

# **Research Achievements 2011**

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

**Programs for Biomedical Research, Division of Molecular Medical Science**

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**Programs for Biomedical Research, Division of Frontier Medical Science**

[Department of Oral and Maxillofacial Pathobiology](#)

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Informatics**

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[Department of Oral and Maxillofacial Radiology, and Department of Oral & Maxillo-  
facial 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 & Maxillo-  
facial Surgery and Oral Medicine (Oral and Maxillofacial Reconstructive Surgery)

[Department of Advanced Prosthodontics, and Department of Preventive and  
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**Master's Program for Oral Health Sciences, Division of Oral Health Sciences**

[Department of Public Oral Health](#)

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## **Programs for Biomedical Research, Division of Molecular Medical Science (Department of Biomaterials Science)**

### **(1) Staffs and Students**

Professor: Koichi Kato  
 Assistant Professor: Yuji Nomura, Isao Hirata, Ryo Nishikiori  
 Researcher: Jiang Wu  
 Undergraduate Student: Takayuki Ooto, Sho Nishimoto, Mizuki Takahashi, Kotaro Watanabe,  
 Chiharu Kubota, Hisanobu Kamio

### **(2) Main Research Activities**

Development of novel disinfectants for dental materials.

### **(3) Research Achievements**

#### **A) Original Papers**

Design of culture substrates for large-scale expansion of neural stem cells: Konagaya S., Kato K., Nakaji-Hirabayashi T., Iwata H.: *Biomaterials*, 32 (4), 992-1001, 2011.

Enhanced proliferation of neural stem cells in a collagen hydrogel incorporating engineered epidermal growth factor: Egawa E. Y., Kato K., Hiraoka M., Nakaji-Hirabayashi T., Iwata H.: *Biomaterials*, 32 (21), 4737-4743, 2011.

Array-based functional screening of growth factors toward optimizing neural stem cell microenvironments: Konagaya S., Kato K., Nakaji-Hirabayashi T., Arima Y., Iwata H.: *Biomaterials*, 32 (22), 5015-5022, 2011.

Irradiation effect on osteoclastogenesis stimulated by breast cancer cell: Sawajiri M., Nomura Y., Nishikiori R., Banik S., Sonoda Y., Tanimoto K.: *Health Physics*, 101 (3), 259-264, 2011.

Detection of synthetic RGDS(PO<sub>3</sub>H<sub>2</sub>)PA peptide adsorption using a titanium surface plasmon resonance biosensor: Abe Y., Hiasa K., Hirata I., Okazaki Y., Nogami K., Mizumachi W., Yoshida

Y., Suzuki K., Okazaki M., Akagawa Y.: J. Mater. Sci. Mater. Med., 22 (3), 657-661, 2011.

## **B) Review**

Synthesis of functional artificial lymphoid tissues: Kobayashi Y., Kato K., Watanabe T.: Discovery Med., 12 (65), 351-362, 2011.

Culture substrates enabling the large-scale production of neural stem cells: Kato K.: J. Clin. Exp. Med. (IGAKU NO AYUMI), 238 (13), 1192

Regenerative Medicine (Taipei), 2011.

Designing of biomaterials and biodevices for controlling stem cell functions: Kato K.: 84th Annual Meeting of the Japanese Biochemical Society, Symposium on Nano Biomaterials and Biochemistry (Kyoto), 2011.

Engineering approaches for regenerative medicine: Kato K.: 2011 Summer Seminar of the Japanese Society for Dental Materials and Devices, Kinki-Chu-Shikoku Branch (Minami-Awaji), 2011.

Designing of biomaterials and biodevices for controlling stem cell functions: Kato K.: Seminar at the Institute for Materials Chemistry and Engineering, Kyushu University (Hakata), 2011.

Effect of heavy ion beams on bone metabolism: Sawajiri M., Nomura Y., Takinami S., Tanimoto K.: 54th Annual Meeting of the Japan Radiation Research Society (Kobe), 2011.

Study on the antimicrobial efficacy of chlorine dioxide as a component of denture cleanser: Hori T., Maeda T., Nomura Y., Sadamori S., Okazaki M., Akagawa Y.: 3rd Academic Meeting of the Japan Denture Care Society (Morioka), 2011.

Study on the antimicrobial effect of chlorine dioxide for *Candida albicans*: Hori T., Maeda T., Nomura Y., Sadamori S., Akagawa Y.: 2011 Annual Meeting of the Chugoku and Shikoku Branch, Japanese Prosthodontic Society (Okayama), 2011.

Disinfection of dental stone casts: Effect on surface morphology: Nishikiori R., Watanabe K., Nomura Y., Hirata I., Sawajiri M., Okazaki M.: International Dental Materials Congress 2011 (Seoul), 2011.

Applications of ozonized water to disinfection of dental materials. I. The effect on the surface roughness of dental stone casts: Nishikiori R., Okuda T., Ootoshi A., Okazaki M., Nishijima A.: 20th Annual Meeting of the Japan Ozone Association (Chiba), 2011.

Calcium phosphate nucleation ability on the titanium surface modification via alkylphosphonic acid with carboxyl group: Wu J., Hirata I., Zhao X., Okazaki M.: International Dental Materials Congress 2011 (Seoul), 2011.

Calcium phosphate nucleation ability on titanium surface influenced by alkyl chain length of phosphate self-assembled monolayers: Wu J., Hirata I., Nagaoka N., Yoshida Y., Zhao X., Okazaki M.: 3rd International Symposium on Surface and Interface of Biomaterials (Sapporo), 2011.

Calcium phosphate nucleation ability on the titanium surface modification by self assembled monolayers: Wu J., Hirata I., Zhao X., Okazaki M., Koichi K.: 4th Hiroshima Conference (Hiroshima), 2011.

Newly developed carbonate apatite-chitosan scaffold for in vitro bone tissue engineering: Ariani MD., Matsuura A., Hirata I., Kuto T., Okazaki M., Akagawa Y.: 4th Hiroshima Conference (Hiroshima), 2011.

Bone formation ability of carbonate apatite-collagen sponge with some cytokines: Ariani MD., Matsuura A., Hirata I., Kubo T., Okazaki M., Akagawa Y.: 2nd Joint Scientific Meeting in Dentistry (Surabaya), 2011.

: Matsuura A,

Ariani M. D., Hirata I., Kubo T., Akagawa Y, 41st Annual General Meeting/Academic Convention of the Japanese Society of Oral Implantology (Nagoya), 2011.

C

: Ariani M. D.,

Matsuura A., Hirata I., Kubo T., Okazaki M., Akagawa Y.: 2011 Summer Seminar of the Japanese Society for Dental Materials and Devices, Kinki-Chu-Shikoku Branch (Minami-Awaji), 2011.

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

Ministry of Education, Culture, Sports, Science and Technology, Grant-in-Aid for Scientific Research (B): Kato K.: Designing modular biomaterials for functional regulation of neural progenitor cells. No. 22300164 3,200,000 JPY

Japan Science and Technology Agency, Adaptable and Seamless Technology Transfer Program through Target-driven R&D, Feasibility Stage: Biochips for the quality control of mesenchymal stem cells. No. AS231Z04602F 1,700,000 JPY

Ministry of Education, Culture, Sports, Science and Technology, Grant-in Aid for Young Scientists (B) Hirata I.: Effect of self-assembled monolayers on the growth and differentiation of mesenchymal stem cells in a serum-free medium: No. 23792282 1,900,000JPY

Grant for Exploratory Research, Hiroshima University: Nishikiori R.: Identification of prospective surface markers of mesenchymal stem cells using an on-chip cell sorting method. 500,000 JPY

#### (5) Academic Awards, etc.

Hirata I.: Paper Award of the Japanese Dental Material Society in 2010 (April 23, 2011)

Wu J.: Poster award at the 4th Hiroshima Conference (October 9, 2011)

#### (6) Patents

Iwata H., Kato K., Nakaji T.: Culture substrates for the induction of dopaminergic neurons (Japanese Patent Application No. 2011-118849 (Kyoto University, Nippon Flour Mills Co., Ltd.

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**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, Kazuko Kitayama
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)



6:

B) Review

C) Publicati

Meeting of Indonesia Association of Tissue Bank (IATB), SYMPOSIUM, Surabaya, Indonesia ,  
Sep.22-23, 2011.

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

(5) Academic Awards, etc.

(6) Patents

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## Basic Life Sciences

### Department of Bacteriology

#### (1) Faculty members and students

Professor : Motoyuki Sugai

Assistant Professor : Fuminori Kato, Shizuo Kayama, Junzo Hisatsune

Co-Researcher : Keiko Tsuruta (Oral Health Care Major)

Ikue Hayashi Faculty of Dentistry

Keita Iori Tokyo University of Agriculture and Technology

Aug 15 - Sep 4

Visiting Research Scholar Dr. Pratiwi Soesilawati

(Airlangga Univ. Fac. Dent. Dept. Oral Biol.) (Sep 30 – Oct 13)

Graduate Student : Shuntarou Kouda OD (D7) From Dept. Urology Shima Morioka D6, Kanao Kobayashi D4 (From Dept. Urology), Wataru Shimizu D4 (From Dept. Surgery 1), Norifumi Shigemoto D3 (From Dept. Surgery 1), Itsugun Ko D3 (From Pediatric Dentistry), Ryuichi Kuwabara D3, Taro Kojima D2, Yuko Iwamoto D2 (From Pediatric Dentistry), Nobuyuki Tatsukawa D1 (From Pediatric Dentistry) Yoshie Harino D1 Clinical Laboratory, Hiroshima City Asa Hospital Shrestha Looniva D1 Kazuhisa Koizumi M2 Pharmacy, Kimura Eye & Int. Med. Hospital

Research student Yu Liansheng doctoral course year

#### (2) Main Research Interests

1:

*Journal of Microbiological Methods*

*Klebsiella pneumoniae*

*bla*

*Diagnostic Microbiology and Infectious Disease*

*Staphylococcus aureus*

*Applied*

*and Environmental Microbiology*

*Staphylococcus aureus.*

*Journal of Microbiological Methods*

*Staphylococcus aureus.*

*Veterinary Dermatology*

*Staphylococcus*

*Japanese Journal of Veterinary Dermatology*

*Aggregatibacter actinomycetemcomitans*  
*in vivo.*

*Journal of Periodontal Research*

*Staphylococcus aureus*

*Journal of Applied Microbiology*

. *The Japanese Journal of Antibiotics*

D) Other Publications

E) Presentation at Scientific Meeting

*S. aureus*

*bla*

*Klebsiella pneumoniae*

*Klebsiella pneumoniae*

*Klebsiella pneumoniae*

*Staphylococcus aureus.*

*bla*

*S. aureus*

*Staphylococcus aureus*

*S. aureus*

*bla*

*Klebsiella pneumoniae*

—

*Klebsiella pneumoniae*

*Staphylococcus aureus*

*Klebsiella pneumoniae*

*Pseudomonas aeruginosa*

*Pseudomonas aeruginosa*      *bla*

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*Staphylococcus aureus*

*Staphylococcus aureus*

*Staphylococcus aureus.*

F) Invited speakers, Symposist and others

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*S. aureus*





4/21

*N*

*Listeria monocytogenes*

*Pseudomonas aeruginosa*

*Staphylococcus aureus.*

(4) Research grants.

(5) Awards

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(6) Patents

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**Programs for Biomedical Research,  
Division of Integrated Medical Science  
(Department of Oral Physiology)**

(1) Staffs and Students

Professor SUGITA, Makoto

Associate Professor HIRONO, Chikara

Research Associate KITAGAWA, Michinori (April )

Research Assistant YAMAMOTO, Kuniyo

Graduate Students YAMAMOTO, Kuniyo (April )

(2) Main Research Activities

Molecular physiological study on function of ion channels and ion transporters

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

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

Study on the system mechanisms of mastication and swallowing

(3) Research Achievements

A) Original Papers (including Case Reports)

B) Review

Interrelationship between taste perception and salivary secretion: Hirono C., Sugita M.: The Journal of Hiroshima Dental Association, 38, 1-9, 2010. (published in 2011)

C) Publications

D) Other publication

E)

Suppression of phenylephrine-induced  $\text{Cl}^-$  secretion by dobutamine in rat submandibular acinar cells:

Hirono C., Sugita M., Shiba Y.: The 53th Annual Meeting of Japanese Association for Oral Biology (Gifu), 2011.

The genetic tracing to functionally define the gustatory neurons at a single cell resolution: Sugita M., Yamamoto K., Hirono C., Shiba Y.: The 53th Annual Meeting of Japanese Association for Oral Biology (Gifu), 2011.

Genetic tracing of taste representation in the brain reveals its potential interaction with the homeostatic control of feeding: Sugita M.: The 59th Annual Meeting of Japanese Association for Dental Research (Hiroshima), 2011.

Effects of sympathetic  $\alpha_1$  and  $\alpha_2$  agonists on parasympathetically induced  $\text{Ca}^{2+}$  increase in rat submandibular acinar cells: Hirono C., Sugita M., Shiba Y.: The 63th Annual Meeting of Chugoku and Shikoku Division in Physiological Society of Japan (Hiroshima), 2011.

Involvement of CFTR R domain-

## **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

Research Associate: Satoshi Asano

Graduate student: Toshiya Okumura, Hiroto Tanaka

Undergraduate student (Advanced Dental Research course): Ryuichi Tsuruta (6th), Yuya Ogawa (5-6th), Nami Kikushige (5-6th), Nozomi Hinada (5-6th), Kousuke Yokobayashi (4th), Tomohiro Mukai (4th), Seiya Hayashi (4th), Eri Ikeda (4th), Sakura Yamada (4th).

### **2 Main Research Activities**

- 1 Studies on the molecular mechanisms of GABA<sub>A</sub> 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 Involvement of PRIP, phospholipase C-related, but catalytically inactive protein, in bone formation. Tsutsumi K, Matsuda M, Kotani M, Mizokami A, Murakami A, Takahashi I, Terada Y, Kanematsu T, Fukami K, Takenawa T, Jimi E, Hirata M. J Biol Chem. 286(35):31032-31042, 2011.
- 2 Phenotypes of pain behavior in phospholipase C-related but catalytically inactive protein type 1 knockout mice. Migita K, Tomiyama M, Yamada J, Fukuzawa M, Kanematsu T, Hirata M, Ueno S. Mol Pain. 18;7:79, 2011.
- 3 A case report of prothodontic reconstruction using dental implants for the edentulous patient with

severe gagging reflex: Ono S., Takechi M., Harada K., Ohta K., Okumura T., Kagawa K., Abekura H., Okui G., Ninomiya Y., Takamoto A., Akagawa Y., Kamata N.: the Journal of Hiroshima University Dental Society, 43(1), 57-60, 2011.

## B Reviews

- 1: Recommendation for the pharmacological management of neuropathic pain: Tsuruta R., Akagi Y., Nakatao H., Terabe T., Tokunaga A., Nishimura Y., Mori S., Morita K., Kitayama T., Kanematsu T.: Journal of Hiroshima University Dental Society, 43(1), 9-19, 2011.

## C Publications

## D Other Publications

- 1 Thank you for the Best Presentation Award: Okumura T., The Journal of Hiroshima University Dental Society, 43, 134, 2011.

## E Presentation at Scientific Meeting

- 1 Energy metabolism is up-regulated in PRIP-DKO mice: Okumura T., Harada K., Kamata N., Kanematsu T.: 3rd International Workshop on BioDental Education & Research Hiroshima University Graduate School of Biomedical Sciences 2011, (Hiroshima), 2011.
- 2 Spinal glycinergic interneuron mediates the analgesic action of tricyclic antidepressants in neuropathic pain models in mice.: Jinnin Y., Motoyama N., Morita K., Kitayama S., Nishimura F., Kanematsu T.: 3rd International Workshop on BioDental Education & Research Hiroshima University Graduate School of Biomedical Sciences 2011, (Hiroshima), 2011.
- 3 Modulation of insulin secretion by GABARAP and PRIP: Kitayama T., Hirata M., Kikushige N., Kanematsu T.: The 84<sup>th</sup> Annual Meeting of The Japanese Pharmacological Society (Yokohama), 2011.
- 4 The inhibitory action of tricyclic and tetracyclic antidepressants on GABA transporter subtypes: Rile G., Sogawa C., Ohyama K., Jinzenji A., Miyawaki T., Masuko T., Kusama T., Morita K., Sogawa N., Kitayama S.: The 84<sup>th</sup> Annual Meeting of the Japanese Pharmacological Society (Yokohama), 2011.
- 5 Effects of PRIP on pain-related behavior in mice: Kitayama T., Morita K., Kanematsu T.: The 119<sup>th</sup> Kinki Branch Meeting of Japanese Pharmacological Society (Nagoya), 2011.
- 6 Mechanisms of analgesic effect of glycine transporter inhibitors for neuropathic pain in mice:

- Motoyama N., Morita K., Kitayama T., Nishimura F., kanematsu T., Dohi T.: The 134<sup>th</sup> Meeting of the Japanese Society of Conservative Dentistry (Chiba), 2011.
- 7 PRIP regulates lipolysis in white adipose tissue: Okumura T., Harada K., Mizokami A., Hirata M., Kamata N., Kanematsu T.: the 44th Ordinary Meeting of Hiroshima University Dental society, (Hiroshima), 2011.
  - 8 Role of platelet-activating factor (PAF) receptor in the developing and established intractable pain: Motoyama N., Morita K., Nishimura F., kanematsu T., Dohi T.: The 31<sup>st</sup> Annual Meeting of the Japanese Society of Oral Therapeutics and Pharmacology (Chiba), 2011.
  - 9 Evaluation of the removal effect of commercial denture cleaners to the denture adhesives: Harada K., Hong G., Hamada T.: the 3rd Annual Meeting of the Japanese Denture Care Society, (Iwate), 2011.
  - 10 PRIP regulates energy metabolism: Okumura T., Harada K., Mizokami A., Hirata M., Kamata N., Kanematsu T.: the 53rd Annual Meeting of Japanese Association for Oral Biology, (Gifu), 2011.
  - 11 PRIP negatively regulates autophagy Umebayashi H., Matsuda M., Mizokami A., Takeuchi H., Hirata M., Kanematsu T. the 53rd Annual Meeting of Japanese Association for Oral Biology, (Gifu), 2011.
  - 12 Effects of PRIP on pain signaling: Kitayama T., Morita K., Kanematsu T.: The 53<sup>rd</sup> Annual Meeting of Japanese Association for Oral Biology (Gifu), 2011.
  - 13 Platelet-activating factor (PAF) receptor; a role of initiation and/or maintenance of pathological pain in mice: Motoyama N., Morita K., Kitayama T., Nishimura F., Kanematsu T., Dohi T.: The 53<sup>rd</sup> Annual Meeting of Japanese Association for Oral Biology (Gifu), 2011.
  - 14 The inhibitory action of PRIP on the PAF receptor-mediated signaling pathway in platelets: Motoyama N., Morita K., Kitayama T., Nishimura F., Kanematsu T., Dohi T.: The 53<sup>rd</sup> Annual Meeting of Japanese Association for Oral Biology (Gifu), 2011.

Kyushu University Centennial Anniversary International Symposium New Aspects of Phospholipid Biology and Medicine 2011, (Fukuoka), 2011.

F Special lectures in academic meeting

- 1 Trafficking of GABA<sub>A</sub> Receptors is Modulated by Their Phosphoregulation via a Novel GABA<sub>A</sub>



- 1: Inventors: Morita K., Dohi T., Motoyama N., Kitayama T., Kanematsu T., Shiraishi S.: Management of cancer pain: translating mechanistic advances and evidence-based research into clinical practice (International Application No: PCT/JP2011/078508; Basic Application No: 2010-274581 filed on 9 December 2011) (Applicants: Hiroshima University; National Cancer Center)

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**Program for Biomedical Research**  
**Division of Frontier Medical Science**  
**Department of Oral and Maxillofacial Pathobiology**

(1) Staffs and Students

Professor Takashi Takata  
 Associate Professor Mutsumi Miyauchi  
 Assistant Professor Yasusei Kudo  
 Research Associate Toshihiro Inubushi  
 Visiting Researcher Chea Chanbora, Istiati Soepribadi, Nurina Febriyanti Ayuningtyas, Pasutha Thunyak  
 Secretary: Yuko Masuda  
 Graduate Student Hisako Furusho (D4), Phuong Thao Nyugen D4 Intan Suraiya Merican Binti Aljunid Merican D3 Takaaki Tsunematsu (D2), Mariko Obayashi (D2), Ajiravudh Subarnhesaj (D1), Mariko Okada (M1)

(2) Main Research Activities

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

(3) Research Achievements

A) Original Papers

1. Frequent Increased Gene Copy Number and High Protein Cancers. Okamoto, M., Hirata, S., Sato, S., Koga, S., Fujii, M., Qi, G., Ogawa, I., Takata, T., Shimamoto, F., Tatsuka, M. DNA Cell Biol. 2011 Dec 2. [Epub ahead of print].
2. Amelogenin enhances the proliferation of cementoblast lineage cells. Kunimatsu, R., Tanimoto, K., Tanne, Y., Kamiya, T., Ohkuma, S., Huang, Y.C., Yoshimi, Y., Miyauchi, M., Takata, T., Tanne, K. J Periodontol. 2011 Nov;82(11):1632-8.

3. Effect of PGE(2) induced by compressive and tensile stresses on cementoblast differentiation in vitro. Rego. E.B., Inubushi. T., Kawazoe. A., Miyauchi. M., Tanaka. E., Takata. T., Tanne. K. Archives of Oral Biology. 2011 Nov;56(11):1238-46.
4. Ultrasound stimulation attenuates root resorption of rat replanted molars and impairs tumor necrosis factor- $\alpha$  signaling in vitro. Rego. E.B., Inubushi. T., Miyauchi. M., Kawazoe. A., Tanaka. E., Takata. T., Tanne. K. J Periodontal Res. 2011 Dec;46(6):648-54.
5. Differential Effects of Amelogenin on Mineralization of Cementoblasts and Periodontal Ligament Cells. Tanimoto, K., Kunimatsu, R., Tanne, Y., Huang, Y.C., Yoshimi, Y., Miyauchi, M., Takata, T., Tanne, K. Journal of Periodontology 2011 Sep 26. [Epub ahead of print].
6. Oral Administration of EP4 Antagonist Inhibits LPS-Induced Osteoclastogenesis in Rat Periodontal Tissue. Oka, H., Miyauchi, M., Furusho, H., Nishihara, T., Takata T. Journal of Periodontology 12 September 2011: 1-23
7. MMP-10/stromelysin-2 promotes invasion of head and neck cancer. Deraz, E.M., Kudo, Y., Yoshida, M., Tani, H., Tsunematsu, T., Siriwardena, B.S.M.S., Kiekhäe, M.R., Qi, G., Iizuka, S., Ogawa, I., Campisi, G., Lo Muzio, L., Abiko, Y., Kikuchi, A., Takata, T. PLoS ONE 6(10): e25438.
8. Overexpression of Receptor for Hyaluronan-Mediated Motility (RHAMM) in MC3T3-E1 induces the proliferation and differentiation through phosphorylation of ERK1/2. Hatano, H., Shigeishi, H., Kudo, Y., Higashikawa, K., Tobiume, K., Takata, T., Kamata, N. J Bone Miner Metabol (2011 Sep 27. Epub ahead of print).
9. Increased telomerase activity and hTERT expression in human salivary gland carcinomas. Shigeishi H, Sugiyama M, Tahara H, Ono S, Bhawal UK, Okura M, Kogo M, Shinohara M, Shindoh M, Shintani S, Hamakawa H, Takata T, Kamata N. Oncology Letter 2:845-850, 2011
10. miR-22 represses cancer progression by inducing cellular senescence. Xu, D., Takeshita, F., Hino, Y., Fukunaga, S., Kudo, Y., Tamaki, A., Matsunaga, J., Takahashi, R., Takata, T., Shimamoto, A., Ochiya, T., Tahara, H. J Cell Biol 193(2):409-24.
11. Topical application of Aggregatibacter actinomycetemcomitans cytotoxic distending toxin induces cell cycle arrest in the rat gingival epithelium in vivo. Ohara M, Miyauchi M, Tsuruda K, Takata T, Sugai M. J Periodontal Res. 2011 Mar 1.
12. N-cadherin expression is involved in malignant behavior of head and neck cancer in relation to epithelial-mesenchymal transition. Nguyen PT, Kudo Y, Yoshida M, Kamata N, Ogawa I, Takata T. Histol Histopathol. 2011 Feb;26(2):147-56.
13. Ameloblastin regulates osteogenic differentiation by inhibiting Src kinase via cross talk between integrin  $\beta$ 1 and CD63. Iizuka S, Kudo Y, Yoshida M, Tsunematsu T, Yoshiko Y, Uchida T, Ogawa I, Miyauchi M, Takata T. Mol Cell Biol. 2011 Feb;31(4):783-92.

