

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

Research Achievements

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Department of Calcified Tissue Biology, Basic Life Sciences

(1) Staff and Students

Professor: Yuji Yoshiko

Assistant Professor: Tomoko Minamizaki, Hirota Yoshioka, Yuichiro Takei

Technical Assistant: Miho Kondo

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

(2) Main Research Activities

Bone and tooth formation and mineralization.

Calcitropic and phosphotropic factors and mineral metabolism.

Osteonetwork (Cross-talk between bone and other tissues/organs).

(3) Research Achievements

A) Original Papers (including Case Reports)

Sequence-specific promoter elements regulate temporal-specific changes in chromatin required for testis-specific activation of the *Pgk2* gene.: Yang Z., Yoshioka H., McCarrey JR.: *Reproduction*, 146(5), 501-516, 2013.

Hypercholesterolemia and effects of high cholesterol diet in type IIa sodium-dependent phosphate co-transporter (Npt2a) deficient mice.: Tanaka S., Yamamoto H., Nakahashi O., Ishiguro M., Takei Y., Masuda M., Kozai M., Ikeda S., Taketani Y., Miyamoto K., Takeda E.: *J. Med. Invest.*, 60(3-4), 191-196, 2013.

Phosphorylation of protein inhibitor of activated STAT1 (PIAS1) by MAPK-activated protein kinase-2 inhibits endothelial inflammation via increasing both PIAS1 transrepression and SUMO E3 ligase activity.: Heo K.S., Chang E., Takei Y., Le N.T., Woo C.H., Sullivan M.A., Morrell C., Fujiwara K., Abe J.: *Arterioscler. Thromb. Vasc. Biol.*, 33(2), 321-329, 2013.

Thyroid hormones decrease plasma $1\alpha,25$ -dihydroxyvitamin D levels through transcriptional repression of the renal 25-hydroxyvitamin D₃ 1α -hydroxylase gene (CYP27B1):. Kozai M., Yamamoto H., Ishiguro M., Harada N., Masuda M., Kagawa T., Takei Y., Otani A., Nakahashi O.,

Ikeda S., Taketani Y., Takeyama K., Kato S., Takeda E.: *Endocrinology*, 154(2), 609-622, 2013.

A crucial role for p90RSK-mediated reduction of ERK5 transcriptional activity in endothelial dysfunction and atherosclerosis.: Le N.T., Heo K.S., Takei Y., Lee H., Woo C.H., Chang E., McClain C., Hurley C., Wang X., Li F., Xu H., Morrell C., Sullivan M.A., Cohen M.S., Serafimova I.M., Taunton J., Fujiwara K., Abe J.: *Circulation*, 127(4), 486-499, 2013.

B) Review

Vitamin D receptor gene polymorphisms and diseases.: Yamamoto H., Takei Y., Kazai M., Tanaka S., Sakamoto T., Ikeda R.: *Vitamin*, 87(9), 514-518, 2013.

For research into bone, a sophisticated organ.: Yoshiko Y.: *J. Hiroshima University Dental Society*, 45(2), 76-79, 2013.

C) Other Publications

Dynamics of lineage fate determination between osteoblasts and adipocytes in rodent models.:

Yoshiko Y., Sakurai K., Fujino Y., Minamizaki T., Yoshioka H., Takei Y., Okada M., Kozai K.:

Proceedings of 5th Hiroshima Conference on Education and Science in Dentistry, 82-87, 2013.

D) Presentation at Scientific Meeting

Soluble Klotho does not rescue but rather exaggerates skeletal defects in klotho-deficient mice.:

Minamizaki T., Konishi Y., Sakurai K., Yoshioka H., Kozai K., Yoshiko Y.: *2nd Joint Meeting of International Bone and Mineral Society and The Japanese Society for Bone and Mineral Research (Kobe)*, 2013.

Imaging Mass Spectrometry-based Molecular Histology of Bone Shows the Implication of MEPE-ASARM for the Klotho-Deficient Phenotype.: Fujino Y., Minamizaki T., Sakurai K., Irie Y., Yoshioka H., Takei Y., Kozai K., Okada M., Yoshiko Y.: *The American Society for Bone and Mineral Research 2013 Annual Meeting (Baltimore)*, 2013.

Soluble Klotho does not rescue but rather exaggerates skeletal defects in Klotho-deficient mice.:

Minamizaki T., Konishi Y., Sakurai K., Yoshioka H., Kozai K., Yoshiko Y.: *5th Hiroshima Conference on Education and Science in Dentistry (Hiroshima)*, 2013.

Osteoclast-like Cells are Involved in Aortic Aneurysm Formation.: Takei Y., Yamanouchi D., Yoshiko Y.: *5th Hiroshima Conference on Education and Science in Dentistry (Hiroshima)*, 2013.

A Novel Therapeutic Approach to Abdominal Aortic Aneurysm through the Inhibition of Osteoclastogenesis. Takei Y., Kurosawa K., Yamanouchi D.: *Arteriosclerosis, Thrombosis and*

Vascular Biology 2013 Scientific Sessions (Lake Buena Vista), 2013.

Epigenetic mechanisms in the development of mouse tooth germ.: Yoshioka H., Minamizaki T., Yoshiko Y.: The 55th Annual Meeting of Japanese Association for Oral Biology (Okayama), 2013.

Functional roles of DNA methyltransferase Dnmt1 in the development of mouse tooth germ.: Onishi A., Yoshioka H., Minamizaki T., Yoshiko Y.: The 118th Annual Meeting of Japanese Association of Anatomists (Takamatsu), 2013.

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

Grants-in-Aid for Scientific Research (C) New: Minamizaki T., Study of regulation of bone/tooth mineralization via downstream factor(s) of Klotho derived from breast cancer cells. No. 25462858.

Grants-in-Aid for Young Scientists (B) Continuance: Yoshioka H., Study of tooth morphogenesis from the aspect of local regulation of phosphate metabolism: An epigenomic approach. No. 24791962.

Grant-in-Aid for Research (Start-up) New: Takei Y., Study of microRNA-mediated cellular network in bone tissue. No. 25893145.

Grants-in-Aid for Scientific Research (C) Continuance: Yoshiko Y., Study of the FGF23-Klotho system as inter-organ crosstalk in bone and dental diseases. No. 20263709.

Iwadare Scholarship Foundation: Yoshiko Y.

Ono Pharmaceutical Co. Research found.: Yoshiko Y.

(5) Academic Awards, etc.

(6) Patents

Yoshiko Y. Minamizaki T. Yoshioka H. Hirata I. Kozai K. Maeda N. Watanabe K. Seito T.: PHOSPHORYLATED PEPTIDE, HARD TISSUE AND/OR ECTOPIC CALCIFICATION INHIBITOR, ANTIBODY, AND HARD TISSUE AND/OR ECTOPIC CALCIFICATION PROMOTER WO/2013/005839 Hiroshima University

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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 UENO, Kaori, YAMAMOTO, Kuniyo

(2) Main Research Activities

Molecular physiological study on function of ion channels and ion transporters

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

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

Study on the system mechanisms of mastication and swallowing

(3) Research Achievements

A) Original Papers (including Case Reports)

Information processing in brainstem taste-evoking neurons defined by genetic tracing : Sugita M., Yamamoto K., Hiroao C., Shiba Y. : Neuroscience, 250, 166-180, 2013.

B) Review

: Sugita M., Yamamoto K., Hiroao C., Shiba Y. : J. Oral Biosci., 55, 66-72, 2013.

Visualization and functional analyses of taste-neuronal circuitries Sugita M. : The Nippon Dental Review, 73(12), 9-11, 2013.

C) Publications

11-1. Taste A Guidebook for Student Practicals in Physiology The Physiological Society of Japan :

Sugita M. : Nankodo Tokyo 205-209 2013

D) Other publication

E) Presentation at Scientific Meeting

Intracellular pH changes related to bicarbonate secretion in rat parotid intralobular ducts : Ueno K., Hirono C., Kitagawa M., Sugita M., Shiba Y. : The 46th Annual Meeting of Hiroshima University Dental Society (Hiroshima), 2013.

Characterization of the rate-limiting activities of NKCC and TMEM16A for salivary Cl⁻ secretion : Sugita M., Hirono C., Shiba Y. : The 46th Annual Meeting of Hiroshima University Dental Society (Hiroshima), 2013.

Genetic tracing of taste neuronal circuitries reveals their involvement in the homeostatic control of feeding : Sugita M., Yamamoto K., Hirono C., Shiba Y. : 2012 NIPS Research Meeting (Okazaki), 2013.

TMEM16E exhibits protein instability and distinct characteristics in chloride channel/pore forming ability : Tobiume K.

Department of Molecular Biology and Biochemistry, Basic Life Sciences

(1) Staff and Students

| | |
|------------------------|-------------------------------------|
| Professor: | Chisa Shukunami |
| Associate Professor: | Mitsuhide Noshiro |
| Assistant Professor: | Takeshi Kawamoto , Katsumi Fujimoto |
| International Student: | Veronica Sainik Ronald |

(2) Main Research Activities

Mechanisms regulating in the establishment of the junction between cartilage and tendon/ligament
 The role of Pax1 during formation of vertebral column
 Mechanisms of tendon/ligament formation
 Mechanisms of periodontal ligaments formation
 Pathogenic mechanisms involved in adolescent idiopathic scoliosis
 Study on the regulatory mechanisms of lipid-metabolism and blood pressure control by clock proteins DEC1 and DEC2.
 Mechanisms regulating differentiation of dental pulp stem cells

(3) Research Achievements

A) Original Papers (including Case Reports)

Generation and characterization of ScxCre transgenic mice. *Genesis*: Sugimoto Y, Takimoto A, Hiraki Y, Shukunami C: *Genesis*, 51 (4), 275-283, 2013.

Tenomodulin expression in the periodontal ligament enhances cellular adhesion: Komiyama Y, Ohba S, Shimohata N, Nakajima K, Hojo H, Yano F, Takato T, Docheva D, Shukunami C, Hiraki Y, Chung UI: *PLoS One*, 8(4), e60203, 2013.

Genetic variants in GPR126 are associated with adolescent idiopathic scoliosis: Kou I, Takahashi Y, Johnson TA, Takahashi A, Guo L, Dai J, Qiu X, Sharma S, Takimoto A, Ogura Y, Jiang H, Yan H, Kono K, Kawakami N, Uno K, Ito M, Minami S, Yanagida H, Taneichi H, Hosono N, Tsuji T, Suzuki T, Sudo H, Kotani T, Yonezawa I, Londono D, Gordon D, Herring JA, Watanabe K, Chiba K, Kamatani N, Jiang Q, Hiraki Y, Kubo M, Toyama Y, Tsunoda T, Wise CA, Qiu Y, Shukunami C, Matsumoto M, Ikegawa S : *Nat. Genet.*, 45 (6), 676-679, 2013.

Scx⁺/Sox9⁺ progenitors contribute to the establishment of the junction between cartilage and

tendon/ligament: Sugimoto Y, Takimoto A, Akiyama H, Kist R, Scherer G, Nakamura T, Hiraki Y, Shukunami C : *Development*, 140 (11), 2280-2288, 2013.

Mesenchymal stem cells ameliorate experimental peritoneal fibrosis by suppressing inflammation and inhibiting TGF-beta1 signaling.: Ueno T, Nakashima A, Doi S, Kawamoto T, Honda K, Yokoyama Y, Doi T, Higashi Y, Yorioka N, Kato Y, Kohno N, Masaki T : *Kidney Int.*, 84 (2), 297-307, 2013.

Different circadian expression of major matrix-related genes in various types of cartilage: modulation by light-dark conditions.: Honda KK, Kawamoto T, Ueda HR, Nakashima A, Ueshima T, Yamada RG, Nishimura M, Oda R, Nakamura S, Kojima T, Noshiro M, Fujimoto K, Hashimoto S, Kato Y: *J. Biochemistry*, 54 (4), 373-381, 2013.

Pax1 acts as a negative regulator of chondrocyte maturation: Takimoto A, Mohri H, Kokubu C, Hiraki Y, and Shukunami C : *Exp. Cell Res.*, 319 (20), 3128-3139, 2013.

Age-dependent decrease in the chondrogenic potential of human bone marrow mesenchymal stromal cells expanded with fibroblast growth factor-2.: Kanawa M, Igarashi A, Ronald VS, Higashi Y, Kurihara H, Sugiyama M, Saskianti T, Pan H, Kato Y : *Cytotherapy*, 15(9), 1062-1072, 2013

B) Review

Regulatory mechanisms of tendon and ligament formation Chisa Shukunami *Pharma Medica*, 31, 43-46, 2013.

C) Publications

Verb collocation and thesaurus for oral presentations Takeshi Kawamoto, Hiroshi Ohtake Amazon Services International, Inc. (USA), 422 pages, 2013

Life science dictionary collocation search part 1 outline of seach: Takeshi Kawamoto: Amazon Services International, Inc. (USA), 45 pages, 2013

D) Other Publications

E) Presentation at Scientific Meeting

Genome-wide analysis of MSX1 target genes in stem cells from human exfoliated deciduous teeth Noriko Goto, Katsumi Fujimoto, Sakiko Fuii, Takeshi Kawamoto, Mitsuhide Noshiro, Katsuyuki Kouzai, Yukio Kato. the 24th Congress of International Association of Paediatric Dentistry (IAPD) to be held in June 12th-15th 2013, in Seoul, Korea.

The functional role of MSX1 in stem cells from human exfoliated deciduous teeth (SHED) : Noriko Goto, Katsumi Fujimoto, Veronica Sainik Ronald, Sakiko Fujii, Serika Imamura, Takeshi Kawamoto, Mitsuhide Noshiro, Katsuyuki Kozai, Yukio Kato: 5th Hiroshima Conference on Education and Science, Oct. 12th-13th 2013, in Hiroshima, Japan.

Statistical analysis of English verbs used in scientific presentations: Takeshi Kawamoto, Hiroshi Ohtake, Nobuyuki Fujita, Yoshihiro Ugawa, Hiroaki Takeuchi, Masataka Takekoshi, Shuji Kaneko: 46th Annual Meeting of Hiroshima University Dental Society (Hiroshima), 2013.

F) Special lectures in academic meetings

Molecular mechanisms underlying the formation of tendon and ligament: Chisa Shukunami: The 2nd biodental coliserum (Hiroshima), Aug. 31th 2013

Regulatory mechanisms governing the establishment of the junction between cartilage and tendon/ligament: Chisa Shukunami The 28th Annual Research Meeting of the Japanese Orthopaedic Association Symposium 8 (Chiba), Oct. 18th, 2013

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

Grant-in-Aid for Scientific Research (B): Chikara Kokubu, Chisa Shukunami, Yuji Hiraki, 24300154 500

Grant-in-Aid for Scientific Research (B): Haruhiko Akiyama, Chisa Shukunami, Shuichi Matsuda. 25293319 100

Grant-in-Aid for Scientific Research (B): Yukio Kato, Mitsuhide Noshiro, Takeshi Kawamoto, Katsumi Fujimoto, 23390423 3,200

Grant-in-Aid for Scientific Research (C): Katsumi Fujimoto, 25462889 1,600

Grant-in-Aid for Scientific Research (C): Ayumu Nakashima, Takeshi Kawamoto, Yukihiro Higashi, Takao Masaki, 25461248. 100

Grant-in-Aid for Scientific Research (C): Hiroshi Ohtake, Shuji Kaneko, Yoshihiro Ugawa, Takeshi Kawamoto, NHiroaki Takeuchi, Masataka Takekoshi, Brian Morren, 24590622. 100

Grant-in-Aid for challenging Exploratory Research: Chisa Shukunami, Aki Takimoto, Teruko Yamamoto, 5670871 2,000

(5) Academic Awards, etc.

Noriko Goto: Poster award: 5th Hiroshima Conference on Education and Science

(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 | : Phuong Thao Nyugen |
| Graduate Student | : Takaaki Tsunematsu (D4), Mariko Ohbayashi (D4), Toshinori Ando (D3), Ajravudh Subarnhesaj (D3), Nurina Febriyanti Ayuningtyas (D2), Syunryo Yanagisawa (D2), Chea Chanbora (D2), Atsuhiko Nagasaki (D1) |

(2) Main Research Activities

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

(3) Research Achievements

A) Original Papers including case reports

1. Examination of stimulated saliva production, caries risk item and number of Candida of mouth. Kitagawa M, Yanagisawa S, Shintani T, Ogawa I, Kurihara H. J JSEDP. 5(1):31-7,2013.
2. Selective enhancing effect of early mitotic inhibitor 1 depletion on the sensitivity of doxorubicin or X-ray treatment in human cancer cells. Shimizu N, Nakajima N, Tsunematsu T, Ogawa I, Kawai H, Hirayama R, Fujimori A, Yamada A, Okayasu R, Ishimaru N, Takata T, Kudo Y. J Biol Chem. Jun; 288(24):17238-52,2013.
3. Ultrasound stimulation attenuates resorption of tooth root induced by experimental force application. Inubushi T, Tanaka E, Rego EB, Ohtani J, Kawazoe A, Tanne K, Miyauchi M, Takata T. Bone. Apr;53(2):497-506,2013.
4. Aurora-A controls pre-replicative complex assembly and DNA replication by stabilizing geminin

- in mitosis. Tsunematsu T, Takihara Y, Ishimaru N, Pagano M, Takata T, Kudo Y. *Nat Commun.* 4:1885, doi: 10.1038/ncomms2859,2013.
5. Expression of receptor for hyaluronan-mediated motility (RHAMM) in ossifying fibromas. Hatano H, Ogawa I, Shigeishi H, Kudo Y, Ohta K, Higashikawa K, Takechi M, Takata T, Kamata N. *Histol Histopathol.* Apr;28(4):473-80,2013.
 6. IL-17 receptor A signaling is protective in infection-stimulated periapical bone destruction. AISHwaimi E, Berggreen E, Furusho H, Rossall JC, Dobeck J, Yoganathan S, Stashenko P, Sasaki H. *J Immunol.* Aug; 191(4):1785-91,2013.
 7. The FGFR-1 inhibitor PD173074 induces mesenchymal-epithelial transition through the transcription factor AP-1. Nguyen PT, Tsunematsu T, Yanagisawa S, Kudo Y, Miyauchi M, Kamata N, Takata T. *Br J Cancer.* Oct ;109(8):2248-58,2013.
 8. Orally administered liposomal lactoferrin inhibits inflammation-related bone breakdown without interrupting orthodontic tooth movement. Kawazoe A, Inubushi T, Miyauchi M, Ishikado A, Tanaka E, Tanne K, Takata T. *J Periodontol.* Oct;84(10):1454-62,2013.
 9. Dental infection of *Porphyromonas gingivalis* exacerbates high fat diet-induced steatohepatitis in mice. Furusho H, Miyauchi M, Hyogo H, Inubushi T, Ao M, Ouhara K, Hisatune J, Kurihara H, Sugai M, Hayes CN, Nakahara T, Aikata H, Takahashi S, Chayama K, Takata T. *J Gastroenterol.* Nov;48(11):1259-70,2013.
 10. Malignant ossifying fibromyxoid tumor of the tongue: case report and review of the literature. Ohta K, Taki M, Ogawa I, Ono S, Mizuta K, Fujimoto S, Takata T, Kamata N. *Head Face Med.* 24(9):16, doi: 10.1186/1746 -160X-9-16,2013.
 11. Ectomesenchymal chondromyxoid tumor of the tongue: insights on histogenesis. Yoshioka Y, Ogawa I, Tsumematsu T, Sakaue T, Yamasaki S, Fukui Y, Hayashido Y, Toratani S, Okamoto T. *Oral Surg Oral Med Oral Pathol Oral Radiol.* 115(2):233-40,2013.
 12. A case of focal osseous dysplasia arising bilaterally in the mandible detected by long-term observation by a family dentist. Kanda T, Hamada A, Ando T, Sumi K, Ogawa I, Toratani S, Okamoto T. *J Hiroshima Univ Dent Soc.* 45(1):33-8, 2013.

B Review

1. Dental infection of *Porphyromonas gingivalis* exacerbates pathological progression of non-alcoholic steatohepatitis (NASH). Miyauchi M, Furusho H, Min A, Inubishi T, Takata T. *Hiroshima Dent Med.* 40: 1-6. 2013.
2. Pathological Diagnosis of Odontogenic Tumors “Classification and Epidemiology of Odontogenic tumors”. Takata T, Ogawa I. *Pathology and Clinical Medicine.* 31(5):479-85,2013.

C Publications

Histological characteristics of salivary gland tumors and their origin: Oral sciences. Takata T. (Edits Totsuka Y, Takato T), Asakura Publishing Co., Ltd. 2013.

D Other Publications

E Presentation at Scientific Meeting

1 Special lectures in academic meetings

1. Accreditation system of dental education in USA. Takata. T Symposium on Accreditation System of Dental Education (Tokyo), 2013.
2. Workshop “relationship between oral inflammatory diseases and systemic health condition. New developments in Oral-Systemic Medicine” Outline. Takata T. The 102nd annual meeting of the Japanese Society of Pathology (Sapporo), 2013.
3. Workshop “relationship between oral inflammatory diseases and systemic health condition. New developments in Oral-Systemic Medicine” Dental infection exacerbates non-alcoholic steatohepatitis (NASH). Miyauchi M, Furusho H, Takata T. The 102nd annual meeting of the Japanese Society of Pathology (Sapporo), 2013.
4. The mouth is the gate of evil? Takata T. Open lecture in Prefectural university of Hiroshima (Hiroshima), 2013.
5. Cytology – From sampling to interpretation of results – . Ogawa I, Miyauchi M. The 1st academic lecture of Hiroshima prefecture dental association in Heisei 25 year. (Hiroshima), 2013.
6. Relationship between oral health and systemic health condition: Dental infection of *P.gingivalis* is a risk factor for non-alcoholic steatohepatitis (NASH). Takashi Takata. Japan academy of oral human doc. The 16th academic meeting (Tokyo), 2013.
7. Junior symposium “For novel paradigm”; Clarification of carcinogenesis and cancer progression by abnormality of ubiquitin dependent proteolysis of cell cycle regulator. Tsunematsu T, Kudo Y, Takata T. The 24th Meeting of the Japanese Society of Oral Pathology (Tokyo), 2013.
8. Application of liposomalized lactoferrin to prevention and treatment of periodontal diseases. Takata T.

The Forsyth Institute (Boston), 2013.

9. OG/OB session; Clarification of carcinogenesis and cancer progression by abnormality of ubiquitin dependent proteolysis of cell cycle regulator. Frontier Dental School 2013 (Tokyo), 2013.
10. IAP slide seminar “Oral pathology – Cysts, tumors and tumor like lesions –“ Takata T. The Japanese Society of Pathology (Kofu), 2013.
11. Oral administration of liposomalized lactoferrin inhibits bone resorption by periodontitis and other bone destructive diseases. Takata T. 8th International Dental Collaboration of the Mekong River Region Congress (Phnom Penh), 2013.
12. A verrucous lesion of the palate. Takata T, Ogawa I. 1st Asian regional consensus meeting on terminology and criteria for oral verrucous papillary lesions of the oral cavity (Kuala Lumpur), 2013.
13. Challenges to the globalization of dental education at Hiroshima University. Takata T, Oka H, Suardita K. 3rd International Symposium on Human Resouce Development Towards Global Initiative (Krabi), 2013.

2 Presentation at International Scientific Meeting

1. Odontogenic infection of *P.gingivalis* induces preterm delivery through Galectin-3. Ao M, Miyauchi M, Furusho H, Inubushi T, Kozai K, Takata T. International Association of Dental Research General Session (Seattle), 2013.
2. Effect of *Porphyromonas gingivalis* on the progression non-alcoholic steatohepatitis. Furusho H, Miyauchi M, Ao M, Inubushi T, Takata T. International Association of Dental Research General Session (Seattle), 2013.
3. The novel tumor suppressor function of Ameloblastin in osteosarcoma. Ando T, Tsunematsu T, Kudo Y, Ogawa I, Miyauchi M, and Takata T. International Association of Dental Research General Session (Seattle), 2013.
4. Proteomic analysis of the pocket exudate of periodontal patients. Miyauchi M, Inubushi T, Kitagawa M, Takata T. The 2nd Meeting of the International Association of Dental Research-Asia Pacific Region (Bangkok), 2013.
5. Bovine lactoferrin enhances osteogenesis through TGF- β receptor signaling. Inubushi T, Kosai A, Yanagisawa S, Chanbora C, Miyauchi M, Yamasaki S, Sugiyama E, Ishikado A, Makino T,

Takata T. The 2nd Meeting of the International Association of Dental Research-Asia Pacific Region (Bangkok), 2013.

6. F-spondin plays an anti-inflammatory role in periodontitis. Tsukimoto S, Kitagawa M, Miyauchi M, Takata T. The 2nd Meeting of the International Association of Dental Research-Asia Pacific Region (Bangkok), 2013.
7. Oral administration of liposomal bovine lactoferrin is useful for prevention and control of periodontitis. Takata T, Inubushi T, Miyauchi M, Ishikado A, Makino T. XIth International Conference on Lactoferrin

14. The inhibitory effects of bovine lactoferrin on growth and invasion of oral squamous cell carcinoma. Chanbora C, Inubushi T, Subarnhesaj A, Ayuningtyas NF, Miyauchi M, Ishikado A, Makino T, Takata T. 5th Hiroshima Conference on Education and Science in Dentistry (Hiroshima), 2013.
15. Pathological progression of non-alcoholic steatohepatitis is exacerbated by dental Infection of *Porphyromonas gingivalis*. Sakamoto S, Hirata M, Furusho H, Inubushi, T, Miyauchi M, Takata T. 5th Hiroshima Conference on Education and Science in Dentistry (Hiroshima), 2013.
16. Effect of F-spondin on LPS-induced periodontal inflammation and bone destruction. Kitagawa M, Miyauchi M, Takata T. 5th Hiroshima conference on education and science in dentistry (Hiroshima), 2013.

3 Presentation at Domestic Scientific Meeting

1. Study on inhibitory effects of Lactoferrin on bone resorption and its molecular biological mechanism. Inubushi T, Miyauchi M, Min A, Furusho H, Ishikado A, Makino T, Takata T. The 56th Spring Meeting of the Japanese Society of Periodontology (Tokyo), 2013.
2. Role of Galectin-3 in Process of Preterm Birth development by Dental infection of *Porphyromonas gingivalis*. Min A, Miyauchi M, Inubushi T, Kozai K, Takata T. The 56th Spring Meeting of the Japanese Society of Periodontology (Tokyo), 2013.
3. Identification of microRNA-203 as an inhibitor of invasion in oral cancer. Obayashi M, Yoshida M, Kudo Y, Ogawa I, Miyauchi M, Takata T. The 102nd annual meeting of the Japanese Society of Pathology (Sapporo), 2013.
4. A case of parotid gland tumor with the histopathological characteristics between epithelial-myoepithelial carcinoma and intercalated dust lesion. Tokuyasu Y, Nakamoto S, Ogawa I, Takata T. The 102nd annual meeting of the Japanese Society of Pathology (Sapporo), 2013.
5. Identification of microRNA-203 as an inhibitor of invasion in oral cancer. Obayashi M, Yoshida M, Tsunematsu T, Kudo Y, Ogawa I, Takata T. The 46th annual meeting of the Dental Association of Hiroshima University (Hiroshima), 2013.
6. The inhibitory effects of lactoferrin on growth and invasion of oral squamous cell carcinoma. Chanbora C, Inubushi T, Subarnhesaj A, Ayuningtyas NF, Miyauchi M, Ishikado A, Makino T, Takata T. The 24th Meeting of the Japanese Society of Oral Pathology (Tokyo), 2013.

