

2014

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

Research Achievements

2014

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

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- [Department of Periodontal Medicine, and Department of Preventive and Restorative Dentistry \(Periodontics and Endodontics\)](#)
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○ Division of Advanced General Dentistry, General Dentistry

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○ Central Clinical Sections, Special Dental Clinic Section

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Basic Life Sciences

Department of Calcified Tissue Biology

(1) Staff and Students

Professor: Yuji Yoshiko

Assistant Professor: Tomoko Minamizaki, Hiroataka 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), Faisal Ahmed

(2) Main Research Activities

- 1 : Bone and tooth formation and mineralization
- 2 : Calcitropic and phosphotropic factors and mineral metabolism
- 3 : Osteonetwork (Cross-talk among bone cells and extracellular cells).

(3) Research Achievements

A) Original Papers (including Case Reports)

- 1 : Downregulation of renal type IIa sodium-dependent phosphate cotransporter during lipopolysaccharide-induced acute inflammation.: Ikeda S., Yamamoto H., Masuda M., Takei Y., Nakahashi O., Kozai M., Tanaka S., Nakao M., Taketani Y., Segawa H., Iwano M., Miyamoto K., Takeda E.: *Am J Physiol Renal Physiol.*, 306(7), F744-F750, 2014.
- 2 : Short-term dietary phosphate restriction up-regulates ileal fibroblast growth factor 15 gene expression in mice.: Nakahashi O., Yamamoto H., Tanaka S., Kozai M., Takei Y., Masuda M., Kaneko I., Taketani Y., Iwano M., Miyamoto K., Takeda E.: *J Clin Biochem Nutr.*, 54(2), 102-108, 2014.
- 3 : Identification of Activators of ERK5 Transcriptional Activity by High-Throughput Screening and the Role of Endothelial ERK5 in Vasoprotective Effects Induced by Statins and Antimalarial Agents.: Le N.T., Takei Y., Izawa-Ishizawa Y., Heo K.S. Lee H., Smrcka A.V., Miller B.L., Ko K.A., Ture S., Morrell C., Fujiwara K., Akaike M., Abe J.: *J Immunol.*, 193(7), 3803-3815, 2014.
- 4 : Delphinidin, one of the major anthocyanidins, prevents bone loss through the inhibition of excessive osteoclastogenesis in osteoporosis model mice.: Moriwaki S., Suzuki K., Muramatsu M.,

Nomura A., Inoue F., Into T., Yoshiko Y., Niida S.: PLoS One, 9(5), e97177, 2014.

- 5 : Functional Diversity of Fibroblast Growth Factors in Bone Formation: Takei Y., Minamizaki T., Yoshiko Y.: International Journal of Endocrinology, Article ID 729352, 2014.

B) Reviews

- 1 : Osteo-vasculo-corelation and microRNA: Takei Y., Yoshiko Y.: Japanese Journal of Clinical Chemistry, 43(2), 106-111, 2014.

C) Books

D) Other Publications

E) Presentation at Scientific Meeting

- 1 : Fibroblast growth factor (FGF) 10 negatively regulates the formation of caraniomaxillofacial skeleton.: Kagawa K., Yoshioka H., Kuremoto K., Takei Y., Minamizaki T., Tsuga K., Yoshiko Y.: The 98th Annual Meeting of the Hiroshima University Dental Society (Hiroshima), 2014.
- 2 : Effect of fibroblast growth factor (FGF) 10 on the formation of caraniomaxillofacial skeleton.: Kagawa K., Yoshioka H., Kuremoto K., Takei Y., Minamizaki T., Tsuga K., Yoshiko Y.: The 69th Chugoku-Shikoku Sectional Meeting of Japanese Association of Anatomists (Hiroshima), 2014.
- 3 : Imaging mass spectrometry-based analysis of Klotho deficient mice kidney: Fujino Y., Minamizaki T., Miyawaki S., Kawakami A., Miyaji T., Sakurai K., Takei Y., Yoshioka H., Kozai K., Okada M., Yoshiko Y.: The 69th Chugoku-Shikoku Sectional Meeting of Japanese Association of Anatomists (Hiroshima), 2014.
- 4 : Bone matrix protein MEPE-derived ASARM decreases bone volume independently of serum phosphate levels: Sakurai K., Minamizaki T., Kawamoto M., Fujino Y., Takei Y., Yoshioka H., Okada M., Kozai K., Yoshiko Y.: The 69th Chugoku-Shikoku Sectional Meeting of Japanese Association of Anatomists (Hiroshima), 2014.
- 5 : Overexpressing fibroblast growth factor (FGF) 10 at mid- and late-embryonic stages perturbs craniomaxillofacial development in mice.: Kagawa K., Yoshioka H., Kuremoto K., Takei Y., Minamizaki T., Tsuga K., Yoshiko Y.: The 56th Annual Meeting of Japanese Association for Oral Biology (Fukuoka), 2014.
- 6 : MEPE-ASARM, a substrate of Phex, decreases bone volume independently of serum phosphate levels: Sakurai K., Minamizaki T., Yoshioka H., Takei Y., Kozai K., Yoshiko Y.: The 32nd Annual Meeting of the Japanese Society for Bone and Mineral Research (Osaka), 2014.

- 7 : MEPE-ASARM, a substrate of Phex, decreases bone volume independently of serum phosphate levels: Sakurai K., Minamizaki T., Yoshioka H., Takei Y., Kozai K., Yoshiko Y.: The American Society for Bone and Mineral Research 2014 Annual Meeting (Houston), 2014.
- 8 : Imaging Mass Spectrometry-based Molecular Histology of the Klotho-Deficient Phenotype: Fujino Y., Okada M.: The 31st Annual Meeting of the Japanese Society for Disability and Oral Health (Sendai), 2014.
- 9 : D-Aspartic acid, but not L-Aspartic acid, modulates osteoblast marker gene expression in MC3T3E-1 osteoblasts: Arima Y., Yoshiko Y., Namera, A., Nagao, M.: The 2nd International Conference of D-Amino Acid Research (Utsunomiya), IDAR 2014.

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

- 1 : Grants-in-Aid for Young Scientists (B) New: Takei Y., MicroRNA-mediated cellular network in calcified tissue. No.26861548. ¥1,600,000
- 2 : Grants-in-Aid for Scientific Research (C) New: Yoshioka H., Development of bone regeneration strategies by controlling the epigenetic state of bone lining cells. No. 26462785, ¥1,690,000
- 3 : Grants-in-Aid for Scientific Research (C) Continuance: Minamizaki T., Study of regulation of bone/tooth mineralization via downstream factor(s) of Klotho derived from breast cancer cells.. No. 25462858, ¥1,820,000
- 4 : Ono Pharmaceutical Co.: Yoshiko Y., A Screen for regulators of mineralization involved in skeletal and extraskeletal organs. ¥4,000,000
- 5 : Drug Discovery Support Network: Yoshiko Y., Development of anti-ectopic mineralization medicine. ¥11,822,598

(5) Academic Awards, etc.

(6) Patents

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Basic Life Sciences

Department of Physiology and Oral Physiology

(1) Staff s and Students

Professor : SUGITA, Makoto

Associate Professor : HIRONO, Chikara

Assistant Professor : KITAGAWA, Michinori

Research Assistant : YAMAMOTO, Kuniyo

Graduate Students : UENO, Kaori, YAMAMOTO, Kuniyo, TERACHI, Momomi

(2) Main Research Activities

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

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

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

4 : Study on the system mechanisms of mastication and swallowing

(3) Research Achievements

A) Original Papers (including Case Reports)

1 : TMEM16E (GDD1) exhibits protein instability and distinct characteristics in chloride channel/pore forming ability : Tran TT., Tobiume K., Hirono C., Fujimoto S., Mizuta K., Kubozono K., Inoue H., Itakura M., Sugita M., Kamata N. : J. Cell. Physiol., 229, 181-190, 2014.

B) Review

C) Publications

D) Other publication

E) Presentation at Scientific Meeting

1 : Activation of the Na⁺-H⁺ exchanger by Ca²⁺ and cAMP signals during bicarbonate secretion from rat

- salivary ducts : Ueno K., Hirono C., Kitagawa M., Sugita M., Shiba Y. : The 91th Annual Meeting of the Physiological Society of Japan (Kagoshima), 2014.
- 2 : Information processing in the brainstem neurons defined by genetic tracing of taste representation : Sugita M., Yamamoto K., Hirono C., Shiba Y. : The 91th Annual Meeting of the Physiological Society of Japan (Kagoshima), 2014.
- 3 : Cellular characteristics of brainstem bitter taste-relaying neurons visualized by genetic tracing : Sugita M., Yamamoto K., Hirono C., Shiba Y. : The 47th Annual Meeting of Hiroshima University Dental Society (Hiroshima), 2014.
- 4 : Analysis of bicarbonate secretion mechanisms based on intracellular pH and ionic current measurements in rat parotid intralobular ducts : Hirono C., Ueno K., Kitagawa M., Sugita M., Shiba Y.: The 56th Annual Meeting of Japanese Association for Oral Biology, Satellite Symposium 12 (Fukuoka), 2014.
- 5 : Functional analysis of Hippo signaling pathway during salivary gland development in mice : Kitagawa M., Hirono C., Sugita M. : The 56th Annual Meeting of Japanese Association for Oral Biology (Fukuoka), 2014.
- 6 : A functional role of molecular complex formation mediated by the CFTR R domain : Sugita M. : 2014 NIPS Research Meeting (Okazaki), 2014.
- 7 : Quantitative and qualitative assessment of taste alteration in cancer patients treated with chemotherapy : Kikushige N., Nishi H., Ohge H., Sugiyama K., Ogawa T., Sugita M. : The 98th Meeting of Hiroshima University Dental Society (Hiroshima), 2014.

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

- 1 : Grant-in-Aid for Scientific Research (Challenging Exploratory Research): Sugita M., The neuronal mechanisms underlying the taste-evoked emotional responses. 24659826. ¥900,000.
- 2 : Grant-in-Aid for Scientific Research (C): Kitagawa M., Functional analysis of Hippo signaling pathway on the formation and maintenance of salivary gland structure. 24592768. ¥1,200,000.

(5) Academic Awards, etc.

(6) Patents

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Basic Life Sciences

Department of Molecular Biology and Biochemistry

(1) Staffs and Students

Professor: Chisa Shukunami

Associate Professor: Mitsuhide Noshiro

Assistant Professor: Katsumi Fujimoto

Assistant Professor (Special Appointment): Yuki Yoshimoto

Researcher: Veronica Sainik Ronald

(2) Main Research Activities

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

(3) Research Achievements

A) Original Papers (including Case Reports)

- 1 : Sox9- and Scleraxis-Cre Lingeage Fate Mapping in Aortic and Mitral Valve Structures: Austin B, Yoshimoto Y, Shukunami C, Lincoln J: *J. Cardiovasc. Dev. Dis.*, 1(2), 163-176, 2014.
- 2 : The N-Terminal Cleavage of Chondromodulin-I in Growth-Plate Cartilage at the Hypertrophic and Calcified Zones During Bone Development: Miura S, Kondo J, Takimoto A, Sano-Takai H, Guo L, Shukunami C, Tanaka H, Hiraki Y: *PLoS One*, 9 (4), e94239, 2014.
- 3 : A Novel Protein, CHRONO, Functions as a Core Component of the Mammalian Circadian Clock: Goriki A, Hatanaka F, Myung J, Kim JK, Yoritaka T, Tanoue S, Abe T, Kiyonari H, Fujimoto K, Kato Y, Todo T, Matsubara A, Forger D, Takumi T: *PLoS Biol.*, 12(4), e1001839, 2014.

B) Review

- 1 : DEC1/STRA13/SHARP2 and DEC2/SHARP1 Coordinate Physiological Processes, Including Circadian Rhythms in Response to Environmental Stimuli: Kato, Y, Kawamoto, T, Fujimoto, K, Noshiro, M: Current Topics in Developmental Biology, 110, 339-372, 2014.

C) Publications

D) Other Publications

- 1 : Molecular cloning of cytochrome P450 (CYP7A1) involved in bile acid biosynthesis: Mitsuhide Noshiro: Tanjusan, 13, 25, 2014

E) Presentation at Scientific Meeting

- 1 : Analysis of the regulatory mechanisms underlying cartilage-specific expression of Chondromodulin-I: Hiroshi Yamashita, Chisa Shukunami, Yuji Hiraki: The 2014 Annual Conference of the Japan Society for Bioscience, Biotechnology and Agrochemistry (Tokyo), March 28th, 2014.
- 2 : Screening of the *cis*-element regulating cartilage-specific expression of zebrafish Chondromodulin-I: Hiroshi Yamashita, Chisa Shukunami, Yuji Hiraki: The 61st meeting of the Japanese Biochemical Society, Kinki Branch (Kyoto), May 17th, 2014
- 3 : Increased expression of the ladybird homeobox 1 (*lhx1*) cause scoliosis in zebrafish mimicking human adolescent idiopathic scoliosis and congenital scoliosis: Guo Long, Hiroshi Yamashita, Ikuyo Kou, Aki Takimoto, Taiji Adachi, Yuji Hiraki, Shiro Ikegawa, Chisa Shukunami: The 61st meeting of the Japanese Biochemical Society, Kinki Branch (Kyoto), May 17th, 2014
- 4 : *In vivo* screening of the element regulating cartilage-specific Chondromodulin-I expression: Hiroshi Yamashita, Chisa Shukunami, Yuji Hiraki: The Joint Meeting of the 40th Annual Meeting of the Japanese Society for Connective Tissue Research & the 61st Annual Meeting of the Japan Matrix Club (Aichi), June 5th- 7th, 2014.
- 5 : Establishment of an *in vivo* model for analysis of periodontal ligament formation: Yuki Sugimoto, Aki Takimoto, Yuji Hiraki, Chisa Shukunami: The 47th Annual Meeting of Hiroshima University Dental Society (Hiroshima), June 21st, 2014.
- 6 : The role of Pax1 in intervertebral disc formation: Aki Takimoto, Yuji Hiraki, Chisa Shukunami: The 32nd Annual Meeting of the Japanese Society for Bone and Mineral Research (Osaka), July 24th-26th, 2014
- 7 : The functional role of collagen fibrillogenesis in tendons during establishment of the musculoskeletal system: Yuki Sugimoto, Aki Takimoto, Kei-Ichiro Nishida, Yuji Hiraki, Chisa Shukunami: The 32nd Annual Meeting of the Japanese Society for Bone and Mineral Research (Osaka), July 24th-26th, 2014

- 8 : Lineage analysis of cells in the attachment sites of tendons/ligaments into the skeletal tissues: Aki Takimoto, Yuki Yoshimoto, Haruhiko Akiyama, Yuji Hiraki, Chisa Shukunami: The 15th Locomotor Science Meeting (Tokyo), September 5th, 2014
- 9 : Analysis of the regulatory mechanisms underlying cartilage-specific expression of Chondromodulin-I with *in vivo* screening in zebrafish: Hiroshi Yamashita, Chisa Shukunami, Yuji Hiraki: The 15th Locomotor Science Meeting (Tokyo), September 5th, 2014
- 10 : Increased expression of the ladybird homeobox 1 (*lhx1*), human adolescent idiopathic scoliosis related gene, causes scoliosis in zebrafish: Guo Long, Hiroshi Yamashita, Ikuyo Kou, Aki Takimoto, Taiji Adachi, Yuji Hiraki, Shiro Ikegawa, Chisa Shukunami: The 15th Locomotor Science Meeting (Tokyo), September 5th, 2014
- 11 : The homeobox transcription factor *MSX1* regulates odontogenic/osteogenic differentiation of human dental pulp stem cells: Noriko Goto, Katsumi Fujimoto, Hiroko Ida-Yonemochi, Hayato Ohshima, Takeshi Kawamoto, Mitsuhide Noshiro, Chisa Shukunami, Katsuyuki Kozai, Yukio Kato: The 15th Locomotor Science Meeting (Tokyo), September 5th, 2014
- 12 : Establishment of an *in vivo* model to analyze the development of the periodontal ligament: Yuki Yoshimoto, Chisa Shukunami: The 56th Annual Meeting of Japanese Association for Oral Biology (Fukuoka), September 26th-28th, 2014
- 13 : Increased and decreased expression of the ladybird homeobox 1 cause scoliosis in zebrafish: Guo Long, Hiroshi Yamashita, Tetsushi Sakuma, Ikuyo Kou, Aki Takimoto, Takashi Yamamoto, Taiji Adachi, Yuji Hiraki, Shiro Ikegawa and Chisa Shukunami: The 4th Genome Editing Meeting (Hiroshima), October 6th-7th, 2014
- 14 : The homeobox transcription factor *MSX1* regulates odontogenic/osteogenic differentiation of human dental pulp stem cells: Noriko Goto, Katsumi Fujimoto, Hiroko Ida-Yonemochi, Hayato Ohshima, Takeshi Kawamoto, Mitsuhide Noshiro, Chisa Shukunami, Katsuyuki Kozai, Yukio Kato: The 87th Annual Meeting of the Japanese Biochemical Society (Kyoto), October 15th-18th, 2014
- 15 : The improved performance of mesenchymal stem cell cultures by fibronectin and mixed self-assembled monolayers under serum-free conditions: Veronica Sainik Ronald, Masami Kanawa, Isao Hirata, Koichi Kato, Katsumi Fujimoto, Chisa Shukunami, Yukio Kato: The 98th Regular Meeting of the Hiroshima University Dental Society (Hiroshima), November 9th, 2014

F) Special lectures in academic meetings

- 1 : The role of *Sox9* in the formation of cartilage, tendon, and ligament: Chisa Shukunami: The 27th Annual Meeting of the Japanese Society of Cartilage Metabolism. Sponsored Symposium (Kyoto), 28th February, 2014.
- 2 : Molecular mechanisms governing the formation of tendons and ligaments during musculoskeletal development: Chisa Shukunami: The 27th bone metabolism seminar (Tokyo), 6th June, 2014

- 3 : Molecular mechanisms regulating the establishment of the osteotendinous junction: Chisa Shukunami: The 32nd Annual Meeting of the Japanese Society for Bone and Mineral Research, Current Concept (Osaka), July 24th-26th, 2014.
- 4 : Molecular mechanisms regulating tendon and ligament formation: Chisa Shukunami: The 11th Bone Biology Forum Lecture VI (Susono), 23rd August, 2014.
- 5 : DEC1 controls circadian rhythms of adipose lipid-metabolizing genes: Mitsuhide Noshiro: The 21st Annual Meeting of Japanese Society for Chronobiology (Fukuoka), 9th November, 2014
- 6 : *Scx*⁺/*Sox9*⁺ progenitors contribute to the establishment of the junction between cartilage and tendon/ligament: Yuki Yoshimoto: The 17th Annual Meeting of Skeletal Research Meeting (Tokyo), 29th, November, 2014

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

- 1 : Grant-in-Aid for Scientific Research (B): Chikara Kokubu, Chisa Shukunami, Yuji Hiraki, 24300154. ¥500,000
- 2 : Grant-in-Aid for Scientific Research (B): Haruhiko Akiyama, Chisa Shukunami, 25293319. ¥100,000
- 3 : Grant-in-Aid for Scientific Research (B): Chisa Shukunami, Haruhiko Akiyama, Aki Takimoto, 26293395. ¥5,600,000
- 4 : Grant-in-Aid for challenging Exploratory Research: Chisa Shukunami, Aki Takimoto, Teruko Yamamoto, 5670871. ¥900,000
- 5 : Grant-in-Aid for Scientific Research Activity Start-up: Yuki Yoshimoto, 26893164. ¥1,500,000
- 6 : Grant-in-Aid for Scientific Research (C): Katsumi Fujimoto, 25462889. ¥1,100,000

(5) Academic Awards, etc.

(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	: Hisako Furusho, Mariko Ohbayashi
Visiting Researcher	: Phuong Thao Nyugen
Graduate Student	: Toshinori Ando (D4), Ajiravudh Subarnbhesaj (D4), Nurina Febriyanti Ayuningtyas(D3), Chea Chanbora (D3), Syunryo Yanagisawa(D3), Atsuhiko Nagasaki (D2)

(2) Main Research Activities

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

(3) Research Achievements

A) Original Papers including case reports

1. Odontogenic carcinoma with dentinoid: A new odontogenic carcinoma. Mosqueda-Taylor A, Neville BW, Tatemoto Y, Ogawa I, Takata T. Head Neck Pathol. Dec;8(4):421-31. 2014.
2. Odontogenic tumors, WHO 2005: Where do we go from here? Wright JM, Odell EW, Speight PM, Takata T. Head Neck Pathol. Dec;8(4):373-82. 2014.
3. Head and neck pathology: Update of odontogenic tumors. Takata T. Pathology. Oct;46 Suppl 2. 2014.
4. Lactoferrin inhibits infection-related osteoclastogenesis without interrupting compressive

- force-related osteoclastogenesis. Inubushi T, Kawazoe A, Miyauchi M, Yanagisawa S, Subarnbhesaj A, Chanbora C, Ayuningtyas NF, Ishikado A, Tanaka E, Takata T. *Arch Oral Biol.* 59(2):226-32. 2014.
5. F-spondin inhibits differentiation of clastic precursors via LRP8. Oka H, Kitagawa M, Takata T. *J Periodontol.* Posted online on October 9, 2014.
 6. Infection with *Porphyromonas gingivalis* exacerbates endothelial injury in obese mice. Ao M, Miyauchi M, Inubushi T, Kitagawa M, Furusho H, Ando T, Ayuningtyas NF, Nagasaki A, Ishihara K, Tahara H, Kozai K, Takata T. *PLOS ONE.* Oct 21; 9(10):e110519. 2014.
 7. BDNF mimetic compound LM22A-4 regulates cementoblast differentiation via the TrkB-ERK/Akt signaling cascade. Kajiya M, Takeshita K, Kittaka M, Matsuda S, Ouhara K, Takeda K, Takata T, Kitagawa M, Fujita T, Shiba H, Kurihara H. *Int Immunopharmacol.* 2014 Apr;19(2):245-52. doi: 10.1016/j.intimp.2014.01.028. Epub Feb 11. 2014.
 8. Hinokitiol increases the angiogenic potential of dental pulp cells through ERK and p38MAPK activation and hypoxia-inducible factor-1 α (HIF-1) upregulation. Kim MK, Park HJ, Kim YD, Ryu MH, Takata T, Bae SK, Bae MK. *Arch Oral Biol.* Feb;59(2):102-10. 2014.
 9. Bisphosphonate-related osteonecrosis of the jaw successfully treated with surgical resection and its histopathological features. Shintani T, Miyauchi M, Tani R, Yoshioka Y, Akagi E, Toratani S, Okamoto T. *J Oral Maxillofac Surg.* (in press)
 10. A case of intermediate lesion between intercalated duct lesion and epithelial-myoepithelial carcinoma. Tokuyasu Y, Nakamoto S, Suzuki T, Ogawa I, Takata T. *Jpn J Diag Pathol.* Apr; 31(2):165-9, 2014.
 11. A case of myxofibrosarcoma of the maxilla. Toratani S, Sakamoto A, Ochi Y, Miyauchi M, Ogawa I, Okamoto T. *Jpn J Oral Maxillofac Surg.* Jun;60(6):354-8, 2014.
 12. A case of neck lymph node metastasis after surgery for tongue cancer with Churg-Strauss syndrome. Nakagawa T, Ohta K, Ono S, Seino S, Obayashi M, Ogawa I, Takata T, Takechi M. *J Hiroshima Univ Dent Soc.* Jun; 46(1):67-72, 2014.
 13. A case of lichen planus suspected of palladium allergy to dental metals: Kitagawa M, Oumi F, Okamoto Y, Nagasaki A, Obayashi M, Shintani T, Toratani S, Ogawa I, Kurihara H. *J JSEDP,* 6(1):66-70, 2014.

B) Review

1. Odontogenic infection exerts harmful effects on pathological condition of metabolic syndrome. Miyauchi M, Furusho H, Inubushi T, Takata T. Hyogo Dentists, Association, Monthly 751(2): 2014.

C) Publications

D) Other Publications

E) Presentation at Scientific Meeting

1) Special lectures in academic meetings

1. Oral and whole body health - dental infection of *Porphyromonas gingivalis* is a risk factor of non-alcoholic steatohepatitis (NASH) -. Takata T. 34th Myanmar Dental Conference (Yangon), 2014.
2. Oral administration of liposomalized lactoferrin inhibits bone resorption by periodontitis and other bone destructive diseases. Takata T, Inubushi T, Chanbora C, Miyauchi M. 6th Meeting of Asian Society of Oral Pathology and Medicine (Hyderabad), 2014.
3. Odontogenic infection of periodontal pathogen, *Porphyromonas gingivalis* exacerbates pathological progression of NASH. Miyauchi M, Furusho H, Hyogo H, Cyayama K, Kurihara H, Takata T. 10th symposium of Hiroshima liver project research center (Hiroshima), 2014.
4. A survey study of effects of periodontitis on pathological progression of NASH. Miyauchi M, Furusho H, Nagasaki A, Takata T. 30th Comprehensive meeting focusing on dental medicine (Tokyo), 2014.
5. Update of odontogenic tumors. Takata T. 30th Meeting of International Academy of Pathology (Bangkok), 2014.
6. Pathology of oral and maxillofacial lesions. 115th meeting of Chugoku-Sikoku division of the Japanese Society of Pathology (Hiroshima) 2014. Takashi Takata
7. Educational Seminar: Oral Pathology, The International Academy of Pathology, Japanese division (Okinawa), Takashi Takata, 2014.

2) Presentation at International Scientific Meeting

1. Immunohistochemical mapping of oxygen gradient in mouse oral epithelia. Furusho H, Ohta A, Sasaki H. 43rd Annual Meeting & Exhibition of the AADR (Charlotte), 2014.
2. Role of VEGF-Flt-1 signaling in oral cancer progression. Subarnbhesaj A, Miyauchi M, Inubushi T, Chanbora C, Nguyen PT, Takata T. 17th International Congress on Oral Pathology and Medicine (Istanbul), 2014.
3. Significance of fusion gene analysis for the differential diagnosis of mucoepidermoid carcinoma.

Nagasaki A, Ando T, Obayashi M, Ogawa I, Takata T. 17th International Congress on Oral Pathology and Medicine (Istanbul), 2014.

4. Role of VEGF-Flt-1 signaling in malignant behaviors of oral cancer. Subarnbhesaj A, Miyauchi M, Nguyen PT, Chanbora C, Ayuningtyas NF, Takata T. 30th Meeting of International Academy of Pathology (Bangkok), 2014.
5. Assessment of academic preparation and motivation to create a standard of entry behavior for International Dental Course Program at Faculty of Dentistry Hiroshima University. Suardita K, Oka H, Takata T, Setijanto D, Sugai M. 16th Ottawa Conference (Ottawa), 2014.
6. Interim assessment of educational program for undergraduate dental students with Japanese-English dual linguistic education system at Hiroshima University (the first and the second year). Oka H, Suardita K, Takata T, Nikawa H, Kato K, Sugai M. 16th Ottawa Conference (Ottawa), 2014.

3) Presentation at Domestic Scientific Meeting

1. Oncogenic role of TIMP-1 in sarcoma. Ando T, Umehara H, Nishizaka T, Miyauchi M, Takata T. 103rd annual meeting of the Japanese Society of Pathology (Hiroshima), 2014.
2. Role of VEGF-Flt-1 signaling in oral cancer progression. Subarnbhesaj A, Miyauchi M, Inuboshi T, Chanbora C, Nguyen PT, Takata T. 103rd annual meeting of the Japanese Society of Pathology (Hiroshima), 2014.
3. Bovine lactoferrin inhibits growth and invasion of oral squamous cell carcinoma. Chanbora C, Inuboshi T, Subarnbhesaj A, Ayuningtyas N F, Miyauchi M, Ishikado A, Makino T, Takata T. 103rd annual meeting of the Japanese Society of Pathology (Hiroshima), 2014.
4. A case of central mucoepidermoid carcinoma which diagnosis is established by the identification of CRTC1-MAML2 fusion gene. Ogawa I, Suzuki R, Yanagisawa S, Nagasaki A, Ohkubo Y, Sakamoto H, Ohta S, Nakatani Y, Nagao T, Takata T. 103rd annual meeting of the Japanese Society of Pathology (Hiroshima), 2014.
5. Odontogenic infection of *Porphyromonas gingivalis* induces preterm and low weight birth. Miyauchi M, Furusho H, Nagasaki A, Takata T. 103rd annual meeting of the Japanese Society of Pathology (Hiroshima), 2014.
6. The inhibitory effects of bovine lactoferrin on tumor angiogenesis. Ayuningtyas NF, Inuboshi T, Subarnbhesaj A, Chanbora C, Miyauchi M, Hida K, Shindoh M, Takata T. 68th annual meeting of Japanese Stomatological Society (Tokyo), 2014.
7. Identification of miR-203 as an inhibitor of invasion in oral cancer. Ohbayashi M, Yoshida M, Tsunematsu T, Kudou Y, Ogawa I, Miyauchi M, Takata T. 68th annual meeting of Japanese Stomatological Society (Tokyo), 2014.

8. Role of VEGF-Flt-1 signaling in malignant behaviors of oral cancer. Subarnbhesaj A, Miyauchi M, Chanbora C, Ayuningtyas NF, Nguyen PT, Takata T. 47th annual meeting of the Dental Association of Hiroshima University (Hiroshima), 2014.
9. Liposomalized lactoferrin prevents pathological progression of RA through regulating Treg-Th17 cell balance. Harada K, Kaneko A, Yanagisawa S, Subarnbhesaj A, Inubushi T, Miyauchi M, Yamamoto D, Takahashi I, Takashi T. 47th annual meeting of the Dental Association of Hiroshima University (Hiroshima), 2014.
10. Odontogenic infection of *Porphyromonas gingivalis* induces pathological progression of non-alcoholic steatohepatitis (NASH). Furusho H. 25th annual meeting of Japanese society of Oral Pathology(Niigata), 2014.
11. Liposomal bovine lactoferrin prevents pathological progression of rheumatoid arthritis. Yanagisawa S, Inubushi T, Harada K, Subarnbhesaj A, Miyauchi M, Imanaka M, Ishikado A, Makino T, TakataT. 25th annual meeting of Japanese society of Oral Pathology(Niigata), 2014.
12. Odontogenic infection of periodontal pathogen, *Porphyromonas gingivalis* exacerbates pathological progression of NASH. Miyauchi M, Furusho H, Nagasaki A, Takata T. Clinical Lipid Seminar 2014 (Hiroshima), 2014.
13. Significance of titanium allergy as preoperative test of implant: Kitagawa M, Obayashi M, Nagasaki A, Yanagisama S, Shintani T, Kagawa K, Hiasa K, Kubo T, Takachi M, Ogawa I, Kurihara H. 7th Annual Meeting of Japanese Society for Evidence and the Dental Professional (Okayama), 2014.
14. Odontogenic infection of *Porphyromonas gingivalis* exacerbates pathological progression of non-alcoholic steatohepatitis. –Effects of *Pg* infection and *Pg*-LPS on hepatocytes-. Hirata M, Furusho H, Miyauchi M, Takata T. 56th annual meeting of Japanese association for Oral Biology (Fukuoka), 2014.
15. Odontogenic infection of *Porphyromonas gingivalis* induces preterm birth. Miyauchi M, Frusho H, Nagasaki A, Urabe T, Konishi H, Miyoshi H, Kudo M, Takata T. 22nd Meeting of Japan Placenta Association (Kyoto), 2014.
16. Odontogenic infection of *Porphyromonas gingivalis* induces pathological progression of non-alcoholic steatohepatitis (NASH). Furusho H, Miuauchi M, Takata T. 5th Asian Pacific Topic Conference (Hyogo), 2014.
17. Liposomal bovine lactoferrin prevents pathological progression of rheumatoid arthritis. Yanagisawa S, Inubushi T, Harada K, Kaneko A, Chanbora C, Ayuningtyas NF, Miyauchi M, Imanaka M, Ishikado A, Makino T, TakataT. 6th annual meeting of Japanese association for Lactoferrin (Ibaragi), 2014.
18. Bovine lactoferrin inhibits tumor angiogenesis. Ayuningtyas NF, Inubushi T, Chanbora C, Subarnbhesaj A, Miyauchi M, Saninggar KE, Maishi N, Imanaka H, Ishikado A, Makino T, Hida

- K, Shindoh M, Takata T. 6th annual meeting of Japanese association for Lactoferrin (Ibaragi), 2014.
19. A case of low-grade cribriform cystadenocarcinoma of parotid gland. Tanaka Y, Ogawa I, Miyauchi M, Takata T, Arihiro K, Fujihara M. The 53rd Academic Meeting in Autumn of Japanese Society of Clinical Cytology (Shimonoseki), 2014.
 20. Nagasaki A. Participation of 17th International Congress on Oral Pathology and Medicine. 2th Graduate School of Biomedical & Health Sciences FD (Hiroshima), 2014.
 21. Role of VEGF - Flt - 1 signaling in bone invasion of oral cancer. Mikuriya A, Subarnbhesaj A, Miyauchi M, Nguyen PT, Takata T. 62nd annual meeting of Japanese association of dental research (Osaka), 2014.
 22. The effects of *Porphyromonas gingivalis* infection on hepatocytes. Sakamoto S, Furusho H, Nagasaki A, Miyauchi M, Hisatsune J, Sugai M, Tahara H, and Takata T. 62nd annual meeting of Japanese association of dental research (Osaka), 2014.
 23. Assessment of Japanese-English dual linguistic education system at HUD-Feedbacks from the lecturers about present conditions and handlings -. Sugai M, Oka H, Suardita K, Nguyen PT, Takata T, Kato K, Nikawa H. 33th Annual Academic Meeting of Japanese Dental Education Association (Kitakyushu), 2014.
 24. Assessment of Japanese-English dual linguistic education system at HUD-Study on the factors students expect for the present lectures/ practices-. Oka H, Suardita K, Nguyen PT, Takata T. 33th annual academic meeting of Japanese Dental Education Association (Kitakyushu), 2014.
 25. Views of dental students in the home countries of international dental course students-survey for dental students in Airlangga University, Indonesia-. Takigawa Y, Kato M, Tanji T, Suardita K, Oka H, Takata T. 33th annual academic meeting of Japanese Dental Education Association (Kitakyushu), 2014.
 26. The activity in a primary school by dental students – An extracurricular activity with HUD regular program students and international undergraduates: Kato M, Okamoto K, Saninggar KE, Kinanthi N, Dung NT, Oka H, Takata T. 33th annual academic meeting of Japanese Dental Education Association (Kitakyushu), 2014.
 27. Hiroshima University short-term international study program “ Overview of dental sciences” 2013 for mutual exchanges. Okamoto K, Oka H, Takata T, Sugai M. 33th annual academic meeting of Japanese Dental Education Association (Kitakyushu), 2014.