14. N-cadherin expression is correlated with metastasis of spindle cell carcinoma of head and neck region. Nguyen PT, Kudo Y, Yoshida M, Iizuka S, Ogawa I, Takata T. *J Oral Pathol Med.* 2011 Jan;40(1):77-82.
15. RHAMM/ERK interaction induces proliferative activities of cementifying fibroma cells through a mechanism based on the CD44-EGFR. Hatano H, Shigeishi H, Kudo Y, Higashikawa K, Tobiume K, Takata T, Kamata N. *Lab Invest.* 2011 Mar;91(3):379-91.
16. Synthetic ameloblastin peptide stimulates differentiation of human periodontal ligament cells. Kitagawa M, Kitagawa S, Nagasaki A, Miyauchi M, Uchida T, Takata T. *Arch Oral Biol* 2011 Apr;56(4):374-9.
17. Dental service activity report in Cambodia elementary school. Matsumoto A, Iwamoto A, Omae Y, Shimazu A, Amano H, Fujiwara N, Tsuka T, Ashikaga N, Kawano S, Moriyama Y, Matsuzoe K, Ouchi A, Miyasako S, Okita S, Muroi N, Muroi M, Nin E, Ando T, Yoshimoto T, Otani S, Iwamoto Y, Kodama N, Kadomoto N, Kozai K, Nishimura F, Takata T. *The journal of Hiroshima University Dental Society* 43:51-56, 2011.
18. Soy bean liposomal lactoferrin reduces periodontal inflammation and inflammation-induced periodontal tissue destruction without inhibition of tooth movement by orthodontic force. Kawzoe A, Inubushi T, Miyauchi M, Ishikado A, Tanne K, Takata T. *Lactoferrin* 2011:27-34,2011. (Japanese)

## B) Original Papers (Case Reports)

1. A case of mucoepidermoid carcinoma arising in Warthin tumor of parotid gland.: Ogawa I., Takeshima Y., Inai K., Takata T.: *Jpn J Diag Pathol* 28, 94-98, 2011.
2. A case of multifocal nodular oncocytic hyperplasia. Sato S, Kishino M, Ogawa Y, Ogawa I, Takata T, Toyosawa S. *Pathology-Research and Practice* 207:452-

4. Histopathological classification of salivary gland tumors –For practical use of WHO classification 2005-: Ogawa I., Takata T.: Jpn J Oral Maxillofac Surg, 57, 486-492, 2011.

#### D) Books

1. Pathology of salivary gland tumors; Focus on the diagnostic aspect.: Hand Manual of Oral & Maxillofacial Surgery'11 (Oral Surgery): Ogawa I., Kitagawa M., Kudo Y., Miyauchi M., Takata T.: Quintessence Publishers (Tokyo), 144-150, 2011.

#### E) Special lectures in academic meetings

1. Application of liposomal lactoferrin to prevention and treatment of periodontal diseases.: Takata T.: The 2<sup>nd</sup> joint scientific meeting in dentistry Surabaya, Indonesia, December 3-4, 2011.
2. Identification of novel oral cancer invasion related gene.: Takata T. 22th Annual Meeting of the Japanese Society for Oral Mucous Membrane Kagoshima, September 24, 2011.
3. The anti-inflammatory effects of lactoferrin and application for orthodontic treatment. Inubushi T. The 29<sup>th</sup> Japan Tip-Edge society of orthodontic Osaka. August 28, 2011.
4. ASOMP Scientific Session: Frontier research of oral pathology in Asia: Identification of novel invasion related molecules in oral cancer. Kudo Y. The 5<sup>th</sup> Meeting of Asian Society of Oral and Maxillofacial Pathology The 22<sup>nd</sup> Annual Meeting of the Japanese Society of Oral Pathology Fukuoka August 24-25, 2011
5. Salivary gland tumors, Head and neck pathology.: Takata T.: The 7<sup>th</sup> Asia Pacific International Academy of Pathology Congress (Taipei), May 23, 2011.
6. Innovation of Dental Program in Hiroshima University for Establishing Dental Education in 21st Century.: Takata T.: The Third Workshop for BioDental education and research, Aster Plaza (Hiroshima) January 31, 2011.
7. Symposium: Diagnosis and Treatment of Salivary Gland Tumors. Pathology of Salivary Gland Tumors; Focus on the Minor Salivary Gland Tumors-: Ogawa I., Takata T.: The 29<sup>th</sup> Annual Meeting of Japan Society for Oral Tumors (Kumamoto), January 27-28, 2011.

#### F) Presentation at International Scientific Meeting

1. Acemannan induces cementoblast proliferation, alkaline phosphatase activity and collagen expressions.: Thunyakitpisal P, Sahawat D, Takata T.: 25th IADR-SEA Division Annual Scientific Meeting (Singapore), October 28-30, 2011.
2. F-spondin promotes the differentiation of human periodontal ligament cells. Kitagawa M, Miyauchi M, Takata T. 4<sup>th</sup> Hiroshima conference On education and science in dentistry (Hiroshima), October 9-10, 2011.
3. Inhibitory effect of bLF on LPS-induced crosstalk among TLR pathways in osteoblasts. Okada M,

- Morimoto C, Inubushi T, Miyauchi M, Takata T. 4<sup>th</sup> Hiroshima conference On education and science in dentistry (Hiroshima), October 9-10, 2011.
4. Application of Lactoferrin for periodontitis prevention and treatment. Kosai A, Inubushi T, Miyauchi M, Takata T. 2011 Dentsply SCRP (Las Vegas, USA), October 8, 2011.
  5. Geminin stabilization by Aurora kinase-mediated phosphorylation during mitosis. Tsunematsu T, Kudo Y, Takata T. Cold spring harbor meeting, "The ubiquitin family" (New York, USA), May 17-21, 2011.
  6. Chromosome passenger complex protein, Borealin is regulated by APC/C<sup>Cdh1</sup> ubiquitin ligase complex. Kudo Y, Tsunematsu T, Takata T. Cold spring harbor meeting, "The ubiquitin family" (New York, USA), May 17-21, 2011.
  7. Acemannan induces cementum formation, in vitro study.: Thunyakitpisal P, Sahawat D, Kanthasuwon S, Sangvanich P, Takata T, Kitagawa M.: IADR/AADR/CADR 89th General Session and Exhibition (San Diego, USA), March 16-19, 2011
  8. Geminin stabilization by Aurora kinases-mediated phosphorylation during mitosis. Tsunematsu T, Kudo Y, Takata T. 3rd International workshop on BioDental Education & Research (Hiroshima) January 30, 2011.
  9. Experimental study on relationship between periodontitis and systemic diseases -Systemic influence of continuous application of LPS to periodontal tissues-. Furusho H, Miyauchi M, Aomin, Inubushi T, Kitagawa M, Takata T. 3rd International workshop on BioDental Education & Research (Hiroshima) January 30, 2011.

#### G) Presentation at Domestic Scientific Meeting

1. The challenge of the regeneration of periodontal tissue -Study on cementum regeneration by a cementoblast specific gene, f-spondin-: Kitagawa M., Miyauchi M., Takata T.: The 50th Annual Meeting of Hiroshima Dental Association and the 95th Annual Meeting of Hiroshima University Dental Society (Hiroshima), November 13, 2011.
2. Geminin escapes from ubiquitin-mediated degradation by Aurora-A induced phosphorylation during mitosis. Tsunematsu T, Kudo Y, Takata T. 59<sup>th</sup> JADR Annual Meeting Hiroshima October 8-9, 2011.
3. Dental infection of Porphyromonas gingivalis induces pathological progression of non-alcoholic steatohepatitis. Furusho H, Miyauchi M, Aomin, Inubushi T, Ouhara K, Hisatune J, Kurihara H, Sugai M, Takata T. 59<sup>th</sup> JADR Annual Meeting Hiroshima October 8-9, 2011.
4. Molecular mechanisms of inhibitory effects of lactoferrin on LPS-mediated osteoclastogenesis. Inubushi T, Miyauchi M, Kawazoe A, Okada M, Aomin, Kudo Y, Ishikado A, Makino T, Tanne K, Tanaka E, Takata T. 59<sup>th</sup> JADR Annual Meeting Hiroshima October 8-9, 2011.
5. Identification of microRNA-203 as an inhibitor of invasion in oral cancer. Obayashi M, Kudo Y,

- Yoshida M, Hino Y, Fukunaga S, Tahara H, Takata T. 59<sup>th</sup> JADR Annual Meeting Hiroshima October 8-9, 2011.
6. Amelogenin differentially affects mineralization of cementblasts and periodontal ligament cells. Y Yoshimi, K Tanimoto, R Kunimatsu, T Takata, K Tanne, 59<sup>th</sup> JADR Annual Meeting Hiroshima October 8-9, 2011.
  7. Mechanism of hypoxia-inducible factor-1a in cartilage degradation by mechanical stress. M Shirakura, K Tanimoto, T Takata, K Tanne, 59<sup>th</sup> JADR Annual Meeting Hiroshima October 8-9, 2011.
  8. Dental infection of *P. gingivalis* progresses non-alcoholic steatohepatitis (NASH). Hisako Furusho. Frontal Dental School 2011, Miura ,September 1-2, 2011
  9. Identification of miR-203 as a invasion related molecule in oral cancer. Ohbayashi M Kudo Y, Yoshida M, Hino Y, Fukunaga S, Tahara H, Takata T. 3<sup>rd</sup> RNAi Meeting Hiroshima August 26-27, 2011.
  10. Nuclear survivin expression is well correlated with tumor progression of Head and Neck Cancer. Aljunid Merican ISM, Kudo Y, Qi G, Ogawa I, Takata T. The 22<sup>nd</sup> Annual Meeting of the Japanese Society of Oral Pathology Fukuoka August 24-25, 2011
  11. Application of Lactoferrin for periodontitis prevention and treatment. Kosai A, Inubushi T, Miyauchi M, Takata T. 2011 Dentsply (Tokyo), August 19, 2011.
  12. Identification of miR-203 as an invasion related molecule in oral cancer. Ohbayashi M Kudo Y, Yoshida M, Hino Y, Fukunaga S, Tahara H, Takata T. 30<sup>th</sup> Molecular Pathology Meeting Kurashiki July 22-24, 2011.
  13. Phosphorylation and ubiquitin

2. A case of “benign metastasizing myoepithelioma” with multiple pulmonary metastasis nine years after operation of primary parotid lesion.: Ogawa I., Ohbayashi M., Nakano R., Sakaida N, Konobu T., Saito S., Torii Y., Maruyama H., Takata T.: The 56<sup>th</sup> Annual Meeting for the Salivary Gland (Tokyo), December 3, 2011.
3. A case of osseous dysplasia arising bilaterally in the mandible that long-term progress observation was performed before extraction-: Hamada M., Kanda T., Ando T., Ogawa I., Toratani S., Okamoto T.: The 59<sup>th</sup> Chugoku-Shikoku Sectional Meeting of Japanese Somatological Society (Matsuyama), November 26, 2011.
4. Tumor of the palate (Mucoepidermoid carcinoma, clear cell variant).: Ohbayashi M., Ando T., Tani R., Konishi M., Ogawa I., Takata T.: The 106<sup>th</sup> Academic Meeting of Chugoku-Shikoku Branch of the Japanese Society of Pathology (Okayama), October 29, 2011.
5. A case of synchronous double cancer of the posterior mandible cystadenocarcinoma and papillary thyroid carcinoma.: Mizuta K., Ohta A., Shimasue H., Higashikawa K., Miyauchi M., Ogawa I., Kamata N.:The 56th Congress of the Japanese Society of Oral and Maxillofacial Surgery (Osaka), October 21-23,2011.
6. A case of myoepithelial carcinoma ex pleomorphic adenoma of the hard palate.: Fukui Y., Toratani S., Fujii T., Miyauchi M., Ogawa I., Okamoto T.:The 56th Congress of the Japanese Society of Oral and Maxillofacial Surgery (Osaka), October 21-23,2011.
7. Tumor of the palate (Signet-ring cell Mucin-producing adenocarcinoma of minor salivary gland).: Ogawa I. Kushitani K., Sakamoto T., Miyauchi M., Inai K., Takata T.: The 22<sup>nd</sup> Annual Meeting of the Japanese Society of Oral Pathology Fukuoka August 24-25, 2011
8. Tumor of the tongue (Ectomesenchymal chondromyxoid tumor of the anterior tongue).: Ogawa I., Tsunematsu T., Kitagawa M., Yoshioka Y, Takata T.: The 105<sup>th</sup> Academic Meeting of Chugoku-Shikoku Branch of the Japanese Society of Pathology (Kida-gun, Kagawa), June 25, 2011.
9. A case of bilateral osseous dysplasia in the mandible.: Ando T., Kanda T., Furusho H., Ogawa I., Toratani S., Miyauchi M., Takata T.: The 44<sup>th</sup> Meeting of Hiroshima University Dental Society (Hiroshima), June 11, 2011.
10. Mandibular lesion (Osseous dysplasia). : Ando T., Furusho H., Miyauchi M., Fujita M., Kanda T., Toratani S., Ogawa I., Takata T.:The 56<sup>th</sup> Meeting of Hiroshima Pathological Conference (Hiroshima), May 28, 2011.
11. A case of calcifying cystic odontogenic tumor occurring in the mandible of very elderly
12. woman Kubozono K, Shimasue H, Shigeishi H, Tsunematsu T, Ogawa I, Takechi M, Kamata N. The 40<sup>th</sup> Meeting of Chugoku-Shikoku Branch of the Japanese Society of oral and maxillofacial surgeons (Matsue) May 28, 2011
13. A case of myoepithelial carcinoma ex pleomorphic adenoma of the palate. Fukui Y., Toratani S.,



Fujii T., Miyauchi M., Ogawa I., Okamoto T. The 40<sup>th</sup> Meeting of Chugoku-Shikoku Branch of the Japanese Society of oral and maxillofacial surgeons (Matsue) May 28, 2011

14. A case of calcified lymph node at left submandibular.: Fujii Y, Yoshioka Y, Shintani T, Tsunematsu T, Ogawa I, Toratani S, Okamoto T. The 40<sup>th</sup> Meeting of Chugoku-Shikoku Branch of the Japanese Society of oral and maxillofacial surgeons (Matsue) May 28, 2011
15. Tumor of the palate (Myoepithelial carcinoma ex pleomorphic adenoma).: Yoshida M., Furusho H., Fukui Y., Toratani S., Miyauchi M., Ogawa I., Takata T.: The 104<sup>th</sup> Academic Meeting of Chugoku-Shikoku Branch of the Japanese Society of Pathology (Ube), February 19, 2011.

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

1. Grants-in-Aid for Scientific Research Young Scientists (A) New: Yasusei Kudo: Clarification of carcinogenesis induced by abnormal regulation of cell cycle regulators through ubiquitin dependent proteolysis.
2. Grants-in-Aid for Scientific Research Grant-in-Aid for Challenging Exploratory Research New: Yasusei Kudo: Clarify of involvement of microRNA in oral cancer invasion.
3. JST Adaptable and Seamless Technology transfer Program through target-driven R & D: A-STEP FS New: Yasusei Kudo: Identification and application to clinical diagnosis of invasion related microRNA in oral cancer.
4. Grants-in-Aid for Scientific Research Research fellowship for young scientists New: Takaaki Tsunematsu: The role and regulation of RUNX3 in oral squamous cell carcinoma.
5. Grants-in-Aid for Scientific Research Research fellowship for international scientists New: Phuong Thao Nguyen: Study on the development of novel treatment for targeting N-cadherin in oral cancer.
6. Grants-in-Aid for Scientific Research Scientific Research Continuance Takashi Takata The clarification of the mechanism of invasion and metastasis of oral cancer and its application to diagnosis of malignancy and gene therapy.
7. Grants-in-Aid for Scientific Research Scientific Research (C) Continuance: Mutsumi Miyauchi Study on the development of novel therapy for bone disease targeting  $\gamma$ -GTP.
8. Donated fund from Ito ultrasound Ltd., Continuance Takashi Takata Study on the influence of ultrasonic irradiation on periodontal tissue.
9. Donated fund from Sanstar Co. Ltd. Takashi Takata.
10. Donated fund from Clinical laboratory center, Hiroshima city medical association, Continuance Takashi Takata Study on diagnosis for oral disease.
11. Donated fund from Mitsubishi-Mihara Hospital, Continuance Takashi Takata Study on diagnosis for oral disease.
12. Donated fund for Hiroshima Prefecture tumor registration business, Continuance Takashi Takata

**(5) Academic Awards, etc.**

1. Maki Yoshida 3rd International workshop on BioDental Education & Research. Oral Presentation Award, January 30, 2011 (Hiroshima).
2. Takaaki Tsunematsu 3rd International workshop on BioDental Education & Research. Poster Award, January 30, 2011 (Hiroshima).
3. Takaaki Tsunematsu Encouragement Award of Hiroshima University Faculty of Dentistry Alumni Association, May 14, 2011 (Hiroshima).
4. Hisako Furusho The 43rd meeting of Hiroshima University Dental Society, Encouragement Award, June 11, 2011 (Hiroshima).
5. Fumitaka Obayashi 6<sup>th</sup> grade Student The 43rd meeting of Hiroshima University Dental Society, Encouragement Award, June 11, 2011 (Hiroshima).
6. Chiaki Morimoto 6<sup>th</sup> grade Student The 43rd meeting of Hiroshima University Dental Society, Special Award from President of Hiroshima University Dental Society, June 11, 2011 (Hiroshima).
7. Azuma Kosai 5<sup>th</sup> grade Student Japan dental association organized DENTSPLY International sponsored Student Clinician Research Program SCRP , invitational tournament for represent Japan, First prize 19<sup>th</sup> August, 2011, Tokyo.
8. Hisako Furusho Frontal dental school 2011 Excellence Award 2 September, 2011, (Miura).
9. Toshihiro Inubushi 59<sup>th</sup> The 59th Annual Meeting of Japanese Association for Dental Research (JADR) Young Researcher's Award, October8, 2011 (Hiroshima).
10. Hisako Furusho The 59th Annual Meeting of Japanese Association for Dental Research (JADR) Young Researcher's Award, October8, 2011 (Hiroshima).

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## **Program for Department of Periodontal Medicine, Division of Frontier Medical Science and Department of Preventive and Restorative Dentistry (Periodontics and Endodontics)**

### **(1) Staffs and Students**

Professor: Hidemi Kurihara

Associate Professor: Hiroyuki Kawaguchi

Associate Professor, Lecture: Hideki Shiba, Takamune Hino (additional post of Hiroshima University Dental Clinic Director)

Assistant Professor: Naohiko Hasegawa, Noriyoshi Mizuno, Tsuyoshi Fujita, Yuushi Uchida, Katsuhiro Takeda, Tomoyuki Iwata, Kazuhisa Ohara, Shinji Matsuda

Resident: Yasuko Kitamoto, Fumino Ogawa

Graduate Student: Yoriko Iwasaki, Yoshie Niitani, Takeshi Ueda, Tomoko Hatakeyama, Naoko Katagiri, Mizuho Kittaka, Akihiro Konishi, Tsuyoshi Miyagawa, Kenji Wada, Kabir MD Ahamedul, Irma Josefine Savitri, Shu Ishida, Haruka Imai, Yusuke Obinata, Eri Kaneda, Takako Fujita, Ryoichi Yagi, Khung Rathvisal, Daisuke Ito, Kei Kashiwai, Masahiro Yamakawa, Tetsuya Yoshimoto

### **(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)

chemotaxis dysfunction. : Mizuno N, Niitani M, Shiba H, Iwata T, Hayashi I, Kawaguchi H, Kurihara H. ; J Clin Periodontol. 2011 Apr;38(4):310-7.

Characteristics of High-Molecular-Weight Hyaluronic Acid as a Brain-Derived Neurotrophic Factor Scaffold in Periodontal Tissue Regeneration.: Takeda K, Sakai N, Shiba H, Nagahara T, Fujita T, Kajiya M, Iwata T, Matsuda S, Kawahara K, Kawaguchi H, Kurihara H.; Tissue Eng Part A. Apr;17(7-8):955-67, 2011.

Susceptibility test and systemic administration of antibiotics for the treatment of alveolar abscess infected by *Pseudomonas aeruginosa*: A case report: Uchida Y, Kitamoto Y, Hino T, Shiba H, Kawaguchi H, Kurihara H; Journal of Japan Endodontic Association, 32(1): 38-46, 2011

Diagnosis with cone-beam computed tomography and treatment using microscope for endodontic lesion caused by root canal perforation; A case report Uchida Y, Shiba H, Kawaguchi H, Kurihara H; Journal of Japan Endodontic Association, 32(3): 226-231, 2011

## B) Review

## C) Publications

## D)

1. Toward the Realization of Biologic Endodontics H. Shiba, H. Kurihara Supplemental issue of the Quintessence Let's change clinical treatment best by ENDO Quintessence publication Co., 128-137
2. Examination study for DHs: What is the bacterial examination for samples from root canals? : H. Kurihara, I. Ogawa, M. Kitagawa; DHstyle. Dental Diamond Co. 5(9):66-70, 2011.
3. Examination study for DHs: Examination of serum IgG antibody titer for periodontopathic bacteria: H. Kurihara, T. Shintani; DHstyle. Dental Diamond Co. 5(12):62-66, 2011.

## E) Presentation at Scientific Meeting

1. Development of a newly medical device for periodontal tissue regeneration using brain-derived neurotrophic factor( BDNF) / hyaluronic acid complex : K. Takeda, H. Shiba, T. Fujita, S. Matsuda, A. Konishi, N. Katagiri, H. Kawaguchi, H. Kurihara; The 10<sup>th</sup> Congress of the Japanese Society for Regenerative Medicine (Tokyo), March 2011
2. BDNF induces migration of endothelial cells: S. Matsuda, T. Fujita, H. Shiba, H. Kurihara; the 89th General Session & Exhibition of the International Association for Dental Research (San Diego), March 2011
3. Irsogladine Maleate Regulates Gingival Epithelial Barrier Functions In Inflammatory Condition: T.

- Fujita, H. Yumoto, K. Ouhara, T. Miyagawa, S. Matsuda, H. Kawaguchi, T. Matsuo, H. Kurihara; the 89th General Session & Exhibition of the International Association for Dental Research (San Diego), March 2011
4. Inflammatory reaction of S100 protein in human gingival epithelial cells: Y. Uchida, K. Ohara, T. Fujita, H. Shiba H. Kawaguchi, H. Kurihara; the 89th General Session & Exhibition of the International Association for Dental Research (San Diego), March 2011
  5. Usefulness of stem cell-produced extracellular matrix as a scaffold : M. Kittaka, H. Shiba, K. Hayashida, K. Takeda, T. Iwata, T. Fujita, H. Kawaguchi, H. Kurihara; the 89th General Session & Exhibition of the International Association for Dental Research (San Diego), March 2011
  6. A case report of localized aggressive periodontitis improved by early phase of periodontal regenerative therapy: K. Takeda, H. Shiba, H. Kawaguchi, H. Kurihara; The 54<sup>th</sup> spring meeting of the Japanese society of Periodontology (Fukuoka), May 2011
  7. The antimicrobial peptide LL37 promotes the expression of VEGF in human periodontal ligament cell: M. Kittaka, H. Shiba, K. Ouhara, K. Takeda, T. Fujita, T. Fujita, H. Kawaguchi, H. Kurihara; The 54<sup>th</sup> spring meeting of the Japanese society of Periodontology (Fukuoka), May 2011
  8. The involvement of SMAD2 of apoptosis in gingival epithelium: T. Fujita, K. Ouhara, H. Shiba, H. Kawaguchi, H. Kurihara ; The 54<sup>th</sup> spring meeting of the Japanese society of Periodontology (Fukuoka), May 2011
  9. Anti-inflammatory effects of Azithromycin on human gingival epithelial cells: Tsuyoshi Miyagawa, T. Fujita, K. Ouhara, S. Matsuda, K. Takeda, Y. Uchida, H. Imai, Hideki Shiba, H. Kawaguchi, H. Kurihara; The 54<sup>th</sup> spring meeting of the Japanese society of Periodontology (Fukuoka), May 2011
  10. The effect of IL-32 in osteoclastogenesis of human peripheral blood derived mononuclear cell: K. Ouhara, T. Fujita, T. Iwata, H. Shiba, H. Kawaguchi, H. Kurihara; The 10<sup>th</sup> Congress of the Japanese Society for Regenerative Medicine (Tokyo), March 2011
  11. Irsogladine maleate regulates epithelial barrier functions in human gingival epithelial cells stimulated by TNF- $\alpha$ : T. Fujita, H. Shiba, Takeda, H. Kurihara.; The 32<sup>nd</sup> annual meeting of Japanese society of Inflammation and Regeneration (Kyoto) , June 2011
  12. Trial of selective antibiotics therapy for radicular cystic lesion - Embodiment of the concept called the biological endodontic treatment - : H. Kurihara, Y. Uchida, Y. Kitamoto, H. Shiba, H. Kawaguchi, I. Ogawa, T. Shintani, M. Kitagawa ; The 44th meeting of The Hiroshima University Dental Society (Hiroshima), June 2011.
  13. Anti-inflammatory effect of Azithromycin on human gingival epithelial cells: Tsuyoshi Miyagawa, T. Fujita, K. Ouhara, S. Matsuda, K. Takeda, Y. Uchida, H. Imai, H. Shiba, H. Kawaguchi, H. Kurihara; The 44th meeting of The Hiroshima University Dental Society (Hiroshima), June 2011.
  14. The antimicrobial peptide LL37 promotes the expression of VEGF in human periodontal ligament

- cell: M. Kittaka, H. Shiba, K. Ouhara, K. Takeda, T. Fujita, T. Fujita, H. Kawaguchi, H. Kurihara; The 44th meeting of The Hiroshima University Dental Society (Hiroshima), June 2011.
15. The necessity for the metal allergy test before the operation of dental implant: M. Kitagawa, M. Ohbayashi, T. Ando, T. Shintani, I. Ogawa, H. Kawaguchi, K. Kagawa, T. Nakagawa, M. Takechi, H. Kurihara; The 44th meeting of The Hiroshima University Dental Society (Hiroshima), June 2011.
  16. Trend of dental metal allergy: M. Kitagawa, T. Ando, T. Shintani, I. Ogawa, H. Kurihara; 4th Annual Meeting of Japanese Society for Evidence and the Dental Professional (Chiba), August 2011
  17. Effects of Dokudami (*Houttuynia cordata*) on IL-8 expression in human gingival epithelial cells stimulated by *Aggregatibacter actinomycetemcomitans*: M. Kabir, T. Fujita, K. Ouhara, I. Savitri, T. Miyagawa, M. Kittaka, H. Imai, Y. Uchida, S. Matsuda, H. Shiba, H. Kawaguchi, H. Kurihara; The 54<sup>th</sup> spring meeting of the Japanese society of Periodontology (Shimonoseki), 2011 September
  18. Adhesion of mesenchymal stem cells to root surface of teeth *in vitro*: K. Wada, Y. Uchida, T. Ueda, H. Kawaguchi, H. Kurihara; The 54<sup>th</sup> spring meeting of the Japanese society of Periodontology (Shimonoseki), September 2011
  19. Immunohistochemical study of periodontal tissue regenerative process by BDNF.: A. Konishi, K. Takeda, H. Shiba, T. Ueda, T. Fujita, S. Matsuda, H. Kawaguchi, H. Kurihara.; The 54<sup>th</sup> spring meeting of the Japanese society of Periodontology (Shimonoseki), September 2011
  20. The ability of osteogenic differentiation of mesenchymal stem cell isolated from dog alveolar bone T. Ueda, H. Kawaguchi, Y. Uchida, K. Takeda, K. Wada, T. Fujita, H. Kurihara; The 54th autumn meeting of the Japanese society of Periodontology Shimonoseki September 2011
  21. The effect of BDNF on permeability of endothelial cells: S. Matsuda, T. Fujita, K. Takeda, M. Kittaka, H. Imai, H. Shiba, H. Kawaguchi, H. Kurihara; The 135<sup>th</sup> autumn meeting of Japanese society of conservative dentistry (Osaka), October 2011
  22. Amphotericin B regulates IL-8 expression in human gingival epithelial cells : H. Imai, T. Fujita, K. Ouhara, S. Matsuda, Y. Uchida, T. Miyagawa, H. Shiba, H. Kawaguchi, H. Kurihara; The 135<sup>th</sup> autumn meeting of Japanese society of conservative dentistry (Osaka), October 2011
  23. Immunohistochemical study of periodontal tissue regenerative process by BDNF.: A. Konishi, K. Takeda, H. Shiba, T. Ueda, T. Fujita, S. Matsuda, H. Kawaguchi, H. Kurihara.; 4th Hiroshima Conference on Education Science in Dentistry (Hiroshima), October 2011
  24. Isolation and osteogenic differentiation of jaw bone marrow derived mesenchymal stem cells in beagle dogs: T. Ueda, H. Kawaguchi, K. Wada, K. Takeda, T. Fujita, Y. Uchida, H. Kurihara; 4th Hiroshima Conference on Education Science in Dentistry (Hiroshima), October 2011
  25. The inhibitory effect of irsogladine maleate against Toll-like receptor 2 induction mediated by *Porphyromonas gingivalis* in human gingival epithelial cells: Irma Josefina Savitri, K. Ouhara, T. Fujita, T. Miyagawa, Y. Uchida, H. Shiba, H. Kawaguchi, H. Kurihara; 4th Hiroshima Conference on Education Science in Dentistry (Hiroshima), October 2011

26. The establishment of the method to make marrow mesenchyma stem cells adhere to the tooth root surface K. Wada, Y. Uchida, T. Ueda, H. Kawaguchi, H. Kurihara The 97th Hiroshima dental society (Hiroshima), November 2011

27.