7. Significance of lip biopsy in diagnosis of Sjogren syndrome and IgG4-related disease: Nagasaki A, Kitagawa M, Shintani T, Ogawa I, Kurihara H. The 6th Annual Meeting of Japanese Society for Evidence and the Dental Professional (Yokohama), 2013.
8. Anti-inflammatory effect of F-spondin expressed by cementoblast: Kitagawa M, Miyauchi M, Oka H, Sotomaru Y, Takata T. The 55th Japanese Association for Oral Biology (Okayama), 2013.
9. F-spondin inhibits hard tissue destruction of periodontal tissue: Oka H, Kitagawa M, Takata T. The 55th Japanese Association for Oral Biology (Okayama), 2013.
10. Examination of stimulated saliva production, caries risk item and number of Candida of mouth. Kitagawa M, Nagasaki A, Shintani T, Ogawa I, Kurihara H. The 52nd Annual Meeting of Hiroshima Dental Association and the 97th Annual Meeting of Hiroshima University Dental Society (Hiroshima), 2013.
11. Role of lip biopsy in diagnosis of Sjögren's syndrome and IgG4-related disease. Nagasaki A, Kitagawa M, Shintani T, Ogawa I, Kurihara H, Takata T. The 58th Meeting of Japanese Salivary Gland Society (Tokyo), 2013.
12. A case of undifferentiated malignant tumor, high-grade malignancy with rapid growth that proved difficult to diagnose. Sakurai S, Yasui T, Suematsu M, Ishida Y, Kanda T, Hayashido Y, Ogawa I, Takata T, Okamoto T. The 61st Chugoku-Shikoku Sectional Meeting of Japanese Somatological Society (Okayama), 2013.
13. Two cases of tongue tumor showing the histological features similar to myoepithelial tumors. Ogawa I, Tsunematsu T, Ohbayashi M, Miyauchi M, Takata T. The 102nd annual meeting of the Japanese Society of Pathology (Sapporo), 2013.

4 Case Reports at Scientific Meeting

1. Palatal tumor (Basal cell adenoma). Tsunematu T, Ogawa I, Ohta S, Koike H, Takata T. The 110th Academic Meeting of Chugoku-Shikoku Branch of the Japanese Society of Pathology (Hiroshima), 2013.
2. Left submandibular tumor (Mucoepidermoid carcinoma, clear cell variant) Tanaka A, Kuroda N, Ogawa I, Takata T. The 110th Academic Meeting of Chugoku-Shikoku Branch of the Japanese Society of Pathology (Hiroshima), 2013.

3. Parotid tumor (Low-grade cribriform cystadenocarcinoma). Ando T, Obayashi M, Fujiwara M, Ogawa I, Takata T. The 111st Academic Meeting of Chugoku-Shikoku Branch of the Japanese Society of Pathology (Izumo), 2013.
4. Gingival tumor of maxilla (Spindle cell carcinoma). Nagasaki A, Obayashi M, Shimasue H, Nakamoto T, Ogawa I, Arihiro K, Takata T. The 60th Meeting of Hiroshima Pathological Conference (Hiroshima), 2013.
5. Maxillary tumor (Central mucoepidermoid carcinoma). Yanagisawa S, Tsunematu T, Nagasaki A, Ogawa I, Suzuki J, Ohta S, Nakatani Y, Nagao T, Takata T. The 24th Meeting of the Japanese Society of Oral Pathology (Tokyo), 2013.
6. Brest tumor (Myoepithelial carcinoma). Nagasaki A, Ogawa I, Nishida T, Takata T. The 112nd Academic Meeting of Chugoku-Shikoku Branch of the Japanese Society of Pathology (Okayama), 2013.
7. Parotid tumor (Epithelial-myoepithelial carcinoma, high grade). Uraoka N, Sentani K, Ogawa I, Takata T, Yasui W. The 112nd Academic Meeting of Chugoku-Shikoku Branch of the Japanese Society of Pathology (Okayama), 2013.
8. Parotid tumor (Epithelial-myoepithelial carcinoma with intercalated duct lesion). Ogawa I, Tamura M, Obayashi M, Fujiwara M, Matsuura T, Takata T. The 61st Meeting of Hiroshima Pathological Conference (Hiroshima), 2013.

5 Other lectures

1. Pathological progression of non-alcoholic steatohepatitis (NASH) is exacerbated by dental infection of *Porphyromonas gingivalis* (*P.g.*) – Effects of *P.g.*-LPS and *P.g.* reached from odontogenic infection on hepatocytes. Sakamoto S, Miyauchi M, Takata T. 2013 Dentsply (Tokyo), 2013.
2. Identification of microRNA-203 as an inhibitor of invasion in oral cancer. Obayashi M. Frontal Dental School 2013, (Tokyo), 2013.

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

1. Grants-in-Aid for Scientific Research (Scientific Research(B)) New: Takashi Takata: Control of proliferation and bone invasion of oral cancer.

2. Grants-in-Aid for Scientific Research (Young Scientists(B)) New: Toshihiro Inubushi:
Development of low molecular weight lactoferrin for application in periodontal therapy.
3. Grants-in-Aid for Scientific Research (Scientific Research(C)) New Mutsumi Miyauch:
clarification of pathological progression mechanisms nonalcoholic steatohepatitis caused by
dental infection of periodontal pathogen.
4. Grants-in-Aid for Scientific Research (Challenging Exploratory Research) Continuance: Takashi
Takata: Study on the application of liposomal lactoferrin for prevention of Rheumatoid arthritis.
5. Grants-in-Aid for Scientific Research (Grant-in-Aid for Research Activity start-up) Continuance:
Hisako Furusho: Analysis of mechanisms of nonalcoholic steatohepatitis exacerbation caused by
dental infection and effects of dental treatment.
6. 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.
7. 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.
8. Donated fund from Sanstar Co. Ltd. : Takashi Takata. Study on periodontitis
9. Donated fund from Clinical laboratory center, Hiroshima city medical association. Continuance:
Takashi Takata: Study on diagnosis for oral disease.
10. Donated fund for Hiroshima Prefecture tumor registration business. Continuance: Takashi Takata
11. Donated fund from Mitsubishi-Mihara Hospital. Continuance: Takashi Takata: Study on diagnosis
for oral disease.

(5) Academic Awards, etc.

1. Shinnichi Sakamoto (6th grade of dental faculty) 2013 IADR David B. Scott Fellowship
2. Syota Tsukimoto (6th grade of dental faculty) 2013 Joseph Lister Award representation from
Japan
3. Shinnichi Sakamoto (6th grade of dental faculty) 2013 Dentsply Second winner, Winner of
Basic session
4. Takaaki Tsunematu 100th anniversary young investigator prize of pathology, The Japanese
Society of Pathology

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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 (Leading Program)

Kazuhisa Koizumi Pharmacy, Kimura Eye & Int. Med. Hospital

Graduate Student

Biological Chemistry. 288(52):36915-36925, 2013

3.

- 03/18
3. *Staphylococcus pseudintermedius* ExpB
- 03/20
- 4.
- 5/17
5. Molecular epidemiology of extended-spectrum β -lactamase-producing Enterobacteriaceae in Hiroshima region, Japan. R. Kuwahara, S. Kayama, H. Ohge, M. Sugai. 28th International congress of chemotherapy and infection. 5th-8th June, Yokohama.
6. revalence of the metallo- β -lactamase producing Imipenem-Susceptible Meropenem-Resistant (ISMR) Gram-negative rods in West Japan. S. Kayama, N. Shigemoto, R. Kuwahara, Y. Koba, M. Onodera, M. Yokozaki, H. Nishio, K. Yamasaki, Y. Wada, H. Ohge, M. Sugai. 28th International congress of chemotherapy and infection. 5th-8th June, Yokohama.
7. Identification of a novel *aac(6')-Iag* associated with the *bla_{IMP-1}*-integron in a multidrug-resistant *Pseudomonas aeruginosa*. K. Kobayashi, I. Hayashi, S. Kayama, H. Ohge, A. Matsubara, M. Sugai. 28th International congress of chemotherapy and infection. 5th-8th June, Yokohama.
8. Survey of metallo- β -lactamase producing *Pseudomonas aeruginosa* in Hiroshima. N. Shimada, N. Shigemoto, S. Kayama, H. Ohge, M. Sugai. 28th International congress of chemotherapy and infection. 5th-8th June, Yokohama.
- 9.
- 8/7
10. ETA
- 08/07
11. CA-MRSA
- 10/12
12. IPM Enterobacteriaceae 42
- 10/17
13. *Pseudomonas aeruginosa* RND MexAB-OprM
Staphylococcus aureus
- 61 11/06
14. ESBL (4).
- 61 11/06
15. - - IMP
- 61 11/06

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| 16. | | <i>bla</i> _{TMB-1} | <i>Acinetobacter baumannii</i> | . | 61 |
| | | 11/06 | | | |
| 17. | 2004 | 2012 | | . | 11/06 |
| | | | 61 | | |
| 18. | | <i>bla</i> _{OXA-181} | <i>Klebsiella pneumoniae</i> | . | 61 |
| | | 11/06 | | | |
| 19. | IPM | <i>Klebsiella</i> | - - | <i>bla</i> _{IMP-34} . | 61 |
| | | 11/06 | | | |
| 20. | | IMP | IMP | - - | |
| | | | (46) | 11/09 | |
| 21. | | ESBL | <i>Proteus mirabilis</i> | . | |
| | | 11/30 | | | |
| 22. | | | 11/30 | | |
| 23. | | | | | |
| | | | | 11/30 | |
| 24. | | | <i>bla</i> _{OXA-181} | <i>Klebsiella pneumoniae</i> | |
| | | 11/30 | | | |

F) Invited speakers, Symposist and others

1. The 6th National Scientific Meeting in Dentistry, Surabaya,Indonesia 4/27
2. 2013 3rd Reseach Weßek-international Symposium of Collage of Oral Medicine Taipei Medical University 5/17
3. **25**
9/10

(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
- 6: Grant for Hiroshima Univ. seeds research : Arai, C

(5) Awards

1, Infectious Disease News Article Emergence of staphylococcus aureus carrying multiple drug resistance genes on a plasmid encoding exfoliative toxin B

2, The International Dental Course: A Synchronization of the Dental Education for Joint Degree Program,

- 5 ,
- 3, *bla*TMB-1 *Acinetobacter baumannii* ,
- 8
- 4, ESBL 4
- 8
- 5, *bla*OXA-181 *Klebsiella pneumoniae* ,
- 5

(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, Satoshi Asano

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

Research Associate: Jun Zhang, Kana Harada

Administrative Staff: Nozomi Hinada

Graduate student: Rizia Sultana Kana Oue

- 2 Phospholipase C-related but catalytically inactive protein modulates pain behavior in a neuropathic pain model in mice. Kitayama T., Morita K., Sultana R., Kikushige N., Migita K., Ueno S., Hirata M., Kanematsu T. *Mol. pain*, 9, 23. 2013.
- 3 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*. 17(8): 1156-1167, 2013.
- 4 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*. 40(3): 205-213, 2013.

B Reviews

- 1 The behavior and toxicity of hydrofluoric acid, and emergency treatment of hydrofluoric acid exposure Kitayama T. *The Journal of the Japan Dental Technologists Association* 6, (May) 13-15 2013
- 2 Phospholipase C-related but catalytically inactive protein, PRIP as a scaffolding protein for phospho-regulation. Sugiyama G, Takeuchi H, Kanematsu T, Gao J, Matsuda M, Hirata M. *Adv Biol Regul*. 53(3): 331-340, 2013.

C Publications

D Other Publications

E Presentation at Scientific Meeting

- 1 Increased KCC2 expression in PRIP knockout mice ameliorates neuropathic pain Kitayama T., Morita K., Rizia S., Kanematsu T. *The 86th Annual Meeting of The Japanese Pharmacological Society*, (Fukuoka), 2013.
- 2 Differential effect of intravenous anesthetics in mice deficient in phospholipase C-related but catalytically inactive protein type-1 Ueno S., Nikaido Y., Yamada J., Migita K., Oota J., Kushikata T., Hirota K., Kanematsu T., Hirata M., *The 86th Annual Meeting of The Japanese Pharmacological Society*, (Fukuoka), 2013.
- 3 Post-transcriptional regulation of noradrenaline transporter by nicotine Ooyama K., Sogawa C., Wen X., Morita K., Sogawa N., Kitayama S. *The 86th Annual Meeting of The Japanese Pharmacological Society*, (Fukuoka), 2013.
- 4 A complex of PRIP and protein phosphatase regulates lipolysis in mice adipocyte Kanematsu T.,

- Okumura T. The 7th International DIP Symposium on Diabetes, Hypertension, Metabolic Syndrome, and Pregnancy (Florence, Italy), March 13-16, 2013.
- 5 Regulation of second phase of insulin secretion by phospholipase C-related catalytically inactive protein Asano S., Kanematsu T. 46th meeting of the Hiroshima University Dental Society (Hiroshima), 2013.
 - 6 PRIP regulates autophagosomal maturation containing *Staphylococcus aureus* Harada K. Kanematsu T. The 55th Annual Meeting of Japanese Association for Oral Biology, (Okayama), September 20-22, 2013.
 - 7 Regulation of insulin secretion by phospholipase C-related catalytically inactive protein Asano S., Kanematsu T. The 55th Annual Meeting of Japanese Association for Oral Biology, (Okayama), September 20-22, 2013.
 - 8 Genetic deficiency of PRIP induces impaired adipogenesis Zhang J, Oue K, Harada K, Kitayama T, Kanematsu T. The 86th Annual Meeting of the Japanese Biomedical Society (Yokohama), 2013.
 - 9 PRIP modulates autophagosomal maturation containing invasive bacteria. Harada Kae, Harada Kana, Hayashi S., Ikeda H., Kanematsu T. 5th Hiroshima Conference on Education and Science, (Hiroshima), October 12-13, 2013.
 - 10 Phospholipase C-related catalytically inactive protein modulates insulin secretory vesicle movement Asano S., Kanematsu T. 5th Hiroshima Conference on Education and Science, (Hiroshima), October 12-13, 2013.
 - 11 Inhibition of PRIP Expression Results in Impaired Adipogenesis Oue K., Zhang J., Irifune M., Kanematsu T. 5th Hiroshima Conference on Education and Science, (Hiroshima), October 12-13, 2013.
 - 12 PRIP1- and PRIP2-double knockout mice exhibit resistance to neuropathic pain in a partial sciatic nerve ligation model Kitayama T., Morita K., Kanematsu T. 5th Hiroshima Conference on Education and Science, (Hiroshima), October 12-13, 2013.
 - 13 Novel mechanisms of insulin vesicle transport in the KIF5-mediated insulin secretion Asano S., Kanematsu T. The 8th Japan-Korea conference on cellular signalling for young scientists Fukuoka , 2013.

F Special lectures in academic meeting

(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 33,555,600.
- 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 Young Scientists (B): Harada Kae., Elucidation of an exclusive mechanism via PRIP

against invasive bacteria. Project number 25861757. Amount 3,100,000 (2013) 16,000,000 (2013-2014).

4: Grant-in-Aid for Young Scientists (B): Asano S. Regulatory mechanisms of blood coagulation and repairing blood vessel via novel molecule. Project number 25861756. Amount 4,160,000. (2013-2014)

(5) Academic Awards

(6) Patents

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Department of Biomaterials, Basic Life Sciences

(1) Staff and Students

Professor: Koichi Kato

Assistant Professor: Yuji Nomura, Isao Hirata, Ryo Nishikiori

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

(2) Main Research Activities

- 1: Technology development for the mass-production and quality control of cells used in stem cell-based regenerative medicine
- 2: Design of tissue engineering scaffolds
- 3: Study on dental materials with antimicrobial activity

(3) Research Achievements

A) Original Papers (including Case Reports)

- 1: The extracts of Japanese willow tree species are effective for apoptotic desperation or differentiation of acute myeloid leukemia cells: Fujita K., Nomura Y., Sawajiri M., Mohapatra P.K., El-Shemy H.A., Nguyen N.T., Hosokawa M., Miyashita K., Maeda T., Saneoka H., Fujita S., Fujita T.: *Pharmacognosy Magazine*: in press
- 2: Bioactive surface modification of hydroxyapatite: Abe Y., Okazaki Y., Hiasa K., Yasuda K., Nogami K., Mizumachi W. Hirata I.: *BioMed Research International*, 2013, 626452-62, 2013.
- 3: New development of carbonate apatite-chitosan scaffold based on lyophilization technique for bone tissue engineering: Ariani M.D., Matsuura A., Hirata I., Kubo T., Kato K., Akagawa Y.: *Dent. Mater. J.*, 32(2), 317-25, 2013.
- 4: *In vivo* study on the survival of neural stem cells transplanted into the rat brain with a collagen hydrogel that incorporates laminin-derived polypeptides: Nakaji-Hirabayashi T., Kato K., Iwata H.: *Bioconjugate Chem.*, 24 (11), 1798–804, 2013.
- 5: Cell orientation and regulation of cell-cell communication in human mesenchymal stem cells on different patterns of electrospun fibers: Chang J.C., Fujita S., Tonami H., Kato K., Iwata H., Hsu S.H.: *Biomed. Mater.*, 8(5), 055002, 2013.

- 6: Selective and rapid expansion of human neural progenitor cells on a substrate with terminally-anchored growth factors: Konagaya S., Kato K., Nakaji-Hirabayashi T., Iwata H.: *Biomaterials*, 34(25), 6008-14, 2013.
- 7: Influence of alkyl chain length on calcium phosphate deposition onto titanium surfaces modified with alkylphosphonic acid monolayers: Wu J., Hirata I., Zhao X., Gao B., Okazaki M., Kato K.: *J. Biomed. Mater. Res. Part A*, A101(8), 2267-72, 2013.
- 8: Monitoring neural stem cell differentiation using PEDOT-PSS based MEA: Furukawa Y., Shimada A., Kato K., Iwata H., Torimitsu K.: *Biochim. Biophys. Acta - General Subjects*, 1830(9), 4329-33, 2013.

B) Review

- 1: Recombinant protein and biomaterials: Kato K.: *Seitaizairyō*, 31(2), 82-89, 2013. (in Japanese)

C) Publications

- 1: Biological safety, "Sutanda-do Shikarikougaku 5th edition": Kato K., Okazaki M.: Gakken Shoin, Tokyo Japan, 2013.3.1, p. 47-58. (in Japanese)
- 2: "Kagaku-masuta-kouza biomaterial": Iwata H., Kato K., Kimura S., Tabata Y.: Maruzen, Tokyo Japan, 2013.7.30, pp.73-80 (Chapter 3: Interaction of material and living body, 3-2 Interaction with somatic cells), pp.121-139 (Chapter 5: Making of protein) (in Japanese)

D) Other Publications

- 1: Effects on bone metabolism of heavy particle beam: Sawajiri M., Nomura Y., Terato H., Maruyama K.: Research report *Radiology comprehensive heavy ion beam cancer treatment devices (Treatment and diagnosis, biological)*, 81-82, 2013

E) Presentation at Scientific Meeting

- 1: Development of quality control method of mesenchymal stem cells by biochip. Nishikiori R., Watanabe K., Kato K. The 7th Annual Meeting of Nano Biomedical Society Kyoto 2013
- 2: Fabrication of antibody microarrays for high-throughput cytometry Nishikiori R., Watanabe K., Kato K. International Workshop on Nanodevice Technologies 2013 (Hiroshima), 2013
- 3: Irradiation effect on metastasis of breast cancer cell Sawajiri M., Srimawong P., Nishikiori R., Maruyama K., Taratou H., Tanimoto K. The 56th Annual meeting of the Japan radiation research

- society (Aomori), 2013
- 4: Effect of molecular crowding on antigen-antibody interactions at solid-liquid interfaces: The 4th Taiwan-Japan Symposium on Nanomedicine (Taipei, Taiwan), 2013.
 - 5: Influence of molecular crowding on the antigen-antibody reaction at the solid-liquid interface: Hirata I., Kato K.: 42nd Iyou Koubunshi Sinpoziumu (Tokyo Japan), 2013. (in Japanese)
 - 6: Design of culture substrate for serum-free culture medium of mesenchymal stem cells: Yamauchi Y., Hirata I., Kanawa M., Kato Y., Kato K.: Heisei 25 nendo Japan Dental Material Society Kinki-TyuShikoku Association Summer Seminar (Okayama, Japan), 2013 (in Japanese)
 - 7: Evaluation of proliferation and differentiation of mesenchymal stem cells on mixed self-assembled monolayers: Hirata I., Kanawa M., Kato Y., Kato K.: 5th Hiroshima Conference on Education and Science in Dentistry (Hiroshima, Japan), 2013.
 - 8: Microarrays of plasmids and proteins for identifying the determinants of stem cell fates: Kato K.: 5th Hiroshima Conference on Education and Science in Dentistry (Hiroshima, Japan), 2013.
 - 9: Antibody chip analysis techniques for standardization and quality control of stem cell: Kato K.: BIOtech 2013 Academic Forum (Tokyo, Japan), 2013. (in Japanese)
 - 10: Incorporation of engineered polypeptides into collagen hydrogels for the optimization of cellular microenvironments: Kato K.: 2013 IEEE EMBS (Osaka, Japan), 2013.
 - 11: Kato K.: Interdisciplinary Discussion of Bioengineering in Kyoto (Kyoto, Japan), 2013.
 - 12: Characterization of stem cell population by the antibody array chip: Kato K.: 55th Dental Basic Medical Association Annual Conference meeting (Okayama, Japan), 2013. (in Japanese)
 - 13: Future vision of polymer biomaterials: Kato K.: Heisei 25 nendo Japan Dental Material Society Kinki-ChuShikoku Association Summer Seminar (Okayama, Japan), 2013 (in Japanese)
 - 14: Antibody microarrays for characterization of mesenchymal stem cell populations: Kato K., Nishikiori R., Watanabe K.: 1st China-Japan Symposium on Nanomedicine (Nanjing, China), 2013.

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

- 1: Grant-in-Aid for Scientific Research, Challenging Exploratory Research: Nishikiori R.: Identification of prospective surface markers of mesenchymal stem cells by on-chip cell sorting method: No.25670832. 2,900,000 JPY.
- 2: 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. 900,000JPY
- 3: Grant-in-Aid for Scientific Research (B), Ministry of Education, Culture, Sports, Science and Technology: Hirata Y.: Development of chemical regulation of culture substrate that control cell growth and differentiation: No. 25293403. 11,700,000JPY

- 4: Grant-in-Aid for Scientific Research (B), Ministry of Education, Culture, Sports, Science and Technology: Kato K.: Creation of artificial extracellular matrix for biological similar tissue architecture: No.25293404. 10,920,000JPY
- 5: Grant-in-Aid for Scientific Research on Innovative Areas: Kato K.: Influence of molecular crowding on protein-protein interactions at the solid-liquid interface: No. 24107517. 3,900,000JPY
- 6: Grant-in-Aid for Scientific Research, Challenging Exploratory Research: Kato K.: Design of protein treated scaffold material for periodontal tissue regeneration: No. 24659877. 1,430,000JPY
- 7: JST research results expand business strategic innovation promotion program: Kato K.: Creation of organ regeneration scaffold material based on the differentiation induction technique and cell-specific spatial placement: 4,000,000JPY

(5) Academic Awards, etc.

(6) Patents

- 1: Fujita K., Nomura Y., Nguyen T.N.: Composition for treating tumor and method for producing the same (Patent Number 5441023) (Hiroshima Univ)
- 2: Nomura Y., Nakamura M.,: Disinfection-bleaching device and management system of the device (Patent Number 5234433) (Nakamura M., Nomura Y.)
- 3: Nomura Y., Miyazawa K.: Simple liquid spray device (Patent Number 5458351) (Iryo Kankyo Techno KK)

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

(1) Staffs and Students

Professor: Hidemi: Kurihara

Associate Professor: Hideki Shiba

Associate Professor Lecturer: Tsuyoshi Fujita

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

Kazuhisa Ouhara, Shinji Matsuda, Mikihito Kajiya

Assistant Professor (Special Appointment): Takayoshi Nagahara (October-)

Resident: Yasuko Kitamoto (-March), Fumino Ogawa, Mizuho Kittaka (June-studying abroad), Akihiro Konishi, Tsuyoshi Miyagawa, Kenji Wada

Graduate Student: Yoriko Iwasaki (-March), Yoshie Niitani (under leave of absence), Naoko Katagiri (-March), Kabir MD Ahamedul (-March), Haruka Imai, Yusuke Obinata, Eri Kaneda, Takako Fujita, Ryoichi Yagi, Shu Ishida, Khung Rathvisal, Kei Kashiwai, Masahiro Yamakawa, Tetsuya Yoshimoto, Yusuke Aida, Naoko Tokunaga, Keita Takahashi, Kei Takahashi, NGUYEN, QUOC TRUONG, Masahiko Suzukawa, Ai Okanobu, Manabu Takewaki, Shuichi Munenaga (under leave of absence)

Visiting Researcher: Irma Josefina Savitri

Clinical Trainee: Minako Ueshige (-March), Takeshi Ueda, Tetsutaro Ishigaki (August-), Hiroshi Haraga (December-)

International Research Student:

Kristanti Parisihni September-November Sri Wigati Mardi September-November

(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. Irsogladine maleate regulates the inflammatory related genes in human gingival epithelial cells stimulated by *Aggregatibacter actinomycetemcomitans*
Tsuyoshi Miyagawa, Tsuyoshi Fujita, Kazuhisa Ouhara, Shinji Matsuda, Mikihito Kajiya, Kouichi Hayashida, Haruka Imai, Tetsuya Yoshimoto, Tomoyuki Iwata, Hideki Shiba, Yoshimitsu Abiko, Hidemi Kurihara
International Immunopharmacology, 2013 February, 15(2), 340-347
2. Examination of stimulated saliva production, caries risk item and number of *Candida* of mouth
Kitagawa M, Yanagisawa S., Shintani T., Ogawa I., Kurihara H
J JSEDP, 2013 March, 5(1), 31-7
3. 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.
Journal of Periodontal. Res., 2013 April, 48 (2), 228-234
4. The antimicrobial peptide LL37 promotes bone regeneration in a rat calvarial bone defect.
Mizuho Kittaka, Hideki Shiba, Mikihito Kajiya, Takako Fujita, Tomoyuki Iwata, Khung Rathvisal, Kazuhisa Ouhara, Katsuhiro Takeda, Tsuyoshi Fujita, Hitoshi Komatsuzawa, Hidemi Kurihara
Peptides, 2013 August, 46, 136-142
5. The Keap1/Nrf2 protein axis plays a role in osteoclast differentiation by regulating intracellular reactive oxygen species signaling
Hiroyuki Kanzaki, Fumiaki Shinohara, Mikihito Kajiya, Tetsuya Kodama
The Journal of Biological Chemistry, 2013 August, 9;288(32), 23009-20
6. BDNF protects human vascular endothelial cells from TNF α -induced apoptosis.
Takeda K, Kermani P, Anastasia A, Obinata Y, Hempstead BL, Kurihara H.
Biochem Cell Biol., 2013 October, 91(5), 341-9.
7. Etanercept Administration to Neonatal SH3BP2 Knock-In Cherubism Mice Prevents TNF α -induced Inflammation and Bone Loss
Teruhito Yoshitaka, Shu Ishida, Tomoyuki Mukai, Mizuho Kittaka, Ernst J. Reichenberger, Yasuyoshi Ueki

Journal of Bone and Mineral Research, 2013 October, DOI: 10.1002/jbmr.2125

8. miR-584 Expressed in Human Gingival Epithelial Cells is Induced by Porphyromonas Gingivalis Stimulation and Regulates Interleukin-8 Production via Lactoferrin Receptor. Kazuhisa Ouhara, Irma Josefina Savitri, Tsuyoshi Fujita, Mizuho Kittaka, Mikihito Kajiya, Tomoyuki Iwata, Tsuyoshi Miyagawa, Masahiro Yamakawa, Hideki Shiba, Hidemi Kurihara
Journal of Periodontology, 2013 November, in press
9. Dental infection of Porphyromonas gingivalis exacerbates high fat diet-induced steatohepatitis in mice.
Hisako Frusho, Mutsumi Miyauchi, Hideyuki Hyogo, Toshishiro Inubushi, Min Ao, Kazuhisa Ouhara, Junzou Hisatune, Hidemi Kurihara, Motoyuki Sugai, C Nelson Hayes, Takashi Nakahara, Hiroshi Akita, Shoichi Takahashi, Kazuaki Cyayama, Takashi Takata
Journal of Gastroenterology, 2013 November, Volume 48, Issue 11, pp 1259-1270

B) Review

1. Investigation of Preventive methods for periodontal disease by regulating gingival epithelial function.
Tsuyoshi Fujita
Journal of the Japanese Society of Periodontology, 2013 December, 55(4), 287-293

C) Publications

1. New edition, Encyclopedia about health of a tooth and a mouse for families (Koichi Ito et al.)
Shiba H., Kurihara H
Ishiyaku Publishers Inc. (Tokyo), 2013, 423-426
2. Glossary of Endodontics 2013 (edited by The Japanese Society of Conservative Dentistry and Japan Endodontic Association)
Shiba H., Kurihara H
Ishiyaku Publishers Inc. (Tokyo), 2013, 41-43

D) Other Publications

1. Life stage and Endodontics, For the long-term preservation of teeth, 3. Endodontics for adults, Approach for endodontic and periodontal disease
Shiba H., Kurihara H
2013, Extra number Dental Diamond, 106-113

E) Presentation at Scientific Meeting

1.

