), 2012.
5. The 46th seminar and workshop on medical education : Attendant : Tetsuji Ogawa, Taiji Obayashi, at Gifu Univ. Medical Education Center. (Gifu), 2012.
6. The 48th seminar on medical education at Tokyo Univ.: Attendant : Taiji Obayashi. : Coordinator : International Research Center for Medical Education Tokyo Univ. (Tokyo), 2012.
7. Editorial Seminar : Attendant : Taiji Obayashi. Coordinator: International Research Center for Medical Education Tokyo Univ. (Tokyo), 2012.
8. Recurrent training course “Commensal Oral flora” Attendant: Masaru Ohara. Coordinator : School of Oral Health Science, Faculty of Dentistry, Hiroshima University. (Hiroshima),2012.
9. 144th ICD seminar : Attendant : Hiromi Nishi,. Coordinator : 87th meeting of Japanese society of tuberculosis. (hiroshima), 2012.
10. AHA BLS health-provider course : Attendant: Hiromi Nishi. : Coordinator : Okayama Redcross hospital.(Okayama), 2012.
11. The 2th RIAS Software version up workshop: Attendant : Taiji Obayashi, Kayo Kajitani, Yukiko Nagatani. Coordinator: RIAS study group (Tokyo), 2012.
12. The 3nd follow-up session for medical communication facilitators : Attendant: Taiji Obayashi, Kayo Kajitani, Yukiko Nagatani. : Coordinator: Japanese Dental Education Association. (Okayama), 2012.

I) Implementation of OSCE, CSA

1. 2nd Advanced OSCE for Postgraduate Trainees 2011-2012
2. 1st Advanced OSCE for Postgraduate Trainees 2012-2013

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

1. Grant-in-Aid Scientific Research, Scientific Research (C). Tanaka Y.: Fundamental studies on the analysis of the medical interview conversation first visit dentistry : Program No. 24500257. 1,430,000yen
2. Grant-in-Aid Scientific Research, Young Scientists (B). Nishi H. : Analysis of Toll-like receptor in oral mucosal disease . Program No. 23792346. 1,170,000yen
3. Grant-in-Aid Scientific Research, Scientific Research (C). Ogawa T. : The theory and measurement

methodology of politeness phenomena in the medical interview. Program No. 23520509. 300,000yen
(co-researcher)

(5) Academic Awards, etc.

(6) Patents

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Department of Oral Health and Development, Preventive Dentistry

(1) Staff and Postgraduate students

Assistant Professor: Makoto Kawamura

(2) Research fields

(3) Publication

A) Original Papers (including Case Reports)

B) Reviews

C) Books/Book Chapters

D) Proceedings/Others

E) Presentations

(4) Grants-in-aid

(5) Awards

(6) Patents

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Department of Oral Health and Development (Special Care Dentistry)

(1) Staffs and Students

Professor	: Mitsugi Okada	(※) Head of Dentistry
Assistant Professor	: Yuki Oda	
Resident	: Masaki Hayashiuchi, Yasue Otsuka, Yoko Fujino	
Research Student	: Koichiro Matsumoto (～Sep)	
Graduate Student	: Koichiro Matsumoto (Oct～)	
Clinical Trainee	: Megumi Iwamoto, Masaki Yasusaka, Fumiko Hayashi	

(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: Caries prevalence associated with *Streptococcus mutans* and *Streptococcus sobrinus* in Japanese school children. Okada M, Kawamura M, Oda Y, Yasuda R, Kojima T, Kurihara H: Int J Paediatr Dent 2012, 22: 342-348.
- 2: Prevalence of *Porphyromonas gingivalis fimA* genotypes in Japanese children. Hayashi F, Okada M, Oda Y, Kojima T, Kozai K: J Oral Sci 2012, 54: 77-83.
- 3: Caries prevalence associated with *Streptococcus mutans* and *Streptococcus sobrinus* in outpatients with mental retardation. Okada M, Oda Y, Kojima T, Iwamoto M, Tokikazu T, Wakita A, Nagatani Y: J Jpn Soc Disability Oral Health 2012, 33: 37-41.

B) Review

C) Publications

D) Other Publications

E) Presentation at Scientific Meeting

1 : A two-year longitudinal study of dental caries incidence associated with *Streptococcus mutans* and *Streptococcus sobrinus* in patients with mental retardation. Oda Y, Hayashiuchi M, Otsuka Y, Fujino Y, Matsumoto K, Okada M: 21st Congress of the International Association for Disability and Oral Health (Oct 28-31, Melbourne).