10. Dentistry and infection control Hidemi Kurihara Recurrent education for Dental hygienist Hiroshima , October 2011
11. Vision for new periodontal regenerative therapy Hidemi Kurihara 29th annual meeting of Japan Academy of Clinical periodontology Special lecture Hiroshima , October 2011
12. Dentistry and infection control Hidemi Kurihara Ehime dental association medical care security workshop Matsuyama , November 2011
13. Development of new methods for periodontal regenerative therapy Hidemi Kurihara Japan –China Medical interchange meeting memorial event (China , November 2011

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

1. Grants-in aid for scientific research: Hidemi Kurihara: #21390557
2. Grants-in aid for scientific research: Hiroyuki Kawaguchi: #22592313
3. Grants-in aid for scientific research: Katsuhiro Takeda: #22791929
4. Grants-in aid for scientific research : Kazuhisa Ouhara : #22792085
5. Grants-in aid for scientific research : Tsuyoshi Fujita: #22792087
6. Grants-in aid for scientific research : Yuushi Uchida: #22792088
7. Grants-in aid for scientific research: Hidemi Kurihara: #23592923
8. Grants-in aid for scientific research: Noriyoshi Mizuno #23593061
9. Grants-in aid for scientific research: Hidemi Kurihara: #23659978
10. Grants-in aid for scientific research :Tomoyuki Iwata: #23792478
11. Grants-in aid for scientific research :Yoriko Iwataki: #23932002
12. Japanese Society of Periodontology Encouragement research grants – in aid for Seeds foster young researcher (the year of 2011): Kazuhisa Ouhara; Basic research for development of examination of periodontal disease sensitivity focused on microRNA expression

#### (5) Award.

##### Katsuhiro Takeda

Best Poster Presentation Award of the 54<sup>nd</sup> spring meeting of the Japanese society of Periodontology (Fukuoka): A case report of localized aggressive periodontitis improved by early phase of periodontal regenerative therapy

##### Tsuyoshi Fujita

Japanese Society of Conservative Dentistry prize for encouragement 2011 :



Irsogladine maleate regulates neutrophil migration and E-cadherin expression in gingival epithelium stimulated by *Aggregatibacter actinomycetemcomitans*.; *Biochemical Pharmacology*. 79:1496-1505, 2010.

The 23rd Japanese Association for Oral Biology prize pharmacology section (2011) : Irsogladine maleate regulates neutrophil migration and E-cadherin expression in gingival epithelium stimulated by *Aggregatibacter actinomycetemcomitans*.; *Biochemical Pharmacology*. 79:1496-1505, 2010.

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## Programs for Applied Biomedicine, Division of Medical Intelligence and Informatics (Department of Mucosal Immunology)

### (1) Staffs

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 host defense against oxidized stress

### (3) Research Achievements

#### A) Text book (in japanese)

- 1: Takahashi, I. The intraepithelial lymphocytes. *In "Encyclopedia of Food immunity & Allergy"* (Edited by Japanese Society of Food Immunology) pp.66-67, Asakura Shoten, Tokyo, 2011.

#### B) Review (in japanese)

- 1: Takahashi I, Nagatake T, Kiyono H. Basic concept of Mucosal Immunology. **Cell Technology**. 30:342-347, 2011.

#### C) Original papers

- 1: Hatano H, Shigeishi H, Kudo Y, Higashikawa K, Tobiume K, Takata T, Kamata N. Overexpression of receptor for hyaluronan-mediated motility (RHAMM) in MC3T3-E1 cells induces proliferation and differentiation through phosphorylation of ERK1/2. *J Bone Miner Metab*. PMID: 21947782, 2011.
- 2: Hatano H, Shigeishi H, Kudo Y, Higashikawa K, Tobiume K, Takata T, Kamata N. RHAMM/ERK interaction induces proliferative activities of cementifying fibroma cells through a mechanism based on the CD44-EGFR. *Lab Invest*. 91: 379-91, 2011.

#### D) Presentation at Scientific Meeting

- 1: Toubou H, Goto Y, Kurashima Y, Kiyono H, Maruyama F, Nakagawa I, Kurushima J, Abe A, Hayashi I and Takahashi I. Indigenous environmental bacteria involve the creation of mucosal homeostasis. The 40th Annual Meeting of Japanese Society of Immunology. November 28, 2011, Chiba, Japan.

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

1. Grant for the Co-laboratory Research from the Institute of Medical Science, The University of Tokyo: Takahashi, I: Molecular and cellular mechanism for the induction and maintenance of mucosal memory T cells. (No. 2011-3-305) ¥ 1, 000, 000.
2. Grant for the Co-laboratory Research entitled “Molecular and cellular analysis of mucosal immune responses to food derived immunomodulators” from the Kobayashi Pharmaceutical Company. ¥ 1, 500, 000.

#### (5) Patents.

“The gut-resident commensal bacteria derived polypeptide and the method of its production”  
(#2011-033867) Hiroshima University, The University of Tokyo, Tokyo Medical and Dental University, and Kitasato University. February 18, 2011.

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## **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 : Masaru Konishi, Yukimi Yasuhara, Mitsuko Shimizu,  
 Kiyohito Ota, Md Mahmud Uz Zaman, Satsuki Minamitani,  
 Atia Hossain, Kimio Okada, Keiji Harada

#### **(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 videofluoroscopic examination of swallowing
- 5: Radiation effects of heavy ion particles on bone metabolism.

#### **(3) Research Achievements**

##### **A) Original Papers**

- 1: Reproducibility and diagnostic accuracy of a computer-aided diagnosis system of osteoporosis for detecting linearly eroded endosteal margins of the mandible lower border on panoramic radiographs: Nakamoto T., Taguchi A., Asano A., Zaman M., Tanimoto K.: *Dental Radiology*, 51, 33-38, 2011.
- 2: Irradiation Effect on Osteoclastogenesis Stimulated by Breast Cancer Cell Sawajiri M, Nomura Y., Nishikiori R., Banik S., Sonoda Y., Tanimoto K. *Health Physics* 101(3) 259-264 2011.
- 3: Experience of using a filmless system in dental practice at Hiroshima University Hospital, a former University Dental Hospital: Ohtsuka M., Nakamoto T., Konishi M., Yamane Y.,

Tamura M., Takaba J., Sumida H., Tanimoto K.: Japanese Journal of Radiological Technology, 67(6), 673-678, 2011.

### C) Publications

- 1: Dysphagia Clinical Management in Adults & Children (Groher M. Crary M. eds. Takahashi K.(translation supervisor)): Konishi M. Tanimoto K. partially contributed Ishiyaku Pub.Inc. Tokyo chapter 10, 189-214, 2011
- 2 Evaluation of Dysphagia (In Japanese): Tanimoto K. (partially contributed) Ishiyaku Pub.Inc. Tokyo 62-68, 2011

### E) Presentation at Scientific Meeting

- 1: Irradiation Effect on Osteoclastogenesis Stimulated by Breast Cancer Cell: Sawajiri M., Nomura Y., Takinami S., Maruyama K., Tanimoto K: The 54th Annual Meeting of The Japan Radiation Research Society (Kobe), 2011.
- 2 Disinfection of Dental Stone Casts: Effect on Surface Morphology. Nishikiori R., Watanabe ., Nomura y., Hirata I., Sawajiri M., Okazaki M. International Dental Materials Congress 2011 (Seoul) 2011.
- 3: Two cases of bisphosphonate-related osteomyelitis of the mandible with solid type periosteal reaction: Zaman M., Nakamoto T. Suei Y. Tanimoto K.: 4th Hiroshima Conference on Education and Science in Dentistry (Hiroshima), 2011.
- 4: Important technical parameters are not presented in studies on intra oral radiography in endodontic treatment –Results of a systematic review-: Konishi M. Lindh C. Nilsson M. Tanimoto K. Rohlin M.:18th International Congress of Dento-maxillofacial Radiology (Hiroshima) 2011
- 5: Contrast agents used in the videofluoroscopic swallowing study: Konishi M. Nagasaki T. Yasuhara Y. Tanimoto K.: 18th International Congress of Dento-maxillofacial Radiology (Hiroshima) 2011
- 6: Visualization of Rice Swallowing: Konishi M. Nagasaki T. Yasuhara Y. Tanimoto K.: 2th Joint Scientific meeting in Dentistry (Surabaya), 2011
- 7: Are freeze infusion of root vegetables suitable as a dysphagia diet? : Nagasaki T, Konishi M, Hirai T, Kimura H, Yasuhara A, Kayashita J, Nakamura S, Sakamoto H, Tanimoto T Dysphagia Research Society 19<sup>th</sup> Annual Meeting(San Antonio, USA), 2011
- 8: The swallowing dynamic state of the freeze infusion of foods: Tanimoto K., Nagasaki T.,

Konishi M., Hirai T., Yamagata H., Kayashia J., Yasuhara Y., Kimura H., Nakatsu S., Sakamoto H. :The 23<sup>th</sup> annual meeting of the Society of Japanese Clinical dysphagia Research. (Hiroshima), 2011.

9: The assessment of effects on oral music splint forms: Tomonari A., Tamamoto M., Nagasaki T., Murakami O., Nikawa H., Satoda T., Tanimoto K. : The 95<sup>th</sup> Scientific meeting of Hiroshima University Dental Society (Hiroshima), 2011.

10: The analysis of the oral internal pressures during sucking and swallowing movement: a trial clinical measuring instrument for oral internal pressures: Fukada M., Amano H., Nagasaki T., Hara K., Sugiyama M., Tanimoto K. : Hiroshima University Dental Society (Hiroshima), 2011.

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

1: Grant-in-aid for scientific research from the Japan Society for the Promotion of Science: Sawajiri M. : Radioprotective assay on bone metabolism with Japanese Medaka (*Oryzias latipes*). ( no. 23592765) ¥1,800,000

2: Grant-in-aid for scientific research from the Japan Society for the Promotion of Science: Nagasaki T :The assessment of the oropharyngeal functions for determination of liquid concentration in dysphagic patients. (No. 2359284952) ¥150,000

#### (6) Patents

1: Osteoporosis diagnosis support device: United States Patent (US 7,916,921 B2) (Asano A., Taguchi A., Nakamoto T., Tanimoto K., Arrifin AZ.)

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

### (1) Staffs and Students

Professor: Norihiko Maeda  
Associate Professor: Yuji Yoshiko  
Research Associate: Tomoko Minamizaki, Hirotaka Yoshioka  
Graduate Student: Aya Nishikiori  
Yukiko Konishi (Pediatric Dentistry)  
Undergraduate Student: Maya Mohri, Aoi Nozu, Yasumasa Irie

### (2) Main Research Activities

- 1: Bone and tooth mineralization
- 2: Phosphate-regulating molecules

### (3) Research Achievements

#### A) Original Papers (including Case Reports)

- 1: Incisor enamel formation is impaired in transgenic rats overexpressing the type III NaPi transporter Slc20a1.: Yoshioka H., Yoshiko Y., Minamizaki T., Suzuki S., Koma Y., Nobukiyo A., Sotomaru Y., Suzuki A., Itoh M., Maeda N.: *Calcif Tissue Int.* 89 (3):192-202, 2011.
- 2: Ameloblastin regulates osteogenic differentiation by inhibiting Src kinase via cross talk between integrin  $\alpha 1$  and CD63.: Iizuka S., Kudo Y., Yoshida M., Tsunematsu T., Yoshiko Y., Uchida T., Ogawa I., Miyauchi M., Takata T.: *Mol Cell Biol.* 31 (4):783-92, 2011.

#### E) Presentation at Scientific Meeting

- 1: Inorganic phosphate suppresses Fibromodulin expression in ameloblasts via the ERK1/2 signaling pathway Irie Y., Yoshioka H., Yoshiko Y., Minamizaki T., Kato Y., Maeda N.: The 53rd Annual Meeting of Japanese Association for Oral Biology (Gifu), 2011.
- 2: Klotho FGF23



2011.

3: FGF signaling in bone mineralization with a focus on the FGF23-Phex pathway: Minamizaki T., Yoshiko Y., Konishi Y., Yoshioka H., Kozai K., Maeda N.: The 29th Annual Meeting of the Japanese Society for Bone and Mineral Research (Osaka), 2011.

4: MEPE-derived phosphorylated ASARM and Phex are involved in FGF23/soluble Klotho-dependent hypomineralization: Konishi Y., Yoshiko Y., Minamizaki T., Yoshioka H., Kozai K., Maeda N.: The 29th Annual Meeting of the Japanese Society for Bone and Mineral Research (Osaka), 2011.

5: MEPE-derived phosphorylated ASARM is involved in FGF23/soluble Klotho-dependent hypomineralization: Konishi Y., Minamizaki T., Yoshiko Y., Yoshioka H., Kozai K., Aubin J.E., Maeda N.: The American Society for Bone and Mineral Research 2012 Annual Meeting (San Diego), 2011.

6: MEPE-associated phosphorylated ASARM is a potential target to facilitate bone mineralization: Mohri M., Yoshiko Y., Minamizaki T., Yoshioka H., Maeda N.: 4th Hiroshima Conference on Education and Science in Dentistry (Hiroshima), 2011.

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

- 1: JST A-STEP Feasibility Study (Search Type): Yuji Yoshiko, Analysis of (p)ASARM as a bone-vascular calcification-related molecule in a mouse model 1,700,000.
- 2: Research Grant (Ono pharmaceutical): Yuji Yoshiko, Molecular basis of mineralization in bone and other tissues 3,000,000.
- 3: Grants-in-Aid for Scientific Research (C): Yuji Yoshiko, A study on "A FGF23-soluble Klotho System" in bone/tooth diseases. No. 23592701, ¥ 1,820,000
- 4: Research Grant (Raffinee International): Yuji Yoshiko, Screening for mineralization-associated factors. 3,600,000.
- 5: Grants-in-Aid for Young Scientists (B): Tomoko Minamizaki, A basic study of mineral metabolic disorders with a focus on de novo effect of PTH. No. 23792105, ¥ 2,080,000
- 6: The Hiroshima University Support Foundation (Satake Education and Research Fund): Tomoko Minamizaki: Identify of downstream of PTH which inhibits FGF23 production and signaling. ¥300,000.
- 7: Grants-in-Aid for Young Scientists (B): Hirotaka Yoshioka, Tooth morphogenesis and the regulation of phosphate homeostasis: basic and preclinical studies of tooth hypoplasia., No. 22791768, ¥ 1,820,000

**(5) Academic Awards, etc.**

- 1: Irie Y.: Undergraduate Poster Award, The 53rd Annual Meeting of Japanese Association for Oral Biology, Gifu, 2011.
- 2: Konishi Y., Yoshiko Y., Minamizaki T., Yoshioka H., Maeda N., et. al.: Plenary Poster, The American Society for Bone and Mineral Research 2012 Annual Meeting (San Diego), 16 Sep. 2011.
- 3: Konishi Y.: Travel Award, The American Society for Bone and Mineral Research 2012 Annual Meeting (San Diego), 16 Sep. 2011.

**(6) Patent.**

- 1: Use with utilization of soluble Klotho-, FGF23- and FGFR-complex formation mechanism in calcified tissue. Applicant, Hiroshima University. Inventors, Yuji Yoshiko, Tomoko Minamizaki, Hirotaka Yoshioka, Norihiko Maeda, Kazuaki Kozai, Kazuaki Watanabe. WO/2011/158655, 2011.

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**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

Graduate Student

(2) Main Research Activities

(3) Research Achievements

A) Original Papers (including Case Reports)

## B) Review

## C) Publications

## D) Other Publications

- 1: I aim at training excellent dental anesthesiologists: Irifune M: Journal of Japanese Dental Society of Anesthesiology, 39 (5), 688, 2011.

## E) Presentation at Scientific Meeting

- 1: A case of general anesthesia who was suffered from renal tubular acidosis accompanied with hypotassemia during surgery: Shimizu Y, Fukushima R, Yoshida K, Yamashita M, Ishii H, Oue K, Nishinakamura R, Miyahara T, Mukai A, Doi M, Irifune M: The 26th Scientific Meeting of Dental Anesthesiology in Chugoku and Shikoku branch (Tokushima), 2011.
- 2: General anesthetic management of a patient undergoing dental treatment with mucopolysaccharidosis: Nishinakamura R, Shimizu Y, Doi M, Yoshida K, Mukai A, Miyahara T, Fukushima R, Oue K, Ishii H, Irifune M: The 26th Scientific Meeting of Dental Anesthesiology in Chugoku and Shikoku branch (Tokushima), 2011.
- 3: A way to make a mouthguard for a patient undergoing surgery using transcranial muscle evoked potential monitoring under general anesthesia: Cooperation between medical and dental doctors: Fukushima R, Shimizu Y, Saeki N, Kubo T, Abekura H, Doi M, Yoshida K, Mukai A, Nishinakamura R, Akagawa Y, Irifune M: The 26th Scientific Meeting of Dental Anesthesiology in Chugoku and Shikoku branch (Tokushima), 2011.
- 4: The present status of OSCE performing to junior residents in Department of Dental Anesthesiology, Hiroshima University Hospital: Ishii H, Yoshida K, Oue K, Fukushima R, Nishinakamura R, Miyahara T, Mukai A, Doi M, Shimizu Y, Irifune M: The 26th Scientific Meeting of Dental Anesthesiology in Chugoku and Shikoku branch (Tokushima), 2011.

- 5: Effects of propofol on translocation and enzyme activity of Protein Kinase C (PKC): Miyahara T, Sakaï N, Irifune M, Ito K, The 39th Annual Meeting of Japanese Dental Society of Anesthesiology (Kobe), 2011.
- 6: Effects of GABAergic, glycinergic, neuronal nicotinic acetylcholinergic, and Substance P neurons on pentobarbital-induced anesthetic factors: Mukai A, Irifune M, Miyahara T, Oue K, Ishii H, Doi M, Shimizu Y, Yoshida K, Fukushima R, Nishinakamura R: The 39th Annual Meeting of Japanese Dental Society of Anesthesiology (Kobe), 2011.
- 7: Sufficiency of cone-beam CT in diagnosis of pain for a patient with fenestration of jaw caused by trauma: Doi M, Ishii H, Oue K, Fukushima R, Nishinakamura R, Miyahara T,

Research Associate : Makoto Arakawa, Shigeki Suzuki, Naoyo Motoyama, Akane Mineoka, Akiko Yamashita, Misaki Iwashita

Graduate Student : Hideo Nakarai, Shintara Nagayasu, Takanori Shinjo, Sakiko Fujii, Seiji Kobuke

(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)

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2 The risk factors of periodontal disease; “Basic and clinical of Periodontal therapy”

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June 9-10,

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- 3 Grant-in-Aid for Scientific Research(C): Motoyama N., The potential therapeutic strategy for dental pain. No. 21592421. ¥ 1,000,000
- 4 Grant-in-Aid for Scientific Research: Suzuki S., The establishment of ameloblast cell line from adult stem cells and of the method of tooth germ regeneration. No. 23792176. ¥ 2,470,000
- 5 JST A-step FS stage: Suzuki S., The application of highly phosphorylated protein delivered from bone and tooth for hard tissue regeneration. No. AS231Z05041F ¥1,700,000
- 6 Grant-in-Aid for Scientific Research: Challenging Exploratory Research : Nishimura F, Global analysis of molecules the expression is fluctuated in pulp cell cultured with macrophage. No. 23659889. ¥1,560,000
- 7 Grant-in-Aid for Scientific Research (B)(general): Nishimura F, Collaborative Basic Research on Periodontal Medicine and Geriatric medicine. No. 80208222. ¥2,990,000
- 8 3. Grant-in-Aid for Scientific Research (C)(general): Fujii M, Development of non-serum culture medium for selective proliferation of pulp stem cell. 21592422, ¥1,300,000
- 9 Grants-in-Aid for Scientific Research: Yamashita A., Global analysis of adipocytes co-cultured with macrophages treated with anti-inflammatory substance. No. 22792086. ¥ 1,170,000

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#### (6) Patents

- 1 Inventors: Morita K., Dohi T., Motoyama N., Kitayama T., Kanemastu T., Shiraishi S.: Management of chronic pain: translating mechanistic advances and evidence-based research into clinical practice (International Application No: PCT/JP2011/078508; Basic Application No: 2010-274581 filed on 9 December 2011) (Applicants: Hiroshima University; National Cancer Center) .

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**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, Kyou Hiasa  
Assistant : Katsunori Koretake, Mineka Yoshikawa, Kazuhiko Hayashi, Yasunari Miyamoto,  
Kana Harada  
Secretary : Rinko Kurumi  
Resident : Maho Takeuchi, Ayumi Matsuura, Koji Morita, Mariko Maruyama, Ryo Takeshita  
Graduate Student : Hiroshi Oue, Yohei Okazaki, Hirokazu Tsuchioka, Kazuhisa Ookura,  
Maretaningtias Dwi Ariani, Shinsuke Okada, Shiho Kajihara, Yusuke Makihara,  
Takahiro Mori

(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)

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B) Review

C) Publications

D) Other Publications

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2:

GC CIRCLE 139 28-34 2011

E) Presentation at Scientific Meeting



**(4) Status of Receiving Grants-**



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

**(1) Staff and Students**

Professor	: Yasumasa Akagawa
Associate Professor	: Shinsuke Sadamori, Hitoshi Abekura
Research Associate	: Shunji Inoue (Until March), Kazuko Kagawa (Until March), Koh-ichi Kuremoto (Since October), Kazuya Doi, Kouji Morita
Secretary	: Michiko Miyagawa
Resident	: Kazuko Kagawa (Since April), Isao Fujihara, Takeshi Maeda (Until September), Wataru Mizumachi
Intern	: Kouichi Kamada, Hiroki Tsuka, Masahiro Tsuboi
Graduate Student	: Isao Fujihara, Tomoharu Hori, Tomohisa Okura, Keisuke Nogami
Research Student	: Toru Akutsu

**(2) Main Research Activities**

Selection of osteoblast-precursor cells from oral tissues using cell surface antigen.

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

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

chromogranin A.

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

Molecular biology of mesenchymal stem cells towards osteogenic differentiation.

