

Content

**Hiroshima University faculty of Dentistry, Hiroshima university
Hospital, Graduate school of Biomedical Science**

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Program for Biomedical Research Division of Molecular Science (Department of Biomaterials Science)

(1) Staffs and Students

Professor : Masayuki Okazaki

Associate Professor: Kunio Wakasa

Research Associate: Yuji Nomura, Isao Hirata

Graduate Student : Koji Nagakane, Erinure Tieluhan, Takeo Suzuki, Ryo Nishikiori, Kohei Masuki

(2) Main Research Activities

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

(3) Research Achievements

A) Original Papers (including Case Reports)

- 1: SEM Observation of Collagen Fibrils Secreted from the Body Surface of Osteoblasts on a CO₃apatite-collagen Sponge. : Hirata I, Nomura Y, Tabata H, Miake Y, Yanagisawa T, Okazaki M : Dent Mater J 24, 460-464, 2005.
- 2: Advantages of TOF-SIMS Analysis of Hydroxyapatite and Fluorapatite in Comparison with XRD, HR-TEM and FT-IR. : Okazaki M, Hirata I, Matsumoto T and Takahashi J : Dent Mater J 24, 508-514, 2005.
- 3: Association of Expression of Receptor for Advanced Glycation End Products and Invasive Activity of Oral Squamous Cell Carcinoma : Bhawal UK, Ozaki Y, Nishimura M, Sugiyama M, Sasahira T, Nomura Y, Sato F, Fujimoto K, Sasaki N, Ikeda MA, Tsuji K, Kuniyasu H, Kato Y. : Oncology 69(3),246-255, 2005
- 4: Temporary Restorative Resins using Non-Phthalate Ester Plasticizers : N. Tanaka, Y. Nomura, W. Teshima, S. Shibata, K. Shirai, M. Fujitani, : J Dent 33, 577-583,2005.

- 5: Adynamic model analysis of dentine adhesive interface. : Ikeda A : J Hiroshima Univ Dent Soc37(1), 42-51, 2005 (in Japanese).
- 6: Development of adhesion theory in new generation – Definition of fracture strength and failure mode during conventional and newly-defined micro tests. : Wakasa K : J Hiroshima Univ Dent Soc 37(1),52-60, 2005 (in Japanese).
- 7: Development of adhesion theory in new generation – Definition of adhesion interface. : Wakasa K: J Hiroshima Univ Dent Soc 37(2),121-128, 2005 (in Japanese).

B) Review

- 1: Expectations for biomaterials research in the future. : Okazaki M : J Jan Soc Biomaterials, 23(1), 5-6, 2005 (in Japanese).
- 2: Presence and future of LED. : Teshima W, Nomura Y, Nahara Y, Okazaki M : DE 154: 30-32, 2005 (in Japanese).
- 3: Artificial organs – Recent development. Artificial materials (Inorganics). : Okazaki M : J Artificial Organs 34(3), 180-183, 2005 (in Japanese).
- 4: Development of titanium biosensor for surface plasmon resonance analysis system. : Hirata I : DE 152, 33-34, 2005 (in Japanese).

C) Publications

- 1: Okazaki M : 3. Biological safety. Standard Materials and Devices – Biomaterials and dental materials (Nishiyama M et al., Eds). Gakken Shoin (Tokyo), pp. 49-58, 2005 (in Japanese).
- 2: Okazaki M : Bioceramics learned from living systems. Amenity Medical Materials for Human Being (Nakajima H). Kubapuro (Tokyo), pp. 79-87, 2005 (in Japanese).
- 3: Hirata I : A Glossary for Dental Materials and Devices (The Japanese Society for Dental Materials and Devices Ed.) Ishiyaku (Tokyo), 2005 (in Japanese).

D) Other Publications

- 1: Sawajiri M, Nomura Y, Takinami S, Tanimoto K: Effect of bone metabolism by heavy ion particles irradiation: 2005 Joint Use Research Report for Heavy Ion Medical Accelerator of Total Cancer Treatment, 98-99, 2005 (in Japanese).

E) Presentation at Scientific Meeting

- 1: Acceleration of cell behavior and growth factor adsorption onto titanium implant surface by polyphosphoric acid treatment : Maekawa K, Yoshida Y, Hirata I, Okazaki M, Suzuki K, Kuboki T : The 45th General Session of the Japanese Society for Dental Materials and Devices (Tokyo,

- Japan), April 16, 2005 (in Japanese).
- 2: Study on apatite-collagen composite Part 1 – Effects of collagen irradiated by heavy ion particles on bone formation factors : Nishikiori R, Nomura Y, Sawajiri M, Teshima W, Hirata I, Wakasa K, Okazaki M: The 45th General Session of the Japanese Society for Dental Materials and Devices (Tokyo, Japan), April 16, 2005 (in Japanese).
 - 3: Effect of irradiation using violet LEDs on polymerization behavior of dental resins supplemented with various photoinitiators. (Part 3) – Leachability of components from polymerized resins – : Teshima W, Nomura Y, Nishikiori R, Shirai K, Tanaka N, Okazaki M, Nahara Y: The 45th General Session of the Japanese Society for Dental Materials and Devices (Tokyo, Japan), April 17, 2005 (in Japanese).
 - 4: New adhesion theory – Dynamics of hybrid layer –: Wakasa K, Ikeda A, Nomura Y, Hirata I, Okazaki M, Sano H : The 45th General Session of the Japanese Society for Dental Materials and Devices (Tokyo, Japan), April 17, 2005 (in Japanese).
 - 5: Nanoanalysis of adhesion strength in new generation biomaterials : Wakasa K : 12th International Conference of Composites/Nano Engineering (Canary Island, Spain), August, 2005.
 - 6: Innovation in Dental Technology for the 21st Century: Progress and Development of Materials and Technical Skill in Dental Medicine – Practical Application of New Materials and Techniques for Dentistry – Cooperation of biomaterials and tissue engineering – : Okazaki M: 2005 Academic Conference of The Japanese Association for Dental Science (Ueda) (Kenote lecture), September 11, 2005 (in Japanese).
 - 7: Effect of cell adhesion and proliferation on self assembled monolayers by outmost surface composition change : Fuse Y, Hirata I, Nomura Y, Okazaki M: The 46th General Session of the Japanese Society for Dental Materials and Devices (Nagasaki, Japan), September 15, 2005 (in Japanese).
 - 8: New adhesion theory – Dynamics of hybrid interface – : Wakasa K, Uno S, Nomura Y, Hirata I, Okazaki M : The 46th General Session of the Japanese Society for Dental Materials and Devices (Nagasaki, Japan), September 15, 2005 (in Japanese).
 - 9: Real-time analysis between titanium and bio-interactive molecules using surface plasmon resonance : Hirata I, Nomura Y, Wakasa K, Okazaki M, Yoshida Y, Suzuki K, Maekawa K, Kuboki T : The 46th General Session of the Japanese Society for Dental Materials and Devices (Nagasaki, Japan), September 15, 2005 (in Japanese).
 - 10: Property of composite resin using reducing agent immobilized fillers : Masuki K, Nomura Y, Shibata S, Hirata I, Nahara Y, Okazaki M : The 46th General Session of the Japanese Society for Dental Materials and Devices (Nagasaki, Japan), September 16, 2005 (in Japanese).
 - 11: Crystallographic properties of Apatites with different CO₃ contents : Hayashi H, Yokota R, Hirata I, Nomura Y, Wakasa K, Okazaki M : The 46th General Session of the Japanese Society for Dental Materials and Devices (Nagasaki, Japan), September 16, 2005 (in Japanese).
 - 12: Effect of Fluoride on the Proliferation of Osteoblasts : Okazaki M, Hirata I : XXVith ISFR (Wiesbaden, Germany), September 28, 2005.
 - 13: Effect of CO₃apatite Contents on the Porosity of CO₃Ap-collagen Sponges : Hirata I, Tieliewuhan Y, Itoh M, Okazaki M : ABC2005 (Sapporo, Japan), October 1, 2005.
 - 14: Innovation in Dental Technology for the 21st Century : Progress and Development of Materials and

Technical Skill in Dental Medicine - Practical Application of New Materials and Techniques for Dentistry – Cooperation of biomaterials and tissue engineering - : Okazaki M : 2005 Academic Conference of The Japanese Association for Dental Science (Nagasaki) (Kenote lecture), November 19, 2005 (in Japanese).

- 15: Effect of bone metabolism by heavy ion particles irradiation : Sawajiri M, Nomura Y, Takinami S, Tanimoto K : The 48th Annual Conference of The Japan Radiation Research Society (Hiroshima, Japan), November 16, 2005 (in Japanese).
- 16: Concept of Biomaterials : Okazaki M : The 53th Annual Meeting of Japanese Association for Dental Research (Okayama, Japan), November 26, 2005.
- 17: Osteoblast Behavior at the Surface of CO₃Ap-collagen Sponges : Okazaki M, Tieliewuhan Y, Hirata I : Bioceramics 18 (Kyoto, Japan), December 7, 2005.

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

- 1: Research Project, Grant-in-Aid for Scientific Research (B) (Continued): Okazaki M : Creation of high-quality CO₃Ap-collagen composites for reconstruction and regeneration of alveolar bone. (No.14370634), 1,400,000 yen.
- 2: Research Project, Grant-in-Aid for Exploratory Research (Continued) : Okazaki M : Crystallographic approach and application of tooth enamel formation mechanism. (No.15659465), 900,000 yen.
- 3: Research Project, Grant-in-Aid for Young Scientists (B) (Continued) : Hirata I : Real-time analysis for interaction between titanium surface and tissue adhesion factors in nano-order. (No. 16791191), 1,300,000 yen.
- 4: The Sumitomo Foundation, Grant for Basic Science Research Projects : Hirata I : Preparation of surface characteristics controlled plates for evaluating nano-order biocompatibilities. (No.040573), 1,300,000 yen.
- 5: Donation (Towa Kagaku Co. Ltd.) : Nomura Y : 1,000,000 yen.