2 : Management of Anxious and Special Needs Patients. Okada M: Better Hope for Oral Health in Disabled Children. (Nov 2-3, Surabaya).

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

(5) Academic Awards, etc.

(6) Patents

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Central Clinical Sections, 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: Comparison between Adults and Children in Oral Strength Measurements : Yukimi Y, Misato A, Keiji T : 13th annual meeting of Japanese Association of Speech-Language Hearing Therapists, Fukuoka, 2012.6.15-16
- 2: Characteristic of Viscosity Change in Commercial Thickening : Yukimi Y : 8th annual meeting of Hiroshima Speech-Language Hearing Therapists Association, 2012.3.18
- 3: Materials of videofluoroscopic swallowing study. A systematic review. : Konishi M, Yasuhara Y, Nagasaki T, Tanimoto K. : 13th European Congress of Dentomaxillofacial Radiology, Leipzig, 2012.6.13-16
- 4: Fundamental studies of cooked rice including contrast media: Konishi M, Nagasaki T, Yasuhara Y, Tanimoto K: 17th & 18th annual meeting of the Japanese Society of Dysphagia

Rehabilitation , Sapporo, 2012.8.31-9.1

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

1 : Urakami Foundation (public utility foundation) academic research grant for 2012 : Yukimi Yasuhara :
¥900,000

(5) Academic Awards, etc.

(6) Patents

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Central Clinical Sections, Center of Oral Clinical Examination

(1) Staffs and Students

Director: Hidemi Kurihara
Associate Professor: Ikuko Ogawa (Clinic)
Lecturer: Masae Kitagawa (Clinic)
Research Associate: Tomoaki Shintani
Technician: Keiko Banno
Intern: Shunryo Yanagisawa

(2) Main Research Activities

- 1 : Clinical study on endodontal-periodontal therapy.
- 2 : Clinicopathological study on head and neck lesions.
- 3 : Developmental study of treatment to dysgeusia.
- 4 : Study on test and treatment in metal allergy and dry mouth.
- 5 : Molecular pathological study on proliferation and development of oral squamous cell carcinoma.
- 6 : Study on molecular target therapy to oral cancer targeted with VEGFR and EGFR.
- 7 : Study on function of cementoblast specific genes in human cementoblast.

(3) Research Achievements

A) Original Papers (including Case Reports)

- 1 : F-spondin regulates the differentiation of human cementoblast-like (HCEM) cells via BMP7 expression: Kitagawa M., Ao M., Miyauchi M., Abiko Y., Takata T.: *Biochem Biophys Res Commun.*, 418(2), 229-233, 2012.
- 2 : Frequent increased gene copy number and high protein expression of tRNA (cytosine-5-)-methyltransferase (NSUN2) in human cancers: Okamoto M., Hirata S., Sato S., Koga S., Fujii M., Qi G., Ogawa I., Takata T., Shimamoto F., Tatsuka M.: *DNA Cell Biol.*, 31(5), 660-671, 2012.
- 3 : Periostin Directly and Indirectly Promotes Tumor Lymphangiogenesis of Head and Neck Cancer: Kudo Y., Iizuka S., Yoshida M., Nguyen P.T., Siriwardena B.S.M.S., Tsunematsu T., Ohbayashi M., Ando T., Hatakeyama D., Shibata T., Koizumi K., Maeda M., Ishimaru N., Ogawa I., Takata T.:

PLoS ONE, 7(8), e44488, 2012.