Psychiatric disorders in dental practice.

**(3) Research Achievements**

**A) Original Papers (including Case Reports)**

Durability of peel bond of resilient denture liners to acrylic denture base resin: Maeda T., Hong G., Sadamori S., Hamada T., Akagawa Y.: J Prosthodont Res, in press, 2011.

Nutritional status and oral status of the elderly with dementia: a 2-year study: Sadamori S., Hayashi S., Fujihara I., Abekura H., Hamada T., Akagawa Y.: Gerodontology, in press, 2011.

Association between sleep bruxism and stress sensitivity in an experimental psychological stress task: Abekura H., Tsuboi M., Okura T., Kagawa K., Sadamori S., Akagawa Y.: Biomedical Research, 32(6), 395-399, 2011.

Core binding factor beta functions in the maintenance of stem cells and orchestrates continuous proliferation and differentiation in mouse incisors: Kurosaka H., Islam M.N., Kuremoto K., Hayano S., Nakamura M., Kawanabe N., Yanagita T., Rice D.P., Harada H., Taniuchi I., Yamashiro T.: Stem Cells, 29(11), 1792-1803, 2011.

The initial viscosity and adhesive strength of denture adhesives and oral moisturizers: Hong G., Tsuka H., Dilinuer MS., Wang WQ., Sasaki K.: Asian Pac J Dent, 11, 45-50, 2011.

Comparative evaluation of bone regeneration using spherical and irregularly shaped granules of interconnected porous hydroxylapatite. A beagle dog study: Kubo T., Doi K., Hayashi K., Morita K., Matsuura A., Teixeira ER., Akagawa Y.: J Prosthodont Res, 55, 104-109, 2011.

A case report of prosthodontic reconstruction using dental implants for the edentulous patient with severe gagging reflex: Ono S., Takechi M., Harada K., Ohta K., Okumura T., Kagawa K., Abekura H., Okui G., Ninomiya Y., Takamoto M., Akagawa Y., Kamata N.: Journal of Hiroshima University Dental Society, 43(1), 57-60, 2011.

A case report of ISOD using palatal torus: Ninomiya Y., Takechi M., Ohta K., Ono S., Okui G., Takamoto M., Abekura H., Akagawa Y., Kamata N.: Journal of Hiroshima University Dental Society, 43(1), 61-65, 2011.

## B) Review

## C) Publications

Denture Care - a side reader for dental hygienists- : Hamada T., Minakuchi S., Akiba T., Sadamori S., Suzuki T., Hosoi N., Murata H., Yoneyama K., Oda N., Hong G., Ichikawa T., Okazaki J., Kawai Y., Kimoto K.: Dental Diamond (Tokyo), 1-43, 2011.

## D) Other Publications

## E) Presentation at Scientific Meeting

The antimicrobial efficacy of chlorine dioxide as a component of denture cleanser: Hori T., Maeda T., Nomura Y., Sadamori S., Akagawa Y.: The 3rd Japan Denture Care Society (Morioka), 2011.

Analysis of osteoblast-precursor cells from oral tissues using cell surface antigen: Kamada K, Fujimoto K, Nishimura M, Sadamori S, Akagawa Y, Kato Y.: The 51th Annual Meeting of the Japanese Biochemical Society, Chugoku-Shikoku Branch (Hiroshima), 2011.

Separation of osteoblast-precursor cells from oral tissues using ALCAM: Kamada K, Nishimura M, Sadamori S, Akagawa Y.: The 120th Commemorative Scientific Meeting of Japan Prosthodontic Society (Hiroshima), 2011.

Laboratory study on the mechanical properties of trial tissue conditioners: Tsuka H, Hong G, Mizumachi W, Maeda T, Sadamori S, Nikawa H, Akagawa Y.: The 120th Commemorative Scientific Meeting of Japan Prosthodontic Society (Hiroshima), 2011.

Measurement of jaw muscle activities by extremely small portable electromyographic recorder with monopolar electrode: Okura T, Abekura H, Tsuboi M, Sadamori S, Akagawa Y.: The 24th Annual Meeting of Japanese Society for the Temporomandibular Joint (Hiroshima), 2011.

The Antimicrobial Efficacy of Chlorine Dioxide in *Candida albicans*: Hori T, Maeda T, Nomura Y, Sadamori S, Akagawa Y.: Annual scientific meeting of Japan prosthodontic society Chugoku and Shikoku branches (Okayama), 2011.

Behavioral and psychological symptoms (BPSD) and oral status in the elderly with vascular dementia: Fujihara I, Sadamori S, Abekura H, Sasaki M, Hamada T, Akagawa Y.: Annual scientific meeting of Japan prosthodontic society Chugoku and Shikoku branches (Okayama), 2011.

Development of implant/interconnected porous calcium hydroxyapatite: Oue H., Doi K., Kubo T., Koretake K., Hayashi K., Kajihara S., Imura K., Akagawa Y.: 14th Meeting of the International College of Prosthodontists (Hawaii), 2011.

The aspects of osseointegration of the implants placed in the reconstructed bone: Kajihara S., Doi K., Oue H., Matsuura A., Morita K., Takeshita R., Asamori C., Akagawa Y.: 14th Meeting of the International College of Prosthodontists (Hawaii), 2011.

A case report of application of newly developed interconnected porous hydroxyapatite for implant GBR: Doi K., Kubo T., Hiasa K., Hayashi K., Akagawa Y.: The 41th Annual Meeting of Japanese Society of Oral Implantology (Nagoya), 2011.

Separation of osteoblast-precursor cells from gingival fibroblasts using membrane antigen: Kamada K, Nishimura M, Sadamori S, Kubo T, Akagawa Y.: The 41th Annual Meeting of Japanese Society of Oral Implantology (Nagoya), 2011.

The aspects of osseointegration of the implants placed in the reconstructed bone with using interconnected calcium hydroxyapatite: Kajihara S., Doi k., Kubo T., Morita K., Akagawa Y.: The 41th Annual Meeting of Japanese Society of Oral Implantology (Nagoya), 2011.

Case report of application of newly developed interconnected porous hydroxyapatite for implant GBR: Doi K., Kubo T., Takeshita R., Hiasa K., Akagawa Y.: Annual scientific meeting of Japan prosthodontic society Tohoku, Hokkaido, Kanetsu and Higashi-Kantoh branches (Niigata), 2011.

Development of implant/interconnected porous calcium hydroxyapatite: Oue H., Doi K., Kubo T., Koretake K., Hayashi K., Kajihara S., Imura K., Akagawa Y.: 4th Hiroshima Conference on Education and Science in Dentistry (Hiroshima), 2011.

The aspects of osseointegration of the implants placed in the reconstructed bone by using interconnected porous calcium hydroxyapatite Kajihara S., Doi K., Oue H., Matsuura A., Morita K., Takeshita R., Asamori C., Akagawa Y.: 4th Hiroshima Conference on Education and Science in Dentistry (Hiroshima), 2011.

The necessity for the metal allergy test before the operation of dental implant: Kitagawa M., Ohbayashi M., Ando T., Shintani T., Ogawa I., Kawaguchi H., Kagawa K., Nakagawa T., Takechi M., Kurihara H.: The 44 Meeting of Hiroshima University Dental Society (Hiroshima), 2011.

Relationship between behavioral and psychological symptoms (BPSD) and oral status in the elderly with vascular dementia: Fujihara I., Sadamori S., Hayashi S., Furuebisu M.: The Japanese society for dementia care, Chugoku regional forum (Hiroshima), 2011.

## F Special lectures in academic meetings

Oral Status and Dementia: Sadamori S.: The Japanese Society for Dementia Care - Chugoku Area Conference (Hiroshima), 2011.

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

Grant-in-Aid for Scientific Research (C) (2): Sadamori S., The relation between breathing and denture wearing and not wearing during sleep. No. 23592848. 3,380 thousand yen

Grant-in-Aid for Scientific Research (C): Abekura H., Participation of lifestyle in relationship between oral habits and psychological stress. No. 22592152. 1,170 thousand yen.

Grant-in-Aid for Scientific Research (C): Kuremoto K., Acquirement of amelogenic stem/progenitor cells for tissue-engineered tooth. No. 23592875. 1,900 thousand yen.

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. 1,900 thousand yen.

Grant-in-Aid for Young Scientists (B): Doi K., Mandibular bone regeneration by using bio intelligent artificial bone. No. 22791889. 2,080 thousand yen.

Grant-in-Aid for Young Scientists (B): Morita K., Bone regeneration ability of inorganic hydroxyapatite adsorbed long chain polyphosphate. No. 3792228. 1,950 thousand yen.

Grant-in-Aid for Young Scientists (B): Maeda T., Study on the evaluation of prototype tissue conditioners formulated stable chlorine dioxide No. 22791888. 2,730 thousand yen.



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

(1) Staffs and students

Professor	Kazuo Tanne
Associate Professor	Toshitsugu Kawata
Assistant Professor	Hiroshi Ueda, Kotaro Tanimoto,
Research Associate	Masato Kaku, Tadashi Fujita, Junji Ohtani, Masahide Motokawa, Myongsun Koh, Yuki Tanne
Special appointed assistant professor	Maya Shirakura
Intern	Yasunori Iwabuchi, Ryo Kunimatsu, Genki Watanabe, Goshi Ito, Noritsugu Ozaki, Aki Kawazoe, Hiroyuki Koseki, Hiroko Sunagawa, Tomoko Sasamoto, Naoto Hirose, Atsushi Horihata, Masahiko Michida, Motoko Yoshioka,
Graduate Student	Hidetaka Hayashi, Yayoi Matsuda, Tomomi Mitsuyoshi, Sara Abedini, Syunichi Kojima, Keisuke Sumi, Noriko Tsubamoto, Akiko Terao, Yuki Yoshimi, Emi Ishikawa, Kyoko Murasaki, Yuji Tsuka, Su Shao Ching, Hiromi Sumi, Kaori Takahashi, Tetsuya Awada, Nanae Oki, Hanaka Shikata, Eri Fujii, Fang Zhao, Yuki Okamoto, Tahsin Raquib Abonti, Morio Masunaga (adult graduate student)
Resident	Kayo Horie
Professor (part-time)	Kazuhiro Ueki, Toshitsugu Kojima, Hiroharu Tsuka, Hiroshi Hanaoka, Junichiro Iida
Registered Intern	Kuniaki Tanaka, Kazunori Itatani, Hiroko Kamada, Youhei Suekawa, Ryoko Yamamoto, Natsumi Tsuka, Satoru Ohkuma, Kouji Takahashi
Dental Hygienist	Kouchi Ayumi

(2) Main academic activity

- 1: Viscoelastic property of temporomandibular joint disks.
- 2: Effects of growth factors on the proliferation and differentiation of condylar cartilage and the disk cells.

- 3: Biomechanical investigation of TMJ loading and assessment of lubricating function.
- 4: Mechanisms of pain transmission during experimental tooth movement and clarification of pain control.
- 5: Changes in stomatognathic functions from orthodontic surgery.
- 6: Association between nasal respiratory disturbances and craniofacial morphology and masticatory and respiratory functions.
- 7: Influences of mechanical stimuli on the proliferation and differentiation of chondrocytes.
- 8: Clarification of PDL regeneration mechanism.
- 9: Metabolism of hyaluronan in TMJ synovial fluid.
- 10: Influences of food consistency on neuropathological changes in the cerebral cortex.
- 11: Regeneration of bone and cartilage with mesenchymal stem cells.
- 12: Control mechanism of bone growth and development with sex hormone.
- 13: Long term cryopreservation of various tissues and cells
- 14: Development of biomineralization therapy for damaged tooth enamel using enamel matrix proteins
- 15: Utility of amelogenin peptides for bone regeneration

### (3) Research achievement

#### A) Original article

1. Immune function in Japanese schoolchildren with sleep-disordered breathing.: A preliminary study with analyses of salivary markers.: Ueda H, Horihata A, Matsumoto E, Watanabe G, Koh M, Tanimoto K, Tanne K.:

6. In-vitro and in-vivo study of periodontal ligament cryopreserved with a magnetic field.: Kamada H, Kaku M, Kawata T, Koseki H, Abedini S, Kojima S, Sumi A, Motokawa M, Fujita T, Ohtani J, Ohwada N, Tanne K.: *Am J Orthod Dentofacial Orthop*, 140, 799-805, 2011.
7. Effect of PGE induced by compressive and tensile stresses on cementoblast differentiation in vitro.: Rego EB, Inubushi T, Kawazoe A, Miyauchi M, Tanaka E, Takata T, Tanne K.: *Arch Oral Biol*, 56, 1238-46, 2011.
8. Interleukin-1 beta affects cyclooxygenase-2 expression and cartilage metabolism in mandibular condyle.: Tanimoto K, Iwabuchi Y, Tanne Y, Kamiya T, Inubushi T, Kunimatsu R, Mitsuyoshi T, Tanne K.: *Arch Oral Biol*, 56, 1412-8, 2011.
9. Treatment of a case of skeletal class II malocclusion with temporomandibular joint disorder using miniscrew anchorage.: Kaku M, Koseki H, Kawazoe A, Abedini S, Kojima S, Motokawa M, Ohtani J, Fujita T, Kawata T, Tanne K.: *Cranio*, 29, 155-63, 2011.
10. Ultrasound stimulation attenuates root resorption of rat replanted molars and impairs tumor necrosis factor- $\alpha$  signaling in vitro.: Rego EB, Inubushi T, Miyauchi M, Kawazoe A, Tanaka E, Takata T, Tanne K.: *J Periodontal Res*, 46, 648-54, 2011.
11. Amelogenin enhances the proliferation of cementoblast lineage cells.: Kunimatsu R, Tanimoto K, Tanne Y, Kamiya T, Ohkuma S, Huang YC, Yoshimi Y, Miyauchi M, Takata T, Tanne K.: *J Periodontol*, 82, 1632-8, 2011.
12. Superficial zone protein affects boundary lubrication on the surface of mandibular condylar cartilage.: Tanimoto K, Kamiya T, Tanne Y, Kunimatsu R, Mitsuyoshi T, Tanaka E, Tanne K.: *Cell Tissue Res*, 344, 333-40, 2011.
13. Mandibular and femoral growth alteration after sex hormone disruption in growing mice.: Márquez Hernández RA, Ohtani J, Fujita T, Sunagawa H, Ishikawa E, Tsubamoto N, Kawata T, Kaku M, Motokawa M, Tanne K.: *Orthod Craniofac Res*, 14, 63-9, 2011.
14. Changes in cortical bone mineralization in the mouse mandible with regenerated condyle.: Fujita T, Ohtani J, Shirakura M, Hayashi H, Kawata T, Kaku M, Motokawa M, Tanne K.: *Eur J Oral Sci*, 119, 136-40, 2011.
15. Effects of cryopreservation with a newly-developed magnetic field programmed freezer on periodontal ligament cells and pulp tissues.: Abedini S, Kaku M, Kawata T, Koseki H, Kojima S, Sumi H, Motokawa M, Fujita T, Ohtani J, Ohwada N, Tanne K.: *Cryobiology*, 62, 181-7, 2011.
16. Sex hormones receptors play a crucial role in the control of femoral and mandibular growth in newborn mice.: Márquez Hernández RA, Ohtani J, Fujita T, Sunagawa H, Kawata T, Kaku M, Motokawa M, Tanne K.: *Eur J Orthod*, 33, 564-9, 2011.
17. Fluoride incorporation into apatite crystals delays amelogenin hydrolysis.: DenBesten PK, Zhu L, Li W, Tanimoto K, Liu H, Witkowska HE.: *Eur J Oral Sci*, 119, 3-7, 2011.



18. Clinical survey of the association between root resorption incident to orthodontic treatment and host factors.: Matsuda Y., Motokawa M., Kaku M., Kawata T., Yamamoto R., Tsuka N., Inubushi T., Sasamoto T., Ozaki N., Koseki H., Kawazoe A., Abedini S., Tanne K.: *Orthodontic Waves-Japanese Edition*, 70, 21-31, 2011.
19. An examination about the dentition and occlusion of school children with their study models.: Murasaki K., Koh M., Ito G., Sano R., Ohkuma S., Takahashi K., Horihata A., Tsubamoto N., Ishikawa E., Ohtani J., Ueda H., Tanne K.: *J Hiroshima Dent Asso*, 38, 31-36, 2011.
20. Clinical survey of nasopharyngeal condition in Japanese elementary school children.: Koh M., Ueda H., Watanabe G., Horihata A., Murasaki K., Ishitoku Y., Ohmatsu Y., Akiyama T., Tanne K.: *The Annals of Educational Research in Hiroshima University*, 39, 359-362, 2011.
21. A case of maxillary protrusion with trauma to the upper central incisor.: Tanoue J., Koh M., Fujita T., Watanabe G., Horihata A., Ito G., Murasaki K., Ueda H., Tanne K.: *The Journal of Hiroshima University Dental Society*, 43, 45-50, 2011.
22. Changes of oro-pharyngeal airway in a patient with open bite with macroglossia caused by lymphangioma.: Watanabe G., Koh M., Horihata A., Ito G., Murasaki K., Ueda H., Tanne K.: *Jpn. J. Jaw Deform*, 21, 205-214, 2011.
23. Treatment of a case of adolescent hemifacial microsomia with a functional appliance.: Sano R., Ohtani J., Sunagawa H., Tsubamoto N., Ishikawa E., Fujita T., Ueda H., Tanne K.: *Jpn. J. Jaw Deform*, 21, 195-204, 2011.
24. Changes in upper and lower lip vermilion areas and the relevant factors in mandibular prognathism patients treated with orthognathic surgery.: Tsubamoto N., Ohtani J., Sano R., Sunagawa H., Ishikawa E., Fujita T., Ueda H., Tanne K.: *Jpn. J. Jaw Deform*, 21, 171-178, 2011.
25. An orthodontic retreatment case with skeletal anchorage system (SAS) applied to an adult patient with maxillary protrusion and periodontal disease.: Kunimatsu R., Tanimoto K., Ida Y., Tanne Y., Kamiya T., Ozaki N., Tanne K.: *The journal of Chu-Shikoku orthodontic society*, 23, 41-51, 2011.
26. A study on key factors for good facial profiles in cases of skeletal Class     malocclusion treated by two-jaw surgery.: Tamura A., Kaku M., Sugiyama M., Motokawa M., Shimazu A., Amano H., Kawata T., Tanne K.: *The journal of Chu-Shikoku orthodontic society*, 23, 27-32, 2011.
27. A clinical survey for the risk factors of root resorption incident to orthodontic treatment.: Sasamoto T., Motokawa M., Mtsuda Y., Kaku M., Kawata T., Ozaki N., Terao A., Tanne K.: *The Journal of Hiroshima University Dental Society*, 43, 113-123, 2011.

## B) General remarks

1. The functional assessment of casein phosphopeptide in osteoporosis model mice.: Ohtani J., Tanne

K.: Functional Food, 4, 266-273, 2011.

### C) Books

1. Understanding the association between orthodontics and TMD: Tanne K.: Quintessence TMD YEAR BOOK 2011 Treatment for jaw pain (Koyano K. et al. eds.), Quintessence Publishing Co., Tokyo, pp. 38-39.
2. The efficacy of casein phosphopeptide: Ohtani J.: The application of functional food to bone and cartilage. 171-178, 2011, CMC Publishing
3. A case of maxillary protrusion with the gummy smile treated using the mini screw: Kaku M.: Quintessence YEAR BOOK 2011 Orthodontics for clinicians (Ito G et al. eds.), Quintessence Publishing Co., Tokyo, pp. 118-126.
4. An Angle Class II openbite case with temporomandibular joint osteoarthritis: Tanimoto K.: Quintessence YEAR BOOK 2011 Orthodontics for clinicians (Ito G et al. eds.), Quintessence Publishing Co., Tokyo, pp. 127-135.

### D) Other publications

### E) Presentation at Scientific Meeting

1. Bone regeneration in the treatment of bone defect in the cleft lip and palate patients with mesenchymal stem cells: Tanne K., Yoshioka M., Sumi K., Tanne Y., Tanimoto K.: 87<sup>th</sup> Congress of the European Orthodontic Society (Istanbul), 2011.
2. Cryopreservation technique for tooth banks available for future tooth transplantation: Tanne K., Kaku M., Koseki H., Kojima S., Kawata T.: 87<sup>th</sup> Congress of the European Orthodontic Society (Istanbul), 2011.
3. Variation in the direction of mandibular relapse after sagittal split ramus osteotomy: Koh M., Fujita T., Ito G., Ueda H., Tanne K.: 87<sup>th</sup> Congress of the European Orthodontic Society (Istanbul), 2011.
4. Regeneration of the condyle needs the articular disk: Fujita T., Hayashi H., Shirakura M., Tsuka Y., Tanne K.: 87<sup>th</sup> Congress of the European Orthodontic Society (Istanbul), 2011.
5. Changes in lip-line in asymmetric cases treated with one-jaw surgery: Shirakura M., Fujita T., Koh M., Tanne K.: 87<sup>th</sup> Congress of the European Orthodontic Society (Istanbul), 2011.
6. An innovation in the treatment of open bite with micro-implant: a new strategy based on the etiologic consideration. : Tanne K.: 2011 Annual Session of Taiwan Orthodontic Society (Taipei), 2011.
7. A safety and reliable implantation established by using a torque controllable hand driver.: Ohtani

- J., Sunagawa H., Fujita T., Kawata T., Kaku M., Motokawa M., Koseki H., Tsubamoto N., Ishikawa E., Tanne K.: The 3rd World Implant Orthodontics Conference. (Verona), 2011.
8. Stability of self-drilling screw examined by histomorphometric study.: Sunagawa H., Ohtani J., Fujita T., Kawata T., Kaku M., Motokawa M., Koseki H., Tsubamoto N., Ishikawa E., Tanne K.: 3rd world implant orthodontic conference.(Verona), 2011.
  9. Assessment of primary stability of mini-screw by use of a periotest.: Tsubamoto N., Ohtani J., Sunagawa H., Fujita T., Kawata T., Kaku M., Motokawa M., Koseki H., Ishikawa E., Tanne K.: 3rd World implant orthodontic conference.(Verona), 2011.
  10. Amelogenin without N-terminal domain affects the metabolism of cementoblasts: Yoshimi Y., Tanimoto K., Kunimatsu R., Tanne Y., Kamiya T., Inubushi T., Yu-Ching Huang, Mitsuyoshi T., Miyauchi M., Takata T., Tanne K. :3rd International Workshop on BioDental Education & Research Hiroshima University Graduate School of Biomedical Sciences (Hiroshima), 2011.
  11. Modulation of PRG4 expression by hyaluronan through CD44 receptor: Mitsuyoshi T., Kamiya T., Tanimoto K., Tanne Y.,Kunimatsu R., Yoshioka M.,

School Of Biomedical Sciences (Hiroshima), 2011.