(5) Academic Awards, etc.

- 1: Tieliewuhan Y, Hirata I, Sasaki A, Minagi H, Okazaki M : Osteoblast proliferation behavior and bone Formation on and in CO₃apatite-collagen sponges reinforced with a porous hydroxyapatite frame. : The Japanese Society for Dental Materials and Devices, April 16, 2005.

(6) Patents

Program for Biomedical Research Division of Molecular Science (Department of Dental and Medical Biochemistry)

(1) Staffs and Students

Professor	: Yukio Kato
Associate Professor	: Mitsuhide Noshiro
Assistant Professor	: Takeshi Kawamoto
Research Associate	: Katsumi Fujimoto
Graduate Student	: Kiyomasa K. Honda , Taichi Ueshima
Secretary	: Misano Kuramoto
Research Assistant	: Emi Saka

(2) Main Research Activities

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

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

(3) Research Achievements

A) Original Papers (including Case Reports)

- 1 : Alveolar bone marrow as a cell source for regenerative medicine: differences between alveolar and iliac bone marrow stromal cells. : Matsubara T, Suardita K, Ishii M, Igarashi A, Oda R, Nishimura M, Saito M, Nakagawa K, Yamanaka K, Miyazaki K, Shimizu M, Tsuji K, Nakamura K, Kato Y: Journal of Bone and Mineral Research 20(3), 399-409, 2005.
- 2 : Molecular Markers Distinguish Bone Marrow Mesenchymal Stem Cells from Fibroblasts. : Ishii M, Koike C, Igarashia A, Yamanaka K, Pan H, Higashi Y, Kawaguchi H, Sugiyama M, Kamata N, Iwata T, Matsubara T, Nakamura K, Kurihara H, Tsuji K, and Kato Y: Biochemical and Biophysical Research Communication. 332(1), 297-303, 2005.
- 3 : Tissue-specific disruption of rhythmic expression of DEC1 and DEC2 in Clock mutant mice. : Noshiro M, Furukawa M, Honma S, Kawamoto T, Hamada T, Honma K, Kato Y: Journal of Biological Rhythms. 20(5), 404-

418,2005.

- 4 : Clock gene expression in the submandibular glands. Journal of Dental Research : Furukawa M , Kawamoto T , Noshiro M, Honda K, Sakai M, Fujimoto K, Honma S, Honma K, Hamada T, Kato Y: 84(12), 1193-1197, 2005.
- 5 : Mechanical regulation of terminal chondrocyte differentiation via RGD-CAP/ α 1(I)-h3 induced by TGF- β 1 Ohno S, Tanaka N, Ueki M, Honda K, Tanimoto K, Yoneno K, Ohno-Nakahara M, Fujimoto K, Kato Y, Tanne K : Connective Tissue Research 46, 227-234 ,2005.
- 6 : Collocational Analysis of Life Science English (2) Lists of common collocates of carry, confer, contribute, detect, elucidate, give, know, obtain, raise, understand : Kawamoto T, Fujita N, Kaneko S, Morren B & Ohtake H : Studia Humana et Naturalia. 39, 55-88, 2005.

B) Review

C) Publications

D) Other Publications

E) Presentation at Scientific Meeting

F) Special lectures in academic meetings

- 1 : Hyaluronan increases elasticity of cartilage matrix molecular weight-dependently and induces poorly permeable matrix around chondrocytes. : Y Kato : 4th International Symposium on mechanobiology on cartilage and chondrocyte 20-22 May 2005 - Sofitel Atrium - Budapest-Hungary
- 2 : Characterization of bone marrow mesenchymal stem cells using DNA microarrays : Application to regenerative medicine : Y. Kato: The 4th Scientific Meeting in Dentistry 12 August 2005 Surabaya, Indonesia

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

(5) Academic Awards, etc.

(6) Patents

Program for Biomedical Research Division of Molecular Science (Department of Oral Biology)

(1) Staffs and Students

Professor :Takashi Uchida
Associate Professor :Takahiro Satoda
Research Associate :Shinji Hiyama, Emiko Yamanishi
Graduate Student :Sarker Shishir Kumar

(2) Main Research Activities

- 1 : Morphological and molecular biological studies of the amelogenesis
- 2 : Morphological research on neural circuits of masticatory system
- 3 : Molecular biological and morphological studies of the mechanism of bone metabolism
- 4 : Molecular biology of the stem cell in the dental pulp
- 5 : Development of embryological and functional models for anatomical education

(3) Research Achievements

A) Original Papers (including Case Reports)

- 1 : Cellular and molecular phenotypes osteogenic cells isolated from the medullary bone of the hen in vitro. : Hiyama S, Sugiyama T, Kusuhara S, Uchida T, *Comp Biochem Physiol, Part B : Biochem Mol Biol* 142(2),419-425, 2005.
- 2 : In vitro differentiation of dental epithelial progenitor cells through epithelial-mesenchymal interactions. : Morotomi T, Kawano S, Toyono T, Kitamura C, Terashita M, Uchida T, Toyoshima K, Harada H : *Arch Oral Biol* 50(8),695-705, 2005.
- 3 : Induction of mononuclear cell infiltration into liver by Japanese herbal medicine. : Matsuda T, Uzuki M, Uchida T, Nakamura M, Tai M, Shiraishi N, Sasaki N, Yakushiji F, Tomiyama J, Suzuki S, Fujiki K, Taniguchi K : *Drugs Exp Clin Res* 31(5-6),207-214, 2005.
- 4 : Ultrastructural images of enamel tufts in human permanent teeth. : Amizuka N, Uchida T, Nozawa-Inoue K, Kawano Y, Suzuki A, Li M, Nasu M, Kojima T, Sakagami N, Ozawa H, Maeda T : *J Oral Biosci* 47(1),33-41, 2005.
- 5 : Control of oro-facio-lingual movements by the substantia nigra pars reticulata: high-frequency electrical microstimulation and GABA microinjection findings in rats. : Inchul P, Amano N, Satoda T, Murata T, Kawagishi S, Yoshino K, Tanaka K. : *Neuroscience* 134(2),677-89:2005.

B) Review

C) Publications

D) Other Publications

E) Presentation at Scientific Meeting

- 1 : Expression of ameloblastin in the ameloblast of the rat incisor : Uchida T, Yamanishi E, Hiyama S, Hayashida K, Sarker S K, Satoda T : The 110th Annual Meeting of Japanese Association of Anatomists (Toyama), 2005..
- 2 : A model for functional instruction of ear ossicles : Satoda T, Hiyama S, Yamanishi E, Uchida T : The 110th Annual Meeting of Japanese Association of Anatomists (Toyama), 2005.
- 3 : Expression of ameloblastin in the growing end of the rat incisor. : Uchida T, Yamanishi E, Hiyama S, Sarker S K, Satoda T : The 47th Annual Meeting of Japanese Association for Oral Biology (Sendai), 2005.
- 4 : Tooth abnormalities in the mutant rat associated with amelogenesis imperfecta : Osawa M, Suzuki H, Kenmotsu S, Saito C, Uchida T, Ohshima H : The 47th Annual Meeting of Japanese Association for Oral Biology (Sendai), 2005.
- 5 : Stage dependent expression of ameloblastin isoforms during amelogenesis : Ravindranathi R M H, Devarajani A, Uchida T : 83rd General Session and Exhibition of the IADR (Baltimore, USA) 2005.

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

- 1 : Grant-in-aid for Scientific Research from the Japanese Society for the Promotion of Science (C) Molecular diversity and interaction of enamel proteins in the tooth development. (No.16591826). ¥1,700,000
- 2 : Grant-in-Aid for Young Scientists (B) from the Japanese Society for the Promotion of Science : Molecular biological studies of the role of sex hormone and its target factors in bone metabolism. (No.16791107). ¥1,400,000

(5) Academic Awards, etc.