- 4 : Matrix metalloproteinase-13 (MMP-13) directly and indirectly promotes tumor angiogenesis: Kudo Y., Iizuka S., Yoshida M., Tsunematsu T., Kondo T., Subarnbhesaj A., Deraz E.M., Siriwardena S.B., Tahara H., Ishimaru N., Ogawa I., Takata T.: *J Biol Chem.*, 287(46), 38716-38728, 2012.
- 5 : Establishment of Mesenchymal Cell Line Derived from Human Developing Odontoma: Hatano H., Kudo Y., Ogawa I., Shimasue H., Shigeishi H., Ohta K., Higashikawa K., Takechi M., Kamata N.: *Oral Diseases*, 8(8), 756-762, 2012.
- 6 : A case of basal cell adenoma arising in the submandibular gland: Fujimoto S., Ono S., Takechi M., Shimasue H., Ogawa I., Kamata N.: *Jpn J Oral Maxillofac Surg*, 58(2), 92-96, 2012.
- 7 : A case of peripheral osteoma arising in the inferior border of the mandible: Nakagawa T., Ono S., Higashikawa K., Takechi M., Ogawa I., Kamata N.: *Jpn J Oral Maxillofac Surg*, 58(4), 272-276, 2012.
- 8 : A case of synchronous double cancer of the posterior mandible: cystadenocarcinoma and papillary thyroid carcinoma: Mizuta K., Shimasue H., Ohta A., Arihiro K., Ogawa I., Kamata N.: *Jpn J Oral Maxillofac Surg*, 58(5), 322-326, 2012.
- 9 : A case of calcifying cystic odontogenic tumor occurring in a 92-year-old woman: Shimasue H., Kubozono K., Shigeishi H., Takechi M., Ogawa I., Kamata N.: *Jpn J Oral Maxillofac Surg*, 58(5), 327-331, 2012.
- 1 0 : A case of chondrosarcoma arising in the temporomandibular joint with a point mutation in EXT1: Nishi H., Ohta K., Shimasue H., Ogawa I., Tohmori H., Kamata N.: *J Oral Maxillofac Surg*, 58(6), 357-361, 2012.
- 1 1 : A case of acute sialadenitis in a submandibular gland induced by a penetrated fish bone: Nakagawa T., Shimasue H., Ono S., Takechi M., Ogawa I., Kamata N.: *Jpn J Oral Maxillofac Surg*, 58(6), 400-404, 2012.
- 1 2 : A case of osteochondroma of the mandibular condyle with jaw deviation and joint pain: Toratani S., Hayashido Y., Ogawa I., Takata T., Okamoto T.: *J Jpn Stomatol Soc*, 61(3), 283-290, 2012.

B) Review

- 1 : $1\alpha,25(\text{OH})_2\text{D}_3$ down-regulates HBp17/FGFBP-1 expression via NF- κ B pathway: Rosli S.N.Z., Shintani T., Hayashido Y., Toratani S., Usui E., Okamoto T.: *J Steroid Biochem Mol Biol*, 12, S0960-0760, 2012.

C) Publications

- 1 : Clinical examination for dentist and dental staff -for evidence and the dental professional-: Inoue T. ed.: Inoue T., Ishi K., Matsuzaka K., Ogawa I., Kurihara H., Kakinoki Y., Tohara G., Abiko Y.: Ishiyaku Publishers, Inc (Tokyo), 33-70, 107-109, 2012.

- 2 : The newest series of the textbook for dental hygienists -clinical examination-: The Japan association for dental hygienist Education ed.: Inoue T., Ishi K., Matsuzaka K., Ogawa I., Kurihara H., Kakinoki Y., Kohsaka T., Hatanaka Y., Tohara G., Abiko Y.: Ishiyaku Publishers, Inc (Tokyo), 24-49, 62-63, 2012.