17. Expression profiles of nuclear receptors and their functions in rat growth plate Chondrocytes: Ozaki N., Noshiro M., Honda K., Hayashibara K., Kawamoto T., Fujimoto K., Tanne K., Kato Y.: 3rd International Workshop on BioDental Education & Research Hiroshima University Graduate School Of Biomedical Sciences (Hiroshima), 2011.
18. Histochemical analysis of root resorption in rat by jiggling forces: Matsuda Y., Motokawa M., Kaku M., Kawata T., Fujita T., Ohtani J., Sunagawa H., Koseki H., Abedini S., Hayashi H., Terao A., Kojima S., Ishikawa E., Tsubamoto N., Tanne K.: 3rd International Workshop on BioDental Education & Research Hiroshima University Graduate School Of Biomedical Sciences (Hiroshima), 2011.
19. A study of key factors for good facial profiles in cases of skeletal class II malocclusion treated by two-jaw surgery: Tamura A., Kaku M., Sugiyama M., Motokawa M., Shimazu A., Noso M., Amano H., Kawata T., Tanne K.: 3rd International Workshop on BioDental Education & Research Hiroshima University Graduate School Of Biomedical Sciences (Hiroshima), 2011.
20. Long-term cryopreservation of mouse osteoblasts by use of a program freezer with magnetic field: Koseki H.: 3rd International Workshop on BioDental Education & Research Hiroshima University Graduate School Of Biomedical Sciences (Hiroshima), 2011.
21. Stability of self-drilling screw under various conditions examined by histomorphometric study and clinical survey: Sunagawa H.: 3rd International Workshop on BioDental Education & Research Hiroshima University Graduate School Of Biomedical Sciences (Hiroshima), 2011.
22. Questionnaire survey on school children about sleep-disordered breathing and effect of pharyngeal airway morphology induced mandibular advancement devices: Horihata A.: 3rd International Workshop on BioDental Education & Research Hiroshima University Graduate School Of Biomedical Sciences (Hiroshima), 2011.
23. The role of microglia in neuropathic pain of maxillofacial region: Ito G.: 3rd International Workshop on BioDental Education & Research Hiroshima University Graduate School Of Biomedical Sciences (Hiroshima), 2011.
24. The role of transcription factor GATA6 in proliferation, differentiation, and integrin expression in mesenchymal stem cells (MSC): Michida M.: 3rd International Workshop on BioDental Education & Research Hiroshima University Graduate School Of Biomedical Sciences (Hiroshima), 2011.
25. The role of Dec2 in osteogenic, adipogenic, chondrogenic differentiation of bone marrow derived mesenchymal stem cells: Sasamoto T.: 3rd International Workshop on BioDental Education & Research Hiroshima University Graduate School Of Biomedical Sciences (Hiroshima), 2011.
26. Three-dimensional imaging in regeneration of condyle.: Hayashi H., Fujita T., Shirakura M., Tsuka Y., Arai Y., Tanne K.: 18th International Congress of Dento-Maxillo-Facial Radiology accompanied with the 52nd Annual Congress of Japanese Society for Oral and Maxillofacial Radiology

- (Hiroshima), 2011.
27. Amelogenin-guided biomineralization of hydroxyapatite crystal on tooth enamel.: Tanimoto K., Kunimatsu R., Yoshimi Y., Yoshioka M., Tanne Y., Tanne K.: 4th Hiroshima Conference on Education and Science in Dentistry. (Hiroshima), 2011.
  28. Evaluation of the course work education employing cognitive behavior therapy.: Shirakura M., Oka H., Kamiya T., Suehiro F., Sugai M., Kobayashi M.: 4th Hiroshima Conference on Education and Science in Dentistry (Hiroshima), 2011.
  29. An establishment of jaw cleft treatment with bone regeneration by use of mesenchymal stem cells derived from bone marrow: Sumi K., Tanimoto K., Tanne Y., Yoshioka M., Sugiyama M., Tanne K.: 4th Hiroshima Conference on Education and Science in Dentistry (Hiroshima), 2011.
  30. Mechanisms of hypoxia-inducible factor-1 $\alpha$  in cartilage degradation by mechanical stress.: Shirakura M., Tanimoto K., Takata T., Tanne K.: The 59th Japanese Association for Dental Research(Hiroshima), 2011.
  31. Differential effects of amelogenin on mineralization of periodontal cells: Yoshimi Y., Tanimoto K., Kunimatsu R., Takata T., Tanne K.: The 59th annual meeting of Japanese association for dental research ( Hiroshima), 2011.
  32. Immunohistochemical analysis of root resorption by repetitive orthodontic force: Matsuda Y., Motokawa M., Kaku M., Kawata T., Fujita T., Ohtani J., Terao A., Tanimoto K., Tanne K.: The 59th Annual Meeting of Japanese Association for Dental Research (Hiroshima),2011.
  33. Association between jiggling force and root resorption during experimental tooth movement.: Motokawa M., Matsuda Y., Kaku M., Kawata T., Fujita T., Ohtani J., Terao A., Ersan K., Carmen G., Ali D., Tanne K.: The 4th International Congress      The 70th Annual Meeting of the Japanese Orthodontic Society    Nagoya), 2011.
  34. Effects of cryopreservation with a newly-developed magnetic field programmed freezer on pulp tissues.: Abedini S., Kaku M., Kawata T., Hiroyuki., Koseki H., Kojima S., Sumi H., Fujita T., Motokawa M., Ohtani J., Hayashi H., Matsuda Y., Tanne K.: The 4th International Congress & The 70th Annual Meeting of the Japanese Orthodontic Society. (Nagoya), 2011.
  35. An establishment jaw cleft treatment with bone regeneration by Use of Mesenchymal Stem Cells Derived from Bone Marrow; Sumi K,Tanimoto K, Tanne Y, Yoshioka M, Sugiyama M, Tanne K:The 35th Annual Meeting of Japanese Cleft Palate Association (Niigata),2011.
  36. The long-term change of stomatognathic function in open bite patient with cheilognathoschisis.: Watanabe G.,Shirakura M., Horihata A., Koh M., Ohtani J., Isikawa E., Ueda H., Tanne K.: The 35th Annual Meeting of Japanese Cleft Palate Association (Niigata), 2011
  37. Orthodontic treatment of lip and cleft combined autologous in teeth with bone graft.: Michida M., Tanimoto K., Suekawa T., Tanne Y., Yoshioka M., Sumi K., Tanne K.: The 35th Annual Meeting of Japanese Cleft Palate Association (Niigata), 2011.

38. In silico construction of orthodontic setup model, Kihara T., Katayama A., Katabuchi Y., Taji T., Tanimoto K., Tanne K., Nikawa H. The 44<sup>th</sup> Dental meeting of Hiroshima University(Hiroshima), 2011.
39. Long-term cryopreservation of periodontal ligament cells and pulp tissues with a newly-developed magnetic field programmed freezer.: Abedini S., Kaku M., Kawata T., Koseki H., Kojima S., Sumi H., Motokawa M., Fujita T., Ohtani J., Tanne K.: The 44<sup>th</sup> Dental meeting of Hiroshima University(Hiroshima), 2011.
40. Association between severity of crowding and teeth sizes in elementary school children: Ito G., Koh M., Ueda H., Watanabe G., Horihata A., Murasaki K., Tanne K.: The 44<sup>th</sup> Dental meeting of Hiroshima University(Hiroshima), 2011.
41. Orthodontic facilitation of mandibular growth using functional appliances in a growing patient with a unilateral condylar fracture: Tsuka Y., Fujita T., Shirakura M., Hayashi H., Tanne K.: 54<sup>th</sup> Annual Meeting of Chu-Shikoku Orthodontic Society (Matsuyama), 2011.
42. A consideration for up righting severely mesially inclined impacted mandibular second molars: Shirakura M., Fujita T., Hayashi H., Tsuka Y., Tanne K.: 54<sup>th</sup> Annual Meeting of Chu-Shikoku Orthodontic Society (Matsuyama), 2011.
43. Occlusal assessment with GOSLON Yardstick unilateral lip and palate patients: Ishikawa E., Ohtani J., Ueda H., Sano R., Fujita T., Sunagawa H., Tsubamoto N., Kawata T., Kaku M., Motokawa M., Tanne K.: 54<sup>th</sup> Annual Meeting of Chu-Shikoku Orthodontic Society (Matsuyama), 2011.
44. A treatment case of deep bite with severe scissors bite: Sumi H., Kaku M., Kawata T., Koseki H., Kawazoe A., Sara A., Kojima S., Tanne K.: 5<sup>4th</sup> Annual Meeting of Chu-Shikoku Orthodontic Society (Matsuyama), 2011.
45. Orthodontic approach to avoid the prosthodontic treatment in the non-extraction cases with three mandibular incisors: Takahashi K., Myoishi-Hattori Y., Ito K., Tanne K.: 54<sup>th</sup> Annual Meeting of Chu-Shikoku Orthodontic Society (Matsuyama), 2011.
46. A study on key factors for good facial profiles in cases of skeletal class III malocclusion treated by two-jaw surgery: Tamura A., Kaku M., Sugiyama M., Motokawa M., Shimazu A., Amano H., Kawata T., Tanne K.: 54<sup>th</sup> Annual Meeting of Chu-Shikoku Orthodontic Society (Matsuyama), 2011.
47. Orthodontic treatment for two open bite cases due to inappropriate splint therapy: Sumi K., Tanimoto K., Tanne Y., Kunimatsu R., Mitsuyoshi T., Tanne K.: The 24<sup>th</sup> Annual Meeting of the Japanese Society for the Temporomandibular Joint: The 2<sup>nd</sup> Asian Academic Congress for the Temporomandibular Joint.
48. Association between mandibular anterior guidance and the amount of condylar displacement Horihata A., Watanabe G., Koh M., Ueda H., Tanne K.: The 24<sup>th</sup> Annual Meeting of the Japanese

- Society for the Temporomandibular Joint: The 2<sup>nd</sup> Asian Academic Congress for the Temporomandibular Joint.
49. The direct effect of high magnitude cyclic tensile stress on COX-2 and MMPs expressions in chondrocytes derived from mandibular condyle.: Su S.C., Tanimoto K., Tanne Y., Iwabuchi Y., Kamiya T., Mitsuyoshi T., Sumi K., Tanne K.: The 24<sup>th</sup> Annual Meeting of the Japanese Society for the Temporomandibular Joint: The 2<sup>nd</sup> Asian Academic Congress for the Temporomandibular Joint.
  50. Regeneration of the mandibular condyle with the use of a functional appliance after condylectomy.: Hayashi H., Fujita T., Shirakura M., Tsuka Y., Tanne K.: The 24<sup>th</sup> Annual Meeting of the Japanese Society for the Temporomandibular Joint: The 2<sup>nd</sup> Asian Academic Congress for the Temporomandibular Joint.
  51. Effects of hyaluronan and superficial zone protein on joint lubrication.: Mitsuyoshi T., Kamiya T., Tanne Y., Tanimoto K., Tanne K.: The 24<sup>th</sup> Annual Meeting of the Japanese Society for the Temporomandibular Joint: The 2<sup>nd</sup> Asian Academic Congress for the Temporomandibular Joint.
  52. The role of DEC2 in chondrogenic differentiation of bone marrow derived mesenchymal stem cells: Sasamoto T., Michida M., Ozaki N., Yoshioka T., Tanne Y., Tanimoto K., Kato Y., Tanne K.: The 24<sup>th</sup> Annual Meeting of the Japanese Society for the Temporomandibular Joint: The 2<sup>nd</sup> Asian Academic Congress for the Temporomandibular Joint.
  53. Gene expression analysis and pathohistological observation in rat osteoarthritis model induced by iodine acetic acid A modeling approach.: Ozaki N., Sasamoto T., Tanne Y., Tanimoto K., Tanne K.: The 24<sup>th</sup> Annual Meeting of the Japanese Society for the Temporomandibular Joint: The 2<sup>nd</sup> Asian Academic Congress for the Temporomandibular Joint.
  54. A statistical survey for the prevalence of TMD symptoms in patients in Orthodontic Clinic, Hiroshima University Dental Hospital: Iwabuchi Y., Tanimoto K., Tanne Y., Kamiya T., Mitsuyoshi T., Sumi K., Tanne K.: The 24<sup>th</sup> Annual Meeting of the Japanese Society for the Temporomandibular Joint: The 2<sup>nd</sup> Asian Academic Congress for the Temporomandibular Joint.
  55. Prevalence of TMJ Disease in patients in Orthodontic Clinic, Hiroshima University Dental Hospital: Ozawa S., Tanimoto K., Iwabuchi Y., Tanne Y., Kamiya T., Mitsuyoshi T., Sumi K., Sano R., Tanne K.: The 24<sup>th</sup> Annual Meeting of the Japanese Society for the Temporomandibular Joint: The 2<sup>nd</sup> Asian Academic Congress for the Temporomandibular Joint.
  56. Bone regeneration with mesenchymal stem cells and orthodontic tooth movement into the regenerated bone area : Yoshioka M., Tanimoto K., Tanne Y., Kunimatsu R., Iwabuchi Y., Ozaki N., Sasamoto T., Hirose N., Michida M., Mitsuyoshi T., Sumi K., Yoshimi Y., Su S., Sugiyama M., Tanne K.: The 4th International Congress & The 70th Annual Meeting of the Japanese Orthodontic Society (Nagoya), 2011.

57. Enamel regeneration using biomineralization technology: A new strategy for the prevention of dental caries progression.: Kunimatsu R., Tanimoto K., Tanne Y., Kamiya T., Iwabuchi Y., Yoshioka M., Ozaki N., Hirose N., Sasamoto T., Michida M., Mitsuyoshi T., Yoshimi Y., Sumi K., Su. Sauo-Ching, Tanne K.: The 4th International Congress & The 70th Annual Meeting of the Japanese Orthodontic Society (Nagoya), 2011.
58. Bioactivities of ameloblastin for differentiation and proliferation of ameloblasts: Hirose N, Shimazu A, Tanimoto K, Tanne Y, Kunimatsu R, Ozaki N, Yoshimi Y, Uchida T, Tanne K.: The 4th International Congress & The 70th Annual Meeting of the Japanese Orthodontic Society (Nagoya), 2011.
59. Regulation of the transcription factors Dec1 and Dec2 by RORa and SREBP1c and their roles: Ozaki N., Sasamoto T., Michida M., Hirose N., Kunimatsu R., Tanne Y., Tanimoto K., Tanne K.: The 4th International Congress & The 70th Annual Meeting of the Japanese Orthodontic Society (Nagoya), 2011.
60. Long-term cryopreservation of rat MSCs by use of a programmed freezer with a magnetic field: Kojima S., Kaku M., Kawata T., Motokawa M., Fujita T., Ohtani J., Koseki H., Sara A., Sumi H., Tanne K.: The 4th International Congress & The 70th Annual Meeting of the Japanese Orthodontic Society (Nagoya), 2011.
61. The Correlation between the nasal breathing disorder, the force of lip closure, and craniofacial morphology: Watanabe G, Koh M, Horihata A, Ito G, Murasaki K, Ueda H, Tanne K.: The 4th International Congress & The 70th Annual Meeting of the Japanese Orthodontic Society (Nagoya), 2011.
62. Three-dimensional assessments of impacted teeth movement by CBCT and 3D scanner: Yoshimi Y., Tanimoto K., Michida M., Kihara T., Nagasaki N., Nikawa H., Tanne K. : The 4th international congress & The 70th annual meeting of the japanese othodontic society (Nagoya), 2011.
63. Histochemical analysis of root resorption in rats by repetitive orthodontic forces: Matsuda Y., Motokawa M., Kaku M., Kawata T., Fujita T., Ohtani J., Koseki H., Hiroko S., Abedini S., Terao A., Tanimoto K., Tanne K.: The 4th international congress & The 70th annual meeting of the Japanese orthodontic society (Nagoya), 2011.
64. Influence of occlusal hypofunction and it recovery on the structures of periodontal tissues: Terao A., Motokawa M., Kaku M., Kawata T., Fujita T., Ohtani J., Koseki H., Sunagawa H., Matsuda Y., Hayashi H., Sara A., Tanimoto K., Tanne K.: The 4th international congress & The 70th annual meeting of the Japanese orthodontic society (Nagoya), 2011.
65. Influences of nasal respiratory disorders on memory and learning ability: Tsubamoto N., Ohtani J., Sunagawa H., Ishikawa E., Ueda H., Fujita T., Kawata T., Kaku M., Motokawa M., Koseki H., Abedini S., Hayashi H., Matsuda Y., Tanne K.: The 4th International Congress & The 70th Annual Meeting of the Japanese Orthodontic Society. (Nagoya), 2011.



66. Create electronic modeling jaw of CBCT 3D scanned image synthesis and application of orthodontic treatment: Michida M., Kihara T., Tanimoto K.,

1. Grant-in-aid for Scientific Research (B): Tanne K.: Effectiveness of improvement of lubrication and condylar cartilage regeneration in temporomandibular joints with osteoarthritis. No. 23390474. 4,900,000 yen
2. Grant-in-aid for Scientific Research (C): Tanimoto K.: Optimization of bone regeneration by transplantation of mesenchymal stem cells and application to the closure of jaw cleft. No. 23593029. 1,820,000 yen
3. Grant-in-aid for Scientific Research (C): Fujita T.: Mechanism of the condylar regeneration with orthopedic force.: No. 23593030. 1,300,000yen.
4. Grant-in-Aid for Scientific Research: Tanaka N.: Availability of low-pulse ultrasound stimulation for temporomandibular joint dysfunction.: No. 22592285. 1,700,000yen
5. Grant-in-Aid from the Ministry of Education, Science, Sports and Culture of Japan, Wakate(B): Kaku M: Long term cryopreservation of bone tissue: No. 22792054.: 1,800,000Yen.
6. Grant-in-Aid for Scientific Research: Shirakura M.: Molecular mechanisms of condroclastogenesis in temporomandibular joint – osteoarthritis; clarification of the hypoxia-inducible factor-1 activity. : No. 22792053. 1800,000yen.
7. Grant-in-Aid for Scientific Research: Ohtani J.: Influences of sex hormones and growth factors on craniofacial growth.: No. 23792430. 1,600,000yen.
8. Grant-in-Aid for Scientific Research: Tanne Y.: Elucidation of the mechanism of cartilage destruction induced by COX-2 and the establishment of anti-inflammatory drugs treatment in TMJ osteoarthritis.: No. 23792429. 2,000,000yen.
9. Grant-in-Aid for Scientific Research: Iwabuchi Y.: Regenerative therapy of temporomandibular joint osteoarthritis developed by the regulative technology of matrix metabolism with low intensity pulsed ultrasound irradiation.: No. 22890122. 730,000yen.
10. Grant-in-Aid for Scientific Research: Kunimatsu R.: Effects of enamel matrix protein on the metabolism of periodontal tissue and application of enamel matrix protein for orthodontic treatment. No. 23792428. 1,600,000yen.
11. Grant-in-Aid for Scientific Research: Kawazoe A.: Effect of soy lecithin liposomal lactoferrin in osteoporosis.: No 23890135. 1,300,000yen.
12. Grant-in-Aid for Scientific Research: Yoshioka M.: Analysis of bone induction ability of bone marrow-derived mesenchymal stem cells from jaw and application for jaw cleft.: No. 23890136. 1,300,000yen.
13. Ishikawa Corp.: Verification of commoditizing and efficacy of disinfect in calcium iron water.: 1,000,000yen.
14. New Energy and Industrial Technology Development Organization (NEDO), P10027, Kawata T., Kaku M.: A development of safety culture and preservation technology of human stem cells.: 3,360,000yen.

15. Tanimoto K.: Japan Science and Technology Agency Adaptable and Seamless Technology transfer Program through target-driven R&D, Quest type: A new technology for treatment of dental caries - regeneration of tooth enamel with amelogenin, No. AS231Z01878F, 1,700,000yen.
16. Tanimoto K.: Grant-in-Aid for Clinical Research Hiroshima University Hospital, 2011, Establishment of bone regeneration of cleft palate using mesenchymal stem cells derived from bone marrow, 500,000yen

#### (5) Commendation

1. Sumi K.: An Establishment Jaw Cleft Treatment with Bone Regeneration by Use of Mesenchymal Stem Cells Derived from Bone Marrow.: 35<sup>th</sup> Annual Meeting of Japanese Cleft Palate Association: Best presentation award.
2. Abedini S.: Long-term cryopreservation of periodontal ligament cells and pulp tissues with a newly-developed magnetic field programmed freezer.: The 44<sup>th</sup> Dental meeting of Hiroshima University: Best presentation award.
3. Sumi K.: Orthodontic treatment for two open bite cases due to inappropriate splint therapy: The 24<sup>th</sup> Annual Meeting of the Japanese Society for the Temporomandibular Joint: The 2<sup>nd</sup> Asian Academic Congress for the Temporomandibular Joint: Best presentation award.
4. Su S.C.: The direct effect of high magnitude cyclic tensile stress on COX-2 and MMPs expressions in chondrocytes derived from mandibular condyle: The 24<sup>th</sup> Annual Meeting of the Japanese Society for the Temporomandibular Joint: The 2<sup>nd</sup> Asian Academic Congress for the Temporomandibular Joint: Best presentation award.
5. Sumi K : An Establishment of Jaw Cleft Treatment with Bone Regeneration by Use of Mesenchymal Stem Cells Derived from Bone Marrow: 4th Hiroshima Conference on Education and Science in Dentistry: Best presentation award.
6. Yoshioka M: Bone regeneration with mesenchymal stem cells and orthodontic tooth movement into the regenerated bone area : The 4th International Congress & The 70th Annual Meeting of the Japanese Orthodontic Society: Best presentation award.
7. Terao A: Influence of occlusal hypofunction and its recovery on the structures of periodontal tissues: The 4th International Congress & The 70th Annual Meeting of the Japanese Orthodontic Society: Best presentation award.
8. Sunagawa H.: Stability of self-drilling screw examined by histomorphometric study: 3rd world implant orthodontic conference: Best presentation award.
9. Shirakura M: The Hatton Award 2012 Finalist of Japanese Association for Dental Research (JADR)
10. Y.C. Huang.:

Workshop on BioDental Education & Research Hiroshima University Graduate School of Biomedical Sciences. Oral presentation award

11. Ito G.: The role of microglia in neuropathic pain of maxillofacial region: 3rd International Workshop on BioDental Education & Research Hiroshima University Graduate School Of Biomedical Sciences. Oral presentation award

(6) Patent

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**Programs for Applied Biomedicine, Division of Cervico-Gnathostomatology  
(Department of Pediatric Dentistry)  
Department of Oral Health and Development  
(Pediatric Dentistry)**

(1) Staff and Students

Professor	Katsuyuki Kozai
Associate Professor	Fumiko Hayashi (~March) , Chieko Mitsuhata (April~)
Research Associate	Yasutaka Kaihara, Chieko Mitsuhata, Goh Yoshimura Meiko Tachikake (April~), Noriko Kadomoto (~October), Aya Tsuboi
Physician	Mihaya Ariki, Ryoko Hirata, Satoko Otani, Nami Miyake Masafumi Kitamoto(April~)
Graduate Student	

- 1 Factors Causing Melanin Pigmentation in Children's Gingiva: Miura K., Otani S., Suzuki J., Kaihara Y., Mitsuhashi C., Konishi Y., Kawamura M., Kozai K.: Jpn J Ped Dent, 49(1), 11-19, 2011.
- 2 Dental Service Activity Report in Cambodia Elementary School: Matsumoto A., Iwamoto A., Omae Y., Shimazu A., Amano H., Fujiwara N., Tsuka T., Ashikaga N., Kawano S., Moriyama Y., Matsuzoe K., Ouchi A., Miyasako., Okita S., Muroi N., Muroi M., Nin E., Ando T., Yoshimoto T., Otani S., Iwamoto Y., Kodama N., Kadomoto N., Kozai K. Nishimura F, Takata T: The Journal of Hiroshima University Dental Society, 43(1), 51-56, 2011.
- 3 The Regulatory Mechanism for Exfoliative Toxin Production in *Staphylococcus aureus*: Kato F., Kadomoto N., Iwamoto Y., Bunai K., Komatsuzawa H., Sugai M.: Infection and immunity, 79(4), 1660-1670, 2011.
- 4 Management of Intruded Primary Teeth after Traumatic Injuries: Hirata R., Kaihara Y., Suzuki J., Kozai K.: Pediatric Dental Journal, 21(2), 94-100, 2011
- 5 Status of periodontal disease in Junior high school students: Hayashi F., Yasuda R., Nakata K., Kadomoto N., Tsuboi A., Kawamura M., Kozai K.: The annals of educational research, 39, 315-318, 2011.
- 6 Investigation on dental health behavior of elementary school children: The annals of educational research, 39, 191-196, 2011.
- 7 Inhibitory effect of strained wine lees extract on *Streptococcus mutans*: Ohara Y., Yoshimura G., Konishi T., Mitsuhashi C., Kozai K.: Jpn J Ped Dent, 49(3), 251-258, 2011.

- 1 Specialty of dentistry required by children, Kozai K.: Journal of West Japan Association of Clinical Pediatric Oral and Maxillofacial Surgery, 2(1), 13-18, 2010.

- 1 Pediatric Dentistry (The 4<sup>th</sup> Edition): Chapter 12: Caries, 127-137, Chapter 13: Periodontal disease, 225-230, Chapter 15: Oral soft tissue disease and temporary mandibular disorder, 231-243, Chapter 18: Community oral health for children, 280-281, Kozai K. Joint author, Takagi Y., Tamura Y., Inoue M., Shirakawa T. (editor): Ishiyaku Publishers, Inc., 351-355, 2011.

- 1 SPECIAL EDITION “Awareness” Suggestion by pediatric dentists 1 Awareness on melanin pigmentation in the gingiva Scientific factor analysis. Kozai K., Mitsuhata C.: Japanese Journal of Clinical Dentistry for Children, 16(10) , 18-23, 2011.
- 2 Screening of anti-cariogenic substance from natural foods: Kozai K.: *aromatopia*, 107, 20(4), 53-56, 2011.
- 3 Feature articles: Special issue: Pediatric dentistry for pediatrician 7. Periodontal disease: Kozai K.: Japanese Journal of Pediatric Medicine, 43(8), 1332-1336, 2011.
- 4 Ask the Doctor: Health care for Children’s disease: Cavity Prevention Effect of Fluoride: Kozai K.: The Chugoku Shimbun, 2011.
- 5 Ask the Doctor: Health care for Children’s disease: Aversion to teeth-brushing, Kozai K.: The Chugoku Shimbun, 2011.
- 6 Ask the Doctor: Health care for Children’s disease: When do children's baby teeth fall out? : Kozai K, The Chugoku Shimbun, 2011.

Effects of oral environmental factors on cariogenic genes of *Streptococcus mutans*: Ohara Y., Yoshimura G., Kozai K.: The 44<sup>th</sup> Congress of The Hiroshima University Dental Society (Hiroshima), 2011.

The oral condition of abused children admitted to the shelters: Kodama N., Kadomoto N., Banshoudani A., Otani S., Yamasaki K., Yamane Y., Iwamoto Y., Kozai K.: The 44<sup>th</sup> Congress of The Hiroshima University Dental Society (Hiroshima), 2011.

