Contents

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

Programs for Biomedical Research, Division of Molecular Medical Science
- Department of Biomaterials Science
- Department of Dental and Medical Biochemistry
- Department of Oral Biology
- Department of Bacteriology

Programs for Biomedical Research, Division of Integrated Medical Science
- Department of Oral Physiology
- Department of Dental Pharmacology

Programs for Biomedical Research, Division of Frontier Medical Science
- Department of Oral and Maxillofacial Pathobiology
- Department of Periodontal Medicine, and Department of Preventive and Restorative Dentistry (Periodontics and Endodontics)
- Department of Molecular Oral Medicine & Maxillofacial Surgery

Programs for Applied Biomedicine, Division of Medical Intelligence and Informatics
- Department of Mucosal Immunology
- Department of Oral and Maxillofacial Radiology, and Department of Oral & Maxillofacial Surgery and Oral Medicine (Oral and Maxillofacial Radiology)

Programs for Applied Biomedicine, Division of Clinical Medical Science
- Department of Oral Growth and Developmental Biology
- Department of Dental Anesthesiology, and Department of Oral & Maxillofacial Surgery and Oral Medicine (Dental Anesthesiology)

Programs for Applied Biomedicine, Division of Cervico-Gnathostomatology
- Department of Dental Science for Health Promotion, and Department of Preventive and Restorative Dentistry (Operative and Conservative Dentistry)
- Department of Oral and Maxillofacial Surgery, and Department of Oral & Maxillofacial Surgery and Oral Medicine (Oral and Maxillofacial Reconstructive Surgery)
- Department of Advanced Prosthodontics, and Department of Preventive and Restorative Dentistry (Implants and Prosthodontics)
- Department of Advanced Prosthodontics, and Department of Preventive and Restorative Dentistry (Prosthetic Dentistry)
・Department of Orthodontics and Craniofacial Developmental Biology, and Department of Oral Health and Development (Orthodontics)
・Department of Pediatric Dentistry, and Department of Oral Health and Development (Pediatric Dentistry)

○Master's Program for Oral Health Sciences, Division of Oral Health Sciences
・Department of Public Oral Health
・Department of Maxillofacial Functional Development
・Department of Oral Health Management
・Department of Anatomy and Functional Restorations
・Department of Medical System and Biomaterial Engineering
・Department of Oral Biology & Engineering

○Central Research Laboratory
○Department of Advanced General Dentistry, General Dentistry
○Department of Oral Health and Development, Preventive Dentistry
○Department of Oral Health and Development, Special Care Dentistry
○Central Clinical Sections, Special Dental Clinic Section
○Central Clinical Sections, Center of Oral Clinical Examination
○Central Clinical Sections, Dental Technicians Section
○Central Clinical Sections, Dental Hygiene Section
○Dental Clinic
○Dental Medical Information Section
Programs for Biomedical Research,  
Division of Molecular Medical Science  
(Department of Biomaterials Science)

(1) Staff and Students

Professor: Masayuki Okazaki  
Associate Professor: Kunio Wakasa  
Research Associate: Yuji Nomura, Isao Hirata  
Graduate Student: Tomomi Hayashida  
Researcher: Ryo Nishikiori

(2) Main Research Activities

1: Development of functional biomaterials with adhesion molecules  
2: Biocompatibility of apatite-collagen composites  
3: Interaction between living system and biomaterials with self-assembled monolayers  
4: Dynamics of dentine adhesion interface  
5: Mechanical properties of visible light-cured resin fillers  
6: Bioassay of endocrine disruptor chemicals  
7: Mechanism of molecular-level tooth adhesion  
8: Improvement of implant surface  
9: Synthesis and polymerization of multi-functional monomers  
10: Casting of glass ceramics

(3) Research Achievements

A) Original Papers (including Case Reports)


B) Review

Returns to the Contents
Programs for Biomedical Research,

Division of Molecular Medical Science
(Department of Dental and Medical Biochemistry)

(1) Staff and Students

Professor: Yukio Kato
Associate Professor: Mitsuhide Noshiro
Research Associate: Takeshi Kawamoto, Katsumi Fujimoto
International Student: Tania Saskianti
Secretary: Misano Kuramoto

(2) Main Research Activities

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

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

(3) Research Achievements

A) Original Papers (including Case Reports)
3: PERIOD1 is an anti-apoptotic factor in human pancreatic and hepatic cancer cells. :Sato F, Nagata C,


B) Review

C) Publications

D) Other Publications

E) Presentation at Scientific Meeting

1: Identification of Mesenchymal Stem Cell (MSC)-Transcription Factors by Microarray and Knockdown Analyses, and Signature Molecule-marked MSC in Bone Marrow by Immunohistochemistry. Yukio Kato: International Workshop on BioDental Education & Research 2.7-8, 2009, Hiroshima City

2: Biological Significance of Serum-Free Cultures for Adult Stem Cells: Y. Kato and J. Shao: 3rd Hiroshima Conference11.7-8, 2009, Hiroshima City

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

(5) Academic Awards, etc.

(6) Patents

Returns to the Contents
Programs for Biomedical Research,  
Division of Integrated Medical Science  
(Department of Oral Physiology)  

(1) Staff and Graduate Students  

Professor : SHIBA, Yoshiki  
Associate Professor : HIRONO, Chikara  
Assistant Professor : SUGITA, Makoto  
Assistant : IWASA, Yoshiko  
Graduate Students : MARUYAMA, Takane, INOUE, Machiko  

(2) Current Subjects in Scientific Activity  

1: Study on function and regulation of taste organs and salivary glands  
2: Molecular physiological study on function of ion channels and ion transporters  
3: Study on the mechanism of taste perception  
4: Study on the role of cell communication in proliferation and differentiation of oral mucosa.  
5: Study on mastication and swallowing  

(3) Academic Achievements  

A) Original Papers (including Case Reports)  

B) Review  

C) Publications  

D) Other publication  

E) Presentation in academic meetings  


3: Genetic tracing and characterization of the neurons in the nucleus of the solitary tract, receiving specific taste input.: Sugita M., Shiba Y.: The XXXVI International Congress of Physiological Sciences (Kyoto), 2009.


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

1: JST (PRESTO): Sugita, M., The neuronal mechanisms underlying the taste-evoked behavioral and emotional responses, ¥7,000,000.

2: Grant-in-Aid for Scientific Research (C): Sugita, M., The neuronal mechanisms underlying the taste recognition revealed by genetic tracing, ¥700,000.

(5) Academic Awards, etc.

(6) Patents
Programs for Biomedical Research, 
Division of Integrated Medical Science 
(Department of Dental Pharmacology)

(1) Staff and Students

Professor: Takashi Kanematsu
Associate professor: Katsuya Morita
Assistant professor: Tomoya Kitayama, Kae Harada
Graduate student: Koki Kifune, Toshiya Okumura, Hiroto Tanaka
Undergraduate student (Advanced Dental Research course): Ryuichi Tsuruta (5th), Yuya Ogawa(4th),
Nami Kikushige (4th), Nozomi Hinada (4th)

(2) Main Research Activities

1: Studies on the molecular mechanisms of GABA_A receptor signaling in the central nervous system
2: Studies on the molecular mechanisms controlling insulin secretion
3: Studies on the regulatory mechanisms of food intake and energy metabolism
4: Studies on the roles of a new autophagy-related molecule in autophagy pathway
5: Physiological and pathophysiological roles of neurotransmitter transporters and nucleoside transporters.
6: Studies on the mechanisms for neuropathic pain and the development of novel medicaments.

(3) Research Achievements

A) Original Papers

1: Binding of phospholipase C-related but catalytically inactive protein to phosphatidylinositol 4,5-bisphosphate via the PH domain: J. Gao, H. Takeuchi, Z. Zhang, M. Fujii, T. Kanematsu and M. Hirata: Cell Signal., 21, 1180-1186, 2009
2: Involvement of phospholipase C-related inactive protein in the mouse reproductive system through the regulation of gonadotropin levels: Biol. Reprod., 81, 681-689, 2009
B) Reviews

C) Publications

D) Other Publications

E) Presentation at Scientific Meeting


14: PRIP-dependent complex formation is important for the insulin-induced membrane insertion of GABA_A receptor: M. Fujii, T. Kanematsu and M. Hirata: The 82nd Annual Meeting of the Japanese Biochemical Society, Kobe, 2009.