D) Other Publications

E) Presentation at Scientific Meeting

- 1 : $1\alpha,25(\text{OH})_2\text{D}_3$ down-regulates FGF-BP expression through NF κ B pathway: Rosli S.N.Z., Shintani T., Hayashido Y., Toratani S., Usui E. and Okamoto T.: The 15th Workshop on Vitamin D (Houston), 2012.
- 2 : FGFR-1 inhibitor PD173074 induces mesenchymal-epithelial transition through suppression of AP-1 in Head and Neck Squamous Cell Carcinoma: Nguyen P.T., Inubushi T., Tsunematsu T., Kudo Y., Kamata N., Ogawa I., Takata T.: Cold Spring Harbor Meeting, Models & Mechanisms of Cancer (New York), 2012.
- 3 : Diagnosis and examination of Sjogren Syndrome -Confirmed Diagnosis by suitable examination and risk assessment of oral disease- : Kitagawa M., Yanagisawa S., Ando T., Shintani T., Ogawa I., Kurihara H.: The 45th Meeting of Hiroshima University Dental Society (Hiroshima), 2012.
- 4 : Conclusion of conventional type saliva test -View of saliva test in aged society-: Kitagawa M., Yanagisawa S., Shintani T., Ogawa I., Kurihara H.: The 5th Annual Meeting of Japanese Society for Evidence and the Dental Professional (Tokyo), 2012.
- 5 : Cementoblast controls inflammatory reaction through F-spondin: Kitagawa M., Miyauchi M., Takata T. The 55th Autumn Meeting of Japanese Society of Periodontology.
- 6 : Analysis of inflammatory reaction inhibition mechanism through F-spondin in Cementoblast: Kitagawa M., Tsukimoto S., Miyauchi M., Takata T.: The 51st Annual Meeting of Hiroshima Dental Association and the 96th Annual Meeting of Hiroshima University Dental Society (Hiroshima), 2012.
- 7 : FGFR-1 inhibitor PD173074 induces mesenchymal-epithelial transition through suppression of AP-1 in Head and Neck Squamous Cell Carcinoma: Nguyen P.T., Inubushi T., Tsunematsu T., Kudo Y., Kamata N., Ogawa I., Takata T.: The 23rd Meeting of the Japanese Society of Oral Pathology (Tokyo), 2012.
- 8 : The novel tumor suppressor function of Ameloblastin in osteosarcoma: Ando T., Tsunematsu T., Kudo Y., Ogawa I., Miyauchi M., Takata T.: The 60th Annual Meeting of Japanese Association for Dental Research (Niigata), 2012.

- 9 : Inhibitory effect of bLF on LPS-induced crosstalk among TLR pathways. Yanagisawa S., Inubushi T., Miyauchi M., Furusho H., Ao M., Ishikado A., Takata T. The 60th annual meeting of Japanese Association for Dental Research (Niigata), Dec.14.2012.
- 1 0 : The role as a tumor suppressor gene of Ameloblastin: Ando T., Tsunematsu T., Kudo Y., Ogawa I., Miyauchi M., Takata T.: The 101st Annual Meeting of the Japanese Society of Pathology (Tokyo), 2012.
- 1 1 : The role as a tumor suppressor gene and the expression of Ameloblastin in osteosarcoma.: Ando T., Tsunematsu T., Kudo Y., Ogawa I., Miyauchi M., Takata T.: The 66th Annual Meeting of the Japanese Stomatological Society (Hiroshima), 2012.
- 1 2 : The novel function of Ameloblastin as a tumor suppressor gene in osteosarcoma: Ando T., Tsunematsu T., Kudo Y., Ogawa I., Miyauchi M., Takata T.: The 45th Annual Meeting of the Dental Association of Hiroshima University (Hiroshima), 2012.
- 1 3 : $1\alpha,25(\text{OH})_2\text{D}_3$ suppresses HBp17/FGFBP-1 expression via NF κ B pathway in oral squamous cell carcinoma: Rosli S.N.Z., Shintani T, Hayashido Y, Toratani S, Usui E, Okamoto T.: The 66th Annual Meeting of Japanese Somatological Society: The 49th Japanese Society of Tissue Culture for Dental Research Convention. (Hiroshima), 2012.
- 1 4 : $1\alpha,25(\text{OH})_2\text{D}_3$ down-regulates HBp17/FGFBP-1 by inhibiting NF κ B activity: Rosli S.N.Z., Shintani T., Hayashido Y., Toratani S., Usui E. and Okamoto T.: The 85th Japanese Biochemical Society Conference (Fukuoka), 2012.
- 1 5 : The expression of HBp17/FGFBP-1 with $1\alpha,25(\text{OH})_2\text{D}_3$ in oral squamous cell carcinoma: Rosli S.N.Z., Shintani T, Hayashido Y, Toratani S, Usui E, Okamoto T.: The 66th Annual Meeting of Japanese Somatological Society (Hiroshima), 2012.
- 1 6 : Three cases of MALT lymphoma of oral region: Akagi E., Yoshioka Y., Okamoto K., Koizumi K., Ogawa I., Hayashido Y., Toratani S., Okamoto T.: The 41st Chu-Shikoku sectional meeting of Japanese Oral and Maxillofacial Surgery (Touon), 2012.
- 1 7 : A case of bilateral osseous dysplasia of mandible with long follow-up observation before enucleation: Hamada M., Kanda T., Ando T., Ogawa I., Toratani S., Okamoto T.: The 59th Chugoku-Shikoku sectional meeting of Japanese Stomatological Society (Matsuyama), 2012.
- 1 8 : A case of odontogenic clear cell carcinoma with formation of a large amount of osteodentin: Nakayama K., Tachimoto Y., Shimamoto H., Nomati A., Hara S., Tateishi Y., Ogawa I., Takata T. The 66th Annual Meeting of the Japanese Stomatological Society (Hiroshima), 2012.
- 1 9 : A case of adenocarcinoma of maxillary alveolar bone, undetectable primary lesion: Suematsu M., Nabeshima I., Tani R., Toratani S., Ando T., Ogawa I., Okamoto T.: The 60th Chugoku-Shikoku Sectional Meeting of the Japanese Stomatological Society (Hiroshima), 2012.
- 2 0 : A case of bilateral central giant cell lesions in mandible: Kimura N., Kanda T., Hara J., Ando T., Ogawa I., Toratani S., Okamoto T.: The 57th Meeting of the Japanese Oral and Maxillofacial Surgery