- 3 Experimental study on effects of periodontitis on systemic diseases – Dental infection of *P. gingivalis* on liver tissue –: Furusho H., Miyauchi M., Aomin., Inubushi T., Ouhara K., Kozai K., Kurihara H., Sugai M., Takata T.: The 44<sup>th</sup> Congress of the Hiroshima University Dental Society (Hiroshima), 2011.
- 4 Inhibitory effect on the plaque formation and influence of cariogenic bacteria of extracts by red (wine) grape pomace Konishi T., Yoshimura G., Aida K., Ochiai K., Kozai K.: The 58<sup>th</sup> Congress of the Japanese society for food science and technology (Sendai), 2011.
- 5 Surveys on dental health in Cambodia: Kadomoto N., Iwamoto Y., Iwamoto A., Kozai K.: The 18<sup>th</sup> General Session and Exhibition of Japanese society of Dental Welfare, 2011.
- 6 Dental service activity in Cambodia Developing the cooperative relationships and oral health promotion: Iwamoto Y., Kadomoto N., Kodama N., Otani S., Iwamoto A., Amano H., Kozai K.: The 22<sup>nd</sup> Annual Meeting of Japan Association of International Cooperation for Oral Health (Nagoya), 2011.
- 7 Experimental study on relationship between periodontitis and systemic diseases Systemic

- influence of continuous application of LPS to periodontal tissues: Furusho H., Miyauchi M., Aomin, Inubushi T., Kitagawa M., Takata T.: The 3<sup>rd</sup> International Workshop on BioDental Education & Research Hiroshima University Graduate School of Biomedical Science (Hiroshima), 2011.
- 8 MEPE-derived phosphorylated ASARM is involved in FGF23/soluble Klotho-dependent hypomineralization: Konishi Y., Yoshiko Y., Minamizaki T., Yoshioka H., Kozai K., Aubin J. E., Maeda N. : The 29<sup>th</sup> Annual Meeting of the Japanese Society for Bone and Mineral Research, 2011.
  - 9 Isolation and identification of lactic acid bacteria from Japanese pre-school children: Shimada A., Noda M., Matoba Y., Kumagai T., Kozai K., Sugiyama M.: Japan society for lactic acid bacteria 2011's meeting Osaka , 2011.
  - 10 Correlation of oral lactic acid bacteria isolated from pre-children with dental caries: Shimada A., Noda M., Matoba Y., Kumagai T., Kozai K., Sugiyama M.: The 6<sup>th</sup> Asian conference on lactic acid bacteria (Sapporo), 2011.
  - 11 Contribution of enolase in fluoride-resistant *Streptococcus mutans*: Mitsuhashi C., Ohara Y., Yoshimura G., Kozai K.: The 23<sup>rd</sup> Congress of the International Association of Paediatric Dentistry in Athens (Athens), 2011.
  - 12 MEPE-derived phosphorylated ASARM is involved in FGF23/soluble Klotho-dependent hypomineralization: Y. Konishi, Y. Yoshiko, Minamizaki T., Yoshioka H., Kozai K., Aubin J. E., Maeda N.: ASBMR 2011 Annual Meeting (San Diego), 2011.
  - 13 A case of improvement in dysphasia using functional appliance after removal of dermoid cyst: Kaihara Y., Miyake N., Hirata R., Kadomoto N., Kozai K.: The 30<sup>th</sup> Congress of Japanese Society of Pediatric Dentistry Chushikoku Branch (Kitakyusyu , 2011.
  - 14 Outpatient surgical procedures performed at department of pediatric dentistry Hiroshima University Hospital: Tachikake M., Otani S., Yoshimura G., Mitsuhashi C., Kozai K.: The 30<sup>th</sup> Congress of Japanese Society of Pediatric Dentistry Chushikoku Branch (Kitakyusyu , 2011.
  - 15 Three-dimensional evaluation of dental arch changes in infancy: a serial observation from birth to one year and six months.: Iwamae S., Kuwahara M., Kanbe C., Kaihara Y., Nikawa H., Amano H., Kozai K.: The 49<sup>th</sup> Congress of Japanese Society of Pediatric Dentistry (Morioka), 2011.
  - 16 Correlation of oral lactic acid bacteria isolated from pre-children with dental caries: Shimada A., Ohara Y., Yoshimura G., Kozai K. The 49<sup>th</sup> Congress of Japanese Society of Pediatric Dentistry (Morioka), 2011.
  - 17 Oral condition of children in a rural area of Cambodia: Iwamoto Y., Kadomoto N., Kodama N., Otani S., Iwamoto A., Amano H., Kozai K.: The 49<sup>th</sup> Congress of Japanese Society of Pediatric Dentistry (Morioka), 2011.
  - 18 Oral complications caused by bone marrow transplantation and effectiveness of dental drug delivery system: Tsuboi A., Suzuki J., Yoshimura G., Kadomoto N., Kaihara Y., Otani S., Nakaoka M.,



- Matsuura K., Kozai K.: The 49<sup>th</sup> Congress of Japanese Society of Pediatric Dentistry (Morioka), 2011.
- 19 A potential link between mouse cranial bone formation and renal function: the roles of the senescence-related protein Klotho and FGF23: Konishi Y., Kozai K.: The 49<sup>th</sup> Congress of Japanese Society of Pediatric Dentistry (Morioka), 2011.
  - 20 Stress of dental treatment in children with developmental disorders: Nakaoka M., Mitsuhashi C., Irie Y., Kozai K.: The 28<sup>th</sup> Annual Meeting of the Japanese Society for Disability and Oral Health (Fukuoka), 2011.
  - 21 Practical study for teacher training program of oral health in Cambodian Primary Schools: Iwamoto A., Matsumoto A., Shimazu A., Iwamoto Y., Kozai K., Amano H., Takata T.: The 30<sup>th</sup> Meeting of Japanese Dental Education Association Tokyo , 2011
- 
- 1 The Lecture organized by Mihara Nursery League: Oral development and eating habits of babies and infants: Kozai K.: Mihara Region Plaza (Mihara), 2011.
  - 2 The Lecture organized by Hiroshima Pediatric Association.: Pediatric dental disease and its treatment: Kozai K.: Hiroshima prefectural medical association hall (Hiroshima), 2011.
  - 3 The Meeting of the Alumni Association of the Department of Pediatric Dentistry of Hiroshima University: Ten years history and future perspective: Kozai K.: Hotel Granvia Hiroshima (Hiroshima), 2011.
  - 4 2011 Recurrent seminar for dental hygienist: Reliable clinical pediatric dentistry: Kozai K.: Faculty of Dentistry Hiroshima University (Hiroshima), 2011.
  - 5 The 19<sup>th</sup> Annual Meeting of Oral Health Promotion for School Children in Hiroshima Prefecture School dental health activity for creating "Zest for Living": Kozai K.: Center of Hiroshima Prefecture Dental Association (Hiroshima), 2011.
  - 6 The 58<sup>th</sup> Annual Meeting of the Japanese Society of Child Health: Symposium: Children's health and dental health: The point of growth changes in the oral area: Kozai K.: Nagoya Congress Center (Nagoya), 2011.
  - 7 The 5<sup>th</sup> Conference of Asian International Association of Dental Traumatology: Reeruption of intruded primary teeth: Kozai K. Aichi Gakuin University Kusumoto campus (Nagoya), 2011.
  - 8 The 33<sup>rd</sup> Hiroshima-ken Shouni Hoken Kenkyu-kai: Recent topics of pediatric dentistry: Kozai K.: Hiroshima City Hospital (Hiroshima), 2011.
  - 9 Special Lecture: Clinical view of mutans streptococci transmission in children.: Kozai K.: Airlangga University (Surabaya), 2011.

- 10 The 22<sup>nd</sup> Annual Meeting of West-Japan Association of Clinical Pediatric Oral and Maxillofacial Surgery: Symposium: Perioperative management for children undergoing maxillofacial surgery 1. The way of communication with the children: Kozai K.: Fukuoka Dental Association Hall (Fukuoka), 2011.

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

- 1 Grant-in-Aid for Challenging Exploratory Research: Kozai K.: Effects of removal of oral biofilm to improve of factors of diabetes in children No. 21659475 . 2010: ¥1,100,000, 2011: ¥1,1700,000.
- 2 Grant-in-Aid for Scientific Research (B): Kozai K.: Effects of plaque-eco system on gene of cariogenic bacteria. (No. 2239039) : 2010: direct expenses: ¥7,500,000, indirect expenses: ¥2,250,000, 2011: direct expenses: ¥3,800,000, indirect expenses: ¥1,140,000.
- 3 Grant-in-Aid for Scientific Research (B): Kadomoto N.: Development of oral care program using dental drug delivery system for patients who underwent hematopoietic stem cell transplantation (No.21792073). 2011: direct expenses: ¥1,400,000, indirect expenses: ¥420,000.
- 4 Grant-in-Aid for Scientific Research (B): Tachikake M.: Elucidation of the mechanism of the inhibition of the differentiation of osteoblasts by LPS from *A.a.* (No. 21792074). 1,000,000.
- 5 Grant-in-Aid for Encouragement of Scientists: Otani S.: Association of melanin pigmentation in the gingiva of children with passive smoking (No. 22932007). ¥ 400,000.
- 6 Grant-in-Aid for Scientific Research (C): Mitsuhashi C.: Effects of endocrine disorders on developing dopaminergic system in Brain (No.19592354). 1,050,000.
- 7 Hiroshima University Educational Research 2010: Hayashi F.: Status of periodontal diseases in Junior high school students. ¥ 74,000.
- 8 Hiroshima University Educational Research 2010: Kaihara Y.: Investigation on dental health behavior of elementary school children. ¥ 62,000.
- 9 Grant-in-aid Scientific Research (C): Yoshimura G.: Oral health intervention for pediatric patients with hematopoietic stem cell transplantation. (No.22592286). 910,000.
- 10 Grant-in-Aid of Futoku-kai: 2010: Ao min. ¥ 300,000.
- 11 Grant-in-Aid of Futoku-kai: 2010: Tsuboi A. ¥ 300,000.

#### (5) Academic Awards, etc.

- 1 Ayumi Shimada: 2011 JSPD Distinguished Scientists Awards at the 49<sup>th</sup> Annual Meeting of JSPD, 2011.
- 2 Yukiko Konishi: ASBMR 2011 Young Investigator Travel Grant at the American Society for Bone

and Mineral Research (ASBMR) 2011 Annual Meeting, 2011.

- 3 Yukiko Konishi: ASBMR 2011 Annual Meeting plenary poster presentation at the American Society for Bone and Mineral Research (ASBMR) 2011 Annual Meeting, 2011.

**(6) Patents**

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

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**Programs for Applied Biomedicine,  
Division of Cervico-Gnathostomatology  
Department of International Collaboration Development  
for Dentistry**

(1) Staffs and Students

Director: Takashi Takata (Dean, Professor; April-)

Associate Professor: Udijanto Tedjosasongko (Specially appointed; April- )

Research Associate: Hiroko Oka (Specially appointed; April- )

(2) Main Research Activities

Development and evaluation of dental education program cooperated with Asian countries

Development and evaluation of Japanese-English dual linguistic education system

Study on international exchange program

Study on contribution to international community through dentistry

Research on the specific mechanisms of destruction in periodontal tissue

(3) Research Achievements

A) Original Papers (including Case Reports)

Oral Administration of EP4 Antagonist Inhibits LPS-Induced Osteoclastogenesis in Rat Periodontal Tissue. : Oka H, Miyauchi M, Furusho H, Nishihara T, Takata T.: Journal of Periodontology; in press; 2011.

F-spondin inhibits migration and differentiation of osteoclastic precursors.: Oka H, Mori M, Kihara H.: Journal of Periodontology 82(12); 1776-1783; 2011.

B) Review

C) Publications

D) Other Publications

The report for BioDental GP program in fiscal 2011 : Graduate School of Biomedical Sciences,

Hiroshima University; 2011.

The terminal report for BioDental GP program : Graduate School of Biomedical Sciences, Hiroshima University; 2011.

The road to start International Dental Course : Guide book 2011, Hiroshima University, Faculty of Dentistry; 2011.

#### **E) Presentation at Scientific Meeting**

Evaluation of the course work education employing Cognitive Behavior Therapy : M. Shirakura, H.Oka, T. Kamiya, F. Suehiro, M. Sugai and M. Kobayashi : The 4<sup>th</sup> Hiroshima Conference (Hiroshima), 2011.

Current status of Dental English education in Hiroshima University : Oka H : The 1<sup>st</sup> Discussion Forum to Develop a Core Curriculum for Dental English Education (Okayama), 2011.

#### **F) Special lectures in academic meetings and extension lectures**

The Debrief Meeting of Dental Identification Assistance Team of Hiroshima for the Tohoku Earthquake : The report for dental identification support in Sendai : Santanda T, Watanabe F, Katayama A, Kawaguchi H, Fujita T, Oka H. : Hiroshima-ken Shikaishi Kaikan (Hiroshima), 2011.

Hiroshima University Campus/ Course/ Classroom Exhibition : Life in Hiroshima (International Collaboration Development for Dentistry) : Udiyanto Tedjosongko : Hiroshima University Faculty of Dentistry (Hiroshima), 2011.

Hiroshima University Campus/ Course/ Classroom Exhibition : Study as foreign students in Hiroshima University (International Collaboration Development for Dentistry) : Udiyanto Tedjosongko : Hiroshima University Faculty of Dentistry (Hiroshima), 2011.

Hiroshima University Campus/ Course/ Classroom Exhibition : Facing Globalization Era (International Collaboration Development for Dentistry) : Udiyanto Tedjosongko : Hiroshima University Faculty of Dentistry (Hiroshima), 2011.

Hiroshima University Campus/ Course/ Classroom Exhibition : Leadership (International Collaboration Development for Dentistry) : Udiyanto Tedjosongko : Hiroshima University Faculty of Dentistry (Hiroshima), 2011.

Hiroshima University Campus/ Course/ Classroom Exhibition : Networking & Collaboration (International Collaboration Development for Dentistry) : Udiyanto Tedjosongko : Hiroshima University Faculty of Dentistry (Hiroshima), 2011.

The report of BioDental GP program and assessment for the next step: The 3<sup>rd</sup> Meeting of Faculty Development Hiroshima University Graduate School of Biomedical Sciences (Hiroshima), 2011.

Hiroshima University Campus/ Course/ Classroom Exhibition : Poster Presentation Udijanto Tedjosasongko : Hiroshima University Graduate School of Biomedical Sciences (Hiroshima), 2011.

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

Grant-in-Aid for Young Scientists (B) : Hiroko Oka : Mechanism of hard tissue destruction controlled by F-spondin via LDL receptor family. (No. 23792103). 1,300,000.

(5) Academic Awards, etc.

(6) Patents

(7) Others

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

The 1<sup>st</sup> international short exchange program : 17 students (Taipei Medical University, 4<sup>th</sup>-year, Taiwan) : 5 days, 2011.

The 2nd international short exchange program : 4 students (Faculty of Dentistry, Airlangga University, 5<sup>th</sup>-year, Indonesia), 2 students (Khon Kaen University, 5<sup>th</sup>-year, Thailand) : 14 days, 2011.

International exchange program : 2 students (Taipei Medical University, 3<sup>rd</sup>-year and 4<sup>th</sup>-year, Taiwan) : 1 year, 2011.

International Dental Course: 3 students (2 students : Faculty of Dentistry, Airlangga University; 1 student : Faculty of Odonto-Stomatology, University of Medicine and Pharmacy at HoChiMinh City), 2011.

B) Grateful letter

For dental identification support in Sendai (the Tohoku Earthquake) : Oka H : Japan Dental Association : 2011.

For dental identification support in Sendai (the Tohoku Earthquake) : Oka H : Hiroshima Prefecture Dental Association : 2011.

C) Homepage of International Program

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

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

Faculty of Dentistry, Airlangga University-Indonesia

Faculty of Odonto-Stomatology, University of Medicine and Pharmacy at HoChiMinh City,  
Socialist Republic of Vietnam

E) Supporting the International Research Exchange Program

Preparing the documents for sending the research equipment grant from Hiroshima University

Faculty of Dentistry to Airlangga University Faculty of Dentistry

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**Master's Program for Oral Health Sciences,  
Division of Oral Health Sciences  
(Department of Public Oral Health)**

(1) Staffs and Students

Professor : Masaru Sugiyama  
Assistant Professor : Maki Nosou  
Assistant Professor : Atsushi Shimazu (Department)  
Graduate Student : Rumi Nishimura Aya Tamura

(2) Main Research Activities

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

(3) Research Achievements

A) Original Papers (including Case Reports)

A study on affairs and required faculties of full-time dental hygienist at administrative organs in Hiroshima Prefecture: Kitamura M, Sasahara H, Shimazu A, Hara K, Nosou M, Amano H, Sugiyama M J Hiroshima Dent Soc: 43(1), 1-8, 2011.

A study on key factors for good facial profiles in cases of skeletal Class III malocclusion treated by two-jaw surgery Tamura A, Kaku M, Sugiyama M, Motokawa M, Shimazu A, Amano H, Kawata T, Tanne K The journal of cho-shikoku orthodontic society, 23(1), 27-32, 2011.

Analysis of the surface properties of lost dental implant fixture Mine Y Makihira S Sugiyama M Kamata N Okazaki S Nikawa H J Hiroshima Dent Soc: 43(2), 106-112, 2011.

Increased telomerase activity and hTERT expression in human salivary gland carcinomas: Shigeishi H, Sugiyama M, Tahara H, Ono S, Bhawal UK, Okura M, Kogo M, Shinohara M, Shindoh M, Shintani S, Hamakawa H, Takata T, Kamata N: Oncology Letters, 2, 845-850, 2011.

B) Review



Chapter 2 2-9. Diseases of the salivary glands Sugiyama M in "Oral Surgery for Dental Hygienist"  
ed. By Komori T Nagasue Publishing Kyoto p161-174 2011

Chapter 3 3-16. Removal of salivary duct calculi Sugiyama M in "Oral Surgery for Dental Hygienist"  
ed. By Komori T Nagasue Publishing Kyoto p251-254 2011

#### D) Other Publications

Understanding for temporomandibular disorders Sugiyama M Journal of the Japanese Society for the Temporomandibular Joint 23 Suppl, 78, 2011.

Health promotion starting from oral health Sugiyama M Health Sciences 27(3), 188, 2011.

#### E) Presentation at Scientific Meeting

Survey of attitudes toward teeth and toothbrushes in the current middle school students. Shimazu A, Sasahara H, Kawamura M, Ogawa T. The 60th Japanese Society for Dental Health (Chiba), 2011.

Developing an intra- and inter-judge calibration system in terms of the periodontal assessment (G, GO scale) using a computer aided testing tool for school dentists. Kawamura M, Okada M, Sasahara H, Shimazu A, Taguchi N, Ogawa T. The 60th Japanese Society for Dental Health (Chiba), 2011.

Conscious survey of gingivitis in female high-school students. -Focus on Hiroshima University-Dental Behavioral Inventory and self-esteem. - Noso M, Ueda E, Shimazu A, Kawamura M, Takemoto T, Sugiyama M. The 60th Japanese Society for Dental Health (Chiba), 2011.

A study on oral microorganisms in patients with oral cancer and matched controls.:Yamashita K, Nishimura R, Ohara M, Hara K, Takemoto T, Sugiyama M.:The 6th Annual Meeting of the Japan Dental Hygienists' Association. (Nigata), 2011.

A program for improvement of oral function to prevent nursing-care.:Fukada E, Nishimura R, Yamashita K, Iwamoto A, Tamura A, Matsumoto A, Hara K, Nikawa H, Amano H.:The 6th Annual Meeting of the Japan Dental Hygienists' Association. (Nigata),2011.

Age-related changes of sensory thresholds in the oro-facial region and the relationship of sensory thresholds with dysphagia.:Nishimura R, Yamashita K, Hara K, Amano H, Sugiyama M.:The 4th Hiroshima Conference on Education and Science in Dentistry. (Hiroshima),2011.

A study on key factors for good facial profiles in cases of skeletal Class III malocclusion treated by two-jaw surgery Tamura A, Kaku M, Sugiyama M, Motokawa M, Sshimazu A, Amano H, Kawata T, Tanne K 54<sup>th</sup> Cho-shikoku orthodontic society (Ehime),2011

A study on key factors for good facial profiles in cases of skeletal class III malocclusion treated by two-jaw surgery Tamura A, Kaku M, Sugiyama M, Motokawa M, Shimazu A, Amano H, Kawata

T, Tanne K 3rd International Workshop on BioDental Education&Research Hiroshima 2011  
 Changes of oral sensation and its relationships with dysphagia and application of dentures in the elderly Sugiyama M The 56th Congress of the Japanese Society of Oral and Maxillofacial Surgeon, Osaka 2011.

Study on oral opportunistic pathogens after treatment of oral cancers Sugiyama M The 20th Annual Meeting of the Japanese Association for Oral Infectious Diseases, Yokohama 2011.

## F) Contribution to Community

Shimazu A Dental Support Activity in Cambodia Cambodia , 2011.

Shimazu A Oral health activity in Junior High School Students in Hiroshima Hiroshima , 2011.

Shimazu A Dental Examination for Acidity and Alkalinity Hiroshima , 2011.

Sugiyama M Understanding of temporomandibular disorders Public lecture “In the case you get jaw joint disease Advices from oral surgeons, Prosthodontists and Orthodontists-“, Hiroshima, 2011.7.24.

Sugiyama M Symposium 1 in the 27th Annual Meeting of the Japan Society of Health Sciences “Health promotion starting from oral health Yokohama, 2011. 8.6.

Sugiyama M Refresher course for dental hygienists Step up course “High points to see outpatients Assessment of general condition ” Hiroshima 2011.8.25

Sugiyama M Special lecture in the annual meeting of the dental department in hospitals of Yamaguchi Prefecture “To develop team approaches to dental care Trials by School of Oral Health Sciences, Hiroshima University Faculty of Dentistry ” Hofu, 2011. 9. 10.

Sugiyama M

**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

Research Associate : TSURUDA Keiko

Graduate Student : IWAMOTO Akiko, FUKADA Eri TETSUMORI Kotomi

(2) Specialized Fields

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

(3) Achievements

A Study on Affairs and Required Faculties of Full-time Dental Hygienist at Administrative Organs :  
M. Kitamura, H. Sasahara, A. Shimazu, K. Hara, M. Noso, H. Amano, M. Sugiyama: 43(1), 1-8, 2011.  
Topical application of *Aggregatibacter actinomycetemcomitans* cytolethal distending toxin induces  
cell cycle arrest in the rat gingival epithelium *in vivo*. : Ohara M, Miyauchi M, Tsuruda K, Takata, T,  
Sugai, M. J Periodont Res, 46, 389-

SHIMAZU Atsushi, AMANO Hideaki, KAWATA Toshitugu, TANNE Kazuo :J. CHU-SHI Orthod Soc., 23(1), 27-32, 2011.

## B) Reviews

## C) Books

MANUAL FOR ORAL CARE The Japanese Society of Oral Care *Gargling* 30. Gargling :  
Kumiko Hara:Quintessence Publishing Co.,Ltd.(Tokyo),100-102,2011.

## D) Other Publications

## E) Presentations

A Program for maintenance of better oral functions in a seminar of care prevention : Eri Fukada,  
Rumi Nishimura, Kaoru Yamashita, Akiko Iwamoto, Hiroki Nikawa, Kumiko Hara, Hideaki  
AMANO : 18<sup>th</sup> Annual Meeting of the Japanese Society of Dental Welfare (Okayama), 2011.5.15

A Study on the introduction of 'dental hygiene process' into dental hygiene education in Japan  
Kumiko Hara, Aiko Fujiwara, Naomi Yoshida, Sizue Oyama, Chie Okabayashi, Yoshie Niitani,  
Atsue Matsumoto, Keiko Kondo, Keiko Endo : 30th Annual Meeting of the Japanese Dental  
Education Association (Tokyo), 2011.7.16-17

An analysis of suckling and swallowing functions from measurement of internal pressure of oral  
cavity – A prototype of clinical measurement system of internal pressure of oral cavity- : Eri  
Fukada, Hideaki Amano, Shinichi Nagasaki, Kumiko Hara, Masaru Sugiyama, Keiji Tanimoto : 44<sup>th</sup>  
Annual Meeting of Hiroshima University Dental Society (Hiroshima), 2011.6.11

A Study of age change of sensation in oral-facial area : Rumi Nishimura, Kaoru Yamashita, Kumiko  
Hara, Hideaki Amano, Masaru Sugiyama : 44<sup>th</sup> Annual Meeting of Hiroshima University Dental  
Society (Hiroshima), 2011.6.11

CdtC-induced processing of membrane-bound CdtA is a crucial step in complex formation of  
CDT holotoxin. Keiko Tsuruda, Motoyuki Sugai. International Union of Microbiological  
Societies 2011 Congress (Sapporo, Japan), 2011. 9. 6-10

Age change of sensation in oral-facial area : Rumi Nishimura, Kaoru Yamashita, Kumiko Hara,  
Hideaki Amano, Masaru Sugiyama : 6<sup>th</sup> Annual Meeting of Japan Dental Hygienist's Association  
(Niigata), 2011.9.24

A Study of indigenous microorganism on oral mucosa of patients with oral malignancy : Kaoru  
Yamashita, Rumi Nishimura, Masaru Ohara, Kumiko Hara, Toshinobu Takemoto, Masaru  
Sugiyama : 6<sup>th</sup> Annual Meeting of Japan Dental Hygienist's Association (Niigata), 2011.9.24

Effectiveness of the seminar of care prevention by assessments of oral functions : Eri Fukada, Rumi

Nishimura, Kaoru Yamashita, Akiko Iwamoto, Kumiko Hara, Atsue Matsumoto, Hiroki Nikawa, Kumiko Hara, Hideaki Amano: 6<sup>th</sup> Annual Meeting of Japan Dental Hygienist's Association (Niigata), 2011.9.24

Age- related changes of sensory thresholds in the oro-facial region and the relationship of sensory thresholds with dysphagia Rumi Nishimura Kaoru Yamashita Kumiko Hara Hideaki Amano Masaru Sugiyama 4th Hiroshima Conference on Education and Science in Dentistry Hiroshima 2011.10.9-10

- 10 Complex formation mechanism of CDT holotoxin of *Aggregatibacter actinomycetemcomitans*:  
Mao Tanaka, Keiko Tsuruda, Oranart Matangkasombut, Masaru Ohara, Motoyuki Sugai: 4th  
Hiroshima Conference on Education and Science in Dentistry (Hiroshima), 2011.10.9-10
- 11 An Approach of the program for maintenance of better functions of oral functions in the seminar for  
care prevention 1<sup>st</sup> Report Program and questionnaire research : Rumi Nishimura, Eri Fukada,  
Kumiko Hara, Akiko Iwamoto, Kaoru Yamashita, Aya Tamura, Atsue Matsumoto, Hideaki Amano,  
Hiroki Nikawa, Masaru Sugiyama : 95<sup>th</sup> Annual Meeting of Hiroshima University Dental Society  
and 50<sup>th</sup> Hiroshima Prefecture Dental Association(Hiroshima), 2011.11.13
- 12 An Approach of the program for maintenance of better functions of oral functions in the seminar for  
care prevention 2<sup>nd</sup> Report Effectiveness of the seminar of care prevention by assessments of  
oral functions : Eri Fukada, Rumi Nishimura, Kumiko Hara, Akiko Iwamoto, Kaoru Yamashita, Aya  
Tamura, Atsue Matsumoto, Hideaki Amano, Hiroki Nikawa, Masaru Sugiyama : 95<sup>th</sup> Annual  
Meeting of Hiroshima University Dental Society and 50<sup>th</sup> Hiroshima Prefecture Dental Association  
(Hiroshima), 2011.11.13
- 13 A Research of oral conditions of the children of a rural area in Cambodia : Yuko Iwamoto, Noriko  
Kadomoto, Noriko Kodama, Fusako Otani, Akiko Iwamoto, Hideaki Amano, Katsuyuki Kozai :  
49<sup>th</sup> Annual Meeting of Japanese Society of Pediatric Dentistry (Iwate), 2011.11.28.
- 14 A study of the effect of the active noise control headphone against the noise surround the dental  
chair : Akiko Iwamoto, Hideaki Amano : 49<sup>th</sup> Annual Meeting of Japanese Society of Pediatric  
Dentistry (Iwate), 2011.11.29.
- 15 Preliminary study on the education method of Dental Hygiene Process in Dental Hygiene Education  
part1 Understandings of the significance between the dental hygiene instructors Kumiko Hara,  
Naomi Yoshida, Keiko Endo, Aiko Fujihara, Keiko Kondo, Hisako Wada, Kimiko Watanabe, Chieko  
Nagano, Kimiko Kobayashi Japan Society Of Dental Hygiene Education(Tokyo), 2011.12.3-4
- 16 Preliminary study on the education method of Dental Hygiene Process in Dental Hygiene Education  
part2 Current status and placement in the educational curriculum Tomoko Sanda Yukiko  
Murakoshi Emiko Nakano, Mieko Masuda Takako Yabe Yumi Hoshino Kumiko Hara Naomi  
Yoshida Keiko Endo Aiko Fujihara Japan Society Of Dental Hygiene Education Tokyo  
2011.12.3-4

## F) Lectures

Review the Oral Care : Hara K.: Seminar for Study Group of Oral Care (Kagoshima) 2011.2.20.