- and Mineral Research (Kobe), May 2013
9. BDNF regulates inflammatory cytokine expressions in human vascular endothelial cells
Yusuke Obinata, Katsuhiko Takeda, Akihiro Konishi, Naoko Katagiri, Mikihito Kajiya, Tsuyoshi Fujita, Hideki Shiba, Hidemi Kurihara
The 56th spring meeting of the Japanese society of Periodontology (Tokyo), May 2013
 10. To investigate the effect of PLGA as a scaffold of bone marrow mesenchymal stem cell for the treatment of large periodontal defect
Takako Fujita, Katsuhiko Takeda, Takayoshi Nagahara, Mizuho Kittaka, Takeshi Ueda, Kenji Wada, Tsuyoshi Fujita, Hideki Shiba, Hidemi Kurihara
The 56th spring meeting of the Japanese society of Periodontology (Tokyo), May 2013
 11. Regulation of human gingival epithelial cells by Irsogladine maleate
Tsuyoshi Miyagawa, Tsuyoshi Fujita Kazuhisa Ouhara Shinji Matsuda Katsuhiko Takeda Yuushi Uchida Haruka Imai Mikihito Kajiya Hideki Shiba Hidemi Kurihara
The 56th spring meeting of the Japanese society of Periodontology (Tokyo), May 2013
 12. Effect of TGF- β 1 on apoptosis signaling and the expression of E-cadherin in gingival epithelial cells
Tetsuya Yoshimoto, Tsuyoshi Fujita, Kazuhisa Ouhara, Mikihito Kajiya, Tsuyoshi Miyagawa, Haruka Imai, Hideki Shiba, Hidemi Kurihara
The 56th spring meeting of the Japanese society of Periodontology (Tokyo), May 2013
 13. The influence of the expression of inflammatory cytokines via lipid raft on human gingival epithelial cells.
Haruka I., Fujita T, Ouhara K, Kajiya M, Uchida Y, Miyagawa T, Yoshimoto T, Shiba H, Kurihara H
The 138th Meeting of the Japanese Society of Conservative Dentistry (Fukuoka), June 2013
 14. Small molecule BDNF mimetic regulates cementoblast differentiation via TrkB signaling
Mikihito Kajiya, Kei Kashiwai, Kei Takeshita, Nguyen Quon Trung, Masae Kiagawa, Takashi Takata, Tsuyoshi Fujita, Hideki Shiba, Hidemi Kurihara
The 138th Meeting of the Japanese Society of Conservative Dentistry (Fukuoka), June 2013
 15. Experimental analysis of *Porphyromonas gingivalis* infection affected the expression of rheumatoid arthritis
Masahiro Yamakawa, Kazuhisa Ouhara, Mikihito Kajiya, Mizuho Kittaka, Tsuyoshi Fujita, Hideki Shiba, Hidemi Kurihara
The 138th Meeting of the Japanese Society of Conservative Dentistry (Fukuoka), June 2013
 16. BDNF regulates inflammatory cytokine expressions in human vascular endothelial cells
Yusuke Obinata, Katsuhiko Takeda, Akihiro Konishi, Naoko Katagiri, Mikihito Kajiya, Tsuyoshi Fujita, Hideki Shiba, Hidemi Kurihara
46th meeting of the Hiroshima University Dental Society (Hiroshima), June 2013
 17. Osteogenic differentiation of mesenchymal stem cells in PLGA block

- Takako Fujita, Katsuhiko Takeda, Takayoshi Nagahara, Mizuho Kittaka, Takeshi Ueda, Kenji Wada, Tsuyoshi Fujita, Hideki Shiba, Hidemi Kurihara
46th meeting of the Hiroshima University Dental Society (Hiroshima), June 2013
18. Detecting novel mutations of Alzheimer's disease using semiconductor sequencing
Ryoichi Yagi, Hirofumi Maruyama, Hiroyuki Morino, Noriyoshi Mizuno, Hideshi Kawakami, Hidemi Kurihara
46th meeting of the Hiroshima University Dental Society (Hiroshima), June 2013
19. Screening causative genes of Alzheimer's disease
Ryoichi Yagi, Ryosuke Miyamoto, Yuishin Izumi, Hirofumi Maruyama, Hidemi Kurihara, Hideshi Kawakami
The 28th Annual Meeting of Japan Geriatrics Society (Osaka), June 2013
20. Anti-inflammatory effect of Irsogladine maleate on human gingival epithelial cells
Tsuyoshi Miyagawa, Tsuyoshi Fujita, Hideki Shiba, Hidemi Kurihara
The 34th Annual Meeting of Japanese Society of Inflammation and Regeneration (Kyoto), July 2013
21. Outer membrane protein 29 from *Aggregatibacter actinomycetemcomitans* may induce gingival epithelial cells apoptosis via TGF- β type I Receptor -smad2-caspase3/9 signaling pathway.
Tetsuya Yoshimoto, Tsuyoshi Fujita, Kazuhisa Ouhara, Mikihiro Kajiyama, Tsuyoshi Miyagawa, Haruka Imai, Hideki Shiba, Hidemi Kurihara
The 10th Asian Pacific Society of Periodontology Meeting (Nara), September 2013
22. Experimental analysis of the expression of Rheumatoid arthritis affected *Porphyromonas gingivalis* infection
Masahiro Yamakawa, Kazuhisa Ouhara, Mikihiro Kajiyama, Mizuho Kittaka, Tsuyoshi Fujita, Hideki Shiba, Hidemi Kurihara
The 10th Asian Pacific Society of Periodontology Meeting (Nara), September 2013
23. Significance of lip biopsy in diagnosis of Sjogren syndrome and IgG4-related disease
Nagasaki A, Kitagawa M., Shintani T., Ogawa I., Kurihara H
The 6th Annual Meeting of Japanese Society for Evidence and the Dental Professional (Yokohama), September 2013
24. Experimental analysis of the expression of Rheumatoid arthritis affected *Porphyromonas gingivalis* infection
Masahiro Yamakawa, Kazuhisa Ouhara, Mikihiro Kajiyama, Mizuho Kittaka, Tsuyoshi Fujita, Hideki Shiba, Hidemi Kurihara
The 56th Autumn Meeting of Japanese Society of Periodontology (Maebashi), September 2013
25. Functional analysis of mesenchymal stem cell in long term culture and passage process.
Shu Ishida, Tomoyuki Iwata, Eri Kaneda, Keita Takahashi, Hideki Shiba, Hidemi Kurihara
The 56th Autumn Meeting of Japanese Society of Periodontology (Maebashi), September 2013

26. Effects of Receptor for advanced glycation endproducts on Human Gingival Epithelial Cells
Y Uchida, K Ouhara, T Fujita, M Kajiya, H Shiba, H Kurihara
The 56th Autumn Meeting of Japanese Society of Periodontology (Maebashi), September 2013
27. GCF and IFN- γ in mouse periodontitis -Report of Brain-Circuation Program-
S. Matsuda
5th Hiroshima Conference on Education and Science (Hiroshima), October 2013
28. Human gingival epithelial cells are induced apoptosis via TGF- type I Receptor-smad2-caspase3/9 signaling pathway.
Tetsuya Yoshimoto, Tsuyoshi Fujita, Kazuhisa Ouhara, Mikihiro Kajiya, Tsuyoshi Miyagawa, Haruka Imai, Hideki Shiba, Hidemi Kurihara
The 139th autumn meeting of the Japanese Society for conservative dentistry (Akita), October 2013
29. BDNF induces apoptotic cascade of human gingival epithelial cells.
Kei Kashiwai, Mikihiro Kajiya, Tsuyoshi Fujita, Shinji Matsuda, Katsuhiko Takeda, Hideki Shiba, Hidemi Kurihara
The 139th autumn meeting of the Japanese Society for conservative dentistry (Akita), October 2013
30. microRNAs regulate differentiation of mesenchymal stem cells by humoral factors from gingival fibroblasts
Eri Kaneda, Tomoyuki Iwata, Shu Ishida, Keita Takahashi, Takayoshi Nagahara, Tsuyoshi Fujita, Hideki Shiba, Hidemi Kurihara
The 139th autumn meeting of the Japanese Society for conservative dentistry (Akita), October 2013
31. A case report of aggressive periodontitis improved by initial preparation
Noriyoshi Mizuno, Hidemi Kurihara
The Japanese Academy of Clinical Periodontology (Hiroshima), October 2013
32. Detecting novel mutations of Alzheimer's disease gene using semiconductor sequencing
Ryoichi Yagi, Ryosuke Miyamoto, Hiroyuki Morino, Yuishin Izumi, Masahito Kuramochi, Takashi Kurashige, Hirofumi Maruyama, Noriyoshi Mizuno, Hidemi Kurihara, Hideshi Kawakami
2013 American society Human genetics (BOSTON, USA), October 2013
33. Establish new method for picking up GCF in mice model
S. Matsuda, M. Kajiya, T. Fujita, H. Shiba, H. Kurihara
The 97th meeting of Hiroshima University Faculty of Dentistry (Hiroshima), November 2013
34. Adhesion of mesenchyme stem cells to dentin surface
K Wada, Y Uchida, K Takeda, H shiba, H Kurihara
The 97th meeting of Hiroshima University Faculty of Dentistry (Hiroshima), November 2013
35. Immunohistochemical study of periodontal tissue regenerative process by BDNF.
Akihiro Konishi, Katsuhiko Takeda, Mikihiro Kajiya, Shinji Matsuda, Tsuyoshi Fujita, Hideki Shiba, Hidemi Kurihara

- The 97th meeting of Hiroshima University Faculty of Dentistry (Hiroshima), November 2013
36. Examination of stimulated saliva production, caries risk item and number of *Candida* of mouth
Kitagawa M, Nagasaki A., Shintani T., Ogawa I., Kurihara H.
The 97th meeting of Hiroshima University Faculty of Dentistry (Hiroshima), November 2013
37. Possible IgG Transportation mechanism mediated by Neonatal Fc Receptor (FcRn) expressed in gingival epithelial cells
Kazuhisa Ouhara, Mikihiro Kajiya, Tsuyoshi Fujita, Hideki Shiba, Hidemi Kurihara
The 53rd General Session of the Korean Academy of Periodontology (Seoul, Korea), November 2013
38. Apoptosis in human gingival epithelial cells is induced via TGF- β type I Receptor-smad2-caspase3 signaling cascade.
Tetsuya Yoshimoto, Tsuyoshi Fujita, Kazuhisa Ouhara, Mikihiro Kajiya, Tsuyoshi Miyagawa, Haruka Imai, Hideki Shiba, Hidemi Kurihara
The 53rd General Session of the Korean Academy of Periodontology (Seoul, Korea), November 2013
39. Brain-derived neurotrophic factor (BDNF) modulates pro-inflammatory cytokines induced endothelial barrier dysfunction for periodontal tissue regeneration.
S. Matsuda, K. Kashiwai, M. Kajiya, K. Takeda, T. Fujita, H. Shiba, H. Kurihara
The 53rd General Session of the Korean Academy of Periodontology (Seoul, Korea), November 2013
40. Clumps of MSCs/ECM complex can be a novel tissue engineering therapy for bone regeneration
Mikihiro Kajiya, Mizuho Kittaka, Hideki Shiba, Manabu Takewaki, Kei Takeshita, Khung Rathvisal, Nguyen Quon Troung, Kazuhisa Ouhara, Tsuyoshi Fujita, Hidemi Kurihara
The 53rd General Session of the Korean Academy of Periodontology (Seoul, Korea), November 2013
41. Experimental analysis of the expression of Rheumatoid arthritis affected *Porphyromonas gingivalis* infection
Masahiro Yamakawa, Kazuhisa Ouhara, Mikihiro Kajiya, Mizuho Kittaka, Tsuyoshi Fujita, Hideki Shiba, Hidemi Kurihara
The 53rd General Session of the Korean Academy of Periodontology (Seoul, Korea), November 2013
42. AUDIT System for prevention of nosocomial infection in dental clinic by Hiroshima Safety Dental Service Support Network – (2) based on the result of first AUDIT test run –
Tomoyuki Iwata, Noriyoshi Mizuno, Miyuki Nakaoka, Yumi Irie, Hideki Shiba, Akihiro Sawa, Koji Kimura, Tomoko Sugata and Hidemi Kurihara
The 34th Hiroshima study meeting for infectious disease (Hiroshima), November 2013

43. Role of lip biopsy in diagnosis of Sjögren's syndrome and IgG4-related disease
Nagasaki A, Kitagawa M., Shintani T., Ogawa I., Kurihara H., Takata T
The 58th Meeting of Japanese Salivary Gland Society (Tokyo), December 2013

F) Special lectures in academic meetings

1. Hidemi Kurihara KPPIKG2013 (Indonesia), March 2013
- 2.

meeting for infectious disease (Hiroshima), November 2013

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

1. Grants-in aid for scientific research: Hidemi Kurihara: #235929235
2. Grants-in aid for scientific research: Noriyoshi Mizuno #235930610
3. Grants-in aid for scientific research: Hidemi Kurihara: #243904670
4. Grants-in aid for scientific research: Hideki Shiba: #245931220
5. Grants-in aid for scientific research : Tsuyoshi Fujita: #245931230
6. Grants-in aid for scientific research: Hidemi Kurihara: #246598775
7. Grants-in aid for scientific research: Shinji Matsuda: #247923300
8. Grants-in aid for scientific research: Mikihiro Kajiyama: #248901420
9. Grants-in aid for scientific research: Yuushi Uchida: # 254629600
10. Grants-in aid for scientific research: Katsuhiko Takeda: # 254632180
11. Grants-in aid for scientific research: Hidemi Kurihara: # 256708850
12. Grants-in aid for scientific research :Tomoyuki Iwata: #258620490
13. Grants-in aid for scientific research: Takayoshi Nagahara: #258620500
14. Grants-in aid for scientific research : Kazuhisa Ouhara : #258620510
15. General foundation Ryokufukai The year of 2013 education and research prize for encouragement (Grant for young researcher grant): Masahiro Yamakawa
16. Japanese Society of Periodontology Encouragement research grants – in aid for Seeds foster young researcher (the year of 2013): Mikihiro Kajiyama
17. Hiroshima University education and research support foundation The year of 2013 grants for education and research Grants for scientific research and public disclosure of the results by young researcher : Mikihiro Kajiyama
18. The year of 2013 Japanese Association for Dental Science Project research business: Hidemi Kurihara

gingival epithelial cells

The 53rd General Session of the Korean Academy of Periodontology

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

(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

Resident : Maho Takeuchi, Mariko Maruyama, Hiroshi Oue, Yohei Okazaki, Hirokazu Tsuchioka

Graduate Student : Shinsuke Okada, Shiho Kajihara, Yusuke Makihara, Takahiro Mori, Chiaki Higa, Aya Hesaka, Kan kato, Keisuke Yasuda, Yoshifumi Oki, Akira kato, Hiromichi kawano, Yukari Kinoshita, Masako Kobayashi, Yoko Shiotani, Yosuke Takeda

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: Bioactive surface modification of hydroxyapatite : Abe Y, Okazaki Y, Hiasa K, Yasuda K, Nogami K, Mizumachi W, Hirata I BioMed Research International, 2013, 626452, 2013.

- 2: Tooth loss induces memory impairment and neuronal cell loss in APP transgenic mice: Oue H, Miyamoto Y, Okada S, Koretake K, Jung CG, Michikawa M, Akagawa Y: *Behav Brain Res.*, 252, 318-325, 2013.

B) Review

C) Publications

D) Other Publications

E) Presentation at Scientific Meeting

- 1: Prosthodontic Value-Its Reality: Akagawa Y: 85th Annual Meeting of The American Prosthodontic Society Golden Medallion Awardee Lecture (Chicago). 2013.
- 2: Applying inorganic polyphosphate-adsorbed hydroxyapatite for GBR in dogs : Doi K, Kubo T, Kajihara K, Morita K, Akagawa Y : 91st General Session & Exhibition of the IADR (Seattle), 2013.
- 3: Tooth loss induces memory impairment and neuronal cell loss : Oue H, Miyamoto Y, Koretake K, Okada S, Akagawa Y : 1st General Session & Exhibition of the IADR (Seattle), 2013.
- 4: Histological and mechanical evaluation of the implants placed in the reconstructed bone by interconnected porous calcium hydroxyapatite : Makihara Y, Doi K, Morita K, Kajihara S, Kubo T, Akagawa Y : International College of Prosthodontists (Torino), 2013.
- 5: Relationship between swallowing function and maximum tongue pressure in ALS patients: Yoshikawa M, Hesaka A, Takaki S, Nakamori M, Nagasaki T, Hosomi N, Yoshida M, Tsuga K, Tanimoto K, Matsumoto M, Izumi Y: 3rd congress of the European society for swallowing disorders, 2013.
- 6: Re-assessment of management of medical information : Hiaa K, Tanaka T, Tanne K : the annual conference of university hospital information management liaison (Niigata), 2013.
- 7: Diagnosis of implant treatment from prosthetic viewing : Kubo T : Japanese society of Oral implantology chugoku & shikoku branch Implant start-up seminar (Kurayoshi), 2013.
- 8: Implant : Akagawa Y : Japanese society of Oral implantology chugoku & shikoku branch Implant start-up seminar (Kurayoshi), 2013.
- 9: Oral Functional Rehabilitation using Lollipop Candy for The Patient with Moderate Dementia : Yamawaki K, Yoshikawa M, Tsuga K, Kubo T, Taji T, Akagawa Y : The Japan Prosthodontic society 122 annual meeting (Fukuoka), 2013.
- 10: Tongue pressure changes over a 5-year period among community-dwelling elderly: Mori T, Tsuchioka H, Maruyama M, Yoshikawa M, Yoshida M, Tsuga K, Kimura M: 46th meeting of

Hiroshima university dental society, 2013.

- 11: Relationship between swallowing function and maximum tongue pressure in ALS patients: Yoshikawa M, Hesaka A, Takaki S, Nakamori M, Hichi M, Oda M, Ito H, Nagasaki T, Hosomi N, Higa C, Mori T, Yoshida M, Tsuga K, Tanimoto K, Matsumoto M, Izumi Y: 46th meeting of Hiroshima university dental society, 2013.
- 12: Effect on peri-implant bone by splinting of different surface implants : Okada S, Oue H, Miyamoto Y, Koretake K : Japanese prosthodontics society annual meeting of chugoku&shikoku brunch (Kochi),2013.
- 13: The implants placed in the reconstructed bone by interconnected porous calcium hydroxyapatite: Histological and mechanical evaluation : Makihara Y, Doi K, Kajihara S, Kubo T, Akagawa Y : Japanese Society of Oral Implantology(Hakata): 2013.
- 14: Relationship between swallowing function and maximum tongue pressure in ALS patients: Hiraoka A, Yoshikawa M, Takaki S, Nakamori M, Hichi M, Oda M, Ito H, Nagasaki T, Higa C, Mori T, Tsuga K, Tanimoto K, Hosomi N, Izumi Y, Matsumoto M : The Japanese Society of Dysphagia Rehabilitation (Okayama), 2013.
- 15: Influence of implant surface on primary stability : An experiment of reduced bone model : Oki Y, Doi K, Oue H, Kajihara S, Makihara Y, Kubo T, Tsuga K : The 97th meeting of The Hiroshima University dental society (Hiroshima), 2013.
- 16: The influence of implant surface on primary stability: An examination using decreased bone quality model: Oue H, Doi K, Kajihara S, Makihara Y, Kubo T: Japanese society of oral implantology The 33th annual scientific meeting of chugoku shikoku branch (Yonago), 2013.

(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). ¥1,700,000
- 2: MEXT Grant-in Aid for scientific Research (B) Akagawa Y Development of functional intelligent implant complex using bio-processing (Grant No. 243904350A). ¥6,985,000
- 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- B decoy. (Grant No. 23390443). ¥4,300,000
- 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). ¥1,520,000
- 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). ¥1,686,000

- 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). ¥1,536,000
- 7: MEXT Grants-in-Aid for Scientific Research (C) : Koretake K : Development of diagnosis of single implant supported denture for edentulous patients. (Grant No. 25462998). ¥1,200,000
- 8: 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). ¥1,029,000
- 9: 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). ¥1,929,000

(5) Academic Awards, etc.

- 1: The American Prosthodontic Society Golden Medallion Award : Akagawa Y
- 2: International Association for Dental Research Distinguished Scientist Award in Prosthodontics and Implants : Akagawa Y
- 3: International Association for Dental Research Arthur Frechette Award 2013 Finalist: Oue H
- 4: Japanese society of oral implantology the 42nd annual meeting excellent research presentation award: Okazaki Y

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Department of Advanced Prosthodontics, Applied Life Sciences and Department of Prosthetic Dentistry, Division of Preventive and Restorative Dentistry

(1) Staff and Students

- Professor : Yasumasa Akagawa (until March)
- Associate Professor : Shinsuke Sadamori (until March), Hitoshi Abekura
- Assistant Professor : Koh-ichi Kuremoto, Kazuya Doi, Kouji Morita,
Wataru Mizumachi (since April)
- Administrative staff : Michiko Miyagawa
- Resident : Kazuko Kagawa (until March), Kouichi Kamada (until March), Hiroki Tsuka,
Masahiro Tsuboi, Tomoharu Hori , Tomohisa Okura (since April), Yosifumi Oki
(since April), Akira Kato (since April), Hiromichi Kawano (since April)
- Graduate Student : Keisuke Nogami, Kazuko Kagawa, Yosifumi Oki (since April), Akira Kato (since
April), Hiromichi Kawano (since April)
- Clinical Trainee : Isao Fujihara

(2) Main Research Activities

The study of relationship between oral habits and psychosomatic stress responses measured by salivary chromogranin A.

The antimicrobial efficacy of chlorine dioxide element to add to dental material.

Exploration of amelogenic stem/progenitor cells for tissue-engineered tooth.

The roles of FGFR2b signaling in the regenerative capacity of tooth and bone.

Study of occlusal-supporting ability of individual maxillary and mandibular teeth

Relation between prosthetic treatment and general condition in elderly with dementia.

Psychiatric disorders in dental practice.

Establishment of bone regeneration by using interconnected porous hydroxyapatite and biopolymeric material

(3) Research Achievements

A) Original Papers (including Case Reports)

Development of inorganic polyphosphate-adsorbed interconnected porous hydroxyapatite Doi K
Ann Jpn Prosthodont Soc, 5(4) , 417-419, 2013

A Case of Using Interconnected Porous Calcium Hydroxyapatite and Absorptive Screw for the Alveolar Ridge Atrophy Ninomiya Y., Ono S., Ohta K., Nakagawa T., Takamoto M., Kagawa K., Abekura H., Takechi M.: J Hiroshima Univ Dent Soc, 45(2), 118-123 , 2013

Inorganic Polyphosphate Suppresses Lipopolysaccharide-Induced Inducible Nitric Oxide Synthase (iNOS) Expression in Macrophages: Harada K., Shiba T., Doi K., Morita K., Kubo T., Makihara Y., Piattelli A., Akagawa Y.: PLoS One, 8(9), e74650, 2013.

Polyphosphate-mediated inhibition of tartrate-resistant Acid phosphatase and suppression of bone resorption of osteoclasts Harada K., Itoh H., Kawazoe Y., Miyazaki S., Doi K., Kubo T., Akagawa Y., Shiba T.: PLoS One, 8(11), e78612, 2013.

Correlation between the Bone Density Recorded by a Computerized Implant Motor and by a Histomorphometric Analysis: A Preliminary In Vitro Study on Bovine Ribs Iezzi G., Scarano A., Di Stefano D., Arosio P., Doi K., Ricci L., Piattelli A., Perrotti V.: Clin Implant Dent Relat Res, 2013 (in press).

Influence of formalin fixation on the implant stability quotient and mechanical characteristics of bone Morita K., Doi K., Oue H., Kajihara S., Hayashi K., Akagawa Y.: Br J Oral Maxillofac Surg, 51, 550-4, 2013.

Proposed score for occlusal-supporting ability : Abe Y., Nogami K., Mizumachi W., Tsuka H., Hiasa K.: Open Journal of Stomatology, 3,230-234,2013.

B) Review

C) Publications

D) Other Publications

1. Development of the Nobel Abutment for Implant Supported Removable Partial Dentures Kuremoto K., Maeda T., Tamada Y., Inoue M., Etoh T., Akagawa Y., Okazaki J.: Dental Outlook, 22nd JADS, 282, 2013.

E) Presentation at Scientific Meeting

Influence of implant surface on primary stability : An experiment of reduced bone model : Oki Y., Doi K., Oue H., Kajihara S., Makihara Y., Kubo T., Tsuga K.: The 97th meeting of The Hiroshima University dental society (Hiroshima), 2013.

Immediate effect of wearing on swallowing Kawano H., Yoshida M., Hiraoka A., Higa C., Mori T., Yoshikawa M., Kohada A., Tsuga K.: Annual Scientific Meeting of Japan Prosthodontic Society Chugoku and Shikoku Branch (Kouchi), 2013.

The implants placed in the reconstructed bone by interconnected porous calcium hydroxyapatite: Histological and mechanical evaluation Makihara Y., Doi K., Kajihara S., Kubo T., Akagawa Y.: Japanese Society of Oral Implantology (Fukuoka), 2013.

A collaborative and cooperative clinical practice for the undergraduates in the school of dentistry and the course of oral engineering Taji T., Simoe S., Tamamoto M., Hisaki K., Kuremoto K., Tsuga K., Sadamori S., Murayama T., Satoda T., Akagawa Y., Nikawa H.: The 32nd annual meeting of Japanese Dental Education Association (Sapporo), 2013.

Analysis of causal relationship between jaw muscle activity during sleep, emotional stress and subjective signs or symptoms of TMD Okura T., Abekura H., Tsuboi M., Sadamori S., Akagawa Y.: The 122th Scientific Meeting of Japan Prosthodontic Society (Fukuoka), 2013.

Histological and mechanical evaluation of the implants placed in the reconstructed bone by interconnected porous calcium hydroxyapatite Makihara Y., Doi K., Morita K., Kajihara S., Kubo T., Akagawa Y.: The 15th Biennial Meeting of International College of Prosthodontists Torino , 2013.