(Yokohama), 2012.

- 2 1 : A case of ectomesenchymal chondromyxoid tumor -Difference from myoepithelial carcinoma:-
Ogawa I., Tsunematsu T., Ando T., Obayashi M., Yamazaki S., Takata T.: The 57th Annual Meeting of
the Japanese Salivary Gland Society (Tokyo), 2012.
- 2 2 : Tumor of maxillary sinus (Dedifferentiated adenoid cystic carcinoma): Tsunematsu T., Ando T.,
Obayashi M., Ogawa I., Sueti Y., Takata T.: The 107th Slide Conference of the Japanese Society of
Pathology (Tokushima), 2012.
- 2 3 : Tumor of the buccal mucosa (Clear cell carcinoma, NOS): Furusho H., Ogawa I., Sakaida N., Nakano
R., Takata T.: The 108th Academic Meeting of Chugoku-Shikoku Branch of the Japanese Society of
Pathology (Kurashiki), 2012.
- 2 4 : Lesion of mandible (Thickened dental follicle): Ogawa I., Obayashi M., Fujita Y., Fujihara M., Takata
T.: The 58th Meeting of Hiroshima Pathological Conference (Hiroshima), 2012.
- 2 5 : Pigmented lesion of palate (Intramucosal melanocytic nevus): Obayashi M., Fujita Y., Fujihara M.,
Ogawa I., Takata T.: The 23rd Annual Meeting of the Japanese Society of Oral Pathology (Tokyo),
2012.

F) Special lectures in academic meetings

- 1 : Pathological diagnosis of salivary gland lesions and neoplasms: Ogawa I., Takata T.: The 3rd Meeting
of Kochi Conference of Diagnostic Pathology (Kochi), 2012.
- 2 : Companion meeting 6 [Pathology of salivary gland tumors - controversial points and recent topics],
The diagnostic problems of malignant counterpart of pleomorphic adenoma: Ogawa I., Takata T.: The
101st Annual Meeting of the Japanese Society of Pathology (Tokyo), 2012.
- 3 : Workshop [Pathobiology of bisphosphonate-related osteonecrosis of the jaw], Pathological
characteristics of jaw bone of the patient treated with intravenous bisphosphonates. A case
presentation: Ogawa I., Miyauchi M., Takata T.: The 23rd Annual Meeting of the Japanese Society of
Oral Pathology ("Tokyo), 2012.

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

(5) Academic Awards, etc.

(6) Patents

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Central Clinical Sections, Dental Technicians Section

(1) Staff and Students

Director of Dental Technicians Section	: Hiroki Nikawa (Prof.)
Chief Dental Technician	: Hirotaka Okura
Supervisor Dental Technician	: Masanobu Yamamoto, Eisaku Habu, Yoshihiro Otani, Meiji Yamamoto, Ryoji Kato
Dental Technician	: Syougo Iwaguro

(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

(3) Research Achievements

A) Original Papers (including Case Reports)

B) Review

C) Publications

- 1: Working model : Prosthodontics 1 (Yatani H., Matsumura H.) Hamada T.,Sadamori S., Kato R. Nagasue syoten, 249-254, 2012.

D) Other Publications

E) Presentation at Scientific Meeting

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

(5) Academic Awards, etc.