4) Case Reports at Scientific Meeting

1. Palatal tumor (Mucoepidermoid carcinoma). Obayashi M, Nagasaki A, Mizuta K, Ogawa I, Takata

- T. 113rd Academic Meeting of Chugoku-Shikoku Branch of the Japanese Society of Pathology (Ehime), 2014.
2. A tumor of pancreas (Solid-pseudopapillary neoplasm). Nagasaki T, Ogawa I, Takata T, Nishida T. 114th Academic Meeting of Chugoku-Shikoku Branch of the Japanese Society of Pathology (Kouchi), 2014.
 3. A tumor of buccal mucosa (Solitary fibrous tumor). Ogawa I, Sasaki N, Yoneda S, Tohmori H, Hirose T, Takata T 114th Academic Meeting of Chugoku-Shikoku Branch of the Japanese Society of Pathology (Kouchi), 2014
 4. A tumor of buccal mucosa (Solitary fibrous tumor). Ogawa T, Obayashi M, Kitagawa M, Takata T. 25th Annual Meeting of Japanese Society of Oral Pathology (Niigata), 2014.
 5. Parotid tumor (Epithelial-myoepithelial carcinoma). Obayashi M, Ogawa I, Sakatani A, Fujihara M, Takata T. 115th Academic Meeting of Chugoku-Shikoku Branch of the Japanese Society of Pathology (Hiroshima), 2014.
 6. A tumor of breast (Adenoid cystic carcinoma). Nagasaki A, Ogawa I, Takata T, Nishida T. 115th Academic Meeting of Chugoku-Shikoku Branch of the Japanese Society of Pathology (Hiroshima), 2014.
 7. Parotid tumor (Polymorphous low-grade adenocarcinoma). Ogawa I, Obayashi M, Fujihara M, Takata T. 62nd Meeting of Hiroshima Pathological Conference (Hiroshima), 2014.
 8. Parotid tumor (Mammary analogue secretory carcinoma of salivary gland). Ando T, Nagasaki A, Nishisaka T. 63rd Meeting of Hiroshima Pathological Conference (Hiroshima), 2014
 9. A case of signet-ring cell adenocarcinoma of the palate – a variant of myoepithelial carcinoma? – Ogawa I, Kushitani K, Sakamoto A, Takata T. 59th Meeting of Japanese Salivary Gland Society (Tokyo), 2013.

5) Other lectures

1. The relationship between oral health and systemic health condition – Topic about chronic infectious disease and non-alcoholic steatohepatitis – T Takata. Alumni association of department of periodontology second, ANA-Crown Plaza Hotel (Hiroshima). 2014
2. Is the mouth the gate of evil? – Periodontitis and systemic health condition-T Takata. Open lecture of Hiroshima Prefectural University 「Food and life and community service」 (Hiroshima), 2014.

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

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| | Encouragement Award |
| 2. Ajiravudh Subarnhesaj
University | 47 th annual meeting of the Dental Association of Hiroshima |
| | Encouragement Award |
| 3. Hisako Furusho | 25 th annual meeting of Japanese society of Oral Pathology |
| | Encouragement Award |
| 4. Mutsumi Miyauchi | 30 th Comprehensive meeting focusing on dental medicine |
| 5. Mayumi Hirata | 56 th annual meeting of Japanese association for Oral Biology |
| | Student Poster Award |
| 6. Syunryo Yanagisawa
Award | 6 th annual meeting of Japanese association for Lactoferrin Tomita |
| 7. Aki Mikuriya | 62 nd annual meeting of JADR Joseph Lister Award |

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Basic Life Sciences

Department of Cellular and Molecular Pharmacology

(1) Staff and Students

Professor: Takashi Kanematsu

Assistant professor: Tomoya Kitayama, Kae Harada, Satoshi Asano, Yousuke Yamawaki

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

Research Associate: Jun Zhang, Kana Harada

Administrative Staff: Nozomi Hinada, Kousuke Yokobayashi

Graduate student: Rizia Sultana, Kana Oue, Masaki Hayashiuchi,

Undergraduate student (Advanced Dental Research course): Takashi Ryoke (6th), Furutama Daisuke (6th), Sayaka Asano (6th), Masaki Yokoyama (5th), Seiki Tomoyuki (5th), Sakiho Tsuyama (5th).

(2) Main Research Activities

- 1 : Studies on the molecular mechanisms of GABA_A receptor signaling in the central nervous system
- 2 : Studies on the molecular mechanisms controlling insulin secretion
- 3 : Studies on the regulatory mechanisms of food intake and energy metabolism
- 4 : Studies on the roles of a new autophagy-related molecule in autophagy pathway
- 5 : Physiological and pathophysiological roles of neurotransmitter transporters and nucleoside transporters.
- 6 : Studies on the mechanisms for neuropathic pain and the development of novel medicaments.
- 7 : Studied on the mechanisms of cell migration regulated by a new molecule.
- 8 : Studies on the molecular mechanisms of thermogenesis in brown adipocytes.
- 9 : Studies on the relationship immune systems and depression-like behavior.

(3) Research Achievements

A) Original Papers

- 1 : Phospholipase C-related catalytically inactive protein (PRIP) controls KIF5B-mediated insulin secretion. Asano S, Nemoto T, Kitayama T, Harada K, Zhang J, Harada K, Tanida I, Hirata M, Kanematsu T. *Biology Open*. 8;3(6): 463-474, 2014.

- 2 : Phospholipase C-related catalytically inactive protein participates in the autophagic elimination of *Staphylococcus aureus* infecting mouse embryonic fibroblasts. Harada-Hada K, Harada K, Kato F, Hisatsune J, Tanida I, Ogawa M, Asano S, Sugai M, Hirata M, Kanematsu T. PLoS one 9 (5), e98285, 2014.
- 4 : Phospholipase C-related catalytically inactive protein (PRIP) regulates lipolysis in adipose tissue by modulating the phosphorylation of hormone-sensitive lipase. Okumura T, Harada K, Oue K, Zhang J, Asano S, Hayashiuchi M, Mizokami A, Tanaka H, Irifune M, Kamata N, Hirata M, Kanematsu T. PLoS one 9 (6), e100559, 2014.
- 5 : Palliation of bone cancer pain by antagonists of platelet-activating factor receptors. Morita K, Shiraishi S, Motoyama N, Kitayama T, Kanematsu T, Uezono Y, Dohi T. PLoS One, 9(3): e91746, 2014.
- 7 : Enhanced desensitization followed by unusual resensitization in GABA_A receptors in phospholipase C-related catalytically inactive protein-1/2 double-knockout mice. Toyoda H, Saito M, Sato H, Tanaka T, Ogawa T, Yatani H, Kawano T, Kanematsu T, Hirata M, Kang Y. Pflügers Archiv: European journal of physiology. 467(2):267-284, 2014.
- 8 : Selective blockade of N-methyl-D-aspartate channels in combination with dopamine receptor antagonism induces loss of the righting reflex in mice, but not immobility. Kikuchi N, Irifune M, Shimizu Y, Yoshida K, Morita K, Kanematsu T, Morioka N, Nakata Y, Sakai N. Psychopharmacology. 232(1):39-46, 2014.
- 9 : Relief of Cancer Pain by Glycine Transporter Inhibitors. Motoyama N, Morita K, Shiraishi S, Kitayama T, Kanematsu T, Uezono Y and Dohi T. Anesth Analg, 119(4): 988-995, 2014.

B) Reviews

C) Publications

D) Other Publications

- 1 : Elucidating the mechanism of a novel molecule associated with energy metabolism and food intake regulation : Takashi Kanematsu : 「Funding Program for Next Generation World-Leading Researchers: 2030」 , pp63, 2014.

E) Presentation at Scientific Meeting

- 1 : Elucidating the mechanism of a novel molecule associated with energy metabolism and food

- intake regulation: Takashi Kanematsu : NEXT Symposium, (Tokyo), 2014.
- 2 : Down regulation of zinc transporter 1 induces neuropathic pain via BDNF-KCC2 signaling pathway in spinal cord : Kitayama T., Morita K., Kanematsu T. : The 87th Annual Meeting of The Japanese Pharmacological Society (Morioka), 2014.
 - 3 : Mice lacking phospholipase C-related but catalytically inactive protein (PRIP) are protected from high-fat diet-induced obesity : Oue K, Irifune M, Kanematsu T : The 47th The meeting of Hiroshima University Dental Society, (Hiroshima), June 21, 2014.
 - 4 : PRIP participates in the autophagic elimination of *Staphylococcus aureus* infecting mouse embryonic fibroblasts. : Harada-Hada K, Harada K, Asano S, Sugai M, and Kanematsu T. : The 47th The meeting of Hiroshima University Dental Society, (Hiroshima), June 21, 2014.
 - 5 : Altered anesthetic action of propofol in phospholipase C-related catalytically inactive protein (PRIP) knockout mice. : Masaki Hayashiuchi, Tomoya Kitayama, Mitsugi Okada, Takashi Kanematsu. : The 47th The meeting of Hiroshima University Dental Society, (Hiroshima), June 21, 2014.
 - 6 : Elucidation of a new molecule regulating lipolysis and insulin secretion : Takashi Kanematsu : Showa University Seminar (Tokyo), 2014.
 - 7 : Elucidation of roles of PRIP in autophagic elimination of *Staphylococcus aureus* : Kana Harada, Kae Harada-Hada, and Takashi Kanematsu. : The 19th The Annual meeting of Japanese Society for Proteases in Pathophysiology (Osaka), 2014.
 - 8 : Food intake control by PRIP-mediated GABA signaling : Takashi Kanematsu : The 1th The Study Meeting for Oral Society (Osaka), 2014.
 - 9 : Regulation of cell migration by phospholipase C-related catalytically inactive protein : Asano S., Kanematsu : T. : The 56th Annual Meeting of Japanese Association for Oral Biology, (Fukuoka), 2014.
 - 10 : Behavioral Responses to Chronic Restraint Stress in Mice Lacking Phospholipase C-related Inactive Protein Type-1 : Nikaido Y., Yamashita S., Ozaki T., Migita K., Shibata Y., Furukawa T., Yamada J., Kanematsu T., Hirata M., Nakamura K., Ueno S. : The 37th Annual Meeting of Japan Neuroscience Society (Yokohama), 2014.
 - 11 : Inhibition of fusion between autophagosome and lysosome in *Prip*-knockout MEFs : Harada-Hada K, Harada K and Kanematsu T : The 87th Annual Meeting of the Japanese Biomedical Society (Kyoto), 2014.
 - 12 : Different pain responses between *Prip1*-knockout and *Prip1/Prip2*-double knockout mice : Kanematsu T., Kitayama T., Ueno S., Migita K. : 24th Neuropharmacology Conference 2014, GABAergic Signaling in Health and Disease, (Washington, D.C.), 2014.
 - 13 : Anesthetic action of propofol in relation to types of GABA_A receptors : Hayashiuchi M., Okada M., Kanematsu T. : The 31st Annual Meeting of Japanese Society for Disability and Oral Health (Sendai), 2014.

- 14 : Regulation of cell migration by PRIP: PRIP regulates PDGF-induced PI(3,4,5)P₃ synthesis in the plasma membrane: Asano S., Kanematsu T.: The 37th Annual meeting of the molecular biology society of japan (Yokohama), 2014
- 15 : Fat and energy metabolism in adipocytes : Takashi Kanematsu : The 2th The Study Meeting for Oral Society (Morioka), 2014.

F) Special lectures in academic meeting

- 1 : Elucidation of a new molecule that regulates insulin secretion and lipid metabolism : Takashi Kanematsu : NEXT symposium in Hiroshima University (Hiroshima), 2014.
- 2 : PRIP-regulated GABA signaling involved in regulation of feeding behavior. : Takashi Kanematsu : The 56th Annual Meeting of Japanese Association for Oral Biology, (Fukuoka), 2014.

(4) Grants

- 1 : Grant-in-Aid for challenging Exploratory Research: Kanematsu T., Studies on molecular mechanisms in differentiation and dedifferentiation of adipocytes. Project number 26670809. Amount 2,800,000. (2014-2015)
- 2 : Grant-in-Aid for Scientific Research (C): 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) 15,000,000 (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 : Grant-in-Aid for Young Scientists (B): Yamawaki Y.: Epigenetics in microglia as a mechanism of stress vulnerability. Project number 25861036. Amount 3,900,000. (2013-2014)

(5) Academic Awards

Kana Harada, Young Investigator's Award of JSPP 2014, The 19th The Annual meeting of Japanese Society for Proteases in Pathophysiology.

(6) Patents

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Basic Life Sciences

Department of Biomaterials

(1) Staff and Students

Professor: Koichi Kato

Assistant Professor: Yuji Nomura, Isao Hirata, Ryo Nishikiori

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

(2) Main Research Activities

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

(3) Research Achievements

A) Original Papers (including Case Reports)

- 1 : Effect of thione primers on adhesive bonding between an indirect composite material and Ag-Pd-Cu-Au alloy: Imai H., Koizumi H., Shimoe S., Hirata I., Matsumura H., Nikawa H.: Dental Materials Journal, 33(5), 681-688, 2014.
- 2 : Osteoclast response to bioactive surface modification of hydroxyapatite: Okazaki Y., Abe Y., Yoshida Y., Hiasa K., Hirata I.: Open Journal of Stomatology, 4(7), 340-344, 2014.
- 3 : Seeding of mesenchymal stem cells into inner part of interconnected porous biodegradable scaffold by a new method with a filter paper: Yamanaka K., Yamamoto k., Sakai Y., Suda Y., Shigematsu Y., Kaneko T., Kato K., Kumagai T., Kato Y.: Dental Materials Journal, in press.

B) Review

- 1 : Biodental engineering: Matsumoto T., Egusa H., Kato K., Tsuji T.: Journal Oral Bioscience, in press.

C) 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), 60-61, 2014.

D) Presentation at Scientific Meeting

- 1 : Effect of Molecular Crowding on the Dynamics of Antigen-antibody Interactions at Solid/Liquid Interfaces: Hirata I., Kato K.: The 2nd Japan-China Symposium on Nanomedicine (Hiroshima, Japan), 2014.
- 2 : Surface Design for Optimizing Mesenchymal Stem Cell Culture in a Serum-free Medium: Yamauchi Y., Hirata I., Kanawa M., Kato Y., Kato K.: The 2nd Japan-China Symposium on Nanomedicine (Hiroshima, Japan), 2014.
- 3 : Antibody Microarrays Fabricated through Plasma-assisted Micropatterning for Use in Quality Control of Stem Cells: Nishikiori R., Watanabe K., Kato K.: The 2nd Japan-China Symposium on Nanomedicine (Hiroshima, Japan), 2014.
- 4 : Constitutive cell arrangement for analyzing the epithelial-mesenchymal interactions : Kato K., Kubota C., Sakakitani S., Nishikiori R. The 98th Hiroshima University Dental Society (Hiroshima, Japan), 2014.
- 5 : Radiation effects of heavy ion particles on bone metabolism: Sawajiri M., Nomura Y., Terato H., Maruyama K., Tanimoto K.: 2013 Annual meeting of the research project with heavy ion at NIRS-HIMAC (Chiba), 2014.
- 6 : Effect of cell condition on the outermost surface functional groups of mixed self-assembled monolayers.: Hirata I., Kato K.: The 144th Poval Meeting (Kyoto, Japan), 2014.
- 7 : Development of specialized culture substrate for mesenchymal stem cells –Study about self-assembled monolayers and serum-free medium-: Hirata I., Ronald V.S., Kanawa M., Kato Y., Kato K.: The 64th General Session of the Japanese Society for Dental Materials and Devices (Hiroshima, Japan), 2014.
- 8 : Inorganic polyphosphate is changed surface property of HA plate and induced osteoblast differentiation.: Morita K., Doi K., Okazaki Y., Kubo T., Hirata I., Kato K., Tsuga K.: The 64th General Session of the Japanese Society for Dental Materials and Devices (Hiroshima, Japan), 2014.
- 9 : Effect of thione primers on bonding between Ag-Pd-Cu-Au alloy and an indirect composite material.: Koizumi H., Imai H., Shimoe S., Hirata I., Nikawa H., Matsumura H.: The 64th General Session of the Japanese Society for Dental Materials and Devices (Hiroshima, Japan), 2014.
- 10 : Analysis of chemical interaction of between zirconia materials and functional monomers.: Shimoe S., Chiba Y., Hirata I., Iwaguro S., Matsumura H., Kato K.: The 64th General Session of the Japanese Society for Dental Materials and Devices (Hiroshima, Japan), 2014.
- 11 : Antibody arrays for high-throughput assessment of surface markers expressed on mesenchymal stem

- cells.: Nishikiori R., Watanabe K., Kato K.: The 64th General Session of the Japanese Society for Dental Materials and Devices (Hiroshima, Japan), 2014.
- 12 : Effect of Wnt3a on cementoblast differentiation from bone marrow-derived mesenchymal stem cells.: Aida Y., Kurihara H., Kato K.: The 141st Meeting of the Japanese Society of Conservative Dentistry (Yamagata, Japan), 2014.
- 13 : Molecular design of growth factors that have an affinity for biodegradable polyesters.: Nishio F., Hirata I., Kato K.: The 36th Annual Meeting of the Japanese Society for Biomaterials (Tokyo, Japan), 2014.
- 14 : Surface design for optimizing mesenchymal stem cell culture in a serum-free medium: Yamauchi Y., Hirata I., Kanawa M., Kato Y., Kato: The 47th Hiroshima University dentistry society (Hiroshima), 2014.

E) Special lectures in academic meetings

- 1 : 2-Dimensional antibody display as a platform for cellular analysis: Kato K.: The 2nd Japan-China Symposium on Nanomedicine (Hiroshima, Japan), 2014.
- 2 : A cell culture substrate with antibody micropattern as an analytical platform for modeling epithelial-mesenchymal interactions.: Kato K.: 5th Taiwan-Japan Symposium on Nanomedicine (Taipei, Taiwan), 2014.
- 3 : Microarrays for immunophenotyping of mesenchymal stem cells: Kato K.: 7th World Congress on Preventive and Regenerative Medicine (Taipei, Taiwan), 2014.
- 4 : Potentials of micropatterned antibody arrays as platforms for cellular assays: Kato K.: 8th International Symposium on Nanomedicine (Ehime, Japan), 2014.
- 5 : Perspectives of future dental materials: Kato K.: Seminar & Workshop of CPD in Dental Materials (Surabaya, Indonesia), 2014.
- 6 : Two-dimensional antibody display as a platform for the analysis of cellular interactions: Kato K., Kubota C., Sakakitani S., Nishikiori R.: International Symposium on Materials and Regenerative Medicine 2014 (Taipei, Taiwan), 2014.
- 7 : Two dimensional antibody display as cell analysis platform: Kato K.: Institute for Frontier Medical Sciences, Kyoto University, a Joint Research Lecture (Kyoto, Japan), 2014.
- 8 : Regenerative dental medicine: Bioengineering challenges: Kato K.: Seminar for School of Dentistry, Kyushu University (Fukuoka, Japan), 2014.
- 9 : Designing of biomaterials and biodevices for early realization of regenerative medicine: Kato K.: The 2nd Chu-Sikoku Brainstorming, Block of Chu-Sikoku, Japanese Society for Biomaterials (Okayama, Japan), 2014.
- 10 : Microfabrication Technology and Regenerative Dental Treatment: Kato K.: Clinical Research

Conference, Hiroshima University (Hiroshima, Japan), 2014.

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

- 1: Grant-in-Aid for Scientific Research (B), Ministry of Education, Culture, Sports, Science and Technology, Representative Kato K.: Kato K.: Creation of artificial extracellular matrices that mimic biological tissue architecture: No.25293404.. 2,700,000JPY
- 2: Grant-in-Aid for Scientific Research (B), Ministry of Education, Culture, Sports, Science and Technology, Representative Hirata I.: Hirata I.: Development of culture substrates capable of controlling cell growth and differentiation: No. 25293403. 1,250,000JPY
- 3: Grant-in-Aid for Scientific Research (C), Ministry of Education, Culture, Sports, Science and Technology, Representative Nomura Y.: Nomura Y.: Development of dental materials with functional antibacterial activity: No.24592917. 900,000JPU
- 4: Grant-in-Aid for Scientific Research (B), Ministry of Education, Culture, Sports, Science and Technology, Representative Kato K.: Hirata I.: Creation of artificial extracellular matrices that mimic biological tissue architecture: No.25293404. 100,000JPY
- 5: Grant-in-Aid for Scientific Research (B), Ministry of Education, Culture, Sports, Science and Technology, Representative Kurihara H.: Kato K.: Induction of cementoblasts from mesenchymal stem cells and formation of cementum on dentin surface: No. 24390467. 450,000JPY
- 6: Grant-in-Aid for Scientific Research (B), Ministry of Education, Culture, Sports, Science and Technology, Representative Hirata I.: Kato K.: Development of culture substrates capable of controlling cell growth and differentiation: No. 25293403. 50,000JPY
- 7: Grant-in-Aid for Scientific Research (C), Ministry of Education, Culture, Sports, Science and Technology, Representative Shimoe S.: Hirata I.: Toward clinical application of tooth-friendly composite crowns made of zirconia and composite resin: No. 24592916. 50,000JPY
- 8: Grant-in-Aid for Scientific Research (C), Ministry of Education, Culture, Sports, Science and Technology, Representative Abe Y.: Hirata I.: Development of highly-functional hydroxyapatite surfaces using ultraviolet (UV) light: No. 245929150A. 50,000JPY
- 9: S-Innovation (Strategic Promotion of Innovative Research and Development): Kato K.: Tissue engineering scaffolds for spatially-controlled tissue regeneration: 2,308,000JPY
- 10: Terumo Life Science Foundation: Grant for small research meetings: Kato K.: 700,000JPY
- 11: Grant in Aid for Region-oriented Education and Research: Nishikiori R.: Aggregate analysis of Hiroshima Peace Memorial Museum visitors. Community oriented programs on peace education and research, Center of Community (COC): 400,000JPY

(5) Patents

- 1: Nomura Y., Sawajiri m.: Aqueous solution production technique and water vapor producing device including halogen dioxide: (JP2014-113404) (Medical Environment Techno Co.,Ltd., Mikasa Shoji Co.,Ltd.)
- 2: Nii T., Nomura Y., Sawajiri M., Ohata T.: A component for dealing with a tumor, and a manufacturing method for the same (JP2014-113404) (Medical Environment Techno Co.,Ltd.)

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

(1) Staffs and Students

Professor: Hidemi Kurihara

Associate Professor: Hideki Shiba

Associate Professor, Lecturer: Tsuyoshi Fujita

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

Kazuhisa Ouhara, Mikihiro Kajiya, Shinji Matsuda

Assistant Professor (Special Appointment): Takayoshi Nagahara (- March), Khung Rathvisal (October -)

Resident: Yasuko Fumino Ogawa, Mizuho Kittaka (- March/studying abroad), Akihiro Konishi, Tsuyoshi Miyagawa, Kenji Wada(- March), Haruka Imai, Yusuke Obinata, Eri Kaneda, Takako Fujita, Ryoichi Yagi

Graduate Student: Yoshie Niitani (under leave of absence), Shu Ishida, 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, Keichi Akutagawa, Nao Komatsu, Yoko Sato, Shinobu Matsui, Minami Yoshioka

Clinical Trainee: Takeshi Ueda, Tetsutaro Ishigaki (September-), Hiroshi Haraga, Masahiro Takase (December-)

(2) Main Research Activities

- 1: Immunological study on the onset of periodontics
- 2: Study on periodontal tissue regeneration using bone marrow mesenchymal stem cells
- 3: Study on periodontal tissue regeneration using neurotrophines
- 4: Study on the relationship between periodontal disease and systemic disease
- 5: Study on physiological function and differentiation of the cells derived from periodontal ligament or dental pulp
- 6: Study on pathogenicity of periodontopathogenic bacteria
- 7: Study on interaction between periodontopathogenic bacteria and host cells
- 8: Clinical study on endodontal-periodontal therapy
- 9: Study on interaction between stress and periodontics

(3) Research Achievements

A) Original Papers (including Case Reports)

1. The effect of brain-derived neurotrophic factor on periodontal furcation defects.
Jimbo R, Tovar N, Janal MN, Mousa R, Marin C, Yoo D, Teixeira HS, Anchieta RB, Bonfante EA, Konishi A, Takeda K, Kurihara H Coelho PG.
PLoS One, 2014 Jan, 14;9(1), e84845
2. BDNF mimetic compound LM22A-4 regulates cementoblast differentiation via the TrkB-ERK/Akt signaling cascade.
Mikihito Kajiya, Kei Takeshita, Mizuho Kittaka, Shinji Matsuda, Kazuhisa Ouhara, Katsuhiko Takeda, Takashi Takata, Masae Kitagawa, Tsuyoshi Fujita, Hideki Shiba, Hidemi Kurihara
International Immunopharmacology 2014 April, 19(2), 245-52
3. miR-584 expressed in human gingival epithelial cells is induced by *Porphyromonas gingivalis* stimulation and regulates interleukin-8 production via lactoferrin receptor
Ouhara K., Savitri I. J., Fujita T., Kittaka M., Kajiya M., Iwata T., Miyagawa T., Yamakawa M., Shiba H., Kurihara H.
J. Periodontol., 2014 Jun, 85, 198-204
4. Detecting gene mutations in Japanese Alzheimer's patients by semiconductor sequencing.
Yagi R, Miyamoto R, Morino H, Izumi Y, Kuramochi M, Kurashige T, Maruyama H, Mizuno N, Kurihara H, Kawakami H
Neurobiol Aging, 2014 Jul, 35(7), 1780.e1-5
5. Amphotericin B down-regulates Aggregatibacter actinomycetemcomitans-induced production of IL-8 and IL-6 in human gingival epithelial cells
Haruka Imai, Tsuyoshi Fujita, Mikihito Kajiya, Kazuhisa Ouhara., Tsuyoshi Miyagawa, Shinji Matsuda, Hideki Shiba, Hidemi Kurihara
Cellular Immunology, 2014 August, 290(2), 201-208.
6. Brain-derived neurotrophic factor prevents the endothelial barrier dysfunction induced by interleukin-1 β and tumor necrosis factor- α
Matsuda S., Fujita T., Kajiya M., Kashiwai K., Takeda K., Shiba H., Kurihara H.
J Periodontal Res. 2014 September, in press
7. Irsogladine maleate inhibits *Porphyromonas gingivalis*-mediated expression of toll-like receptor 2 and interleukin-8 in human gingival epithelial cells.
Irma Josefina Savitri, Kazuhisa Ouhara, Tsuyoshi Fujita, Mikihito Kajiya, Tsuyoshi Fujita, Mizuho Kittaka, Masahiro Yamakawa, Hideki Shiba, Hidemi Kurihara
Journal of Periodontal Research, 2014 Sep, 20, doi: 10.1111/jre.12231.
8. Enhanced TLR-MYD88 signaling stimulates autoinflammation in SH3BP2 cherubism mice and defines the etiology of cherubism.
Yoshitaka T, Mukai T, Kittaka M, Alford LM, Masrani S, Ishida S, Yamaguchi K, Yamada M,

- Mizuno N, Olsen BR, Reichenberger EJ, Ueki Y
Cell Rep., 2014 Sep, 8(6), 1752-66
9. Smad2 is Involved in Aggregatibacter actinomycetemcomitans-induced Apoptosis.
Yoshimoto T, Fujita T, Ouhara K, Kajiya M, Imai H, Shiba H, Kurihara H
JOURNAL OF DENTAL RESEARCH, 2014 November,93(11), 1148-1154
 10. Introduction of a Mixture of β -tricalcium Phosphate into a Complex of Bone Marrow Mesenchymal Stem Cells and Type I Collagen can Augment the Volume of Alveolar Bone Without Impairing Cementum Regeneration.
Nagahara T, Yoshimatsu S, Shiba H, Kawaguchi H, Takeda K, Iwata T, Mizuno N, Fujita T, Kurihara H.
J Periodontol., 2014 Dec, 12, Epub ahead of print
 11. Nuclear Nrf2 induction by protein transduction attenuates osteoclastogenesis.
Hiroyuki Kanzaki, Fumiaki Shinohara, Mikihito Kajiya, Sari Fukaya, Yutaka Miyamoto, Yoshiki Nakamura
Free Radical Biology and Medicine, 2014December, 77, 239-248
 12. A case of lichen planus suspected of palladium allergy to dental metals
Kitagawa M., Oumi F., Okamoto Y., Nagasaki A., Obayashi M., Shintani T., Toratani S., Ogawa I., Kurihara H. J JSEDP, 6(1), 66-70, 2014.

B) Review

C) Publications

1. Environmental and systemic factors: The Periodontology (edited by Yuuichi Izumi, Atsuhiko Kinoshita, Yukihiro Numabe, Matsuo Yamamoto)
Fujita T., Shiba H., Kurihara H.
Nagasueshoten (Kyoto), 44-45, 57-58, 2014.

D) Other Publications

1. The case example of dental practice network for HIV-patients in Hiroshima: The list of case examples of network-construction of dental practice (the revised edition): Welfare Labor Scientific Research in 2014 "Study on construction and maintenance of the medical system for HIV infection: Study on the system of dental practice for HIV infection: Yuuji Usami (the Nagoya Medical Center)
Santanda T., Shiba H.: 18-27, 2014.
2. Medical security asked from the society: Standard precaution: Is your infection countermeasures for infection perfect?
Noriyoshi Mizuno, Miyuki Nakaoka, Yoshie Niitani and Hidemi Kurihara

E) Presentation at Scientific Meeting

1. On AUDIT System of Hiroshima Safety Dental service Support network for the prevention of nosocomial infection for the dental clinic
Iwata T., Mizuno N., Nakaoka M., Irie Y., Nagahara T., Shiba H., Sawa A. and Kurihara H
The 29th Annual meeting of the Japanese Society for Infection Prevention and Control (2014 February, Tokyo)
2. Porphyromonas gingivalis infection exacerbated RA in mice model
Masahiro Yamakawa, Kazuhisa Ouhara, Satoshi Yamasaki, Eiji Sugiyama, Hidemi Kurihara
The 58th Annual General Assembly and Scientific Meeting of the Japan College of Rheumatology (2014 April, Tokyo)
3. BDNF regulates p75-JNK signaling cascade to induce gingival epithelial cells apoptosis.
Kei Kashiwai, Mikihito Kajiya, Shinji Matsuda, Tsuyoshi Fujita, Katsuhiko Takeda, Hideki Shiba, Hidemi Kurihara
The 57th spring meeting of the Japanese society of Periodontology (2014 May, Gifu)
4. Porphyromonas gingivalis infection exacerbated RA in mice model
Masahiro Yamakawa, Kazuhisa Ouhara, Mikihito Kajiya, Mizuho Kittaka, Katsuhiko Takeda, Takako Fujita, Tsuyosi Fujita, Hideki Shiba, Hidemi Kurihara
The 57th spring meeting of the Japanese society of Periodontology (2014 May, Gifu)
5. BDNF regulates p75-JNK signaling cascade to induce gingival epithelial cells apoptosis.
Kei Kashiwai, Mikihito Kajiya, Shinji Matsuda, Tsuyoshi Fujita, Katsuhiko Takeda, Hideki Shiba, Hidemi Kurihara
The 47th meeting of the Hiroshima University Dental Society (2014 June, Hiroshima)
6. The involvement of smad2 in Aggregatibacter actinomycetemcomitans-induced apoptosis in human gingival epithelial cells
Tetsuya Yoshimoto, Tsuyoshi Fujita, Kazuhisa Ouhara, Mikihito Kajiya, Hideki Shiba, Hidemi Kurihara
The 47th meeting of the Hiroshima University Dental Society (2014 June, Hiroshima)
7. Porphyromonas gingivalis infection exacerbated RA in mice model
Masahiro Yamakawa, Kazuhisa Ouhara, Mikihito Kajiya, Mizuho Kittaka, Katsuhiko Takeda, Takako Fujita, Tsuyosi Fujita, Hideki Shiba, Hidemi Kurihara
The 47th meeting of the Hiroshima University Dental Society (2014 June, Hiroshima)
8. TGF- β 1 induces mitochondria-dependent apoptosis in human gingival epithelial cells.
Tetsuya Yoshimoto, Tsuyoshi Fujita, Mikihito Kajiya, Hideki Shiba, Hidemi Kurihara
The 92nd General Session & Exhibition of the International Association of Dental Research (2014 June, Capetown/South Africa)
9. Effects of Brain-derived neurotrophic factor on antiinflammation and bone-dentin related proteins expression in human pulp cells
Tokunaga N., Takeda K., Kajiya M., Matsuda S., Fujita T., Shiba H. and Kurihara H.