(6) Patents

Program for Biomedical Research Division of Molecular Science Laboratory of Bacteriology

(1) Staffs and Students

Professor : Motoyuki Sugai
Associate Professor : Hitoshi Komatsuzawa
Research Associate : Masaru Ohara, Tamaki Fujiwara
Postdoctoral Fellow : Kazuhisa Ouhara, Fuminori Katou
Research Assistant : Hiromi Nishi (- Mar 31), Aiko Takeda (- Mar 31) Yuko Tomita,
Takako Yokogi April 18 -), Naomi Kida (April 18 -), Naomi Saiki
(April 18 -)
Graduate Student : Masae Ikura D4, Junko Sawada D4, Shima Morioka M2
Research Fellow : Panida Thanasrisung

(2) Main Research Activities

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

(3) Research Achievements

A) Original Papers (including Case Reports)

- 1 :Mutation analysis of the Histidine residues in the glycylglycine endopeptidase ALE-1. : Tamaki F, Shin A, Hitoshi K, Tetsuya N, Masaru O, Hidekazu S, and Motoyuki S. : Journal of Bacteriology 187, 480-487, 2005
- 2 :Susceptibilities of periodontopathogenic and cariogenic bacteria to antibacterial peptides, β -defensins and LL37, produced by human epithelial cells. : Kazuhisa O, Hitoshi K, Sakuo Y, Hideki S, Tamaki F, Masaru O, Koji S, Koji H, Hidemi K and Motoyuki S : Journal of Antimicrobial Chemotherapy 55, 888-896, 2005
- 3 :Staphylococcus hyicus exfoliative toxins selectively digest porcine desmoglein 1 : Yasuyuki F, Koji N, Lars O A, Takayuki Y, Hitoshi K, Masayuki A, Motoyuki S : Microbial Pathogenesis 39, 171-176, 2005
- 4 :Identification and molecular characterization of an N-acetylmuramyl-L-alanine amidase

- Sle1 involved in cell separation of *Staphylococcus aureus* : Junko K, Tamaki F, Sakuo Y, Yoshika S, Tetsuya N, Yoshihiro O, Ikue H, Jun-ichi Y, Hitoshi K, Motoyuki S : *Molecular Microbiology* 58 (8), 1087-1101, 2005
- 5 :The clinical manifestations of staphylococcal scalded skin syndrome depends on the serotypes of exfoliative toxins : Osamu Y, Takayuki Y, Motoyuki S, Chapuis-Fran o A, Fran o V, Jerome E, Gerard L : *Journal of Clinical Microbiology* 43, 1890-1893, 2005
- 6 :New mechanisms of skin innate immunity : ASK-1-mediated keratinocyte differentiation regulates the expression of β -defensins, LL37, and TLR2. : Koji S, Hitoshi K, Kenshi Y, Yuji S, Yasushi H, Kazuhisa O, Sho T, Xiuju D, Mikiko T, Peter ten D, Motoyuki S, Hidenori I, and Koji H : *European Journal of Immunology* 35, 1886-1895, 2005
- 7 :Isoglandine maleate influences the response of gap junctional intercellular communication and IL-8 of human gingival epithelial cells following periodontopathogenic bacterial challenge : Uchida Y, Shiba H, Komatsuzawa H, Hirono C, Ashikaga A, Fujita T, Kawaguchi H, Sugai M, Shiba Y, Kurihara H : *Biochem Biophys Res Commun* 333, 502-507, 2005
- 8 :Induction of keratinocyte migration via transactivation of the EGF receptor by the antimicrobial peptide LL-37 : Sho T, Koji S, Yuji S, Hitoshi K, Kazuhisa O, Yasushi H, Yoko Y, Xiuju D, Mikiko T, Hiroshi N, Lujun Y, Shigeki H, Akihiko Y, Motoyuki S, Koji H : *Journal of Immunology* 175,175(7):4662-8
- 9 :Cloning of swine desmoglein 1 and its direct proteolysis by *Staphylococcus hyicus* exfoliative toxins isolated from pigs with exudative epidermitis : Koji N, Yasuyuki F, Takayuki Y, Toshihiro I, Motoyuki S and Masayuki A : *Veterinary Dermatology* 16, 315-323, 2005

B) Review

- 1 :Bacterial toxins that control cell cycle progression : Eric O, Jean-Philippe N, Frederic T, Motoyuki S : *Current Opinion in Microbiology* 8, 1-9, 2005
- 2 :Cytotoxic Distending toxin and its implication in periodontal diseases : Masaru O, Motoyuki S : *Journal of Oral Biosciences* 47, 18-24, 2005

C) Publications

- 1: *Oral Microbiology and Immunology 2nd ed.*: Shigeyuki H ed. : Motoyuki Sugai: Ishiyaku Shuppan (Tokyo) Chapt 1 Basic Microbiology Section 4 Genetics of Bacteria p. 32-39
Chapt 4 Prevention and Treatment of Infectious Diseases p.192-204, 2005.
- 2: *Infectious Diseases of Microbes – A Novel Science in Infectious Diseases -* : Masao M ed.: Motoyuki Sugai: Nanzando (Tokyo), *Staphylococcus aureus*, p. 124-133, 2005.
- 3: *Why Bacteria Cause Infection? Characterization of Bacterial Genome* : Hideo H ed.:

Motoyuki Sugai: Kuba-Pro (Tokyo) Genomes of Bacteria Causing Suppurative Infection – Staphylococcus, Indwelling Bacteria in Skin and Mucosa p. 110-122, 2005.

D) Other Publications

- 1: Bullous Impetigo and Staphylococcal Scalded Skin Syndrome (SSSS) : Motoyuki S, Takayuki Y : Saishin-Igaku vol 60, No. 2. 48-53, 2005.
- 2: Bullous Impetigo and Staphylococcus aureus : Motoyuki S, Takayuki Y : Chemotherapy vol.21 No.3, 83-90, 2005
- 3: Clinical Application of lytic enzyme selectively targets cariogenic bacteria : Motoyuki S : Hiroshima City Dentist Association
- 4: MRSA, VISA, VRSA : Motoyuki S, Hitoshi K : Chemotherapy vol. 21(9), 1275-1281, 2005
- 5: A Diagnosis Kit for Bullous Impetigo : Motoyuki S : Nikkei Business vol. 10 suppl p. 7, 2005.

E) Presentation at Scientific Meeting

- 1: Genome analysis of Staphylococcus hyicus, causative agent of swine exudative epidermitis : Takayuki Y, Yasuyuki F, Atsushi Y, Hideki H, Hidehiro T, Lars O A, Satoru K, Masahira H, Tetsuya H, Motoyuki S : 7th Workshop Frontier in Microbial Genome Research (Chiba), 2005.
- 2: Antibacterial activity of mouth wash : Shima Morioka, Hitoshi K, Motoyuki S : 20th Meeting in Hiroshima Dental Hygienist Society (Hiroshima), 2005.
- 3: Complete genome sequence of Staphylococcus hyicus, a pathogen causing exudative epidermitis in animals. : Motoyuki S, Takayuki Y, Yasuyuki F, In Recent advance in bacterial genomics; new insights into the host-parasite interaction : 78th Annual meeting of Japan Society for Bacteriology (Tokyo), 2005.
- 4: Clinically isolated exfoliative toxin-producing Staphylococcus aureus, Toxin productivity and agr typing : Noriko K, Hitoshi K, Tamaki F, Takayuki Y, Katsuyuki K, Motoyuki S : 78th Annual meeting of Japan Society for Bacteriology (Tokyo), 2005.
- 5: Bacteriolytic enzyme Aml selectively lyses S. mutans and S. sobrinus : Yuko T, Hitoshi K, Tamaki F, Gou Y, Katsuyuki K, Motoyuki S : 78th Annual meeting of Japan Society for Bacteriology (Tokyo), 2005.
- 6: Substrate specificity of targeting domain of S. aureus-selective lytic enzyme ALE-1 : Tamaki F, Hitoshi K, Motoyuki S : 78th Annual meeting of Japan Society for Bacteriology (Tokyo), 2005.
- 7: Analysis on synthesis of Glc-6-P in S. aureus : Hitoshi K, Tamaki F, Hiromi N, Sakuo Y, Motoyuki S : 78th Annual meeting of Japan Society for Bacteriology (Tokyo), 2005.
- 8: Omp100 of Actinobacillus actinomycetemcomitans induces antimicrobial peptides :

- Kazuhisa O, Hitoshi K, Hidemi K, Motoyuki S : 78th Annual meeting of Japan Society for Bacteriology (Tokyo), 2005.
- 9: The complete genome sequence of *Staphylococcus hyicus* JCM2423. a pathogen causing exudative epidermitis in pig : Motoyuki S, Takayuki Y, Atsushi Y; Hideki H, Yasuyuki F, Hidehiro T, Lars O A, Satoru K, Masahira H, Tetsuya H : Human Genome Meeting (Kyoto), 2005.
 - 10: Clinically isolated exfoliative toxin-producing *Staphylococcus aureus*, Toxin productivity and agr typing : Noriko K, Hitoshi K, Tamaki F, Katsuyuki K, Motoyuki S : Encouragement award session in 38th Shigakukai (Hiroshima), 2005.
 - 11: Species selective lytic activity of bacteriolytic enzyme Aml produced by *S. mutans* : Gou Y; Katsuyuki K, (Hitoshi K, Tamaki F, Ikue H, Sakuo Y, Motoyuki S) : 43th Annual meeting of Japan Pediatric Dentistry Society (Niigata), 2005.
 - 12: *Staphylococcus aureus* fibronectin-binding protein is a major inducer of the expression of the antimicrobial peptides in human keratinocyte. : Kazuhisa O, Hitoshi K and Motoyuki S : 5th Awaji Forum Infection and Immunity, Awaji Yumebutai, Hyogo (Hyogo), 2005.
 - 13: *Staphylococcus aureus* fibronectin binding protein is an inducer of antimicrobial peptides of human epidermal keratinocytes : Kazuhisa O, Hitoshi K, Motoyuki S : 50th Meeting in Japan Society for Staphylococcal Infection (Okayama), 2005.
 - 14: *Staphylococcus aureus* fibronectin binding protein is an inducer of antimicrobial peptides of human epidermal keratinocytes : Kazuhisa O, Hitoshi K, Motoyuki S : 58th Annual meeting of Chugoku-Shikoku branch Japan Society for Bacteriology (Kochi), 2005.
 - 15: Effect of Cdt on rat periodontal tissue : Masaru O, Mutsumi M, Takashi T, Motoyuki S : 58th Annual meeting of Chugoku-Shikoku branch Japan Society for Bacteriology (Kochi), 2005.
 - 16: Susceptibility to carbapenem and quinolone of *Pseudomonas aeruginosa* isolated in urology ward in Hiroshima University Hospital : Shuntaro K, Masaru O, Hideyuki I, Masanobu S, Tsuguru U, Motoyuki S : 18th Hiroshima Infection Forum (Hiroshima), 2005.
 - 17: Drug resistance of hospital-acquired *Pseudomonas aeruginosa* in Hiroshima district; Establishment of basic genome informatics for pleiotropic infection caused by *Staphylococcus aureus* : Motoyuki S : 18th Hiroshima Infection Forum (Hiroshima), 2005.
 - 18: Crystal structure of Exfoliative toxins from *S. hyicus* : Kenji Y, Yasuyuki F, Takayuki Y, Motoyuki S, Katsuo K : Japan Society for Pharmacology (Tokyo), 2005.
 - 19: Mechanism of autophagy of *S. aureus* ingested into non-phagocytotic cells : Atsurou S, Ichiro N, Junko F, Takayuki Y, Motoyuki S, Shigeyuki H : 78th Annual meeting of Japan Society for Bacteriology (Tokyo), 2005.