F) Special lectures in academic meetings

The newest view for Bruxism Abekura H Academic lecture for Hiroshima university Faculty of Dentistry alumni association (Hiroshima), 2013.2.2

Metal Free restoration by CAD/CAM system and induction of High technology modern medicine to national health insurance system Abekura H Annual Scientific Meeting of Japan Prosthodontic Society Chugoku and Shikoku Branch (Kouchi), 2013.9.1

Clinic of metal free restoration by CAD/CAM system Abekura H Lecture for Training program of Japan Dental Association (Hiroshima), 2013.10.20

Prosthetic treatment for defect and missing teeth caused by trauma Abekura H Annual Scientific Meeting of Japan association of dental traumatology western part of the Japan (Hiroshima), 2013.11.10

Development of predictable biomaterial using hybridizing with existing technology Doi K Program and Abstracts The 122nd Scientific Meeting of the Japan Prosthodontic Society (Fukuoka), 2013.5.18.

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

Grant-in-Aid for Scientific Research (C) Abekura H, Covariance structure analysis of sleep, diurnal bruxism , sociopsychological and TMD. No. 25462999. 1,900, thousand yen.

Grant-in-Aid for Scientific Research (C) Doi K, Bone regeneration of applying polyphosphate on bone defect by implantitis. No.24592918. 2,340 thousand yen.

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.

Grant-in-Aid for Scientific Reserch (C) Mizumachi W, Development of occlusal support ability system in residual teeth based on clinical data processing No.23592847.1,430 thousand yen.

Grant-in-Aid for Young Scientists (B) Kouji Morita, Bio-active effect of inorganic polyphosphoric to achieve new innovation for bone quality. No.25861845. 1,300 thousand yen.

Grant-in-Aid for Young Scientists (B) Hori T, New development of chlorine dioxide-containing denture cleaner. No. 25861847. 1,800 thousand yen.

Grants-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
Biology, Applied Life Sciences and
Department of Orthodontics, Division of Oral Health and
Development**

(1) Staffs and students

| | |
|-----------------------|---|
| Professor | Kotaro Tanimoto |
| Lecture | Hiroshi Ueda, Masato Kaku |
| Assistant Professor | Tadashi Fujita, Masahide Motokawa, Myongsun Koh, Yuki Asakawa, Ryo Kunitatsu, Naoto Hirose, Syunichi Kojima, Keisuke Sumi |
| Intern | Hidetaka Hayashi, Yayoi Matsuda, Tomomi Mitsuyoshi, Noriko Tsubamoto, Akiko Terao, Yuki Yoshimi, Emi Ishikawa, Kyoko Murasaki |
| Graduate Student | 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, Aimi Naim Bindi Abdullah, Takaharu Abe, Saki Okita, Hidemi Gunji, Shoutoku Kojima, Chikako Sumi, Yuko Nakao, Cynthia Concepcion Medina |
| Professor (part-time) | Kazuo Tanne, Ichiro Takahashi |
| Registered Intern | Kuniaki Tanaka, Kazunori Itatani, Eri Ohtani, Junji Ohtani, Atsushi Horihata, 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. P2X7 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, 2013.
2. 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, 2013.
3. Orally administered liposomal lactoferrin inhibits inflammation-related bone breakdown without interrupting orthodontic tooth movement: Kawazoe A, Inubushi T, Miyauchi M, Ishikado A, Tanaka E, Tanne K, Takata T.: *Journal of Periodontology* 84: 1454-1462, 2013.
4. 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* 83: 597-604, 2013.
5. Ameloblastin in Hertwig's Epithelial Root Sheath Regulates Tooth Root Formation and Development: Hirose N, Shimazu A, Watanabe M, Tanimoto K, Koyota S, Sugiyama T, Uchida T, Tanne K.: *Plos One* 8: 1-8, 2013.
6. Effects of hyaluronan oligosaccharides on apoptosis of human gingival fibroblasts: Tanne Y, Tanimoto K, Okuma S, Kunimatsu R, Hirose N, Mitsuyoshi T, Tanne K.: *Open Journal of Stomatology* 3: 19-24, 2013.
7. Longitudinal changes in the height and location of bone bridge from autogenous iliac bone graft in patients with cleft lip and palate: Tanimoto K, Tanne Y, Sumi K, Hirose N, Kawai N, Tanaka E, Tanne K.: *Open Journal of Stomatology* 3: 58-62, 2013.
8. P2X7 Receptor and Cytokines Contribute to Extra-territorial Facial Pain: Murasaki K, Watanabe M, Takahashi K, Ito G, Suekawa Y, Inubushi T, Hirose N, Uchida T, Tanne K.: *Journal of Dental*

Research 92: 260-265, 2013.

9. Regeneration of condyle with a functional appliance: Fujita T., Hayashi H., Shirakura M., Tsuka Y., Fujii E., Kawata T., Kaku M., Ohtani J., Motokawa M., Tanne K.: *Journal of Dental Research* 92: 322-328, 2013.
10. Ultrasound stimulation attenuates resorption of tooth root induced by experimental force application: Inubushi T., Tanaka E., Rego E.B., Ohtani J., Kawazoe A., Tanne K., Miyauchi M., Takata T.: *Bone* 53:497-506, 2013.
11. Changes in activity and structure of jaw muscles in Parkinson's disease model rats: Nakamura S., Kawai N., Ohnuki Y., Saeki Y., Korfage J.A., Langenbach G.E., Kitayama T., Watanabe M., Sano R., Tanne K., Tanaka E.: *Journal of Oral Rehabilitation* 40: 205-213, 2013.
12. Open bite as a risk factor for orthodontic root resorption: Motokawa M., Terao A., Kaku M., Kawata T., Gonzales C., Darendeliler M.A., Tanne K.: *European Journal of Orthodontics* 35: 790-795, 2013.
13. Enhanced increase in pharyngeal airway size in Japanese Class II children following a 1-year treatment with an activator appliance: Horihata A., Ueda H., Koh M., Watanabe G., Tanne K.: *International Journal of Orthodontics* 24, 35-40, 2013.
14. Cryopreservation of osteoblasts by use of a programmed freezer with a magnetic field: Koseki H., Kaku M., Kawata T., Kojima S., Sumi H., Sjikata H., Motokawa M., Fujita T., Ohtani J., Tanne K.: *CryoLetters* 34, 10-19, 2013.
15. Experimental tooth movement into new bone area regenerated by use of bone marrow-derived mesenchymal stem cells: Tanimoto K., Sumi K., Yoshioka M., Oki N., Tanne Y., Awada T., Kato Y., Sugiyama M., Tanne K.: *The Cleft Palate Craniofacial Journal*. 2013 in press
16. Cryopreservation of rat MSCs by use of a programmed freezer with magnetic field: Kojima S., Kaku M., Kawata T., Sumi H., Shikata H., Abonti TR., Kojima S., Fujita T., Motokawa M., Tanne K.: *Cryobiology* 67: 258-263, 2013.
17. Effects of bFGF on the modulation of apoptosis in gingival fibroblasts with different host ages: Tanimoto K., Ohkuma S., Tanne Y., Kunimatsu R., Hirose N., Mitsuyoshi T., Yoshimi Y., Su S., Tanne K.: *Interantional Journal of Dentistry* 2013.
18. Synthesis of hyaluronan and superficial zone protein in synovial membrane cells modulated by fluid flow: Yanagida-Suekawa T., Tanimoto K., Tanne Y., Mitsuyoshi T., Hirose N., Su S., Tanne K., Tanaka E.: *European Journal of Oral Sciences* 121:566-572, 2013.
19. Changes in the lip-line in asymmetrical cases treated with isolated mandibular surgery: Fujita T., Shirakura M., Koh M., Itoh G., Hayashi H., Tanne .K.: *Journal of Orthodontics* 40: 313-317, 2013.
20. Changes in the stomatognathic function in the two molar cross bite cases treated with rapid maxillary expansion: Kawai A., Kaku M., Kato M., Miyamoto K., Ueda H., Tanne .K.: *The Journal of Hiroshima Dental Association* 40: 7-14, 2013.
21. A case of treatment for sleep fragment due to periodic limb movement disorder with obstructive

- sleep apnea syndrome Improvement of “lower legs jerking” using oral appliance : Matsumura Y., Ueda H., Koh M., Horihata A., Tanimoto K.: Journal of Hiroshima University Dental Society 45: 112-117, 2013.
22. Consideration of the improvement of masticatory function in orthodontics. - Introduction of stomatognathic function laboratory with the evidence of chewing difficulty - : Ueda H., Koh M., Tsubamoto N., Ishikawa E., Matsumura Y., Cynthia Concepcion, Tanimoto K.: Journal of Hiroshima University Dental Society 45: 81-86, 2013.
23. An orthodontic treatment case of severe skeletal open bite with anterior crowding: Shikata H., Kaku M., Kojima S-I., Sumi H., Kojima S-T., Motokawa M., Fujita T., Tanne K.: The journal of Chu-Shikoku orthodontic society 25: 59-66, 2013.

B) General remarks

- 1 Orthodontics and regeneration medicine –Trial of bone regeneration suitable to orthodontic tooth treatment: Tanimoto K.: Journal of Hiroshima University Dental Society 45: 69-75, 2013.

C) Books

D) Other publications

E) Presentation at Scientific Meeting

1. Inductive Ability of Human Fetal and Adult Dental Mesenchyme.: Zheng L., Warotayanont R., Stahl J., Kunimatsu R., Klein O., Denbesten P., Zhang Y.:IADR/AADR/CADR General Session and Exhibition (Seattle), 2013.
2. Effects of Near-Infrared Laser on Adult Human Dental Pulp Cells.: Le T., Kunimatsu R., Zhang Y., Denbesten P.: IADR/AADR/CADR General Session and Exhibition (Seattle), 2013.
3. SATB1 is stabilized through PKC-mediated phosphorylation in fluorosed rodent enamel.: Zhang Y., Kim J.,Horst O.V., Nakano Y., R. Kunimatsu R., Zhu L., Everett ET., Denbesten P.:IADR/AADR/CADR General Session and Exhibition (Seattle), 2013.
4. Autotransplantation of a cryopreseved tooth with magnetic field programmed freezer: Kaku M.: 3rd National Congress, International Dental Seminar & Trade Fair, Bangladesh Academy of Dentistry International (Dhaka), 2013.
5. Long-term cryopreservation of rat MSCs by use of a programmed freezer with a magnetic field: Kojima S.: 3rd National Congress, International Dental Seminar & Trade Fair, Bangladesh Academy of Dentistry International (Dhaka), 2013.
6. A new therapeutic system for for open bite with micro-implant derived from the etiologic

- consideration: Tanne K.: 3rd National Congress, International Dental Seminar & Trade Fair, Bangladesh Academy of Dentistry International (Dhaka), 2013.
7. Regeneration of condyle with mandibular advancement.: Fujita T., Hayashi H., Shirakura M., Tsuka Y., Fujii E., Tanne K.: The 113th Annual Session of American Association of Orthodontists (Philadelphia), 2013.
 8. Effects of cyclic tensile forces on the expression of cytokines in cultured human pulp cells: Sumi H., Kaku M., Kojima S., Shikata H., Motokawa M., Kawata T., Tanne K.: The 113th Annual Session of American Association of Orthodontists (Philadelphia), 2013.
 9. Regeneration of condyle needs the articular disc: Hayashi H., Fujita T., Fang X., Shirakura M., Tsuka Y., Fujii E., Tanne K.: The 113th Annual Session of American Association of Orthodontists (Philadelphia), 2013.
 10. Modulation of PRG4 expression by hyaluronan through CD44 receptor and ERK: Mitsuyoshi T., Tanimoto K., Tanne Y., Hirose N., Yoshioka M., Su S.C., Okamoto Y., Tanne K.: The 113th Annual Session of American Association of Orthodontists (Philadelphia), 2013.
 11. Amelogenin variants promote the proliferation and differentiation of human cementoblasts; Yoshimi Y., Tanimoto K., Kunimatsu R., Hirose N., Tanne K.: 113th Annual Session of American Association of Orthodontists (Philadelphia), 2013.
 12. Effect of Er:YAG and Nd:YAG laser irradiation in cultured osteoblasts: Tsuka Y., Fujita T., Shirakura M., Hayashi H., Fujii E., Tanne K.: 113th Annual Session of American Association of Orthodontists (Philadelphia), 2013.
 13. Influences of pulpectomy on root resorption during experimental tooth movement: Sumi H., Kaku M., Kojima S., Shikata H., Tahsin A., Kojima S., Motokawa M., Fujita T., Kawata T.: The 46th Dental Meeting of Hiroshima University (Hiroshima), 2013.
 14. Effect of Celecoxib on extracellular matrix metabolism in condylar chondrocytes under excessive mechanical stress: Su S.C., Tanimoto K., Tanne Y., Hirose N., Mitsuyoshi T., Tanne K.: The 26th Annual Meeting of the Japanese Society for the Temporomandibular Joint (Tokyo), 2013.
 15. Effects of C-terminal amelogenin on the metabolism of human osteoblast-like cells: Awada T., Kunimatsu R., Hirose N., Yoshimi Y., Tanne Y., Hirata I., Kato K., Tanne K., Tanimoto K.: 46th Korean Association of Orthodontists (Jeju), 2013.
 16. Application of human recombinant amelogenin to regeneration of cementum: Kunimatsu R., Tanimoto K., Tanne Y., Hirose N., Yoshimi Y., Miyauchi M., Takata T., Tanne K.: The 46 Korean Association Orthodontists (Jeju), 2013.
 17. Amelogenin-guided biomineralization of hydroxyapatite crystal on tooth enamel: Tanimoto K., Kunimatsu R., Tanne Y., Hirose N., Yoshimi Y., Sumi K., Tanne K.: The 46th Korean Association Orthodontists (Jeju), 2013.
 18. The analysis and evaluation after orthodontic treatment for twins (extraction and non-extraction

- cases): Hirose N., Sumi K., Su S.C., Oki N., Shikata H., Tanne K., Tanimoto K.: 25th Taiwan Association of Orthodontists' Annual Meeting (Kaohsiung), 2013.
19. A Case Report of Crouzon Disease Treated by Surgical Orthodontics: Sumi K., Asakawa Y., Yoshimi Y., Awada T., Irome K., Abe T., Tanimoto K.: 25th Taiwan Association of Orthodontists Annual Conference (Kaohsiung), 2013.
 20. Treatment of jaw cleft by Bone Regeneration with Bone Marrow –derived Mesenchymal Stem Cells -Availability of Jaw Bone Marrow: Oki N., Sumi K., Asakawa Y., Abe T., Kazuo T., Tanimoto K.: 25th Taiwan Association of Orthodontists Annual Conference (Kaohsiung), 2013.
 21. Effect of celecoxib on extracellular matrix metabolism in condylar chondrocytes under excessive mechanical stress: Su S.C., Tanne Y., Hirose N., Mitsuyoshi T., Okamoto Y., Tanne K., Tanimoto K.: 25th Taiwan Association of Orthodontists Annual Conference (Kaohsiung), 2013.
 22. Treatment of an oligodontia by autotransplantation of cryopreserved tooth after removal of unnecessary mini-screw: Kaku M., Kojima S-I., Sumi H., Shikata H., Kojima S-T, Abonti T.R., Motokawa M., Fujita T., Kawata T., Tanne K.: 5th World Implant Orthodontic Conference (Phuket), 2013.
 23. Molar intrusion using temporary anchorage devices (TADs) was research long-term retention stability: Kojima S-I., Kaku M., Sumi H., Shikata H., Kojima S-T, Abonti T.R., Motokawa M., Fujita T., Kawata T., Tanne K.: 5th World Implant Orthodontic Conference (Phuket), 2013.
 24. Expression of mechanoreceptor and inflammatory mediator in rat osteoarthritis model: Okamoto Y., Tanimoto K., Tanne Y., Shirakura M., Hirose N., Mitsuyoshi T., Su S.C., Tanne K.: the 3rd International Orthodontic Conference of ODOAN (Kathmandu), 2013.
 25. Role of MSCs in bone and blood vessel regeneration: Oki N., Tanimoto M., Yoshioka M., Sumi K., Yoshimi Y., Sugiyama M., Tanne Y., Tanne K.: The 37th Annual Meeting of Japanese Cleft Palate Association (Saga), 2013.
 26. Effect of MSCs on the resorption of scaffold for bone regeneration Sumi K., Tanimoto K., Tanne Y., Yoshioka M., Oki N., Sugiyama M., Tanne K. The 37th Annual Meeting of Japanese Cleft Palate Association (Saga), 2013.
 27. Morphological characteristics of craniofacial skeleton in an adolescent CLP patient with OSA: Ueda H., Inubushi T., Yoshimi Y., Horihata H., Koh M., Ohtani J., Tanne K.: The 37th Annual Meeting of Japanese Cleft Palate Association (Saga), 2013.
 28. A treatment case of mandibular prognathism with open bite improving sleep-disordered breathing by orthognathic surgery: Koh M., Ueda H., Horihata H., Matsumura Y., Tanne K.: The 23th Annual Meeting of the Society for Jaw Deformities (Osaka), 2013.
 29. 2-jaw osteotomy for treatment of a patient with facial asymmetry caused by unilateral condylar hyperplasia: Nakagawa T., Ohta K., Otani J., Tsubamoto N., Ono S., Kubozono K., Takechi M., Tanne K., Kamata N.: The 23th Annual Meeting of the Society for Jaw Deformities (Osaka), 2013.

30. A severe gammy smile patient treated by SSRO and horseshoe osteotomy after distraction osteogenesis: Ono S., Nakagawa T., Kubozono K., Kaku M., Sumi H., Ohta K., Takechi M., Tanne K., Kamata N.: The 23th Annual Meeting of the Society for Jaw Deformities (Osaka), 2013.
31. An open bite case treated with tooth autotransplantation for right maxillary central incisor with substitutional root resorption: Date T., Koh M., Murasaki K., Horie K., Ueda H., Tanne K.: 56th Annual Meeting of Chu-Shikoku Orthodontic Society (Kurashiki), 2013.
32. Expression of mechanoreceptor and inflammatory mediator in rat osteoarthritis mode: Okamoto Y., Tanimoto K., Tanne Y., Shirakura M., Hirose N., Mitsuyoshi T., Su S.C., Tanne K.: The 26th Annual Meeting of the Japanese Society for the Temporomandibular Joint (Tokyo), 2013.
33. Examination of skeletal maxillary protrusion case with severe periodontal disease: Irome K., Tanimoto K., Yoshioka M., Sumi K., Awada T., Tanne K.: 56th Annual Meeting of Chu-Shikoku Orthodontic Society (Kurashiki), 2013.
34. Study of reserach in UCSF orofacial sciences.: Kunimatsu R: The 46th Hiroshima University Dentistry Meeting (Kurashiki), 2013.
35. Prevention of root resorption in hypofunctional teeth by occlusal function recovery: Terao A., Motokawa M., Kaku M., Kawata T., Fujita T., Matsuda Y., Hayashi H., Kojima S. Tsubamoto N., Sumi H., Tanne K., Tanimoto K.: 72th Annual Meeting of the Japanese Orthodontic Society (Matsumoto), 2013.
36. Effects of C-terminal and N-terminal of the Mn(II) on human Osteoblasts. 96 136.066 514.227 Tm [(S)28(56 3 Tj 4-8

41. Long-term cryopreservation of rat MSCs by use of a programmed freezer with magnetic field: Kojima S, Kaku M, Motokawa M, Fujita T, Otani J, Sumi H, Shikata H, Kojima S-T, Kawata T, Tanne K.: The 72th Annual Meeting of the Japanese Orthodontic Society (Matsumoto), 2013.
42. The role of articular disk in condylar regeneration: Hayashi H., Fujita T., Shirakura M., Tsuka Y., Fujii E., Tanimoto K.: The 72th Annual Meeting of the Japanese Orthodontic Society (Matsumoto), 2013.
43. A case report of crowding with a generalized severe chronic periodontitis: Inubushi M., Suzukawa M., Inubushi T., Ueda H., Tanne K.: The 72th Annual Meeting of the Japanese Orthodontic Society (Matsumoto), 2013.
44. A case of skeletal class II malocclusion treated by two-jaw surgery: Mitsuyoshi T, Asakawa Y, Sumi K, Su S.C, Okamoto Y, Toratani S, Koizumi K, Okamoto T, Tanimoto K.: The 52th Annual Meeting of Hiroshima Dental Association and The 97th Annual Meeting of Hiroshima University Dental Society (Hiroshima), 2013.
45. Long-term cryopreservation of rat MSCs by use of a programmed freezer with magnetic field: Kojima S, Kaku M, Motokawa M, Fujita T, Sumi H, Shikata H, Tahsin Raquib Abonti, Kojima S-T, Tanimoto K.: The 52th Annual Meeting of Hiroshima Dental Association and The 97th Annual Meeting of Hiroshima University Dental Society (Hiroshima), 2013.
46. An establishment of jaw cleft treatment with bone regeneration by use of bone marrow-derived mesenchymal stem cells.-Examination for interaction of MSCs with metabolism of Scaffold-: Sumi K., Asakawa Y., Yoshioka M., Oki N., Abe T., Sugiyama M., Tanimoto K.: The 52th Annual Meeting of Hiroshima Dental Association and The 97th Annual Meeting of Hiroshima University Dental Society (Hiroshima), 2013.

F) Academic society symposium and special lecture

1. Tanimoto K: Amelogenin-guided biomineralization of hydroxyapatite crystal on tooth enamel. The 2nd BioDental Coliseum Special seminar (Hiroshima), 2013.
2. Kaku M.: The stability of intruded molars by TAD.: 56th Annual Meeting of Chu-Shikoku Orthodontic Society (Kurashiki), 2013.
3. Kunitatsu R: Effects of low-level laser irradiation on human dental pulp cell metabolism: The 5 Hiroshima Conference on Education and Science in Dentistry (Hiroshima), 2013.
4. Kunitatsu R: Study of research in UCSF orofacial sciences: The 5 Hiroshima Conference on Education and Science in Dentistry (Hiroshima), 2014, young researchers to report the experience of own overseas education.
5. Sumi K.: An establishment of jaw cleft treatment with bone regeneration by use of bone marrow-derived mesenchymal stem cells: The 95th Stem Cell Study Club (Hiroshima), 2013.

(4) Scientific research grant -in-aid

1. Grant-in-aid for Scientific Research (C): Ueda H.: Comprehensive clinical development in newly oral appliance for obstructive sleep apnea syndrome. No.20304446. 260,000yen
2. Grant-in-

of the Japanese Orthodontic Society Excellence Award, 2013.

3. Hayashi H .: The role of articular disk in condylar regeneration:., The 72th Annual Meeting of the Japanese Orthodontic Society Excellence Award, 2013 .
4. Sumi H: Hiroshima university excellent student scholar ship, 2013.

(6) Patent

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

(1) Staff and Students

Professor :Keiji Tanimoto

Associate Professor :Minoru Fujita

Associate Professor/Lecturer :Yoshikazu Suei, Takashi Nakamoto

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

Graduate Student : Yukimi Yasuhara, Mitsuko Shimizu, Kiyohito Ota,
Md Mahmud Uz Zaman, Satsuki Minamitani, Atia Hossain, Kimio Okada,
Preeyaporn Srimawong, Keiji Harada

- diffuse sclerosing osteomyelitis Suei Y. Oral Radiol.,29,121–134, 2013.
- 3: A retrospective study of digital subtraction technique to detect sclerotic changes in alveolar bone on intraoral radiographs of bisphosphonate-treated patients Zaman MU., Nakamoto T., Tanimoto K.: Dentomaxillofac Radiol, 42(10), in process, 2013.
- 4:A questionnaire survey contrast medium-enhanced computed tomography at dental university hospital in Japan: Konishi M, Suei Y, Nakamoto T, Nagasaki T, Ohtsuka M, Zaman M, Fujita M, Tanimoto K: Dental Radiology 53(1), 3-13, 2013.
- 5: A report of two cases showed deep depression of internal aspect of the mandible: Konishi M, Suei Y, Nakamoto T, Hossain A, Zaman M, Fujita M, Tanimoto K: The journal of Hiroshima University dental society 45(2), 128-132, 2013.
- 6: Comprehensive Oral Management for Collaborative Medical and Dental Care Practical Approaches for Oral Care Support Team : Nishi H, Fujimoto S, Konishi M, Fukui A, Yoshioka Y, Yoshikawa M, Naruse T, Hamana T, Tsuga K, Matsumoto K, Hayashiuchi M, Fujino Y, Kitagawa M, Itou Y, Ohta K, Kajiya M, Nagahara R, Nagasaki T, Tanaka R, Kajitani K, Dainobu K, Takamoto M, Ohshita M, Nakaoka M, Nishimura R, Iwamoto A, Fukada E, Tetsumori K, Ogawa T, Kamata N, Ohge H, Irihune M, Kurihara H: The journal of Hiroshima University dental society 45(1), 128-132, 2013.
- 7: Deglutitive tongue movement after correction of mandibular protrusion. Fujiki T, Deguchi T, Nagasaki T, Tanimoto K, Yamashiro T, Takano-Yamamoto T: Angle Orthod., 83(4):591-6, 2013.
- 8: Assessment of swallowing functions; Oral and Maxillofacial Radiology 5th edition (Okano T, Kobayashi K, Ariji E): Tanimoto K, Nagasaki T: Ishiyakusyupann (Tokyo), 383-6, 2013.