19: PRIP is involved in regulation of energy metabolism.: K. Harada, H. Tanaka, M. Hirata and T. Kanematsu:


F) Special lectures in academic meeting


(4) Grants

1: Grant-in-Aid for Scientific Research (B): Kanematsu T., Studies on the mechanisms of food intake-regulated by PRIP. Project number 21390495. Amount 7,800,000.

2: Grant-in-Aid for challenging Exploratory Research: Kanematsu T., Studies on the regulatory mechanisms of neuropathic pain by PRIP. Project number 21659429. Amount 1,200,000.

4: Japan Diabetes Foundation: Kanematsu T., Analysis of the molecular mechanisms of insulin secretion via PRIP molecule. Amount 1,000,000.

5: The Pharmacological Research Foundation, Tokyo: Kanematsu T., Developmental studies for the new approaches to the pharmacotherapy of neuropathic pain. Amount 1,000,000.


(5) Academic Awards

(6) Patents
Programs for Biomedical Research, Division of Frontier Medical Science (Department of Oral and Maxillofacial Pathobiology)

(1) Staff and Students

Professor : Takashi Takata
Associate Professor : Mutsumi Miyauchi
Assistant Professor : Yasusei Kudo
Research Associate : Shojiro Kitajima
Postdoctoral Fellow : Shinji Iizuka
Research Assistant: Saki Tomita, Nobuko Ishimura, Tomomi Ichi
Secretary: Yuko Masuda
Graduate Student : Kiyako Sakamoto (D4), Mohammad Reza Keikhaee (D4), Guangying Quit (D4), Maki Yoshida (D3), Elsayed Deraz (D3), Hisako Furusho (D2), Phuong Thao Nyugen (D2), Intan Suraiya Merican Binti Aljunid Merican (D1), Natsumi Shimizu (M1)

(2) Main Research Activities

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

(3) Research Achievements

A) Original Papers (including Case Reports)

2. Effects of improvement in periodontal inflammation by toothbrushing on serum lipopolysaccharide concentration and liver injury in rats: Tomofuji T, Ekuni D, Sanbe T, Azuma T, Tamaki N, Irie K,
209


B) Publications


(Japanese).


C) Other Publications


E) Presentation at Scientific Meeting

2. Low-intensity Ultrasound Stimulation Inhibits Root Resorption Induced by the Application of Experimental Force: Toshihiro Inubushi, Braga Emanuel Rego, Yamano Eizo, Jyunji Otani, Mutsumi Miyauchi, Takashi Takata, Kazuo Tanne: The 3rd International Workshop on Biodental education &


F) Special lectures in academic meetings
1. Abnormal regulation of ubiquitin mediated proteolysis of cell cycle regulators in cancer cells:
5. Satellite symposium “Young D.D.S. Investigator Symposium: Diversity of research of life science”.

(4) Status of Receiving Grants-in Aid for Scientific Research, etc.
1. Grants-in-Aid for Scientific Research (Scientific Research (A)) New: Takashi Takata: The clarification of the mechanism of invasion and metastasis of oral cancer and its application to diagnosis of malignancy and gene therapy. ¥18,300,000
2. Grants-in-Aid for Scientific Research (Scientific Research (C)) New: Mutsumi Miyauchi: Study on the development of novel therapy for bone disease targeting γ-GTP. ¥1,600,000
3. Grants-in-Aid for Scientific Research (Young Scientists (A)) Continuance: Yasusei Kudo: Abnormal regulation of APC/C ubiquitin ligase complex inhibitor Emil and its role for carcinogenesis. ¥4,000,000
4. Grants-in-Aid for Scientific Research (Young Scientists (B)) Continuance: Shojiro Kitajima: Regulation of Aurora-A stabilization by phosphorylation and its abnormal regulation in oral cancer. ¥1,500,000
5. Grants-in-Aid for Scientific Research (JSPS Fellows) Continuance: Shinji Iizuka: The study of bone regeneration by using Ameloblastin synthetic peptides. ¥600,000
6. Grants-in-Aid for Scientific Research (JSPS Fellows) Continuance: Guangying Qi: Overexpression of Survivin and Aurora-B and their roles in oral cancer. ¥600,000
7. Grant from Ministry of Health, Labour and Welfare, New: Takashi Takata: Exploring and analysis of novel marker for health and geriatric disease. ¥3,000,000
8. Donated fund (SATAKE education research promotion) New: Shojiro Kitajima: Clarification of the mechanisms of cell division through dephosphorylation by PP2A. ¥300,000
10. Donated fund from Ito ultrasound Ltd., Continuance : Takashi Takata : Study on the influence of ultrasonic irradiation on periodontal tissue. ¥4,500,000
11. Donated fund from Clinical laboratory center, Hiroshima city medical association, Continuance : Takashi Takata : Study on diagnosis for oral disease. ¥200,000
12. Donated fund from Mitsubishi-Mihara Hospital, Continuance : Takashi Takata : Study on diagnosis for oral disease. ¥105,000
13. Donated fund for Hiroshima Prefecture tumor registration business, Continuance : Takashi Takata ¥20,575

(5) Academic Awards, etc.
2. Toshinori Ando: Encouragement Award at The 42nd meeting of Hiroshima University Dental Society, Hiroshima, 2009.

(6) Patents
None
Programs for Biomedical Research, Division of Frontier Medical Science (Department of Periodontal Medicine), and Department of Preventive and Restorative Dentistry (Periodontics and Endodontics)

(1) Staff and Students

Professor: Hidemi Kurihara
Associate Professor: Hiroyuki Kawaguchi
Research Associate: Hideki Shiba
Assistant: Takamune Hino, Naohiko Hasegawa, Noriyoshi Mizuno, Tsuyoshi Fujita, Yuushi Uchida, Katsuhiko Takeda, Tomoyuki Iwata, Kazuhisa Ohara
Resident: Yasuto Kawamura, Fumino Ogawa
Graduate Student: Yoriko Iwasaki, Yoshie Niitani, Shinji Matsuda, Takeshi Ueda, Yusuke Taniguchi, Tomoko Hatakeyama, Naoko Katagiri, Mizuho Kittaka, Akihiro Konishi, Tuyoshi Miyagawa, Kenji Wada

(2) Main Research Activities

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

(3) Research Achievements

A) Original Papers (including Case Reports)

1: Neodymium-doped yttrium-aluminium-garnet laser irradiation abolishes the increase in interleukin-6 levels caused by peptidoglycan through the p38 mitogen-activated protein kinase pathway in human


C) Publications


E) Presentation at Scientific Meeting


3: Development of periodontal tissue regeneration therapy by using bone marrow mesenchymal stem cells/ beta-tricalcium phosphate complex: Nagahara T, Kawaguchi H, Takeda K, Fujita T, Hayashida K, Kawahara K, Sakai N, Ueda T, Tsuji K, Kurihara H. The 52nd spring meeting of the Japanese society of Periodontology (Okayama), 2009


University Dental Society, 2009


16: Is the serum IgG antibody titer to Aggregatibacter actinomycetemcomitans effective for diagnosis of periodontitis types?: Ogawa F, Hino T, Kawamura Y, Shiba H, Kawaguchi H, Kurihara H.: The second meeting of the Japanese society of Evidence and the Dental Professional (Hiroshima), 2009


23: Brain-derived Neurotrophic Factor / Hyaluronic Acid Complex Enhances Periodontal Tissue Regeneration : KATSUHIRO TAKEDA, NORIYUKI SAKAI, HIDEKI SHIBA, HIROYUKI KAWAGUCHI, KOICHIRO TSUJI, HIDEMI KURIHARA :87th General session and Exhibition of the international association for dental research (April; Miami, USA)