F) Special lectures in academic meetings

- 1: Should we use antibiotics to treat bullous impetigo – agenda from a bacteriologist:

- Motoyuki S : Meeting in Tama Dermatologist Society (Tokyo), 2005.
- 2: Complete genome sequence of *Staphylococcus hyicus*, a pathogen causing exudative epidermitis in animals. : Motoyuki S, Takayuki Y, Yasuyuki F : In Recent advance in bacterial genomics; new insights into the host-parasite interaction : 78th Annual meeting of Japan Society for Bacteriology (Tokyo), 2005.
 - 3: Staphylococcal blistering skin diseases – emergence of C-MRSA in the community : Motoyuki S : International Symposium Molecular Bases Underlying Microbial Infections and the Host Responses, Hitotsubashi Memorial Hall (Tokyo) 2005
 - 4: Primary defense system of host against bacterial infection : Symposium on research of host-parasite interface –from basic to applied research- : Hitoshi K : 47th Shika Kiso Igakukai (Sendai), 2005.
 - 5: Pathogenicity of *Actinobacillus actinomycetemcomitans* outer membrane protein : Hitoshi K : Invited lecture at School of Dentistry at Aichi Gakuin (Nagoya), 2005.
 - 6: *Actinobacillus actinomycetemcomitans* cytolethal distending toxin : Motoyuki S : 53th JADR symposium, Pathogenic factors (Okayama) 2005.
 - 7: Seminar in Sankaken: Motoyuki S (Hiroshima) 2005.
 - 8: Application of lytic enzyme specific to cariogenic bacteria : Motoyuki S : New Technology Forum (JST) (Tokyo) 2005.
 - 9: Peptides in human gingival keratinocytes : Hitoshi K : Seminar at Kawai Lab. in Forsyth Institute: (Boston) 2005.
 - 10: Establishment of genome informatics on bacteria causing nosocomial infection : Motoyuki S, Naomasa G : Meeting in priority research area applied genomics (Toyama) 2005.
 - 11: Sankaken Seminar: Hitoshi K (Hiroshima) 2005.
 - 12: Antimicrobial peptides in human gingival keratinocytes : Hitoshi K : Seminar at Shimizu lab. in School of Medicine, Kanazawa University (Kanazawa)
 - 13: Trial to develop a new method to prevent cariogenesis : Motoyuki S : Hiroshima University Seminar 2005 (Tottori) 2005.

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

- 1: Grant-in-Aid for Scientific Research C from the Ministry of Education, Science, Sports and Culture of Japan : Motoyuki S : Integrated research of virulence factors of periodontopathogenic bacteria.
- 2: Grant-in-Aid for Scientific Research C from the Ministry of Education, Science, Sports and Culture of Japan : Hitoshi K : Effect of sugar metabolism system on drug susceptibility of *S. aureus*
- 3: Grant-in-Aid for Scientific Research for Young Investigator B from the Ministry of Education, Science, Sports and Culture of Japan : Fujiwara : Research on autolytic enzyme Aml produced by oral streptococci.

- 4: Grant-in-Aid for Scientific Research in Priority Area (2) C from the Ministry of Education, Science, Sports and Culture of Japan : Mode of action of exfoliative toxin superfamily.
- 5: Grant-in-Aid for Scientific Research in Priority Area from the Ministry of Education, Science, Sports and Culture of Japan : Motoyuki S : Establishment of genome informatics on bacteria causing nosocomial infection
- 6: Knowledge Cluster : Motoyuki S: Application of lytic enzyme selectively lyse cariogenic bacteria

(5) Academic Awards, etc.

(6) Patents

- 1: Motoyuki S, Hitoshi K : Means of bactericide selective to cariogenic bacteria and methods to kill cariogenic bacteria (pat. Appl. No. 2005-216099)
- 2: Motoyuki S, Takayuki Y, Masaru O et al. : T-cell stimulating polypeptide, nucleotide sequence of the polypeptide, crystal of the polypeptide and its application (pat. Appl. No. 2005-227294)

Program for Biomedical Research Division of Integrated Medical Science (Department of Oral Physiology)

(1) Staffs and Students

Professor : Shiba Yoshiki

Associate Professor : Hirono Chikara

Research Associate : Sugita Makoto, Iwasa Yoshiko

Graduate Student : Ohishi Hiroe, Shintani Takahide Kongo Hiroyasu, Fujita Kazuya,
Hara Kumiko, Maruyama Takane

(2) Main Research Activities

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

(3) Research Achievements

A) Original Papers (including Case Reports)

- 1: Genetic tracing shows segregation of taste neuronal circuitries for bitter and sweet : Sugita M and Shiba Y : Science. 309,781-785, 2005.
- 2: Irsogladine maleate influences the response of gap junctional intercellular communication and IL-8 of human gingival epithelial cells following periodontopathogenic bacterial challenge : Uchida Y, Shiba H, Komatsuzawa H, Hirono C, Ashikaga A, Fujita T, Kawaguchi H, Sugai M, Shiba Y and Kurihara H : Biochem Biophys Res Commun. 333, 502-507, 2005.

B) Review

C) Publications

D) Other Publications

E) Presentation at Scientific Meeting

- 1: A HCO_3^- current induced by parasympathomimetic stimulation in rat parotid ductal cells. : Hirono

- C : The Gordon Research Conferences : Salivary Glands & Exocrine Secretion (Ventura), 2005.
- 2: Variousness of carbachol-induced bicarbonate current in rat parotid duct cells : Hirono C, Sugita M, Iwasa Y and Shiba Y : The 47th Annual Meeting of Japanese Association for Oral Biology (Sendai), 2005.
 - 3: Effect of cell communication inhibitor on amylase secretion in rat parotid : Kongo H, Hirono C, Sugita M, Iwasa Y and Shiba Y : The 47th Annual Meeting of Japanese Association for Oral Biology (Sendai), 2005.
 - 4: Segregation of taste neuronal circuitries for bitter and sweet revealed by genetic tracing. : Sugita M and Shiba Y : The 3rd International Symposium on Molecular and Neural Mechanisms of Taste and Olfactory Perception (Fukuoka), 2005.

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

- 1: Grant-in-Aid for Scientific Research : Shiba Y : Control of salivary secretion through gap junctional communication, ¥1,200,000.
- 2: Grant-in-Aid for Scientific Research : Hirono C : Regulatory mechanism of Na⁺-K⁺-2Cl⁻ cotransporter activity in fluid secretion, ¥2,300,000.
- 3: Grant-in-Aid for Scientific Research : Sugita M : A genetic approach to investigate the cellular mechanisms underlying the construction of taste neuronal circuitries ¥2,000,000.

(5) Academic Awards, etc.

(6) Patents

Program for Biomedical Research Division of Integrated Medical Science (Department of Dental Pharmacology)

(1) Staffs and Students

Professor : Toshihiro Dohi

Associate Professor: Katsuya Morita

Research Associate: Norimitsu Morioka, Tomoya Kitayama

Graduate Student : Md. Joynal Abdin, Atsue Matsumoto, Naoyo Motoyama, Liqiu Song,
Koki Kifune

(2) Main Research Activities

- 1: Regulation by cyclic ADP-ribose of intracellular Ca²⁺ dynamics and cellular functions.
- 2: Physiological and pathophysiological roles of neurotransmitter transporters and nucleoside transporters.
- 3: Studies on the mechanisms for neuropathic pain and the development of novel medicaments.
- 4: Application of neural progenitor cells for therapy of oral dysfunctions.

(3) Research Achievements

A) Original Papers (including Case Reports)

- 1 : Role of C-terminal region in the functional regulation of rat serotonin transporter(SERT). : Mochizuki H, Amano T, Seki T, Matsubayashi H, Mitsuhashi C, Morita K, Kitayama S, Dohi T, Mishima K and Sakai N : Neurochem. Int. 46, 93-105, 2005.
- 2 : Transport of dopamine and levodopa and their interaction in COS-7 cells heterologously expressing monoamine neurotransmitter transporters and in monoaminergic cell lines PC12 and SK-N-SH. : Hashimoto W, Kitayama S, Kumagai K, Morioka N, Morita K and Dohi T : Life Sci. 76, 1603-1612, 2005.
- 3 : Inhibition of serotonin transporters by cocaine and mepylcaine through 5-HT_{2C} receptor stimulation facilitates their seizure activities. : Morita K, Hamamoto M, Arai S, Kitayama S, Irifune M, Kawahara M, Kihira K and Dohi T : Brain Res. 1057, 153-160, 2005.
- 4 : cDNA cloning of a mannose-binding lectin-associated serine protease (MASP) gene from hagfish (*Eptatretus burgeri*). : Song L, Takamune K, Sugawara Y and Fujii T : Zoolog. Sci. 22, 897-904, 2005.