Health Information sent from Mouth 1: Amano H. : Annual meeting of the Japan Society of Health Sciences (Kanagawa) 2011.8.6

Health Information sent from Mouth 3 : Hara K. : Annual meeting of the Japan Society of Health Sciences (Kanagawa) 2011.8.6

An Effort to go for better Team Dentistry Medicine of the School of Oral Sciences, Hiroshima University Faculty of Dentistry 2. From a view point of Dental Hygienist. : Hara K. : Yamaguchi Pref. Medical Center (Yamaguchi), 2011.9.010

What is the key of longevity biting steadily ? 3. Practice : Hara K. : The University Extension course of Hiroshima University in 2011(Matsue) , 2011.11.19.

Change the Dental Hygienist into Oral Health Manager for team medicine : Amano H. : 49<sup>th</sup> Annual Meeting of the Japanese Society of Pediatric Dentistry (Iwate) 2011.11.28.

## G) Social Contributions

: Program for kids from elementary schools, Dental Kids, “Let’s Be a Dentist!”: Hiroshima University Faculty of Dentistry, 2011.

: Program for high school students, Dental Kids: Hiroshima University Faculty of Dentistry, 2011.

:Cooperate to the assessment of the Program for improvement of oral function in the ambulatory care facility “Kosei-En”, 2011.

## (4) Grant-in-Aid for Scientific Research

2011th 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)

2011th grant-in-aid for scientific research Tsuruda K. Development of the method of preventing infection under control of the mucosal genes. No.22592333

## (5) Awards

## (6) Patents

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Analysis of peripheral vein width and salivary free radical at the time of ,oral relaxation

the introduction of ,dental hygiene process into dental hygiene education in Japan





Program for kids from elementary schools, Dental Kids, "Let's Be a Dentist!"

Renewal seminar for teacher's license: Takemoto T, Hiroshima University (Hiroshima), 2011.

Member of Dental Hygienists' Examination committee

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**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
Graduate Students	Shougo Iwaguro, Yuji Chiba, Syouji Matsushita, Hiroki Nishida, Kumiko Hirose

(2) Main Research Activities

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

(3) Research Achievements

A) Original Papers (including Case Reports)

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B) Review

## C) Publications

- 1: The new series of textbooks for dental technologist-Dental technology of restoration : Suese K, Matsumura H, Marumo Y, Kumono Y, Shimoe S : Ishiyaku Publishers, Inc , Tokyo, 174, 2007 .
- 2: The new series of textbooks for dental technologist-Dental technology practical training : Kanai M, Kuwata M, Shimoe S, Maeda Y, Matsumura H, Miura H et al : Ishiyaku Publishers, Inc ,Tokyo, 207, 2008 .

## D) Other Publications

## E) Presentation at Scientific Meeting

Functional model of the Suprahyoid and Infrahyoid muscles Takahiro Satoda Hiroki Nishida Kumiko Hirose Ranka Kyoda Yosuke Arima Saiji Shimoe The joint meeting of the 88<sup>th</sup> Annual Meeting of the Physiological Society of Japan & The 116<sup>th</sup> Annual Meeting of Japanese Association of Anatomists Yokohama (This meeting was canceled due to HigashiNihon Daishinsai) 2011.3

A hand-made model of the forearm Takahiro Satoda Jun-ichi Mitsugi Yosuke Arima Kumiko Hirose Saiji Shimoe The 10<sup>th</sup> Annual Meeting of Co-Medical Function and Structure Association Kasugai , 2011.9

A hand-made model of the forearm Jun-ichi Mitsugi Kibou Tumura Haruna Nishiura Kanako Touma Keishi Hiradani Saiji Shimoe Takahiro Satoda The 33<sup>th</sup> Annual Meeting of Nippon Academy of Dental Technology Tokyo 2011.10.

Effect of alumina-blasting on the surface treatment of Ce-TZP/Al<sub>2</sub>O<sub>3</sub> nanocomposite (P-NANOZR)

- 9 A hand-made model of the forearm Jun-ichi Mitsugi Yosuke Arima Kumiko Hirose Saiji Shimoe  
Takahiro Satoda The 66<sup>th</sup> Annual Meeting of Japanese Association of Anatomist, Cyugoku-Shikoku  
regional meeting Tokushima 2011.11
- 10: Analysis of the significance of the dissection methods in the students' dissection practices Yosuke  
Arima Saiji Shimoe Takahiro Satoda The 65<sup>th</sup> Annual Meeting of Japanese Association of Anatomist,  
Cyugoku-Shikoku regional meeting Tokushima 2011.11.

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

1:

(5) Academic Awards, etc.

- 1: Jun-ichi Mitsugi Excellent poster presentation award in The 33<sup>th</sup> Annual Meeting of Nippon Academy  
of Dental Technology (Tokyo), 2011.10.

(6) Patents

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**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 : Daigo Tomonari, Mana Kawakami, Keita Yauchi, Tsuyoshi Hidaka,  
Shinya Chiba, Kouki Ishizu  
Graduation Research Students : Yuta Takumi, Kousei Ohno, Setsuri Shimazaki, Keisuke Hayashida,  
Asumi Yamaguchi, Asumi Nagata, Mayumi Nakanodo, Megumi  
Nishikawa, Noriko Fujimoto, Yuko Fuchimoto, Haruka Houchi,  
Shuich Masu

(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 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)

Takahiro SATODA

KIHARA, Saiji SHIMOE, Takeshi MURAYAMA, Tsuyoshi TAJI,  
Kazuko KAWAHARA, Hisako SASAHARA, Masakazu SASAKI, Hiroki NIKAWA:

- 1: Development of a system that evaluates abutment teeth for dental CAD/CAM: Kawakami M, Miyamoto K, Yanagibashi M, Murayama T, Tamamoto M, Eguchi T: The 23rd Bioengineering Conference: 2011 Annual Meeting of BE D/JSME, No.10-74, 575-576 (Kumamoto), 2011.
- 2: Meeting due-dates and minimizing lead-times in a integrated production planning and scheduling environment: Eguchi T, Hirano S, Murayama T: Manufacturing Systems Divisions Conference 2011 No.11-7, 49-50(Tokyo), 2011.
- 3: Discrete-event simulation of dental technical work: Chiba S, Murayama T, Eguchi T, Tamamoto M: 33rd Meeting of the Nippon Academy of Dental Technology (Tokyo), 2011.
- 4: Fabrication of finger prostheses using finger models created from principal feature database: Ohno K, Murayama T, Tada M, Nagami M, Kihara T, Tamamoto M, Eguchi T: 33rd Meeting of the Nippon Academy of Dental Technology (Tokyo), 2011.
- 5: Development of a system evaluating abutment teeth for CAD/CAM: Mana KAWAKAMI, Takeshi MURAYAMA, Kozue MIYAMOTO, Toru EGUCHI, Mitsuhiro TAMAMOTO: 59th Annual Meeting of Japanese Association for Dental Research (Hiroshima), 2011.
- 6: Analysis of skills in dental technology by using a motion-capture system: Hidaka T, Murayama T, Eguchi T, Shimoe S, Tamamoto M: 2011 Annual Meeting of the Chugoku-shikoku Branch of Japan Society for Precision Engineering(Tokushima), 2011.



- 7: Application of dispatching rules to dental technical work and its evaluation by discrete-event simulation: Chiba S, Murayama T, Eguchi T, Tamamoto M: 2011 Annual Meeting of the Chugoku-shikoku Branch of Japan Society for Precision Engineering(Tokushima), 2011.
- 8: Quantitative evaluations of effects by using various oral music splints: Tomonari D, Tamamoto M, Nagasaki T, Murayama T, Nikawa H, Satoda T, Tanimoto K: 95th Regular Meeting of Hiroshima University Dental Society (Hiroshima), 2011.
- 9: Building three-dimensional models from three-tesla MRI for the simulation of temporomandibular joint: Takumi Y, Kawakami M, Murayama T, Nagasaki T, Ueda K, Ogawa H, Tanaka E, Nikawa H: 95th Regular Meeting of Hiroshima University Dental Society (Hiroshima), 2011.
- 10: Development of a system that evaluates abutment teeth for dental CAD/CAM: Takeshi MURAYAMA, Mana KAWAKAMI, Kozue MIYAMOTO, Toru EGUCHI, Mitsuhiro TAMAMOTO: The 3rd International Symposium on Digital Manufacturing 2011(Kokura), 2011.
- 11: A Method of Constructing Cooperative Work Groups for Concurrent Engineering: Takeshi MURAYAMA, Toru EGUCHI, Akira OGAWA: The 3rd International Symposium on Digital Manufacturing 2011(Kokura), 2011.
- 12: An Approach of Estimation of Distribution Algorithm for Job Shop Scheduling: Toru Eguchi, Masahiro Fujimoto, Takeshi Murayama: The 3rd International Symposium on Digital Manufacturing 2011(Kokura), 2011.

#### F)Special Lectures in Academic Meetings

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

- 1: Grants-in-Aid for Scientific Research (Challenging Exploratory Research): Takeshi Murayama (Representative) Health monitoring system using wearable sensors involved in dentures No. 23650352 1,500,000yen
- 2: Grants-in-Aid for Scientific Research (Scientific Research (C) (General) ): Mitsuhiro Tamamoto (Cooperation) Development of tooth-friendly

# Master's Program for Oral Health Sciences

## Division of Oral Health Sciences

### (Department of Oral Biology & Engineering)

#### (1) Staff and Students

Professor : Hiroki Nikawa

Assistant Professor : Hisako Sasahara, Tsuyoshi Taji

Research Associate : Kazuko Kawahara

Research Associate : Yuichi Mine

(Special Appointment)

Secretary : Miki Onji

Research Assistant : Kaori Taguchi

Graduate Student : Takuya Kihara, Yuichi Mine, Sumiyo Mimura, Hitomi Ishii, Satoshi Iwata,  
Emi Okura, Shota Okazaki, Suguru Kawamura, Yuko Takamoto, Yukihiro  
Takayama, Sachie Hogaki, Minako Okamura, Yuko Katabuchi, Minako Shinkawa,  
Tomoya Tamura, Minako Hiramatsu, Rie Fukuda, Eri Morooka, Yu Yamaguchi,  
Kaori Yushita

Undergraduate Student : Hitomi Kajiware, Asami Katayama, Megumi Kurose, Mao Shiba, Hideki  
Tanaka, Ayane Toda, Yu Tomiyama, Yukari Muraoka, Natsumi Yamamoto,  
Yusuke Yamamoto, Mikiko Kurose, Mari Sakata, Ayumi Sato, Kentaro  
Takagi,

#### (2) Main Research Activities

Mechanisms on allergy caused by dental materials

Study on candidal biofilms and denture plaque

Study on dental caries and probiotics

Design for cationic antimicrobial peptides

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

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

Study on dental implant materials

#### (3) Research Achievements

A) Original Papers (including Case Reports)

*Lactobacillus rhamnosus*

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

(5) Academic Awards, etc.

(6) Patents

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**Central Research Laboratory**

Ronholm J., Cao X., Hayashi I., Sugai M., Lin M: CSM Conference 2011

- 3: SKIP, a versatile cell wall protein of *S.aureus* causing severe skin diseases: Sugai M., Hisatsune J., Murakami T., Kojima T., Hayashi I., Kato F.: 84<sup>th</sup> Annual Meeting for Japanese Society for Bacteriology, XIII International Congress of Bacteriology and Applied Microbiology (Sapporo) 2011
- 4: SKIP, a Trojan horse of *staphylococcus aureus* causing severe impetigo/SSSS: Hisatsune J., Murakami T., Hayashi I., Kato F., Sugai M.: 84<sup>th</sup> Annual Meeting for Japanese Society for Bacteriology, XIII International Congress of Bacteriology and Applied Microbiology (Sapporo) 2011
- 5: Functionl analysis of SKIP, a versatile cell wall protein, found in staphylococcus aureus: Hisatsune J., Murakami T., Kojima T., Tatsukawa N., Hayashi I., Kato F., Sugai M.: The 34<sup>th</sup> Annual Meeting of the Molecular Biology Society of Japan (Yokohama) 2011
- 6: Nucleolar protein nucleolin could function for DNA damage response through chromatin modification : Kobayashi J., Fujimoto H., Hayashi I., Komatsu K.: Gordon Research Conference “*Mammalian DNA Repair*” (Ventura) 2011.

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

- 1: Research project, Grant-in-Aid for Scientific Research (C): Hayashi I: Mechanism of automutanolysin (Aml) for the specific selectivity toward cariogenetic bacteria:(No. 23592702), ¥2,860,000

#### (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(until March 2011)
Associate Professor	Norihiro Taguchi (until March 2010)		
Research Associate	Yoshihara Tanaka	Masaru Ohara	Hiromi Nishi
Graduate Student	Taiji Obayashi	Kayo Kajitani (from April, 2011)	Yukiko Nagatani (from April, 2011)
Secretary	Tomoe Sasaki (until February 2011)		

### (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. Sporadic isolations of a multi-drug resistant *Pseudomonas aeruginosa* clone during a 14-month epidemic in a general hospital in Hiroshima.: Kouda S, Fujiue Y, Watanabe Y, Ohara M, Kayama S, Kato F, Hisatsune J, Tsuruda K, Matsubara A, Doi M, Kuwabara M, Sugai M.: *Infection*, 39,247–253, 2011.
2. Topical application of *Aggregatibacter actinomycetemcomitans* CDT induces cell cycle arrest in the rat gingival epithelium in vivo.: Ohara M, Miyauchi M, Tsuruda K, Takata T, Sugai M.: *J Periodont Res*, 46, 389-395,2011.
3. Additive effects of orexin B and vasoactive intestinal polypeptide on LL-37-mediated antimicrobial activities.: Ohta K, Kajiya M, Zhu T, Nishi H, Mawardi H, Shin J, Elbadawi L, Kamata N, Komatsuzawa H, Kawai T.: *J Neuroimmunol*, 233,37-45,2011.

4. A case of SAPHO syndrome with diffuse sclerosing osteomyelitis of the mandible treated successfully with prednisolone and bisphosphonate.: Hatano H, Shigeishi H, Higashikawa K, Shimasue H, Nishi H, Oiwa H, Shindo H, Takechi M, Ohge H, Kamata N.: J Oral Maxillofac Surg ,2011.

#### B) Review

#### C) Publications

#### D) Other Publications

#### E) Presentation at Scientific Meeting

1. Change to a Reflective Practitioner from Reflective Learner : Tetsuji Ogawa, Yoshiharu Tanaka, Masaru Ohara, Hiromi Nishi, Taiji Obayashi, Tomoe Sasaki, and Norihiro Taguchi : 30<sup>th</sup> Meeting of Japanese Dental Education Association, Tokyo, 2011.
2. Follow-up Session for Instructor Attending the Training Seminar for Medical Communication Facilitator : Kazuyoshi Suzuki, Toshiko Yoshida, Mika Oishi, Shinichiro Aoki, Tetsuro Konoo, Itsuo Chiba, Takanori Ito, Tetsuji Ogawa, Shiro Mataka and Kazutaka Kasai : 30<sup>th</sup> Meeting of Japanese Dental Education Association, Tokyo, 2011.
3. Training Seminar for Medical Communication Facilitator (Fundamental Course and Intermediate Course) : Toshiko Yoshida, Kazuyoshi Suzuki, Mika Oishi, Tetsuro Konoo, Itsuo Chiba, Takanori Ito, Tetsuji Ogawa, Shiro Mataka and Kazutaka Kasai: 30<sup>th</sup> Meeting of Japanese Dental Education Association, Tokyo, 2011.
4. A qualitative research using with SCAT (Steps for Coding and Theorization) for Dental Clinical : Taiji Obayashi, Hiromi Nishi, Masaru Ohara, Yoshiharu Tanaka, Tomoe Sasaki, Kayo Kajitani, Yukiko Nagatani, Norihiro Taguchi, and Tetsuji Ogawa : 30<sup>th</sup> Meeting of Japanese Dental Education Association, Tokyo, 2011.
5. The green tea polyphenol (-)-epigallocatechin gallate precipitates salivary proteins. -Biochemical study- : Masaru Ohara, Yoshihiko Ohyama, Ikue Hayashi, Hiromi Nishi, Yoshiharu Tanaka, Takamune Hino, Tetsuji Ogawa: Research Seminar in General Dental Medicine, Niigata, 2011.
6. An attempt of doing oral management and rethinking about medically compromised patients on dental clinical training course in Hiroshima university hospital. Hiromi Nishi, Yoshiharu Tanaka, Taiji Obayashi, Masaru Ohara,: Research Seminar in General Dental Medicine, Niigata, 2011.
7. Self-reflection on the past communication education. : Tetsuji Ogawa: Communication Association in Japan Chugoku



Hiroshima, 2011.

8. A qualitative research using questionnaire for Dental clinical training : Taiji Obayashi, Hiromi Nishi, Masaru Ohara, Yoshiharu Tanaka, Tomoe Sasaki , Kayo Kajitani, Yukiko Nagatani, Norihiro Taguchi, and Tetsuji Ogawa: Communication Association in Japan Chugoku-Shikoku branch, Educational Research Seminar in Health Communication, Hiroshima, 2011.

#### F) Implementation of Seminars / Workshops

1. Workshop for postgraduate trainees 2011 (Hiroshima)
2. Communication Association in Japan Chugoku-Shikoku branch, Educational Research Seminar in Health Communication, Hiroshima, 2011.

#### G) Lecturer / Symposiast

#### H) Attending of Lectures, Seminars, and Workshops

1. The 40<sup>th</sup> seminar and workshop on medical education: Attendant : Tetsuji Ogawa, at Gifu Univ. Medical Education Center. (Gifu), 2011.
2. The 2<sup>nd</sup> MEDC workshop: Attendant : Taiji Obayashi, at Gifu Univ. Medical Education Center. (Gifu), 2011.
3. The 2<sup>nd</sup> follow-up session for medical communication facilitators : Attendant: Taiji Obayashi, Tomoe Sasaki. Coordinator: Japanese Dental Education Association. (Tokyo), 2011.
4. The 6<sup>th</sup> RIAS training workshop: Attendant : Hiromi Nishi, Taiji Obayashi, Kayo Kajitani, Yukiko Hase. Coordinator: RIAS study group (Nagoya), 2011.
5. The 1<sup>st</sup> training seminar for fresh teachers: Attendant : Tetsuji Ogawa: Coordinator: Public Interest Corporation Commission, University Seminar House (Tokyo), 2011.
6. Symposium on “Patient-oriented medicine”: Attendant: Yoshiharu Tanaka. Coordinator: “Patient-oriented medicine” Study Group (Tokyo), 2011.
7. The 5<sup>th</sup> training seminar for medical communication facilitators : Attendant: Hiromi Nishi, Taiji Obayashi, Tomoe Sasaki. Coordinator: Japanese Dental Education Association (Tokyo), 2011.
8. The 1<sup>st</sup> workshop (H23) on dental OSCE on medical communication : Attendant: Hiromi Nishi. Coordinator: OSCE committee (Gifu), 2011.
9. The 37<sup>th</sup> seminar on medical education at Tokyo Univ.: Attendant : Taiji Obayashi. Coordinator: International Research Center for Medical Education Tokyo Univ. (Tokyo), 2011.

#### I) Implementation of OSCE, CSA

1. 2<sup>nd</sup> Advanced OSCE for Postgraduate Trainees 2010-2011
2. 1<sup>st</sup> Advanced OSCE for Postgraduate Trainees 2011-2012

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

1. Grant-in-Aid Scientific Research, Young Scientists (B). Nishi H.: Analysis of Toll-like receptor in oral mucosal disease . Program No. 23792346. 1,600,000yen
2. Grant-in-Aid Scientific Research, Scientific Research (C). Ogawa T.: theory and measurement methodology of politeness phenomena in the medical interview. Program No. 23520509. 400,000yen (co-researcher)

**(5) Academic Awards, etc.**

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## Department of Oral Health and Development, Preventive Dentistry

Staff and Postgraduate students

Assistant Professor Makoto Kawamura

### Research fields

Behavioral science regarding oral health

Studies on community dental health

Studies on school dental health

Studies on computer-aided diagnosis scheme for periodontal disease

### Publication

#### A) Original Papers (including Case Reports)

1: Caries prevalence associated with *Streptococcus mutans* and *Streptococcus sobrinus* in Japanese schoolchildren. Okada, M., Kawamura, M. Oda, Y., Yasuda, R., Kojima, T., Kurihara, H. *International Journal of Paediatric Dentistry* (in press), 2011.

#### B) Reviews

#### C) Books/Book Chapters

D) Proceedings/Others

E) Presentations

1. Developing an intra- and inter-judge calibration system in terms of the periodontal assessment (G, GO scale) using a computer aided testing tool for school dentists. Kawamura, M., Okada, M., Sasahara H., Shimazu,, A., Taguchi N., Ogawa, T. The 60<sup>th</sup> Japanese Society for Dental Health (Chiba), 2011.
2. Survey of attitudes toward teeth and toothbrushes in the current middle school students. Shimazu,, A., Sasahara H., Kawamura, M., Ogawa, T. The 60<sup>th</sup> Japanese Society for Dental Health (Chiba), 2011.
3. Conscious survey of gingivitis in female high-school students. –Focus on Hiroshima University-Dental Behavioral Inventory and self-esteem . Noso M., Ueda, E., Shimazu,, A., Kawamura, M., Takemoto .T , Sugiyama M. The 60<sup>th</sup> Japanese Society for Dental Health (Chiba), 2011.

Grants-in-aid

Awards

Patents

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## Department of Oral Health and Development

### Special Care Dentistry

#### (1) Staffs and Students

Professor Mitsugi Okada (from June 2011 to present)

Head of Dentistry

Resident : Yuki Oda

Registered Intern Megumi Iwamoto

#### (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)

Caries prevalence associated with *Streptococcus mutans* and *Streptococcus sobrinus* in Japanese schoolchildren: Okada M, Kawamura M, Oda Y, Yasuda R, Kojima T, Kurihara H: Int J Paediatr Dent. 2012 Jan 8. doi: 10.1111/j.1365-263X.2011.01203.x. [Epub ahead of print]

Caries prevalence associated with *Streptococcus mutans* and *Streptococcus sobrinus* in outpatients with mental retardation: Okada M, Oda Y, Kojima T, Iwamoto M, Tokikazu T, Wakita A, Nagatani Y: J Jpn Soc Disability Oral Health. (in press)

Prevalence of *Porphyromonas gingivalis fimA* genotypes in Japanese children: Hayashi F, Okada M, Oda Y, Kojima T, Kozai K: J Oral Sci. (in press)

##### B) Review

##### C) Publications

**D) Other Publications**

**E) Presentation at Scientific Meeting**

Developing an intra- and inter-judge calibration system in terms of the periodontal assessment (G, GO scale) using a computer aided testing tool for school dentists. Kawamura M, Okada M, Sasahara H, Shimazu A, Taguchi N, Ogawa T: The 60th Japanese Society for Dental Health (Chiba), 2011.