- The 35th Annual scientific meeting of JEA (2014 July, Niigata)
10. To establish anti-inflammatory cytokine producing Clumps of MSCs/ECM(C-MSCs) complex ex vivo
Kei Takeshita, Mikihito Kajiya, Manabu Takewaki, Kazuhisa Ouhara, Tomoyuki Ouhara, Tsuyoshi Fujita, Hideki Shiba, Hidemi Kurihara
The 35th Annual Meeting of the Japanese Society of Inflammation and Regeneration (2014 July, Okinawa)
 11. Development of novel tissue engineering therapy by using clumps of mesenchymal stem cells/extracellular matrix complex
Mikihito Kajiya, Hideki Shiba, Manabu Takewaki, Kei Takeshita, Khun Rathvisal, Nguyen Quoc Troung, Tomoyuki Iwata, Kazuhisa Ouhara, Katsuhiko Takeda, Tsuyoshi Fujita, Hidemi Kurihara
The 30th Annual meeting of dental medicine to promote comprehensive research (2014 August, Tokyo)
 12. BDNF regulates p75-JNK signaling cascade to induce gingival epithelial cells apoptosis.
Kei Kashiwai, Mikihito Kajiya, Shinji Matsuda, Tsuyoshi Fujita, Katsuhiko Takeda, Hideki Shiba, Hidemi Kurihara
The 56th Annual Meeting of Japanese Association for Oral Biology (2014 September, Fukuoka)
 13. The involvement of smad2 in bacteria-induced apoptosis of human gingival epithelial cells
Tetsuya Yoshimoto, Tsuyoshi Fujita, Hideki Shiba, Hidemi Kurihara
The 56th Annual Meeting of Japanese Association for Oral Biology (2014 September, Fukuoka)
 14. IgG titer against Porphyromonas gingivalis at Center of Oral Clinical Examination, Hiroshima University Hospital
Kazuhisa Ouhara, Tomoaki Shintani, Yuushi Uchida, Mikihito Kajiya, Masae Kitagawa, Ikuko Ogawa, Tsuyoshi Fujita, Takamune Hino, Hideki Shiba, Hidemi Kurihara
The 7th Annual Meeting of The Japanese Society for Evidence and the Dental Professional (2014 September, Okayama)
 15. Significance of titanium allergy as preoperative test of implant
Kitagawa M., Obayashi M., Nagasaki A., Yanagisama S., Shintani T., Kagawa K., Hiasa K., Kubo T., Takachi M., Ogawa I., Kurihara H.
The 7th Annual Meeting of Japanese Society for Evidence and the Dental Professional (Okayama), 2014.
 16. Development of novel tissue engineering therapy by using clumps of mesenchymal stem cells/extracellular matrix complex
Mikihito Kajiya, Mizuho Kittaka, Hideki Shiba, Manabu Takewaki, Kei Takeshita, Tomoyuki Iwata, Kazuhisa Ouhara, Katsuhiko Takeda, Tsuyoshi Fujita, Hidemi Kurihara
The 64th General Session of the Japanese Society for Dental Materials and Devices (2014 October, Hiroshima)
 17. Brain-derived neurotrophic factor / hyaluronic acid complex enhances periodontal tissue regeneration
Takeda K., Konishi A., Kajiya M., Matsuda S., Fujita T., Shiba H. and Kurihara H.
The 64th General sessions of the Japanese society for Dental Materials and Devices (2014 October,

- Hiroshima)
18. Effect of Wnt3a on the cementoblast differentiation of bone marrow-derived mesenchymal stem cells
Yusuke Aida, Hidemi Kurihara, Koichi Kato
The 141st Meeting of the Japanese Society of Conservative Dentistry (2014 October, Yamagata)
 19. Elucidation of the mechanisms of drug-induced gingival hyperplasia using the model mice
Ai Okanobu, Shinji Matsuda, Tsuyoshi Fujita, Mikihiro Kajiya, Yushi Uchida, Hideki Shiba and Hidemi Kurihara
The 57th fall meeting of the Japanese society of Periodontology (2014 October, Kobe)
 20. Effect on the expression and activity of histone deacetylase by humoral factors secreted by periodontal cells
Keita Takahashi, Tomoyuki Iwata, Eri Kaneda, Takayosi Nagahara, Syu Isida, Hideki Shiba, Hidemi Kurihara
The 57th fall meeting of the Japanese society of Periodontology (2014 October, Kobe)
 21. Development of novel tissue engineering therapy by using clumps of mesenchymal stem cells/extracellular matrix complex
Mikihiro Kajiya, Mizuho Kittaka, Hideki Shiba, Manabu Takewaki, Kei Takeshita, Tomoyuki Iwata, Kazuhisa Ouhara, Katsuhiko Takeda, Tsuyoshi Fujita, Hidemi Kurihara
The 57th fall meeting of the Japanese society of Periodontology (2014 October, Kobe)
 22. Control of inflammation by lipid raft in human gingival epithelial cells
Haruka Imai, Tsuyoshi Fujita, Mikihiro Kajiya, Kazuhisa Ouhara, Hideki Shiba, Hidemi Kurihara
The 57th fall meeting of the Japanese society of Periodontology (2014 October, Kobe)
 23. A case report of tooth transplantation and orthodontic treatment for recovering occlusal function
Tsuyoshi Fujita and Hidemi Kurihara
The 57th fall meeting of the Japanese society of Periodontology (2014 October, Kobe)
 24. Effect on the expression and activity of histone deacetylase by humoral factors secreted by periodontal cells
Keita Takahashi, Tomoyuki Iwata, Eri Kaneda, Takayosi Nagahara, Syu Isida, Minami Yoshioka, Hideki Shiba, Hidemi Kurihara
The 98th Hiroshima University Dental Society (2014 November, Hiroshima)
 25. To develop Clumps of MSCs/ECM(C-MSCs) complexes for novel allograft cell transplantation therapy
Kei Takeshita, Mikihiro Kajiya, Manabu Takewaki, Kazuhisa Ouhara, Tomoyuki Ouhara, Tsuyoshi Fujita, Hideki Shiba, Hidemi Kurihara
The 98th Hiroshima University Dental Society (2014 November, Hiroshima)
 26. A case of external root resorption by endodontal/periodontal therapy.
Takayoshi Nagahara, Ryoichi Yagi, Katsuhiko Takeda, Hideki Shiba, Hidemi Kurihara
2014 Workshop by Chugoku-Shikoku regional 3 universities of the Japanese society of Periodontology/ Chugoku-Shikoku regional branch of the Japanese academy of clinical periodontology (2014 November, Okayama)
 27. Establishment of mice model of drug-induced gingival hyperplasia
A. Okanobu, S. Matsuda, T. Fujita, M. Kajiya, H. Shiba and H. Kurihara

- The 62th Annual Meeting of Japanese Association for Dental Research (2014 December, Osaka)
28. Regulation of inflammatory cytokines via lipid raft in the gingival epithelial cells
Haruka Imai, Tsuyoshi Fujita, Mikihiro Kajiyama, Kazuhisa Ouhara, Hideki Shiba, Hidemi Kurihara
The 62th Annual Meeting of Japanese Association for Dental Research (2014 December, Osaka)
29. BMP-2 expression induced by LL37 in human pulp cells
Khung R., Shiba H., Kajiyama M., Ouhara K., Kurihara H.
The 62th Annual Meeting of Japanese Association for Dental Research (2014 December, Osaka)
30. Problems clarified from questionnaire after HIV dental clinical system construction business by
Hiroshima University Hospital.
Iwata T., Shiba H., Mastui K., Shintani T., Okada M., Hamamoto K., Unei H., Saito S., Takata N. and
Fujii T.
The 28th Annual meeting of the Japanese Society for AIDS research (2014 December, Osaka)

F) Special lectures in academic meetings

1. Hidemi Kurihara: Lecture in Sasebo-shi dental association (2014 January, Sasebo)
2. Periodontal Disease during pregnancy and its influence on baby born: Hidemi Kurihara; The 7th National Scientific Meeting in Pediatric Dentistry (2014 February, Surabaya/Indonesia)
3. The practice of epidemiology and countermeasures in dentistry - mainly on the action by national and public university hospital consultative meeting for infection control - : Hidemi Kurihara; The 29th Annual meeting of the Japanese Society for Infection Prevention and Control (2014 February, Tokyo)
4. Hidemi Kurihara; Two-days-symposium (2014 February, Kaohsiung/Taiwan)
5. Periodontal disease and orthodontics: Hidemi Kurihara; ACIDS (Study meeting by Aichi gakuin University division of orthodontics) (2014 March, Nagoya)
6. Gingival Epithelium Regulation: Is it possible to prevent periodontal disease? : Tsuyoshi Fujita ; The International Association for Dental Research (2014 June, Capetown/South Africa)
7. Mesenchymal stem cells and cytokine therapy/ present and **prospectiveness: Hidemi Kurihara**; BioHorizons The 4th special lecture meeting (2014 July, Osaka)
8. Frontier of periodontology: Hidemi Kurihara; Hiroshima Pharmacist training workshop (2014 July, Hiroshima)
9. On management system for medical security in dental office: Hidemi Kurihara; dental hygienist lecture meeting for infection prophylaxis (2014 August, Hiroshima)
10. Information concerning performance of countermeasure for HIV infection in the Chugoku and Shikoku areas: Shiba H.; the first Liaison Council of AIDS treatment between AIDS core hospitals in the Chugoku and Shikoku areas (2014 August, Okayama)
11. Present and future perspective on Periodontal therapy: Hidemi Kurihara; Yamaguchi prefectural dental association Academic lecture (2014 September, Yamaguchi)
12. Cell Therapy for Periodontal Tissue Regeneration: Hidemi Kurihara; 2014 Annual meeting of American Academy of Periodontology (2014 September, San Francisco/USA)

13. The actual situation for infection control in dental office: Hidemi Kurihara; Society of Kochi oral science (2014 September, Kochi)
14. Expectation to Dental materials and devices for establishment of Evidence-Based Dentistry: Hidemi Kurihara; The 64th General Session of the Japanese Society for Dental Materials and Devices (2014 October, Hiroshima)
15. Whole concept of dentistry and periodontal therapy in medical and dental cooperation: Hidemi Kurihara; The 57th fall meeting of the Japanese society of Periodontology (2014 October, Kobe)
16. Hidemi Kurihara; Taiwan Academy of Periodontology (TAP) Annual Meeting of 2014 (2014 November, Kaohsiung/Taiwan)
17. On management system for medical security in dental office: Hidemi Kurihara; dental hygienist lecture meeting for infection prophylaxis (2014 November, Shiojiri)
18. The present conditions and network-construction of the dental practice for the HIV-infected patients: Shiba H.: 2014-AIDS workshop in Hiroshima University Hospital (2014 November, Hiroshima)
19. Whole concept of dentistry and periodontal therapy in medical and dental cooperation: Hidemi Kurihara; Lecture in Sasebo-shi dental association (2014 December, Sasebo)

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

1. Grants-in aid for scientific research: Hidemi Kurihara: #264630085
2. Grants-in aid for scientific research: Hidemi Kurihara: #243904670
3. Grants-in aid for scientific research: Hideki Shiba: #245931220
4. Grants-in aid for scientific research : Tsuyoshi Fujita: #245931230
5. Grants-in aid for scientific research: Mikihiro Kajiyama: # 268618140
6. Grants-in aid for scientific research: Yuushi Uchida: # 254629600
7. Grants-in aid for scientific research: Katsuhiko Takeda: # 254632180
8. Grants-in aid for scientific research: Hidemi Kurihara: # 256708850
9. Grants-in aid for scientific research :Tomoyuki Iwata: #258620490
10. Grants-in aid for scientific research: Shinji Matsuda: #268618150
11. Grants-in aid for scientific research : Kazuhisa Ouhara : #258620510
12. Hiroshima University the year of 2014 Grant for portent research: Tsuyoshi Miyagawa
13. Hiroshima University the year of 2014 Grant for portent research: Haruka Imai
14. Hiroshima University the year of 2014 Grant for portent research: Eri Kaneda
15. Mitsui Sumitomo Insurance welfare foundation the year of 2014 research aid: Mikihiro Kajiyama
16. GSK Japan Research Grant 2014-2015: Noriyoshi Mizuno
17. Research grants: Grants for research received from Hiroshima Prefecture: Hideki Shiba and others, Study on network-construction of dental practice for HIV infection
18. Grants on KCB-1D (Phase III) for marginal periodontitis by Kaken Pharmaceutical Co., Ltd.

(5) Award.

Tsuyoshi Miyagawa

The 17th prize for encouragement by Hiroshima University school of dentistry class reunion
2014

The irsogladine maleate inhibits the expression of inflammatory factor by the stimulation of
Aggregatibacter actinomycetemcomitans in human gingival epithelia cell.

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

(1) Staff and Students

Professor: Tetsuji Okamoto

Associate Professor: Shigeaki Toratani

Director: Shigeaki Toratani(by-work)

Lecturer: Yasutaka Hayashidou

Assistant Professor: Ryouji Tani, Yukio Yoshioka, Kouichi Koizumi, Kohsei Okamoto, Taku Kanda,
Kensaku Sumi, Tomoaki Hamana, Yasutaka Ishida, Sachiko Yamasaki(Oct~)

Administrative staff: Michiko Nii

Resident: Koh Nabeshima(~Jul), Yoku Ito, Sachiko Yamasaki(~Sep), Taishi Sakaue,
Yuki Taguchi, Takahiko Fujii, Hanae Mukasa(~Dec)

Clinical Trainee: Emiko Usui, Isao Takahashi

Graduate Student: Eri Akagi, Mirei Suematsu, Atsuko Hamada, Shigeru Sakurai, Huyuyoshi Takatsu,
Hirotaka Takatao, Mari Hoshino, Humitaka Oobayashi, Kouji Tsushima, Taeko Yasui,
Youji Nakase, Mirai Higaki, Suguru Hirota, Kensaku Matsui, Nguyen Quang Tam
Iwao Katayama, Yuuichi Arita, Tomohiro Sado

Visiting Researcher: Za Wani Rosli, Sirica Chhem

(2) Main Research Activities

- 1 : Study on genetic diagnosis and therapy of oral cancer and tumor of salivary gland
- 2 : Study on genetic diagnosis and therapy of craniofacial and congenital anomalies
- 3 : Induction of Jaw Bone and Tooth Germ from murine embryonic stem cells and human bone marrow stem cells in serum-free defined suspension culture
- 4 : Search for the bioactive compounds from the marine invertebrates and the basic study of application of them to novel anticancer drugs
- 5 : Study on Photodynamic therapy for treatment of oral squamous cell carcinomas
- 6 : Adoptive Immunotherapy of Oral Cancer with Lymphokine-activated Killer (LAK) Cells
- 7 : Study on tissue engineering of maxilla and jaw bone and teeth using mouse ES cell and iPS cells.
- 8 : Study on Epidemiology of craniofacial and congenital anomalies near the Nuclear Test Site of Semipalatinsk, Kazakhstan

(3) Research Achievements

A) Original Papers (including Case Reports)

- 1: Yamamoto N, Toratani S. et al.: Anti-EGFR monoclonal antibody 12-93 inhibits the growth of human salivary adenocarcinoma via sub-G1 arrest and induction of apoptosis, *J Oral Maxillofac Surg, Med, Pathol* 26:183–187, 2014.
- 2: Yamasaki S, Taguchi Y. et al.: Generation of human induced pluripotent stem (iPS) cells in serum- and feeder-free defined culture and TGF- β 1 regulation of pluripotency. *PlosONE*, Published: January 29, DOI: 10.1371/journal.pone.0087151, 2014.
- 3: S. N. Zawani B. Rosli, Shintani T. et al.: 1 α ,25(OH)₂D₃ inhibits FGF-2 release from oral squamous cell carcinoma cells through downregulation of HBp17/FGFBP-1, *In Vitro Cell. Devel. Biol.-Anim*, Oct;50(9):802-806, 2014.
- 4: Shigeaki Toratani, Koh Nabeshima, Kensaku Sumi, Taku kanda, Kohichi Koizumi, Yukio Yoshioka, Ryouji Tani, Tetsuji Okamoto, et al.: Prediction of the Cervical Lymph Node Metastases in the Early Oral Tongue Cancer Patients using Primary Site SUVmax (maximum standardized uptake values) on FDG-PET (18-fluorodeoxyglucose positron emission tomography), *The journal of Hiroshima University Dental Society* 46(1), 36-41, 2014-06
- 5: Shigeaki Toratani, Ogawa Ikuko, Tetsuji Okamoto, et al.: A case of myxofibrosarcoma of the maxilla *Japanese journal of oral and maxillofacial surgery* 60(6), 354-358, 2014-06
- 6: Mitsuyoshi T, Toratani S, Koizumi K, Okamoto T, Tanimoto K, et al.: A case of maxillary Protrusion treated by Orthognathic Surgery. *Journal of Hiroshima dental association* 41 Vol.1P13-18(2014.03)
- 7: Hayashido Y, Kitano H, Sakaue T, Fujii T, Suematsu M, Sakurai S, Okamoto T, et al.: Overexpression of integrin α v facilitates proliferation and invasion of oral squamous cell carcinoma cells via mek/erk signaling pathway that is activated by interaction of integrin α v β 8 with type I collagen. *Int J Oncol*. 2014 Nov;45(5):1875-82.

B) Review

- 1: Kenji Kamiya, Tetsuji Okamoto.: The problem which is radiation education to a health care worker from a nuclear power plant accident: Japan Association on Radiological Protection in Medicine Newsletter(0918-5658)70 Page5-8(2014.07)

C) Publications

1: Diagnosis of injury :Dentistry of sports injury(Keiichi Ishigami, Toshiaki Ueno et al.); Kazuhiro Tsuga, Shigeaki Toratani, Taku Kanda: IGAKUJYUHOUSYA(Tokyo) , P57-61, 2015

D) Other Publications

not applicable

E) Presentation at Scientific Meeting

- 1: Generation and maintenance of human induced pluripotent stem cells from human peripheral blood mononuclear cells in serum-free and feeder-free culture condition with use of Sendai virus vectors
Eri Akagi, Sachiko Yamasaki, et al.
The 68th Annual Meeting of the Japanese Stomatological Society (Tokyo), May 2014 .
- 2: Processing of Integrin αV by autophagy of Oral squamous carcinoma cells.
Mirei Suematsu, Yasutaka Hayashidou et al.:
The 68th Annual Meeting of the Japanese Stomatological Society (Tokyo), May 2014 .
- 3: Generation and long term maintenance of human induced pluripotent stem cells in serum-free and feeder-free culture conditions using Sendai virus vectors.
Atsuko Hamada, Sachiko Yamasaki et al.
The 68th Annual Meeting of the Japanese Stomatological Society (Tokyo), May 2014
- 4: Clinical analysis of surgical-site infections in maxillofacial surgery with microvascular free-flap reconstructions at department of Oral and Maxillofacial Surgery, Hiroshima University hospital
F. Obayashi, Y. Ishida, et al.
68th Annual Meeting of the Japanese Somatological Society (Tokyo), Mar 2014
- 5: Report of oral cancer chemotherapy using Molecular target drug cetuximab.
Huyuyoshi Takatsu, et al.
68th Annual Meeting of the Japanese Somatological Society (Tokyo), Mar 2014
- 6: Anti-tumor effect of the combination chemotherapy with weekly paclitaxel and cetuximab for the metastatic adenoid cystic carcinoma arising at a hard palate.
Yukio YOSHIOKA, Huyuyoshi TAKATSU, Hirotaka NAKATAO, Yasuto HUKUI, Humitaka OHBAYASHI, Kouichi KOIZUMI, Ryoji TANI, Yasutaka HAYASHIDO, Shigeaki TORATANI, Kazunori HUIJITAKA, Tetsuji OKAMOTO
The 43th local meeting of Japanese Society of Oral and Maxillofacial Surgeons (Tokushima), Apr 2014.
- 7: A case of Sinovial chondromatosis.
Taeko Ysui, Taku Kanda, Shigeaki Toratani, Tetsuji Okamoto
The 43th congress of the Chugoku/shikoku Japanese Society of Oral and Maxillofacial surgeons (Tokushima) Apr 2014.
- 8: Two Free-flap reconstruction cases of oral cancer with perioperative care by team medical staffs.
Kensaku Matsui, et al.
The 43th congress of the Chugoku/shikoku Japanese Society of Oral and Maxillofacial surgeons (Tokushima) , Apr 2014.
- 9 : Reprogramming efficiencies of DPCs-derived hiPS cells with various virus vectors in serum- and feeder-free culture conditions.
Rie Akagi, Sachiko Yamasaki, Tetsuji Okamoto, et al
2014 World Forum on Biology (Georgia, USA), May 2014
- 10: Generation and maintenance of human induced pluripotent stem cells in serum-free and feeder-free culture conditions using Sendai virus vectors

- Atsuko Hamada, Sachiko Yamasaki, Tetsuji Okamoto, et al.
2014 World Forum on Biology (Georgia, USA), May 2014
- 11: Report of Early Clinical Exposure in School of Dentistry, Faculty of Dentistry, Hiroshima University
Taku Kanda, Hidemi Kurihara, Motoyuki Sugai, et al
The 33th congress of the Japanese Dental Association (Kokura), Jul 2014.
 - 12: Clinical analysis of late-stage elderly oral cancer patients at department of Oral and Maxillofacial Surgery, Hiroshima University hospital
Y. Ito, M. Higaki, et al .
62th Chugoku-Shikoku Branch Meeting of the Japanese Somatological Society (Tokushima),
Oct 2014
 - 13: Clinical analysis of late-stage elderly oral cancer patients at department of Oral and Maxillofacial Surgery, Hiroshima University hospital
M. Higaki, Y.Ito, et al.
58th Hiroshima Association for Dental Science, 98th Hiroshima University Dental Society
(Hiroshima), Nov 2014
 - 14: Report of the preoperative examination for patients with disability in Hiroshima Univ.Hosp.
Keita Yoshida, Taku Kanda, Masaharu Irihune, et al.
The 31th annual meeting of the Japanese Society for Disability and Oral Health (Sendai),
Nov (2014)
 - 15: Processing of integrin α v subunit by autophagy in squamous cell carcinoma cells.
Mirei Suematsu, Yasutaka Hayashidou, et al.
Hiroshima University The 3rd International Symposium (Hiroshima), Feb 2014
 - 16: Generation and maintenance of human induced pluripotent stem cells in serum-free and feeder-free culture conditions using Sendai virus vectors.
Atsuko Hamada, Sachiko Yamasaki, et al.
Hiroshima University The 3rd International Symposium (Hiroshima), Feb 2014
 - 17: Reprogramming efficiencies of DPCs-derived hiPS cells with various virus vectors in serum- and feeder-free culture conditions.
Eri Akagi, Sachiko Yamasaki, et al.
Hiroshima University The 3rd International Symposium (Hiroshima), Feb 2014
 - 18: Medical activity of Phoenix Leader Education Program.
Hirotaka Nakatao: Hiroshima University The 3rd International Symposium (Hiroshima),
Feb 2014
 - 19: Processing of Integrin α V by selective autophagy Relation through sequestome 1 of Oral squamous carcinoma cells.
Mirei Suematsu, Yasutaka Hayashidou, et al.
The 51st Annual Meeting of Japan Tissue Culture Society for Dental Research (Kokura) , Nov 2014
 - 20: Generation and maintenance of human induced pluripotent stem cells from human peripheral blood mononuclear cells in serum-free and feeder-free culture condition with use of Sendai virus vectors
Eri Akagi, Sachiko Yamasaki et al.
The 51st Annual Meeting of Japan Tissue Culture Society for Dental Research (Kokura) Nov 2014

F) Special lectures in academic meetings

- 1: Report of study abroad: Yasutaka Ishida: Hiroshima Univ. Dent. Soc. (Hiroshima) Jun 2014
- 2: Director commendation of Hiroshima Univ Hosp.: Taku Kanda , Mar 2014

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

- 1: JST: Sachiko Yamasaki :#AS262Z01770P.

- 2 : Grants-in aid for scientific research: Tetsuji Okamoto :#26670865.
- 3: Grants-in aid for scientific research: Tomoaki Hamana :#26463044.
- 4: Grants-in aid for scientific research: Kohsei Okamoto :#26463008.
- 5: Grants-in aid for scientific research: Yukio Yoshio :#26463006.
- 6: Grants-in aid for scientific research : Sachiko Yaasaki :#26861723.
- 7: Grants-in aid for scientific research: Yasuto Fukui :refuse to accept
- 8: Grants-in aid for scientific research: Taishi Sakaue :#26893166.
- 9: Grants-in aid for scientific research: Takahiko Fujii :#26893167.
- 10: Grants-in aid for scientific research: Hanae Mukasa :#26893168.
- 11: Grants-in aid for scientific research: Tetsuji Okamoto:#24390456.
- 12: Grants-in aid for scientific research: Yasutaka Hayashidou :#24390455.
- 13: Grants-in aid for scientific research: Ryouji Tani :#24593032.
- 14: Grants-in aid for scientific research : Tomoaki Shintani :#25463109.
- 15: Grants-in aid for scientific research : Kouishi Koizumi :# 24593033.
- 16: Grants-in aid for scientific research: Yasutaka Ishida :#24792221.
- 17: Grants-in aid for scientific research: Koh Nabeshima :#25861945.
- 18: Grants-in aid for scientific research: Yoku Itoh :# 25861942.

(5) Academic Awards, etc.

- 1: Sachiko Yamasaki: Encouragement award of Alumni Oral and Maxillofacial Surgery Hiroshima Univ. Hosp.2014

(6) Patents

1. USA PTC: Generation of human induced pluripotent stem (iPS) cells in serum- and feeder-free defined culture and TGF- β 1 regulation of pluripotency. Inventors: Tetsuji Okamoto, Sachiko Yamasaki, Applicant: Hiroshima University, Date: December 25, (2013)
2. Liver function disorder preservative, Inventors: Tetsuji Okamoto, Ryouji Tani, Kouichirou Tokuma (Hiroshima Univ, Nihon kefir Co., Ltd) : Dec 3,(2008), 2008-308559

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- **Applied Life Sciences Department of Advanced Prosthodontics**
- **Division of Preventive and Restorative Dentistry Department of Oral Implant**

(1) Staff and Students

Professor : Kazuhiro Tsuga
Associate Professor : Takayasu Kubo, Mineka Yoshikawa
Lecturer : Yasuhiko Abe, Kyou Hiasa
Assistant Professor : Katsunori Koretake, Hiroshi Oue, Yohei Okazaki
Resident : Maho Takeuchi, Mariko Maruyama, Shiho Kajihara
Graduate Student : Yusuke Makihara, Takahiro Mori, Chiaki Higa, Aya Hiraoka, Kan kato, Keisuke Yasuda, Yoshifumi Oki, Hiromichi kawano, Yukari Kinoshita, Masako Kobayashi, Yoko Shiotani, Yosuke Takeda, Azusa Kuroki, Miyuki Yokoi
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: In Vitro Simulation of Tooth Mobility Resulting from Periodontal Attachment Loss: Abe Y, Nogami K, Yasuda K, Okazaki Y, Hiasa K: Open Journal of Stomatology, 4, 303-309, 2014.
- 2: Osteoclast Response to Bioactive Surface Modification of Hydroxyapatite: Okazaki Y, Abe Y, Yasuda

K, Hiasa K, Hirata I: *Open Journal of Stomatology*, 4, 340-344, 2014.

- 3: Tooth loss might not alter molecular pathogenesis in an aged transgenic Alzheimer's disease model mouse: Oue H, Miyamoto Y, Koretake K, Okada S, Doi K, Jung CG, Michikawa M, Akagawa Y: *Gerodontology*, Epub ahead of print, 2014.
- 4: The influence of fixation in formalin on the measurement of stability of implants using resonance frequency analysis and Periotest M[®]: a study in a dog: Doi K, Kajihara S, Morita K, Makihara Y, Okada S, Akagawa Y: *Br J Oral Maxillofac Surg*, 52, 29-33, 2014.

B) Review

C) Publications

D) Other Publications

E) Presentation at Scientific Meeting

- 1: Evaluation of implant stability in novel implant/interconnected porous calcium hydroxyapatite complex: Makihara Y, Doi K, Kubo T, Oue H, Kajihara S, Morita K, Akagawa Y, Tsuga K: The 9th Scientific Meeting of the Asian Academy of Osseointegration (Sapporo), 2014.
- 2: Effect of intermittent parathyroid hormone administration on primary stability in rabbit osteoporosis model: Doi K, Kubo T, Makihara Y, Oue H, Kato K, Oki Y, Akagawa Y, Tsuga K: The 9th Scientific Meeting of the Asian Academy of Osseointegration (Sapporo), 2014.
- 3: Relationship of candy licking function, saliva secretion and bacterial counts on tongue surface: Yoshikawa M, Mori T, Shiotani Y, Yamazaki Y, Hiraoka A, Kawano H, Kinoshita Y, Tsuga K: 46th meeting of Hiroshima university dental society (Hiroshima), 2014.
- 4: Maximum tongue pressure and appropriate liquid thickness in ALS: Yoshikawa M, Hiraoka A, Takaki S, Nakamori M, Nagasaki T, Hosomi N, Tanimoto K, Tsuga K, Izumi Y: 4th Congress of European Society for swallowing disorders (Brussels), 2014.
- 5: Dysphagia and difficulties in taking medicine in the elderly requiring long-term care: Nozaki S, Katsuragi S, Nohara K, Yoshikawa M, Yoshida M, Ichimura K, Itami K, Umaki Y, Asaki S: 4th Congress of European Society for swallowing disorders (Brussels), 2014.
- 6: Effect of intermittent parathyroid hormone (PTH) administration on primary stability in osteoporosis rabbit model: Oue H, Doi K, Oki Y, Makihara Y, Kajihara S, Koretake K, Kubo T, Akagawa Y, Tsuga K: The 23rd European Association for Osseointegration (Rome), 2014.
- 7: Evaluation of implant stability in implant/interconnected porous hydroxyapatite complex: Kajihara S, Doi K, Kubo T, Oue H, Makihara Y, Morita K, Kato K, Akagawa Y, Tsuga K: The 23rd European

Association for Osseointegration (Rome), 2014.

- 8: The influence of tooth loss and diet on learning and memory by behavioral study: Takeda Y, Koretake K, Oue H, Okada S, Akagawa Y, Tsuga K: Indonesian prosthodontic society and Japan prosthodontic society joint meeting (Bali), 2014.

F) Special lectures in academic meetings

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

- 1: MEXT Grant-in-Aid for Young Scientists (B): Oue H: Molecular biological elucidation for learning and memory impairment by tooth loss. (Grant No.26861641). ¥1,820,000
- 2: MEXT Grant-in-Aid for Research Activity Start-up: Kajihara S: The development of bFGF/polyphosphoric acid double-processing complex. (Grant No.26893165). ¥1,500,000
- 3: MEXT Grant-in-Aid for Scientific Research (C): Koretake K: Treatment planning for edentulous patients applied over denture on single standing implant. (Grant No. 25462998). ¥1,400,000
- 4: MEXT Grant-in-Aid for Scientific Research (C): Tsuga K: Development of functional oral rehabilitation by sucking candy. (Grant No. 26462951). ¥1,300,000
- 5: The Japanese Society of Dysphagia Rehabilitation Grant-in-Aid for Scientific Research: Yoshikawa M: Relationship between vicarious mandible movement and deterioration of swallowing function with ALS progression. ¥200,000

(5) Academic Awards, etc.

(6) Patents

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

(1) Staff and Students

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

(2) Main Research Activities

- 1 : The study of relationship between oral habits and psychosomatic stress responses measured by salivary chromogranin A.
- 2 : The antimicrobial efficacy of chlorine dioxide element to add to dental material.
- 3 : Exploration of amelogenic stem/progenitor cells for tissue-engineered tooth.
- 4 : The roles of FGFR2b signaling in the regenerative capacity of tooth and bone.
- 5 : Study of occlusal-supporting ability of individual maxillary and mandibular teeth
- 6 : Relation between prosthetic treatment and general condition in elderly with dementia.
- 7 : Establishment of bone regeneration by using interconnected porous hydroxyapatite and biopolymeric material

(3) Research Achievements

A) Original Papers (including Case Reports)

- 1 : Runx/Cbfb signaling regulates postnatal development of granular convoluted tubule in the mouse

submandibular gland: Islam MN., Itoh S., Yanagita T., Sumiyoshi K., Hayano S., Kuremoto K., Kurosaka H., Honjo T., Kawanabe N., Kamioka H., Sakai T., Ishimaru N., Taniuchi I., Yamashiro T.: Dev Dyn., Epub ahead of print, 2014.