5 : Educational Effects of Plaque Control Suspension Practice for Dental Hygiene Students. :Matsumoto A, Hara K, Morioka S, Takemoto T, Morishita M and Akagawa Y : JJDEA.20, 333-338, 2005.

B) Review

- 1 : Inhibition of monoamine neurotransmitter transporters and central nervous system stimulation induced by synthetic local anesthetics and cocaine.: a comparative review-update.: Dohi T, Kitayama S and Morita K : Curr. Med. Chem.-Central Nervous System Agents 5, 89-100, 2005.
- 2 : Molecular mechanisms for human dental nociceptors : Ohara M ,Okamura E, Sakuma T, Miyoshi S, Yamasaki S, Yamamoto K, Kitayama T and Dohi T : J. Hiroshima Univ. Dent. Soc 37, 1-10, 2005.
- 3 : Role of $\alpha 7$ nicotinic acetylcholine receptor in spinal nociceptive transduction cascade. : Dohi T, Morioka N, Morita K, Kitayama T, Kitayama S and Nakashima T : Smoking research foundation annual research report 558-563, 2005

C) Publications

D) Other Publications

E) Presentation at Scientific Meeting

International Meeting

- 1 : Tactile allodynia induced by PAF and glutamate is mediated through NO/cGMP/G-kinase cascade in spinal cord. : Dohi T, Morita K, Abdin M J, Morioka N and Kitayama T : The 7th World Congress on Inflammation. (Melbourne), 2005.
- 2 : Cyclic ADP-ribose is an intracellular messenger for fMLP-induced intracellular Ca^{2+} rise and migration of human neutrophils. : Dohi T, Morita K, Morioka N and Kitayama T : The 7th World Congress on Inflammation. (Melbourne), 2005.
- 3 : Cyclic GMP mediates the signaling for allodynia induced by platelet-activating factor (PAF) in spinal cord in mice. : Dohi T, Morita K, Morioka N, Abdin M J and Kitayama T : 2005 Sino-Japanese Conference on Stomatology, (Shanghai), 2005.
- 4 : Development of tactile allodynia and thermal hyperalgesia by intrathecally administered platelet-activating factor in mice. : Dohi T, Morita K, Morioka N and Abdin M J : 2005 Sino-Japanese Conference on Stomatology, (Shanghai), 2005.
- 5 : Molecular identification and characterization of the human dopamine transporter splice variant. : Mitsuhashi C, Sogawa C, Kozai K, Morita K, Dohi T and Kitayama S : 35th Annual Meeting of Society for Neuroscience, (Washington DC), 2005.
- 6 : Tissue-specific expression of the human norepinephrine transporter splice variants. :

Kitayama S, Sogawa C, Kumagai K, Morita K and Dohi T : 35th Annual Meeting of Society for Neuroscience, (Washington DC), 2005.

Domestic meeting

- 1 : Role of serotonergic neurons in sensitization of mice to local anesthetic-induced convulsions. : Hamamoto M, Morita K, Morioka N, Kitayama T and Dohi T : The 24th Annual Meeting of Japanese Society of Oral Therapeutics and Pharmacology, (Yokohama), 2005.
- 2 : Effect of various vasoconstrictors on action of local anesthetics. : Hamamoto M, Morita K, Morioka N, Kitayama T and Dohi T : The 24th Annual Meeting of Japanese Society of Oral Therapeutics and Pharmacology, (Yokohama), 2005.
- 3 : Carboxy terminal region regulates the expression of human norepinephrine transporter splicing variants. : Sogawa T, Sogawa N, Kumagai K, Morita K, Dohi T, Onodera K and Kitayama S : The 78th Annual Meeting of The Japanese Pharmacological Society (Yokohama), 2005.
- 4 : Non steroidal anti-inflammatory drugs (NSAIDs) aggravate 1-methyl-4-phenylpyridinium (MPP⁺)-induced cell toxicity via blockade of multidrug resistance proteins (MRPs) in PC12 cells. : Morioka N, Kitayama T, Morita K, Kitayama S and Dohi T : The 78th Annual Meeting of The Japanese Pharmacological Society (Yokohama), 2005.
- 5 : Possibility of neuron regeneration therapy on eating disorder. : Kitayama T, Song L, Morita K and Dohi T : The 78th Annual Meeting of The Japanese Pharmacological Society (Yokohama), 2005.
- 6 : Effects of local anesthetics on function of noradrenaline transporter in mouse injected with antidepressant. : Song L, Kitayama T, Morita K, Kitayama S and Dohi T : The 107th Kinki Branch Meeting of Japanese Pharmacological Society (Kanazawa), 2005.
- 7 : Expression of eating disorder and behavior disorder on Parkinson model animals. : Kitayama T, Song L, Morita K and Dohi T : The 107th Kinki Branch Meeting of Japanese Pharmacological Society (Kanazawa), 2005.
- 8 : Effect of local anesthetics on downregulation of NET by desipramine. : Song L, Kitayama T, Morita K, Arai S, Kihira K and Dohi T : Joint meeting of the 27th Annual Meeting of the Japanese Society of Biological Psychiatry and the 35th Annual Meeting of the Japanese Society of Neuropsychopharmacology (Osaka), 2005.
- 9 : Sideration of eating disorder on Parkinson model animals. : Kitayama T, Song L, Morita K and Dohi T : Joint meeting of the 27th Annual Meeting of the Japanese Society of Biological Psychiatry and the 35th Annual Meeting of the Japanese Society of Neuropsychopharmacology (Osaka), 2005.
- 10 : The role of $\alpha 7$ Nicotinic Acetylcholine Receptor in the Spinal Nociceptive Transduction Cascades : Dohi T, Morioka N, Morita K, Kitayama T, Kitayama S and Nakashima T : The meeting of Smoking Research Foundation (Tokyo), 2005.

- 11 : Cyclic ADP-ribose mediates calcium signaling for catecholamine release from bovine adrenal chromaffin cells. : Morita K, Kitayama T, Kitayama S and Dohi T : The 9th meeting of active amine (Hiroshima), 2005.
- 12 : Effect of local anesthetics on expression of NET protein by desipramine. : Kitayama T; Song L, Morita K and Dohi T : The 9th meeting of active amine (Hiroshima), 2005.
- 13 : Effect of local anesthetics on function change of NET protein by desipramine. : Song L, Kitayama T, Morita K, Kitayama S and Dohi T : The 9th meeting of active amine (Hiroshima), 2005.
- 14 : Interleukin-1 inhibits voltage-dependent P/Q-type Ca²⁺ channel in adrenal chromaffin cells. : Morita K, Kitayama S and Dohi T : Biofunction and Drug Discovery Symposium 2005 (Hiroshima), 2005.
- 15 : Nonsteroidal anti-inflammatory drugs potentiate the MPP⁺-induced cell death in PC 12 cells. : Morioka N, Kitayama T, Morita K, Kitayama S and Dohi T : Biofunction and Drug Discovery Symposium 2005 (Hiroshima), 2005.
- 16 : Local anaesthetic action and regional blood flow. : Hamamoto M, Morita K and Dohi T : The 47th Annual Meeting of Japanese Association for Oral Biology (Sendai), 2005.
- 17 : Development of tactile allodynia and thermal hyperalgesia by intrathecally administered platelet-activating factor (PAF) in conscious mice. : Morita K, Morioka N, Abdin M J, Kitayama S and Dohi T : The 47th Annual Meeting of Japanese Association for Oral Biology (Sendai), 2005.
- 18 : Non steroidal anti-inflammatory drugs (NSAIDs) potentiate 1-methyl-4-phenylpyridinium (MPP⁺)-induced cell toxicity though the blockade of multidrug resistance proteins (MRPs) in PC12 cells. : Morioka N, Morita K, Kitayama S and Dohi T : The 47th Annual Meeting of Japanese Association for Oral Biology (Sendai), 2005.
- 19 : Effect of cell transplantation on eating disorder of Parkinson model rat. : Kitayama T, Morita K and Dohi T : The 47th Annual Meeting of Japanese Association for Oral Biology (Sendai), 2005.
- 20 : Intrathecal administration of nicotine attenuates the mechanical allodynia in the tibial nerve injured-neuropathic pain model of the rat. : Abdin M J, Morioka N, Morita K and Dohi T : The 47th Annual Meeting of Japanese Association for Oral Biology (Sendai), 2005.
- 21 : Effects of oral relaxation on secretion of saliva and CgA. : Matsumoto A, Kitayama T, Morioka N, Morita K and Dohi T : The 47th Annual Meeting of Japanese Association for Oral Biology (Sendai), 2005.
- 22 : Chronic desipramine induced NET protein localization on cell surface and reversal by lidocaine. : Song L, Kitayama T, Morita K and Dohi T : The 108th Kinki Branch Meeting of Japanese Pharmacological Society (Nishinomiya), 2005.
- 23 : Reduction of local circulation by local anesthetics. : Hamamoto M, Morita K and Dohi T : The 25th Annual Meeting of Japanese Society of Oral Therapeutics and Pharmacology, (Yokohama), 2005.