24: Distribution of cortisol and the cell adhesion proteins in gingival tissue from aggressive periodontitis.: Koichi Hayashida, Noriko Tsunekuni, Mikihito Kajiya, Tsuyoshi Fujita, Hideki Shiba, Yushi Uchida, Hiroyuki Kawaguchi, Hiromi Kurihara :87th General session and Exhibition of the
international association for dental research (April; Miami, USA)
25: Preventive effect of irsogladine maleate for periodontal disease : Akiyoshi Kishimoto, Tsuyoshi Fujita, Hideki Shiba, Kouichi Hayashida, Yuushi Uchida, Hiroyuki Kawaguchi, Hidemi Kurihara : 87th General session and Exhibition of the international association for dental research (April; Miami, USA)
26: Irsogladine maleate abolishes IL-8 production through ERK in human epithelial cells : Tsuyoshi Fujita, Akiyoshi Kishimoto, Hideki Shiba, Mikihito Kajiya, Katsuhiro Takeda, Kouichi Hayashida, Yuushi Uchida, Shinji Matsuda, Hiroyuki Kawaguchi, Hidemi Kurihara : 87th General session and Exhibition of the international association for dental research (April; Miami, USA)
27: Brain-derived Neurotrophic Factor (BDNF) enhances endothelial cell migration : Shinji Matsuda, Tsuyoshi Fujita, Mikihito Kajiya, Katsuhiro Takeda, Hideki Shiba, Hiroyuki Kawaguchi, Kouichiro Tsuji, Hidemi Kurihara : 87th General session and Exhibition of the international association for dental research (April; Miami, USA)
28: Ceruloplasm Regulates Superoxide Generation in LAP Neutrophils : Tomoyuki iwata, Alpdogan Kantarci, Motohiko Yagi, Amanda Blackwood, Tina Jackson, Taisuke Ohira, Hatice Hasturk, Hidemi Kurihara, Thomas E. Van Dyke : 87th General session and Exhibition of the international association for dental research (April; Miami, USA)
30: Brain-derived Neurotrophic Factor (BDNF) Enhances Angiogenesis through ERK Signaling : Shinji Matsuda, Tsuyoshi Fujita, Katsuhiro Takeda, Hideki Shiba, Hiroyuki Kawaguchi, Kouichiro Tsuji, Hidemi Kurihara : 3rd Hiroshima Conference on Education and Science in Dentistry (November; Hiroshima)

F) Special lectures in academic meetings

1: Periodontal tissue regeneration by mesenchymal stem cell: Kawaguchi H., Kurihara H.: Symposium 'Regenerative Therapy', The meeting of the Japanese tissue culture association.
3: Periodontal regenerative therapy : symposium : Kurihara H: Academic meeting of the Tokyo dental collge
4: 「Periodontal tissue regeneration with brain-derived neurotrophic factor」: Hidemi Kurihara : ADS-ROC annual meeting

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

1: Grants-in aid for scientific research : Ouhara K.: 21890165.
4: Grants-in aid for scientific research : Mizuno N.: 21792122.
8: Grants-in aid for scientific research : Kurihara H.: 20592334.

(5) Award.

2: Kitamoto Y: Utility of bacterial examination with anaerobic culture system for samples from root canal in root canal treatment: The second meeting of the Japanese society of Evidence and the Dental Professional

3: Matsuda S.: Brain-derived Neurotrophic Factor (BDNF) Enhance Angiogenesis Through Map Kinase Cascade: The Hiroshima University Dental Society, 2009

Returns to the Contents
Programs for Applied Biomedicine, Division of Medical Intelligence and Informatics (Department of Mucosal Immunology)

(1) Staff and Students

Professor: Ichiro Takahashi
Associate Professor: Kei Tobiume
Graduate Student: Hirokazu Toubou

(2) Main Research Activities

1: Immunobiological analysis of the mucosal immune system
2: Molecular analysis of cell death

(3) Research Achievements

A) Original Papers


B) Review


C) Presentation at Scientific Meeting

1: Takahashi, I. A role of mucosal T cells in determining the outcome of commensal bacteria-triggered

D) Other Publications

E) Presentations

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


(5) Academic Awards, etc.

(6) Patents

Returns to the Contents
Programs for Applied Biomedicine, Division of Medical Intelligence and Informatics (Department of Oral and Maxillofacial Radiology)
Department of Oral and Maxillofacial Surgery and Oral Medicine (Oral and Maxillofacial Radiology)

(1) Staff and Students

Professor : Keiji Tanimoto
Associate Professor : Minoru Fujita
Assistant Professor : Yoshikazu Suei, Takashi Nakamoto
Research Associate : Toshikazu Nagasaki, Masahiko Ohtsuka, Masahiko Sawajiri, Masaru Konishi
Graduate Student : Samir Banik, Masaru Konishi, Yukimi Yasuhara, Mitsuko Shimizu, Kiyohito Ota

(2) Main Research Activities

1: Radiographic classification of simple bone cyst of the jaw
2: Radiographic study of osteomyelitis of the jaw
3: Study of radiation dosimetry in X-ray region for diagnosis
4: Study on the contrast agents and foods used in videofluoroscopic examination of swallowing
5: Radiation effects of heavy ion particles on bone metabolism.

(3) Research Achievements

A) Original Papers

B) Review

C) Publications

E) Presentation at Scientific Meeting


D) Other Publications

E) Presentation at Scientific Meeting

(4) Status of Receiving Grants-in Aid for Scientific Research, etc.
1: Grant-in-aid for scientific research from the Japan Society for the Promotion of Science: Sawajiri M: Radioprotective assay on bone metabolism with Japanese Medaka (Oryzias latipes). (no. 20592201) ¥800,000

(5) Academic Awards, etc.

(6) Patents
Programs for Applied Biomedicine,
Division of Clinical Medical Science
(Department of Oral Growth and Developmental Biology)

(1) Staff and Students

Professor: Maeda Norihiko
Associate Professor: Yoshiko Yuji
Research Associate: Minamizaki Tomoko, Yoshioka Hirotaka
Researcher: Kitabatake Seiko
Graduate Student: Nishikiori Aya
Student: Koma Yoshiaki, Irie Yasumasa

(2) Main Research Activities

1: Study on the development and aging in the masticatory system
2: Study on the neurogenesis in the brain
3: Studies on cell fate choice and plasticity in osteoblast-lineage cells
4: Studies on the molecular mechanisms of bone formation and mineralization
5: Study on the molecular mechanisms of tooth formation and mineralization

(3) Research Achievements

A) Original Papers (including Case Reports)


B) Review

C) Publications

D) Other Publications

E) Presentation at Scientific Meeting


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

1: Grant from Raffinee International Corporation: Y. Yoshiko: ¥3,600,000, 2009

2: Grant-in-Aid for Scientific Research: Y. Yoshiko: (No. 20592139) ¥1,430,000, 2009

3: Grant from Hiroshima University: T. Minamizaki ¥220,000, 2009

4: Grant-in-Aid for Scientific Research: T. Minamizaki: (No. 21791788) ¥1,340,000, 2009

5: Grant from Raffinee International Corporation: H. Yoshioka (No. 21890156): ¥3,600,000, 2009

(5) Academic Awards, etc.

1: H. Yoshioka et al., JSBMR Plenary Poster Award in the 27th Annual Meeting of the Japanese Society for Bone and Mineral Research, Osaka, 2009

2: Minamizaki et al., JSBMR Plenary Poster Award in the 27th Annual Meeting of the Japanese Society for Bone and Mineral Research, Osaka, 2009
(6) Patents

(7) Introduction of Department of Oral Growth and Developmental Biology

[Education]

Our educational program consists of lectures and the practical exercise on histology of
the human body, and oral anatomy mainly focusing the mastication.

[Research]

We mainly focus on the subjects described in the Main Research Activities. The final goal of our
research is to contribute to the high quality of the human life in the world. So, we collaborate on the
research not only with some research groups of other universities and research institutes in Japan but also
with the research group of the University of Toronto in Canada.
Programs for Applied Biomedicine, Division of Clinical Medical Science (Department of Dental Anesthesiology) and Department of Oral and Maxillofacial Surgery and Oral Medicine (Dental Anesthesiology)

(1) Staff and Students

Professor: Irifune Masahiro, D.D.S., Ph.D.
Resident: Miura Kan-na, D.D.S.

(2) Main Research Activities

1: Study on mechanisms of general anesthetic action
2: Study on a stage of delirium in general anesthesia
3: Study on antianxiety effects of sedative drugs
4: Effects of nitrous oxide on cardiovascular system
5: Study on chronic pain
6: Study on efficacy of chest compressions in cardiopulmonary resuscitation
7: Acute medicine for emergency during dental treatments

(3) Research Achievements

A) Original Papers (including Case Reports)


B) Review

C) Publications

D) Other Publications

E) Presentation at Scientific Meeting


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

1: Grant-in-Aid No. 20592373 for Scientific Research (C) from the Ministry of Education, Culture, Sports, Science, and Technology of Japan (Continued): Irifune M: The role of Substance P in antinociception
and immobility as general anesthetic components, ¥500,000.