- 2 : The influence of fixation in formalin on the measurement of stability of implants using resonance frequency analysis and Periotest M[®]: a study in a dog: Doi K., Kajihara S., Morita K., Makihara Y., Okada S., Akagawa Y.: Br J Oral Maxillofac Surg, 52, 29-33, 2014.
- 3 : Inorganic polyphosphate adsorbed onto hydroxyapatite for guided bone regeneration: an animal study: Doi K., Kubo T., Takeshita R., Kajihara S., Kato S., Kawazoe Y., Shiba T., Akagawa Y.: Dent Mater J , 33, 179-86, 2014.
- 4 : Tooth loss might not alter molecular pathogenesis in an aged transgenic Alzheimer's disease model mouse: Oue H., Miyamoto Y., Koretake K., Okada S., Doi K., Jung CG., Michikawa M., Akagawa Y.: Gerodontology, 2014. in press

B) Review

C) Publications

- 1 : Repairing Method for Membrane Perforation in Sinus Augmentation Using a Bioabsorbable Membrane : Ishida Y., Ohta K., Sasaki K., Abekura H., Kazuhiro Tsuga K., Takechi M.: J Hiroshima Univ Dent Soc., 46, 149-155, 2014.
- 2 :

D) Other Publications

- 1 : Clinic for hybrid resin CAD/CAM crown applied for Japanese health insurance system-Using experience from High technology modern medicine-: Abekura H.: Clinical forum (GC Co., Ltd.), Case Presentation No.1, 2014.
- 2 : For success in treatment by CAD/CAM crown (Japanese health insurance system)-The point for success are abutment tooth preparation and crown setting-: Abekura H.: CAD/CAM NEWS (Wada precision dental laboratories), Vo1.02, 2014.
- 3 : Application of inorganic polyphosphate for dental material field: Doi K., Shiba T., Akagawa Y.: Shikai-tenbo, Vol. 23.754-758, 2014

E) Presentation at Scientific Meeting

- 1 : Significance of titanium allergy as preoperative test of implant: Kitagawa M., Obayashi M., Nagasaki A., Yanagisawa S., Shintani T., Kagawa K., Abekura H., Hiasa K., Kubo T., Takechi M., Ogawa I., Kurihara H.: The 7th Annual Meeting of The Japanese Society for Evidence and the Dental Professional (Okayama), 2014.
- 2 : Approaches for insurance introduction of oral inspection at the oral inspection center of Hiroshima University Hospital: Shintani T., Kitagawa M., Yoshioka Y., Doi M., Arakawa M., Nakamoto T., Konishi Y., Ouhara K., Kou M., Nisi H., Morita K., Abekura H., Yoshikawa M., Kubo T., Takechi M., Okada M., Ogawa I., Kurihara H.: The 7th Annual Meeting of The Japanese Society for Evidence and the Dental Professional (Okayama), 2014.
- 3 : Overexpressing fibroblast growth factor (FGF) 10 at mid- and late-embryonic stages perturbs craniomaxillofacial development in mice: Kagawa K., Yoshioka H., Kuremoto K., Takei Y., Minamizaki T., Tsuga K., Yoshiko Y.: The 56th Annual Meeting of Japanese Association for Oral Biology (Fukuoka), 2014.
- 4 : Effect of fibroblast growth factor (FGF) 10 on the formation of caraniomaxillofacial skeleton: Kagawa K., Yoshioka H., Kuremoto K., Takei Y., Minamizaki T., Tsuga K., Yoshiko Y.: The 69th Chugoku-Shikoku Sectional Meeting of Japanese Association of Anatomists (Hiroshima), 2014.
- 5 : Fibroblast growth factor (FGF) 10 negatively regulates the formation of caraniomaxillofacial skeleton: Kagawa K., Yoshioka H., Kuremoto K., Takei Y., Minamizaki T., Tsuga K., Yoshiko Y.: The 98th Annual Meeting of the Hiroshima University Dental Society (Hiroshima), 2014.
- 6 : A case report of functional oral rehabilitation using task candiesucking for an advanced dementia patient: Maruyama M., Kuroki A., Kawano H., Hiraoka A., Mori T., Morita K., Sakurai Y., Yoshikawa M., Tsuga K.: The 98th Annual Meeting of the Hiroshima University Dental Society (Hiroshima), 2014.
- 7 : Effect of intermittent parathyroid hormone administration on primary stability in rabbit osteoporosis model: Oki Y., Doi K., Kubo T., Akagawa Y., Tsuga K.: Japanese Society of Oral Implantology 34th Annual Scientific Meeting of Chugoku Shikoku Branch (Yamaguchi), 2014.
- 8 : Advantage of measuring bone turnover markers in dental implant patients: Okada S., Hiasa K., Abe Y., Kubo T., Tsuga K.: Japanese Society of Oral Implantology 34th Annual Scientific Meeting of Chugoku Shikoku Branch (Yamaguchi), 2014.
- 9 : Inorganic polyphosphosphate promotes the differentiation of osteoblast-like cells on hydroxyapatite plate: Kato K., Morita K., Doi K., Kubo T., Tsuga K.: The 44th Conference of Japanese Society of Oral Implantology (Tokyo), 2014.
- 10 : Evaluation of surface treatment and osteoblast differentiation promoting for hydroxyapatite plate adsorbed inorganic polyphosphate: Morita K., Doi K., Okazaki Y., Kubo T., Hirata I., Kato K., Tsuga K.: The 64th Conference of the Japanese society of dental materials and devices (Hiroshima), 2014.
- 11 : Evaluation of implant stability in implant/interconnected porous hydroxyapatite complex on dog

- mandible study: Kajihara S., Kubo T., Doi K., Oue H., Makihara Y., Morita K., Kato K., Tsuga K.: The 123th Scientific Meeting of Japan Prosthodontic Society (Sendai), 2014.
- 12 : Effect of intermittent parathyroid hormone administration on primary stability in rabbit osteoporosis model : Doi K., Oki Y., Kubo T., Oue H., Makihara Y., Kajihara S., Koretake K., Yamamori T., Sekine H., Akagawa Y., Tsuga K.: Annual Scientific Meeting of Japan Prosthodontic Society Hokkaido and Tohoku Branch (Koriyama), 2014.
- 13 : Relationship between sucking function and swallowing dynamics in elderly people with dementia: Mori T., Hiraoka A., Kuroki A., Kawano H., Maruyama M., Takagi Y., Yoshikawa M., Tsuga K.: 53th Scientific Meeting of the Japanese Society of Stomatognathic Function (Matsudo), 2014.
- 14 : Evaluation of implant stability in novel implant/interconnected porous calcium hydroxyapatite complex: Makihara Y., Doi K., Kubo T., Oue H., Kajihara S., Morita K., Akagawa Y., Tsuga K.: The 9th Scientific Meeting of the Asian Academy of Osseointegration (Sapporo), 2014.
- 15 : Effect of intermittent parathyroid hormone administration on primary stability in rabbit osteoporosis model: Doi K., Kubo T., Makihara Y., Oue H., Kato K., Oki Y., Akagawa Y., Tsuga K.: The 9th Scientific Meeting of the Asian Academy of Osseointegration (Sapporo), 2014.
- 16 : Evaluation of implant stability in implant/ interconnected porous hydroxyapatite complex: Kajihara S., Doi K., Kubo T., Oue H., Makihara Y., Morita K., Kato K., Akagawa Y., Tsuga K.: The 23rd European Association for Osseointegration (Rome), 2014.
- 17 : Effect of intermittent parathyroid hormone (PTH) administration on primary stability in osteoporosis rabbit model: Oue H., Doi K., Oki Y., Makihara Y., Kajihara S., Koretake K., Kubo T., Akagawa Y., Tsuga K.: The 23rd European Association for Osseointegration (Rome), 2014.
- 18 : Relationship of candy licking function, saliva secretion and bacterial counts on tongue surface: Yoshikawa M., Mori T., Shiotani Y., Yamazaki Y., Hiraoka A., Kawano H., Kinoshita Y., Tsuga K.: The 47th Annual Meeting of the Hiroshima University Dental Society (Hiroshima), 2014.
- 19 : Maximum tongue pressure and appropriate liquid thickness in ALS: Yoshikawa M., Hiraoka A., Takaki S., Nakamori M., Nagasaki T., Hosomi N., Tanimoto K., Tsuga K., Izumi Y.: 4th Congress of European Society for swallowing disorders (Brussels), 2014.
- 20 : The influence of tooth loss and diet on learning and memory by behavioral study: Takeda Y., Koretake K., Oue H., Okada S., Akagawa Y., Tsuga K.: Indonesian prosthodontic society and Japan prosthodontic society joint meeting (Bali), 2014.

F) Special lectures in academic meetings

- 1 : Crown applied CAD/CAM system: Abekura H.: Academic lecture for Kyusyu dental university alumni association (Hiroshima branch) (Hiroshima), 2014.4.10

- 2 : Correspondence to CAD/CAM crown approved by Japanese health insurance : Abekura H.: Academic Lecture of Japan Dental Association of Miyoshi City: The clinical applicability of the CAD/CAM system for dentistry (Miyoshi), 2014.4.12
- 3 : Palatal augmentation prosthesis: New social contribution based on two guidelines: Tsuga K.: Academic Lecture of Japan Dental Association of Hiroshima City (Hiroshima), 2014.5.29
- 4 : CAD/CAM crown :Point from tooth preparation to setting into oral cavity: Abekura H.: Academic Lecture of Japan Dental Association of Hiroshima City (Hiroshima), 2014.5.29
- 5 : Instruction and exercise for patients wearing occlusal splints for TMD treatment -dental mouth rehabilitation 2-: AbekuraH.: Academic Lecture of Japan Dental Association of Hiroshima prefecture (Hiroshima), 2014.6.8
- 6 : Points for treatment by CAD/CAM crown: Abekura H.: Academic Lecture of Japan Dental Association of Hiroshima prefecture (Hiroshima), 2014.6.8
- 7 : Novel program for improving oral function considering tongue pressure: Tsuga K.: Open lecture of Japanese Academy of Occlusion and Health (Tokyo), 2014.7.21
- 8 : Evaluation of oral function and rehabilitation for nursing cared elderly: utilizing novel tongue pressure examination: Tsuga K.: Scientific lecture meeting of Kure City Dental Association (Kure), 2014.7.31
- 9 : Instruction and exercise for patients wearing occlusal splints for TMD treatment -dental mouth rehabilitation 2- : Hitoshi Abekura : Academic Lecture of Japan Dental Association of Hiroshima prefecture (Fukuyama) , 2014.8.3
- 10 : Points for treatment by CAD/CAM crown: Abekura H.: Academic Lecture of Japan Dental Association of Hiroshima prefecture (Fukuyama), 2014.8.3
- 11 : Proposal of novel program for improving oral function: Tsuga K.: Workshop for staffs of regional comprehensive support center and related dentists (Hiroshima), 2014.8.29
- 12 : Challenges and ripple effects of the department of advanced prosthodontics: Tsuga K.: Special lecture in joint annual meeting of Japan Prosthodontic Society Chugoku-Shikoku and Kansai branches (Kurashiki), 2014.9.7
- 13 : Tongue pressure examination for quantitative evaluation of oral motor function: Tsuga K.: Lecture meeting for social health insurance directors (Tokyo), 2014.9.17
- 14 : Novel functional oral rehabilitation based on tongue pressure evaluation: Tsuga K.: Workshop for specialists of prosthodontics in Kan-etsu branch of Japan Prosthodontic Society (Niigata), 2014.9.17
- 15 : Contribution of advanced prosthodontics on programs for improving oral function: Tsuga K.: Academic lecture for Hiroshima University Dental Alumni Society Yamaguchi Branch (Yamaguchi), 2014.10.18
- 16 : Proposal of program for improving oral function utilizing novel tongue pressure examination: Tsuga K.: Academic workshop of Aki Dental Society (Hiroshima), 2014.11.22

- 17 : Correspondence to hybrid resin CAD/CAM crown approved by Japanese health insurance: Abekura H.: Annual Scientific Meeting of Japan Prosthodontic Society of Kanetsu branch (Niigata), 2014.11.23
- 18 : Utilizing tongue pressure measurement and training for improving oral function: Tsuga K.: Workshop for medical-dental collaboration for home medical care in Minami-ward (Hiroshima), 2014.11.26
- 19 : Proposal of training based on tongue pressure examination for improving oral function: Tsuga K.: Workshop for training anti-dysphagia supportive dentists (Gifu), 2014.12.7.
- 20 : Evidence based dentistry with novel quantitative evaluation of oral function: Tongue pressure examination: Tsuga K.: Special lecture in Niigata University School of Dentistry (Niigata), 2014.12.12

G) Others

- 1 : Basic technical point of CAD/CAM crown (hybrid resin block)-from abutment tooth preparation to setting into oral cavity-: Production instruction by Abekura H. and editorial supervision by Japan Prosthodontic Society: Video contents on HP of GC Co., Ltd., 2014.5.19
- 2 : Design of crown for decade tooth using a computer and fabrication with resin by machine: Abekura H.: Yomiuri newspaper (Evening paper), 2014.5.22

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

- 1 : Grant-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 thousand yen.
- 2 : Grant-in-Aid for Scientific Research (C): Tsuga K: Development of functional oral rehabilitation by sucking candy. (Grant No. 26462951). 1,300 thousand yen.
- 3 : Grant-in-Aid for Scientific Research (C): Abekura H., Covariance structure analysis of sleep, diurnal bruxism, sociopsychological and TMD. No.25462999. 1,170 thousand yen.
- 4 : 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.
- 5 : Grant-in-Aid for Scientific Research (C): Doi K., Bone regeneration of applying polyphosphate on bone defect by implantitis. No. 24592918. 1,660 thousand yen
- 6 : Grant-in-Aid for Young Scientists (B): Morita K., Bio-active effect of inorganic polyphosphoric to achieve new innovation for bone quality. No.25861845. 1,600 thousand yen.
- 7 : Grant-in-Aid for Scientific Research (C): Mizumachi W., Development of occlusal support ability system in residual teeth based on clinical data processing. No.23592847. 1,430 thousand yen.

- 8 : Grant-in-Aid for Young Scientists (B) : Hori T., New development of chlorine dioxide-containing denture cleaner. No. 25861847. 1,800 thousand yen.
- 9 : Step-Up Support Program for KAKENHI (Grant-in-Aid for Scientific Research) FY2014: Kuremoto K., Mechanistic exploration for the odontogenic differentiation and regeneration of stem cells from human apical papilla. No.189072. 1,000 thousand yen.

(5) Academic Awards, etc.

(6) Patents

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

(1) Staffs and students

Professor	: Kotaro Tanimoto
Lecture	: Hiroshi Ueda, Masato Kaku
Assistant Professor	: Masahide Motokawa, Myongsun Koh, Yuki Asakawa, Ryo Kunimatsu, Naoto Hirose, Syunichi Kojima, Keisuke Sumi
Intern	: Yayoi Matsuda, Tomomi Mitsuyoshi, Yuki Yoshimi, Yuji Tsuka, Hiromi Sumi
Graduate Student	: Tetsuya Awada, Nanae Oki, Hanaka Shikata, Eri Fujii, Yuki Okamoto, Tahsin Raquib Abonti, Hirotaka Sugino, Tomomi Date, Yu Matsumura, Aimi Naim Bindi Abdulah, Takaharu Abe, Saki Okita, Hidemi Gunji, Shoutoku Kojima, Chikako Sumi, Yuko Nakao, Cynthia Concepcion Medina, Aya Kimura, Kengo Nakajima, Makoto Yanoshita, Taeko Yamamoto
Professor (part-time)	: Kazuo Tanne, Eiji Tanaka, Ichiro Takahashi
Registered Intern	: Kuniaki Tanaka, Kazunori Itatani, Eri Ohtani, Noriko Sano, Emi Ishikawa, Kyoko Mizukami
Dental Hygienist	: Yano Kanako, Miho Okada

(2) Main academic activity

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

(3) Research achievement

A) Original article

1. Effects of pulpectomy on the amount of root resorption during orthodontic tooth movement.: Kaku M., Sumi H., Shikata H., Kojima S, Motokawa M., Fujita T., Tanimoto K., Tanne K. J. Endod, 40: 372-378, 2014.
2. Cranial bone regeneration after cranioplasty using cryopreserved autogenous bone by a programmed freezer with a magnetic field in rats.: Kaku M, Koseki H, Kojima S, Sumi H, Shikata H, Kojima S, Motokawa M, Fujita T, Tanimoto K, Tanne K.: Cryo Letters, 35:451-461, 2014.
3. Effects of occlusal hypofunction and its recovery on PDL structure and expression of VEGF and bFGF in rats.: Motokawa M, Kaku M, Matsuda Y, Kojima S, Sumi C, Kimura A, Tanimoto K. Clin Oral Investig. 2014 Sep 11. [Epub ahead of print]
4. Preferential and selective degradation and removal of amelogenin adsorbed on hydroxyapatites by MMP20 and KLK4 in vitro.: Zhu L, Liu H, Witkowska HE, Huang Y, Tanimoto K, Li W. Front Physiol, 24; 5:268. 2014.
5. Effects of low-intensity pulsed ultrasound on the expression of cyclooxygenase-2 in mandibular condylar chondrocytes.: Iwabuchi Y, Tanimoto K, Tanne Y, Inubushi T, Kamiya T, Kunimatsu R, Hirose N, Mitsuyoshi T, Su S, Tanaka E, Tanne K.: J Oral Facial Pain Headache, 28: 261-268. 2014.
6. Role of articular disc in condylar regeneration of the mandible.: Hayashi H, Fujita T, Shirakura M, Tsuka Y, Fujii E, Terao A, Tanimoto K.: Exp Anim, 63: 395-401. 2014.
7. Celecoxib exerts protective effects on extracellular matrix metabolism of mandibular condylar chondrocytes under excessive mechanical stress.: Su SC, Tanimoto K, Tanne Y, Kunimatsu R, Hirose N, Mitsuyoshi T, Okamoto Y, Tanne K.: Osteoarthritis Cartilage. 22: 845-851. 2014.
8. Factors related to stability following the surgical correction of skeletal open bite.: Ito G., Koh M., Fujita T., Shirakura M., Ueda H., Tanne T.: Aust Orthod J 1: 61-66. 2014.
9. Inductive ability of human developing and differentiated dental mesenchyme. Zheng L, Warotayanont R, Stahl J, Kunimatsu R, Klein O, DenBesten PK, Zhang Y. Cells Tissues Organs. 198(2):99-110, 2013.
10. 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 Journal of Hiroshima Dental Association, 41-1, 13-18, 2014.
11. Clinical investigation into the prevalence of permanent teeth with amelogenesis imperfecta by Department of Orthodontics, Hiroshima University.: Oki N., Motokawa M., Kunimatsu R., Hirose N., Yoshimi Y., Tanimoto K : Orthodontic Waves-Japanese Edition 73, 137-142, 2014.

12. Canine alignment in two deep bite cases achieved by distal movement of the lower posterior teeth.: Ishikawa E., Ohtani J., Ueda H., Kato M., Oki N., Tanimoto K.: The Journal of Chu-Shikoku Orthodontic Society 26, 49-60, 2014.
13. A treatment of a crowding with oligodontia by teeth autotransplantation.: Kojima S-T, Kaku M, Kubo T, Fujita T, Ono S, Nagayasu S, Kojima S-I, Sumi H, Shikata H, Yamamoto T, Motokawa M, Tanimoto K.: The Journal of Hiroshima University Dental Society 46, 156-161, 2014.
14. A Treatment of an Adult Crowding Case with Missing of Bilateral Maxillary Central Incisors by an Injury.: Kamiya T, Kaku M, Kojima S, Hiasa K, Tanimoto K. The Journal of Hiroshima University Dental Society 46, 143-148, 2014.

B) General remarks

1. Tanimoto K.: Approach to the treatment of craniofacial anomaly accompanied by malocclusion – team approach and regeneration medicine-. Hiroshima City Dental General Incorporated Association Journal 21, 2-5, 2014.
2. Tanimoto K.: Orthodontic treatment and temporomandibular disorders – Aststematic approach correspond to the pathological condition –, J Hiroshima Dent Asso. 41, 5-12, 2014.

C) Books

1. Tanne K., Ohtani J., Sunagawa H., Kaku M., Fujita T.: Treatment of Class II open bite malocclusion supported by skeletal anchorage. In Skeletal Anchorage in Orthodontic Treatment of Class II Malocclusion – Contemporary application of orthodontic implants, miniscrew implants and miniplates (Editor: Moschos M. Papadopoulos). Mosby Elsevier, London, New York, Toronto etc, 235-238, 2014.

D) Other publications

E) Presentation at Scientific Meeting

1. Effects of amelogenin on the metabolism of human osteoblast-like cells—Development of bone regeneration therapy using the peptide derived from enamel protein—: Awada T., Kunimatsu R., Yoshimi Y., Hirose N., Kojima S., Kaku M., Hirata I., Kato K., Tanne K., Tanimoto K.: The 38th Annual Meeting of Japanese Cleft Palate Association (Sapporo), 2014.

2. Tissue regeneration by implantation of cryopreserved MSCs for the defect of parietal bones and sagittal suture: Kojima S., Kaku M., Kojima S., Tanimoto K.:The 38th Annual Meeting of Japanese Cleft Palate Association (Sapporo), 2014.
3. A treatment case of skeletal mandibular prognathism associated with Mitochondrial myopathy: Horie K.,Ishikawa E.,Koh M.,Date T.,Matsumura Y.,Nakao Y.,Ueda H.,Tanimoto K.:The 24th Annual Meeting of the Society for Jaw Deformities (Fukuoka), 2014.
4. Role of mechanoreceptor in the metabolism of chondrocytes under excessive mechanical stimuli: Okamoto Y., Asakawa Y., Shirakura M.,Kunimatsu R.,Hirose N.,Mitsuyoshi T.,Su S., Tanne K.,Tanimoto K.: The 27th Annual Meeting of The Japanese Society for Temporomandibular Joint (Fukuoka), 2014.
5. Effects of Matrix degradation via EP4 receptor in condylar chondrocytes under excessive mechanical stress: Mitsuyoshi T, SU Shaoching, Asakawa Y, Hirose N, Awada T, Okamoto Y, Tanne K and Tanimoto K.: The 27th Annual Meeting of the Society for the Temporomandibular Joint (Fukuoka), 2014.
6. A case report of CHARGE syndrome with cleft plate and bimaxillary hypoplasia: Yuko Nakao, Myongsun Koh, Tomomi Date, Kayo Horie, Yu Matsumura, Naoto Hirose, Hiroshi Ueda, Kotaro Tanimoto.: 57th Annual Meeting of Chu-Shikoku Orthodontic Society (Yamaguchi), 2014.
7. A case of report of Crouzon syndrome treated by two-jaw surgery: Yoshimi Y., Sumi K., Tsuka Y., Awada T., Fujii E., Abe T., Okita S., Tanimoto K.:The 57th Annual session of chu-shikoku orthodontic society (Yamaguchi), 2014.
8. Influences of pulp tissue on the experimental tooth movement: Sumi H., Kaku M., Motokawa M., Matsuda Y., Kojima S.,Shikata H., Kawata T., Tanne K., Tanimoto K.: The 73rd Annual Meeting of the Japanese Orthodontic Society (Makuhari), 2014.
9. Evaluation of upper airway morphology in obstructive sleep apnea patients by supine X-ray and CT:Matsumura Y., Koh M., Nagasaki T., Ueda H., Tanimoto K.:The 73rd Annual Meeting of the Japanese Orthodontic Society (Makuhari), 2014.
10. Evaluation of orthodontic treatment for twins with or without tooth extraction: Hirose N., Mineo W., Matsumura Y., Ueda H., Tanimoto K.:The 73rd Annual Meeting of the Japanese Orthodontic Society (Makuhari), 2014.
11. Influences of intervals of jiggling force on root resorption in rats: Matsuda Y., Motokawa M., Kaku M., Sumi H., Sumi C., Tanimoto K.: The 73th Annual Meeting of the Japanese Orthodontic Society (Makuhari), 2014.
12. Evaluation of the cleaning effect of the tooth surface by use of nano particks from shell: Kunimatsu R., Sumi K., Asakawa Y., Hirose N., Mitsuyoshi T., Yoshimi Y., Gunji H., Tanimoto K.: The 73th Annual Meeting of the Japanese Orthodontic Society (Makuhari), 2014.
13. A case of adult patient with maxillary protrusion accompanied by periodontitis using skeletal

- anchorage system: Kunimatsu R., Asakawa Y., Mitsuyoshi T., Okamoto Y., Gunji H., Shao-Ching Su, Ida Y., Tanimoto K.: The 73th Annual Meeting of the Japanese Orthodontic Society (Makuhari), 2014.
14. Effects of Low-level Diode Laser Treatment on the Metabolism of Human Dental Pulp Cells: Gunji H., Kunimatsu R., Asakawa Y., Hirose N., Mitsuyoshi T., Yoshimi Y., Tsuka Y., Tanimoto K.: The 73th Annual Meeting of the Japanese Orthodontic Society (Makuhari), 2014.
 15. Effects of Low-level Er;YAG laser treatment on the metabolism during orthodontic tooth movement : Tsuka Y., Fujita T., Shirakura M., Kunimatsu R., Fujii E., Gunji H., Tanimoto K.: The 73th Annual Meeting of the Japanese Orthodontic Society (Makuhari), 2014.
 16. Effects of occlusal hypofunction and its recovery on PDL structure and expression of VEGF and bFGF in rats: Motokawa M., Kaku M., Matsuda Y., Kojima S., Sumi C., Tanimoto K.: The 73th Annual Meeting of the Japanese Orthodontic Society (Makuhari), 2014.
 17. Effects of Er;YAG laser during experimental tooth movement: Tsuka Y., Kunimatsu R., Fujii E., Gunji H., Tanimoto K.: The 53th Hiroshima University Dental Society (Hiroshima), 2014.
 18. Influences of pulp tissue on the root resorption after orthodontic tooth movement: Sumi H., Kaku M., Motokawa M., Matsuda Y., Kojima S., Shikata H., Tahsin A., Kojima S., Yamamoto T., Tanimoto K.: The 53th Hiroshima University Dental Society (Hiroshima), 2014.
 19. Two-jaw steotomy for treatment of a patient with facial asymmetry caused by unilateral condylar hyperplasia.: Kubozono K., Nakagawa T., Ohta K., Ono S., Ohtani J., Tsubamoto N., Tanimoto K., Takechi M.: The 53th Hiroshima University Dental Society (Hiroshima), 2014.
 20. Application of maxilla/alveolar distraction osteogenesis and two-jaw surgery to a patient with Crouzon syndrome : Nakagawa T., Ono S., Ohta K., Ohtani T., Ishikawa E., Ueda H., Tanimoto K. Takechi M.: The 53th Hiroshima University Dental Society (Hiroshima), 2014.
 21. A case of Mandibular retrognathia with gummy smile by Lefort I and SSRO after distraction osteogenesis : Ono S., Nakagawa T., Kubozono K., Kaku M., Sumi H., Ohta K., Tanimoto K. Takechi M.: The 53th Hiroshima University Dental Society (Hiroshima), 2014.
 22. A survey of clinical practice by dental hygienist students in new out-patient clinic of Hiroshima University Hospital: Tokikazu T., Hase Y., Matsui K., Wakida A., Dainobu K., Okada M., Kawai C., Nakaoka M., Mizuno N., Ogawa A., Kubo T., Yoshikawa M., Doi K., Okamoto K., Ninomiya Y., Ueda H., Koh M., Tachikake M., Oda Y., Okada M., Ogawa T.: The 53th Hiroshima University Dental Society (Hiroshima), 2014.
 23. Effects of Low-level Nd;YAG laser treatment on the metabolism during orthodontic tooth movement: Tsuka Y., Kunimatsu R., Fujii E., Gunji H., Tanimoto K.: The 26th Annual Meeting of Japanese Society for Laser Dentistry (Tokyo), 2014.
 24. Effects of diode laser treatment on the metabolism of human dental pulp cells: Kunimatsu R., Tsuka Y., Gunji H., Tanimoto K.: The 26th Annual Meeting of Japanese Society for Laser Dentistry

- (Tokyo), 2014.
25. Effect of intervals and force magnitude of jiggling force on root resorption in rats: Matsuda Y., Motokawa M., Kaku M., Sumi C., Tanne K., Tanimoto K.: The 47th Annual Scientific Congress of Korean Association of Orthodontists (Seoul), 2014.
 26. A crowding case with an upper central incisor presenting substitutional root resorption treated with auto-transplantation: Date T., Koh M., Horie K., Matsumura Y., Nakao Y., Yanoshita M., Hirose N., Ueda H., Tanne K., Tanimoto K.: The 47th Annual Scientific Congress of the Korean Association of Orthodontists (Seoul), 2014.
 27. Comparative cephalometric analysis of open bite cases treated with orthodontic anchor screw and MEAW: Sugino H, Motokawa M, Matsuda Y, Oki N, Sumi C, Kimura A, Tanimoto K: The 47th Annual Scientific Congress of Korean Association of Orthodontists (Seoul), 2014.
 28. Functional mechanism of Integrin as mechanoreceptor in the metabolism of chondrocytes under excessive mechanical stress: Okamoto Y., Asakawa-Tanne Y., Kunimatsu R., Hirose N., Mitsuyoshi T., Tanne K., Tanimoto K.: The 47th Annual Scientific Congress of Korean Association of Orthodontists (Seoul), 2014.
 29. Effect of Nd: YAG laser irradiation in cultured osteoblasts: Tsuka Y., Kunimatsu R., Fujii E., Gunji H., Tanimoto K.: The 47th Annual Scientific Congress of Korean Association of Orthodontists (Seoul), 2014.
 30. A case of skeletal II malocclusion treated by two-jaw surgery: Mitsuyoshi T, Tanimoto K.: The 47th Annual Scientific Congress of Korean Association of Orthodontists (Seoul),2014.
 31. Role of mechanoreceptor in the metabolism of chondrocytes under excessive mechanical stimuli.: Okamoto Y., Asakawa Y., Shirakura M., Kunimatsu R., Hirose N., Mitsuyoshi T., Su S.C., Irome K., Tanne K., Tanimoto K.: The 6th Euro TM joint Congress on temporomandibular joint (TMJ) in juvenile idiopathic arthritis (JIA) (Tampere), 2014.
 32. Role of mechanoreceptor in the metabolism of chondrocytes under excessive mechanical stimuli.: Okamoto Y., Asakawa Y., Shirakura M.,Kunimatsu R.,Hirose N.,Mitsuyoshi T., Su S.C., Tanne K., Tanimoto K.: The 47th Annual Meeting of the Hiroshima University Dental Society (Hiroshima), 2014.
 33. Influences of pulpectomy on root resorption during experimental tooth movement: Sumi H., Kaku M., Motokawa M., Matsuda Y., Kojima S.,Shikata H., Kawata T., Tanne K., Tanimoto K.: 9th APOC and 20th MAOISCT (Kuching), 2014.
 34. Effects of Nd: YAG laser irradiation on molecular biological and histological at tooth movement - a pilot study: Tsuka Y., Kunimatsu R., Fujii E., Gunji H, Tanimoto K.: 9th APOC and 20th MAOISCT (Kuching),2014.
 35. A case report of Crouzon Syndrome treated by Two-jaw surgery: Yoshimi Y, Sumi K, Tsuka Y, Awada T, Fujii E, Abe T, Okita S, Nakajima K, Tanne K, Tanimoto K.: 9th APOC and 20th

MAOISCT (Kuching),2014

36. Irradiation effects of newly developed low temperature multi gas plasma jet on oral bacteria: Abonti Tahsin Raquib, Kaku M, Kojima S, Sumi H, Shikata H, Kojima S, Tanimoto K.: The 73th Annual Meeting of the Japanese Orthodontic Society (Makuhari), 2014.

F) Academic society symposium and special lecture

1. Tanimoto K: Bone Regeneration by use of Mesenchymal Stem Cells for Treatment of Jaw Cleft: Application of a New Carbonated-Hydroxyapatite Scaffold. 4th International Week-Symposium in TMU. (Taipei), 2014.
2. Tanimoto K: Bone Regeneration by use of Mesenchymal Stem Cells with Carbonated-hydroxyapatite Scaffold - A New Strategy for Treatment of Jaw Cleft -. 8th International Dental Scientific Meeting, (Makassar), 2014.
3. Tanimoto K.: Orthodontics and temporomandibular disorders – A systematic approach corresponding to the pathological condition -. Academic Meeting of Hiroshima University Faculty of Dentistry Alumni Association, (Hiroshima), 2014.
4. Tanimoto K.: Orthodontic treatment and regeneration medicine -Application of mesenchymal stem cells to bone regeneration of jaw cleft-. Academic Seminar of Hiroshima Orthodontic Society, (Hiroshima), 2014.
5. Tanimoto K.: Orthodontic treatment and temporomandibular disorders –Systematic approach under consideration of medical safety-. Academic Meeting of Hiroshima University Faculty of Dentistry Alumni Association, Ehime Branch, (Matsuyama), 2014.
6. Tanimoto K.: Bone regeneration of jaw cleft by use of mesenchymal stem cells –Utility and present issues-. 57th Annual meeting of Chu-Shikoku Orthodontic Society, (Ube), 2014.
7. Tanimoto K.; Next-generation orthodontic treatment pioneered by the cooperation between orthodontist and oral engineer. Academic Seminar of Hiroshima University Department of Orthodontics Alumni Association, (Hiroshima), 2014.
8. Tanimoto K.: Orthodontic treatment and temporomandibular disorders –Diagnosis and systematic approach corresponding to the pathological condition -. Scientific meeting in Tokushima University, (Tokushima), 2014.
9. Hiroshi Ueda. The role of dentists in the management of sleep apnea syndrome -Dental/occlusal side effect of oral appliances- The Academy of Dental Sleep Medicine 13th annual meeting symposium. Tokyo. 2014.
10. Kaku M. : Role of orthodontic treatment for comprehensive dental care: Tokyo Dental College alumni meeting in Hiroshima, 2014.
11. Kunimatsu 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.