- 24 : Antinociceptive action of nicotine on the tibial nerve transection (TNT)-induced mechanical allodynia in rats. : Abdin M J, Morioka N, Morita K and Dohi T : The 44th Scientific Meeting of Hiroshima Prefecture Dental Association; The 89th Ordinary Meeting of Hiroshima University Dental society, (Hiroshima), 2005.
- 25 : Measurement of CgA and IgA in salivary induced by oral relaxation. : Matsumoto A, Kitayama T, Morioka N, Morita K and Dohi T : The 44th Scientific Meeting of Hiroshima Prefecture Dental Association; The 89th Ordinary Meeting of Hiroshima University Dental society, (Hiroshima), 2005.
- 26 : Role of platelet-activating factor (PAF) on spinal nociceptive transduction-Mediation by ATP, Glutamate and cGMP. : Dohi T, Morita K, Morioka N, Kitayama T : National Institute for Physiology Workshop (Okazaki), 2005.

F) Special lectures in academic meetings

- 1 : Role of Platelet-activating factor in the transduction of pain signal in the spinal cord. : Dohi T, Morita K, Morioka N, Abdin M J, Kitayama T, Kitayama S, Nakata Y : The 78th Annual Meeting of The Japanese Pharmacological Society (Yokohama), 2005.
- 2 : Chronic desipramine induced NET down-regulation and reversal by lidocaine. : Kitayama T, Song L, Morita K and Dohi T : The 33th Symposium of Drug Activity (Niigata), 2005.

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

- 1: Grant-in Aid for Scientific Research (B) : Dohi T : The role of Platelet-Activating Factor (PAF) on the mechanisms of development of neuropathic pain and its regulation. (Project number 15390562). ¥ 3,800,000.
- 2 : Grants-in Aid for Young Scientists (B) : Morioka N : The nociceptive transduction mechanisms through the network between neuron and glia in spinal cord. -the role of ATP purinoceptor P2X7-. (Project number 17791322). ¥ 1,900,000.
- 3 : Grants-in Aid for Young Scientists (B) : Kitayama T : Development of neuroregeneration therapy on disease of oral area. (Project number 17791323). ¥ 2,000,000
- 4 : Grant-in-Aid for Exploratory Research : Dohi T : Study on the oral health promoted by cellular response to mechanical stimuli. (Project number 16659512). ¥ 800,000.
- 5 : Smoking Research Foundation : Dohi T : Role of $\alpha 7$ nicotinic acetylcholine receptor in spinal nociceptive transduction cascade. ¥ 2,000,000.

(5) Academic Awards, etc.

(6) Patents

Program for Biomedical Research Division of Frontier Medical Science

(Oral and Maxillofacial Pathobiology)

(1) Staffs and Students

Professor : Takashi Takata

Associate Professor : Mutsumi Miyauchi

Assistant Professor : Yasusei Kudo

Research Associate : Masae Hiraoka, Suano Sato

Graduate Student : Akihisa Saito, Hirota Ueda, Hiroko Oka, Shojiro Kitajima, Shinji Iizuka, Kiyako Sakamoto,
B.S.M.Samadarani Siriwardena, Yusuke Kawazoe

Research Student : Mohammad Reza Keikhaee

(2) Main Research Activities

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

(3) Research Achievements

A) Original Papers (including Case Reports)

- 1 : Small interfering RNA targeting of S phase kinase-interacting protein 2 inhibits cell growth of oral cancer cells by inhibiting p27 degradation. : Kudo Y, Kitajima S, Ogawa I, Kitagawa M, Miyauchi M, Takata T : *Molecular Cancer Therapy* 4, 471-476, 2005.
- 2 : Establishment of cementoblast cell lines from rat cementum lining cells by transfection with temperature-sensitive simian virus-40 T-antigen gene. : Kitagawa M, Kitagawa S, Kudo Y, Ogawa I, Miyauchi M, Tahara H, Ide T, Takata T : *Bone* 37, 220-226, 2005.
- 3 : Overexpression of Aurora-A potentiates HRAS-mediated oncogenic transformation and is implicated in oral carcinogenesis. : Tatsuka M, Sato S, Kitajima S, Suto S, Kawai H, Miyauchi M, Ogawa I, Maeda M, Ota T, Takata T : *Oncogene* 24, 1122-1127, 2005.
- 4 : Vascular endothelial growth factor plays an important autocrine/paracrine role in the progression of osteoarthritis. : Tanaka E, Aoyama J, Miyauchi M, Takata T, Hanaoka K, Iwabe T, Tanne K : *Histochemistry and Cell Biology* 123,275-281, 2005.
- 5 : Aurora-B/AIM-1 kinase activity is involved in Ras-mediated cell transformation. : Kanda A, Kawai H, Suto S, Kitajima S, Sato S, Takata T, Tatsuka M : *Oncogene* 24,1122-1127, 2005.

- 6 : The effect of experimental cartilage damage and impairment and restoration of synovial lubrication on the friction in the temporomandibular joint. : Tanaka E, Iwabe T, Dalla-Bona D A, Kawai N, van Eijden T, Tanaka M, Kitagawa S, Takata T, Tanne K. : Journal of Orofacial Pain 19, 331-336, 2005.
- 7 : A case of epithelial-myoepithelial carcinoma of the parotid gland showing predominantly papillary-cystic growth pattern with area of cellular atypia. : Ogawa I, Nishida T, Hirakawa H, Miyauchi M, Takata T : Japanese Journal of Diagnostic Pathology 22, 231-234, 2005.
- 8 : A case of lung carcinoma metastasized to the tongue, suspected by the autopsy. : Ono S, Nobumori T, Yoneda S, Tohmori H, Ninomiya Y, Ogawa I, Takata T, Kamata N : The Journal of Hiroshima University Dental Society 37, 82-86, 2005.
- 9 : A case of congenital tooth with cleft uvula. : Ono S, Higashikawa K, Miyauchi M, Nobumori T, Shigeishi H, Ninomiya Y, Sugiyama M, Nishi H, Yoneda S, Saito A, Kamata N : Pediatric Oral and Maxillofacial Surgery 15, 131-134, 2005.
- 10 : Usefulness of Patch test and elemental analysis of patients suspected to be allergic to metals : Makihira S, Nikawa H, Uchiyama Y, Abekura H, Sadamori S, Ogawa I, Tanaka T, Takata T, Kozai K, Hamada T : Journal of Dental Association of Hiroshima Prefecture 33, 32-36, 2005.

B) Review

- 1 : Down-regulation of Cdk inhibitor p27 in oral squamous cell carcinoma. : Kudo Y, Kitajima S, Ogawa I, Miyauchi M, Takata T : Oral Oncology 41, 105-116, 2005.
- 2 : Pathological diagnosis of odontogenic tumors. : Ogawa I, Miyauchi M, Kudo Y, Takata T : Pathology and Clinical Medicine 23, 1186-1193, 2005.
- 3 : Molecular pathology of salivary gland tumors. : Ogawa I, Kitagawa M, Kudo Y, Miyauchi M, Takata T : Journal of the Japanese Salivary Gland Society 46, 57-68, 2005.
- 4 : New classification of odontogenic tumor by WHO : Takeda Y, Takata T : Pathology and Clinical Medicine 23, 867-873, 2005.

C) Publications

- 1 : Calcifying Ghost Cell Odontogenic Carcinoma. WHO Classification of Head and Neck Tumours. Chapter 6 Odontogenic Tumours. : Takata T, Lu Y : IARC (Lyon), 293, 2005.
- 2 : Calcifying Epithelial Odontogenic Tumour. WHO Classification of Head and Neck Tumours. Chapter 6 Odontogenic Tumours. : Takata T, Slootweg PJ : IARC (Lyon), 302-303, 2005.
- 3 : Anatomy of Periodontal Tissue, Non-plaque Induced Inflammatory Gingival Lesions, Differential Diagnosis: Periodontal Tumors and Cysts ; Lindhe's Clinical Periodontology and Implant Dentistry 4th edition (Hiroshi Okamoto ed.) : Takata T : Quintessence Publishing Co., Ltd (Tokyo), 3-49, 287-316, 317-337, 2005.
- 4 : Aberration of immune system ; Standard Pathology (Masaki Shimono ed.) : Takata T, Kudo Y : Gakken Shoin (Tokyo), 160-189, 2005.
- 5 : General Rules for Clinical Studies on Head and Neck Cancer (Japanese Society for Head and Neck Cancer) : Takata T : Kanehara (Tokyo), 46-61, 2005.

6 : Adenoid cystic carcinoma, Polymorphous low grade adenocarcinoma : Atlas of Salivary Gland Tumors (Morinaga S ed.) : Takata T: Kanehara (Tokyo), 96-105. 2005.