D) Other Publications

- 1: Radiation effects of heavy ion particles on bone metabolism: M.Sawajiri, Y Nomura, K Maruyama: 2012Annual Report of the Research Project with Heavy Ions at NIRS-HIMAC: 81-82 2013

E) Presentation at Scientific Meeting

- 1: Treatment results by the radical external radiotherapy for oral cancers : Fujita M, Takahashi I, Hirokawa J, Doi H, Murakami Y, Kimura T, Kenjyo M, Kaneyasu Y, Nagata Y.ama: 2012(Y 190.083 T3 Tm (Fu) Tj8)-3(o

- Nobuzane T., Tanimoto K. The 97th Scientific meeting of Hiroshima University Dental Society (Hiroshima), 2013.
- 3: Irradiation Effect on Osteoclastogenesis Stimulated by Breast Cancer Cell: Sawajiri M., Surimawong P., Nishikiori R. Terato H., Maruyama K. The 55th Annual Meeting of The Japan Radiation Research Society (Aomori), 2013.
- 4 A report of two cases showed deep depression of internal aspect of the mandible: Konishi M, Tanimoto K: The 54th annual meeting of Japan Society of Oral and Maxillofacial Radiology(Fukuoka), 2013.
- 5: Oral health care for head and neck cancer patients before the radiotherapies: A systematic review: Konishi M, Fujita M, Tanimoto K: 19th International congress of dento-maxillo-facial Radiology (Bergen), 2013.
- 6: Permeability estimation of contrast medium into the rice made for videofluoroscopic examination of swallowing observation by a scanning electron microscope : Konishi M, Nagasaki T, Yasuhara Y, Tanimoto K: 19th annual meeting of the Japanese Society of Dysphagia Rehabilitation (Kurashiki), 2013
- 7: A suspicious case of intracranial invasion through mandibular nerve in squamous cell carcinoma of the mandible: Konishi M, Sueti Y, Nakamoto T, Fujita M, Tanimoto K: The 17th congress of clinical imaging for oral and maxillofacial lesions(Tokyo), 2013.
- 8: Introduction experience of Advanced OSCE: Konishi M, Nagasaki T, Sawajiri M, Tanimoto K: The 33th annual joint meeting of Kansai and Kyushu of Japan Society of Oral and Maxillofacial Radiology (Gifu), 2013
- 9 What are the differences among the evaluators of Videofluoroscopic swallowing study?: Hossain A, Konishi M, Nagasaki T, Yasuhara Y, Tanimoto K: The 33th annual joint meeting of Kansai and Kyushu of Japan Society of Oral and Maxillofacial Radiology (Gifu), 2013
- 10: Snack eating and Respiration in healthy adult humans. Nagasaki T, Oota K, Minamitani S, Konishi M, Yasuhara Y , Yoshikawa M, Ogawa T, Tanimoto K The 4th Congress European Society for Swallowing Disorders, (MALM), Sweden 2013.
- 11: Relationship between maximum tongue pressure and swallowing function in ALS patients. Yoshikawa M, Hesaka A, Takagi S, Nakamori M, Nagasaki T , Hosomi N, Tsuga K, Tanimoto K The 4th Congress European Society for Swallowing Disorders, (MALM), Sweden 2013.
- 12: The breathing during jelly chewing-swallowing. : Nagasaki T, Konishi M, Yasuhara Y, Yoshikawa M, Ogawa T, Tanimoto K : The 19th annual meeting of the Japanese Society of Dysphagia Rehabilitation (Kurashiki), 2013.
- 13: Inquest into the maximum tongue pressure and swallowing function in ALS patients. Hiraoka A,

- Yoshikawa M, Takagi S, Nakamori M, Hichi M, Oda M, Itou H, Nagasaki T, Higa C, Mori T, Tsuga K, Tanimoto K, Izumi Y, Hosomi N, Matumoto M: The 19th annual meeting of the Japanese Society of Dysphagia Rehabilitation (Kurashiki), 2013.
- 14: The effect by balloon dilatation therapy for the esophageal stenosis as sequelae of radiation therapy of lung cancer. : Takagi S, Yoshikawa M, Nagasaki T, Ichkawa S, Sasamura K, Tanaka K, Oda M, Izumi Y: The 19th annual meeting of the Japanese Society of Dysphagia Rehabilitation (Kurashiki), 2013.
- 15: Relationship between the oral and pharyngeal functions and the thickness of liquid in healthy young adults. Higa A, Hiraoka A, Mori T, Nagasaki T, Yoshida M, Tsuga K, Tanimoto K : The 19th annual meeting of the Japanese Society of Dysphagia Rehabilitation (Kurashiki), 2013.
- 16: Relationship between maximum tongue pressure and swallowing function in ALS patients. Yoshikawa M, Hesaka A, Takagi S, Nakamori M, Hichi M, Oda M, Itou H, Nagasaki T, Hosomi N, Higa C, Mori T, Yoshida M, Tsuga K, Tanimoto K, Matumoto M, Izumi Y The 46th congress of Hiroshima University Dental Society (Hiroshima), 2013.
- 17: Relationship between the oral and pharyngeal functions and the thickness of liquid in dysphagic patients. Higa A, Hiraoka A, Mori T, Nagasaki T, Yoshida M, Tsuga K, Tanimoto K : The joint meeting of the 52th Hiroshima Prefecture Dental Association and the 97th Hiroshima University Dental Society (Hiroshima), 2013.

F) Lecture

- 1 Study of radiographic images from clinical cases: Konishi M, 72th Hiroshima University clinical seminar (Hiroshima), 2013

(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 (*Oryziaslatipes*). (no. 23592765) ¥1,430,000
- 2: Research Grant (Mikasa Shoji Co., Ltd): Sawajiri M. : The effect of electrolysed water on radioactive extraction from internal exposure animal. (no. 7109) ¥6,000,000
- 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): ¥1,170,000
- 4: Grant-in-aid for scientific research from the Japan Society for the Promotion of Science: Nagasaki T :Assessment of the oral and pharyngeal functions for decision making of the ideal thickness of liquid. (Grant No. 23592849). ¥92,000

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

(1) Staff and Students

Professor :
Associate Professor :
Associate Professor : Masashi Fujii
Assistant Professor : Makoto Arakawa, Shigeki Suzuki, Naoyo Motoyama, Akane Mineoka, Akiko Yamashita, Misaki Iwashita
Resident : Shintara Nagayasu, Takanori Shinjo
Graduate Student : 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 The Inflammation-lipocalin2 axis may contribute to the development of chronic kidney disease. Hashikata A, Yamashita A, Suzuki S, Nagayasu S, Shinjo T, Taniguchi A, Fukushima M, Nakai Y, Nin K, Watanabe N, Asano T, Abiko Y, Kushiyaama A, Nagasaka S, Nishimura F. *Nephrol Dial Transplant*.
- 2 Lactobacillus casei strain Shirota protects against nonalcoholic steatohepatitis development in a rodent model Okubo H, Sakoda H, Kushiyaama A, Fujishiro M, Nakatsu Y, Fukushima T, Matsunaga Y, Kamata H, Asahara T, Yoshida Y, Chonan O, Iwashita M, Nishimura F, Asano T

- Am J Physiol Gastrointest Liver Physiol, 305, G911-918, 2013.
- 3 Par14 protein associates with insulin receptor substrate 1 (IRS-1), thereby enhancing insulin-induced IRS-1 phosphorylation and metabolic actions Zhang J, Nakatsu Y, Shinjo T, Guo Y, Sakoda H, Yamamotoya T, Otani Y, Okubo H, Kushiya A, Fujishiro M, Fukushima T, Tsuchiya Y, Kamata H, Iwashita M, Nishimura F, Katagiri H, Takahashi S, Kurihara H, Uchida T, Asano T J Biol Chem, 288, 20692-20701, 2013.
 - 4 Valsartan restores inflammatory response by macrophages in adipose and hepatic tissues of LPS-infused mice Iwashita M, Nakatsu Y, Sakoda H, Fujishiro M, Kushiya A, Fukushima T, Kumamoto S, Shinjo T, Kamata H, Nishimura F, Asano T Adipocyte, 2, 28-32, 2013
 - 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 and Dohi T. Eur. J. Pain. 17(8):1156-67, 2013.
 - 6 Palliation of bone cancer pain by antagonists of platelet-activating factor receptors. Katsuya. Morita K, Shiraishi S, Motoyama N, Kitayama T, Kanematsu T, Uezono Y, and Dohi T. PLoS One. in press.

B) Review

C) Publications

D) Other Publications

E)

- 1 Report on Dental Check-up in Hawaii –Influence of westernization of lifestyle on dental status– Mineoka A., Kurihara H., Nishimura F.: The 139th Japanese Society of Conservative Dentistry (Akita), October 17-18, 2013.
- 2 Analgesic effect of platelet-activating factor (PAF) antagonists for cancer pain model in mice. Motoyama N, Morita K, Dohi T.: The 33rd Annual Meeting of the Japanese Society of Oral Therapeutics and Pharmacology (Tokyo), June 14-16, 2013.
- 3 Potent analgesic effects of platelet-activating factor (PAF) antagonists in a bone cancer pain model. Motoyama N, Morita K, Kitayama T, Kanematsu T, Kurihara H and Dohi T.: The 55rd Annual Meeting of Japanese Association for Oral Biology (Okayama), September 20-22, 2013.
- 4 Potent analgesic action of platelet-activating factor (PAF)antagonists in a bone cancer pain model in mice. Motoyama N, Morita K, Kitayama T, Kanematsu T, Kurihara H and Dohi T.: The 139th Meeting of the Japanese Society of Conservative Dentistry (Akita), October 17-18, 2013.
- 5 Pain relieving effects of platelet-activating factor (PAF) antagonists in a bone cancer pain model.

Morita T, Motoyama N, Shiraish S, Uezono Y and Dohi T.: The 72nd Annual Meeting of the Japanese Cancer Association (Yokohama), October 3-5, 2013.

- 6 Possible regeneration of the islets of langerhans in streptozotocin-diabetic mice given DPP4 inhibitor SK-0403 Iwashita M, Okubo Hirofumi, Sakoda H, Fujishiro M, Kushiyama A, Nakatsu Y, Fukushima T, Shinjo T, Nishimura F, Asono T 56th Annual Meeting of the Japan Diabetes Society (Kumamoto), 2013
- 7 Global analysis of gene expression in mesangial cell co-cultured with LPS-stimulated macrophages: Yamashita A, Hashikata A, Suzuki S, Nagayasu S, Abiko Y, Kushiyama A, Asano T, Nishimura F: 56th Annual Meeting of the Japan Diabetes Society (Kumamoto), 2013
- 8 The study of cathepsin activity in gingival fibroblast from congenital gingival hyperplasia, hirsutism patient: Arakawa M, Nakarai H, Yamashita A, Iwamoto Y, Suzuki S, Nishimura F: the 56th annual meeting of the japanese society of periodontology(Tokyo), May 31, 2013.
- 9 Global analysis of gene expression in mesangial cell co-cultured with LPS-stimulated macrophages: Hashikata A, Yamashita A, Suzuki S, Abiko Y, Nishimura F: the 56th annual meeting of the japanese society of periodontology(Tokyo), May 31, 2013.

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

- 1 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
- 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. ¥ 1,200,000
- 3 Grants-in-Aid for Scientific Research: Iwashita M, Elucidation of amelioration mechanisms of metabolic endotoxemia-induced insulin resistance by valsartan. No. 24792328. ¥ 1,500,000
- 4 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. ¥ 1,300,000

(5) Academic Awards, etc.

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

(1) Staff and Students

| | |
|----------------------------|--|
| Professor | : Katsuyuki Kozai. |
| Associate Professor | : Chieko Mitsuata |
| Research Associate | : Yasutaka Kaihara, : Meiko Tachikake(childcare leave, April~) : Noriko Niizato (childcare leave,~ March) : Ryoko Hirata (substitute teacher, January, March~) : Aya Tsuboi (~ August), Yukari Ohara |
| Physician | : Nami Miyake, Masafumi Kitamoto (~March) : Yukiko Konishi (April~), Ayumi Shimada(April~) |
| Graduate Student | : Yukiko Konishi (~March), Ayumi Shimada (~March) Aomin , Yuko Iwamoto : Noriko Goto, Mega Moeharyono Putteri, .Nobuyuki Tatsukawa, Kaoru Sakurai |
| Visiting Research Scholar: | Hu Yiqun |
| Research Student | : Akira Yamane |
| Clinical Trainee | : Fumiko Hayashi, Mie Hirakawa, :MinakoUesige (April~August), Akemi Hirosumi(April~) |

(2) Main Research Activities

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

(3) Research Achievements

A) Original Papers (including Case Reports)

1 A Ca

- 1 Hisatsune J., Tatsukawa N., Sato Y., Kato F, Kayama S, Sugai N.: *Staphylococcus aureus*: Infectious Diseases Medicine, 1(3), 275-285, 2013.
- 2 Ask the Doctor: Q&A: Caries, Caries prevention: Kozai K.: Internet portal for child care in Hiroshima Iku-chan Net: www.ikuchan.or.jp/navi//cat5166/, 2013
- 3 Ask the Doctor: Health care for Children's disease No. 98.: My 3 year old daughter is bad teeth alignment. What will become of her permanent teeth? : Kozai K.: The Chugoku Shimbun, 2013.

E) Presentation at Scientific Meeting

- 1 Oral status of the patients referred from pediatric wards at Hiroshima University: Tsuboi A., Hirata R., Kaihara Y., Chieko M., Kozai K.: The 51st Congress of Japanese Society of Pediatric Dentistry (Gifu), 2013.
- 2 Dental caries prevalence of abused children in temporary shelters in Japan: Nizato N., Kozai K., Tachikake M., Goto N., Kaihara Y., Banshoudani A., Omoto S., Yamasaki K.: The 51st Congress of Japanese Society of Pediatric Dentistry (Gifu), 2013.
- 3 Application of three-dimensional digital models for the morphometric analysis of pre-dentition plasters: validity and reliability : Katayama A., Yasutaka K., Iwamae S., Amano H., Kozai K., Nikawa H.: The 51st Congress of Japanese Society of Pediatric Dentistry (Gifu), 2013.
- 4 Relationship between organic acid resistance of isolated lactobacilli and dental caries status on its host: Shimada A., Ohara Y., Mitsuhata C., Kozai K.: The 51st Congress of Japanese Society of Pediatric Dentistry (Gifu), 2013.
- 5 Dental Support for abused children Activity at temporary shelters Ohara Y., Nizato N., Kaihara Y., Mitsuhata C., Kozai K.: 20th General Session and Exhibition of Japanese society of Dental Welfare, 2013.
- 6 Dental support activities in Cambodia: Iwamoto Y., Iwamoto A., Rotary Global Peace Forum Hiroshima (Hiroshima), 2013.
- 7 Oral health education for Cambodian children: Iwamoto A., Iwamoto Y., Rotary Global Peace Forum Hiroshima (Hiroshima), 2013.
- 8 Oral health education for children in rural areas of Cambodia: Iwamoto Y., Iwamoto A., Niizato N., Goto N., Takata T., Kozai K., The 24th International Association of Paediatric Dentistry (Seoul), 2013.
- 9 Diet and lifestyle of Cambodian children : Iwamoto A., Iwamoto Y., Niizato N., Chea Chanbora, Kozai K., Amano H., The 24th International Association of Paediatric Dentistry (Seoul), 2013.

- 10 Complex regulatory system of toxin gene expression by multiple regulators: Iwamoto Y., Kato F., Hisatsune J., Komatsuzawa H., Kozai K., Sugai M.: The 46th Congress of The Hiroshima University Dental Society (Hiroshima), 2013.
- 11 The identification of MSX1 target genes in stem cells from human exfoliated deciduous teeth (SHED): Goto N., Fujimoto K., Imamura S., Fujii S., Kawamoto K., Noshiro M., Kozai K., Kato Y.: The 46th Congress of The Hiroshima University Dental Society (Hiroshima), 2013.
- 12 Analysis about promoter region of ETA gene in *Staphylococcus aureus* :Iwamoto Y., Hisatsune J., Kato F., Komatsuzawa H., Kozai K., Sugai M., :7th Wakate Colosseum For Bacteriology (Hiroshima), 2013
- 13 Analysis about promoter region of ETA gene in *S. aureus*. :Iwamoto Y., Hisatsune J., Kato F., Komatsuzawa H., Kozai K., Sugai M. The 58th Japanese Symposium on Staphylococci and Staphylococcal Infections (Tokyo), 2013
- 14 Dental support activities collaborated with local systems in rural area of Cambodia: Iwamoto Y., Iwamoto A., Niizato N., Tatsukawa N., Chea Chanbora., Im Puthavy, Vorn Vutha, Sugai M., Takata T., Kozai K.: 5th Hiroshima Conference on Education and Science (Hiroshima), 2013.
- 15 Oral health education for children in rural areas of Cambodia: Iwamoto A., Iwamoto Y., Niizato N., Sakurai K., Chea Chanbora, Sugai M., Takata T., Kozai K., Amano H. :5th Hiroshima Conference on Education and Science (Hiroshima), 2013.
- 16 Diets and lifestyles of Cambodian primary school students : Iwamoto A. Iwamoto Y., Niizato N., Chea Chanbora, Kozai K., Amano H.: International Symposium on Food, Nutrition and Health (Hiroshima), 2013.
- 17 Genome-wide analysis of MSX1 target genes in stem cells from human exfoliated deciduous teeth: Goto N., Fujimoto., K., Fujii S., Kawamoto K., Noshiro M., Kozai K., Kato Y.: The 24th International Association of Pediatric Dentistry (Seoul) ,2013.
- 18 The functional role of MSX1 in stem cells from human exfoliated deciduous teeth (SHED): Goto N., Fujimoto K., Veronica Sainik Ronald., Fujii S., Kawamoto K., Noshiro M., Kozai K., Kato Y.: 5th Hiroshima Conference on Education and Science (Hiroshima), 2013.
- 19 Isolation, identification and characterization of lactic acid bacteria from preschool children and its correlation with dental caries.: Shimada A., Noda M., Matoba Y., Kumagai T., Sugiyama M., Kozai K.: The 24th Congress of International Association of Paediatric dentistry (Korea), 2013.
- 20 Survey of the Patients Seeking Caries Treatment Dental Caries referred from Private General Dental Clinics at Hiroshima University Hospital: Shimada A., Hirata R., Miyake N., Kaihara Y., Mitsuhata C., Kozai K.:The 32nd Congress of Japanese Society of Pediatric Dentistry Chushikoku Branch (Okayama), 2013.

- 21 School dental health program using a stage of behavior modification model: Morimoto H., Kaihara Y., Mitsuhata C., Kaihara Y., Kozai K.: The 32nd Congress of Japanese Society of Pediatric Dentistry Chushikoku Branch (Okayama), 2013.
- 22 A case of Osteogenesis Imperfecta associated with tooth anomalies: Konishi Y., Mitsuhata C, Ohara Y., Nizato N., Kozai K.: The 32nd Congress of Japanese Society of Pediatric Dentistry Chushikoku Branch (Okayama), 2013.
- 23 Accuracy and Precision of three-dimensional digital models for the morphometric analysis of pre-dentition plasters: Katayama A., Yasutaka K., Amano H., Kozai K., Nikawa H.: The 97th congress of The Hiroshima University Dental Society(Hiroshima), 2013.
- 24 Dental management for children with Autism Spectrum Disorders: Kaihara Y., Hirata R., Miyake N., Sakurai K., Mitsuhata C., Amano H., Kozai K.: The 97th congress of The Hiroshima University Dental Society(Hiroshima), 2013.
- 25 Long-term follow-up of a patient with crown malformation and malposition of successional permanent teeth caused by oral injury: Konishi Y., Mitsuhata C., Hirata R., Ohara Y., Kozai K.: The 25th Congress of Nishinippon Society of Pediatric Oral and Maxillofacial Surgery (Tokyo), 2013.

F) Special lectures in academic meetings

- 1 Seminar for certifying physician of Japan Association of Dental Traumatology: Treatment of traumatic teeth in children Focusing on initial treatment : Kozai K.: Hiroshima University (Hiroshima) 2013.
- 2 The 116th Annual Meeting of the Japan Pediatric Society- Symposium for Interprofessional Collaboration: Interprofessional collaboration in pediatric care Pediatric Oncology : The role of dentists for pediatric cancer treatment: Kozai K.: Hiroshima City Cultural Exchange Hall (Hiroshima), 2013.
- 3 Japan Society for Well-being of Nursery-schoolers/ 2013 The 9th Workshop: Development of teeth and oral cavity and Children's health promotion: Kozai K.: Hiroshima Ishi Kaikan Hall (Hiroshima), 2013.
- 4 2013 Recurrent seminar for dental hygienist: Development of feeding and swallowing function: Development of occlusion in children: Kozai K.: Faculty of Dentistry Hiroshima University (Hiroshima), 2013.
- 5 The 13th Annual Meeting of Japan Association of Dental Traumatology : Treatment of traumatic teeth during development in the school dental health: Kozai K. Tokorozawa 2013.
- 6 Seminar for lifelong learning program in Higashihiroshima: What should we do first for our happy dental life?: Kozai K.: Takayanishi Elementary School Higashihiroshima , 2013.

- 7 The 68th Workshop for medical ethics: Relationship between oral health and children's lifestyle: Kozai K.: Koujin Kaikan, Hiroshima University (Hiroshima), 2013.
- 8 The 21st Annual Meeting of Oral Health Promotion for School Children in Hiroshima Prefecture School dental health activity for creating: Health degree evaluation method of teeth and oral cavity and desirable goal attainment in school: Kozai K.: Hiroshima Prefecture Dental Association Hall (Hiroshima), 2013.
- 9 The 4th annual meeting of sub-committee of health education of the association of junior high school education of Hiroshima prefecture: Healthy teeth and oral cavity promotes our happy life: Kozai K.: Mihara City Hongo Lifelong Learning Center Mihara 2013.
- 10 Training program for clinical trial specialist to evaluate functional foods: Lecture for talent training, Oral Health Care: Kozai K.: Faculty of Pharmaceutical Sciences, Hiroshima University (Hiroshima) 2013.
- 11 The 3rd Japan Association of Dental Traumatology Chushikoku Branch: What to see from oral injuries in children.: Koujin Kaikan, Hiroshima University (Hiroshima), 2013.
- 12 Hiroshima South Rotary Club 2nd meeting of MAY. 2013: Dental support activities in Cambodia and Oral health education for Cambodian children: Iwamoto Y.: International Conference Center Hiroshima (Hiroshima), 2013
- 13 Hiroshima South Rotary Club 4th meeting of OCT. 2013: Dental support activities in Cambodia: Iwamoto Y.: Rihga Royal Hotel Hiroshima (Hiroshima), 2013.

(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 Scientific Research (B): Ohara Y. : Investigation of exacerbation of risk factor to the development of new methods of caries prevention of children. No. 25862020 , 2013 direct expenses: ¥1,600,000, indirect expenses: ¥480,000, 2014 direct expenses: ¥1,600,000, indirect expenses: ¥480,000.
- 4 Grant-in-Aid for Scientific Research (C): Mitsuhashi 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): 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.
- 6 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.
- 7 Grant-in-Aid of Futoku-kai: 2013: Ohara Y. ¥300,000.
- 8 Grant-in-Aid of Futoku-kai: 2012: Mega Moeharyono Putteri. ¥300,000.
- 9 Ryoku Fuu Kai Research Grant for young investigators: 2013, Goto.N., ¥ 500,000.
- 10 Hiroshima University Supporting Committee Grant for students: 2013: Iwamoto Y., ¥ 200,000.

(5) Academic Awards, etc.

- 1 Noriko Niizato: 2013 JSPD Distinguished Scientists Awards at the 51st Annual Meeting of JSPD, 2013
- 2 Noriko Niizato: 2013 JSPD Awards for the best paper published in the Japanese Journal of Pediatric Dentistry, 2013
- 3 Yuko Iwamoto: The 46th Congress of The Hiroshima University Dental Society Presentation Award, 2013.
- 4 Noriko Goto The 46th Congress of The Hiroshima University Dental Society Presentation Award, 2013.
- 5 Yuko Iwamoto: Best Poster Award, 5th Hiroshima Conference on Education and Science in Dentistry, 2013.
- 6 Noriko Goto: Best Poster Award, 5th Hiroshima Conference on Education and Science in Dentistry, 2013.

(6) Patents

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

(1) Staff and Students

| | |
|--------------------|---|
| Professor | : Irifune Masahiro, D.D.S., Ph.D. |
| Research Associate | : Shimizu Yoshitaka, D.D.S., Ph.D., Doi Mitsuru, D.D.S., Mukai Akari, D.D.S., Ph.D., Yoshida Keita, D.D.S. |
| Resident | : Miyahara Takeshi, D.D.S., Ph.D., Miyauchi Miwa D.D.S., Ph.D. |
| Graduate Student | : Oue Kana, D.D.S., Ishii Hiroaki, D.D.S., Yamashita Mieko, D.D.S., Yoshinaka Taiga D.D.S., Uno Tamayo D.D.S., Maetani Yuka, D.D.S., Ogawa Yuya, D.D.S. |
| Clinical Trainee | : Kawahara Michio, M.D., Ph.D., Katayama Sohtaro, 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., |

(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: Comprehensive oral management for collaborative medical and dental care –practical approaches for oral care support team-: Nishi H, Ogawa T, Kamata N, Ohge H, Irifune M, Kurihara H etc.: Journal of Hiroshima University Dental Society 45 (1), 1-6, 2013.
- 2: A clinic-statistical study on the 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, Miyahara T, Miyauchi M, Mukai A, Doi M, Shimizu Y, Irifune M: *Journal of Hiroshima University Dental Society* 45 (2), 100-104, 2013.

B) Review

C) Publications

D) Other Publications

1: New hope -Hiroshima University-: Uno T, Yamashita M, Yoshinaka T: *Journal of Japanese Dental Society of Anesthesiology*, 41 (2), 268-269, 2013.

E) Presentation at Scientific Meeting

- 1: Comprehensive oral management for collaborative medical and dental care –practical approaches for oral care support in Hiroshima University Hospital and city hospital-: Nishi H, Kajiya M, Irifune M, Ohge H, Kurihara H: *The 38th Scientific Meeting of General Hospital in Hiroshima Prefecture (Hiroshima)*, 2013.
- 2: A case of symptomatic trigeminal neuralgia caused by meningioma: Ishii H, Doi M, Ogawa Y, Maetani Y, Irifune M: *The 18th Scientific Meeting of the Japanese Society of Orofacial Pain (Saitama)*, 2013.
- 3: In patients with catastrophic and cancer-phobic thoughts glossodynia tends to be chronic: Doi M, Yoshino A, Tanaka K, Yoshida K, Ishii H, Okamoto Y, Irifune M: *The 18th Scientific Meeting of the Japanese Society of Orofacial Pain (Saitama)*, 2013.
- 4: Selective NMDA channel blockade in combination with dopamine receptor antagonism induces loss of the righting reflex in mice, but not immobility: Irifune M: *The 28th Scientific Meeting of Dental Anesthesiology in Chugoku and Shikoku branch (Hiroshima)*, 2013.
- 5: Role of dental anesthesiologists in treatments for oral complications during induction of general anesthesia – the significance of cooperation between medical and dental anesthesiologists-: Maetani Y, Miyahara T, Mukai A, Yoshida K, Shimizu Y, Irifune M: *The 28th Scientific Meeting of Dental Anesthesiology in Chugoku and Shikoku branch (Hiroshima)*, 2013.
- 6: Perioperative general anesthetic management of a patient with mitochondrial encephalomyopathy: Ogawa Y, Yoshida K, Yamashita M, Maetani Y, Uno T, Yoshinaka T, Ishii H, Oue K, Nishinakamura R, Miyahara T, Miyauchi M, Mukai A, Doi M, Shimizu Y, Irifune M: *The 28th Scientific Meeting of*

- 7: A case of pain disorder with the symptoms and MRI remarks of trigeminal neuralgia: Ishii H, Doi M, Ogawa Y, Maetani Y, Irifune M: The 41th Annual Meeting of Japanese Dental Society of Anesthesiology (Yokohama), 2013.
- 8: Cognitive behavioral therapy for the dental-phobia patient with periodic neutropenia: Doi M, Okada M, Yamashita M, Ishii H, Irifune M: The 41th Annual Meeting of Japanese Dental Society of Anesthesiology (Yokohama), 2013.
- 9: Awareness gap between medical doctors and dental doctors about survival rate of damaged teeth caused by procedural accidents during induction of general anesthesia: Miyahara T, Doi M, Yoshida K, Shimizu Y, Irifune M: The 41th Annual Meeting of Japanese Dental Society of Anesthesiology (Yokohama), 2013.
- 10 A clinic-statistical study on general anesthesia and intravenous sedation for patients with disabilities during the past four years in the Department of Anesthesiology, Hiroshima University Hospital: assessment of its status and usefulness: Mukai A, Uno T, Yoshinaka T, Yoshida K, Irifune M: The 30th Annual Meeting of the Japanese Society for Disability and Oral Health (Kobe), 2013.
- 11 Study on efficacy of training of chest compressions for the dental students in Hiroshima University: Shimizu Y, Yoshinaka T, Yamashita M, Uno T, Ogawa Y, Maetani Y, Ishii H, Miyauchi M, Oue K, Miyahara T, Mukai A, Yoshida K, Doi M, Irifune M: The 52th Scientific Meeting of Hiroshima Prefecture Dental Association and 97th Scientific Meeting of Hiroshima University Dental Society (Hiroshima), 2013.

F) Special lectures in academic meetings

(4) Status of Receiving Grants-

Department of International Collaboration Development for Dentistry, Integrated Health Sciences

(1) Staffs and Students

Professor: Takashi Takata (Chair of ICDD Committee)

Associate Professor: Ketut Suardita (Specially appointed)

Assistant Professor: Hiroko Oka (Specially appointed)

(2) Main Research Activities

Development and evaluation of dental education program cooperated with Asian countries

Development and evaluation of Japanese-English dual linguistic education system

Study on international exchange program

Study on contribution to international community through dentistry

Research on the specific mechanisms of destruction in periodontal tissue

(3) Research Achievements

A) Original Papers (including Case Reports)

Study on a Collaboration between a Short-stay Undergraduate International Exchange Program and Regular Dental Program with Dual Linguistic Education System-I. A Pilot Collaboration in Basic Science Practice-: Hiroko Oka, Ketut Suardita, Takashi Uchida, Takashi Takata: Journal of Japanese Dental Education Association, 29, 214-223, 2013.