(4) Scientific research grant -in-aid

1. Grant-in-aid for Scientific Research, Challenging Exploratory Research: Tanimoto K.: Restoration of tooth enamel by biomineralization with oyster shell nano-powder and enamel matrix proteins. No. 26670885, 110,000yen
2. 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
3. Grant-in-aid for Scientific Research (C): Kaku M.: Long term cryopreservation of mesenchymal stem cells, 1,200,000yen
4. Grant-in-aid for Scientific Research (B): Kunimatsu R.: Effects of diode laser on the metabolism of periodontal tissue and application of diode laser for orthodontic treatment. No. 25862016. 1,600,000yen.
5. Grant-in-aid for clinical and Scientific Research of Hiroshima University : Kunimatsu R: Bone regeneration in the treatment of bone defect in the cleft lip and palate by use of mesenchymal stem cells and diode laser. 500,000 yen
6. Grant-in-aid for Scientific Research : Kunimatsu R : Effects of diode laser on the metabolism of periodontal tissue and application of diode laser for orthodontic treatment. 1,000,000 yen.
7. Collaborative research with Unitak Co., Ltd; Ryo Kunimatsu : Effects of metabolism on the specialized hybrid-diode-laser for orthodontic treatment. 500,000 yen.
8. Grant-in-aid for young researcher of Hiroshima University : Kunimatsu R: Bone regeneration in the treatment of bone defect in the cleft lip and palate by use of mesenchymal stem cells and diode laser. 300,000 yen
9. Grant-in-aid Fujii of Hiroshima University : Kunimatsu R: Bone regeneration in the treatment of bone defect in the cleft lip and palate by use of deciduous dental pulp stem cells and diode laser. 1000,000 yen
10. Grant-in-Aid for Scientific Research (B): Hirose N.: Elucidation of the mechanical stress receptive mechanism by integrins, and establishment of PCR prevention with a integrins inhibitor. No.26861788. 1,600,000 yen
11. Grant-in-Aid for Scientific Research: Yoshimi Y.: Application to root resorption prevention and elucidation of periodontal tissue metabolic activity mechanism by functionality amelogenin peptide: No. 25893147. 1, 300,000yen.

12. Support fund for study from Hiroshima University: Suim H: Irradiation effects of newly developed low temperature multi gas plasma jet on oral bacteria 500,000yen.
13. Grant-in-Aid for Scientific Research: Sumi K.: Expansion to establishment of Jaw Cleft Treatment with Bone Regeneration by Use of MSCs having excellent vascular inducing.: No 2589314810. 1,100,000yen.
14. Grant-in-Aid for Scientific Research (B): Matsuda Y.: investigation of mechanism of root resorption induced by jiggling force and the prediction using GCF. No.258620190. 1,430,000yen
15. Grant-in-Aid for Scientific Research: Yoshimi Y.: Application to root resorption prevention and elucidation of periodontal tissue metabolic activity mechanism by functionality amelogenin peptide: No. 25893147. 500,000yen.
16. Grant-in-Aid for Scientific Research (B): Mitsuyoshi T.: Clarification of the temporomandibular joint disease and the establishment of new therapeutic method using mechanical stress and high molecular HA to the three-dimensional culture cells. No.26861787. 2600,000yen
17. The Hiroshima University Education and Research Support Foundation: Oki N.: An Establishment Jaw Cleft Treatment and study of vascular-inducing ability with Bone Regeneration by Use of MSCs Derived from Bone Marrow. 200,000yen

(5) Commendation

1. Okamoto Y.: Role of mechanoreceptor in the metabolism of chondrocytes under excessivemechanical stimuli.: The 47th Annual meeting of Hiroshima University Faculty of Dentistry Incentive Award, 2014.
2. Sumi H.: Influences of pulpectomy on root resorption during experimental tooth movement: The 72th Annual Meeting of the Japanese Orthodontic Society Excellence Award, 2014.
3. Sumi H.: Influences of pulpectomy on root resorption during experimental tooth movement : 9th APOC and 20yh MAOISCTE Best Digital Poster Presentation (Reserch)
4. Okamoto Y.: Functional mechanism of Integrin as mechanoreceptor in the metabolism of chondrocytes under excessive mechanical stress : The 47th Annual Scientific Congress of Korean Association of Orthodontists(Seoul),2014, Excellent Poster presentation award, 2014.
5. Date T.: The 47th Annual Scientific Congress of Korean Association of Orthodontists(Seoul), Excellent Poster presentation award, 2014.
6. Oki N: Hiroshima university excellent student scholar ship, 2014.
7. Shikata H: Hiroshima university excellent student scholar ship, 2014.
8. Effects of diode laser treatment on the metabolism of human dental pulp cells: Kunimatsu R., Tsuka Y., Gunji H., Tanimoto K.: The 26th Annual Meeting of Japanese Society for Laser Dentistry

(Tokyo), 2014, Excellent Poster presentation award.

9. Hirose N.: Ameloblastin in Hertwig's Epithelial Root Sheath Regulates Tooth Root Formation and Development.: Alumni Association of Hiroshima University Faculty of Dentistry Encouraging Prize, 2014.
10. Motokawa M.: Association between root resorption incident to orthodontic treatment and treatment factors: Alumni Association of Hiroshima University Faculty of Dentistry Encouraging Prize, 2014.

(6) Patent

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

(1) Staff and Students

Professor :Keiji Tanimoto

Associate Professor :Minoru Fujita

Associate Professor/Lecturer :Yoshikazu Suei, Takashi Nakamoto

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

Graduate Student : Mitsuko Shimizu, Kiyohito Ota, Atia Hossain, Kimio Okada,
Preeyaporn Srimawong, Keiji Harada

(2) Main Research Activities

- 1: Radiographic diagnosis of oral diseases
- 2: Radiographic study on mandibular osteomyelitis
- 3: Study of radiation dosimetry in X-ray region for diagnosis
- 4: Study on the videofluoroscopic examination of swallowing
- 5: Radiation effects of heavy ion particles on bone metabolism
- 6: Improvement of treatment results in the radiotherapy for oral cancers
- 7: Radiographic study to screen osteoporosis using panoramic radiographs of the jaw

(3) Research Achievements

A) Original Papers

- 1:Development and fundamental evaluation of cooked rice containing non-ionic water soluble contrast medium(Visipaque270[®]) for videofluoroscopic examination of swallowing: Konishi M., Nagasaki T., Yasuhara Y., Hossain A., Tanimoto K.: The Japanese journal of dysphagia rehabilitation, 18(2), 113-122, 2014.
- 2:Ultrasonographic examinations at department of oral and maxillofacial radiology of Hiroshima

- university hospital: Konishi M., Fujita M., Suei Y., Nakamoto T., Tanimoto K.: The journal of Hiroshima University dental society, 46(1), 63-66, 2014.
- 3: Two cases of ultrasonographic examinations at department of oral and maxillofacial radiology of Hiroshima university hospital: Konishi M., Fujita M., Suei Y., Nakamoto T., Tanimoto K.: The journal of Hiroshima University dental society, 46(1), 73-76, 2014.
- 4: Dental cone beam computed tomography examinations at department of oral and maxillofacial radiology of Hiroshima University hospital: Konishi M., Fujita M., Suei Y., Sawajiri M., Nakamoto T., Nagasaki T., Hossain A., Zaman M., Tanimoto K.: The journal of Hiroshima University dental society, 46(2), 130-135, 2014.
- 5: Automated selection of regions of interest in a computer-aided diagnosis system of osteoporosis using detection of linearly eroded endosteal margin of lower-border of mandible on panoramic radiographs: Nakamoto T, Taguchi A, Asano A, Tanimoto K.: Dental Radiology, 54(2), 15-21, 2014.
- 6 : The extracts of Japanese willow tree species are effective for apoptosis or differentiation of acute myeloid leukemia cells: Fujita K, Nomura Y, Sawajiri M, Mohapatra PK, El-Shemy HA, Nguyen NT, Hosokawa M, Miyashita K, Maeda T, Saneoka H, Fujita S, Fujita T. Pharmacogn Mag. 10(38):125-31. 2014

D) Other Publications

- 1: Radiation effects of heavy ion particles on bone metabolism: M.Sawajiri, Y Nomura, K Maruyama: 2013 Annual Report of the Research Project with Heavy Ions at NIRS-HIMAC: 81-82, 2014

E) Presentation at Scientific Meeting

- 1 : Regional metastases following interstitial brachytherapy for early tongue cancer : Ueda T, Takumida M, Taruya T, Takeno Y, Fujita M, Murakami Y, Nagata Y. : The 38th annual meeting of Japan Society for Head and Neck Cancer(Tokyo), 2014.
- 2 : Improvement of local control rate in Low-dose-rate brachytherapy for Stage I/II tongue cancer by using ultrasonography : Fujita M, Konishi M, Tanimoto K: The 19th congress of clinical imaging for oral and maxillofacial lesions(Okayama), 2014.
- 3 : Radiographic changes of jaw bone after particle radiotherapy for head and neck cancer patient: Konishi M., Suei Y., Fujita M., Nakamoto Y., Tanimoto K.: The 55th annual meeting of Japan Society of Oral and Maxillofacial Radiology (Tokyo), 2014.
- 4: Early Clinical Exposure at Hiroshima University – Patient Imitation Experience to 2nd Grade

- Students —: Konishi M., Nagasaki Y., Sawajiri M., Tanimoto K.: 10th ACOMFR (Bali), 2014.
- 5 : Irradiation Effect on Bone Metastasis of Breast Cancer Cell : Srimawong P., Sawajiri M., Nishikiori R. Terato H., Maruyama K., Tanimoto K., Nishikiori R. Terato H., Maruyama K. The 10th Asian Congress of Oral and Maxillofacial Radiology(Bali)
- 6 : Irradiation Effect on Osteoclastogenesis Stimulated by Breast Cancer Cell: Sawajiri M., Srimawong P., Nishikiori R. Terato H., Maruyama K. The 55th Annual Meeting of The Japan Radiation Research Society (Kagoshima), 2014.
- 7: Relationship between swallowing function and maximum tongue pressure in ALS patients. : Sonoda, Yoshikawa M, Hesaka A, Takagi S, Nakamori M, Nagasaki T , Hosomi N, Tsuga K, Tanimoto K, Matsumoto M, Izumi Y : The 22nd Annual Meeting of the Dysphagia Research, (Tennessee), USA 2014.
- 8: Establishment of upper airway morphological evaluation of the OSA patient by CT. : Yu Matusmura Y, Koh M, Nagasaki T, Ueda H, Tanimoto K : The 73rd Annual Meeting of the Japanese Orthodontic Society, (Chiba), 2014.
- 9: Relationship between the swallowing videoendoscopic findings and the somatosensory test. : Nishimura R, Nagasaki T, Fukada E, Tanimoto K, Hara K, Takemoto T, Amano H, Sugiyama M : The 21st Annual Meeting of Japanese Society of Dental Welfare, (Hiroshima), 2014.
- 10: New advanced computer-aided diagnosis system to screen osteoporosis using dental panoramic radiographs. : Nakamoto T, Zaman MU, Taguchi A, Tanimoto K.: Computer Assisted Radiology and Surgery 28th International Congress and Exhibition (Fukuoka), 2014.

F) Lecture

- 1: Radiographic diagnosis of various clinical cases: Konishi M., 80th Hiroshima university clinical seminar (Hiroshima), 2014.

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

- 1: 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
- 2: 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): ¥900,000.

(6) Patents

- 1: Nomura Y., Sawajiri M.,i: Aqueous solution production technique and water vapor producing device including halogen dioxide: (JP2014-113404) (Medical Environment Techno Co.,Ltd., Mikasa Shoji Co.,Ltd.)
- 2: Nii T., Nomura Y., Sawajiri M.,, Ohata T.: A component for dealing with a tumor, and a manufacturing method for the same (JP2014-113404) (Medical Environment Techno Co.,Ltd.)

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

(1) Staff and Students

Professor : Hideki Shiba
Associate Professor :
Associate Professor : Masashi Fujii
Assistant Professor : Makoto Arakawa, Shigeki Suzuki, Shintaro Nagayasu, Akane Mineoka, Naoyo Motoyama
Resident : Seiji Kobuke
Graduate Student : Sano Tomomi, Atsushi Hashikata, Hiroaki Hoshino

(2) Main Research Activities

- 1: Studies on biological regeneration of dentin/pulp complex and periapical tissues
- 2: Studies on biological obturation of root canals at apical areas.
- 3: Relationship between HIV infection and dental caries
- 4: Development of new therapeutic agent for intractable pain
- 5: Studies on relationship between dental disease and systematic diseases
- 6: Development of new laboratory tests for diagnosis of dental diseases
- 7: Development of new preventive therapies for dental diseases based on new laboratory tests
- 8: Development of new host-noninvasive therapies using lasers

(3) Research Achievements

A) Original Papers (including Case Reports)

- 1: BDNF mimetic compound LM22A-4 regulates cementoblast differentiation via the TrkB-ERK/Akt signaling cascade: Kajiya M., Takeshita K., Kittaka M., Matsuda S., Ouhara K., Takeda K., Takata T., Kitagawa M., Fujita T., Shiba H., Kurihara H.: *Int. Immunopharmacol.*, 19, 245-252, 2014.
- 2: miR-584 expressed in human gingival epithelial cells is induced by *Porphyromonas gingivalis* stimulation and regulates interleukin-8 production via lactoferrin receptor: Ouhara K., Savitri I. J., Fujita T., Kittaka M., Kajiya M., Iwata T., Miyagawa T., Yamakawa M., Shiba H., Kurihara H.: *J. Periodontol.*, 85, 198-204, 2014.

- 3: Amphotericin B down-regulates *Aggregatibacter actinomycetemcomitans*-induced production of IL-8 and IL-6 in human gingival epithelial cells: Imai H., Fujita T., Kajiya M., Ouhara K., Miyagawa T., Matsuda S., Shiba H., Kurihara H.: *Cell Immunol.*, 290, 201-208, 2014.
- 4: Smad2 is involved in *Aggregatibacter actinomycetemcomitans*-induced apoptosis: Yoshimoto T., Fujita T., Ouhara K., Kajiya M., Imai H., Shiba H., Kurihara H.: *J Dent Res.*, 93, 1148-1154, 2014.
- 5: Introduction of a mixture of β -tricalcium phosphate into a complex of bone marrow mesenchymal stem cells and type I collagen can augment the volume of alveolar bone without impairing cementum regeneration: Nagahara T., Yoshimatsu S., Shiba H., Kawaguchi H., Takeda K., Iwata T., Mizuno N., Fujita T., Kurihara H.: *J Periodontol.*, 12, 1-20, 2014.
- 6: Relief of cancer pain by glycine transporter inhibitors: Motoyama N, Morita K, Shiraishi S, Kitayama T, Kanematsu T, Uezono Y, Dohi T.: *Anesth Analg.*, 119(4), 988-95, 2014.
- 7: Palliation of bone cancer pain by antagonists of platelet-activating factor receptor. Morita K, Shiraishi S, Motoyama N, Kitayama T, Uezono Y, Kanematsu T. and Dohi T. *PLoS One*, 9(3): e91746, 2014.
- 8: Wnt Acts as a Pro-Survival Signal to Enhance Dentin Regeneration. Hunter D.J., Bardet C., Mouraret S., Liu B., Singh G., Sadoine J., Dhamdhare G., Smith A., Tran X.V., Joy A., Rooker S., Suzuki S., Vuorinen A., Miettinen S., Chaussain C. and Helms J.A. *J Bone Miner Res.* In press
- 9: Adhesive and migratory effects of phosphophoryn are modulated by flanking peptides of the integrin binding motif. Suzuki S., Kobuke S., Haruyama N., Hoshino H., Kulkarni A. B. and Nishimura F. *PLoS One*. 14;9(11):e112490. 2014.
- 10: The effects of Matrix trioxide aggregate (MTA) on adhesion, migration, and apoptosis of dental pulp cells. Suzuki S., Nagayasu S., Arakawa M., Kobuke S., Hoshino H., Hashikata A., Motoyama T. and Nishimura F. *Jpn J Conserv Dent.* Vol. 57. No. 6. 547-554. 2014.
- 11: A Treatment of a Crowding with Oligodontia by Teeth Autotransplantation. Kojima S., Kaku M., Kubo T., Fjita T., Ono S., Nagayasu S., Kojima S., Sumi H., Shikata H., Yamamoto T., Motokawa M. and Tanimoto K. *J Hiroshima Univ.Dent.Soc.* Vol. 46.No. 2. 156-161. 2014.

B) Review

- 1: Induction of biological pulpal wound healing-SIBLING family: Suzuki S.: *Shikai Tenbou*: 2014-7 Vol. 124 No.1

C) Publications

- 1: Environmental and systemic factors: *The Periodontology* (edited by Yuuichi Izumi, Atsuhiko Kinoshita, Yukihiro Numabe, Matsuo Yamamoto): Fujita T., Shiba H., Kurihara H.: *Nagasueshoten* (Kyoto), 44-45, 57-58, 2014.

D) Other Publications

- 1: 1: The case example of dental practice network for HIV-patients in Hiroshima: The list of case examples of network-construction of dental practice (the revised edition): Welfare Labor Scientific Research in 2014 "Study on construction and maintenance of the medical system for HIV infection: Study on the system of dental practice for HIV infection: Yuuji Usami (the Nagoya Medical Center): Santanda T., Shiba H.: 18-27, 2014.

E) Presentation at Scientific Meeting

- 1: Effects of brain-derived neurotrophic factor on anti-inflammation and bone/dentin-related proteins expression in human pulp cells: Tokunaga N., Takeda K., Kajiya M., Matsuda S., Fujita T., Shiba H., Kurihara H.: 35th Annual Scientific Meeting of JEA (Niigata), 2014.
- 2: BMP-2 expression induced by LL37 in human pulp cells: Khung R., Shiba H., Kajiya M., Ouhara K., Kurihara H.: The 62nd Annual Meeting of the Japanese Division of the IADR (JADR), (Osaka), 2014.
- 3: Problems clarified from questionnaire after HIV dental clinical system construction business by Hiroshima University Hospital: Iwata T., Shiba H., Mastui K., Shintani T., Okada M., Hamamoto K., Unei H., Saito S., Takata N. and Fujii T. The 28th Annual meeting of the Japanese Society for AIDS research.(Osaka), 2014.
- 4: On AUDIT System of Hiroshima Safety Dental service Support network for the prevention of nosocomial infection for the dental clinic: Iwata T., Mizuno N., Nakaoka M., Irie Y., Nagahara T., Shiba H., Sawa A. and Kurihara H. The 29th Annual meeting of the Japanese Society for Infection Prevention and Control.(Tokyo), 2014.
- 5: Evaluation of the association of Serum antibodies to periodontal bacteria and Lifestyle-related diseases—Report on Dental Check-up of Japanese American in Hawaii —: Mineoka A., Nishimura F., Kurihara H.: The 141th Japanese Society of Conservative Dentistry (Yamagata), 2014.
- 6: The role of CCR7 pathway on the pathogenesis of diet-induced obesity and insulin resistance: Tomomi S, Misaki I, Atsushi H, Takanaori S, Shintaro N, Akiko Y, Tomoichiro A, Nishimura F.: The 57th annual meeting of the Japanese society of periodontology (Gifu), 2014.
- 7: The role of CCR7 pathway on the pathogenesis of diet-induced obesity and insulin resistance: Misaki I, Tomomi S, Atsushi H, Takanaori S, Shintaro N, Akiko Y, Tomoichiro A, Nishimura F.: The 57th Annual Meeting of the Japan Diabetes Society (Osaka), 2014.
- 8: The effects of Matrix trioxide aggregate (MTA) on adhesion, migration, and apoptosis of dental pulp cells: Shintaro Nagayasu, Shigeki Suzuki, Hiroaki Hoshino, Seiji Kobuke, Tomotoku Motoyama, Fusanori Nishimura: The Japanese Society of Conservative Dentistry (Yamagata), 2014.
- 9: Usefulness of TCV-309, a selective Platelet-Activating Factor (PAF) antagonist, on chemotherapeutic agents-induced painful neuropathy: Naoyo Motoyama, Katsuya Morita, Hidemi

Kurihara, Toshihiro Dohi: The Japanese Society of Conservative Dentistry (Yamagata), 2014.

- 10: Selective Platelet-Activating Factor(PAF) antagonists as a potential therapeutic strategy for chemotherapeutic agents-induced painful neuropathy: Naoyo Motoyama, Katsuya Morita, Hidemi Kurihara, Toshihiro Dohi : The 34st Annual Meeting of the Japanese Society of Oral Therapeutics and Pharmacology (Osaka), 2014.
- 11: A proposal of translational research aiming at the support care of patients with cancer, Improvement of bone cancer pain by antagonists of platelet-activating factor (PAF) receptor: Katsuya Morita, Naoyo Motoyama, Seiji Shiraishi, Toshihiro Dohi: The 87th Annual Meeting of the Japanese Pharmacological Society JPS Symposia S3D-32 (Sendai), 2014.

F) Special lectures in academic meetings

- 1: Information concerning performance of countermeasure for HIV infection in the Chugoku and Shikoku areas: Shiba H.: The first Liaison Council of AIDS treatment between AIDS core hospitals in the Chugoku and Shikoku areas (Okayama), 2014.
- 2: The present conditions and network-construction of the dental practice for the HIV-infected patients: Shiba H.: 2014-AIDS workshop in Hiroshima University Hospital (Hiroshima), 2014.

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

- 1: Grant-in-Aid for Scientific Research(C) : Shiba H. Usefulness of the beads which consist of three regenerative elements which can be given a three-dimensional form in the severe destruction of periodontal tissues: No.24593122 ¥ 1,500,000
- 2: Research grants: Grants for research received from Hiroshima Prefecture: Shiba H. Study on network-construction of dental practice for HIV infection: ¥ 3,000,000
- 3: Grants-in-Aid for Young scientists(B): Suzuki S. Induction of pulpal wound healing by enhanced integrin-mediated signaling brought about by the amino acid cleavage at the sites close to the integrin-binding domain: No.268615950 ¥ 1,500,000
- 4: Grant-in-Aid for Scientific Research(C): Fujii M., The development of biological direct pulp capping materials targeting for Wnt signaling: No. 24592868 ¥ 900,000
- 5: Grant-in-Aid for Young scientists(B) : Nagayasu S., Search of the TNF - α instruction factor produced by dental pulp cell: No. 26861596 ¥ 1,500,000

(5) Academic Awards, etc.

(6) Patents

- 1: Kurihara H., Kawaguchi H., Takeda K., Shiba H., Mizuno N., Yoshino H., Hasegawa N., Shinohara H.: Remedy and therapeutic method for periodontal diseases and pulpal diseases (Registration number 2460528) (Patent applicant, TWO CELLS Co., Ltd., Kurihara H.)

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

(1) Staff and Students

Professor	: Katsuyuki Kozai.
Associate Professor	: Chieko Mitsuhata (~February)
Lecturer	: Chieko Mitsuhata (~January)
Research Associate	: Yasutaka Kaihara, Meiko Tachikake (April~), Noriko Niizato (~ August) : Ryoko Hirata (January~March), Yukari Ohara, Yukiko Konishi (April~) : Ayumi Shimada (October~)
Physician	: Nami Miyake, Ryoko Hirata (April~), Yukiko Konishi (~March) : Ayumi Shimada(~September), Yuko Iwamoto (April~), Noriko Goto (April~)
Graduate Student	: Aomin (~March), Yuko Iwamoto(~March), Noriko Goto(~March) : Mega Moeharyono Putteri(~September), Nobuyuki Tatsukawa, Kaoru Sakurai
Visiting Research Scholar:	Hu Yiqun
Research Student	: Akira Yamane
Clinical Trainee	: Fumiko Hayashi, Akemi Hirosumi(~March), Masafumi Kitamoto (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

(3) Research Achievements

A) Original Papers (including Case Reports)

- 1 : Kaihara Y., Katayama A., Ono K., Kurose M., Toma K., Amano H., Nikawa H., Kozai K.: Comparative analyses of pediatric dental measurements using plaster and three-dimensional digital models.: *Eur J Paediatr Dent*, 15(2), 137-142, 2014.
- 2 : Kaihara Y., Katayama A., Iwamae S., Kihara T., Ono K., Kurose M., Amano H., Nikawa H., Kozai K.: Application of three-dimensional digital models for the morphometric analysis of pre-dentition plasters: accuracy and precision.: *Eur J Paediatr Dent*, 15(4), 360-366, 2014.
- 3 : Mitsuhata C., Konishi Y., Kaihara Y., Kozai K.: Effective appliances to improve ectopic eruption of mandibular first molar permanent teeth.: *Eur J Paediatr Dent*, 15(2), 181-183, 2014.
- 4 : Mitsuhata C., Puteri M.M. Tatsukawa N., Kozai K.: Possible involvement of enolase to fluoride resistance in *Streptococcus mutans*.: *Pediatric Dental Journal*, 24(1), 12-16, 2014.
- 5 : Mtsuhata C.,Irie Y., Nakaoka M., Konishi Y., Shimada A. and Kozai K: Effectiveness of aspartate aminotransferase as a marker of periodontal disease in children and adolescents.: *Pediatric Dental Journal*, 24(1), 17-21, 2014.
- 6 : Tachikake-Kuramoto M., Suzuki J., Wang Y., Mitsuhata C., Kozai K.: Lipopolysaccharide derived from *Aggregatibacter actinomycetemcomitans* inhibits differentiation of osteoblasts.: *Pediatric Dental Journal*, 24(2), 83-88, 2014.
- 7 : Ao M., Miyauchi M., Inubushi T., Kitagawa M., Furusho H., Ando T., Ayuningtyas N.F., Nagasaki A., Ishihara K.,Tahara T., Kozai K., Takata T.: Infection with *Porphyromonas gingivalis* Exacerbates Endothelial Injury in Obese Mice.: *PLoS One*.: 2014 Oct 21;9(10):e110519., 2014.
- 8 : Hirata R.,Kaihara Y., Miyake N., Sakurai K., Mitsuhata C., Amano H., Kozai K.: Individualized support based on characteristics of patients with autistic spectrum disorder in pediatric practice. : *The Japanese Journal of Pediatric Dentistry*: 52(1), 90-96, 2014.
- 9 : Shimada A., Kozai K., Kaihara Y., Mitsuhata C.: A survey of actual status of new patients with dental caries at pediatric clinic of university hospital. — A state to be gathered by patients with referral letters from general dental practitioners — : *J. Hiroshima Univ. Dent. Soc.*, 46(2), 123-129, 2014.

B) Review

- 1 : Kozai K.: Special Issue Prevention of adult disease and lifestyle disease from childhood: Prevention and treatment of periodontal diseases in children:*The Journal of Adult Diseases*, 44(1), 70-74, 2014
- 2 : Kozai K.: Dental treatment and welfare: *Japanese Journal of Dental Welfare*, 19(1), 1-3, 2014.

C) Publications

- 1 : Saliva and Oral Health (4th Edition) Michael Edgar, Colin Dawes and Denis O'Mullane: Kozai K., Mitsuhashi C.(translator), Watanabe S.(supervisor of the translation project) : Ishiyaku Publisher, Inc.(Tokyo), 98-115, 2014.

D) Other Publications

- 1 : Kozai K.: Special Issue: Prevention of adult disease and lifestyle disease from childhood: Prevention and treatment of periodontal diseases in children : The Journal of Adult Diseases, QUINT, 222, 1, 2014.

E) Presentation at Scientific Meeting

- 1 : Development of patient guiding system in large-scale dental clinical area of hospital using appointment data. : Hiasa K., Tanaka T., Sasahara H., Arakawa M., Uchida Y., Yoshioka Y., Nabeshima T., Nakagawa T., Morita K., Tanimoto K., Kaihara Y., Nakamoto T., Doi R., Okada M., Nishi H., Hayashi K., Kitagawa M., Kubo T., Kazitani K., Yamamoto A., Miyashita A, Takeda S., Kajihara S., Tonomura Y., Hachisuga K., Okita N., Sanbuichi T., Yamada F., Nakayama H., Tankmoto K., Kurihara H.: 2014 The Joint Conference on Medical Information Management of University Hospitals (Tokushima), 2014.
- 2 : Three dimensional analyses of palates and alveolar ridges from pre-dentition period.: Iwamae S., Kaihara Y., Kambe C., Kihara T., Niizato N., Kuwahara M., Amano H., Nikawa H., Kozai K.: The 52nd Congress of Japanese Society of Pediatric Dentistry (Tokyo), 2014.
- 3 : The functional role of MSX1 in dental pulp stem cells from deciduous teeth.: Goto N., Kozai K.: The 52nd Congress of Japanese Society of Pediatric Dentistry (Tokyo), 2014.
- 4 : Regulatory system of Staphylococcus aureus exfoliative toxin causes blisters in newborns and young children: Iwamoto Y., Tatsukawa N., Niizato N., Kozai K.: The 52nd Congress of Japanese Society of Pediatric Dentistry (Tokyo), 2014.
- 5 : Trial of study meeting of oral care by dental hygienists in ward for children inpatients.: Kawagoe M., Irie Y., Kaihara Y., Hirata R., Niizato N., Nakaoka M., Mitsuhashi C., Kozai K.: The 52nd Congress of Japanese Society of Pediatric Dentistry (Tokyo), 2014.

- 6: A case of long-term management for a patient with leprechaunism: Goto N., Ohara Y., Niizato N., Mitsuahata C., Kozai K.: The 33rd Congress of Japanese Society of Pediatric Dentistry Chushikoku Branch (Matsuyama), 2014.
- 7: A study on factors relating transmission of mutans streptococci: Puteri M. M., Mitsuahata C., Ohara Y., Shimada A., Kozai K.: The 33rd Congress of Japanese Society of Pediatric Dentistry Chushikoku Branch (Matsuyama), 2014.
- 8: Child care support for preventing child abuse 3.Efforts of pediatric dentistry: Kaihara Y.: The 39th meeting of The Hiroshima Shouni Hoken Kennkyukai (Hiroshima), 2014.
- 9: The homeobox transcription factor MSX1 regulates odontogenic/osteogenic differentiation of human dental pulp stem cells: Goto N., Fujimoto K., Ida-Yonemochi H., Ohshima H., Kawamoto T., Noshiro M., Shukunami C., Kozai K., Kato Y.: The 87th Annual Meeting of the Japanese Biochemical Society (Kyoto), 2014.
- 10: Odontogenic/osteogenic differentiation is regulated by the homeobox transcription factor MSX1 in human dental pulp stem cells: Goto N., Fujimoto K., Ida-Yonemochi H., Ohshima H., Kawamoto T., Noshiro M., Shukunami C., Kozai K., Kato Y.: The 15th Locomotor Science Meeting (Tokyo), 2014.
- 11: MEPE-ASARM, a substrate of Phex, decreases bone volume independently of serum phosphate levels. Sakurai K., Minamizaki T., Yoshioka H., Takei Y., Kozai K., Yoshiko Y.: The 32nd Annual Meeting of the Japanese Society for Bone and Mineral Research (Osaka), 2014.
- 12: MEPE-ASARM decreases bone volume independently of serum phosphate levels: Sakurai K., Minamizaki T., Kawamoto M., Yoko F., Takei Y., Yoshioka H., Okada M., Kozai K., Yoshiko Y.: The 69th Annual Meeting of Chugoku/Shikoku Branch of The Japanese Association of Anatomists (Hiroshima), 2014.
- 13: A case of the unerupted maxillary right central incisor: Sakurai K., Mitsuahata C., Iwamoto Y., Konishi Y., Kozai K.: The 26th Japanese Society of Pediatric Oral and Maxillofacial Surgery (Utsunomiya), 2014.
- 14: The management of oral health in a patient with myelodysplastic syndrome (MDS) associated with graft-versus-host disease (GVHD) after hematopoietic stem cell transplantation: Irie Y., Ohara Y., Mitsuahata C., Nakaoka M., Kozai K.: The 31st Annual Meeting of The Japanese Society for Disability and Oral Health (Sendai), 2014.
- 15: Imaging Mass Spectrometry-based Molecular Histology of Klotho-Deficient Mice with a Syndrome Resembling Human Premature Aging.: Fujino Y., Sakurai K., Kozai K., Okada M.: The 31st Annual Meeting of The Japanese Society for Disability and Oral Health (Sendai), 2014.
- 16: MEPE-ASARM, a substrate of Phex, decreases bone volume independently of serum phosphate levels.: Sakurai K., Minamizaki T., Yoshioka H., Takei Y., Kozai K., Yoshiko Y.: ASBMR2014 Annual Meeting (Houston), 2014.