2: Grant-in-Aid No. 20791524 for Young Scientists (B) from the Ministry of Education, Culture, Sports, Science, and Technology of Japan (Continued): Doi M: Possibility of symptom specificity for patients with intractable chronic pain, and quantitative evaluation of sociopsychological factors –MEG and f-MRI–, ¥100,000.

(5) Academic Awards, etc.

(6) Patents
Programs for Applied Biomedicine, Division of Cervico-Gnathostomatology (Department of Dental Science for Health Promotion), and Department of Preventive and Restorative Dentistry (Operative and Conservative Dentistry)

(1) Staff and Students

Professor : Fusanori Nishimura
Associate Professor :
Assistant Professor : Masashi Fujii
Research Associate : Kenichi Shirai, Makoto Arakawa, Shigeki Suzuki, Naoyo Motoyama, Akane Mineoka, Akiko Yamashita
Graduate Student : Misaki Iwashita, Sonoko Kumamoto, Junko Yonehiro, Yuuki Jinnin, Hideo Nakarai, Sakiko Fujii, Takanori Shinjo

(2) Main Research Activities

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

(3) Research Achievements

A) Original Papers (including Case Reports)


2: Dentin sialoprotein and dentin phosphoprotein have distinct roles in dentin mineralization.: Suzuki


B) Review


C) Publications


D) Other Publications

E) Presentation at Scientific Meeting


8: Glycine receptor α3 (GlyRα3) mediation of tactile allodynia induced by platelet-activating factor (PAF) through cGMP signaling in spinal cord in mice: Motoyama N., Morita K., Kitayama T., Nishimura F., Dohi T.: The 130th Japanese Society of Conservative Dentistry (Sapporo), June 11-12, 2009.

9: Microarray analyses of the genes differentially expressed in adipocytes co-cultured with macrophages stimulated with LPS: Yamashita A., Soga Y., Iwamoto Y., Abiko Y., Nishimura F.: The


21: Glycine transporter inhibitors as a potential therapeutic strategy for neuropathic pain: Morita K.,
Motoyama N., Kitayama T., Kanematsu T., Dohi T.: The 6th Japan-Korea Conference on Cellular signaling for Young Scientists(Sasebo), November 24-26, 2009.


F) Special lectures in academic meetings

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

1: Grant-in-Aid for Exploratory Research: Nishimura F., Elucidation of the association between nutrition and caries susceptibility. No. 20659298. ¥3,200,000

2: Grant-in-Aid for Scientific Research (B): Nishimura F., Collaborative Basic Research on Periodontal Medicine and Geriatric medicine. No. 80208222. 6,890,000

3: Grant-in-Aid for Scientific Research (C): Shirai K., Development of adhesive system with capacity of self-repair applied by Sr-CaPO4 complex. No. 20592227. ¥910,000

4: Grant-in-Aid for Young Scientist (Start-up): Suzuki S., The analysis of the mechanism and significance of Dentin sialophosphoprotein cleavage in dentin development. No. 21890158. ¥1,365,000

5: Grants-in-Aid for Scientific Research: Arakawa M., Study on relationship between aging and periodontal disease -Evaluation on Werner Syndrome patients-. No. 21722120. ¥1,170,000

6: Grant-in-Aid for Scientific Research(C): Motoyama N., The potential therapeutic strategy for dental pain. No. 21592421. ¥1,950,000

7: Grants-in-Aid for Scientific Research: Yamashita A., The basic and clinical study of the relevance of periodontal disease and metabolic syndrome. No. 20890143. ¥1,560,000

(5) Academic Awards, etc.


2: Yonehiro J.: Densply Merit Award in recognition of distinctive contributions to research in
Conservative Dentistry, October 29, 2009.

3: Yonehiro J.: Merit Award in recognition of distinctive contributions to new research in the Autumn Scientific Meeting 132nd of Korean Academy of Conservative Dentistry, November 14, 2009.

(6) Patents
Programs for Applied Biomedicine,
Division of Cervico-Gnathostomatology
(Department of Advanced Prosthodontics)
Department of Preventive and Restorative Dentistry
(Implants and Prosthodontics)

(1) Staff and Students

Professor : Yasumasa Akagawa
Associate Professor : Kazuhiro Tsuga, Takayasu Kubo
Assistant Professor : Yasuhiko Abe, Tsuyoshi Taji, Kyou Hiasa
Assistant : Katsunori Koretake, Mineka Yoshikawa, Kazuya Doi
Secretary : Rinko Kurumi
Resident : Maho Takeuchi, Kazuhiko Hayashi, Yasunari Miyamoto, Ayumi Matsuura, Koji Morita
Clinical Trainee : Takahisa Kawamura, Koji Morita
Graduate Student : Yayoi Kanehisa, Mariko Maruyama, Ryo Takeshita, Hiroshi Oue, Yohei Okazaki, Hirokazu Tsutioka, Maretaningtias Dwi Ariani

(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 oral implants, prostheses and their surrounding bone.
5: Elucidation of the effect of prosthodontic treatments on the quality of life of elderly people.
6: Elucidation of the effect of prostheses on 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. Effect of combined application of bFGF and inorganic polyphosphate on bioactivities of osteoblasts


B) Review


C) Publications

D) Other Publications


E) Presentation at Scientific Meeting


10: Prosthodontic Treatment by Complete Denture and Healthy Well-living: Akagawa Y: Special lecture in the Nippon Dental University School of Life Dentistry at Tokyo (Tokyo), 2009.

11: Handy tongue pressure measuring device using disposable intra-oral probe: Kazuhiro Tsuga: Niigata University region cooperation food science center series lecture "Food science technology" #11 "Measurement of eating" (Niigata), 2009.

12: The Future value of Removable Prosthodontic Treatment: Akagawa Y: Special lecture in Hokkaido University Graduate School of Dental Medicine (Sapporo), 2009.


hiroshima university dental society (Hiroshima), 2009.


29: Symposium 2; Clinical examinations for geriatric dental treatments - Examination of oral function with handy tongue pressure measuring device: Kazuhiro Tsuga: The 2nd annual scientific meeting of Japanese Society for Evidence and the Dental Professional (Hiroshima), 2009.


31: What is the Council of Japan Dental Science of Societies?: Akagawa Y: Matsumoto Dental University Post-Graduate School FD Study Meeting (Shiojiri), 2009.

32: Tips on production of implant superstructure - Collaboration between clinic and laboratory-: Kubo T: Lunch-on-seminar in The 60th Chugoku Regional Meeting of Dental Medicine (Hiroshima), 2009.


37: The Front of Implant and GBR Researches: Akagawa Y: Special Lecture in Kagoshima University Graduate School of Medical and Dental Sciences (Kagoshima), 2009.

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

1: Ministry of Education, Culture, Sports, Science and Technology (MEXT) Grant-in Aid for scientific Research (B): Akagawa Y: Newly development of bFGF-polypophosphate integrated intelligent artificial bone. (Grant No. 2139051). ¥5,200,000

2: MEXT Grants-in-Aid for Scientific Research (B): Akagawa Y: Development of New Implant GBR Using a bFGF-gelatin Hydrogel Complex. (Grant No. 19390498). ¥6,900,000

3: MEXT Grants-in-Aid for Exploratory Research: Akagawa Y: A Molecular Research on Relationship between Dementia of the Alzheimer Type and Loss of Occlusal Support. (Grant No. 19390498). ¥900,000

4: Ministry of Health, Labour and Welfare Grants-in-Aid: Akagawa Y: Establishment of oral Care Management. (Grant No. KOSE202001). ¥4,340,000

5: National Institute of Biomedical Innovation Grants-in-Aid: Akagawa Y: Research of medicine eluted artificial bone in dental field. (Grant No. 1809JE023). ¥4,480,000

6: MEXT Grants-in-Aid for Scientific Research (A): Akagawa Y: A Multi-center Study on Prosthetic Intervention in Patients with Shortened Dental Arch. (Grant No. 20249077). ¥1,750,000

7: MEXT Grants-in-Aid for Scientific Research (C): Tsuga K: Development of Rader-chart for enhancing the anti-aging effect of prosthodontic treatments. (Grant No. 20592269). ¥9,000,000

8: MEXT Grants-in-Aid for Scientific Research (C): Abe Y: Development of high-level biofunctional nano-surface modification of bionic titanium implant. (Grant No. 21592452). ¥1,400,000

9: MEXT Grants-in-Aid for Scientific Research (C): Taji T: Occlusal support index for partial denture design. (Grant No. 20592270) ¥2,700,000