D) Other Publications

E) Presentation at Scientific Meeting

- 1 : New WHO classification of odontogenic tumors : Takata T : Japanese Society of Oral and Maxillofacial Surgeons 26th Educational Meeting (Niigata), 2005.
- 2 : Slide seminar "Salivary gland tumors" : Ogawa I, Takata T : The 16th Annual Meeting of the Japanese Society for Oral Pathology (Morioka), 2005.
- 3 : Molecular analyses of oral cancer in Korea and Japan. : Kudo Y, Ogawa I, Hong S D, Lim J J, Miyauchi M, Lee J I, Hong S P, Takata T : The 2nd Meeting of Asian Society of Oral and Maxillofacial Pathology (Soul), 2005.
- 4 : Disorder of Aurora A degradation in oral cancer. : Kitajima S, Kudo Y, Sato S, Ogawa I, Miyauchi M, Tatsuka M, Takata T : The 2nd Meeting of Asian Society of Oral and Maxillofacial Pathology (Soul), 2005.
- 5 : Histologic diversity and differential diagnosis of epithelial-myoepithelial carcinoma. : Ogawa I, Miyauchi M, Kitagawa M, Kitajima S, Kudo Y, Takata T : The 2nd Meeting of Asian Society of Oral and Maxillofacial Pathology (Soul), 2005.
- 6 : Gene expression in sub-cloned PC-1 and ANK mutant periodontal cells. : Sato S, Foster B L, Swanson E C, Miyauchi M, Takata T, Somerman M J : The 83rd General Session & Exhibition of the IADR (Baltimore), 2005.
- 7 : Platelet-derived growth factor enhances the proliferation and matrix synthesis of the temporomandibular joint disc-derived cells. : Hanaoka K, Tanaka E, Takata T, Miyauchi M, Aoyama J, Kawai N, Dalla-Bona D, Yamano E, Tanne K : The 5th Asian-Pacific Orthodontic Conference (Beijing), 2005.
- 8 : Establishment of human cementoblast cell line : Kitagawa M, Oka H, Saito A, Ogawa I, Miyauchi M, Tahara H, Ide H, Takata T : The 48th Annual Meeting in Spring of the Japanese Society of Periodontology (Nagasaki), 2005.
- 9 : Effect of heparin and heparin derivative on proliferation and differentiation of osteoblasts. : Saito A, Yoshida M, Nakata A, Oka H, Kitagawa M, Ogawa I, Miyauchi M, Takata T : The 48th Annual Meeting in Spring of the Japanese Society of Periodontology (Nagasaki), 2005.
- 10 : Effect of enamel matrix derivative on the proliferation and the differentiation of human pulp cells. : Ueda H, Kitagawa M, Saito A, Miyauchi M, Ogawa I, Oda R, Fujitani M, Takata T : The 38th Plenary Meeting of the Hiroshima University Dental Society (Hiroshima), 2005.
- 11 : Disorder of Aurora-A in Oral Cancer : Kitajima S, Kudo Y, Tatsuka M, Ogawa I, Miyauchi M, Takata T : The 38th Plenary Meeting of the Hiroshima University Dental Society (Hiroshima), 2005.
- 12 : The study on the development of regeneration therapy of periodontal and bone tissues by synthetic peptide of ameloblastin : Yoshida M, Nakata A, Iizuka S, Oka H, Kitagawa M, Kitagawa S, Kudo Y, Ogawa I, Miyauchi M, Takata T : The 38th Plenary Meeting of the Hiroshima University Dental Society (Hiroshima), 2005.
- 13 : Effect of heparin and heparin derivative on proliferation and differentiation of osteoblasts. : Saito A, Yoshida M, Nakata A, Oka H, Kitagawa M, Ogawa I, Miyauchi M, Takata T : The 38th Plenary Meeting of the Hiroshima University Dental Society (Hiroshima), 2005.
- 14 : Disorder of Aurora-A in Oral Cancer : Kitajima S, Kudo Y, Tatsuka M, Ogawa I, Miyauchi M, Takata T : The

Summer School of the network of leading-edge dental science (Miura), 2005

- 1 5 : Identify of Periostin as a novel factor for oral cancer invasion : Kudo Y, Ogawa I, Kitajima S, Kitagawa M, Siriwardena B S M S, Miyauchi M, Takata T. : The 16th Annual Meeting of the Japanese Society for Oral Pathology (Morioka), 2005
- 1 6 : Studies on the regulatory mechanism of proliferation and function of the cementoblast, III. Responses of cementoblast cell line, OCCM-30 to prostaglandin E₂-stimulation and the role of PGE receptor subtypes in the responses : Oka H, Miyauchi M, Furusho H, Saito A, Kitagawa M, Sakamoto K, Iizuka S, Ogawa I, Noguchi K, Ishikawa I, Takata T : The 48th Annual Meeting in Autumn of the Japanese society of Periodontology (Sapporo), 2005.
- 1 7 : γ -Glutamyltranspeptidase is a possible stimulating factor of alveolar bone resorption : Miyauchi M, Kawazoe Y, Sakamoto K, Oka H, Kitagawa M, Ishizuka Y, Niida S, Takata T : The 47th Annual Meeting of Japanese Society of Oral Biology (Sendai), 2005.
- 1 8 : Effects of representative physiologically active substance on the proliferation and differentiation of established human cementoblast cell line. : Kitagawa M, Iizuka S, Sakamoto K, Kawazoe Y, Oka H, Saito A, Kudo Y, Ogawa I, Miyauchi M, Takata T : The 47th Annual Meeting of Japanese Society of Oral Biology (Sendai), 2005.
- 1 9 : Effect of enamel matrix derivative on human pulp cells. : Ueda H, Kitagawa M, Saito A, Miyauchi M, Ogawa I, Oda R, Fujitani M, Takata T : The 47th Annual Meeting of Japanese Society of Oral Biology (Sendai), 2005.
- 2 0 : Disorder of Aurora-A Degradation in Oral Cancer : Kitajima S, Kudo Y, Ogawa I, Miyauchi M, Tatsuka M, Takata T : The 47th Annual Meeting of Japanese Society of Oral Biology (Sendai), 2005.
- 2 1 : The mechanism of degradation of Aurora A protein and disorder of its degradation in Oral Cancer : Kitajima S, Kudo Y, Ogawa I, Miyauchi M, Tatsuka M, Takata T : The 28th Annual Meeting of Molecular Biology Society of Japan (Hakata), 2005.
- 2 2 : Program for Kids from Elementary Schools, Dental Kids, "Let's Be a Dentist!": Nikawa H, Amano H, Satoda T, Takemoto T, Murayama T, Sugiyama M, Tamamoto M, Hara K, Shimoe S, Fujimoto H, Matsumoto A, Tajima H, Niitani Y, Ogawa I, Morita K, Obara M, Suei Y, Takata T, Sugai M, Tanimoto K, Okamoto T, Kurihara H : The 44th Annual Meeting of Hiroshima Prefecture Dental Association and 89th Regular Meeting of the Hiroshima University Dental Society (Hiroshima) ,2005.
- 2 3 : Availability of the data on patch test and metal analysis of suspected patients of metal allergy. : Makihira S, Nikawa H, Uchiyama H, Shigeoka M, Nakano K, Miyoshi H, Ogawa I, Takata T, Hamada T : The 44th Annual Meeting of Hiroshima Prefecture Dental Association and 89th Regular Meeting of The Hiroshima University Dental Society (Hiroshima), 2005.
- 2 4 : Effects of cytolethal distending toxin on rat periodontal tissue : Ohara M, Miyauchi M, Takata T, Sugai M : The 58th Cyugoku-Shikoku Branch Meeting of Japanese Society for Bacteriology (Kouchi), 2005.
- 2 5 : Aurora Kinases and Signal for carcinogenesis : Tatsuka M, Kawai H, Kanda A, Maeda M, Ohta T, Sato S, Kitajima S, Kudo Y, Miyauchi M, Ogawa I, Takata T : The 64th Annual Meeting of Japanese Cancer Association (Sapporo), 2005.
- 2 6 : Clinicopathological analyses of surviving expression in cytoplasm and nucleus of colon cancer. : Shimamoto F, Tanaka S, Oka S, Sai K, Aoki E, Takahashi A, Tatsuka M, Takata T : The 64th Annual Meeting of Japanese Cancer Association (Sapporo), 2005.
- 2 7 : Biological effects of electromagnetic wave : Shimamoto F, Sai K, Ogawa H, Kei T, Takata T, Tatsuka M :

- Hiroshima Prefectural University anniversary of the founding of a school(Hiroshima), 2005.
- 2 8 : In vivo marker of radiation exposure: Radiobiological application of low molecular G protein regulation factor LyGDI : Tatsuka M, Sutoh S, Mori T, Nitta Y, Sato S, Takata T, Zhou S, Ota T : The 48th Annual Conference of the Japan Radiation Research Society (Hiroshima), 2005.
- 2 9 : Parotid gland tumor (Epithelial-myoepithelial carcinoma) : Ogawa I, Nishida T, Kimura T, Miyauchi M, Takata T : The 86th Slide Conference. Academic Meeting of Chugoku-Shikoku Branch of the Japanese Society of Pathology, (Takamatsu), 2005.
- 3 0 : Mandibular tumor (Ameloblastic carcinoma, secondary type (intraosseous)) : Kitagawa M, Saito A, Oka H, Miyauchi M, Toratani S, Ree K, Ogawa I, Takata T : The 16th Annual Meeting of the Japan Society for Oral Pathology (Morioka), 2005.
- 3 1 : Mandibular Tumor (Squamous odontogenic tumor) : Iizuka S, Oka H, Nakayama H, Ogawa I, Toratani S, Lee K, Yoshimura Y, Miyauchi M, Takata T : The 88th Slide Conference, Academic Meeting of Chugoku-Shikoku Branch of the Japanese Society of Pathology. (Okayama), 2005.
- 3 2 : Salivary gland tumor (Acinic cell carcinoma) : Kitagawa M, Saito A, Kudo Y, Ogawa I, Sugita A, Takata T : The 7th Meeting of Society of Salivary Gland Tumor Pathology (Tokyo), 2005.
- 3 3 : A case of oncocytic carcinoma with cystic change. : Ogawa I, Nishida T, Kimura T, Saitoh A, Kitagawa M, Miyauchi M, Takata T : The 50th Annual Meeting of the Japanese Salivary Gland Society (Tokyo), 2005.
- 3 4 : A case of squamous odontogenic tumor in the region of anterior tooth of mandible. : Fukui Y, Tani R, Toratani S, Ogawa I, Hayashi D, Yoshimura Y, Takata T, Okamoto : The 53rd Chugoku-Shikoku Sectional Meeting of the Japanese Stomatological Society (Takamatsu), 2005.
- 3 5 : A case of Kimura's disease of submandibular gland. : Miyauchi M, Shimasue H, Shigeishi H, Ogawa I, Sugiyama M, Miyauchi M, Kamata N : The 50th Annual Meeting of Japanese Society of Oral and Maxillofacial Surgeons (Osaka), 2005.
- 3 6 : New WHO classification of Odontogenic Tumors : Takashi T : Kagoshima Head and Neck Pathological Conference (Kagoshima), 2005.
- 3 7 : Translational Research for developing New diagnostics and therapeutics of Periodontal Diseases. : Takashi T : TMDU Seminar of Periodontology (Tokyo), 2005.
- 3 8 : Good-looking gum recovers and healthy bone returns: introduction of new treatment approach to periodontal tissue regeneration. : Takashi T : Hiroshima University Extension (Yonago). 2005.