(6) Patents

Central Clinical Sections (Dental Hygiene Section)

(1) Staff and Students

Director of Dental Hygiene Section : Hidemi Kurihara

Chief Dental Hygienist : Hiroko Tamura(Till March), Miyuki Nakaoka(From April)

Supervisor Dental Hygienists : Kayo Kajitani(From April)

Dental Hygienists : Yoriko Iwasaki, Miho Yoneda(Till February), Kanako Matsui, Megumi Takamoto, Tomoko Tokikazu, Kana Dainobu, Naomi Hara(Till August), Miho Okada, Ayumi Kouchi, Itsuka Kouno(Till June), Atsuko Wakita, Chieko Kawai, Yukiko Nagatani, Yumi Irie, Yurie Nakano, Maiko Kawagoe, Kanako Yano(From April), Mayuko Oshita(From April), Ayano Tomoike(From July), Ayumi Yamaguchi(From October)

Dental Assistants : Yuri Ota, Yuka Tamamoto, Hisako Ozaki, Mayumi Yatabe

(2) Main Research Activities

1 : A study about the dentistry health guidance that dental hygienist performs.

2 : A study about improvement of local dentistry health.

3 : About a role of dental hygienist in dentistry medical examination and treatment.

(3) Research Achievements

A) Original Papers (including Case Reports)

1: Caries prevalence associated with *Streptococcus mutans* and *Streptococcus sobrinus* in outpatients with mental retardation : Okada M, Oda Y, Kojima T, Iwamoto M, Tokikazu T, Wakita A, Nagatani Y: Jpn Soc Disability Oral Health. 33: 37-41, 2012.

2: Questionnaire Survey about Uneasiness and Satisfaction to Bone Augmentation Surgery for Oral Implant: Takamoto M, Tokikazu T, Dainobu k, Takechi M, Ohta K, Ninomiya Y, Ono S, Shigeishi H, Mizuta K, Nakagawa T, Tada M, Minami M, Ohta A, Kamata N.: The Journal of Hiroshima University Dental Society, 44(1):29-35. 2012

B) Review

C) Publications

D) Other Publications

E) Presentation at Scientific Meeting

- 1: A qualitative research using 'very simple question' for dental clinical training:Obayashi T, Nishi H, Tanaka Y, Ohara M,Sasaki T, Kajitani K, Nagatani Y,Taguchi N,Ogawa T:15th Ottawa Conference (Kuala Lumpur)2012.3.11-13
- 2:The effectiveness of PTM[®] kit in children:Irie Y, Mituhata M, Nakaoka M, Kozai K:The 50th Congress of Japanese Society of Pediatric Dentistry(Tokyo),2012.5.12
- 3 : Retrospective view and present state of clinical pass for dental outpatient surgery in Hiroshima University hospital : Takamoto M, Ishio M, Tokikazu T, Dainobu K, Takao K, Shimasue H, Yoshioka Y, Toratani S, Kamata N: The 66th Annual Meeting of the Japanese Stomatological Society(Hiroshima),2012.5.28
- 4: The treatment of chronic periodontitis and SPT Case report:Good oral condition has been maintained for 4years and half by SPT :Kouchi A,Mizuno T,Nakaoka M,Kurihara H:The Japanese society of periodontology (Shimane),2012.7.8
- 5: Short-term improvement of inflamed periodontal tissue and occlusal force in a patient with severe chronic periodontitis; A case report :Matsui K, Uchida Y, Fujita T, Nakaoka M, Kurihara H: Japan society of Periodontology The 7 th Clinical training meeting(Chugoku area)(Shimane),2012.7.8
- 6: Successful management of generalized aggressive periodontitis patient by initial preparation : a case report : Nagatani Y,Mizuno T,Nakaoka M,KuriharaH : Japan society of Periodontology The 7 th Clinical training meeting(Chugoku area)(Shimane),2012.7.8
- 7: What kind of effect dose the deep reflection of the dental trainee bring about?:Obayashi T,Kajitani K,Nagatani Y,Nishi H,Taguti N,Ogawa T : The 44th annual meeting of the Japan society for medical education(Yokohama),2012.7.27-28
- 8: Medical profession of Dental Hygienist : Nagatani Y,Kajitani K,Obayashi T,Tanaka Y,Nishi H,Takanaga S,Waki T,Nakaoka M,Ogawa T : The 44th annual meeting of the Japan society for medical education(Yokohama),2012.7.27-28
- 9:Comparison of anti-oxidative potency in saliva by oral relaxation in various age groups:Nakano Y, Matsumoto A, Niitani Y, Tsuzuki H, Tetsumori k, Shimazu A, Takemoto T:The 23ht annual meeting of the kinki-Chugoku-Shikoku Branch of the Japanese Society for Dental Health(shiga)2012.9.12
- 10: Medical profession of Dental Hygienist in hospital: Nagatani Y,Kajitani K,Oobayashi T,Tanaka Y,Nishi H,Takanaga S,Waki T,Nakaoka M,Ogawa T:The 7th meeting of the Japan Dental Hygienists association (Iwate),2012.09.15-17
- 11: The influence of Begg type appliance on the durability of tooth coating material:Yano K,Shirakura M,Tanaka N,Tanne K:Tha 71th Annual Meeting of the Japanese Orthodontic Society(Iwate),2012.9.27
- 12: A two-year longitudinal study of dental caries incidence associated with*Streptococcus mutans* and *Streptococcus sobrinus* in patients with mentalretardation:Oda Y, Hayashiuchi M, Otsuka Y, Fujino Y,