10: MEXT Grants-in-Aid for Scientific Research (C): Hiasa K: Development of Multi-physics simulator for Advanced implant integration system of diagnosis and treatment. (Grant No. 20592299). ¥3,000,000

11: MEXT Grants-in-Aid for Young Scientists (B): Koretake K: The New Bone Quality Improving Method Applying the Bone Modeling for Additional Implant Insertion. (Grant No. 19791443). ¥1,100,000
12: MEXT Grants-in-Aid for Young Scientists (B) : Yoshikawa M : Anti-aging on swallowing function by maintenance and restoration of occlusion retention. (Grant No. 19791442). ¥3,500,000
13: MEXT Grants-in-Aid for Scientific Research (C) : Yoshikawa M : Magnetoencephalogram (MEG) and diffusion MRI. (Grant No. 20592202). ¥60,000
14: MEXT Grants-in-Aid for Young Scientists (Start-up) : Matsuura A : Effect of bone formation ability using a cytokine treated biomimetic bone graft material. (Grant No. 21890159). ¥1050,000
15: MEXT Grants-in-Aid for Young Scientists (Start-up) : Morita K : Effect of bone formation ability by combined application of bFGF and polyphosphate adsorbed on hydroxyapatite. (Grant No.21890160). ¥1,050,000

(5) Academic Awards, etc.

1: Hiroshima University The President Award : Akagawa Y
2: The 13th Meeting of the International College of Prosthodontists (ICP) Poster Competition Award : Doi K

(6) Patents
Programs for Applied Biomedicine, Division of Cervico-Gnathostomatology
(Department of Advanced Prosthodontics)
Department of Preventive and Restorative Dentistry
(Prosthetic Dentistry)

(1) Staff and Students

Professor : Yasumasa Akagawa
Associate Professor : Shinsuke Sadamori
Associate Professor : Hitoshi Abekura (in the university), Masahiro Nishimura (in the university until May)
Assistant : Shunji Inoue, Hong Guang (Until March), Kazuko Kagawa, Kazuya Doi
Secretary : Michiko Miyagawa
Resident : Kae Harada, Syouji Hyashi, Isami Fujiwara
Intern Dentist : Fumio Suehiro (Until March), Isami Fujiwara (Until March), Tomoharu Hori (Until March), Takeshi Maeda, Wataru Mizumachi, Takae Yamamoto
Graduate Student : Takeshi Maeda (Until March), Wataru Mizumachi (Until March), Syouji Hyashi, Kouji Kamata, Hiroki Tsuka, Masahiro Tsuboi, Dhirinuru (Until April), Kazuisa Okura
Registered Intern : Masami Furuebisu (Until March), Yutaka Fukanogi (Until March),

(2) Main Research Activities

1 : Molecular biology of mesenchymal stem cells towards osteogenic differentiation
2 : Relation between prosthetic treatment and general condition in elderly with dementia
3 : The study of relationship between oral habits and psychosomatic stress responses measured by salivary chromogranin A
4 : Rheology of dental materials and development of denture lining materials
5 : Development of low invasive alveolar ridge augmentation systems
6 : Psychiatric disorders in dental practice

(3) Research Achievements

A) Original Papers (including Case Reports)


B) Review

C) Publications

D) Other Publications

E) Presentation at Scientific Meeting


F) Special lectures in academic meetings

1: Dental and oral health (Bruxism): Hiroshima Prefecture Dental Hygiene Liaison Council, “Heisei 21 Nendo” Campaign Promotion Project “Keep 20 Teeth Till Your 80”, Promotion Project Workshop “Dental, Oral and Mental positive Health” (Mihara), 2009.12.2

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

1: Grant-in-Aid for Scientific Research (C): Abekura H, assignment number 19592242. 1,560 thousand yen
2: Grant-in-Aid for Scientific Research (B) (2) general: Nishimura M: Development of alveolar bone regenerative medicine using regulated autologous cells. assignment number 19390497. 3,200 thousand yen
3: Grant-in-Aid for Young Scientists (B): Hong Guang: Research on the evaluation of trail crude drug combination tissue conditioner for halitosis. assignment number 19791441. 1,100 thousand yen
4: Grant-in-Aid for Scientific Research (C): Kagawa K: The development of crude drug combination oral moisture gel for dry mouth. assignment number 19592238. 910 thousand yen

(5) Academic Awards, etc.

1: Nishimura M: Excellent Young Investigator Award at The 3rd International Symposium for Interface Oral Health Science in Sendai: 2009.1.15

(6) Patents

Programs for Applied Biomedicine,  
Division of Cervico-Gnathostomatology  
(Department of Orthodontics and Craniofacial Developmental Biology)  
Department of Oral Health and Development (Orthodontics)

(1) Staff and students

Professor : Kazuo Tanne  
Assistant Professor : Toshitsugu Kawata, Hiroshi Ueda, Kotaro Tanimoto,  
Assistant : Masato Kaku, Tadashi Fujita, Nobuaki Tanaka, Junji Ohtani, Masahide Motokawa, Myongsun Koh, Yuki Tanne  
Resident : Emi Ishikawa, Kyoko Murasaki  
Intern : Youhei Suekawa, Ryouko Yamamoto, Toshihiro Inubushi, Satoru Ohkuma, Takashi Kamiya, Ryouta Sano, Maya Shirakura, Kouji Takahashi, Natsumi Tsuka  
International Student : Daniele Irina Shiratori  
Professor (part-time) : Kazuhiro Ueki, Toshitsugu Kojima, Hiroharu Tsuka, Hiroshi Hanaoka, Junichiro Iida  
Registered Intern : Kuniaki Tanaka, Kazunori Itatani, Isuzu Kimura, Masashi Ueki, Hiroko Kamada, Tamami Suekawa, Takuro Hasegawa, Reiko Yamano, Eizo Yamano  
Dental Hygienist : Miho Okada

(2) Main academic activity

1:  Viscoelastic property of temporomandibular joint disks.  
2:  Effects of growth factors on the proliferation and differentiation of condylar cartilage and the disk cells.  
3:  Biomechanical investigation of TMJ loading and assessment of lubricating function.
4: Mechanisms of pain transmission during experimental tooth movement and clarification of pain control.
5: Changes in stomatognathic functions from orthodontic surgery.
6: Association between nasal respiratory disturbances and craniofacial morphology and masticatory and respiratory functions.
7: Influences of mechanical stimuli on the proliferation and differentiation of chondrocytes.
8: Clarification of PDL regeneration mechanism.
9: Metabolism of hyaluronan in TMJ synovial fluid.
10: Influences of food consistency on neuropathological changes in the cerebral cortex.
11: Regeneration of bone and cartilage with mesenchymal stem cells.
12: Control mechanism of bone growth and development with sex hormone.

(3) Research achievement

A) Original article

7. The mandibular cartilage metabolism is altered by damaged subchondral bone from traumatic impact loading: Lin YY., Tanaka N., Ohkuma S., Kamiya T., Kunimitsu R., Huang YC.,


19. Clinical survey of traumatic injury to facial complex in patients with malocclusions of


B) General remarks


5. Orthodontics and temporomandibular disorders: Tanimoto K., Tanne K.: The Nippon Dental...


D) Other publications

E) Presentation at Scientific Meeting


29. A treatment case of posterior open bite due to a long-term use of occlusal splint for


39. A clinical survey for the association between root resorption to orthodontic treatment and tooth movement: Sasamoto T., Motokawa M., Kaku M., Kawata T., Yamamoto R., Tsuka N., Inubushi T.,


F) Academic society symposium and special lecture

1. Tanne K.: Induction mechanisms of temporomandibular joint disorder (TMD) and the problem-oriented therapeutic system: The 7th Congress of Iranian Association of Orthodontists (Hamadan, Iran), 2009.

2. Tanne K.: Recent advances in clinical orthodontics: evidence-based therapeutic strategy with use of teeth cryopreservation and implant anchorage: The 7th Congress of Iranian Association of Orthodontists (Hamadan, Iran), 2009.

3. Tanne K.: Recent innovation in edgewise technique for the correction of vertical discrepancy cases: multiloop edgewise archwire (MEAW) or micro-implant?: The 5th World Edgewise Orthodontic Congress (Xi’an, China), 2009.