- 17: Skip, a cell wall protein of *S. aureus* for biphasic skin adhesion strategies.: Hisatsune J., Murakami T., Kojima T., Tatsukawa N., Yamada S., Sugai M.: The 87th Annual Meeting of Japanese Society for Bacteriology (Tokyo), 2014.
- 18: Regulatory mechanism of cell wall protein Skip in *Staphylococcus aureus*.: Tatsukawa N., Hisatsune J., Hayashi I., Kozai K., Sugai M.: The 87th Annual Meeting of Japanese Society for Bacteriology (Tokyo), 2014.
- 19: Regulatory mechanism of cell wall protein Skip in *Staphylococcus aureus*: Tatsukawa N., Hisatsune J., Hayashi I., Kozai K., Sugai M.:The 16th International Symposium on Staphylococci and Staphylococcal Infections (Chicago), 2014.
- 20: Skip, a cell wall protein of *S. aureus* for biphasic skin adhesion strategies.: Hisatsune J., Murakami T., Kojima T., Tatsukawa N., Yamada S., Sugai M.: The 16th International Symposium on Staphylococci and Staphylococcal Infections (Chicago), 2014.
- 21: Regulatory mechanism of cell wall protein Skip in *Staphylococcus aureus*: Tatsukawa N., Hisatsune J., Hayashi I., Kozai K., Sugai M.: The 47th Congress of The Hiroshima University Dental Society (Hiroshima), 2014.
- 22: Regulatory mechanism of cell wall protein Skip in *Staphylococcus aureus*: Tatsukawa N., Hisatsune J., Hayashi I., Kozai K., Sugai M.:The 67th Annual Meeting of the Japanese Society for Bacteriology Chugoku-Shikoku Branch meeting (Tokushima), 2014.
- 23: Dental support activities to establish the self-sufficing dental services in Cambodia: Iwamoto Y., Iwamoto A., Niizato N., Hirata R., Amano H., Kozai K.: The 21st General Session and Exhibition of Japanese society of Dental Welfare (Hiroshima), 2014.
- 24: The case report of the malposition of permanent tooth germs associated with the traumatic injure to the deciduous teeth occurred at 3 years of age.: Iwamoto Y., Hirata R., Mitsuhata C., Kozai K.: The 53rd Scientific Meeting of Hiroshima Prefecture Dental Association (Hiroshima), 2014.
- 25: Inhibitory effect of strained wine lees extract on caries prevention : Shimazu K., Konishi T, Ohara Y., Hazama K., Mitsuhata C., Kozai K.:The 61st The Japanese Society of Food Science andTechnology (Fukuoka), 2014.

F) Special lectures in academic meetings

- 1: The Special lecture:The environment surrounding children and dental treatment: Kozai K.: The 21st General Session and Exhibition of Japanese society of Dental Welfare, Hiroshima University (Hiroshima), 2014.

- 2: 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), 2014.
- 3: 2014 The seminar for graduate held by the reunion of Faculty of Dentistry, Hiroshima University: For reliable pediatric dental practice: Kozai K., Nakaoka M.: Essor Hiroshima (Hiroshima), 2014.
- 4: 2014 The recurrent seminar for dental hygienist: The treatment of malocclusion in children—The basic concept for management of the developing dentition and occlusion—: Kozai K.: Faculty of Dentistry, Hiroshima University (Hiroshima), 2014.
- 5: 2014 The seminar of Hiroshima dental association: Response of oral injuries of children in school dental health: Kozai K.: Hiroshima-ken shikaishi kaikan Harmony hall (Hiroshima), 2014.
- 6: The seminar for certifying physician of the Japan Association of Dental Traumatology: Oral injuries of children associated with raising environment —Focusing on initial treatment—: Kozai K.: Hiroshima University (Hiroshima), 2014.
- 7: 2014 The seminar for school nurse of Higashihiroshima City: Living powers are promoted by oral health: Kozai K.: Hiroshima-ken Gakko kyushoku sougou center (Higashihiroshima), 2014.
- 8: 2014 The academic meeting of the Aki Dental Association: Pediatric dentistry in an aging society with a declining birthrate: Kozai K.: Hiroshima-ken shikakokuho kaikan (Hiroshima), 2014.

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

- 1 : 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.
- 2 : Grant-in-Aid for Scientific Research (B): Niizato N.: Clinical evaluation and Explication of mechanism of the Prevention program adapting 3DS from the systemic bacterial infection. (No. 26861789), 2014 direct expenses: ¥1, 500,000, indirect expenses: ¥450,000.
- 3 : Ryokufu Association Education and Research Award (young researchers grant): Tatsukawa N., Isolation and Characterization of *Staphylococcus aureus* from pediatric oral, 2014: ¥500,000.
- 4 : Grant-in-Aid for Scientific Research (Challenging Exploratory Research): Kozai K.: Effects of endocrine disorders on developing dopaminergic system in Brain (No. 24659911), 2014 direct expenses: ¥700,000, indirect expenses: ¥210,000.

(5) Academic Awards, etc.

- 1 : Nobuyuki Tatsukawa: Student Excellence Award at the 68th Annual Meeting of the Japanese Society for Bacteriology Chugoku-Shikoku Branch meeting, 2014.

(6) Patents

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

(1) Staff and Students

Professor	: Irifune Masahiro, D.D.S., Ph.D.
Lecturer	: Yoshida Mitsuhiro, 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.
Graduate Student	: Oue Kana, D.D.S., Ishii Hiroaki, D.D.S., Yoshinaka Taiga, D.D.S., Uno Tamayo, D.D.S., Maetani Yuka, D.D.S., Ogawa Yuya, D.D.S., Kikuchi Yuka, D.D.S., Oda Aya, D.D.S., Yamashita Mieko, D.D.S. (temporary withdrawal)
Clinical Trainee	: Kawahara Michio, M.D., Ph.D., Katayama Sohtaro, D.D.S., Ph.D., Kawahara Toshiya, D.D.S., Nishinakamura Ryo, D.D.S., Fukushima Reiko, D.D.S., Yasusaka Masaki, D.D.S., Miyauchi Miwa, D.D.S., Ph.D.

(2) Main Research Activities

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

(3) Research Achievements

A) Original Papers (including Case Reports)

- 1: Pain control in a patient with central post-stroke pain who suffered from allodynia during feeling of

- anxiety: Doi M, Ishii H, Ogawa Y, Maetani Y, Oue K, Miyahara T, Irifune M: *Journal of Japanese Dental Society of Anesthesiology*, 42 (2), 204-207, 2014.
- 2: Phospholipase C-related catalytically inactive protein (PRIP) regulates lipolysis in adipose tissue by modulating the phosphorylation of hormone-sensitive lipase: Okumura T, Harada K, Oue K, Zhang J, Asano S, Hayashiuchi M, Mizokami A, Tanaka H, Irifune M, Kamata N, Hirata M, Kanematsu T: *PLoS One*, 9(6), e100559, 2014.
 - 3: Perioperative general management for a patient with suspicion of mitochondrial encephalomyopathy underwent upper and lower jawbones movement: Yamashita M, Yoshida K, Ogawa Y, Mukai A, Miyauchi M, Shimizu Y, Irifune M: *Journal of Japanese Dental Society of Anesthesiology*, 42 (3), 285-286, 2014.
 - 4: An appropriate compression pace is important for securing the quality of hands-only CPR --a manikin study: Shimizu Y, Tanigawa K, Ishikawa M, Ouhara K, Oue K, Yoshinaka T, Kurihara H, Irifune M: *Hiroshima J Med Sci*. 63(1-3), 7-11, 2014.
 - 5: General anesthesia in a patient with allergies to multiple drugs: Yamashita M, Yoshida K, Miyauchi M, Kikuchi Y, Yoshinaka T, Mukai A, Doi M, Irifune M: *Journal of Japanese Dental Society of Anesthesiology*, 42 (5), 625-629, 2014.
 - 6: Perioperative management of a patient with protein S syndrome underwent mandibular resection and reconstruction by the left fibula flap: Ogawa Y, Mukai A, Oda A, Kikuchi Y, Miyauchi M, Yoshida K, Irifune M: *Journal of Japanese Dental Society of Anesthesiology*, 42 (5), 642-643, 2014.
 - 7: A clinicostatistical study on the management of general anesthesia and intravenous sedation for disabled patients in the Department of Dental Anesthesiology, University Hospital: Mukai A, Yoshida K, Yamashita M, Uno T, Yoshinaka T, Irifune M: *Journal of the Japanese Society for Disability and Oral Health*, 35 (4), 657-661, 2014.

B) Review

C) Publications

- 1: Bronchial asthma; A how-to book on medicine used in dental treatments 2015-2018 (eds., Kaneko A, Suda H, Sano K, Shibahara T, Kawabe R): Irifune M: *Dental Diamonds Publisher (Tokyo)*, 326-327, 2014.
- 2: Cerebrovascular disease; A how-to book on medicine used in dental treatments 2015-2018 (eds., Kaneko A, Suda H, Sano K, Shibahara T, Kawabe R): Irifune M: *Dental Diamonds Publisher (Tokyo)*, 328-329, 2014.

D) Other Publications

- 1: New hope -Hiroshima University-: Ogawa Y, Maetani Y: Journal of Japanese Dental Society of Anesthesiology, 42 (1), 145-146, 2014.
- 2: New hope afterward -Hiroshima University-: Ishii H: Journal of Japanese Dental Society of Anesthesiology, 42 (5), 695, 2014.

E) Presentation at Scientific Meeting

- 1: Oral assessment and management of patients undergoing hematological malignancies treatments: Nishi H, Kuroda Y, Takamoto A, Ota K, Kitagawa M, Kikushige N, Irifune M, Ohge H, Kurihara H, Ichinohe T, Ogawa T: The 36th Annual Meeting of the Japan Society for Hematopoietic Cell Transplantation (Ginowan), 2014.
- 2: Mice lacking phospholipase C-related but catalytically inactive protein (PRIP) are protected from high-fat diet-induced obesity: Oue K, Irifune M, Kanematsu T: The 47th Scientific Meeting of Hiroshima University Dental Society (Hiroshima), 2014.
- 3: A case of hyperthyroidism who was diagnosed according to the preanesthetic evaluation: Oda A, Yoshida K, Kikuchi Y, Ogawa Y, Maetani Y, Uno T, Yamashita M, Yoshinaka T, Yasusaka M, Ishii H, Oue K, Miyahara T, Miyauchi M, Mukai A, Doi M, Shimizu Y, Yoshida M, Irifune M: The 29th Scientific Meeting of Dental Anesthesiology in Chugoku and Shikoku branch (Tokushima), 2014.
- 4: A case of hemochromatosis-induced cardiomyopathy underwent extraction of a tooth under intravenous sedation: Maetani Y, Shimizu Y, Ishii H, Uno T, Yoshinaka T, Ogawa Y, Oda A, Kikuchi Y, Irifune M: The 29th Scientific Meeting of Dental Anesthesiology in Chugoku and Shikoku branch (Tokushima), 2014.
- 5: A case suffered from anaphylaxis during subcutaneous test of amid-type local anesthetics: Kikuchi Y, Yamashita M, Yoshida K, Oda A, Ogawa Y, Maetani Y, Uno T, Yoshinaka T, Yasusaka M, Ishii H, Oue K, Miyahara T, Miyauchi M, Mukai A, Doi M, Shimizu Y, Yoshida M, Irifune M: The 29th Scientific Meeting of Dental Anesthesiology in Chugoku and Shikoku branch (Tokushima), 2014.
- 6: The person feels the pain to be strong by the induced emotion from the anger face: Doi M, Yoshimura S, Tanaka K, Sasahara H, Irifune M: The 42th Annual Meeting of Japanese Dental Society of Anesthesiology (Niigata), 2014.
- 7: A study on effects of personal cognitive characteristics on subjective strength of chronic or acute pain: Doi M, Yoshimura S, Tanaka K, Sasahara H, Irifune M: The 42th Annual Meeting of Japanese Dental Society of Anesthesiology (Niigata), 2014.
- 8: Nociceptive stimulation enhances dopamine release in the nucleus accumbens of mice under pentobarbital sedation, but decreases under loss of the righting reflex: Ishii H, Irifune M: The 42th Annual Meeting of Japanese Dental Society of Anesthesiology (Niigata), 2014.

- 9: Perioperative anesthetic management of a patient with myelodysplastic syndromes underwent long oral surgery operation: Maetani Y, Shimizu Y, Oda A, Kikuchi Y, Ishii H, Mukai A, Yoshida K, Irifune M: The 42th Annual Meeting of Japanese Dental Society of Anesthesiology (Niigata), 2014.
- 10: A case of difficult anesthetic management planning for a patient with an allergy to multiple drugs: Yamashita M, Yoshida K, Miyauchi M, Kikuchi Y, Yoshinaka T, Mukai A, Doi M, Irifune M: The 42th Annual Meeting of Japanese Dental Society of Anesthesiology (Niigata), 2014.
- 11: A case of general anesthesia in which vision was preserved of autism: Shimizu Y, Yoshinaka T, Miyahara T, Nishinakamura R, Doi M, Mukai A, Irifune M: The 42th Annual Meeting of Japanese Dental Society of Anesthesiology (Niigata), 2014.
- 12: Perioperative anesthetic management of a patient with Protein S syndrome underwent mandibular resection and reconstruction by a fibula flap for ameloblastoma: Mukai A, Ogawa Y, Maetani Y, Uno T, Yoshinaka T, Yoshida K, Irifune M: The 42th Annual Meeting of Japanese Dental Society of Anesthesiology (Niigata), 2014.
- 13: Simulated training of hands-only CPR for dental students : Shimizu Y, Oue K, Yoshinaka T, Doi M, Yoshida M, Irifune M : The 7th Annual Meeting of the Federation of Asian Dental Anesthesiology Societies, Niigata, Japan, 2014.
- 14: The anesthetic management of a patient with Rubinstein-Taybi syndrome during dental treatment: Mukai A, Yoshinaka T, Uno T, Yamashita M, Oda A, Yoshida K, Yoshida M, Irifune M: The 31st Annual Meeting of the Japanese Society for Disability and Oral Health (Sendai), 2014.
- 15: The evaluation of pre-anesthetic screening test in dental patients with intellectual disability: Yoshida K, Mukai A, Oda A, Uno T, Yamashita M, Yoshinaka T, Kanda T, Yoshida M, Irifune M: The 31st Annual Meeting of the Japanese Society for Disability and Oral Health (Sendai), 2014.

F) Special lectures in academic meetings

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

- 1: Grant-in-Aid No. 24593056 for Scientific Research (C) from the Ministry of Education, Culture, Sports, Science, and Technology of Japan (Continued): Shimizu Y: Development of a novel general anesthetic method applying selective dopamine receptor subtype ligands. ¥800,000.

(5) Academic Awards, etc.

(6) Patents

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Integrated Health Sciences

Department of International Collaboration Development for Dentistry

(1) Staffs and Students

Professor:	Koichi Kato (Chair of ICDD Committee) Takashi Takata (Chair of ICDD Committee; -March)
Associate Professor:	Ketut Suardita (Specially appointed; -March)
Lecturer:	Hiroko Oka (Specially appointed; April-)
Assistant Professor:	Phuong Thao T Nguyen (Specially appointed; April-) Hiroko Oka (Specially appointed; -March)

(2) Main Research Activities

- 1 : Development and evaluation of dental education program cooperated with Asian countries
- 2 : Development and evaluation of Japanese-English dual linguistic education system
- 3 : Study on international exchange program
- 4 : Study on contribution to international community through dentistry

(3) Research Achievements

A) Original Papers (including Case Reports)

- 1 : F-spondin Inhibits Differentiation of Clastic Precursors via LRP8: Hiroko Oka, Masae Kitagawa, Takashi Takata: Journal of Periodontology [Posted online on October 9, 2014.]
- 2 : The FGFR1 inhibitor PD173074 induces mesenchymal-epithelial transition through the transcription factor AP-1: Phuong Thao Nguyen *et al.* British Journal of Cancer. 109(8):2248-2258, 2013.

B) Review

C) Publications

D) Other Publications

E) Presentation at Scientific Meeting

- 1 : Assessment of academic preparation and motivation to create a standard of entry behavior for International Dental Course Program at Faculty of Dentistry Hiroshima University: Ketut Suardita, Hiroko Oka, Takashi Takata, Darmawan Setijanto, Motoyuki Sugai: 16th Ottawa Conference (Ottawa, Canada), 2014.
- 2 : Interim assessment of educational program for undergraduate dental students with Japanese-English dual linguistic education system at Hiroshima University (the first and the second year): Hiroko Oka, Ketut Suardita, Takashi Takata, Hiroki Nikawa, Koichi Kato, Motoyuki Sugai: 16th Ottawa Conference (Ottawa, Canada), 2014.
- 3 : Web learning facilitated the exchange students' achievement in an international short-term exchange program: Hiroko Oka, Phuong Thao Nguyen, Koichi Kato: The 47th Congress of the Hiroshima University Dental Society (Hiroshima), 2014.
- 4 : Assessment of Japanese-English dual linguistic education system at HUD-Feedbacks from the lecturers about present conditions and handlings -: Motoyuki Sugai, Hiroko Oka, Ketut Suardita, Phuong Thao Nguyen, Takashi Takata, Koichi Kato, Hiroki Nikawa: The 33th Annual Academic Meeting of Japanese Dental Education Association (Kitakyushu), 2014.
- 5 : Assessment of Japanese-English dual linguistic education system at HUD-Study on the factors students expect for the present lectures/ practices-: Hiroko Oka, Ketut Suardita, Phuong Thao Nguyen, Takashi Takata: The 33th Annual Academic Meeting of Japanese Dental Education Association (Kitakyushu), 2014.
- 6 : Views of dental students in the home countries of International Dental Course students-Survey for dental students in Airlangga University, Indonesia-: Yukako Takigawam Minami Kato, Tomoyuki Tanji, Ketut Suardita, Hiroko Oka, Takashi Takata: The 33th Annual Academic Meeting of Japanese Dental Education Association (Kitakyushu), 2014.
- 7 : The activity in a primary school by dental students – An extracurricular activity with HUD regular program students and international undergraduates: Minami Kato, Kana Okamoto, Karina Erda Saninggar, Nadia Kinanthi, Nguyen Thi Dung, Hiroko Oka, Takashi Takata: The 33th Annual Academic Meeting of Japanese Dental Education Association (Kitakyushu), 2014.
- 8 : Hiroshima University Short-term International Study Program “Overview of Dental Sciences” 2013 for mutual exchanges: Kana Okamoto, Hiroko Oka, Takashi Takata, Motoyuki Sugai: The 33th Annual Academic Meeting of Japanese Dental Education Association (Kitakyushu), 2014.

F) Special lectures in academic meetings and extension lectures

- 1 : Go through International : Hiroko Oka, Phuong Thao T Nguyen : Hiroshima University Open Lecture for High School-Students : Hiroshima University School of Dentistry (Hiroshima), July 30, 2014.
- 2 : Way to enter globalization era in dentistry : Ketut Suardita: Niigata University (Niigata), 2014.

- 3 : Way to enter globalization era in dentistry : Ketut Suardita: Tohoku University (Sendai), 2014.
- 4 : Way to Enter Globalization Era in Dentistry-Globalization in Dentistry-: Phuong Thao T Nguyen: Niigata University (Niigata), December 12, 2014.
- 5 : Way to Enter Globalization Era in Dentistry-Challenges at Universities in Japan: Hiroko Oka: Niigata University (Niigata), December 12, 2014.
- 6 : Way to Enter Globalization Era in Dentistry-Globalization in Dentistry-: Phuong Thao T Nguyen: Tohoku University (Sendai), December 19, 2014.
- 7 : Way to Enter Globalization Era in Dentistry-Challenges at Universities in Japan: Hiroko Oka: Tohoku University (Sendai), December 19, 2014.

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

- 1 : Hiroshima University Educational Research 2014 : Miyuki Goto, Hiroko Oka, Shinichi Amano, Phuong Thao T Nguyen, Koichi Kato : What Impact on Awareness of Oral Health—A Pilot Study of an Exchange Program between International Dental Course Students and Elementary School Students—. (No.16). ¥147,680.

(5) Academic Awards, etc.

- 1 : Ketut Suardita : Incentive Award for the Presentation at international Academic Meetings, Japanese Dental Education Association, July 4, 2014.
- 2 : Hiroko Oka : Incentive Award for the Presentation at international Academic Meetings, Japanese Dental Education Association, July 4, 2014.

(6) Patents

(7) Others

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

- 1 : **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.
- 2 : **Short Stay Program (JASSO) : 6 students** (2 students; Airlangga University, Indonesia: 2 students; University of Medicine and Pharmacy at HoChiMinh City, Vietnam: 1student; Chulalongkorn

- University, Thailand: 1 student; Khon Kaen University, Thailand): 6 months, Oct. 2014-March 2015.
- 3 : **The international short exchange program 2014 July: 4 students** (Taipei Medical University, Taiwan) : 4days, 2014.
- 4 : **The international short exchange program 2014 Augsut:11 students** (Trisakti University, Indonesia): 2days, 2014.
- 5 : **Short Stay Program (JASSO+Others) : 18 students** (5 students; Airlangga University, Indonesia: 2 students; Chulalongkorn University, Thailand: 2 students, Khon Kaen University, Thailand: 3 students; University of Medicine and Pharmacy at HoChiMinh City, Vietnam: 2 students; University of Health Science, Cambodia: 2student; Wonkwang University, Korea): 10 days, 2014.
- 7 : **International Dental Course 2015: 3 students** (Airlangga University, Indonesia; University of Medicine and Pharmacy at HoChiMinh City, Vietnam; University of Health Science, Cambodia): 2014.
- 6 : **International Dental Course 2014: 3 students** (Airlangga University, Indonesia; University of Medicine and Pharmacy at HoChiMinh City, Vietnam; University of Health Science, Cambodia): 2014.
- 8 : **International Dental Course 2013: 3 students** (Airlangga University, Indonesia; University of Medicine and Pharmacy at HoChiMinh City, Vietnam; University of Health Science, Cambodia): 2014.
- 9 : **International Dental Course 2012: 3 students** (Airlangga University, Indonesia; University of Medicine and Pharmacy at HoChiMinh City, Vietnam; University of Health Science, Cambodia): 2014.
- 10 : **Science without Borders: 1 student** (University of Sao Paulo, Brazil): 1 year, April. 2014-March 2015.

B) Homepage of International Program

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

C) Supporting the International Research Exchange Program

- 1 : SAKURA Science plan (JST): 10 members: 3 days.
- 2 : The Staff Exchange Program: 4 members (from Faculty of dentistry Airlangga University, Indonesia): 8 days

Integrated Health Sciences

Department of Public Oral Health

(1) Staffs and Students

Professor : Masaru Sugiyama

Associate Professor : Maki Nosou, Atsushi Shimazu (Department)

Assistant Professor : Akemi Naitou, Rumi Nishimura

Graduate Student : Yuko Kimura, Chie Yoshinaga

Undergraduate Student: Sayoko Mouri, Yurina Nakagawa, Hitomi Tsurusaki, Hisaka Matsubara, Ayaka Yoshimoto, Yoshino Kamite, Sato Iwasaki (4th grade student), Yoshino Kaneyasu, Nanami Hirano, Chiharu Fujimoto, Sayaka Abe, Nozomi Katou, Miyako Sasaki, Emi Yamashiro, Rina Hayashi, Chika Kuwahara (3rd grade student)

(2) Main Research Activities

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

(3) Research Achievements

A) Original Papers (including Case Reports)

- 1 : A dental health examination and non-smoking education for the university new students by the training dentists.: Sasahara H, Ohto T, Shimazu A, Nikawa T, Sugiyama M.: Journal of Japanese Dental Education 30(1), 35-43, 2014.
- 2 : The intention for the occupation and the real employment situation of oral health engineering students.: Sasahara H., Satoda T, Murayama T, Tamamoto M, Shimazu A, Taji T, Nikawa H.: Journal of Japanese Dental Education 30(2), 69-80, 2014.
- 3 : Elevation in 5-FU-induced apoptosis in Head and Neck Cancer Stem Cells by a combination of CDHP and GSK3 β inhibitors. Shigeishi H, Biddle A, Gammon L, Rodini CO, Yamasaki M, Seino S, Sugiyama M, Takechi M, Mackenzie IC. J Oral Pathol Med. (Epub 2014 Aug 28)
- 4 : Clinicopathological analysis of salivary gland carcinomas and literature review. Shigeishi H, Ohta K, Okui G, Seino S, Yamasaki M, Yamamoto K, Ishida Y, Sasaki K, Naruse T, Rahman MZ, Uetsuki R,

Nimiya A, Ono S, Shimasue H, Higashikawa K, Sugiyama M, Takechi M. Mol Clin Oncol. (Epub 2014 Oct 9)

B) Review

C) Publications

- 1 : 2) Heart Disease and Oral Cavity; Assessment and Improvement of Oral Function: Sugiyama M: Ishiyaku Publishers Inc., Tokyo, p140-144, 2014.

D) Other Publications

E) Presentation at Scientific Meeting

- 1 : Relations between smoking and consultation rate of health examination.: Ando Y, Shibata N, Yanagikawa K, Sasahara H, Shimazu A, Sugiyama, M.: 52st The meeting for all university health management study (Tokyo), 2014.
- 2 : Relationship between dental checkup results and living conditions and self-esteem in junior high school students: Nosou M, Hasegawa Y, Naitou A, Shimazu A, Nishimura R, Sugiyama M.: The 63th general meeting of Japanese Society for Oral Health (Kumamoto), 2014
- 3 : Study on educational effects of basic nursing training in medical outpatient department by Hiroshima University School of Dentistry oral health science in school nurse program : Nosou M, Naitou A, Shimazu A, Nishimura R, Sugiyama M : The 98th Hiroshima University Dental Society. (Hiroshima), 2014.
- 4 : The relation between videoendoscopic evaluation of swallowing and oral sensation test results: Nishimura R, Nagasaki T, Fukada E, Tanimoto K, Hara K, Takemoto T, Amano H, Sugiyama M: The 21th Japanese Society of Dental Welfare(Hiroshima), 2014.
- 5 : For individual variation within and age-specific optimal swallowing amount of water : Ezaki H, Ogawa Y, Nishimura R, Fukada E, Hatanaka Y, Hara K, Yoshida Y : The 20st Annual Meeting of the Japanese Society of Dysphagia Rehabilitation (Tokyo), 2014.
- 6 : A Survey of graduates from Hiroshima University, Faculty of Dentistry, School of Oral Health Science, Course of Oral Science relating to education, skill and job searches.: Takano E, Nishimura R, Yoshinaga T, Kuramoto Y, Shimazu A, Sugiyama M. : The 9th Annual Meeting of the Japan Dental Hygienists' Association. (Saitama), 2014.
- 7 : Consideration of potential as a screening method of beans skip of oral function.: Higashi M, Maehara T, Nishimura R, Iwamoto A, Fukada E, Amano H, Hara K : The 9th Annual Meeting of the Japan

Dental Hygienists' Association. (Saitama), 2014.

- 8 : Meta-analysis of pain relief by cognitive-behavioral therapy in Temporomandibular disorders:
Iwasaki S, Sugiyama M: The 62nd Annual Meeting of the Chugoku-Shikoku Branch in the Japanese
Stomatological Society. (Tokushima), 2014.

F) Contribution to Community

- 1 : Nishimura R : Assessment of oral function at special nursing home.(2014)
- 2 : Nishimura R : The oral care of persons requiring nursing care at Hiroshima University Hospital.(2014)
- 3 : Nishimura R : Refresher course for dental hygienists (Step up course), Hiroshima, 2014.03.13.
- 4 : Nishimura R : Refresher course for dental hygienists (Oral health course), Hiroshima, 2014. 11.27.
- 5 : Nishimura R : Refresher course for dental hygienists (Oral health course), Hiroshima, 2014.12.18.
- 6 : Shimazu A : Dental Support Activity in Cambodia (Cambodia) , 2014.
- 7 : Shimazu A : Oral health activity in Junior High School Students in Hiroshima (Hiroshima) , 2014.
- 8 : Shimazu A : Dental Examination for Acidity and Alkalinity (Hiroshima) , 2014.
- 9 : Shimazu A : Dental Examination for Infants (Higashi-Hiroshima) , 2014.
- 10 : Nosou M, Naitou A : Dental health activity in special needs schools of Hiroshima city, Hiroshima, 2014.
- 11 : Nosou M, Naitou A : Dental health activity in junior high schools of Hiroshima city, Hiroshima, 2014.
- 12 : Nosou M, : Secretary at Hiroshima Branch of Children's Cancer Association of Japan, Hiroshima, 2014.
- 13 : Sugiyama M : Dental Examination for staff of Hiroshima University, Hiroshima, 2014.

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

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

(5) Academic Awards, etc.

(6) Patents

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Integrated Health Sciences

Department of Maxillofacial Functional Development

(1) Staff and Students

Professor : AMANO Hideaki

Assistant Professor : HARA Kumiko

Research Associate : TSURUDA Keiko, IWAMOTO Akiko

Graduate Student :, FUKADA Eri, SATO Manami, MAEHARA Asako, HIGASHI Mamuka

(2) Specialized Fields

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

(3) Achievements

- 1: Comparative analyses of paediatric dental measurements using plaster and three-dimensional digital models : Y. Kaihara, A. Katayama, K. Ono, M. Kurose, K. Toma, H. Amano, H. Nikawa, K. Kozai : European Journal of paediatric dentistry 15(2), 137-142, 2014. 7
- 2: Current education needs of undergraduate dental hygiene education regarding dental hygiene process: Emiko Nakano, Yoshie Niitani, Hisako Wada, Yumi Hoshino, Yukiko Murakoshi, Chieko Nagano, Kumiko Hara, Naomi Yoshida, Aiko Fujiwara, Keiko Endo,: journal of the Japanese Society of Dental Hygiene Education 5 (2), 101-115, 2014.10

B) Reviews

- 1: Amano H.: Our Education to bring up the Oral Health Manager for the Team Medical Care: J. of the conference of national university for the dental hygienist 3, 2-4, 2014. 3

C) Books

D) Other Publications

E) Presentations

- 1 : Response of the blood pressure by the metabotropic excitatory amino acid receptor agonist L-AP4 injected to caudalis medulla oblongata ventral: Yumi Takemoto, Keiko Tsuruda : 91th annual meeting of the Physiological Society of Japan(Kagoshima) 2014.3.17.
- 2 : Examination of the factor that was able to introduce group fluoride mouth rinsin : Sanae Miyoshi, Kumiko Hara : 21th annual meeting of Japanese Society of Dental Welfare(Hiroshima) 2014.6.15.
- 3 : For autonomy of dentistry in Cambodia : Yuko Iwamoto, Akiko Iwamoto, Noriko Niizato, Ryouko Hirata, Hideaki Amano, Katsuyuki Kozai : 21th annual meeting of Japanese Society of Dental Welfare(Hiroshima) 2014.6.15.
- 4 : A Study of the influence that a sound at the time of the dental practice gives to a brain blood flow : Akiko Iwamoto, Eri Fukada, Mamuka Higashi, Toshinobu Takemoto, Masaru Sugiyama, Hideaki Amano : 21th annual meeting of Japanese Society of Dental Welfare(Hiroshima)2014.6.15.
- 5 : A Study of the clinical diagnostic method for absorption and swallowing function by measurement of the intraoral pressure : Eri Fukada, Masaru Sugiyama, Hideaki Amano : 21th annual meeting of Japanese Society of Dental Welfare(Hiroshima) 2014.6.15.
- 6 : The association between deglutition endoscopy views and intraoral perception test : Rumi Nishimura, ShinnichiNagasaki, Eri Fukada, Keiji Tanimoto, Kumiko Hara, Toshinobu Takemoto, HideakiAmano, Masaru Sugiyama : 21th annual meeting of Japanese Society of Dental Welfare(Hiroshima) 2014.6.15.
- 7 : Analysis of the absorption, deglutition by the intraoral pressure measurement - Development of the clinical intraoral pressure measuring equipment- : Eri Fukada : 1st meeting of Health and Science for young researchers (Hiroshima) 2014.7.18.
- 8 : Quantity of optimal deglutition of the water according to the generation and personal changes : Hiromi Ezaki, Yukiko Ogawa, Rumi Nishimura, Eri Fukada, Yoshiko Hatanaka, Kumiko Hara, Yukie Yoshida : 20th annual meeting of Japanese Society of Dysphagia Rehabilitation (Tokyo) 2014.9.6.
- 9 : Report of the local support activity in connection with a cable TV station and administration : Sanae Miyoshi, Yasuka Ito, Akane Shimizu, Natsuko Hiramoto, Kumiko Hara : 20th annual meeting of Japanese Society of Dysphagia Rehabilitation (Tokyo) 2014.9.6
- 10 : Examination of the possibility of the Splash Bean Test as the screening method of the oral function : Mamuka Higashi, Asako Maehara, Rumi Nishimura, Akiko Iwamoto, Eri Fukada, Hideaki Amano, Kumiko Hara : 9th annual meeting of the Japan Society for Dental Hygiene(Saitama), 2014.9.13.