Matsumoto K,Wakita A,Kawai C,Iwamoto M,Yasusaka M,Hayashi F,Kozima T, Okada M: 29st Journal of the Japanese Society for Disability and Oral Health(Sapporo),2012.9.29

13:Validity of the lecture and working of autism, making pictograms in dental hygienist students:Wakita A,Kawai C,Fujino Y,Hayashiuchi M,Kozima T,Otsuka Y,Iwamoto M,Yasusaka M,Matsumoto K,Oda Y,Nishimura R,Fukada E,Hara K,Hayashi F,Okada M:29st Journal of the Japanese Society for Disability and Oral Health(Sapporo),2012.9.29

14:Survey on outpatients at Special Care Dental Clinic of Hiroshima University Hospital:Kawai C,Wakita A,Fuzino Y,Oda Y,Kozima T,Hayashiuchi M,Otsuka Y,Matsumoto K,Iwamoto M,Yasusaka M,Hayashi F,Okada M:29st Journal of the Japanese Society for Disability and Oral Health(Sapporo),2012.9.30

15: The cooperation with the dental hygienist to the implant treatment– the strategy in Hiroshima university hospital oral implant center –:Matsui K, Tani R, Takechi M, Kubo T, Akagawa Y: Japanese Society of Oral Implantology since 1972 (Kouchi),2012.11.17-18

16: The approach to Dental treatment for the HIV- positive patients in Hiroshima university hospital-I:Matsui K, Shiba H, Kagiura A, Kinoshita K, Nishisaka R, Iwata T, Takada N, Saito S, Fujii T: 26th annual meetings of Japanese society for AIDS research (Yokohama),2012.11.24-26

F) Special lectures in academic meetings

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

1:Scientific research funds subsidy (encouragement study) : Miho Okada , The effect of the cognitive-behavioral therapy on dental phobia patient～Evaluation using the brain function image～. No24932002.600,000yen

2:Scientific research funds subsidy (encouragement study): Miyuki Nakaoka, Study on evaluation of dental stress reduction of children with developmental disability. encouragement study. No24932006. 300,000yen

(5) Academic Awards, etc.

(6)Patent

(7)Special Lecture

1:Knowledge and techniques of oral care :Kayo Kajitani:5th Technical Committee on Respiratory Care Hiroshima

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Dental Clinic

(1) Staff and Students

Director : Takamune Hino

Research Associate : 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 : Hara K, Ohara M, Hayashi I, Hino T, Nishimura R, Iwasaki Y, Ogawa T, Ohyama Y, Sugiyama M, Amano H. The green tea polyphenol (-)-epigallocatechin gallate precipitates salivary proteins including alpha-amylase: biochemical implications for oral health. *European Journal of Oral Science*. 120: 132-139. (2012)

B) Review

C) Publications

D) Other Publications

E) Presentation at Scientific Meeting

1. Examination of experimental bacteria biofilm formation in a tube of dental unit waterline. Y. Niitani, K. Ouhara, T. Hino, H. Shiba, H. Kurihara.; 45th meeting of Hiroshima University Faculty of Dentistry (Hiroshima) June 2012
2. Prevalence of drug-resistant nosocomial microorganisms in oral cavity after oral cancer therapy
3. Masaru Ohara, Masaru Sugiyama, Taiji Ohbayashi, Hiromi Nishi, Yoshiharu Tanaka, Tetsuji Ogawa. The 5th Research Seminar in General Dental Medicine. Osaka, 2012.