6. Tanne K.: Planning of education curriculum of temporomandibular joint disorder (TMD): It’s important to educate basic knowledge and treatment skills for TMD leading to the long-term

7. Tanimoto K. Regeneration of maxillary bone with mesenchymal stem cells for the treatment of jaw cleft; a trial for clinical application. The regular meeting of Hiroshima orthodontic society (Hiroshima), 2009.

8. Tanimoto K. Application of mesenchymal stem cells to the treatment of jaw cleft; regeneration of maxillary bone and orthodontic tooth movement to the grafted area. The 73rd meeting of Stem cell research society, (Hiroshima), 2009.

(4) Scientific research grant -in-aid

1. Grant-in-aid for Scientific Research (B): Tanne K.: Responses of each cartilaginous layer of mandibular condyle to external stimuli and the association with progressive condylar resorption. 5200000 yen.

2. Grant-in-Aid for Clinical Research: Tanne K.: Hiroshima University Hospital: Establishment of long-term cryopreservation technique for bone marrow-derived mesenchymal stem cells with use of magnetic field: 500,000 yen.

3. Grant-in-Aid for Scientific Research: Ueda H.: Clinical application of the oral appliance for sleep apnea to diminish the side effect on occlusal function: No 20592403.: 1,450,000 yen.


5. Grant-in-Aid for Scientific Research: Tanimoto K.: Development of biomineralization technology using nano-process and its application to regeneration of tooth enamel: No. 21659474.: 1,600,000 yen.


7. Grant-in-Aid for Scientific Research: Tanne Y.: Applications of amelogenin to the induction of bone regeneration by using mesenchymal stem cells: No21890164. 1,352,000 yen.


11. Collaborative Research in Hiroshima University: Pro-Seed Co.: Histomorphometric study for the development of newly short screw as an orthodontic anchorage.: 700,000yen.

12. Grants-in-Aid for support of small business: Ishikawa co.: Investigation of commercialize in calcium ion water with bactericidal activity. 800,000yen.

(5) Commendation

1. Huang YC.: Effects of Amelogenin on the Proliferation and Differentiation of Human Mesenchymal Stem Cells: Poster award: Workshop on Bio-Dental Education and Research in Hiroshima (Hiroshima, Japan), 2009.


5. Fujita T.: The 12th Hiroshima University Faculty of Dentistry Alumni Association Encouragement Award, 2009.


Returns to the Contents
Programs for Applied Biomedicine, Division of Cervico-Gnathostomatolgy
(Department of Pediatric Dentistry)
Department of Oral Health and Development
(Pediatric Dentistry)

(1) Staff and Students

Professor : Katsuyuki Kozai
Associate Professor : Junji Suzuki
Research Associate : Yasutaka Kahiara, Fumiko Hayashi, Chieko Mitsuhata
Goh Yoshimura, Meiko Tachikake (April~), Noriko Kadamoto(~March)
Physician : Noriko Kadamoto (April~), Kozue Miura, Mihaya Arika, Ryoko Hirata
Satoko Otani, Nami Miyake
Graduate Student : Aya Tsuboi, Yukari Ohara, Hu Yiqun Yukiko Konishi (April~)
Ayumi Shimada (April~), Kazunori Matsuura (April~), Akira Yamane (April~)
Research Student : Kaori Saiga, Ryoko Hirata, Ayako Banshoudani, Mie Hirakawa, No Min
Registered Intern : Mami Yamashiro

(2) Main Research Activities

1 : Automutanolysin in oral streptococci
2 : Research in oral bacteria especially *Staphylococcus aureus* in children
3 : Effect of PG agonist differentiation of osteoblast
4 : Molecular analysis of cell-cell communication in differentiation of osteoblast
5 : Bacteriological and epidemiological research in periodontal diseases in children
6 : Behavior evaluation of psychological stress in dental treatment in children
7 : Transmission of mutans streptococci
8 : Seeking for anti-cariogenic substance from natural foods
9 : Denaturalization of tooth by low pH beverage

(3) Research Achievements

A) Original Papers (including Case Reports)

1 : A pilot study for establishment of educational guidelines of pre-clinic practice of pediatric dentistry in Japan. (1) Overview of educational contents of pre-clinical practice: Hayashi F.,


B) Review

1: Transmission of Mutans streptococci and prevention of caries (review): Kozai K., Suzuki J.


C) Publications


D) Other Publications

E) Presentation at Scientific Meeting


8 : Improvement in the respiratory failure by dental approach: Tachikake M., Suzuki J., Ohara Y., Kozai


F) Special lectures in academic meetings


17: The 27th Congress of Japanese Society of Pediatric Dentistry Chushikoku Branch Table clinic: The comprehensive approach to patients with pervasive developmental disorders at the department of pediatric dentistry Hiroshima University Hospital: Kadomoto N.: Hiroshima University, 2009.

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

1: Grant-in-Aid for Scientific Research (B): Kadomoto N.: Development of oral care program using dental drug delivery system for patients who underwent hematopoietic stem cell transplantation . (No.21792073) . ¥1,170,000
2: Grant-in-Aid for Scientific Research (B): Tachikake M.: Inhibition of osteoblastic cell differentiation by Lipopolysaccharide from Periodontopathic Bacteria (A.a) and its mechanism (No. 21792074). ¥ 2,600,000

3: Grant-in-Aid for Scientific Research (B): Kozai K.: Resolution of mechanism of transmission of periodontitis related bacterial strains in children and development of prevention from adult periodontitis. (No.19390530). ¥ 2,200,000

4: Grant-in-aid scientific research (C): Suzuki J.: Unknown virulence factors produced by periodontal pathogen. (No.18592236). ¥ 600,000

5: Grant-in-Aid for Scientific Research(C): Mitsuhashi C.: Effects of endocrine disorders on developing dopaminergic system in Brain. (No.19592354). ¥ 1,500,000

6: Grant-in-Aid for Scientific Research from the Ministry of Education, Science, Sports and Culture of children’s mouths. (No.19791581). ¥ 1,000,000

7: Grant-in-Aid of Futoku-kai: 2008: Kadamoto N.: ¥ 300,000

8: Hiroshima University Educational research: Kaihara Y.: Investigation on eating habits of elementary school children. ¥ 133,000

9: Hiroshima University Educational research.: Hayashi F.: Status of periodontal diseases and prevalence of periodontal pathogens in Junior high school students, ¥ 94,000

10: Grant-in-Aid of Futoku-kai: 2008: Hu Yiqun.. ¥ 300,000

(5) Academic Awards, etc.

(6) Patents
Master’s Program for Oral Health Sciences
Division of Oral Health Sciences
(Department of Public Oral Health)

(1) Staff and Students

Professor : Masaru Sugiyama
Assistant Professor : Maki Noso
Research Associate : Akemi Naitou

(2) Main Research Activities

1 : Study on the relationship between oral microorganism infection and oral mucosal lesion.
2 : Study on the relationship between oral sensitivity and function in elders.
3 : Study on the activities of oral health at school.

(3) Research Achievements

A) Original Papers (including Case Reports)


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

Returns to the Contents
Master’s Program for Oral Health Sciences, Division of Oral Health Sciences (Department of Maxillofacial Functional Development)

(1) Staff and Students

Professor : AMANO Hideaki
Assistant Professor : HARA Kumiko

(2) Specialized Fields

1 : Clinical research of the growth and development of dento-maxilofacial 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 education program for graduate dental hygienists

(3) Achievements


B) Reviews

C) Books

D) Other Publications


E) Presentations


F) Lectures

G) Social Contributions
1: Program for kids from elementary schools, Dental Kids, “Let’s Be a Dentist!”: Hiroshima University Faculty of Dentistry, 2009.
2: Program for high school students, Dental Kids: Hiroshima University Faculty of Dentistry, 2009.
3: Cooperate to the assessment of the Program for improvement of oral function in the ambulatory care facility “Kosei-En”, 2009.

(4) Grant-in-Aid for Scientific Research
1: 2009th grant-in-aid for scientific research: Hara K.: An analysis of lowering factors of salivary secretion and development of the preventive program for the xerostomia. (No. 21592650)
2: 2009th employment system for scientific research supporter: Hara K.