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

(5) Academic Awards, etc.

(6) Patents

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(1) Staff and Students

(2) Main Research Activities

1:

2:

3:

4:

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## Central Clinical Sections, Center of Oral Clinical Examination

### (1) Staffs and Students

Director: Hidemi Kurihara  
 Associate Professor: Ikuko Ogawa Clinic  
 Research Associate: Tomoaki Shintani, Masae Kitagawa  
 Technician: Keiko Banno  
 Intern: Toshinori Ando

### (2) Main Research Activities

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

### (3) Research Achievements

#### A) Original Papers (including Case Reports)

- : MMP-10/stromelysin-2 promotes invasion of head and neck cancer.: Deraz E.M., Kudo Y., Yoshida M., Tani H., Tsunematsu T., Siriwardena B.S.M.S., Kiekhoe M.R., Qi G., Iizuka S., Ogawa I., Campisi G., Lo Muzio. L, Abiko Y., Kikuchi A., Takata T.: PLoS ONE, 6, e25438, 2011.
- : N-cadherin expression is involved in malignant behavior of head and neck cancer in relation to epithelial-mesenchymal transition.: Nguyen P.T., Kudo Y., Yoshida M., Kamata N., Ogawa I., Takata T.: Histol Histopathol, 26, 147-156, 2011.
- : Ameloblastin regulates osteogenic differentiation by inhibiting Src kinase via cross talk between integrin beta1 and CD63.: Iizuka S., Kudo Y., Yoshida M., Tsunematsu T., Yoshiko Y., Uchida T., Ogawa I., Miyauchi M., Takata T.: Mol Cell Biol, 31, 783-792, 2011.
- : N-cadherin expression is correlated with metastasis of spindle cell carcinoma of head and neck region.: Nguyen P.T., Kudo Y., Yoshida M., Iizuka S., Ogawa I., Takata T.: J Oral Pathol Med, 40, 77-82, 2011.

- : Synthetic ameloblastin peptide stimulates differentiation of human periodontal ligament cells.: Kitagawa M., Kitagawa S., Nagasaki A., Miyauchi M., Uchida T., Takata T.: Arch Oral Biol, 56(4), 374-9, 2011.
- : A case of multifocal nodular oncocytic hyperplasia.: Sato S., Kishino M., Ogawa Y., Ogawa I., Takata T., Toyosawa S.: Pathol Res Pract, 207, 452-455, 2011.
- : A case of mucoepidermoid carcinoma arising in Warthin tumor of parotid gland.: Ogawa I., Takeshima Y., Inai K., Takata T.: Jpn J Diag Pathol, 28, 94-98, 2011.
- : Clinico-statistical study of the maxillofacial bone fractures at the department of oral and maxillofacial surgery, Hiroshima University Hospital during the past 10 years.: Sakaue T., Fukui Y., Okazaki F., Kimura N., Takesue N., Nabeshima K., Ishida Y., Hamana T., Sumi K., Okamoto K., Kanda T., Shintani T., Yoshioka Y., Tani R., Hayashido Y., Toratani S., Okamoto T.: J Hiroshima Univ Dent Soc, 43(1), 20-6, 2011.
- : Clinico-statistical study of orthognathic surgery in clinic of oral and maxillofacial surgery, Hiroshima University Hospital during the past 14 years.: Toratani S., Tani R., Fukui Y., Yamasaki S., Okazaki F., Takesue N., Nabeshima K., Ishida Y., Sumi K., Kanda T., Shintani T., Koizumi K., Yoshioka Y., Okamoto T.: J Hiroshima Univ Dent Soc, 43(2), 91-7, 2011.

## B) Review

- : Clinicopathological features of tumors and tumor-like lesions of the minor salivary glands: Ogawa I., Yoshida M., Ohbayashi M., Takata T.: Pathol Clin Med, 23, 596-601, 2011.
- : Pathology of salivary gland tumors; Focus on the minor salivary gland tumors:-: Ogawa I., Kudo Y., Takata T.: J Jpn Soc Oral Tumors, 23, 50-58, 2011.
- : Histopathological classification of salivary gland tumors –For practical use of WHO classification 2005-: Ogawa I., Takata T.: Jpn J Oral Maxillofac Surg, 57, 486-492, 2011.

## C) Publications

- : Pathology of salivary gland tumors; Focus on the diagnostic aspect.: Hand Manual of Oral & Maxillofacial Surgery'11 (Oral Surgery): Ogawa I., Kitagawa M., KudoY., Miyauchi M., Takata T.: Quintessence Publishers (Tokyo), 144-150, 2011.

## D) Other Publications

- : Examination study for DHs: What is the bacterial examination for samples from root canals? Kurihara H., Ogawa I., Kitagawa M.: DHstyle, Dental Diamond Co., 5 (9), 66-70 2011

- : Examination study for DHs: Examination of serum IgG antibody titer for periodontopathic bacteria: Kurihara H., Shintani T.: DHstyle, Dental Diamond Co., 5(12), 62-66, 2011.

#### E) Presentation at Scientific Meeting

- : F-spondin promotes the differentiation of human periodontal ligament cells: Kitagawa M., Miyauchi M., Takata T.: The 4<sup>th</sup> Hiroshima Conference on Education and Science in Dentistry (Hiroshima), 2011.
- : Trial of selective antibiotics therapy for radicular cystic lesion - Embodiment of the concept called the biological endodontic treatment - Kurihara H., Uchida Y., Kitamoto Y., Shiba H., Kawaguchi H., Ogawa I., Shintani T., Kitagawa M.: The 44<sup>th</sup> Meeting of Hiroshima University Dental Society (Hiroshima), 2011.
- : The necessity for the metal allergy test before the operation of dental implant: Kitagawa M., Ohbayashi M., Ando T., Shintani T., Ogawa I., Kawaguchi H., Kagawa K., Nakagawa T., Takechi M., Kurihara H.: The 44<sup>th</sup> Meeting of Hiroshima University Dental Society (Hiroshima), 2011.
- : Trend of dental metal allergy: Kitagawa M., Ando T., Shintani T., Ogawa I., Kurihara H.: The 4<sup>th</sup> Annual Meeting of Japanese Society for Evidence and the Dental Professional (Chiba), 2011.
- : The reality of dental metal allergy –From the result of patch test in Dental Departments, Hiroshima University Hospital- : Kitagawa M., Ando T., Shintani T., Ogawa I., Kurihara H.: The 50<sup>th</sup> Annual Meeting of Hiroshima Dental Association and the 95<sup>th</sup> Annual Meeting of Hiroshima University Dental Society (Hiroshima), 2011.
- : The challenge of the regeneration of periodontal tissue -Study on cementum regeneration by a cementoblast specific gene, f-spondin-: Kitagawa M., Miyauchi M., Takata T.: The 50<sup>th</sup> Annual Meeting of Hiroshima Dental Association and the 95<sup>th</sup> Annual Meeting of Hiroshima University Dental Society (Hiroshima), 2011.
- : Tumor of the palate (Myoepithelial carcinoma ex pleomorphic adenoma): Yoshida M., Furusho H., Fukui Y., Toratani S., Miyauchi M., Ogawa I., Takata T.: The 104<sup>th</sup> Academic Meeting of Chugoku-Shikoku Branch of the Japanese Society of Pathology (Ube), 2011.
- : Tumor of the tongue (Ectomesenchymal chondromyxoid tumor of the anterior tongue): Ogawa I., Tsunematsu T., Kitagawa M., Yoshioka Y., Takata T.: The 105<sup>th</sup> Academic Meeting of Chugoku-Shikoku Branch of the Japanese Society of Pathology (Kida-gun, Kagawa), 2011.
- : Tumor of the palate (Mucoepidermoid carcinoma, clear cell variant): Ohbayashi M., Ando T., Tani R., Konishi M., Ogawa I., Takata T.: The 106<sup>th</sup> Academic Meeting of Chugoku-Shikoku Branch of the Japanese Society of Pathology (Okayama), 2011.
- : Mandibular lesion (Osseous dysplasia). : Ando T., Furusho H., Miyauchi M., Fujita M., Kanda T., Toratani S., Ogawa I., Takata T.: The 56<sup>th</sup> Meeting of Hiroshima Pathological Conference

- (Hiroshima), 2011.
- : Tumor of the parotid (Myoepithelial carcinoma, invasive, ex pleomorphic adenoma): Ogawa I, Takata T, Mizobuchi K, Morito T: The 57<sup>th</sup> Meeting of Hiroshima Pathological Conference (Hiroshima), 2011.
  - : Tumor of the palate (Signet-ring cell [Mucin-producing] adenocarcinoma of minor salivary gland): Ogawa I, Kushitani K, Sakamoto T, Miyauchi M, Inai K, Takata T: The 22<sup>nd</sup> Annual Meeting of the Japanese Society of Oral Pathology (Fukuoka), 2011.
  - : A case of “benign metastasizing myoepithelioma” with multiple pulmonary metastasis nine years after operation of primary parotid lesion: Ogawa I, Ohbayashi M, Nakano R, Sakaida N, Konobu T, Saito S, Torii Y, Maruyama H, Takata T: The 56<sup>th</sup> Annual Meeting for the Salivary Gland (Tokyo), 2011.
  - : Clinico-statistical study of bisphosphonate-related osteonecrosis of the jaw at the department of oral and maxillofacial surgery:- Mukasa H, Shintani T, Sakaue T, Taguchi Y, Fujii T, Ito Y, Yamasaki S, Okazaki F, Fujii Y, Kimura N, Takesue N, Nabeshima., Ishida., Sado T, Hamana T, Mashima T, Sumi K, Fukui Y, Arita Y, Okamoto K, Kanda T, Koizumi K, Yoshioka Y, Tani R, Hayashido Y, Sakamoto A, Tanimoto Y, Sakamoto T, Yoshimura Y, Ogawa I, Toratani S, Okamoto T: The 65<sup>th</sup> Annual Meeting of Japanese Somatological Society (Tokyo), 2011.
  - : Identification of heparin-binding protein 17 (HBp17)/FGF-binding protein (FGFBP) in saliva:- Okazaki F, Shintani T, Usui E, Okamoto T: The 65<sup>th</sup> Annual Meeting of Japanese Somatological Society (Tokyo), 2011.
  - : A case of a calcification of lymph node in the left submandibular region:- Fujii Y, Yoshioka Y, Shintani T, Tsunetatsu T, Ogawa I, Toratani S, Okamoto T: The 40<sup>th</sup> Chugoku-Shikoku Sectional Meeting of Oral and Maxillofacial Surgery (Matsue), 2011.
  - : A case of myoepithelioma beneath the upper labial mucosa -: Kimura N, Yoshioka Y, Koizumi K, Ogawa I, Toratani S, Okamoto T: The 40<sup>th</sup> Chugoku-Shikoku Sectional Meeting of Oral and Maxillofacial Surgery (Matsue), 2011.
  - : A case of ectomesenchymalchondromyxoid tumor:- Sakaue T, Yoshioka Y, Yamasaki S, Ogawa I, Hayashido Y, Toratani S, Okamoto T: The 56<sup>th</sup> Annual Meeting of Oral and Maxillofacial Surgery (Osaka), 2011.
  - : A case of myoepithelial carcinoma ex plemorphic adenoma of the hard palate:- Fukui Y, Toratani S, Fujii T, Miyauchi M, Ogawa I, Okamoto T: The 56<sup>th</sup> Annual Meeting of Oral and Maxillofacial Surgery (Osaka), 2011.
  - : A case of cervicofacial gas gangrene associated with BRONJ:- Nabeshina K, Fujii Y, Taguchi Y, Shintani T, Toratani S, Okamoto T: The 56<sup>th</sup> Annual Meeting of Oral and Maxillofacial Surgery (Osaka), 2011.
  - : A case of osseous dysplasia arising bilaterally in the mandible that long-term progress observation was performed before extraction:- Hamada M, Kanda T, Ando T, Ogawa I, Toratani S, Okamoto

- T.: The 59<sup>th</sup> Chugoku-Shikoku Sectional Meeting of Japanese Somatological Society (Matsuyama), 2011.
- : Clinico-statistical study of bisphosphonate-related osteonecrosis of the jaw at the department of oral and maxillofacial surgery-: Mukasa H., Shintani T., Akagi E., Ishida Y., Hamana T., Fukui Y., Okamoto K., Kanda T., Koizumi K., Yoshioka Y., Tani R., Hayashido Y., Toratani S., Okamoto T.: The 7<sup>th</sup> Hiroshima Breast Care Seminar (Hiroshima), 2011.
- : A case of calcifying cystic odontogenic tumor occurring in the mandible of very elderly woman Kubozono K., Shimasue H., Shigeishi H., Tsunematsu T., Ogawa I., Takechi M., Kamata N.: The 40<sup>th</sup> Chugoku-Shikoku Sectional Meeting of Oral and Maxillofacial Surgery (Matsue), 2011.
- : A case of basal cell adenoma arising in the submandibular gland: Fujimoto S., Ono S., Takechi M., Ogawa I., Kamata N.: The 40<sup>th</sup> Chugoku-Shikoku Sectional Meeting of Oral and Maxillofacial Surgery (Matsue), 2011.
- : A case of synchronous double cancer of the posterior mandible cystadenocarcinoma and papillary thyroid carcinoma: Mizuta K., Ohta A., Shimasue H., Higashikawa K., Miyauchi M., Ogawa I., Kamata N.: The 56<sup>th</sup> Annual Meeting of Oral and Maxillofacial Surgery (Osaka), 2011.
- : A case of bilateral osseous dysplasia in the mandible: Ando T., Kanda T., Furusho H., Ogawa I., Toratani S., Miyauchi M., Takata T.: The 44<sup>th</sup> Meeting of Hiroshima University Dental Society (Hiroshima), 2011.

- : A case of acute sialadenitis in a submandibular gland induced by a penetrated fish bone Nakagawa T. Shimasue H. Kubozono K., Ono S. Ogawa I. Takechi M. Kamata N.: The 13<sup>th</sup> Annual Meeting of Japan Society of Oral and Maxillofacial Trauma (Miyazaki), 2011.

#### F) Special lectures in academic meetings

- : Symposium: Diagnosis and Treatment of Salivary Gland Tumors. Pathology of Salivary Gland Tumors; Focus on the Minor Salivary Gland Tumors-: Ogawa I., Takata T.: The 29<sup>th</sup> Annual Meeting of Japan Society for Oral Tumors (Kumamoto), 2011.
- : Symposium: The examination of serum antibody to periodontal bacteria in periodontal disease patients in the first visit-: Shintani T.: The 54<sup>th</sup> Autumn Meeting of Japanese Society of Periodontology (Shimonoseki), 2011.
- : Special Lecture: Topics of Oral Squamous Cell Carcinoma; Recent Concept of Diagnosis of Precancerous Lesions and Research on the New Factors related to Invasion and Metastasis.: Ogawa I.: Histopathological Seminar of Yamaguchi University Graduate School of Medicine (Ube), 2011.

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

- : Grants-in-Aid for Scientific Research Young Scientists (B) : Shintani T.: The role of FGF binding protein/HBp17 of cancer stem cells in oral cancer and an application for the molecular target therapy. No. 22791982. 1,200,000 yen
- : Grants-in-Aid for Scientific Research Young Scientists (B) : Kitagawa M.: Functional analysis of cementoblast maker gene, f-spodin. No. 22791767. 2,080,000 yen
- : JST Adaptable and Seamless Technology transfer Program through target-driven R & D: A-STEP (FS): Kitagawa M.: Study for the applying to the diagnosis of periodontal disease by a biomarker. No. AS232Z01987. 1,690,000 yen

#### (5) Academic Awards, etc.

#### (6) Patents

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## Central Clinical Sections, Dental Technicians Section

### (1) Staff and Students

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

### (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

2:

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



(5) Academic Awards, etc.

(6) Patents

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## Central Clinical Sections

### Dental Hygiene Section

#### (1) Staff and Students

Director of Dental Hygiene Section Hidemi Kurihara

Chief Dental Hygienist Hiroko Tamura

Supervisor Dental Hygiene Section (Till June 30) Miyuki Nakano (en-US)>>BDC BT 81 07 319.314a<39E6>] TJ ET EMC /P

Dental Hygienists Miho Yoneda, Tomoko Hatakeyama, Kayo Kojima, Kanako Matsuda (Till June 30) Kana Dainobu Naomi Hara

Megumi Takamoto, Tomoko Tokikazu Kanako Yano (Till June 30) Kana Dainobu Naomi Hara

## B) Review

## C) Publications

## D) Other Publications

## E) Presentation at Scientific Meeting

A Clinical study of maxillary sinus floor elevation using interconnected porous calcium hydroxyapatite: Ninomiya Y, Takechi M, Ohta K, Ono S, Takamoto M, Kamata N: The 65th Annual Meeting of The Japanese Stomatological Society (Tokyo),

Dental Health Care for HIV-positive Person in the Hiroshima University Hospital: Matsui K Shiba H Iwata T, Hasegawa N, Tamura H, Kurihara H: The 54th Spring Meeting of Japanese society of periodontology (Fukuoka) .

Relationship of the level of acid erosion and the tendency to take acid drink and food Hatakeyama Mineoka A Motoyama N Fujii S Yano Arakawa M Shirai K Fujii M: The 134th Meeting of Japanese society of conservative Dentistry (Chiba), 2011.6.9.

A qualitative research using with SCAT (Step for Coding and Theorization) for Dental clinical training: Taiji OBAYASHI, Hiromi NISHI, Masaru OHARA, Yoshiharu TANAKA, Tomoe SASAKI, Kayo KAJITANI, Yukiko NAGATANI, Norihiro TAGUTI, Testuji OGAWA : The 30th Meeting of Japanese dental Education Association (Tokyo),

Kiyomi Kobayashi Kayo Kajitani youko sato: (Hiroshima)

Questionnaire survey about uneasiness and satisfaction to bone augmentation surgery for oral implant : Takamoto M Takechi M Ninomiya Y, Shimasue H, Ono S, Shigeishi H, Nakagawa T, Dainobu K, Tamura H, Kamata N: 6th Japan Society for Dental Hygiene (Niigata),

A case using interconnected porous calcium hydroxyapatite and absorptive screw for the bone augmentation: Ninomiya Y, Takechi M, Ohta K, Nakagawa T, Takamoto M, Kamata N: 31st Annual Meeting of Japanese Society of Oral Implantology Stomatological Society Chugoku-Shikoku Branch (Ehime)

Clinical study of bone augmentation using interconnected porous calcium hydroxyapatite mixed with autogenous bone: Ohta K, Takechi M, Ninomiya Y, Ono S, Shigeishi H, Okui G, Takamoto M, Kamata N: The 56th Congress of the Japanese Society of Oral and Maxillofacial Surgeons (Osaka),

A case using interconnected porous calcium hydroxyapatite and absorptive screw for the alveolar ridge atrophy: Ninomiya Y, Takechi M, Takamoto M, Kamata N: The 56th Congress of the Japanese Society of Oral and Maxillofacial Surgeons (Osaka),

Basic study of bone augmentation for dental implant treatment by NEOBONE®: Minami M, Takechi M, Ohta K, Hukui A, Ohta A, Takamoto M, Kamata N: The 56th Congress of the Japanese Society of Oral and Maxillofacial Surgeons (Osaka),

Comparison of bacterial contamination in the bone extracted using the instruments for the jaw bone augmentation: Takamoto M, Takechi M, Ohta K, Ninomiya Y, Ono S, Nakagawa T, Kamata N: The 56th Congress of the Japanese Society of Oral and Maxillofacial Surgeons (Osaka), 2011.10.23

12 Stress of special needs children in dental treatment. : Nakaoka M, Mitsuhashi C, Irie Y, Kozai K: The 28th Annual Meeting of the Japanese Society for Disability and Oral Health (Fukuoka), 2011.11.4-6

An attempt of doing oral management and rethinking about medically compromised patients on dental clinical training course in Hiroshima University Hospital. : Hiromi Nishi, Yoshiharu Tanaka, Kayo Kajitani, Taiji Obayashi, Masaru Ohara, : Research Seminar in General Dental Medicine (Niigata),

Development of new bone graft material using carbonate apatite-PLGA composite: Ohta A, Takechi M, Ohta K, Ninomiya Y, Nakagawa T, Tada M, Minami M, Takamoto M, Tsuru K, Ishikawa K, Kamata N: The 33th Annual Meeting of The Japanese Society for Biomaterials (Kyoto)

Development of new bone graft material using carbonate apatite-PLGA composite: Ohta A, Takechi M, Ohta K, Ninomiya Y, Minami M, Takamoto M, Tsuru K, Ishikawa K, Kamata N: The 59th Congress of the Japanese Society of Oral and Maxillofacial Surgeons. Chugoku-Shikoku Branch (Ehime),

A Clinical study of maxillary sinus floor elevation using interconnected porous calcium hydroxyapatite: Ninomiya Y, Takechi M, Ohta K, Ono S, Takamoto M, Kamata N: The 15th Annual Meeting of the Japanese Academy of Maxillofacial Implants (Urayasu),

Two cases using interconnected porous calcium hydroxyapatite, NEOBONE® and absorptive screw for the alveolar ridge atrophy: Nakagawa T, Takechi M, Ninomiya Y, Takamoto M, Kamata N: The 15th Annual Meeting of the Japanese Academy of Maxillofacial Implants (Urayasu), 2011.12.04

A qualitative research using questionnaire for Dental clinical training: Taiji OBAYASHI, Hiromi NISHI, Masaru OHARA, Yoshiharu TANAKA, Tomoe SASAKI, Kayo KAJITANI, Yukiko NAGATANI, Norihiro TAGUTI, Tetsuji OGAWA (Hiroshima), 2011.12

#### F) Special lectures in academic meetings

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

1 Scientific research funds subsidy (encouragement study) Yoriko Iwasaki, Basic study on gene

expression about the gas production of periodontal disease bacteria and relations of the bad breath.  
encouragement study. . yen

(5) Academic Awards, etc.

(6) Patent

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## Dental Clinic

### (1) Staff and Students

Director Takamune Hino

Research Associate Masaru Ohara

### (2) Main Research Activities

Pathogenesis of the periodontal diseases

A study on the drug-resistant bacteria from nosocomial infection

### (3) Research Achievements

#### A) Original Papers (including Case Reports)

1. Kouda S, Fujiue Y, Watanabe Y, Ohara M, et al. Sporadic isolations of a multi-drug resistant *Pseudomonas aeruginosa* clone during a 14-month epidemic in a general hospital in Hiroshima. *Infection*, 39:247–253, 2011
2. Ohara M, Miyauchi M, Tsuruda K, Takata T, Sugai M. Topical application of *Aggregatibacter actinomycetemcomitans* CDT induces cell cycle arrest in the rat gingival epithelium in vivo. *J Periodont Res*, 46: 389-395, 2011
3. Susceptibility test and systemic administration of antibiotics for the treatment of alveolar abscess infected by *Pseudomonas aeruginosa*: A case report: Uchida Y, Kitamoto Y, Hino T, Shiba H, Kawaguchi H, Kurihara H; Journal of Japan Endodontic Association, 32(1): 38-46, 2011

#### B) Review

#### C) Publications

#### D) Other Publications

1. [Toothbrushing Great Strategy!] Ya! Admirable, (The information town pages which Hiroshima University students make.) Takamune Hino THE WEEKLY PRESSNET

Higashihiroshima , March 2011

2. Special feature [How should have about the tooth?] Good Tooth Week Takamune Hino Cue  
(Chugoku Newspaper, Higashihiroshima), November 2011

#### E) Presentation at Scientific Meeting

1. The green tea polyphenol (-)-epigallocatechin gallate precipitates salivary proteins.  
-Biochemical study- : Masaru Ohara, Yoshihiko Ohyama, Ikue Hayashi, Hiromi Nishi,  
Yoshiharu Tanaka, Takamune Hino, Tetsuji Ogawa Research Seminar in General Dental  
Medicine 2010. Niigata, 2011.

#### F) Seminar, Workshop, etc.

1. Class about HIV infection for the dental practice staff Takamune Hino Hiroshima prefecture  
dental association lecture Hiroshima , November 2011

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

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

#### (5) Academic Awards, etc.

#### (6) Patents

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## Dental Medical Information Section

### (1) Staff and Students

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

### (2) Main Research Activities

Research on development and management of hospital information system.

Research on Medical Informatics.

### (3) Research Achievements

#### A) Original Papers (including Case Reports)

IKEUCHI: Proceedings of “anagement  
Departments in University Hospitals 2011 (Kagawa)” pp. 153-156, 2011.

Japan Journal of Medical Informatics **31** Suppl. pp.  
596-599, 2011.

: Hidehiko TSUKUMA, Takeshi TANAKA, et  
al., Japan Journal of Medical Informatics **31** Suppl.

#### B) Review

#### C) Publications

application of Medical Fee: Takeshi TANAKA: “Medical and  
” ICHIGAYA Publishing Co., Ltd.



D) Other Publications

E) Presentation at Scientific Meeting

Basic requirements to manage user access control list for sharing electronic health record with medical facilities

The 31<sup>th</sup> Joint Conference of Medical Informatics  
(Kagoshima) 2011.

: Hidehiko TSUKUMA, Takeshi TANAKA, et  
al., The 31<sup>th</sup> Joint Conference of Medical Informatics (Kagoshima) 2011.

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

(5) Academic Awards, etc.

(6) Patents

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