Development of New Oral Health Program for Elementary School Students which Collaborates to International Communications -Through the Exchange Program with International Dental Course Students-: Miyuki Goto, Hiroko Oka, Shinichi Amano, Takashi Takata: The annals of educational research, 41, 199-204, 2013.

B) Review

C) Publications

D) Other Publications

E) Presentation at Scientific Meeting

An assessment of the class “Basic Practice of Anatomy” from Japanese students with a collaboration of a Short Stay undergraduate international exchange program at HUD: Hiroko Oka, Ketut Suardita, Shinji Hiyama, Mineo Watanabe, Takashi Uchida, Takashi Takata: The 46th Congress of the Hiroshima University Dental Society (Hiroshima), 2013.

Evaluation of Japanese-English dual linguistic education system at Faculty of Dentistry Hiroshima University: Ketut Suardita, Hiroko Oka, Takashi Takata, Motoyuki Sugai: The 32th Annual Academic Meeting of Japanese Dental Education Association (Hokaido), 2013.

Assignment of the class “Basic Practice of Anatomy” with a collaboration of a Short Stay undergraduate international exchange program at HUD: Hiroko Oka, Ketut Suardita, Takashi Uchida, Takashi Takata: The 32th Annual Academic Meeting of Japanese Dental Education Association (Hokkaido), 2013.

F-spondin protects periodontal hard tissue from resorption: Hiroko Oka, Masae Kitagawa, Takashi Takata: The 55th Annual Meeting of Japanese Association for Oral Biology (Okayama), 2013.

Questionnaire survey on student’s opinion about dual linguistic education system at Faculty of dentistry Hiroshima University: K. Suardita, H Oka, T Takata: the 5th Hiroshima Conference (Hiroshima) 2013.

Analysis of motivations and assessments from HUD students on Short-term Visit Programs: H Oka, K Suardita, T Takata: the 5th Hiroshima Conference (Hiroshima), 2013.

Short-term Visit Program 2012 —Visiting Airlangga University—:Short-term Visit Program 2012 students: the 5th Hiroshima Conference (Hiroshima),

Challenges to the Globalization of Dental Education at Hiroshima University: Takashi Takata, Hiroko Oka, Ketut Suardita: International Symposium on Health through Oral Health Collaborative Education, Research and Practices (Krabi, Thailand), 2013.

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

Grant-in-Aid for Young Scientists (B) : Hiroko Oka : Mechanism of hard tissue destruction controlled by F-spondin via LDL receptor family. (No. 23792103). 900,000.

(5) Academic Awards, etc.

Hiroko Oka, Takashi Takata (Motoyuki Sugai) : 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

Short Stay Program (JASSO) : 6 students (3 students; Airlangga University, Indonesia: 3 students; University of Medicine and Pharmacy at HoChiMinh City, Vietnam) 6 months, Oct. 2012-March 2013.

The international short exchange program 2012 January: 9 students (Taipei Medical University, 4th-year, Taiwan) : 5 days, 2013.

The international short exchange program 2013 August: 5 students (Taipei Medical University, 4th-year, Taiwan) : 5 days, 2013.

Short Stay Program (JASSO) : 6 students (2 students; Airlangga University, Indonesia: 2 students; Khon Kaen University, Thailand: 1 student; Taipei Medical University, Taiwan: 1 student; University of Medicine and Pharmacy at HoChiMinh City, Vietnam) 6months, Oct. 2013-March 2014.

Short Stay Program (JASSO) : 14 students (3 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: 1student; Wonkwang University, Korea): 10 days, 2013.

International Dental Course 2014: 3 students (Airlangga University, Indonesia; University of

Medicine and Pharmacy at HoChiMinh City, Vietnam; University of Health Science, Cambodia), 2013.

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

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

B) Homepage of International Program

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

C) Supporting the International Research Exchange Program

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

D) Synchronization of the educational curriculum with the International Dental Course (IDC) Program

The 1st meeting for the International Dental Course (IDC) Program (Hiroshima), 2013

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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 Yuko Kimura
 Undergraduate Student: Junko Fujiyama, Chie Yoshinaga, Eri Takano, Momomi Terachi, Shiori Matsuura, Yoko Hasegawa, Yuri Kuramoto

(2) Main Research Activities

Study on oral care
 Study on the oral functions in the elderly
 Experimental study on the mechanism of growth and regeneration of periodontal tissues
 Study on the activities of oral health at school

(3) Research Achievements

A) Original Papers (including Case Reports)

Comprehensive Oral Management for Collaborative Medical and Dental Care -Practical Approaches for Oral Care Support Team- : Nishi H, Fujimoto S, Konishi M, Fukui A, Yoshioka Y, Yoshikawa M, Naruse T, Hamano T, Tsuga K, Matsumoto K, Hayashiuchi M, Fujino Y, Kitagawa M, Itou Y, Ohta K, Kajiya M, Nagahara R, Nagasaki T, Tanaka Y, Kajitani K, Dainbu K, Takamoto M, Oshita M, Nakaoka M, Nishimura R, Iwamoto A, Fukada E, Tethumori K, Ogawa T, Kamata N, Ohge H, Irihune M, Kurihara H.: The journal of Hiroshima University Dental Society 45(1), 1-6, 2013.6
 Prevalence of drug-resistant opportunistic microorganisms in oral cavity after oral cancer: Yamashita K, Ohara M, Kojima T, Nishimura R, Ogawa T, Hino T, Okada M, Toratani S, Kamata N, Sugai M, Sugiyama M: Journal of Oral Science 55(2): 145-155. 2013.
 Ameloblastin in Hertwig's epithelial root sheath regulates tooth root formation and development. : Hirose N., Shimazu A., Watanabe M., Tanimoto K., Koyota S., Sugiyama T., Uchida T., Tanne K. : PLoS One 8(1), e54449. 2013.
 Relationship between consultation behavior and awareness of various diseases and subjective

symptoms in junior high school students. : Shimazu A., Sasagara H. Nosou M., Naitou A., Sugiyama M. : J Dent Hlth 63(5), 420–427, 2013.

The effectiveness of a dental health education program for junior high school students : A Study of behavioral changes and health awareness. : Sasahara H., Shimazu A., Ogawa T. : J Dent Hlth 63, 258–264, 2013.

The research about dental services and oral health promotion for the children in asina region. : Iwamoto Y., Iwamoto A., Niizato N., Matsumoto A., Shimazu A., Sasahara H., Chanbora C., Tsuka T., Heya O., Amano H., Takata T., Sugai M., Kozai K. : J Hiroshima Dent Soc: 45(2), 92-99, 2013.

A study on dental staffs attitudes toward sound environment of dental clinics. Iwamoto A, Sasahara H, Nikawa H, Sugiyama M, Amano H. J Hiroshima Dent Soc: 45(2), 87-91, 2013.

Age-dependent decrease in the chondrogenic potential of human bone marrow mesenchymal stromal cells expanded with fibroblast factor-2. Kanawa M, Igarashi A, Ronald VS, Higashi Y, Kurihara H, Sugiyama M, Saskianti T, Pan H, Kato Y. Cytotherapy 15, 1062-72, 2013.

Maintenance of stem cell self-renewal in head and neck cancers requires actions of GSK3b influenced by CD44 and RHAMM. Shigeishi H, Biddle A, Gammon L, Emich H, Rodini AO, Gemenetzidis E, Frazil B, Sugiyama M, Kamata N, Mackenzie IC. Stem Cells 31, 2073-83, 2013.

- 10 Experimental tooth movement into new bone area regenerated by use of bone marrow-derived mesenchymal stem cells. Tanimoto K, Sumi K, Yoshioka M, Oki N, Tanne Y, Awada T, Kato Y, Sugiyama M, Tanne K. Cleft Palate-Craniofacial Journal (Published Online: June 19, 2013).

B) Review

C) Publications

Oral Care for the Patients with five major diseases. Fujimoto A, Takei N, Katakura A, Ohno T, Itoda M, Sugiyama M, Yoshie H, Kobayashi Y: Ishiyaku publisher, Tokyo, 2013.

Chapter 5 Inflammation; Oral Surgery and Dental Anesthesia. Sugiyama M, Quintessence Publisher, Tokyo, p80-93, 2013.

D) Other Publications

E) Presentation at Scientific Meeting

The effects of chewing tempo on the amount of saliva.: Hara K, Yumiba A, Nishimura R, Fukada E, Amano H.: The 20th the Japa nese society of Health, Fitness and Nutrition. (Osaka) 2013

The effect of salivary gland massage in patients with Sjogren's syndrome.: Hara K, Niitani Y,

Nishimura R, Fukada E, Iwamoto A, Matsumoto A, Amano H, Takemoto T, Sugiyama M.: The 6th Annual Meeting of the Japan Dental Hygienists' Association. (Kobe) 2013.

Skip beans or can serve as an indicator of oral function account.: Higashi M, Nishimura R, Iwamoto A, Fukada E, Amano H, Hara K.: The 24rd the Kinki-Chugoku-Shikoku Branch of the Japanese Society for Dental Health (Okayama), 2013.

Age-related changes of tactile and thermal sensation in the oral cavity. :Rumi Nishimura, Kaoru Yamashita, Eri Fukada, Kumiko Hara, Masaru Sugiyama: International Symposium on Food, Nutrition and Health (Hirshima) 2013.10.14.

A program for Preventive Approach in Long Term Care: Eri Fukada, Rumi Nishimura, Akiko Iwamoto, Kotomi Tetsumori, Kumiko Hara, Atsue Matsumoto, Hiroki Nikawa, Hideaki Amano: International Symposium on Food, Nutrition and Health (Hirshima) 2013.10.14

A case of salivary gland massage in patients with Sjogren's syndrome: Hara K, Niitani Y, Nishimura R, Fukada E, Iwamoto A, Matsumoto A, Amano H, Takemoto T, Sugiyama M. :The 52th Hiroshima Prefecture Dental Association and The 97th Hiroshima University Dental Society. (Hiroshima) 2013.

Study of awareness of toothpaste in daily life and behavior habits of middle school students. : Shimazu A., Nagata R., Nosou M., Naitou A., Sugiyama M.: The 62th Japanese Society for Dental Health (Matsumoto), 2013.

Joint training initiatives targeting interprofessional education collaboration for dental and oral health Sciences students.: Shimazu A., Niitani Y., Nosou M., Sasahara H., Naitou A., Ogawa T., Sugiyama M.; The 32th Japanese Society for Dental Education (Sapporo), 2013.

Efforts of undergraduate education toward interprofessional education in our university dental School.: Shimazu A., Takahashi K., Niitani Y., Tetsumori K., Nosou M., Sasahara H., Naitou A., Ogawa T., Sugiyama M.: The 45th Japanese Society for Medical Education (Chiba), 2013.

- 10 Analysis utilizing text mining of joint training targeting dental and oral health students.: Matsuura S., Shimazu A., Nosou M., Sasahara H., Naitou A., Sugiyama M.: The 24th the Kinki-Chugoku-Shikoku Branch of the Japanese Society for Dental Health (Okayama), 2013

F) Contribution to Community

Nishimura R Assessment of oral function at special nursing home.(2013)

Nishimura R The services to improve oral function are provided in Hatsukaichi city.(2013)

Nishimura R The services to improve oral function are provided in Saka town.(2013)

Nishimura R The oral care of persons requiring nursing care at Hiroshima University Hospital.(2013)

Shimazu A Dental Support Activity in Cambodia Cambodia , 2013.

Shimazu A Oral health activity in Junior High School Students in Hiroshima Hiroshima , 2013.

Shimazu A Dental Examination for Acidity and Alkalinity Hiroshima , 2013.

Shimazu A Dental Examination for Infants Higashi-Hiroshima , 2013.

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.

Grants-in-Aid for Scientific Research Scientific Research (C) Shimazu A Study for pathology and expression of semaphorin in periodontal tissue. (No. 25463245). ¥1,700,000.

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.

Matsuura S. : Best Poster Award : The 24th the Kinki-Chugoku-Shikoku Branch of the Japanese Society for Dental Health (Okayama), 2013.

(6) Patents

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Department of Maxillofacial Functional Development,

- 4: A Study on Dental Staff's Attitudes toward Sound Environment of Dental Clinics: Akiko Iwamoto, Noriko Sasahara, Hiroki Nikawa, Masaru Sugiyama, Hideaki Amano: The Journal of Hiroshima Univ. Dental Society, 45(2), 87-91, 2013.12
- 5: The Research about Dental Services and Oral Health Promotions for the Children in Asian Region –The Efforts for Cambodian Children-: Yuko Iwamoto, Akiko Iwamoto, Noriko Niizato, Atsue Matsumoto, Atsushi Shimazu, Noriko Sasahara, Chea Chanbora, Toshihiko Tsuka, Osamu Hetani, Hideaki Amano, Takashi Takata, Motoyuki Sugai, Katsuyuki Kozai: The Journal of Hiroshima Univ. Dental Society, 45(2), 92-99, 2013.12

B) Reviews

C) Books

- 1: Dictionary for Oral Health Care : Kumiko Hara, Gakkensyoin Co., Ltd.(Tokyo) 4-13,2013

D) Other Publications

E) Presentations

A Study of the influence that a chewing tempo gives to quantity of salivation Asami Yuba, Kumiko Hara, Rumi Nishimura, Eri Fukada, Hideaki Amano: 20th annual meeting of the Japanese Society of Health, Fitness and Nutrition.(Osaka) 2013.3.16

A Study for elucidation of the mechanism to generate CDT secreted by *Aggregatibacter actinomycetemcomitans*: Keiko Tsuruda 62nd Annual Meeting of the Japanese Society for Oral Health (Matsumoto) 2013. 5.15-17.

Oral Health Education for Cambodian Children: Akiko Iwamoto, Yuko Iwamoto: Rotary Global Peace Forum (Hiroshima) 2013.5.17-18.

Dental Support Activities in Cambodia: Yuko Iwamoto, Akiko Iwamoto: Rotary Global Peace Forum (Hiroshima) 2013.5.17-18.

Diet and lifestyle of Cambodian Children: Akiko Iwamoto Yuko Iwamoto, Noriko Niizato, Chea Chanbora, Katsuyuki Kozai, Hideaki Amano: The 24th Congress of International Association of Paediatric Dentistry (Seoul, Korea) 2013.6.12-15.

Oral health education for children in rural areas of Cambodia: Yuko Iwamoto, Akiko Iwamoto Noriko Niizato, Noriko Goto, Takashi Takata, Katsuyuki Kozai: The 24th Congress of International Association of Paediatric Dentistry (Seoul, Korea) 2013.6.12-15.

Processing enzyme of *Aggregatibacter actinomycetemcomitans*-CDTA. Tsuruda K, Ohara M Sugai M. 2nd Meeting of the International Association for Dental Research Asia Pacific Region (Bangkok,

Thailand). 2013. 8.21-23.

Targeting domain of automutanolysin selectively recognizes cariogenic Streptococci by peptidoglycan-structure. Thanyasrisung P, Hayashi I, Fujiwara T, Tsuruda K, Sugai M. 2nd Meeting of the International Association for Dental Research Asia Pacific Region(Bangkok, Thailand). 2013. 8.21-23.

Effect of the salivary gland massage for the patients of the Sjögren's syndrome: Kumiko Hara, Yoshie Niitani, Rumi Nishimura, Eri Fukada, Akiko Iwamoto, Atsue Matsumoto, Hideaki Amano, Toshinobu Takemoto, Masaru Sugiyama: 8th annual meeting of the Japan Society for Dental Hygiene (Kobe) 2013.9.14 16

- 10 : The Splash Bean Test will be a index for the evaluation of the oral function ? :Mamuka Higashi, Rumi Nishimura, Akiko Iwamoto Eri Fukada, Hideaki Amano, Kumiko Hara: 24th annual meeting of the Chu-Shikoku-Kinki Oral Health Society.(Okayama),2013.10.6
- 11 Oral health education for children in rural areas of Cambodia: Akiko Iwamoto, Yuko Iwamoto, Noriko Niizato, Kaoru Sakurai, Chea Chanbora, Motoyuki Sugai, Takashi Takata, Katsuyuki Kozai, Hideaki Amano: 5th Hiroshima Conference on Education and Science (Hiroshima) 2013.10.12-13.
- 12 Dental support activities collaborated with local systems in rural area of Cambodia: Yuko Iwamoto, Akiko Iwamoto, Noriko Niizato, Nobuyuki. Tatsukawa, Chea Chanbora, Im Puthavy, Vorn Vutha, Motoyuki Sugai, Takashi Takata, Katsuyuki Kozai: 5th Hiroshima Conference on Education and Science (Hiroshima) 2013.10.12-13.
- 13 Diets and lifestyles of Cambodian primary school students: Akiko Iwamoto Yuko Iwamoto, Noriko Niizato, Chea Chanbora, Katsuyuki Kozai, Hideaki Amano: International Symposium on Food, Nutrition and Health (Hiroshima) 2013.10.14
- 14 Age-related changes of tactile and thermal sensation in the oral cavity Rumi Nishimura, Kaoru Yamashita, Eri Fukada, Kumiko Hara, Masaru Sugiyama :International Symposium on Food, Nutrition and Health(Hiroshima) 2013.10.14.
- 15 A Program for Preventive Approach in Long Term Care Eri Fukada, Rumi Nishimura, Akiko Iwamoto, Kotomi Tetsumori, Kumiko Hara, Atsue Matsumoto, Hiroki Nikawa, Hideaki Amano:International Symposium on Food, Nutrition and Health(Hiroshima) 2013.10.14.
- 16 : A Case of the salivary gland massage carried out for a patient of the Sjögren's syndrome: Kumiko Hara, Yoshie Niitani, Rumi Nishimura, Eri Fukada, Akiko Iwamoto, Atsue Matsumoto, Hideaki Amano, Toshinobu Takemoto, Masaru Sugiyama: 97th annual meeting of the Hiroshima University Dental Society (Hiroshima) 2013.11.10

F) Lectures

- 1: Amano H.: From Dental Hygienist to Oral Health Manager for the Team Medical Care: Annual meeting of the conference of national university for the dental hygienist (Nagoya), 2013. 5.11

- 2: Hara K. Lecture for the class for diabetics : Hiroshima Teishin Hospital (Hiroshima) 2013.7.25
- 3: Hara K. : Lecture of oral care for staff : Kosei-En(Hiroshima), 2013.9.10/10.10
- 4: Hara K. : Workshop of oral care for nurse : Kusatsu Hospital (Hiroshima) 2013.10.17

G) Social Contributions

- : Program for kids from elementary schools, Dental Kids, “Let’s Be a Dentist!”: Hiroshima University Faculty of Dentistry, 2013.
- : Program for high school students, Dental Kids: Hiroshima University Faculty of Dentistry, 2013.
- : Cooperate to the assessment of the Program for improvement of oral function in the ambulatory care facility “Kosei-En”, 2013.

(4) Grant-in-Aid for Scientific Research

2013th 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)

(5) Awards

Higashi M. : Oral narration excellence prize of the 24th annual meeting of the Chu-Shikoku-Kinki Oral Health Society.

(6) Patents

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Department of Oral Health Management, Integrated Health Sciences

Staffs

Professor: Toshinobu TAKEMOTO

Assistant professor: Atsue MATSUMOTO

Research associate: Yoshie NIITANI

Graduate student

Doctor course: Yukiko NAGATANI(From April)

Master course: Hinako TSUZUKI(Until March), Takafumi OCHIAI (Until March),
Miho KUME (From April)

Graduation thesis student: Kotoko HIROSE, Midori KOHMURA, Akiko OHARA, Yukiko YAMANOI,
Manami TATSUMOTO, Kiyomi HARAJIRI, Shoko KATAYAMA, Airi USAMI,
Rika MARUYAMA, Sakura UEMUKAI, Shiho FUKISHIMA,
Yuuka WAKABAYASHI, Momo YAMAGUCHI.

Research Fields

- : Dental hygienists education
- : Research about dental hygienists occupation
- : Career formation of students
- : The efficacy of oral relaxation method
- : Relation between saliva flow and emotion
- : Education about counseling
- : Infection control in dentistry
- : Research about halitosis

Achievements

Original Articles

[Factors affecting to the stress and mental health status of dental hygienists in private dental clinics][ja]: Sasa C., Takemoto T., Kume M., Matsumoto A.: Jpn. J. Dent. Prac. Admin. , 48(2), 155-164, 2013.

[Factors affecting the will to continue a job of dental hygienists at private dental clinics –A survey in Hiroshima Prefecture][ja] Kondo H., Takemoto T., Kume M., Matsumoto A.: Jpn. J. Dent. Prac.

Admin. , 48(3), 204-216, 2013.

[The present state of operation of patients with halitosis in private dental clinics. -Analysis according to the situation of sensory evaluation-][ja] Ochiai K., Takemoto T., Kume M., Niitani Y., Matsumoto A.: J. Hiroshima Univ. Dent. Soc., 45(1), 2013.

[The research about dental services and oral health promotions for the children in Asian region -The efforts for Cambodian children -][ja]: Iwamoto Y., Iwamoto A., Niizato N., Matsumoto A., Shimazu A., Sasahara H., Chandora C., Tuka T., Heya O., Amano H., Takata T., Sugai M., Kozai K.: J. Hiroshima Univ. Dent. Soc., 45(2), 92-99, 2013.

Master Course Thesis, 2013.

1. [The relation between job continuity will and work-life balance, commitment or vocational motives about dental hygienists.][ja]: Tsuzuki H.

Graduation Thesis, 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]: Ogura 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. -Disaster culture and disaster prevention behavior.][ja]: Kume M.
7. [The consciousness of Oral Health Science students about tobacco smoking and smoking prohibition.][ja]: Toyoda M.

Other Publications

[Oral prophylaxis and oral health instruction][ja]: The newest series of textbook for dental hygienists (Matsumoto A.: Contributor): Edited by the Japan Association for Dental hygienists Education, Ishiyaku Publishers (Tokyo) 2013.

[Basic theory and practical process for prosthodontics dentistry][ja]: The newest series of textbook for dental hygienists (Matsumoto A.: Contributor): Edited by the Japan Association for Dental hygienists Education, Ishiyaku Publishers (Tokyo) 2013.

Presentations at Scientific Meeting

- [Professionalism of dental hygienist][ja] : Nagatani Y., Kajitani K., Nakaoka M., Takemoto T., Ogawa T.: The 32nd Annual Meeting of Japanese Dental Education Association (Sapporo), 2013.
- [Comparison of youth and elderly people in the amount of secretion and antioxidative power of saliva, and the influence of medication][ja]: Nakano Y., Matsumoto A., Niitani Y., Nakaoka M., Takemoto T.: The 8th Annual Meeting of the Japan Dental Hygienists Association (Kobe) 2013.
- A program for preventive approach in long term care: Fukada E., Nishimura R., Iwamoto A., Tetsumori K., Hara K., Matsumoto A., Nikawa H., Amano H.: International Symposium on Food, Nutrition and Health, Hiroshima, 2013.
- [Effect of salivary gland massage in patients with Sjogren syndrome][ja]: Hara K., Niitani Y., Nishimura R., Fukada E., Iwamoto A., Matsumoto A., Amano H., Takemoto T., Sugiyama M.: The 8th Annual Meeting of the Japan Dental Hygienists Association (Kobe) 2013.
- [Example that carried out a salivary gland massage to a patient of Sjogren][ja]: Hara K., Niitani Y., Nishimura R., Fukada E., Iwamoto A., Matsumoto A., Amano H., Takemoto T., Sugiyama M.: The 52nd Meeting of Hiroshima Prefecture Dental Association, The 97th Regular Meeting of Hiroshima University Dental Society (Hiroshima) 2013.
- [What are expected to the university of dental hygienists education? –A consideration from small scale survey][ja]: Takemoto T. : Annual meeting of Hiroshima Association of Dental Hygienist Education (Hiroshima), 2013.

Presentation of Graduation Thesis 2013 (Hiroshima), 2013.

1. [Research about scattering of splash by polishing of tooth surface with polishing brush.][ja]: Koumura M.
2. [Research about fitting of latex glove for students in Oral Health Science Course.][ja]: Katayama S.
3. [Research about the factors relating to the satisfaction of patients. –Survey to 3rd and 4th grade dental hygienists students and dental hygienists in university hospitals.][ja]: Ohara R.
4. [The effect of reality-shock to students. –Survey about the consciousness to infection control methods during clinical training.][ja]: Hirose K.
5. [Survey about the consciousness for the limitation of dental hygienists job of dental hygienists in private dental clinics.][ja]: Harajiri K.
6. [Survey about the stress of dental hygienists.][ja]: Tatsumoto M.
7. [Survey about the reality-shock and desire of quitting job of newcomer dental hygienists.][ja]: Yamanoi Y.

Lectures

[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) : 2013.

[Oral care for pregnant woman and new born infant][ja]: Matsumoto A.: School for pregnant women in Gynecology department of Hiroshima University Hospital (Hiroshima) , 2013.

Outpatient Preventive Long-Term Care Project for Specified elderly person at Hatsukaichi city
Matsumoto A.:(Hiroshima), 2013.

[Dental Hygiene 2][ja]: Niitani Y.: JADHE program I for teachers in dental hygienists schools (Gifu) 2013.

Social Contributions

:Program for kids from elementary schools, Dental Kids, “Let’s Be a Dentist!”: Hiroshima University Faculty of Dentistry (Hiroshima), 2013.

:Renewal seminar for teacher’s license: Takemoto T, Hiroshima University (Hiroshima), 2013.

:Secretary of the regional association of Kinki , Chugoku and Shikoku area for Japanese Society for Dental Health: Matsumoto A(Okayama), 2013.

:Editorial committee of The Journal of Japan Society for Dental Hygiene.: Matsumoto A, Japan Society for Dental Hygiene (Tokyo), 2013.

:Editorial board of The Journal of Japan Society for Dental Hygiene.: Matsumoto A, Japan Society for Dental Hygiene (Tokyo), 2013.

:Member of Dental Hygienists’ National Examination Committee: Niitani Y.: Foundation of Promoting Dental Care and Training(Tokyo), 2013.

:Educational committee of Japanese Association for Dental Hygienists Education, Niitani Y, JADHE (Tokyo), 2013.

:Member of dental working group in committee of National University Hospital infection control association: Niitani Y., Training seminar at Chugoku-Shikoku Block in 2013(Okayama), 2013.

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

: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

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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, Kanako Touma

Undergraduate Student Yuri Kanou, Kou Shintani, Namiko Kayama, Hidehito Nagadouri,
Chihiro Ohhira, Mai Ohtaku, Kanae Iwamatsu, Chika Takeda, Akane Taniguchi, Natsumi Ikuta, Memori
Minoda, Saki Shiraishi, Yusuke Kobayashi

(2) Main Research Activities

Development of Effective model for anatomy education

Morphological Research on masticatory neuronal network

Study on dental materials for esthetic

Study on new clinical application using novel dental ceramic

Study on objective evaluation using the three-dimensional image

(3) Research Achievements

A) Original Papers (including Case Reports)

Effectiveness of surface preparations and bonding characteristics of indirect composites to zirconia ceramic material: Saiji Shimoe, Yuko Araki, Naomi Tanoue, Hideo Matsumura, Takeshi Murayama, Hiroki Nikawa, Takahiro Satoda *Journal of Nippon Academy of Dental Technology*, Vol.34, (1), pp.1–7, 2013

Influence of alumina-blasting and heating rate on the bond strength between zirconia and veneering porcelain Shogo Iwaguro, Saiji Shimoe, Yuji Chiba, Takahiro Satoda *Journal of Nippon Academy of Dental Technology*, Vol.34, (1), pp.8–14, 2013

B) Review

C) Publications

The glossary of Dental technology terms Satoda T. member of editorial board Ishiyaku Publishers, Inc, Tokyo 2011

Netter's Head and Neck Anatomy for Dentistry Ishiyaku Publishers Inc, Tokyo chapter 19 Eye, Satoda T, translation 2012

Understanding the Eating and Swallowing and Accidental Swallowing Mechanisms Seeing Computer Graphics and the Model showing a function Satoda T., Tohara H. Ishiyaku Publishers Inc, Tokyo 2013.3

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 .