(5) Awards
(6) Patents

Returns to the Contents
Master’s Program for Oral Health Sciences, Division of Oral Health Sciences (Department of Oral Health Management)

(1) Staff
Professor: Toshinobu TAKEMOTO
Assistant professor: Atsue MATSUMOTO
Research associate: Yoshie NIITANI
Graduate student: Koutarou KUBO (from April)

(2) Research Fields
1: Dental hygienists education
2: Research about halitosis
3: Career formation of students
4: Oral relaxation method
5: Relation between saliva flow and emotion
6: Education about counseling
7: Infection control in dentistry
8: About male dental hygienists in Japan

(3) Achievements

A) Original Articles

C) Books
E ) Presentations at Scientific Meeting


University Dental Society, 48th Meeting of Hiroshima Prefecture Dental Association (Hiroshima), 2009.


16: [Improvement of career support in 4-year university for dental hygienist – The analysis of consciousness survey for students-.] [ja]: Kubo K, Takemoto T: The 28th Annual Meeting of Japanese Dental Education Association (Hiroshima), 2009.


F) Lectures
1: [Oral relaxation and salivary flow - For instruction to aged people][ja]: Matsumoto A., Seminar in Asa-Minami block of Hiroshima prefecture Dental Hygienists association (Hiroshima), 2009.


5: [Dental Hygiene 3][ja]: Niitani Y.; JADHE program II for teachers in dental hygienists schools (Gifu) 2009.

G) Social Contributions

1: Program for kids from elementary schools, Dental Kids, “Let’s Be a Dentist!”: Hiroshima University Faculty of Dentistry, 2009.

2: Program for high school students, Dental Kids: Hiroshima University Faculty of Dentistry, 2009.

3: Renewal seminar for teacher’s license: Takemoto T, Hiroshima University (Hiroshima), 2009.


5: Member of Dental Hygienists’ Examination committee: Matsumoto A. : Foundation of Promoting Dental Care and Training, 2009.


7: Member of dental hygienists authorization committee: Matsumoto A., Japan Dental Hygienists’ Association, 2009.


9: Volunteer activity for international dental support: Matsumoto A (Cambodia) 2009.


11: Member in the dental project team in committee of National University Hospital infection control association: Niitani Y., 2009

Returns to the Contents
Master’s Program for Oral Health Sciences,  
Division of Oral Health Sciences  
(Department of Anatomy and Functional Restorations)

(1) Staff and Students

Professor : Takahiro Satoda
Assistant Professor : Saiji Shimoe

(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 bonding prosthetic materials to dental alloys
5 : Study on effective denture marking for individual identification

(3) Research Achievements

A) Original Papers (including Case Reports)


B) Review

C) Publications


D) Other Publications
E) Presentation at Scientific Meeting


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

Grant-in-Aid for Scientific Research(C) (New): Shimoe S: Development of tooth-friendly zirconia crown restorations optimized polymer composite resins. (No. 21592453). ¥1,820,000

(5) Academic Awards, etc.

(6) Patents

Returns to the Contents
Master’s Program for Oral Health Sciences,  
Division of Oral Health Sciences  
(Department of Medical System and Biomaterial Engineering)

(1) Staff and Students

Professor : Takeshi Murayama  
Associate Professor : Mitsuhiro Tamamoto  
Graduate Student : Kozue Miyamoto,  
Graduation Research Students : Kazuki Tatehata, Keita Yauchi, Sakie Fujita, Yuta Takumi,  
Daigo Tomonari, Mana Kawakami, Shougo Iwaguro,  
Harumi Kaneishi, Tsuyoshi Hidaka, Mana Kawaguchi,  
Masamine Ogasawara, Kaoru Wada, Shinya Chiba, Koki Ichizu

(2) Main Research Activities

1: Application of CAD/CAM and rapid prototyping to dentistry  
2: Concurrent engineering in dentistry  
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 sensors  
8: Simulation-based analysis of work processes in dental technology  
9: Study on sports dentistry (mouthguard)  
10: Study on musical dentistry (adapter)

(3) Research Achievements

A) Original Papers (including Case Reports)

1: Functional model of the middle ear ossicles: Satoda T, Shimoe S, Makihira S, Tamamoto M,  
Matsumoto A, Hara K, Nos o M, Niitani Y, Sugiya m a M, Takemoto T, Murayama T, Amano H, Nikawa H:  

B) Review

C) Publications

D) Other Publications

E) Presentation at Scientific Meeting


20: Develop the inexpensive articulator be enabled to give occlusal surface on mouth guard: Yauchi K, Tamamoto M, Murayama T, Tomonari D, Kaneishi H, Satoda T, Nikawa H: 31st Meeting of the Nippon Academy of Dental Technology (Fukuoka), 2009.


F) Special Lectures in Academic Meetings


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

1: Regional Innovation Grant: Hiroki Nikawa, Takeshi Murayama, Eiji Tanaka, Toshikazu Nagasaki, et al.(Representative: Digital Solutions Inc. Kanji Ueda), Development of System assisting Diagnosis and Treatment of Joints by FEM Analysis. ¥39,999,000

(5) Academic Awards, etc.

(6) Patents
Master’s Program for Oral Health Sciences
Division of Oral Health Sciences
(Department of Oral Biology & Engineering)

(1) Staff and Students

Professor : Hiroki Nikawa
Associate Professor : Seicho Makihira
Assistant Professor : Hisako Sasahara (H21.4-)
Research Associate : Kazuko Kawahara (H21.4-)
Secretary : Miki Onji
Research Assistant : Kaori Taguchi
Graduate Student : Naoya Imari, Adusa Yamada, Yuko Omae, Aya Hiyama, Yuichi Mine, Sumiyo Mimura, Takuya Kihara, Takahiro Syuto, Airi Takahashi, Suirin Akamine (H21.4-H21.9)

(2) Main Research Activities

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

(3) Research Achievements

A) Original Papers (including Case Reports)


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
Central Research Laboratory

(1) Staff and Students

Director : Katsuyuki Kozai (by-work)
Research Associate : Ikue Hayashi

(2) Main Research Activities

1 : Proteomics approach for protein identification
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

2: Substrate recognition mechanism and characteristic of selective hydrolytic activity of ALE-1 for S.


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

(5) Academic Awards, etc.

(6) Patents
Department of Advanced General Dentistry, General Dentistry

(1) Staff and Students

Professor : Tetsuji Ogawa (※) Vice President of Hospital : Tetsuji Ogawa
Associate Professor : Norihiro Taguchi
Research Associate : Yoshihara Tanaka, Masaru Ohara
Secretary : Tomoe Sasaki

(2) Main Research Activities

1. Research in patient-centred 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)

6. Screening Test of Methicillin-resistant Staphylococci in the Nasal and Oral Cavity of the Residents at the Department of Advanced General Dentistry, Hiroshima University Hospital. Ohara M.,


B) Review

C) Publications

D) Other Publications
2. Diffuse X-ray impenetrable image that reaches all mandibles. Tanaka Y, Taguchi N. Dental Diamond 34, 9, 125-126, 7 2009.

E) Presentation at Scientific Meeting
7. Cross sectional PBL tutorial for 1st year dental students. Taji T., Taguchi N., Takemoto T., Tamamoto


F) Implementation of Seminars / Workshops

1. Workshop for postgraduate trainees 2009 (Hiroshima)


G) Lecturer • Symposium


4. Education of Professionalism in Hiroshima University School of Dentistry. Ogawa T. Meeting for Promotion of Educational Research in Medical, Dental and Pharmacy, Tokyo, 2009.

H) Attending of Lectures, Seminars, and Workshops

1. Seminar of Qualitative Research for Medical Education in Nagoya 2009. Ogawa T. Associate Dean & Professor, Technologies in Education, Department of Educational Sciences, Graduate School of Education and Human Development, Nagoya University, Nagoya 2009.


I) Implementation of OSCE, CSA

1. 2nd Advanced OSCE for Postgraduate Trainees 2008-2009

2. 1st Advanced OSCE for Postgraduate Trainees 2009-2010

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

(5) Academic Awards, etc.

1. 1st Education culture Prize of Japanese Dental Education Association. Norihiro TAGUCHI

(6) Patents
Department of Oral Health and Development, Preventive Dentistry

(1) Staff and Postgraduate students

Assistant Professor: Makoto Kawamura

(2) Research fields

1: Behavioral science regarding oral health
2: International studies on oral health promotion
3: Studies on community dental health
4: Studies on school dental health
5: Studies on development of computer-aided diagnosis scheme for periodontal disease

(3) Publication

A) Original Papers (including Case Reports)


3: Self-reported oral health status, oral health-related behaviors, resilience and hope in Romania.

4: The influence of parents’ attitude toward child-raising on the dental health condition of their children.