4. 2. Evaluation on protocols on medical network during education for dental residents in Hiroshima University Hospital. Hiromi Nishi, Yoshiharu Tanaka, Taiji Ohbayashi, Masaru Ohara, Tetsuji Ogawa. The 31st meeting for Japanese Dental Education Committee. 2012/7/20 Okayama
5. 3. Education for “Professionalism” by case study. Tetsuji Ogawa, Taiji Ohbayashi, Hiromi Nishi, Masaru Ohara, Tetsuro Konoo, Hirotaka Onishi. The 31st meeting for Japanese Dental Education Committee. 2012/7/20 Okayama

F) Seminar, Workshop, etc.

1. Infection control on the Dental Clinic of Hiroshima University : Takamune Hino ; The 3rd meeting of Higashihiroshima dental association lecture (Higashihiroshima) , February 2012
 2. Discussion of bacteriological and immunological studies for origin, progress or extension of periodontal disease : Takamune Hino ; The meeting of the clinical study society (Hiroshima), February 2012
-
1. Recurrent seminar : Important ecosystem of oral flora. Masaru Ohara: 2012/10/11 (Thu) 19:30-21:00 in Hiroshima
 2. Advanced OSCE for residents: 2012/4/4(Wed) • 11(Wed)

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

1. Grants-in aid for scientific research: Takamune Hino: #21390557

(5) Academic Awards, etc.

(6) Patents

1. JP 4857438 B2 2012.1.18
2. JP 5007439 B2 2012.8.22

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Dental Medical Information Section

(1) Staff and Students

Director : Kazuo Tanne (Co.)
Professor : Hideaki Amano (Co.)
Assistant Professor : Kyou Hiasa (Co.), Masahiko Ohtsuka (Co.), Takeshi Tanaka
Technician : Tokue Yanagida (Co.)

(2) Main Research Activities

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

(3) Research Achievements

A) Original Papers (including Case Reports)

- 1 : The Present Situation of Managing a Hospital Information System in Japan and the Credibility of its Patient Data: H TSUKUMA, M IKEUCHI, T TANAKA and K ISHIKAWA: Proceedings of “The Liaison Conference of Information Management Departments in University Hospitals 2012” (Matsuyama) pp. 76-79, 2012.
- 2 : Use Cases and User Permission Tables of Minimum Patient Information: T TANAKA et al.: Japan Journal of Medical Informatics **32** Suppl. pp. 222-225, 2012.
- 3 : Experience of using Tablet PC for patient explanations at Radiation Therapy Department: K MORIMOTO et al.; Japan Journal of Medical Informatics **32** Suppl. pp. 450-451, 2012.
- 4 : Is E-Healthcare Chart Contributory To Patient Safety?: K ISHIKAWA, T TANAKA, M IKEUCHI and H TSUKUMA: Proceedings of HEALTHINF 2012 (SciTePress) pp. 430-433, 2012.
- 5 : Lost Electronic Medical Records by System Troubles: T TANAKA et al.: Proceedings of APAMI 2012 (Beijing) Submission 54, 2012.

B) Review

C) Publications

D) Other Publications

E) Presentation at Scientific Meeting

- 1 : The Present Situation of Managing a Hospital Information System in Japan and the Credibility of its Patient Data: H TSUKUMA, M IKEUCHI, T TANAKA and K ISHIKAWA: The Liaison Conference of Information Management Departments in University Hospitals 2012” (Matsuyama), 2012.
- 2 : Use Cases and User Permission Tables of Minimum Patient Information: T TANAKA et al. : The 32nd Joint Conference of Medical Informatics (Niigata) 2012.
- 3 : Experience of using Tablet PC for patient explanations at Radiation Therapy Department: K MORIMOTO et al: The 32nd Joint Conference of Medical Informatics (Niigata) 2012.
- 4 : Is E-Healthcare Chart Contributory To Patient Safety?: K ISHIKAWA, T TANAKA (Presenter), M IKEUCHI and H TSUKUMA: HELTHINF 2012 (Feb. 1-4, 2012, Vilamoura).
- 5 : Lost Electronic Medical Records by System Troubles: T TANAKA et al.: APAMI 2012 (Oct. 23-25, 2012, Beijing).

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

(5) Academic Awards, etc.

(6) Patents

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