- 11 : A case of the complete denture using a duplicate denture on lower jaw : Yoshihisa Inoue, Akiko Iwamoto, Masaru Hashioka : 53th Hiroshima Prefecture Dental Association(Hiroshima),2014.11.9.
- 12 : Analysis of the intraoral air pressure change at the time of the absorption and swallowing - Examination of the new clinical analysis system of oral function- : Eri Fukada, Masaru Sugiyama, Hideaki Amano : 53th Hiroshima Prefecture Dental Association(Hiroshima),2014.11.9.
- 13 : A study of the influence that an oral environmental factor gives to the taste threshold : Yuki Emura, Kayoko Tsuruda, Kumiko Hara, Hideaki Amano : 53th Hiroshima Prefecture Dental Association(Hiroshima),2014.11.9.

F) Lectures

- 1 : Akiko Iwamoto : 「How to take desirable eating between meals/Brushing before going to bed」, Wat-Bo Primary school(SiemReap,Cambodia), 2014.2.27
- 2 : Akiko Iwamoto : 「How to take desirable eating between meals/Brushing before going to bed」, Provincial Teacher Training College(SiemReap,Cambodia), 2014.3.5
- 3: Hara K., Fukada E. : Lecture for the class for diabetics : Hiroshima Teishin Hospital (Hiroshima), 2014.7.24
- 4: Hara K. : Lecture of oral care for staff : Kosei-En(Hiroshima), 2014.10.18/11.26
- 5: Hara K. : Workshop of oral care for nurse : Kusatsu Hospital (Hiroshima), 2014.10.17

G) Social Contributions

- 1 : Program for kids from elementary schools, Dental Kids, “Let’s Be a Dentist!”: Hiroshima University Faculty of Dentistry, 2014.
- 2 : Program for high school students, Dental Kids: Hiroshima University Faculty of Dentistry, 2014.
- 3 :Cooperate to the assessment of the Program for improvement of oral function in the ambulatory care facility “Kosei-En”, 2014.
- 4 : 7th Dentistry Activity Support in Cambodia 2104.

(4) Grant-in-Aid for Scientific Research

- 1: 2014th grant-in-aid for scientific research : AMANO H.: A Study of Intraoral pressure Change for the Clinical Diagnosis System of Ability to Swallow. (No. 24593093)
- 2: 2014th grant-in-aid for scientific research : HARA K. : Dental Kids Project (HT26230)
- 3: 2014th FUTOKUKAI’s fellowship for scientific research of Oral Health : MAEHARA T. : A study of behavioral control for disabled children.

(5) Awards

1 : Kumiko H. : Prize of the Oral Health Society for Excellence poster presentation. 2104. 9

(6) Patents

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Integrated Health Sciences

Department of Oral Health Management

(1) Staffs

Professor: Toshinobu TAKEMOTO

Lecturer: Atsue MATSUMOTO

Research associate: Yoshie NIITANI

Graduate student

Doctor course: Yukiko NAGATANI

Master course: Miho KUME

Graduation thesis student: Airi USAMI, Rika MARUYAMA, Sakura UEMUKAI, Shiho FUKISHIMA,
Yuuka WAKABAYASHI, Momo YAMAGUCHI, Tomomi INOUE, Miku ISHIKAWA,
Yuuka MIZOTA, Mayu FUJISHIRO, Reina YANAGI

(2) Research Fields

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

(3) Achievements

A) Original Articles

- 1 : [Examination about the aspect of the reflection of the dental trainee in the midway point of the clinical training course][ja]: Obayashi T., Oto T., Nagatani Y., Kajitani K., Tanaka Y., Nishi H., Ohara M., Ogawa T. : J. Hiroshima Univ. Dent. Soc., 46, 1-5, 2014.
- 2 : [Relation between stress marker and mental factor of the student in roll-playing training in the dental hygienist education][ja]: Hayashi M., Takemoto T., Matsumoto A., Kume M., Niitani Y. : J. Hiroshima Univ. Dent. Soc., 46, 42-49 2014.
- 3 : [A survey of the consciousness about career to students in a university of 4-year dental hygienist education –The difference between grades-][ja]: Takemoto T., Niitani Y., Matsumoto A., Kume M. : J. Hiroshima Univ. Dent. Soc., 46, 50-62 2014.

- 4 : [The current education needs of undergraduate dental hygiene education regarding the dental hygiene process][ja] : Nakano E., Niitani Y., Wada H., *et al.*: JSDHE, 5, 101-115, 2014.

D) Other Publications

- 1 : [Oral prophylaxis and oral health instruction][ja]: The newest series of textbook for dental hygienists (Matsumoto A.: Contributor):Edited by the Japan Association for Dental hygienists Education, Ishiyaku Publishers (Tokyo), 2014.
- 2 : [Basic theory and practical process for prosthodontics dentistry][ja]: The newest series of textbook for dental hygienists (Matsumoto A.: Contributor): Edited by the Japan Association for Dental hygienists Education, Ishiyaku Publishers (Tokyo), 2014.
- 3 : [Standard Precaution][ja]: Mizuno T, Nakaoka M, Niitani Y, Kurihara H: the Quintessence, 33, 59-63, 2014.

E) Presentations at Scientific Meeting

- 1 : Effect of theratrical interprofessional education program: Oto T., Obayashi T., Nagatani Y., Nishi H., Ohara M., Ogawa T.: 40th ADEE Annual Meeting (Riga), 2014.
- 2 : The importance of external training and training team size in clinical practice: Oto T., Obayashi T., Nagatani Y., Nishi H., Ohara M., Ogawa T.:AMEE 2014 (Milan) , 2014.
- 3 : [The image that the students of three types of dental hygienists school have each other][ja]: The 98th Regular Meeting of Hiroshima University Dental Society (Hiroshima) , 2014.
- 4 : [What is required to dental hygienists' 4-year university graduates][ja] : The 98th Regular Meeting of Hiroshima University Dental Society (Hiroshima) , 2014.
- 5 : [Difference in consciousness about the disaster prevention in the private dental clinic][ja] : The 98th Regular Meeting of Hiroshima University Dental Society (Hiroshima) , 2014.
- 6 : [Investigation of contract clinical training of dental hygienists students in the new outpatient clinical building of our hospital][ja] : The 98th Regular Meeting of Hiroshima University Dental Society (Hiroshima) , 2014.
- 7 : [A consideration about acquisition of the humanity necessary to a dental hygienist.-Through a narrative of an expert dental hygienist who carried IPW][ja]:Yukiko Nagatani, Taiji Obayashi, Takayuki Oto, Tadayuki Waki, Toshinobu Takemoto,Tetsuji Ogawa :The 6th Annual Conference of the Japanese Association of Health Communication (Hiroshima), 2014.
- 8 : [The confusions faced by dental trainees in communication -an analysis of reflections][ja]: Oto.T, Obayashi.T, Nagatani.Y, Ogawa.T: The 6th Annual Conference of the Japanese Association of Health Communication (Hiroshima), 2014.

○Graduation thesis presentation of School of Oral Health Science 2013 (Hiroshima), 2013.

- 1 . [Study on patient service improvement in the private dental clinic][ja]: Fukushima S.
- 2 . [Social study on incident by dental hygienist][ja]:Wakabayashi Y.
- 3 . [Research about the vocational disease of the dental hygienist][ja]: Usami A.
- 4 . [Investigation on the extent of dental hygienists job –The difference of consciousness between dentists and dental hygienists-][ja]: Yamaguchi M.
- 5 . [Research about the factors to change motivation of dental hygienists students][ja]: Maruyama R.
- 6 . [Research about face expression and communication.][ja]: Uemukai S.

F) Lectures

- 1 : [Lecture about mouth, group instruction of tooth][ja]: Matsumoto A.: Child-care course of a community program of the nursery school, Mimyo Nursery School (Hiroshima) : 2014.
- 2 : [Oral care for pregnant woman and new born infant][ja]: Matsumoto A.: School for pregnant women in Gynecology department of Hiroshima University Hospital (Hiroshima) , 2014.
- 3 : [Outpatient Preventive Long-Term Care Project for Specified elderly person at Hatsukaichi city][ja] : Matsumoto A.:(Hiroshima), 2014.
- 4 : [Dental Hygiene 1][ja]: Niitani Y.: JADHE program I for teachers in dental hygienists schools (Aichi) 2014.
- 5 : Development of theatrical interprofessional education program for “IPW-Dental hygiene Care”: Nagatani Y. (symposiast) : Aiming at the education to exert IPW -4-year research result and future problem-, The 55th seminars & workshop on medical education (Gifu), 2014

G) Social Contributions

- 1 :Program for kids from elementary schools, Dental Kids, “Let’s Be a Dentist!”: Hiroshima University Faculty of Dentistry (Hiroshima), 2014.
- 2 :Renewal seminar for teacher’s license: Takemoto T, Hiroshima University (Hiroshima), 2014.
- 3 : High school student open class: Matsumoto A, 2014.
- 4 :Secretary of the regional association of Kinki , Chugoku and Shikoku area for Japanese Society for Dental Health: Matsumoto A(Kobe), 2014.
- 5 :Dental Support Activity in Cambodia: Matsumoto A(Cambodia), 2014.
- 6 :Editorial committee of The Journal of Japan Society for Dental Hygiene.: Matsumoto A, Japan Society for Dental Hygiene (Tokyo,Saitama), 2014.
- 7 : Editorial board of The Journal of Japan Society for Dental Hygiene.: Matsumoto A, Japan Society for Dental Hygiene (Tokyo), 2014.

- 8 : Peer review of The Journal of Japan Society for Dental Hygiene.: Matsumoto A, Japan Society for Dental Hygiene (Tokyo), 2014.
- 9 : Commendation selection commissioner of art and science of The Journal of Japan Society for Dental Hygiene.: Matsumoto A, Japan Society for Dental Hygiene (Tokyo), 2014.
- 10 : Member of Dental Hygienists' Examination committee: Niitani Y. : Foundation of Promoting Dental Care and Training (Tokyo), 2014.
- 11: Educational committee of Japanese Association for Dental Hygienists Education, Niitani Y, JADHE (Tokyo), 2014.

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Integrated Health Sciences

Department of Anatomy and Functional Restorations

(1) Staff and Students

Professor : Takahiro Satoda

Associate Professor : Saiji Shimoe

Graduate Students : Shougo Iwaguro, Hidehito Nagadouri

Undergraduate Student: Chihiro Ohhira, Mai Ohtaku, Kanae Iwamatsu, Chika Takeda, Akane Taniguchi,
Natsumi Ikuta, Memori Minoda, Saki Shiraishi, Yusuke Kobayashi,
Mayaka Ide, Yuka Miyata, Aoi Kawamura, Ayaka Kihara

(2) Main Research Activities

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

(3) Research Achievements

A) Original Papers (including Case Reports)

- 1 : Interest in Jobs among Students on the Oral Engineering Course and Their Actual Jobs : Hisako Sasahara, Takahiro Satoda, Takeshi Murayama, Mitsuhiro Tamamoto, Saiji Shimoe, Tsuyoshi Yaji, Atsushi Shimazu, Hiroki Nikawa : The Journal of Japanese Dental Education Association, Vol.30(2), pp.69–80, 2014.
- 2 : Objective evaluation of posterior tooth carving using the three-dimensional image : Kanako Toma, Saiji Shimoe, Takuya Kihara, Mitsuhiro Tamamoto, Tsuyoshi Yaji, Takeshi Murayama, Hiroki Nikawa, Takahiro Satoda : Journal of Nippon Academy of Dental Technology, Vol.35, (1), pp.16–23, 2014.
- 3 : Effect of thione primers on adhesive bonding between an indirect composite material and Ag-Pd-Cu-Au alloy: Hideyuki Imai, Hiroyasu Koizumi, Saiji Shimoe, Isao Hirata, Hideo Matsumura, Hiroki Nikawa : Dental Materials Journal, Vol.33(5), pp.681-688, 2014.

B) Review

C) Publications

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

D) Other Publications

- 1 :Takahiro Satoda: How is Mechanism of Eating system ? Nutrition Care , Vol.67, pp.14－17, Medica publisher, Osaka, 2014, (in Japanese)
- 2 : Takahiro Satoda: How is Mechanism of Swallowing system ? Nutrition Care , Vol.67, pp.14－17, Medica publisher, Osaka, 2014, (in Japanese)

E) Presentation at Scientific Meeting

- 1 : Functional model of Larynx : Takahiro Satoda, Yoshimasa Nagadori, Saiji Shimoe : The 119th Annual meeting of Japanese Association of Anatomists (Tochigi), 2013, 3. 27-29.
- 2 : Functional model of Inner Ear: Memori Minoda, Natsumi Ikuta, Takahiro Satoda, Saiji Shimoe : , The 13th Annual meeting of Co-medical Function and Structure Association (Kitakyusyu), 2014, 9. 20.
- 3 : Functional model of Swallowing : Natsumi Ikuta, Memori Minoda, Takahiro Satoda, Saiji Shimoe :

- The 13th Annual meeting of Co-medical Function and Structure Association (Kitakyusyu), 2014, 9. 20.
- 4 : Effect of alumina-blasting on bonding between nano-zirconia and composite resin –Influence of the jet pressure– : Mai Ohtaku, Saiji Shimoe, Shogo Iwaguro, Chihiro Ohira, Akane Taniguchi, Takahiro Satoda : The 36th the meeting of the Nippon Academy of Dental Technology (Hokkaido), 2014, 9. 20, 21.
- 5 : Effect of hydrophilic by surface treatments on bonding between zirconia material and indirect composite : Chihiro Ohira, Saiji Shimoe, Shogo Iwaguro, Mai Ohtaku, Akane Taniguchi, Takahiro Satoda : The 36th the meeting of the Nippon Academy of Dental Technology (Hokkaido), 2014, 9. 20, 21.
- 6 : Influence of micro mechanical retention with diode laser beam machine on bond strength of zirconia and resin composite : Shogo Iwaguro, Saiji Shimoe, Takeshi Murayama, Takahiro Satoda : The 36th the meeting of the Nippon Academy of Dental Technology (Hokkaido), 2014, 9. 20, 21.
- 7 : Effects of disinfection on stone models : Akane Taniguchi, Saiji Shimoe, Chihiro Ohira, Mai Ohtaku, Takahiro Satoda : The 36th the meeting of the Nippon Academy of Dental Technology (Hokkaido), 2014, 9. 20, 21.
- 8 : Analysis of chemical interaction of between zirconia materials and functional monomers : Saiji Shimoe, Yuji Chiba, Isao Hirata, Shogo Iwaguro, Hideo Matsumura, Koichi Kato : The 64th the meeting of the Japanese Society for Dental Materials and Devices (Hiroshima), 2014, 10. 8, 9.
- 9 : Functional model of Inner Ear : Memori Minoda, Natsumi Ikuta, Takahiro Satoda, Saiji Shimoe : The 69th Annual Meeting of Japanese Association of Anatomist, Cyugoku-Shikoku regional meeting (Hiroshima), 2014, 10. 25, 26.
- 10 : Functional model of Swallowing : Natsumi Ikuta, Memori Minoda, Takahiro Satoda, Saiji Shimoe : The 69th Annual Meeting of Japanese Association of Anatomist, Cyugoku-Shikoku regional meeting (Hiroshima), 2014, 10. 25, 26.
- 11 : Functional model of Inner Ear : Memori Minoda, Natsumi Ikuta, Takahiro Satoda, Saiji Shimoe : The 53nd annual meeting of Hiroshima Prefecture Dental Association and The 98th annual meeting of Hiroshima University Dental Society (Hiroshima), 2014, 11. 9.
- 12 : Functional model of Swallowing : Natsumi Ikuta, Memori Minoda, Takahiro Satoda, Saiji Shimoe : The 53nd annual meeting of Hiroshima Prefecture Dental Association and The 98th annual meeting of Hiroshima University Dental Society (Hiroshima), 2014, 11. 9.
- 13 : Functional model of Swallowing : Takahiro Satoda : The 9th annual meeting of Japanese Society of Parenteral & Enteral Nutrition, Cyugoku-Shikoku regional meeting (Hiroshima), 2014, 12. 6.

F) Special lectures in academic meetings

- 1 : Takahiro Satoda : Understanding Eating and Swallowing Mechanism by using handmade model (Kochi Association of Insurance doctors seminar) (Kochi) 2014,3,16

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

- 1: Grant-in-Aid for Scientific Research(C): Saiji Shimoe : Development of tooth-friendly zirconia crown restorations optimized polymer composite resins for the clinical application. (No.24592916). ¥800,000

(5) Academic Awards, etc.

- 1 : Shogo Iwaguro : Excellent Student Award (President's Awards) 2014.3
- 2 : Namiko Kayama : The 16th Student Carving Contest Gold Award 2014.3
- 3 : Kanako Toma, Saiji Shimoe, Takuya Kihara, Mitsuhiro Tamamoto, Tsuyoshi Yaji, Takeshi Murayama, Hiroki Nikawa, Takahiro Satoda: The Nippon Academy of Dental Technology Young Researcher's Best Paper Award in 2014, 2014.9

(6) Patents

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Integrated Health Sciences

Department of Medical System and Biomaterial Engineering

(1) Staff and Students

Professor : Takeshi Murayama
Associate Professor : Mitsuhiro Tamamoto
Graduate Student : Asumi Nagata, Mayumi Nakanodo, Noriko Fujimoto
Graduation Research Students : Shuntaro Umezaki, Yuya Ishida, Kazumine Ogasawara,
Yuuta Masuhara, Shouta Fujimoto, Rina Niioka, Moe Matsuo,
Yuto Tanaka, Shou Higuchi, Waka Harada, Moemi Nishida,
Yuuki Higashiura

(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: Job shop scheduling with capacity adjustment using the mixture of GA and priority rule - overtime decision based on the critical value of job: Yoda M, Eguchi T, Murayama T: Proceedings of 2014 Annual Conference of Manufacturing Systems Division, The Japan Society of Mechanical Engineers No.14-8, pp.49-50, 2014.
- 2: Efficient job shop scheduling by sequentially fixing partial schedules : Yoda M, Eguchi T, Murayama T: Proceedings of International Symposium on Flexible Automation(ISCIE /

ASME ISFA2014), pp.1-4, 2014.

- 3: Objective evaluation of posterior tooth carving using the three-dimensional images: Tohma K, Shimoe S, Kihara T, Tamamoto M, Taji T, Murayama T, Nikawa H, Satoda T: Journal of Nippon Academy of Dental Technology, Vol.35, No.1, pp.16-23, 2014.
- 4: Interest in jobs among students on the oral engineering course and their actual jobs: Sasahara H, Satoda T, Murayama T, Tamamoto M, Shimoe S, Taji T, Shimazu A, Nikawa H: The journal of Japanese Dental Education Association, Vol.30, No.2, pp.69-80, 2014.
- 5: Job shop scheduling for meeting due dates and minimizing overtime using genetic algorithm incorporating new priority rules: Yoda M, Eguchi T, Murayama T: Journal of Advanced Mechanical Design, Systems, and Manufacturing Vol. 8, No. 5, JAMDSM0071 , pp.1-10, 2014.

B) Review

C) Publications

- 1: Collection of the state examination and key for dental technicians(2013 edition): Edited by Japan Society for Education of Dental Technology, Suese K, Murayama T, Tamamoto M, et al.: Ishiyaku Publishers,Inc., 2014.

D) Other Publications

E) Presentation at Scientific Meeting

- 1: Fabrication of duplicate models of sphenoid bone using 3D printer: Katsura R, Kiguchi M, Nakatani N, Shimizu N, Murayama T, Kurii K, Aoyama Y : The 119th Annual Meeting of the Japanese Association of Anatomists(Tochigi), 2014.
- 2: Job shop scheduling with Capacity Adjustment using the mixture of GA and priority rule - overtime decision based on the critical value of job: Yoda M, Eguchi T, Murayama T: 2014 Annual Conference of Manufacturing Systems Division(Tokyo), 2014.
- 3: Efficient job shop scheduling by sequentially fixing partial schedules : Yoda M, Eguchi T, Murayama T: International Symposium on Flexible Automation(ISCIE / ASME ISFA2014) (Awaji-Island, Hyogo) , 2014.
- 4: Influence of micro mechanical retention with diode laser beam machine on the bond strength of composite resin fused to zirconia: Iwaguro S, Shimoe S, Murayama T, Satoda T: 36th Meeting of the Nippon Academy of Dental Technology(Sapporo), 2014.

- 5: Influence of external factors on maxillofacial prosthetic silicone materials: Fujimoto N, Nakanodo A, Nagata A, Tamamoto M, Murayama T : 98th Regular Meeting of Hiroshima University Dental Society (Hiroshima), 2014.
- 6: Development of inlay wax for optical impression : Nakanodo A, Fujimoto N, Nagata A, Tamamoto M, Murayama T: 98th Regular Meeting of Hiroshima University Dental Society (Hiroshima), 2014.

F)Special Lectures in Academic Meetings

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

(5) Academic Awards, etc.

(6) Patents

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Integrated Health Sciences

Department of Oral Biology & Engineering

(1) Staff and Students

Professor : Hiroki Nikawa

Associate Professor : Tsuyoshi Taji (H26.6-)

Lecturer : Hisako Sasahara

Assistant Professor : Kazuko Kawahara

Assistant Professor : Takuya Kihara, Sumiyo Mimura, Takahiro Shuto (H26.10-) , Yuichi Mine (-H26.3)
(Special Appointment)

Education and Research Support Staff : Kaori Taguchi, Minako Okamura (H26.11-)

Graduate Student : Sachiko Sawa, Yukihiro Takayama, Minako Okamura, Kentaro Takagi,
Reiko Aimi, Chika Umemoto, Chiaki Okada, Yumi Hamamoto, Satoshi Miyauchi

Undergraduate Student : Shun Ichikawa, Kazumi Ofuji, Shiho Kubota, Yuri Sadamitsu,
Yoshika Shozuhara, Nobuko Nishino, Chihiro Noda, Tatsumi Hashida,
Yoshiya Fujikawa, Satoru Yaguchi, Risa Akagi, Shizuka Gion,
Miyu Kiyama, Mizuki Kodama, Natsumi Saizaki, Saori Sueyama,
Konomi Hirota, Ari Fukano, Ai Fujii, Keisuke Fujita

(2) Main Research Activities

- 1 : Study on candidal biofilms and denture plaque
- 2 : Study on dental caries and probiotics
- 3 : Design for cationic antimicrobial peptides
- 4 : Study on mechanisms of the alveolar bone resorption and on bone - resorption inhibitors
- 5 : Study on dental implant materials
- 6 : collaborative research about allergy

(3) Research Achievements

A) Original Papers (including Case Reports)

- 1 : Protein Kinase C-Induced Early Growth Response Protein-1 Binding to *SNAIL* Promoter in Epithelial-Mesenchymal Transition of Human Embryonic Stem Cells : Kinehara M, Kawamura S,

Mimura S, Suga M, Hamada A, Wakabayashi M, Nikawa H, Furue M K :Stem Cells and Development, 23(18): 2180-2189. 2014

- 2 : Application of three-dimensional digital models for the morphometric analysis of pre-dentition plasters: accuracy and precision: Kaihara Y, Katayama A, Iwamae S, Kihara T, Ono K, Kurose M, Amano H, Nikawa H, Kozai K: European Journal of Paediatric Dentistry, 15(4): 360-366. 2014

B) Review

C) Publications

D) Other Publications

E) Presentation at Scientific Meeting

- 1: Bioinformatics based approach to predicting endodermal differentiation efficiency in human ES / iPS cells : Okamura M, Yanagihara K, Kanie K, Liu Y, Nikawa H, Kato R, Furue M K : The 87th Annual Meeting of Japanese Tissue Culture Association (Tokyo) , 2014.
- 2: PREDICTION OF DIFFERENTIATION TENDENCY OF HUMAN PLURIPOTENT STEM CELLS TOWARD ENDODERM ISSCR : Yanagihara K, Okamura M, Kanie K, Kato R, Furue M K : 12th Annual Meeting (Vancouver) , 2014.
- 3: Effect of Kog1 derived from *Lactobacillus rhamnosus* on the expression of inflammatory cytokines and chemokines in human gingival fibroblasts : Umemoto C, Mine Y, Ishii H, Hikichi Y, Kurose M, Tomiyama Y, Taji T, Kawahara K, Nikawa H : 47th The Hiroshima University Dental Society conference (Hiroshima) , 2014.
- 4: Application of Etak(R) to reduce the risk of spread of infectious disease : Okada C, Taji T, Kawahara K, Nikawa H : 47th The Hiroshima University Dental Society conference (Hiroshima) , 2014.
- 5: Diagnostic model of the breast cancer for ultrasonic devices : Hamamoto Y, Taji T, Kawahara K, Nikawa H : 47th The Hiroshima University Dental Society conference (Hiroshima) , 2014.
- 6: Anti-inflammatory effect of Kog1, a bacteriocin-like cationic peptide derived from *Lactobacillus rhamnosus* : Umemoto C, Mine Y, Ishii H, Hikichi Y, Kurose M, Tomiyama Y, Taji T, Kawahara K, Nikawa H : The 9th Scientific Meeting of the Asian Academy of Osseointegration (Sapporo) , 2014.
- 7: Impact of hydrogen content of diamond-like carbon-treated titanium on osteoblast and osteoclast differentiation in vitro : Takagi K, Mine Y, Nakatani T, Okamoto K, Nikawa H : The 9th Scientific Meeting of the Asian Academy of Osseointegration (Sapporo) , 2014.
- 8: Reconstruction of Three-Dimensional Occlusal Contacts Model on a Dental Morphology : Kihara T, Ikawa T, Hirabayashi R, Shigeta Y, Kentaro Hirai K, Mimura S, Taji T, Ogawa T, Nikawa H : The 9th Scientific Meeting of the Asian Academy of Osseointegration (Sapporo) , 2014.
- 9: Antimicrobial activity and steric structure of Kog1, a bacteriocin-like cationic peptide derived from *Lactobacillus rhamnosus* : Mimura S, Tomiyama Y, Shinkawa M, Hiyama A, Okada C, Umemoto C, Kihara T, Taji T, Kawahara K, Nikawa H : The 9th Scientific Meeting of the Asian Academy of Osseointegration (Sapporo) , 2014.
- 10: Analysis of the training institution determinant by dental students in Japan : Kono H, Sasahara H, Koriyama C, Iwashita Y, Taguchi N : 40th ADEE ANNUAL MEETING 2014 (Riga), 2014.
- 11: Factors related to satisfaction with the clinical training among dental hygiene students: Sasahara H, Nikawa H: AMEE 2014 (Milano), 2014.

F) Symposium and special lecture

- 1: A novel product for the general or oral health derived from biofilm study : Nikawa H : 4th Research Week-International Symposium, Taipei (Taiwan), 2014.

(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. ¥3,120,000
- 2: Challenging Exploratory Research: Hiroki Nikawa, Research Project Number: 26670838. ¥2,340,000
- 3: Grants-in-Aid for Scientific Research(Scientific Research(C)) : Tsuyoshi Taji (Head), Hiroki Nikawa (Co-investigators), Research Project Number: 26462921. ¥1,900,000
- 4: Grants-in-Aid for Scientific Research(Scientific Research(C)) : Norihiro Taguchi (Head), Sakiko Sasahara, (Co-investigators),Research Project Number: 25463255. ¥2,600,000
- 5: Donation from Manac Inc. to Hiroki Nikawa. ¥350,000
- 6: Donation from Media Inc. to Hiroki Nikawa. ¥700,000
- 7: Donation from Shikoku nyugyou corporation to Hiroki Nikawa. ¥300,000
- 8: Donation from JEX Co.,Ltd. to Hiroki Nikawa. ¥1,000,000
- 9: Donation from JEX Co.,Ltd. to Hiroki Nikawa. ¥200,000
- 10: Donation from JEX Co.,Ltd. to Hiroki Nikawa. ¥600,000
- 11: Hiroshima Industrial Promotion Organization to Hiroki Nikawa. ¥908,292

(5) Academic Awards, etc.

- 1: Hiroki Nikawa : Hiroshima University President's Awards in 2014

(6) Patents

- 1: Hiroki Nikawa : (US Patent Pat) Method of Fixing Antibacterial Agent and Article Obtained by The Method (NO.8859009 B2) (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 analysis using mass spectrometry
- 2 : Structural analysis of biologically active substances

(3) Research Achievements

A) Original Papers (including Case Reports)

B) Review

C) Publications

D) Other Publications

E) Presentation at Scientific Meeting

- 1: Functional analysis of bacteriocin Bac41 produced by *Enterococcus faecalis* : J. Kurushima, I. Hayashi, D. Nakane, T. Nishikawa, M. Sugai, H. Tomita : 4th ASM Conference on *Enterococci* (Colombia) 2014.
- 2: The role in Impetigo/SSSS *Staphylococcus aureus* skin-infection, a novel cell wall protein Skip : J. Hisatsune, T. Murakami, T. Kozima, N. Tatsukawa, I. Hayashi, S. Yamada, M. Sugai : 87th Annual Meeting of the Japanese Society for Bacteriology (Tokyo) 2014.
- 3: Gene expression mechanism of cell wall protein Skip in *Staphylococcus aureus* : N. Tatsukawa, J. Hisatsune, I. Hayashi, K. Kouzai, M. Sugai : 87th Annual Meeting of the Japanese Society for Bacteriology (Tokyo) 2014.
- 4 : Functional analyses of Bacteriocin Protein Bac41 derived from *Enterococcus faecalis* : J. Kurushima, I. Hayashi, D. Nakane, T. Nishikawa, M. Sugai, H. Tomita : 87th Annual Meeting of the Japanese

Society for Bacteriology (Tokyo) 2014.

- 5 : Effect of IL10 haplotypes and atomic-bomb radiation exposure on risks of gastric cancer subtypes : T. Hayashi, JB. Cologne, Y. Hu, K. Yoshida, W. Ohishi, I. Hayashi, J. Kajimura, S. kyoizumi, Y. Kusunoki, K. Nakachi : 105th Annual Meeting of the American Association for Cancer Research (San Diego)
- 6 : CD14 gene polymorphisms associated with development of colorectal cancer subtypes among atomic bomb survivors in Japan : Y. Hu, K. Yoshida, J. Kajimura, S. kyoizumi, Y. Kusunoki, JB. Cologne, W. Ohishi, I. Hayashi, K. Nakachi, T. Hayashi : 105th Annual Meeting of the American Association for Cancer Research (San Diego)
- 7 : Case study of sepsis caused by *Clostridium tertium* : M. Furushimo, H. Onodera, Y. Koba, M. Hara, S. Nagaoka, Y. Shiroichi, M. Harada, N. Yokozaki, I. Hayashi, M. Sugai : 47th General Meeting of the Japanese Society of Laboratory Medicine (Matsuyama) 2014.
- 8 : The association of reactive oxygen species in blood cells with age, past radiation exposure, and IL-6R gene polymorphisms : T. Hayashi, Y. Hu, K. Furukawa, W. Ohishi, SM. Geyer, NP. Weng, I. Hayashi, Y. Yoshida, J. Kajimura, J. Kyoizumi, Y. Kusunoki, K. Nakachi : Immunology 2014 American Association Immunologist Annual Meeting (Pittsburg) 2014.
- 9 : Regulatory mechanism of cell wall protein Skip in *Staphylococcus aureus* : N. Tatsukawa, J. Hisatsune, I. Hayashi, K. Kozai, M. Sugai : 46th meeting of the Hiroshima University Dental Society (Hiroshima) 2014.
- 10 : Gene expression mechanism of cell wall protein Skip in *Staphylococcus aureus* : N. Tatsukawa, J. Hisatsune, I. Hayashi, M. Sugai : 67th General Meeting of the Japanese Society for Bacteriology (Tokushima) 2014.
- 11 : Identification of non-tuberculous mycobacterium by MALDI-TOF MS : I. Hayashi, H. Onodera, S. Kayama, Y. Koba, N. Yokozaki, H. Ouge, M. Sugai : 36th Infectious Disease Meeting in Hiroshima (Hiroshima) 2014.

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

- 1 : Research project, Grant-in-Aid for Scientific Research (B): Hayashi I (share holder): Elucidation of the genome stability maintenance mechanism through the chromatin remodeling by nucleolin : (No.2431004) ¥700,000

(5) Academic Awards, etc.

- 1 : I. Hayashi, : Presentation award : 36th Infectious Disease Meeting in Hiroshima (Hiroshima) 2014.

(6) Patents

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General Dentistry

Department of Advanced General Dentistry

(1) Staff and Students

Professor :Tetsuji Ogawa

Assistant Professor : Yoshihara Tanaka (until March 2014), Masaru Ohara, Hiromi Nishi,
Taiji Obayashi(from April, 2014)

Graduate Student :Taiji Obayashi(until September 2014), Takayuki Ooto, Nami Kikushige

(2) Main Research Activities

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

(3) Research Achievements

A) Original Papers (including Case Reports)

1. Dental Check-up and Anti-smoking Education by Trainee Dentists for Newly Enrolled University Students : SASAHARA Hisako,OTO Takayuki,SHIMAZU Atsushi,NIKAWA Hiroki and SUGIYAMA Masaru. : The Journal of Japanese Association in Dental Education. 30(1),35-43,2014.
2. Examination about the Aspect of the Reflection of the Dental Trainee in the Midway Point of the Clinical Training Course : Taiji Obayashi,Takayuki Oto,Yukiko Nagatani, Kayo Kajitani, Yoshiharu Tanaka, Hiromi Nishi, Masaru Ohara and Tetsuji Ogawa. : The Journal of Hiroshima University Dental Society.Vol.46 ,No.1,2014.
3. Invention of the dental drill to remove the endodontic cervical dentinal triangle : Masaru Ohara, Hiroki Nikawa, Taiji Obayashi, Hiromi Nishi, Nami Kikushige, Takayuki Oto, Tetsuji Ogawa. : The Journal of Japanese Society of the General Dentistry 6, 46-52, 2014.