B) Reviews

C) Books/Book Chapters


D) Proceedings/Others

I: Status of periodontal diseases and prevalence of periodontal pathogens in Junior high school students:

E) Presentations

I: Exploring the relationships between sense of hopelessness, worry, self-rated oral health status and behavior in a Romanian adult population: Dumitrescu A. L., Kawamura M.: Europerio 6 (Stockholm),
2009.

(4) Grants-in-aid

1: Grant-in-aid for Scientific Research(C), No.20592455, Continued: Kawamura M. (representative), Okada M., Taguchi N., Sasahara H., Ogawa T.: Calibration of GO and G for school dental health on the basis of CAD. 600,000yen.

(5) Awards

(6) Patents
Department of Oral Health and Development,
Special Care Dentistry

(1) Staff and Students

Associate Professor : Mitsugi Okada  (※) Head of Dentistry
Research Associate : Koichi Hayashida
Resident : Mie Aoki

(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 periodontal tissue regeneration using bone marrow mesenchymal stem cells
4: A study on dental problems of patients with disabled
5: A study on PBL task for dental problem of patients with mental retardation
6: A clinical study on endodontal-periodontal therapy

(3) Research Achievements

A) Original Papers (including Case Reports)


B) Review
C) Publications

D) Other Publications

E) Presentation at Scientific Meeting

1: PCR detection of *Streptococcus mutans* and *S. sobrinus* in schoolchildren: Okada M, Hayashida K, Yasuda R, Kurihara H: The 86th general session & exhibition of the IADR (Toronto), 2008


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

(5) Academic Awards, etc.

(6) Patents

Returns to the Contents
Central Clinical Sections, Special Dental Clinic Section

(1) Staff and Students

Chief Professor : Keiji Tanimoto
Research Associate : Yukimi Yasuhara

(2) Main Research Activities

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

(3) Research Achievements

A) Original Papers (including Case Reports)
B) Review
C) Publications
D) Other Publications
E) Presentation at Scientific Meeting

(4) Status of Receiving Grants-in Aid for Scientific Research, etc.
(5) Academic Awards, etc.
(6) Patents
Central Clinical Sections, Center of Oral Clinical Examination

(1) Staff and Students

Director: Hidemi Kurihara
Associate Professor: Ikuko Ogawa (Clinic)
Research Associate: Tomoaki Shintani, Masae Kitagawa
Technician: Keiko Banno

(2) Main Research Activities

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

(3) Research Achievements

A) Original Papers (including Case Reports)


B) Review

C) Publications


D) Other Publications

1: Series Clinical lecture close to young dentists. How to use the clinical examination for daily


E) Presentation at Scientific Meeting


6: Case reports of the allergic response to non-metal dental materials: Kitagawa M., Shintani T., Ogawa I., Kurihara H.: The 42nd Meeting of Hiroshima University Dental Society (Hiroshima), 2009.


9: Overexpression of Emi1 by abnormal ubiquitin mediated degradation in oral cancer: Kudo Y.,
Tsunematsu T., Iizuka S., Ogawa I., Takata T.: The 28th Meeting of the Japan Society for Molecular Pathology (Kobe), 2009.
Hiroshima University Dental Society (Hiroshima), 2009.


F) Special Lectures in Academic Meetings


2: Companion meeting [Recent topic of salivary gland tumor], Polymorphous low grade adenocarcinoma: Takata T., Ogawa I.: The 98th Annual Meeting of the Japanese Society of Pathology (Kyoto), 2009.


G) Others (Social contribution)

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

1: Research project, Grant-in-Aid for Scientific Research (C) Continuance: Ogawa I.: Histological and molecular biological study of standardization of the pathological diagnosis of salivary gland tumors:(No.20592141) ¥1,300,000

2: Research project, Grant-in-Aid for Young Scientists (B) Continuance: Kitagawa M.: Study on application of spondin to regeneration of periodontal tissues:(No.20791339) ¥2,210,000
3: Research project, Grant-in-Aid for Young Scientists (B) Continuance: Shintani T.: Study on Molecular target therapy to oral cancer with fibroblast growth factor binding protein (No. 20791519) ¥1,430,000

4: Donated fund (SATAKE education research promotion) New: Kitagawa M.: Study on experimental standard of saliva in Sjogren syndrome. ¥300,000

5: Research grant (Hiroshima University women researcher grant) New: Kitagawa M.: Analysis of cementblast maker gene, f-spondin in the cementum formation. ¥220,000

(5) Academic Awards, etc.


(6) Patents

Returns to the Contents
Central Clinical Sections, Dental Technicians Section

(1) Staff and Students

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

(2) Main Research Activities

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

(3) Research Achievements

A) Original Papers (including Case Reports)

B) Review

C) Publications

D) Other Publications

E) Presentation at Scientific Meeting


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

(5) Academic Awards, etc.

(6) Patents
Central Clinical Sections
(Dental Hygiene Section)

(1) Staff and Students

Director of Dental Hygiene Section: Nobuyuki Kamata
Chief Dental Hygienist: Hiroko Tamura
Supervisor Dental Hygienists: Yoriko Iwasaki, Miyuki Nakaoka
Dental Hygienists: Akiko Kawashima (Till April), Miho Yoneda,
Tomoko Hatakeyama, Kayo Kajitani, Jetsuko Hayashida (Till June),
Kumi Miyakawa, Tomoko Tokikazu, Kanako Matsui, Kanako Yano,
Kana Dainobu, Naomi Hara, Miho Okada, Rie Kanna, Ayumi
Kouchi, Megumi Takamoto, Itsuka, Kouno, Atsuko WakitaRisako
Inoue, Chieko Kawai, Yukiko Nagatani
Dental Assistants: Yuri Ota, Yuka Tamamoto, Hisako Ozaki, Mayumi Yatabe

(2) Main Research Activities

1: A study about the dentistry health guidance that dental hygienist performs.
2: A study about improvement of local dentistry health.

(3) Research Achievements

A) Original Papers (including Case Reports)

B) Review

C) Publications

D) Other Publications

E) Presentation at Scientific Meeting
1: Oral care for the prevention of ventilator-associated pneumonia (VAP): Ninomiya Y,
Ono S, Shigeishi H, Mizuta K, Kobayashi M, Okamoto K, Fukui M, Ishida Y, Takeda T,
Kondo M, Kajitani K, Takamoto M, Tamura Y, Okamoto T, Tanigawa K, Kamata N.


10: 4 year's history of the dental hygiene outpatient center at Hiroshima University Hospital. Hara N, Dainobu K, Kajitani K, Tamura Y. 93th The Hiroshima University Dental Society (2009.10.25, Hiroshima)


F) Special lectures in academic meetings

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

1: A characteristic of P. gingivalis with methyl mercaptan high: encouragement study: Yoriko Iwasaki: 21932003

(5) Academic Awards, etc.

(6) Patents

Returns to the Contents
Dental Clinic

(1) Staff and Students
Assistant Professor : Hiroshi Yoshino
Research Associate : Masaru Ohara

(2) Main Research Activities
1 : Multi drug-resistant *Pseudomonas aeruginosa*
2 : Construction of HIV patients treatment network system

(3) Research Achievements

A) Original Papers (including Case Reports)

B) Review

C) Publications

D) Other Publications

E) Presentation at Scientific Meeting


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

1: Trust research expense : Study of construction of dental care system to HIV patients in Chugoku and Sikoku district 3,000,000 yen

(5) Academic Awards, etc.

(6) Patents
Dental Medical Information Section

(1) Staff and Students

Director : Katsuyuki Kozai (Co.)
Professor : Hideaki Amano (Co.)
Assistant : 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)


B) Review

C) Publications
D) Other Publications

E) Presentation at Scientific Meeting


2: Proposal of information linkage between rescue teams and hospitals with RFID devices on the emergency medical information system of Hiroshima prefecture: Takeshi Tanaka, Kiyomu Ishikawa, Hidehiko Tsukuma, Norikazu Iwata, Minoru Ikeuchi, Kenji Yamada and Yasumasa Iwasaki: Japan Association for Medical Informatics Spring Conference 2009 (Nagasaki).

3: An evaluation of availability by simulating calculations for recovery time of a hospital information system: Norikazu Iwata, Takeshi Tanaka, Hidehiko Tsukuma, Kiyomu Ishikawa: Japan Association for Medical Informatics Spring Conference 2009 (Nagasaki).


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

(5) Academic Awards, etc.

(6) Patents