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 .

Fun of Dental Practice - 28 dramas to send to one's juniors- Ken Imamaki Saiji Shimoe, Noriaki Sugioka, Tetuya Matsui et al Oral Health Association of Japan Tokyou Port of Dental Technician pp.275-284, 2013.1

D) Other Publications

E) Presentation at Scientific Meeting

Functional model of the Shoulder Joint Satoda T Takabayashi K Yamamoto S Takagi Y Kisaka T Shimoe S The 118th Annual meeting of Japanese Association of Anatomists (Takamatsu), 2013,3,28-30

Effective 3DCG of Head and Neck for Anatomy Education Satoda T Nikawa H Kihara T Yamane M Itoh R Koshimoto N The 118th Annual meeting of Japanese Association of Anatomists (Takamatsu), 2013,3,28-30

Abrasion resistance of indirect composite resin treated with various surface smoothing agents Namiko Kayama, Saiji Shimoe, Saki Shiraishi, Yusuke Kobayashi, Takahiro Satoda The 5th

- Influence of air-abrasion and subsequent heat treatment on bonding between Ce-TZP/Al₂O₃ nanocomposite Kou Shintani, Saiji Shimoe, Yuri Kanou, Shogo Iwaguro, Takahiro Satoda The 5th International Congress of Dental Technology, The 35th the meeting of the Nippon Academy of Dental Technology Daejeon, Korea 2013,7,5-7.
- The effect of polishing process and polishing time on surface roughness and specular gloss of Ce-TZP/Al₂O₃ nanocomposite Yusuke Kobayashi, Saiji Shimoe, Takahiro Satoda, Hiroki Nishida, Namiko Kayama The 5th International Congress of Dental Technology, The 35th the meeting of the Nippon Academy of Dental Technology Daejeon, Korea 2013,7,5-7.
- Effect of surface treatment on bonding of indirect composite to Ce-TZP/Al₂O₃ nanocomposite Yuri Kanou, Saiji Shimoe, Kou Shintani, Shogo Iwaguro, Takahiro Satoda The 5th International Congress of Dental Technology, The 35th the meeting of the Nippon Academy of Dental Technology Daejeon, Korea 2013,7,5-7.
- Influence of micro mechanical retention with diode laser beam machine on the bond strength of porcelain fused to zirconia Shogo Iwaguro, Saiji Shimoe, Takeshi Murayama, Hirotaka Ohkura, Takahiro Satoda The 5th International Congress of Dental Technology, The 35th the meeting of the Nippon Academy of Dental Technology Daejeon, Korea 2013,7,5-7.
- Functional model of Larynx Nagadori Y Shintani K Kayama N Kanoh Y Shimoe S Satoda T The 12th Annual meeting of Co-medical Function and Structure Association (Kure) , 2013,9,14
- 10 Functional model of Larynx Nagadori Y Shintani K Kayama N Kanoh Y Shimoe S Satoda T The 68th Annual Meeting of Japanese Association of Anatomist, Cyugoku-Shikoku regional meeting (Yonago), 2013,10,19-20
- 11 Functional model of Larynx Nagadori Y Shintani K Kayama N Kanoh Y Shimoe S Satoda T The 52nd annual meeting of Hiroshima Prefecture Dental Association and The 96th annual meeting of Hiroshima University Dental Society (Hiroshima) , 2013,11,10.
- 12 The influence of disinfectants to the dental model Kanako Touma, Saiji Shimoe, Shogo Iwaguro, Hirotaka Ohkura, Takahiro Satoda The 8th the meeting of the Nippon Academy of Dental Technology Chugoku-Shikoku regional meeting (Tokushima), 2013,11,23.
- 13 Surgery support using the plaster powder adherence method three dimensions printer Shogo Iwaguro, Hirotaka Ohkura, Saiji Shimoe The 15th the meeting of the Japanese Academy of Oral and Maxillofacial Rehabilitation Technology Nara 2013, 11, 30.

(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

(5) Academic Awards, etc.

Shogo Iwaguro, Saiji Shimoe, Yuji Chiba, Takahiro Satoda The Nippon Academy of Dental Technology Young Researcher's Best Paper Award in 2013, 2013.9

Saiji Shimoe, Yuko Araki, Naomi Tanoue, Hideo Matsumura, Takeshi Murayama, Hiroki Nikawa, Takahiro Satoda The Nippon Academy of Dental Technology Best Paper Award in 2013, 2013.9

Shogo Iwaguro, Saiji Shimoe, Takeshi Murayama, Hiroataka Ohkura, Takahiro Satoda The 5th International Congress of Dental Technology, The 35th the meeting of the Nippon Academy of Dental Technology Best Presentation Award, 2013.9

Shogo Iwaguro : H25th Hiroshima University Excellent Student Scholarship, 2013.12

(6) Patents

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Department of Medical System and Biomaterial Engineering, Integrated Health Sciences

(1) Staff and Students

Professor : Takeshi Murayama
 Associate Professor : Mitsuhiro Tamamoto
 Graduate Student : Harumi Kaneishi, Asumi Nagata, Mayumi Nakanodo,
 Noriko Fujimoto
 Graduation Research Students : Kouki Higashi, Mayu Asamura, Ryouma Tsuruta, Yumika Teranishi,
 Emi Hyougo, Shuntaro Umezaki, Yuya Ishida, Kazumine Ogasawara,
 Yuta Masuhara

(2) Main Research Activities

- 1: Application of CAD/CAM and 3d printers to dentistry
- 2: System biology
- 3: 3d modeling and computer simulation in dentistry
- 4: Development and clinical application of maxillofacial prosthetic apparatus for treatment and protection
- 5: Study on esthetic dentistry
- 6: Study on dental education
- 7: Analysis of dental techniques using a motion-capture system
- 8: Simulation-based analysis of work processes in dental technology
- 9: Study on sports dentistry (mouthguard)
- 10: Study on musical dentistry (music splint)

(3) Research Achievements

A) Original Papers (including Case Reports)

- 1: Examination on cleaning method of sports mouse guards: Tamamoto M: The Journal of the Japan Dental Technologists Association, No. 528, pp.33-40, 2013.
- 2: Influence of alumina-blasting and heating rate on the bond strength between zirconia and veneering procelain: Shimoe S, Araki Y, Tagami N, Matsumura H, Murayama T, Nikawa H, Satoda T: Journal of Nippon Academy of Dental Technology, Vol.34, No.1, pp.1-7, 2013.
- 3: Job Shop Scheduling with Capacity Adjustment -An efficient search method using the mixture of GA

and priority rule and its performance evaluation using Lagrangian relaxation method: Eguchi T, Yoda M, Yamamoto Y and Murayama T: Proceedings of the 7th International Conference on Leading Edge Manufacturing in 21st Century, pp.571-575, 2013.

4: Job Shop Scheduling with Capacity Adjustment (An Efficient Search Method Using the Mixture of GA and Priority Rule): Yoda M, Eguchi T, Murayama T: Transactions of the Japan Society of Mechanical Engineers, Vol. 79, No. 807, pp.423-433, 2013.

5: Computer-aided Technique for the Design and Manufacturing of Auricular Prostheses: Murayama T, Ogasawara M, Eguchi T, Morishita Y, Tamamoto M: IFMBE Proceedings, Vol.43, pp.593-596, 2013.

B) Review

C) Publications

D) Other Publications

1: Scheduling to Meet Due Date with Capacity Adjustment -An efficient search method using the mixture of GA and priority rule and its performance evaluation using Lagrangian relaxation method: Eguchi T, Yamamoto Y, Yoda M, Murayama T: ACTIVITY REPORT 2012 of Technical Committee on Integrated Manufacturing Systems, The Japan Society of Precision Engineering, pp.1-6, 2013.

E) Presentation at Scientific Meeting

1: Scheduling to Meet Due Date with Capacity Adjustment -An efficient search method using the mixture of GA and priority rule and its performance evaluation using Lagrangian relaxation method: Eguchi T, Yamamoto Y, Yoda M, Murayama T: Manufacturing Systems Division Conference 2013(Tokyo), 2013.

2: Scheduling to Meet Due Date with Capacity Adjustment-An Efficient Priority Rule for the Mixture Method of GA and Priority Rule-: Yoda M, Eguchi T, Murayama T: The 57th Annual Conference of the Institute of Systems, Control and Information Engineerings (ISCIE) (Kobe), 2013.

3: Motion analysis for dental technology training: Higashi K, Murayama T, Tamamoto M, Shimoe S, Hidaka Tsuyoshi, Eguchi Toru: The 46th Annual Meeting of Hiroshima University Dental society(Hiroshima), 2013.

4: Analysis of motions in dental technology by using a motion-capture system: Higashi K, Murayama T, Tamamoto M, Shimoe S, Hidaka T, Eguchi T: The 5th International Congress of Dental Technology(Daejeon, Korea), 2013.

5: Influence of micro mechanical retention with diode laser beam machine on the bond strength of

- porcelain fused to zirconia: Iwaguro S, Shimoe S, Murayama T, Ohkura H, Satoda T: The 5th International Congress of Dental Technology(Daejeon, Korea), 2013.
- 6: Analysis of students' tooth carving proficiency using the three-dimensional image: Shiraishi S, Shimoe S, Touma K, Kihara T, Murayama T, Nikawa H, Satoda T: The 5th International Congress of Dental Technology(Daejeon, Korea), 2013.
- 7: The trial of the collaborative practice of the department of dentistry and the department of oral health science in undergraduate clinical training: Taji T, Shimoe S, Tamamoto M, Hiasa K, Kuremoto K, Tsuga K, Sadamori S, Murayama T, Satoda T, Akagawa Y, Nikawa H: The 32nd Annual Conference of Japanese Dental Education Association(Sapporo), 2013.
- 8: A scheduling Method using Estimation of Distribution Algorithms with correlation coefficient: Kawashima T, Eguchi T, Murayama T: 2013 Annual Congress of The Japan Society of Mechanical Engineers(Okayama), 2013.
- 9: Scheduling to meet due dates with capacity adjustment –An efficient search method using the mixture of GA and priority rule and its performance evaluation using Lagrangian relaxation method (2nd report)-: Yamamoto Y, Yoda M, Eguchi T, Murayama T: 2013 Annual Congress of The Japan Society of Mechanical Engineers(Okayama), 2013.
- 10: Fabrication of Finger Prosthesis by CAD and 3-D Printer: Murayama T, Oono K, Tada M, Eguchi T, Nagami M, Tamamoto M: 2013 Symposium on Biomedical Engineering(Fukuoka), 2013.
- 11: Job Shop Scheduling with Capacity Adjustment -An efficient search method using the mixture of GA and priority rule and its performance evaluation using Lagrangian relaxation method: Eguchi T, Yoda M, Yamamoto Y and Murayama T: The 7th International Conference on Leading Edge Manufacturing in 21st Century(Miyagi), 2013.

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

(5) Academic Awards, etc.

- 1: Higashi Kouki: Special Award from President of Hiroshima University Dental Society, The 43rd meeting of Hiroshima University Dental Society, 2013.

(6) Patent

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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, Takuya Kihara (H25.4-), Sumiyo Mimura (H25.10-)

(Special Appointment)

Administrative Staff : Haduki Yamaguchi (-H25.3)

Education and Research Support Staff : Kaori Taguchi

Graduate Student : Takuya Kihara, Yuichi Mine, Sumiyo Mimura, Yukihiro Takayama,
Sachie Hogaki, Minako Okamura, Kosei Ohno, Asami Katayama,
Megumi Kurose, Yu Tomiyama, Natsumi Yamamoto, Kentaro Takagi

Undergraduate Student : Ayaka Ando, Chika Umemoto, Masahiro Okuni, Chiaki Okada,
Miku Kuimoto, Eri Tanaka, Tetsuo Hatanaka, Yumi Hamamoto,
Megumi Hirooka, Ryutarō Fujimura, Ai Manabe, Satoshi Miyauchi,
Hayato Ichikawa, Kazumi Ofuji, Shiho Kubota, Yuri Sadamitsu,
Yoshika Shozuhara, Nobuko Nishino, Chihiro Noda, Tatsumi Hashida,
Yoshiya Fujikawa, Satoru Yaguchi

(2) Main Research Activities

Mechanisms on allergy caused by dental materials

Study on candidal biofilms and denture plaque

Study on dental caries and probiotics

Design for cationic antimicrobial peptides

Study on large-scale proliferation of the mesenchymal stem cells using antimicrobial peptides

Study on mechanisms of the alveolar bone resorption and on bone - resorption inhibitors

Study on dental implant materials

(3) Research Achievements

A) Original Papers (including Case Reports)

- 1 Influence of filler on bite impression material in transillumination method for occlusal examination : Kihara T, Shigeta Y, Hirabayashi R, Ikawa T, Ando E, Hirai S, Nikawa H, Ogawa T : Dental Materials Journal, 32(1),144-149. 2013.
- 2 Application of photogrammetry for analysis of occlusal contacts, Shigeta Y, Hirabayashi R, Ikawa T, Kihara T, Ando E, Hirai S, Fukushima S, Ogawa T : Journal of Prosthodontic Research, 57(2), 122-128,2013.
- 3 Accuracy and precision of a non-contact 3D measuring system for dental model analysis : Kaihara Y, Kihara T, Kakayama A, Katabuchi Y, Amano H, Nikawa H, Kozai K : Pediatric Dental Journal.23(2),71-78,2013.
- 4 Protein kinase C regulates human pluripotent stem cell self-renewal : Kinehara M, Kawamura S, Tateyama D, Suga M, Matsumura H, Mimura S, Hirayama N, Hirata M, Uchio-Yamada K, Kohara A, Yanagihara K, Furue M K:PLOS ONE,8(1),e54122.2013

B) Review

C) Publications

D) Other Publications

E) Presentation at Scientific Meeting

- 1: Development of patient specific 3D finite element model Kihara T, Ikawa T, Hirabayashi R, Sasaki K, Shigeta Y, Ando E, Hirai S, Nikawa H, Ogawa T 91st General Session & Exhibition of the International Association for Dental Research ,2013.
- 2: A Synthetic Peptide Derived from TRAF1 Inhibits Osteoclastogenesis and Bone Erosion Mine Y, Makihira S, Shuto T, Nikawa H 2nd Joint Meeting of the International Bone and Mineral Society and The Japanese Society for Bone and Mineral Research, 2013.
- 3: RANKL Expression in the Tissue around Implant Injected with LPS Shuto T, Wachi T, Mine Y, Moroi R, Matono Y, Nikawa H, Terada Y, Makihira S : 2nd Meeting of the International Association for Dental Research and Asia Pacific Region 2013 ,2013.
- 4: Inhibition of Cellular Fusion during RANKL-Dependent Osteoclastogenesis by NHE10-specific Monoclonal Antibody Mine Y, Makihira S, Nikawa H, Kawai T, Ohara M, Kawahara K, Ohta K, Shuto T, Kukita T, Terada Y : 2nd Meeting of the International Association for Dental Research and Asia Pacific Region 2013, 2013.
- 5: Reproduction of Occlusal Contacts on a 3-Dimensional Model of Dental Morphology Kihara T,

Ikawa T, Hirabayashi R, Sasaki K, Shigeta Y, Ando E, Hirai S, Hirai K, Nikawa H, Ogawa T 15th Biennial Meeting of the International College of Prosthodontists ,2013.

- 6: Characterization of Kog1, an antimicrobial peptides produced *Lactobacillus rhamnosus* KO3
Tomiyama Y Shinkawa M, Ohno K, Inoue R, Kurose M, Mine Y, Taji T, Kawahara K, Nikawa H .International Symposium on Food, Nutrition and Health 2013.

E) Symposium and special lecture

- 1: Inhibition of cell-cell fusion during osteoclastogenesis by NHE10-specific monoclonal antibody
Mine Y Makihira S, Nikawa H : 5th Hiroshima Conference on Education and Science in Dentistry
Hiroshima (Hiroshima) ,2013.
- 2: Cultivation of Bio-Dentists with Global Competency and Advanced Technology Symposium on
Education Nikawa H, Sugai M: 5th Hiroshima Conference on Education and Science in Dentistry
Hiroshima i(Hiroshima),2013.

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

- 1: Grants-in-Aid for Scientific Research Scientific Research B : Hiroki Nikawa (Head), Tsuyoshi
Taji (Co-investigators), Research Project Number: 243904340A. 4,690,000
- 2: Grants-in-Aid for Scientific Research Scientific Research C : Tsuyoshi Taji (Head), Hiroki
Nikawa (Co-investigators), Research Project Number: 23592851. 900,000
- 3: Grants-in-Aid for Scientific Research Scientific Research C : Norihiro Taguchi (Head), Sakiko
Sasahara, (Co-investigators), Research Project Number: 25463255 2,600,000
- 4 Donation from Manac Inc. to Hiroki Nikawa 300,000
- 5 Donation from Wada Precision Dental Laboratories to Hiroki Nikawa 200,000

(5) Academic Awards, etc.

- 1 : Hiroki Nikawa : The Commendation for Science and Technology by the Minister of Education,
Culture, Sports, Science and Technology Prizes for Science and Technology Development
Category, 2013.4 Commendation of Science and Technology by the MEXT
- 2 Takuya Kihara : 16th Hiroshima university dental alumni association incentive award, 2013.5
- 3 Sumiyo Mimura : H25th Hiroshima University Excellent Student Scholarship, 2013.12

(6) Patents

1 : Hiroki Nikawa : Australian Patent Solidified detergent composition and method for producing the same (2007-193786)(Hiroshima University)

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Central Research Laboratory

(1) Staff and Students

Director : Koichi Kato by-work

Assistant Professor : Ikue Hayashi

(2) Main Research Activities

1 : Proteomic analyses using mass spectrometry

2 : Structural analysis of biologically active substances

(3) Research Achievements

A) Original Papers (including Case Reports)

- 1: Identification and Characterization of a Novel *aac(6')*-*Iag* Associated with the *blaIMP-1*-Integron in a Multidrug-Resistant *Pseudomonas aeruginosa*: Kobayashi K., Hayashi I., Kouda S., Kato F., Fujiwara T., Kayama S., Hirakawa H., Itaha H., Ohge H., Gotoh N., Usui T., Matsubara A., Sugai M.: PLOS ONE, 8(8), e70557, 2013
- 2: Bacteriocin Protein BacL1 of *Enterococcus faecalis* Is a Peptidoglycan D-Isoglutamyl-L-lysine Endopeptidase Kurushima J., Hayashi I., Sugai M., Tomita H.: The Journal of Biological Chemistry, 288, 36915-36925, 2013.

B) Review

C) Publications

D) Other Publications

E) Presentation at Scientific Meeting

- 1: Identification of a novel *aac(6')*-*Iag* associated with the *blaIMP-1*-integron in a multidrug-resistant *Pseudomonas aeruginosa* K. Kobayashi, I. Hayashi, S. Kayama, H. Ohge, A. Matsubara, M. Sugai
28th Internal Congress of Chemotherapy and Infection (Yokohama) 2013.

- 2: Immunogenetic factors of chronic hepatitis C and hepatocellular carcinoma development observed in atomic –bomb survivors T. Hayashi, W. Ohishi, K. Imai, K. Yoshida, I Hayashi, Y. Hu, J. Kajimura, S. Kyoizumi, Y. Kusunoki, K. Nakachi 15th International Congress of Immunology (Milan) 2013.
- 3: The N-terminal cell wall targeting domain of automutanolysin confers substrate selectivity on cariogenic streptococci P. Thanyasrisung, I. Hayashi, T. Fujiwara, K. Tsuruda, M. Sugai 2nd Meeting of the International Association for Dental Research –Asia Pacific Region (Bangkok) 2013.
- 4 Functional analyses of Bacteriocin Protein Bac41 derived from *Enterococcus faecalis* Kurushima J., Hayashi I., Sugai M., Tomita H.: 7th WAKATE COLOSSEUM for BACTERIOLOGY (Hiroshima) 2013

(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), ¥700,000

(5) Academic Awards, etc.

(6) Patents

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Department of Advanced General Dentistry, General Dentistry

(1) Staff and Students

Professor :Tetsuji Ogawa

Assistant Professor :Yoshihara Tanaka Masaru Ohara Hiromi Nishi

Graduate Student :Taiji Obayashi Kayo Kajitani (until March 2013) Yukiko Nagatani (until March 2013) Takayuki Oto Nami Kikushige Yumiko Nishimura (until December 2013)

(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. Comprehensive Oral Management for Collaborative Medical and Dental Care -Practical Approaches for Oral Care Support Team- : Hiromi Nishi, Shinich Fujimoto, Masaru Konishi, Akiko Fukui, Yukio Yoshioka, Mineka Yoshikawa, Takako Naruse, Tomoaki Hamana, Kazuhiro Tsuga, Koichiro Matsumoto, Masaki Hayashiuchi, Yoko Fujino, Masae Kitagawa, Yoku Itou, Kouji Ohta, Mikihiro Kajiya, Ryukichi Nagahara Toshikazu Nagasaki, Yoshiharu Tanaka, Kayo Kjitani, Kana Dinobu, Megumi Takamoto, Myuko Ohshita, Miyuki Nakaoka, Rumi Nishimura, Akiko Iwamoto, Eri Fukada, Kotomi Tethumori, Tetsuji Ogawa, Nobuyuki Kamata, Hiroki Ohge, Masahiro Irihune and Hidemi Kurihara: The Journal of Hiroshima University Dental Society. 4(1), 1-6, 2013.
2. The Effectiveness of a Dental Health Education Program for Junior High School Students: A Study of Behavioral Changes and Health Awareness. :

Hino Mitsugi Okada, Shigeaki Toratani, Nobuyuki Kamata, Motoyuki Sugai, and Masaru Sugiyama:
Journal of Oral Science, Vol.55, No.2, 145-155, 2013.

4. 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.
57(3):198-206. 2013.

B) Review

C) Publications

D) Other Publications

E) Presentation at Scientific Meeting

1. Tips of the professionalism education using case scenarios : Tetsuji Ogawa, Taiji Obayahi, Hiromi Nishi, Masaru Ohara, Yosiharu Tanaka, Soichiro Hirata, Tetsunori Ozaki, Noriaki Katagi, Tetsuro Konoo, Tatsuo Yamamoto and Yukio Hirata. : 32th Meeting of Japanese Dental Education Association, Sapporo, 2013.
2. Approach of the behavioral science in the medical interview : Tetsuji Ogawa, Kayo Kajitani, Yukiko Nagatani, Taiji Obayahi, Hiromi Nishi, Masaru Ohara, Yoshiharu Tanaka. : 32th Meeting of Japanese Dental Education Association, Sapporo, 2013.
3. Development of the theater-shaped inter-professional education program : Yukiko Nagatani, Tetsuji Ogawa, Kayo Kajitani, Taiji Obayashi, Hiromi Nishi, Masaru Ohara, Yosiharu Tanaka, Miyuki Nakaoka. : 32th Meeting of Japanese Dental Education Association, Sapporo, 2013.
4. Professionalism of Dental Hygienist : Yukiko Nagatani, Kayo Kajitani, Taiji Obayashi, Miyuki Nakaoka, Toshinobu Takemoto, Tetsuji Ogawa. : 32th Meeting of Japanese Dental Education Association, Sapporo, 2013.
5. What can the dental trainee get in the one-year clinical training? -Through Analysis of the reflection at the time of the training completion - : Tetsuji Ogawa, Taiji Obayahi, Hiromi Nishi, Masaru Ohara, Yosiharu Tanaka. : 32th Meeting of Japanese Dental Education Association, Sapporo, 2013.
6. Approach of Joint Educational Program for Dental and Hygienist Students for the Inter-Professional Work : Atsushi Shimazu, Yoshie Niitani, Maki Nosou, Hisako Sasahara, Akemi Naitou, Tetsuji Ogawa, Masaru Sugiyama. : 32th Meeting of Japanese Dental Education Association, Sapporo, 2013.

7. About Communicative Competences of the Dental Hygienists Carrying Out Oral Healthcare in Inter-Professional Cooperation : Kayo Kajitani, Yukiko Nagatani, Taiji Obayashi, Miyuki Nakaoka, Tetsuji Ogawa. : The 45th Annual Meeting of Japan Society for Medical Education, Chiba, 2013.
8. Approach of the Inter-Professional Work in the undergraduate dental education program : Atsushi Shimazu, Yoshiko Takahashi, Yoshie Niitani, Kotomi Tetsumori, Maki Nosou, Hisako Sasahara, Akemi Naitou, Tetsuji Ogawa, Masaru Sugiyama. : The 45th Annual Meeting of Japan Society for Medical Education, Chiba, 2013.
9. Invention of the dental drill to remove the endodontic cervical dentinal triangle : Masaru Ohara, Taiji obayashi, Hiromi Nishi, Yoshiharu Tanaka, Takamune Hino, Tetsuji Ogawa : Research Seminar in General Dental Medicine, Tokyo, 2013.
10. Oral management in Medicine and Dentistry of cooperation.- Attempt of cooperation oral care in Hiroshima University Hospital and community hospitals:- Hiromi Nishi, Mikito Kajiya, Masahiro Irihune, Hiroki Ohge, Hidemi Kurihara: Meeting of Hiroshima prefecture hospital, Hiroshima, 2013.
11. Correlation of Helicobacter pylori and the oral environment in gastric cancer patients. : Hiromi Nishi, Noriaki Tokumoto, Kouji Ohta, Kayo Kajitani, Yoshiharu Tanaka, Tomoaki Shintani, Kazuaki Tanabe, Hiroki Ohge, Hideki Ohdan, Tetsuji Ogawa, Hidemi Kurihara : The 16th Annual Meeting of Japanese Society of Clinical Studies on Intestinal Microflora, Hiroshima, 2013.
12. Effect of oral administration to radiation chemotherapy complications in head and neck cancer patients.: Hiromi Nishi, Tsutomu Ueda, Yoshiharu Tanaka, Kayo Kajitani, Kouji Ohta, Yoshiaki Katagiri, Hiroki Ohge, Katsuhiko Hirakawa, Tetsuji Ogawa. : The 51st Annual Meeting of Japan Society of Clinical Oncology. Kyoto, 2013.
13. Correlation of Helicobacter pylori and the oral environment in gastric cancer patients. : Hiromi Nishi, Noriaki Tokumoto, Kouji Ohta, Kayo Kajitani, Yoshiharu Tanaka, Tomoaki Shintani, Kazuaki Tanabe, Hiroki Ohge, Hideki Ohdan, Tetsuji Ogawa, Hidemi Kurihara : The 31st meeting of Hiroshima Infectious Diseases. Hiroshima, 2013.
14. Study of the anti-inflammatory action of antifungal agents Itokonazoru in Oral mucosal epithelial cells and fibroblasts.: Kouji Ohta, Akiko fukui, Hiromi Nishi, Yoko Ishida, Masakai Takechi, Nobuyuki Kamata. : The 68th Annual Meeting of the Japanese Stomatological Society. Tokyo, 2013.
15. Study of the Itokonazoru effect to inflammatory chemokine expression induced Oral fibroblasts.: Kouji Ohta, Akiko fukui, Hiromi Nishi, Yoko Ishida, Masakai Takechi, Nobuyuki Kamata. : The 26th Annual Meeting of the Japanese Society of Oral Diagnosis/ The 23rd Annual Meeting of the Japanese Society of Oral Medicine. (Tokyo), 2013.
16. Analysis of intracellular transmission mechanism by RIG-I in Oral mucosal epithelial cells and fibroblasts.: Akiko fukui, Kouji Ohta, Hideo Shigeishi, Hiromi Nishi, Masakai Takechi, Nobuyuki Kamata. : The 26th Annual Meeting of the Japanese Society of Oral Diagnosis/ The 23rd Annual Meeting of the Japanese Society of Oral Medicine. (Tokyo), 2013.