B) Review

1. Delivery and application of dietary polyphenols to target organs, tissues and intracellular organelles. : Ohara, M., Ohyama, Y.: *Current Drug Metabolism* 115: 37-47. 2014.
2. [Toll-like receptor \(TLR\) expression and TLR-mediated interleukin-8 production by human submandibular gland epithelial cells.](#) : Ohta K, Ishida Y, Fukui A, Nishi H, Takechi M, Kamata N. *Mol Med Rep.* 10(5):2377-82, 2014.
3. [Expression and function of RIG-I in oral keratinocytes and fibroblasts.](#) : Ohta K, Fukui A, Shigeishi H, Nishi H, Tobiume K, Takechi M, Kamata N. *Cell Physiol Biochem.*;34(5):1556-65. 2014.

C) Publications

D) Other Publications

E) Presentation at Scientific Meeting

1. The comparison of the depth of reflection: Dental trainees reflect more critically by failure experience :
○Taiji Obayashi, Takayuki Oto, Yukiko Nagatani, Hiroshima University; Kayo Kjitani, Tetsuji Ogawa. : 16th OTTAWA CONFERENCE, (OTTAWA), 2014.
2. First Step for a Reflective Practitioner from Reflective Learner : Hiromi NISHI, ○Taiji OBAYASHI, Mitsugi OKADA, Kazuhiro TSUGA, Masaru OHARA, Norihiro TAGUCHI, Tetsuji OGAWA,. : 33th Meeting of Japanese Dental Education Association, (Kokura), 2014.
3. Learning Outcomes and Strategies of the Medical Interview : ○Tetsuji OGAWA, Taiji OBAYASHI, Takayuki OTO, Nami OBAYASHI, Hiromi NISHI, Masaru OHARA. : 33th Meeting of Japanese Dental Education Association, (Kokura), 2014.
4. Practice and Evaluation of PBL tutorial for first-year dental students over five years : ○Tsuyoshi TAJI, Isao HIRATA, Naoyo MOTOYAMA, Junzou HISATSUNE, Tadashi FUJITA, Mineo WATANABE, Mitsuru DOI, Hiroki NIKAWA, Tetsuji OGAWA, Takashi UCHIDA. : 33th Meeting of Japanese Dental Education Association, (Kokura), 2014.
5. Effect of Theatrical Interprofessional Education Program : ○Oto T., Obayashi T., Nagatani Y., Nishi H., Ohara M., Ogawa T. : 40th ADEE (Riga) , 2014.
6. The importance of external training and training team size in clinical practice :
○Oto T., Obayashi T., Nagatani Y., Nishi H., Ohara M., Ogawa T. : AMEE 2014 (Milano) , 2014.
7. A consideration about acquisition of the humanity necessary to a dental hygienist. -Through a narrative of an expert dental hygienist who carried IPW- : ○Yukiko Nagatani, Taiji Obayashi,

Takayuki Oto,

Tadayuki Waki, Toshinobu Takemoto, Tetsuji Ogawa : 6th Annual Conference of the Japanese Association of Health Communication , (Hiroshima), 2014.

8. The confusions faced by dental trainees in communication -an analysis of reflections : ○Oto T., Obayashi.T., Nagatani.Y, Ogawa.T : 6th Annual Conference of the Japanese Association of Health Communication , (Hiroshima), 2014.
9. Questionnaire survey of chemotherapy-induced taste disorder in outpatients : ○Kikushige N., Nishi H., Ohge H., Sugiyama K., Ogawa T., Sugita M. : 47th Hiroshima University Dental Society. (Hiroshima), 2014.
10. Modified comparative genomics between diphodonty and polyphyodonty. : ○Ohara M., Nishi H., Obayashi T., Ogawa T. : 7th Meeting of Japanese Society of the General Dentistry, (Ohsaka), 2014.
11. Study on dysgeusia - Survey in cancer chemotherapy – ○Kikushige N, Nishi H, Ogawa T. : 7th Meeting of Japanese Society of the General Dentistry, (Osaka), 2014.
12. The oral environment evaluation in hematopoietic cell transplantation.: ○Nishi H, kurota Y, Takamoto M, Ohta K, Ohge H, Ichinohe T, Ogawa T, Kurihara H. The 36th Annual Meeting of the Japan Society for Hematopoietic Cell Transplantation, (Okinawa), 2014.
13. Oxidative stress induced by *Candida albicans* β -glucan and Heme oxygenase-1 expression in oral mucosal epithelial cells.: ○Ishida Y, Ohta K, Fukui A, Nishi H, Okui G, Naruse T, Takechi M, Kamata N.: The 51st Annual Meeting of Japan Tissue Culture Society for Dental Research, (Fukuoka), 2014.
14. Expression induction of hemeoxygenase-1 due to *Candida albicans* in oral mucosal epithelial cells.: ○Ishida Y, Ohta K, Fukui A, Nishi H, Okui G, Naruse T, Takechi M, Kamata N.: The 59th Congress of the Japanese Society of Oral and Maxillofacial Surgeons.(Makuhari), 2014.
15. The protective response against Hemeoxygenase-1 expression induced and oxidative stress due to *Candida albicans* β -glucan in oral mucosal epithelial cells.: ○Ishida Y, Ohta K, Fukui A, Nishi H, Okui G, Naruse T, Takechi M, Kamata N.: The 27th Annual Meeting of the Japanese Society of Oral Diagnosis/ The 24th Annual Meeting of the Japanese Society of Oral Medicine. (Fukuoka), 2014.

F) Implementation of Seminars / Workshops

1. Workshop for postgraduate trainees 2014(Hiroshima)
2. The 6th Meeting of Japanese Association of Health Communication 2014(Hiroshima)
3. The 1st Oral care seminar due to disease. 2014 (Hiroshima)
4. The 2nd Oral care seminar due to disease. 2014 (Hiroshima)
5. The 3rd Oral care seminar due to disease. 2014 (Hiroshima)
6. The 4th Oral care seminar due to disease. 2014 (Hiroshima)

G) Lecturer • Symposiast

1. Education for Medical Communication, Tetsuji Ogawa:
Zenkoku-Kango-Koutougakkou-Kennkyu-Kyougikai ,(Hiroshima), 2014.
2. Infection control for oral bacterias, Hiromi Nishi: Kansenbougyo-Senmonnyakuzaishi-Koushuukai,
(Hiroshima), 2014.
3. What and how dental students should be learn for medical communication, clinical reasoning, and
behavior change on the medical interview? 53th MEDC WS, (Gihu), 2014.
4. Oral care based on the bacteriological evaluation. Hiromi Nishi: Infection control meeting
(Hiroshima), 2014.

H) Attending of Lectures, Seminars, and Workshops

1. The 53th seminar and workshop on medical education: Attendant : Taiji Obayashi, Takayuki
Oto.at Gifu Univ. Medical Education Center. (Gifu), 2014
2. The 62th seminar on medical education at Tokyo Univ. : Attendant : Takayuki Oto.at International
Research Centre for Medical Education Tokyo Univ. (Tokyo), 2014.
3. The 9th RIAS training workshop : Attendant : Takayuki Oto. at RIAS study group.(Tokyo), 2014.
4. Kansentaisaku Kyougikai 14' : Attendant : Nishi Hiromi. (Okayama), 2014.
5. The 8th follow-up session for medical communication facilitators : Attendant : Takayuki Oto. at
Japanese Dental Education Association. (Nagoya), 2014.
6. The Lecture for Program Supervisor. Participant: Taiji Obayashi. at Fuji Institute Of Education And
Training. (Susono), 2014.
7. Recurrent training course “Commensal Oral flora” Attendant: Masaru Ohara. Coordinator : School of
Oral Health Science, Faculty of Dentistry, Hiroshima University. (Hiroshima), 2014.
8. The 5th workshop for dental educator. Participant: Taiji Obayashi. at Fuji Institute Of Education
And Training. (Susono), 2014.
9. The 17th chugoku-shikokutiku shikaishirinsyoukensyu shidoushikaikousyuukai : Attendant :
Takayuki Oto. at Hiroshima University Hospital. (Gifu), 2014.

I) Implementation of OSCE, CSA

1. 2nd Advanced OSCE for Postgraduate Trainees 2013-2014
2. 1st Advanced OSCE for Postgraduate Trainees 2014-2015

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

1. Grant-in-Aid Scientific Research, Scientific Research (C). Ogawa T. Education of community based and cultural medical communication. Program No 26463186, 1,400,000Yen.
2. Grant-in-Aid Scientific Research, Young Scientists (B). Nishi H. : Analysis of Toll-like receptor in oral mucosal disease . Program No. 23792346. 1,200,000yen
3. Grant-in-Aid Scientific Research, Scientific Research (C). Ogawa T. : Building of the Education program for community based professionalism. Program No. 25463255. 100,000yen (co-researcher)

(5) Academic Awards, etc.

(6) Patents

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Division of Oral Health and Development Department of Special Care Dentistry

(1) Staffs and Students

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

(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: Phospholipase C-related catalytically inactive protein (PRIP) regulates lipolysis in adipose tissue by modulating the phosphorylation of hormone-sensitive lipase. Okumura T, Harada K, Oue K, Zanf J, Asano S, Hayashiuchi M, et al.: PloS One 2014, 19: e100559. doi: 10.1371/journal.pone.0100559.

B) Review

C) Publications

D) Other Publications

E) Presentation at Scientific Meeting

1. Anesthetic action of propofol in relation to types of GABA_A receptors : Hayashiuchi M., Okada M., Kanematsu T. : The 31st Annual Meeting of Japanese Society for Disability and Oral Health (Sendai), 2014.
2. Imaging mass spectrometry-based molecular histology of Klotho-deficient mice with a syndrome resembling human premature aging. Fujino Y., et al.: The 31st Annual Meeting of Japanese Society for Disability and Oral Health (Sendai), 2014.
3. What do special needs school's staffs think about their oral care? –Questionnaire survey-. Wakita A., et al.: The 31st Annual Meeting of Japanese Society for Disability and Oral Health (Sendai), 2014.
4. What do special needs children's guardians think about their oral care? –Questionnaire survey-. Tomoike A., et al.: The 31st Annual Meeting of Japanese Society for Disability and Oral Health (Sendai), 2014.
5. A survey on oral health status of children and students in special needs school. Nakaoka M., et al.: The 31st Annual Meeting of Japanese Society for Disability and Oral Health (Sendai), 2014.
6. Altered anesthetic action of propofol in phospholipase C-related catalytically inactive protein (PRIP) knockout mice : Masaki Hayashiuchi, Tomoya Kitayama, Mitsugi Okada, Takashi Kanematsu: 47th meeting of the Hiroshima University Dental Society (Hiroshima), June 21, 2014.

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

(5) Academic Awards, etc.

(6) Patents

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Central Clinical Facilities Special Dental Clinic Section

(1) Staff and Students

Chief Professor : Keiji Tanimoto

Assistant Professor : Yukimi Yasuhara

(2) Main Research Activities

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

(3) Research Achievements

A) Original Papers (including Case Reports)

1 : Development and Fundamental Evaluation of Cooked Rice Containing Non-Ionic Water Soluble Iodine Contrast Medium (Visipaque270[®]) for Videofluoroscopic Examination of Swallowing :
Konishi M., Nagasaki T., Yasuhara Y., Hossain A., Tanimoto K.: Official Publication of the Japanese Society of Dysphagia Rehabilitation Vol.18 (2) : 113-122, 2014.

B) Review

C) Publications

D) Other Publications

E) Presentation at Scientific Meeting

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

(5) Academic Awards, etc.

(6) Patents

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Central Clinical Sections Center of Oral Clinical Examination

(1) Staffs and Students

Director: Hidemi Kurihara
Associate Professor: Ikuko Ogawa (Clinic)
Lecturer: Masae Kitagawa (Clinic)
Research Associate: Tomoaki Shintani
Technician: Yuhna Tanaka

(2) Main Research Activities

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

(3) Research Achievements

A) Original Papers (including Case Reports)

1. Odontogenic carcinoma with dentinoid: A new odontogenic carcinoma. Mosqueda-Taylor A, Neville BW, Tatemoto Y, Ogawa I, Takata T. *Head Neck Pathol.* Dec;8(4):421-31. 2014
2. F-spondin Inhibits Differentiation of Clastic Precursors via LRP8. Oka H, Kitagawa M, Takata T. *J Periodontol.* Posted online on October 9, 2014.(doi:10.1902/jop.2014.
- 3 BDNF mimetic compound LM22A-4 regulates cementoblast differentiation via the TrkB-ERK/Akt signaling cascade. Kajiya M, Takeshita K, Kittaka M, Matsuda S, Ouhara K, Takeda K, Takata T, Kitagawa M, Fujita T, Shiba H, Kurihara H. *Int Immunopharmacol.* Apr;19(2):245-52, 2014.
- 4 $1\alpha,25(\text{OH})_2\text{D}_3$ inhibits FGF-2 release from oral squamous cell carcinoma cells through down-regulation of HBp17/FGFBP-1:Rosli SN., Shintani T., Toratani S., Usui E., Okamoto T.:*In Vitro Cell Dev Biol Anim:* 50 (9),802-6,2014.
5. A case of intermediate lesion between intercalated duct lesion and epithelial-myoepithelial carcinoma. Tokuyasu Y., Nakamoto S., Suzuki T., Ogawa I., Takata T. *Jpn J Diag Pathol.* Apr;31(2):165-9, 2014.

6. A case of myxofibrosarcoma of the maxilla. Toratani S., Sakamoto A., Ochi Y., Miyauchi M., Ogawa I., Okamoto T. *Jpn J Oral Maxillofac Surg.* Jun;60(6):354-8, 2014.
7. A case of neck lymph node metastasis after surgery for tongue cancer with Churg-Strauss syndrome. Nakagawa T., Ohta K., Ono S., Seino S., Obayashi M., Ogawa I., Takata T., Takechi M. *J Hiroshima Univ Dent Soc.* Jun; 46(1):67-72, 2014.
8. A case of lichen planus suspected of palladium allergy to dental metals: Kitagawa M., Oumi F., Okamoto Y., Nagasaki A., Obayashi M., Shintani T., Toratani S., Ogawa I., Kurihara H.: *J JSEDP,* 6(1):66-70, 2014.

B) Review

C) Publications

D) Other Publications

E) Presentation at Scientific Meeting

1. Significance of fusion gene analysis for the differential diagnosis of mucoepidermoid carcinoma. Nagasaki A, Ando T, Obayashi M, Ogawa I, Takata T. 17th International Congress on Oral Pathology and Medicine. (Istanbul), 2014.
2. A recurrent case of maxillary osteosarcoma, chondroblastic type, at forehead. Tanaka Y, Ogawa I, Kurita Y, Taira Y, Matsumoto S, Kaneko Y, Simizu T, Oda M, Oda M, Ogawa K, Shiroma N, Arihiro K. The 55th Annual Meeting of Hiroshima Society of Clinical Cytology (Hiroshima), 2014.
3. A case of central mucoepidermoid carcinoma which diagnosis is established by the identification of CRTC1-MAML2 fusion gene. Ogawa I, Suzuki R, Yanagisawa S, Nagasaki A, Ohkubo Y, Sakamoto H, Ohta S, Nakatani Y, Nagao T, Takata T. The 103rd annual meeting of the Japanese Society of Pathology (Hiroshima), 2014.
4. Identification of miR-203 as an inhibitor of invasion in oral cancer. Obayashi M, Yoshida M, Tsunematsu T, Kudo Y, Ogawa I, Miyauchi M, Takata T. The 68th annual meeting of Japanese Stomatological Society (Tokyo), 2014.
5. Significance of titanium allergy as preoperative test of implant: Kitagawa M., Obayashi M., Nagasaki A., Yanagisawa S., Shintani T., Kagawa K., Hiasa K., Kubo T., Takachi M., Ogawa I., Kurihara H.: The 7th Annual Meeting of Japanese Society for Evidence and the Dental Professional (Okayama), 2014.
6. Effort of oral examination center of Hiroshima University Hospital for insurance introduction of oral

- examinations: Shintani T., Kitagawa M., Yoshioka Y., Doi M., Arakawa M., Nakamoto T., Konishi Y., Ouhara K., Koh M., Nishi H., Morita K., Abekura H., Yoshikawa M., Kubo Y., Takechi M., Okada M., Ogawa I., Kurihara H.:The 7th Annual Meeting of Japanese Society for Evidence and the Dental Professional (Okayama), 2014.
7. Palatal tumor (Mucoepidermoid carcinoma). Obayashi M, Nagasaki A, Mizuta K, Ogawa I, Takata T. The 113rd Academic Meeting of Chugoku-Shikoku Branch of the Japanese Society of Pathology (Tohon), 2014
 8. A tumor of pancreas (Solid-pseudopapillary neoplasm). Nagasaki T, Ogawa I, Takata T, Nishida T. The 114th Academic Meeting of Chugoku-Shikoku Branch of the Japanese Society of Pathology (Nangoku), 2014.
 9. A tumor of buccal mucosa (Solitary fibrous tumor). Ogawa I, Sasaki N, Yoneda S, Tohmori H, Hirose T, Takata T The 114th Academic Meeting of Chugoku-Shikoku Branch of the Japanese Society of Pathology (Nangoku), 2014
 10. A tumor of buccal mucosa (Solitary fibrous tumor).. Ogawa T, Obayashi M, Kitagawa M, Takata T. The 25th Annual Meeting of Japanese Society of Oral Pathology (Niigata), 2014.
 11. Parotid tumor (Epithelial-myoepithelial carcinoma). Obayashi M, Ogawa I, Sakatani A, Fujihara M, Takata T. The 115th Academic Meeting of Chugoku-Shikoku Branch of the Japanese Society of Pathology (Hiroshima), 2014.
 12. A tumor of breast (Adenoid cystic carcinoma). Nagasaki A, Ogawa I, Takata T, Nishida T. The 115th Academic Meeting of Chugoku-Shikoku Branch of the Japanese Society of Pathology (Hiroshima), 2014.
 13. Parotid tumor (Polymorphous low-grade adenocarcinoma). Ogawa I, Obayashi M, Fujihara M, Takata T. The 62nd Meeting of Hiroshima Pathological Conference (Hiroshima), 2014.
 14. Parotid tumor (Mammary analogue secretory carcinoma of salivary gland). Ando T, Nagasaki A, Nishisaka T. The 63rd Meeting of Hiroshima Pathological Conference (Hiroshima), 2014
 15. A case of signet-ring cell adenocarcinoma of the palate – a variant of myoepithelial carcinoma? – Ogawa I, Kushitani K, Sakamoto A, Takata T. The 59th Meeting of Japanese Salivary Gland Society (Tokyo), 2014.
 16. A case of low-grade cribriform cystadenocarcinoma of parotid gland. Tanaka Y, Ogawa I, Miyauchi M, Takata T, Arihiro K, Fujihara M. The 53rd Academic Meeting in Autumn of Japanese Society of Clinical Cytology (Shimonoseki), 2014.
 17. Analysis of cytological features of gingival leiomyomas. Comparison between inflammatory lesions and squamous cell carcinoma. Yada N, Ogawa I, Matsuo K. The 53rd Academic Meeting in Autumn of Japanese Society of Clinical Cytology (Shimonoseki), 2014.
 18. A case of neck lymph node metastasis after surgery for tongue cancer with Churg-Strauss syndrome. Nakagawa T, Ohta K, Ono S, Seino S, Ogawa I, Takechi M. The 68th Annual Meeting of The

Japanese Stomatological Society (Tokyo), 2014.

19. Clinico-statistical study of prognostic prediction using pre-treatment PET/CT in oral cancer patients. Mizuta K, Ohta K, Fujimoto S, Uetsuki R, Ogawa I, Takechi M. The 59th Meeting of the Japanese Society of Oral and Maxillofacial Surgeons (Makuhari), 2014.
20. A case of the osteoma with invagination of antral mucosa half occupied in maxillary sinus. Okumura T, Ono S, Nakagawa T, Naruse T, Sasaki K, Yanagisawa S, Ogawa I, Takechi M. The 58th Annual Meeting of the Chugoku-Shikoku Branch of the Japanese Society of Oral and Maxillofacial Surgeons (Tokushima), 2014.

F) Special lectures in academic meetings

1. Pathological diagnosis of malignant salivary gland tumors. Ogawa I. Symposium: Clinical behavior, Diagnosis and Treatment of Malignant Salivary Gland Tumors.. The 59th Meeting of Japanese Society of Oral and Maxillofacial Surgeons (Makuhari), 2014.

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

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

(5) Academic Awards, etc.

1. Shintani T.: Poster award at The 7th Annual Meeting of Japanese Society for Evidence and the Dental Professional

(6) Patents

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Central Clinical Sections

Dental Technicians Section

(1) Staff and Students

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

(2) Main Research Activities

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

(3) Research Achievements

A) Original Papers (including Case Reports)

- 1 : Application of three-dimensional digital models for the morphometric analysis of pre-dentition plasters: accuracy and precision: Kaihara Y, Katayama A, Iwamae S, Kihara T, Ono K, Kurose M, Amano H, Nikawa H, Kozai K: European Journal of Paediatric Dentistry, 15(4): 360-366. 2014

E) Presentation at Scientific Meeting

- 1 : Reconstruction of Three-Dimensional Occlusal Contacts Model on a Dental Morphology : Kihara T, Ikawa T, Hirabayashi R, Shigeta Y, Kentaro Hirai K, Mimura S, Taji T, Ogawa T, Nikawa H : The 9th Scientific Meeting of the Asian Academy of Osseointegration (Sapporo) , 2014.

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

(5) Academic Awards, etc.

- 1 : Hiroki Nikawa : H26th Hiroshima University President's Awards, 2014

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Central Clinical Sections

Dental Hygiene Section

(1) Staff and Students

Director of Dental Hygiene Section : Hidemi Kurihara

Chief Dental Hygienist : Miyuki Nakaoka

Dental Hygienists : Yoriko Iwasaki, Megumi Takamoto, Kanako Matsui(Reinstatement From April), Yumi Irie, Atsuko Wakita, Yukiko Nagatani, Kanako Yano, Tomoko Tokikazu, Kana Dainobu, Miho Okada, Chieko Kawai, Yurie Nakano(December Maternity leave, from March Childcare leave), Maiko Kawagoe, Ayano Tomoike, Kotomi Tetsumori, Tomomi Okino, Ayumi Nakai, Chika Kozono, Yuri Kuramoto(From April), Eri Takano(From April)

Dental Assistants : Yuri Kijima(Till February), Hisako Ozaki, Yatabe Mayumi(Till June), Keiko Kodani(From July)

(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)

B) Review

C) Publications

D) Other Publications

- 1 : Standard Precaution IS infection control perfect? ;Quintessence: Noriyoshi Mizuno., Miyuki Nakaoka, Yoshie Niitani, , Hidemi.Kurihara,; Quintessence(Tokyo),Vol.33 no.10 P.59-63, 2014

E) Presentation at Scientific Meeting

- 1 : Oral hygiene control of a patient with Myelodysplastic syndromes— A case of graft versus host disease to be suspected after Hematopoietic stem cell transplantation — :Irie Y., Ohara Y.,Nakaoka M.,Mitsuhata C., Kozai K.,:The 31 st Annual Meeting of the Japanese Society for Disability and Oral Health(Sendai),2014

- 2 : A survey on oral health status of children and students in special needs school. :Nakaoka M, Wakita A, Tomoike A., Oda Y., Kojima T., Fujita T., Ueda Y., Hayasi F., Okada M: The 31st Journal of the Japanese Society for Disability and Oral Health (Sendai), 2014

- 3 : Problems clarified from questionnaire after HIV dental clinical system construction business by Hiroshima University Hospital.:**Iwata T., Shiba H.,Mastui K., Shintani T., Okada M., Hamamoto K., Unei H., Saito S., Takata N.and Fujii T.:**The 28th Annual meeting of the Japanese Society for AIDS research.(Osaka),2014.

- 4 : Basic infection control dental clinic: Nakaoka M:Kochi oral surgery study roup(Kochi),2014

- 5 : On AUDIT System of Hiroshima Safety Dental service Support network for the prevention of nosocomial infection for the dental clinic:Iwata T., Mizuno N., Nakaoka M., Irie Y., Nagahara T., Shiba H., Sawa A. and Kurihara H:The 29th Annual meeting of the Japanese Society for Infection Prevention and Control.:(Tokyo),2014.

- 6 :The operation situation of the Hiroshima University oral health studies specially graduate and learning in the professional training:Eri Takano, Rumi Nishimura, Chie Yoshinaga, Yuri Kuramoto, Atsushi Shimazu, Masaru Sugiyama : Japanese dental health society (Oomiya) , 2014.

- 7 : What do special needs school`s staffs think about their oral care? –Questionnaire survey- : Atsuko Wakita, Ayano Tomoike, Yuki Oda, Tarou Kojima, Miyuki Nakaoka, Tomoaki Fujita, Yuji Ueda, Mitsugi Okada:The 31st Japanese Society for Disability and Oral Health (SENDAI),2014.

- 8 : What do special needs children`s guardians think about their oral care.-Questionnaire survey-:Ayano Tomoike, Atsuko Wakita, Yuki Oda, Tarou Kojima, Miyuki Nakaoka, Tomoaki Fujita, Yuji Ueda, Mitsugi Okada:Annual Meeting of the Japanese Society for Disability and Oral Health (Sendai) ,2014.

- 9 : Research about the dental health awareness of parent and teachers in special needs school:Yuji Ueda, Takashi Arima, Yoshinori Hada, Yumi Hirai, Tomoaki Fujita, Taizou Komatsu, Kazuki Noumi, Yuki

Oda, Atsuko Wakita, Tarou Kojima, Yuuki Hayashiuchi, Youko Fujino, Kouichirou Matsumoto, Megumi Iwamoto, Chihiro Mantoku, Kou Fujioka, Mitsugi Okada, Kenya Tsuchie: Hiroshima City Dental Association Hiroshima Prefecture Dental Association Hiroshima University Dental Society(Hiroshima), 2014.

1 0 :Field study of dental hygienist students trust clinical training in the new outpatient department ridge of Hiroshima University Hospital : Tomoko Tokikazu, Yukiko Nagatani, Kanako Matui, Atsuko Wakita, Kana Dainobu, Miho Okada, Chieko Kawai, Miyuki Nakaoka, Noriyoshi Mizuno, Fumino Ogawa, Takayasu Kubo, Mineka Yoshikawa, Kazuya Doi, Kousei Okamoto, Yoshiaki Ninomiya, Hiroshi,Ueda Myouzen Koh, Meiko Tachikake, Yuki Oda, Mitsugi Okada, Tetsuji Ogawa:The 98th Hiroshima University Dental Society(Hiroshima), 2014.

1 1 : Trial study meeting for oral care by dental hygienists in ward for children inpatients.:Maiko Kawagoe,Yumi Irie,Yasutaka Kaihara,Ryoko Hirata,Noriko Niizato,Miyuki Nakaoka,Chieko Mitsuata,Katsuyuki Kozai.:52nd Annual Conference of the Japanese Society of Pediatric Dentistry.(Tokyo), 2014.

F) Symposiast

1 : Oral health care in Hiroshima univercity hospital~Activity report of interprofessional oral health care support team~:Tomomi Okino:Hiroshima society of prevention in nosocomial infection(Hiroshima),2014

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

(5) Academic Awards, etc.

(6) Patents

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Dental Clinic

(1) Staff and Students

Director : Takamune Hino

Assistant Professor : Masaru Ohara

(2) Main Research Activities

- 1 : Pathogenesis of the periodontal diseases
- 2 : A study on the drug-resistant bacteria from nosocomial infection

(3) Research Achievements

A) Original Papers (including Case Reports)

1. Delivery and Application of Dietary Polyphenols to Target Organs, Tissues and Intracellular Organelles. Ohara Masaru, Ohyama Yoshihiko, [Current Drug Metabolism](#), 15, 1, pp. 37-47(11), 2014.

B) Review

C) Publications

D) Other Publications

1. Development of the washing-sterilizer by the ordinary pressure superheated steam use. Takamune Hino, Power of Hiroshima University, I - Life science, Collection of Hiroshima University results of research, p148, 2014.
2. Development of the triangle removal drill in the endodontic treatment. Masaru Ohara, Power of Hiroshima University, I - Life science, Collection of Hiroshima University results of research, p32, 2014.

E) Presentation at Scientific Meeting

1. Human dentition-related genetic bioinformatics analysis using the genome information of the polyphyodont creature. Masaru Ohara, Hiromi Nishi, Taiji Ohbayashi, Tetsuji Ogawa. The 6th Research Seminar in General Dental Medicine. (Osaka), Nov. 2014.

F) Seminar, Workshop, etc.

1. The 57th spring meeting of the Japanese society of Periodontology (Kobe), Oct 2014
2. Advanced OSCE for residents: 2014/2/12(Wed) • 19(Wed)
3. Advanced OSCE for residents: 2014/4/2(Wed)

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

1. Grant-in-Aid for Scientific Research (C) from the Ministry of Education, Science, Sports and Culture of Japan. Masaru Ohara

(5) Academic Awards, etc.

(6) Patents

1. JP 4857438 B2 2012.1.18, Takamune Hino
2. JP 5007439 B2 2012.8.22, Takamune Hino
3. Utility Model Registration: RN:3182420, Masaru Ohara, Takamune Hino

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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

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

(3) Research Achievements

A) Original Papers (including Case Reports)

- 1 : Philological Study on Evaluation of Hospital Information Systems -Necessity for Contribution Guidelines which Cover from Case Reports to Original Papers-: H TSUKUMA, T TANAKA and M IKEUCHI: Japan Journal of Medical Informatics **34** Vol. 6. pp.257-269, 2014.
- 2 : Simple Tests for Accessibility of Visually Impaired Person to National University Hospital Websites Based on JIS X 8341-3:2010: T TANAKA, H TSUKUMA and M IKEUCHI: IEICE Technical Report WIT2014-24 (2014-09) pp.31-34, 2014.
- 3 : Development of the Out-Patient Navigation System in a Large Dental Clinic in a University Hospital: K HIASA, et al.: The Proceedings of The Liaison Conference between Information Management Departments of University Hospital 2014. pp.384-386, 2014.
- 4 : The evaluation of the guiding system for an out-patient with a patient's handy terminal in a large dental clinic in a hospital: T TANAKA, K HIASA, K TANIMOTO and H AMANO: Japan Journal of Medical Informatics **34** Suppl. pp.400-401, 2014.
- 5 : Development of patient guiding system in dental clinic of hospital using appointment data: K HIASA et al.: Japan Journal of Medical Informatics **34** Suppl. pp.402-403, 2014.
- 6 : Efforts for Supporting Candidates of Healthcare Information Technologist by a Regional Healthcare Information Technologist Association: K MORIMOTO et al.: Japan Journal of Medical Informatics **34** Suppl. pp.740-742, 2014.

- 7 : A Trial Production of Frame Model for Overhauling Issues to Which Hospital Information Systems Relate. -Inclusion of the View of Organizing Ability, Human Action, and System User Education: H TSUKUMA et al.: Japan Journal of Medical Informatics **34** Suppl. pp. 760-763, 2014.
- 8 : Y KURIHRA et al.: Studies in health technology and informatics **205**, pp.1195, 2014.

B) Review

C) Publications

D) Other Publications

E) Presentation at Scientific Meeting

- 1 : Philological Study on Evaluation of Hospital Information Systems -Necessity for Contribution Guidelines which Cover from Case Reports to Original Papers-: H TSUKUMA, T TANAKA and M IKEUCHI: The Japan Association for Medical Informatics Spring Conference 2014 (Okayama), 2014.
- 2 : Simple Tests for Accessibility of Visually Impaired Person to National University Hospital Webpages Based on WCAG 2.0: T TANAKA, H TSUKUMA and M IKEUCHI: The Japan Association for Medical Informatics Spring Conference 2014 (Okayama), 2014.
- 3 : Development of the Out-Patient Navigation System in a Large Dental Clinic in a University Hospital: K HIASA, et al.: The Liaison Conference between Information Management Departments of University Hospital 2014 (Tokushima), 2014.
- 4 : The evaluation of the guiding system for an out-patient with a patient's handy terminal in a large dental clinic in a hospital: T TANAKA, K HIASA, K TANIMOTO and H AMANO: The 34th Joint Conference of Medical Informatics (Chiba), 2014.
- 5 : Development of patient guiding system in dental clinic of hospital using appointment data: K HIASA et al.: The 34th Joint Conference of Medical Informatics (Chiba), 2014.
- 6 : Efforts for Supporting Candidates of Healthcare Information Technologist by a Regional Healthcare Information Technologist Association: K MORIMOTO et al.: The 34th Joint Conference of Medical Informatics (Chiba), 2014.
- 7 : A Trial Production of Frame Model for Overhauling Issues to Which Hospital Information Systems Relate. -Inclusion of the View of Organizing Ability, Human Action, and System User Education: H TSUKUMA et al.: The 34th Joint Conference of Medical Informatics (Chiba), 2014.

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

(5) Academic Awards, etc.

(6) Patents

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