17. Study of itraconazole to inflammatory chemokine expression induced Oral fibroblasts.: Yoko Ishida, Kouji Ohta, Akiko fukui, Hiromi Nishi, Masakai Takechi, Nobuyuki Kamata. The 50th Annual Meeting of Japan Tissue Culture Society for Dental Research, (Tokyo), 2013.

F) Implementation of Seminars / Workshops

1. Workshop for postgraduate trainees 2013 (Hiroshima)
2. Communication Association in Japan Chugoku Shikoku branch, Educational Research Seminar in Health Communication, Hiroshima, 2013.
3. Oral care seminar in Medicine and Dentistry cooperation, Hiroshima, 2013.

G) Lecturer Symposiast

1. Symposium III New frontier on educational study. Tetsuji Ogawa. The 32th Annual Meeting of Japanese Society for Dental Education, (Sapporo) 2013.
2. Practical oral management for dentists –Cooperation between physician and dentist. Establishment of local network-. Hiromi Nishi. Seminar on oral management at perioperative period. (Hiroshima) 2013.
3. How to write fruitful scripts about medical education cooperated by not only medical staffs but also other professionals. Tetsuji Ogawa. The 49th workshop of Japanese Society for Medical Education, (Gifu) 2013.
4. Oral care - Current status and future of oral care support team- : Hiromi Nishi. The Meeting of Dental Service Standards Organization. (Hiroshima) 2013.
5. Infection prevention with control of oral bacteria. : Hiromi Nishi. The 15th Annual Meeting of Japan Infection Prevention and Control Conference for National and Public University Hospitals. (Hiroshima) 2013.

H) Attending of Lectures, Seminars, and Workshops

1. The 46th seminar and workshop on medical education: Attendant : Tetsuji Ogawa, Taiji Obayashi, at Gifu Univ. Medical Education Center. (Okinawa), 2013
2. The 46th seminar and workshop on medical education: Attendant : Takayuki Ooto at Gifu Univ. Medical Education Center. (Kyoto), 2013
3. The 15th workshop for trainers of dental residents, at Chogoku & Shikoku area. Participant: Takayuki Ooto. At Tokushima University Hospital (Tokushima) 2013

I) Implementation of OSCE, CSA

1. 2nd Advanced OSCE for Postgraduate Trainees 2012-2013
2. 1st Advanced OSCE for Postgraduate Trainees 2013-2014

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

1. Grant-in-Aid Scientific Research, Young Scientists (B). Nishi H. : Analysis of Toll-like receptor in oral mucosal disease . Program No. 23792346. 700,000yen
2. Grant-in-Aid Scientific Research, Scientific Research (C).Tanaka T.: Analysis of conversation about medical interview. Program. Program No. 24500257. 400,000yen
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. 300,000 yen (co-researcher)
4. Grant-in-Aid Scientific Research, Scientific Research (C). Ogawa T. : Building of the Education program for community based professionalism. Program. No. 25463255. 100,000 yen (co-researcher)

(5) Academic Awards, etc.

1. Hiromi Nishi. Award: The 38th meeting of Hospitals in Hiroshima prefecture. Division of oral presentations. 2013

(6) Patents

1. Invention of the dental drill to remove the endodontic cervical dentinal triangle. (Unity model registration No. 3182420) Masaru Ohara, Tsuyoshi Taji, Osamu Murayama, Takamune Hino, Tetsuji Ogawa, Hiroki Nikawa)

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

(1) Staffs and Students

| | | |
|---------------------|---|-------------------|
| Professor | : Mitsugi Okada | Head of Dentistry |
| Assistant Professor | : Yuki Oda | |
| Clinical Staff | : Taro Kojima, Yoko Fujino, Koichiro Matsumoto, Masaki Hayashiuchi | |
| Research Student | : Masaki Hayashiuchi, Yoko Fujino, Koichiro Matsumoto, Yaue Ootsuka | |
| Clinical Trainee | : Megumi Iwamoto, Masaki Yasusaka, Fumiko Hayashi, Chisato Mantoku | |

(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: Prevalence of drug-resistant opportunistic microorganisms in oral cavity after treatment for oral cancer.
Yamashita K, Ohara M, Kojima T, Nishimura R, Ogawa T, Hino T, Okada M, Toratani S, Kamata N, Sugai M, Sugiyama M: J Oral Sci 2013, 55: 145-155.

B) Review

C) Publications

D) Other Publications

E) Presentation at Scientific Meeting

1: Imaging Mass Spectrometry-based Molecular Histology of Bone Shows the Implication of MEPE-ASARM for the Klotho-Deficient Phenotype. Fujino Y, Minamizaki T, Sakurai K, Irie Y, Yoshioka H, Takei Y, Kozai K, Okada M, Yoshiko Y: ASBMR (American Society for Bone and Mineral Research), 2013 Annual Meeting, Baltimore, USA.

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

(5) Academic Awards, etc.

(6) Patents

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Special Dental Clinic Section, Central Clinical Facilities

(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. Aspects of Maximal Tongue Pressure and Swallowing Pressure in healthy adults: Yasuhara Y, 19th annual meeting of the Japanese Society of Dysphagia Rehabilitation (Kurashiki) , 2013
2. Discussion to put an accurate figure on Tongue Pressure: Yasuhara Y, Hiroshima Speech-Language Hearing Therapists Association, Mihara, 2013
3. Permeability estimation of contrast medium into the rice made for videofluoroscopic examination of swallowing observation by a scanning electron microscope : Konishi M, Nagasaki T, Yasuhara Y, Tanimoto K: 19th annual meeting of the Japanese Society of Dysphagia Rehabilitation (Kurashiki), 2013

4. The breathing during jelly chewing-swallowing. : Nagasaki T, Konishi M, Yasuhara Y, Yoshikawa M, Ogawa T, Tanimoto K : The 19th annual meeting of the Japanese Society of Dysphagia Rehabilitation (Kurashiki), 2013.
5. Toshikazu Nagasaki, Kiyohito Oota, Satsuki Minamitani, Masaru Konishi, Yukimi Yasuhara , Mineka Yoshikawa, Tetsuji Ogawa, Keiji Tanimoto: Snack eating and Respiration in healthy adult humans, th Congress European Society for Swallowing Disorders, MALMO, Sweden 2013

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

(5) Academic Awards, etc.

(6) Patents

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Center of Oral Clinical Examination, Central Clinical Sections

(1) Staffs and Students

Director: Hidemi Kurihara
 Associate Professor: Ikuko Ogawa Clinic
 Lecturer: Masae Kitagawa Clinic
 Research Associate: Tomoaki Shintani
 Technician: Keiko Banno, Yuhna Tanaka
 Intern: Atsuhiko Nagasaki, Shunryo Yanagisawa

(2) Main Research Activities

Clinical study on endodontal-periodontal therapy.
 Diagnostic pathological study on head and neck lesions.
 Developmental study of treatment to dysgeusia.
 Study on test and treatment in metal allergy and dry mouth.
 Molecular pathological study on development and progression of oral squamous cell carcinoma.
 Morphological and molecular pathological studies on development and progression of salivary gland tumors
 Study on molecular target therapy to oral cancer targeted with HBp17/FGFBP.
 Study on function of cementoblast specific genes in human cementoblast.

(3) Research Achievements

A) Original Papers (including Case Reports)

- : Examination of stimulated saliva production, caries risk item and number of Candida of mouth:
Kitagawa M., Yanagisawa S., Shintani T., Ogawa I., Kurihara H.: J JSEDP, 5(1), 31-37, 2013.
- : Selective enhancing effect of early mitotic inhibitor 1 depletion on the sensitivity of doxorubicin or X-ray treatment in human cancer cells.: Shimizu N., Nakajima N., Tsunematsu T., Ogawa I., Kawai H., Hirayama R., Fujimori A., Yamada A., Okayasu R., Ishimaru N., Takata T., Kudo Y. :J Biol Chem., 288(24),17238-52,2013.

- : Expression of receptor for hyaluronan-mediated motility (RHAMM) in ossifying fibromas. :
Hatano H., Ogawa I., Shigeishi H., Kudo Y., Ohta K., Higashikawa K., Takechi M., Takata T.,
Kamata N.:*Histol Histopathol.*,28(4),473-80,2013.
- : Malignant ossifying fibromyxoid tumor of the tongue: case report and review of the literature.:
Ohta K., Taki M., Ogawa I., Ono S., Mizuta K., Fujimoto S., Takata T., Kamata N.:*Head Face
Med.* 24(9),16,2013.
- : Ectomesenchymal chondromyxoid tumor of the tongue: insights on histogenesis.:Yoshioka Y.,
Ogawa I., Tsumematsu T., Sakaue T., Yamasaki S., Fukui Y., Hayashido Y., Toratani S., Okamoto
T.: *Oral Surg Oral Med Oral Pathol Oral Radiol.*,115(2),233-40,2013.
- : Ameloblastic carcinoma, secondary type, of the mandible: a case report.:Yoshioka Y., Toratani S.,
Ogawa. I, Okamoto T.:*J Oral Maxillofac Surg.*,71(1),e58-62,2013
- : A case of focal osseous dysplasia arising bilaterally in the mandible detected by long-term
observation by a family dentist.: Kanda T., Hamada A., Ando T., Sumi K., Ogawa I., Toratani S.,
Okamoto T.:*J Hiroshima Univ Dent Soc.* 45(1),33-8, 2013.
- : A case of Kimura's disease (eosinophilic lymphfolliculoid granuloma) associated with Nephrotic
syndrome diagnosed due to the cheek swelling:Kanda T., Toratani S., Yamasaki S., Ito N., Ogawa
I., Okamoto T. : *Jpn J Oral Maxillofac Surg* : 59 (2),83-7,2013.
- : A case of desmoplastic fibroma in the mandible:Kanda T., Hara J., Koizumi K., Ogawa I., Toratani
S., Okamoto T : *Jpn J Oral Somatol Soc*: 62 (1),11-6,2013.

B) Review

- : Pathological Diagnosis of Odontogenic Tumors “Classification and Epidemiology of Odontogenic
tumors”:Takata T.,Ogawa I.:*Pathology and Clinical Medicine* .31(5);480-5,2013.

C) Publications

D) Other Publications

E) Presentation at Scientific Meeting

- : F-spondin protects cementum from destruction by lipopolysaccharide: Tsukimoto S., Kitagawa M.,
Miyachi M., Takata T.:The 2nd Meeting of the International Association of Dental Research-Asia
Pacific Region (Bangkok), 2013.
- : Effect of F-spondin on LPS-induced periodontal inflammation and bone destruction: Kitagawa M.,

- Miyauchi M., Takata T.:The 5th Hiroshima conference on education and science in dentistry (Hiroshima), 2013.
- : Anti-inflammatory effect of F-spondin expressed by cementoblast: Kitagawa M., Miyauchi M., Oka H., Sotomaru Y., Takata T.:The 55th Japanese Association for Oral Biology (Okayama), 2013.
 - : F-spondin inhibits hard tissue destruction of periodontal tissue: Oka H., Kitagawa M., Takata T.: The 55th Japanese Association for Oral Biology (Okayama), 2013.
 - : Examination of stimulated saliva production, caries risk item and number of Candida of mouth: Kitagawa M., Nagasaki A., Shintani T., Ogawa I., Kurihara H.:The 52nd Annual Meeting of Hiroshima Dental Association and the 97th Annual Meeting of Hiroshima University Dental Society (Hiroshima), 2013.
 - : Clinico-statistical study of 53 BRONJ (bisphosphonate-related osteonecrosis of the jaw) cases at the department of oral and maxillofacial surgery Hoshino M., Shintani T., Mukasa H., Akagi E., Yasui T., Obayashi H., Tsushima K., Sakurai S., Takatsu K., Nakatao H., Hamada A., Suematsu M., Taguchi Y., Fuji T., Sakaue T., Yamasaki S., Ito Y., Fujii Y., Nabeshima K., Ishida Y., Hamana T., Sumi K., Fukui Y., Okamoto K., Kanda T., Koizumi K., Yoshioka Y., Tani R., Hayashido Y., Toratani S., Okamoto T.:The 52nd Annual Meeting of Hiroshima Dental Association and the 96th Annual Meeting of Hiroshima University Dental Society (Hiroshima), 2013.
 - : A case of undifferentiated malignant tumor, high-grade malignancy with rapid growth that proved difficult to diagnose : Sakurai S., Yasui T., Suematsu M., Ishida Y., Kanda T., Hayashido Y., Ogawa I., Takata T., Okamoto T.:The 61st Chugoku-Shikoku Sectional Meeting of Japanese Somatological Society (Okayama), 2013.
 - : Down-regulation of HBp17/FGFBP-1 by 1,25(OH)₂D₃ inhibits FGF-2 distribution in oral squamous cell carcinoma cell line: Rosli S.N.Z., Shintani T., Hayashido Y., Toratani S., Usui E., Okamoto T.:The 36th Annual Meeting of the Molecular Biology Society of Japan (Kobe) 2013.
 - : Significance of lip biopsy in diagnosis of Sjogren syndrome and IgG4-related disease: Nagasaki A., Kitagawa M., Shintani T., Ogawa I., Kurihara H.:The 6th Annual Meeting of Japanese Society for Evidence and the Dental Professional (Yokohama), 2013.
 - : 1,25(OH)₂D₃ down-regulates FGF-BP expression through NF B pathway:Rosli S.N.Z., Shintani T., Hayashido Y., Toratani S., Usui E. and Okamoto T.:The 2nd International Symposium Suggestion for the Renaissance from Radiation Disaster (Hiroshima), 2013.
 - : Identification of microRNA-203 as an inhibitor of invasion in oral cancer.Ohbayashi M, Yoshida M, Kudo Y, Ogawa I, Miyauchi M, Takata T.:The 102nd annual meeting of the Japanese Society of Pathology (Sapporo), 2013.

:

: Maxillary tumor (Central mucoepidermoid carcinoma):Yanagisawa S, Tsunematu T, Nagasaki A, Ogawa I, Suzuki J, Ohta S, Nakatani Y, Nagao T, Takata T.:The 24th Meeting of the Japanese Society of Oral Pathology (Tokyo), 2013.

: Palatal tumor (Basal cell adenoma):Tsunematu T., Ogawa I., Ohta S., Koike H., Takata T.:The 110th Academic Meeting of Chugoku-Shikoku Branch of the Japanese Society of Pathology (Hiroshima), 2013.

: Left submandibular tumor (Mucoepidermoid carcinoma, clear cell variant):Tanaka A., Kuroda N., Ogawa I., Takata T.:The 110th Academic Meeting of Chugoku-Shikoku Branch of the Japanese Society of Pathology (Hiroshima), 2013.

: Parotid tumor (Low-grade cribriform cystadenocarcinoma):Ando T., Ohbayashi M., Fujiwara M., Ogawa I., Takata T.:The 111st Academic Meeting of Chugoku-Shikoku Branch of the Japanese Society of Pathology (Izumo), 2013.

: Brest tumor (Myoepithelial carcinoma):Nagasaki A.o2310 9.96 012 Tc 0 Tw 6.48 0 0 6.48 229.324 526(o234 (th) Tjnd

- : Tissue Regeneration for Periapical Defects and Periodontal Defects: Hidemi K.: The 9th World Endodontic Congress (Tokyo), 2013.
- : The basics and common sense for endodontic therapy: Hidemi Kurihara: Staff study group "Breakthrough" (Hiroshima), 2013.
- : Biological endodontic therapy: Hidemi Kurihara: Update seminar for Dental specialist in Japan Association of Dental Traumatology (Hiroshima), 2013.
- : The future prospect of endodontic therapy: Hidemi Kurihara: Staff study group "Breakthrough" (Hiroshima), 2013.

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

- : Grants-in-Aid for Scientific Research (C): Kitagawa M.:Examination about inhibition of alveolar bone resorption by F-spondin, 25462854, 1,900,000 yen.
- : Grants-in-Aid for Scientific Research (C): Shintani T.:The development of the molecular target diagnosis and therapy HBp17/FGFBP protein to oral cancer. 25463109, 2,200,000 yen
- : Grants-in-Aid for Scientific Research (C):Ogawa I.:Analysis of pathological and biomolecular factors related to the biological behaviors of salivary gland tumors. 25462857, 1,200,000 yen.

(5) Academic Awards, etc.

(6) Patents

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Dental Technicians Section, Central Clinical Sections

(1) Staff and Students

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

(2) Main Research Activities

Technology, 2013.9

Syogo Iwaguro :Excellent poster presentation award in The35th Academic Meeting of Nippon

Academy of Dental Technology, 2013.9.

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Dental Hygiene Section, Central Clinical Sections

(1) Staff and Students

Director of Dental Hygiene Section Hidemi Kurihara

Chief Dental Hygienist Miyuki Nakaoka

Supervisor Dental Hygienists Kayo Kajitani

Dental Hygienists Yoriko Iwasaki, Megumi Takamoto, Kanako Matsui(June-September Maternity leave, from August Childcare leave) , Yumi Irie, Atsuko Wakita, Yukiko Nagatani, Kanako Yano , Tomoko Tokikazu, Kana Dainobu, Miho Okada, Chieko Kawai, Yurie Nakano, Maiko Kawagoe, Mayuko Watari, Ayano Tomoike, Ayumi Yamaguchi(Till August), Kotomi Tetsumori (from April), Tomomi Okino(From July), Ayumi Nakai(From July), Chika Kozono(From August)

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 : A Questionnaire Survey for Dental Hygienists about Medical Safety Measures:Kanda T., Yano K., Sugito H., Fukuizumi T., Hidaka K.: Japanese Society of Dental Practice Administration, 48(3), 229-237, 2013.

2 : Comprehensive Oral Management for Collaborative Medical and Dental Care –Practical Approaches for Oral Care Support Team- : Nishi H., Fujimoto S., Konishi M., Fukui A., Yoshioka Y., Yoshikawa M., Naruse T., Hamana T., Tsuga K., Matumoto K., Hayashiuchi M., Fujino Y., Kitagawa M., Itou Y., Ohta K., Kajiya M., Nagahara R., Nagawaki T., Tanaka Y., Kajitani K., Dainobu K., Takamoto M., Ohshita M., Nakaoka M., Nishimura R., Iwamoto A., Fukuda E., Tetsumori K., Ogawa T., Kamata N., Ohge H., Irihune M., Kurihara. : The Journal of Hiroshima University Dental Society, 45, 1-6, 2013

3 Survey of Intellectually Disabled Patients Visiting Department of Pediatric Dentistry of Hiroshima University Hospital : Hayashi F., Mitsuhashi C., Ariki M., Omoto S., Hirata R., Miyake N., Nakaoka M.,

Tachikake M., Kaihara Y., Ohara Y., Yoshimura G., Niizato N., Tsuboi A., Amano H., Kozai K.: Journal of Japanese Society of Pediatric Dentistry,51(1):21-27 2013.

B) Review

C) Publications

D) Other Publications

1 Feature Assistant work of dental hygienist are really "safe and securit" (Chapter1) Have you ever experienced such a situation? The cause and countermeasures of "Hiyari-Hatto" case lurking in the clinic. (Scene3) Hiyari Hatto during an assistant work. :Miyuki nakaoka.: The Journal of Dental Hygiene:33(8):820-821,2013.

E) Presentation at Scientific Meeting

1 : Professionalism of Dental hygienist who bears Inter professional work. : Nagatani Y.,Kajitani K.,Obayashi T.,Nakaoka M.,Takemoto T.,Ogawa T. : The 32th The Meeting of the Japan Dental Education association(Sapporo),2012.07.12-13.

2 : Development of theater type Inter Professional Education program: Nagatani Y.,Ogawa T.,Kajitani K.,Obayashi T.,Nishi H.,Ohara M.,Tanaka Y.,Nakaoka M. : The 32th The Meeting of the Japanese Dental Education Association(Sapporo),2013.07.12-13.

3 : Approach of the behavioral science in the medical interview: : Ogawa T., Kajitani K.,Nagatani Y., Obayashi T.,Nishi H.,Ohara M.,Tanaka Y.:The 32th The Meeting of the Japanese Dental Education Association(Sapporo),2013.07.12-13.

4 : About Communicative Competences of the Dental Hygienists Carrying Out Oral Healthcare in Inter-Professional Cooperation : Kajitani K.,Nagatani Y.,Obayashi T.,Nakaoka M.,Ogawa T.:The 45th Annual Meeing of the Japan Society for Medical Education(Tiba),2013.07.26-27.

5 : Professionalism of Dental Hygienist in Japan :Nagatani Y., Kajitani K., Obayashi T .,Nakaoka M .,Takemoto T., Ogawa T. : An International for medical education 2013 conference(Praha),2013.08.25-28.

6 : Two cases of Stenotrophomonas maltophilia was detected from severe oral mucositis : Kajitani K.,Nishi H.,Kimura N.,Mino T.,Nakaoka M.,Kurihara H.:The 16th Journal of the Japanese Society of Clinical studies on Intestinal Microflora(Hiroshima),2013.08.31.

7 : Presentation at Scientific Meeting : Cognitive behavioral therapy for the dental phobia patient with periodic neutropenia : Doi M., Okada M., Yamashita M., Ishii H., Irihune M.: The 41st Annual Meeting of

the Japanese Dental Society of Anesthesiology (Yokohama), 2013.10.2-4.

8 Comparison of youth and elderly people in the amount of secretion and antioxidative power of saliva, and the influence of medication:Nakano Y.,Matsumoto A.,Niitani Y.,Nakaoka M.,Takemoto T.:The 8th Annual Meeting of the Japan Dental Hygienists Association(Kobe),2013.09.14-16.

9 A case of intraoral management for a patient with myelodysplastic syndrome:Tokikazu T.,Kanda T.,Nakaoka M.,Yosida K.,Oda Y.,Okada M. 30st Journal of the Japanese Society for Disability and Oral Health(Hyougo),2013.10.12.

10 : Medical interview skills for a patient with disabled by dental residents : Okada M.,Oda Y.,Kojima T.,Hayashiuti Y.,Hujino Y.,Matsumoto K.,Iwamoto M.,Wakita A.,Kawai C. : 30st Journal of the Japanese Society for Disability and Oral Health(Sapporo),2013.10.13.

F) Special lectures in academic meetings

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

(5) Academic Awards, etc.

(6) Patent

(7) Special Lecture

1 Fact of oral care by dental hygienist Kajitani.K The 24st Shimane and Tottori Society of Home Respiratory care

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Dental Clinic

(1) Staff and Students

Director Takamune Hino

Assistant Professor Masaru Ohara

(2) Main Research Activities

Pathogenesis of the periodontal diseases

A study on the drug-resistant bacteria from nosocomial infection

(3) Research Achievements

A) Original Papers (including Case Reports)

1. Prevalence of drug-resistant opportunistic microorganisms in oral cavity after oral cancer therapy. Kaoru Yamashita, Masaru Ohara, Taro Kojima, Rumi Nishimura, Tetsuji Ogawa, Takamune Hino, Mitsugi Okada, Shigeaki Toratani, Nobuyuki Kamata, Motoyuki Sugai, and Masaru Sugiyama, *Journal of Oral Science*, 55, 2, 145-155, 2013.

B) Review

C) Publications

D) Other Publications

E) Presentation at Scientific Meeting

1. Development and use technique of the drill for triangle removal for safe endodontic treatment
Masaru Ohara, Taiji Ohbayashi, Hiromi Nishi, Yoshiharu Tanaka, Takamune Hino, Tetsuji Ogawa.
The 6th Annual meeting of the Japanese Association for General Dental medicine, 2013/11/15-17
Tokyo

F) Seminar, Workshop, etc.

1. A special lecture Masaru Ohara The 26th Annual meeting of the Japan Society for Surgical Infection Kobe , 2013/11/26
2. A special lecture Masaru Ohara The 61th Annual meeting of the Japanese Society for Chemotherapy (West Japan Branch), The 56th Annual meeting of the Japanese Association for Infection Diseases, The 83th Annual meeting of the Japanese Association for Infection Diseases (West Japan), Osaka , 2013/11/8
3. A special lecture and authorized medicine, specialist special lecture Takamune Hino The 56th Autumn Meeting of the Japanese Society of Periodontology Maebashi , 22/September 2013
4. Advanced OSCE for residents: 2013/4/3(Wed) 10(Wed)

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

(5) Academic Awards, etc.

(6) Patents

Utility model registration

- 1: The registration 3182420th "Dentistry drill for root canal treatment" Masaru Ohara, Tsuyoshi Taji, Takeshi Murayama, Takamune Hino, Tetsuji Ogawa, Hiroki Nikawa, Registration day 2013.3.6

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Dental Medical Information Section

(1) Staff and Students

| | |
|---------------------|--|
| Director | Keiji Tanimoto(Co.) |
| Professor | Hideaki Amano (Co.) |
| Assistant Professor | Kyou Hiasa (Co.), Masahiko Ohtsuka (Co.), Takeshi Tanaka |
| Technician | Tokue Yanagida (Co.) |

(2) Main Research Activities

Research on development and management of hospital information system.

Research on Medical Informatics.

(3) Research Achievements

A) Original Papers (including Case Reports)

Evaluation on Computerization of Medical Process from the Viewpoint of Patient Safety: H TSUKUMA, K ISHIKAWA, T TANAKA et al: Japan Journal of Medical Informatics **33** Vol. 4, pp. 201-210, 2013.

Problems in healthcare information security education for multinational students: T TANAKA and H TSUKUMA: Japan Journal of Medical Informatics **33** Suppl. pp. 208-211, 2013.

Philological Study on Present Status about Evaluation of a Hospital Information System -Preliminary Survey for the articles of the Joint Conference on Medical Informatics-: H TSUKUMA, T TANAKA and M IKEUCHI:, Japan Journal of Medical Informatics **33** Suppl. pp. 856-860, 2013.

Support for candidates of Healthcare Information Technologist by a Healthcare Information Technologist association in a countryside region: H SEO, K MORIMOTO, N WAKABAYASHI, T TANAKA et al.: Japan Journal of Medical Informatics **33** Suppl. pp. 772-773, 2013.

B) Review

C) Publications

K ISHIKAWA, H TSUKUMA, M IKEUCHI and T TANAKA: Medical Information System and

Electronic Medical Record: *The Japanese Bioethics Series* **16** Ch. 8 pp. 160-181 (Maruzen Publication Co. LTD, Tokyo), 2013.

D) Other Publications

E) Presentation at Scientific Meeting

Evaluation on Computerization of Medical Process from the Viewpoint of Patient Safety: H TSUKUMA, K ISHIKAWA, T TANAKA et al: The Japan Association for Medical Informatics Spring Conference 2013 (Toyama), 2013.

Problems in healthcare information security education for multinational students: T TANAKA and H TSUKUMA: The 33rd Joint Conference of Medical Informatics (Kobe), 2013.

Philological Study on Present Status about Evaluation of a Hospital Information System -Preliminary Survey for the articles of the Joint Conference on Medical Informatics-: H TSUKUMA, T TANAKA and MIKEUCHI: The 33rd Joint Conference of Medical Informatics (Kobe), 2013.

Support for candidates of Healthcare Information Technologist by a Healthcare Information Technologist association in a countryside region: H SEO, K MORIMOTO, N WAKABAYASHI, T TANAKA et al.: The 33rd Joint Conference of Medical Informatics (Kobe), 2013.

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

(5) Academic Awards, etc.

(6) Patents

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