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

Grants-in-aid for scientific research

- 1 : Grants-in-Aid (Basic research(B)(1)) New : Takata T (representative) : Development of novel bone healing medication with a synthetic peptide of ameloblastin, ¥7,300,000
- 2 : Grants-in-Aid (Exploratory research) New : Takata T (representative) : Exploratory research on the mechanism of cementogenesis and periodontal tissue regeneration targeting PC-1, ¥1,700,000
- 3 : Grants-in-Aid from the Ministry of Education, Science and Culture of Japan (Basic research (C)(2)) continuation : Miyauchi M (representative): Role of innate immune system via Toll-like receptors on periodontal tissue destruction, ¥1,400,000

- 4 : Grants-in-Aid from the Ministry of Education, Science and Culture of Japan (Grant-in-aid for Young Scientists (B)) New: Kudo Y (representative) : Clarify the mechanism of Skp2 and Cks1 overexpression in oral cancer, ¥1,900,000
- 5 : Grants-in-Aid from Ministry of Health, Labour and Welfare of Japan, Continuation : Takata T (share) : Study on development of diagnostic and therapeutic drugs for bone and joint diseases. ¥4,000,000
- 6 : Grant-in-Aid for Scientific Research(DC2): Kitajima S : Abberational degradation of p27 protein in Oral Cancer, ¥900,000

Grant-in-aid for commissioned research

- 1 : Research grant from Takeda Science foundation : Kudo Y (representative) : Identification of novel molecules that are involved in invasion and metastasis of oral squamous cell carcinoma, ¥2,000,000
- 2 : Research grant from Tsuchiya foundation : Kudo Y (representative) : Identification of novel invasion related molecules of oral squamous cell carcinoma and its application for diagnosis. ¥1,490,000
- 3 : Research grant from Uehara memorial foundation : Kudo Y (representative) : Clarify the mechanism of Aurora A protein degradation and contribution to carcinogenesis by abnormality of its degradation, ¥2,000,000

Contribution

- 1 : Contribution from Sanstar Co. : Takata T (representative) : Inhibitory effect of liposomal lactoferrin on periodontal tissue destruction caused by lipopolysaccharide. ¥1,000,000
- 2 : Contribution (Pathological diagnosis fee) from Mitsubishi Mihara Hospital : Takata T (representative) ¥80,000
- 3 : Contribution (Pathological diagnosis fee) from Hiroshima Prefectural Medical Association : Takata T (representative) ¥100,000

(5) Academic Awards, etc.

- 1 : Kudo Y : Encouraging prize of Japanese Society of Oral Pathology (Experimental Pathology section), Japanese Society of Oral Pathology, 2005
- 2 : Kitajima S : Encouraging prize, The 38th Plenary Meeting of the Hiroshima University Dental Society, 2005.
- 3 : Kitajima S : Merit award, The Summer School of the Network of Leading-Edge Dental Science, 2005.
- 4 : Yoshida M : Encouraging prize, The 38th Plenary Meeting of the Hiroshima University Dental Society, 2005.

(6) Patents

- 1 : Calcified Tissue Formation Promotor : (applicant for a patent 2005-071023)

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

(1) Staffs and Students

Professor	: Hidemi Kurihara
Associate Professor	: Hiroyuki Kawaguchi
Assistant Professor	: Hiroshi Yoshino, Hideki Shiba
Research Associate	: Takamune Hino, Shigeo Nakamura, Noriyoshi Mizuno, Naohiko Hasegawa, Hideaki Hayashi, Tsuyoshi Fujita, Yuushi Uchida, Daisuke Fujioka
Secretary	: Mako Akagi
Resident	: Keiko Sadanobu, Eri Tamagawa
Intern	: Tomoyuki Iwata, Seiji Kudo, Kazuhisa Ouhara, Katsuhiro Takeda, Koichi Hayashida, Mayumi Morimoto, Masato Kawamura, Sachi Yamakita
Graduate Student	: Arata Ashikaga, Miyuki Niitani, Tomohiko Akasaki, Yoshitaka Ozeki, Mari Kiyota, Hidehiro Tsuda, Noriko Tsunekuni, Kiyotaka Hanaki, Yoshihiko Fuse, Takuma Yanagihara, Shinichiro Yoshimatsu, Takafumi Inui, Tomoko Higashiyama, Reika Hirata, Yasuko Kitamoto, Yoriko Iwasaki, Mikihiro Kajiya, Akiyoshi Kishimoto, Nobuyuki Sakai, Takayoshi Nagahara, Yoshie Niitani

(2) Main Research Activities

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

(3) Research Achievements

A) Original Papers (including Case Reports)

- 1 . Periodontal tissue regenerative therapy using bone marrow mesenchymal stem cells : Kawaguchi H, Hayashi H, Mizuno N, Fujioka D, Uchida Y, Hirachi A, Mouri Y, Iwata T, Ashikaga A, Fujita T, Hasegawa N, Hino T, Yoshino H, Tsuji K, Kato Y, Kurihara H : *Regenerative Medicine* 4, 69-77, 2005. Review. Japanese, 2005
- 2 : Brain-derived neurotrophic factor enhances periodontal tissue regeneration : Takeda K , Shiba H, Mizuno N, Hasegawa N, Mouri Y, Hirachi A, Yoshino H, Kawaguchi H, Kurihara H : *Tissue Eng.* Sep-Oct 11(9-10),1618-29, 2005.
- 3 : Irsogladine maleate influences the response of gap junctional intercellular communication and IL-8 of human gingival epithelial cells following periodontopathogenic bacterial challenge : Uchida Y, Shiba H, Komatsuzawa H, Hirono C, Ashikaga A, Fujita T, Kawaguchi H, Sugai M, Shiba Y, Kurihara H : *Biochem Biophys Res Commun.* Jul 29,333(2),502-7, 2005.
- 4 : Molecular markers distinguish bone marrow mesenchymal stem cells from fibroblasts : Ishii M, Koike C, Igarashi A, Yamanaka K, Pan H, Higashi Y, Kawaguchi H, Sugiyama M, Kamata N, Iwata T, Matsubara T, Nakamura K, Kurihara H, Tsuji K, Kato Y : *Biochem Biophys Res Commun.* Jun 24 ,332(1) ,297-303,2005.
- 5 : Susceptibilities of periodontopathogenic and cariogenic bacteria to antibacterial peptides, {beta}-defensins and LL37, produced by human epithelial cells : Ouhara K, Komatsuzawa H, Yamada S, Shiba H, Fujiwara T, Ohara M, Sayama K, Hashimoto K, Kurihara H, Sugai M : *J Antimicrob Chemother.* Jun 55(6) ,888-96. Epub 2005 May 10 ,2005.
- 6 : Characterization of epithelial cells derived from periodontal ligament by gene expression patterns of bone-related and enamel proteins : Mizuno N, Shiba H, Mouri Y, Xu W, Kudoh S, Kawaguchi H, Kurihara H : *Cell Biol Int.* Feb 29(2) ,111-7,2005.
- 7 : Parotid secretory protein is expressed and inducible in human gingival keratinocytes : Shiba H, Venkatesh S G , Gorr S U, Barbieri G, Kurihara H, Kinane D F : *J. Periodon. Res.* 40, 153-157, 2005.
- 8 : CD38 expression in neutrophils from patients with localized aggressive periodontitis . : Fujita T, Kantarci A, Warbington M, Zawawi K H, Hasturk H, Kurihara H, Van Dyke T E : *J periodontol.* 76 ,1960-1965, 2005..
- 9 : CD38 cleavage in fMLP- and IL-8 induced chemotaxis is dependent on p38 MAP kinase but independent p44/42 MAP kinase. : Fujita T, Zawawi K H, Kurihara H, Van Dyke T E : *Cellular signalling.* 17,167-175, 2005.

B) Review

- 1 : Cell transplantation for periodontal diseases. A novel periodontal tissue regenerative therapy using bone marrow mesenchymal stem cells : Kawaguchi H, Hayashi H, Mizuno N, Fujita T, Hasegawa N, Shiba H, Nakamura S, Hino T, Yoshino H, Kurihara H, Tanaka H, Kimura A, Tsuji K, Kato Y : *Clin Calcium.* Jul 15(7) ,99-104. Review. Japanese, 2005.
- 2 : The genetic basis of periodontitis : Kinane D F, Shiba H, Hart T C : *Periodontol.* 2000. 39, 91-117, 2005.

C) Publications

D) Other Publications

- 1 : Cell transplantation for periodontal diseases. A novel periodontal tissue regenerative therapy using bone marrow mesenchymal stem cells : Kawaguchi H, Hayashi H, Mizuno N, Fujita T, Hasegawa N, Shiba H, Nakamura S, Hino T, Yoshino H, Kurihara H, Tanaka H, Kimura A, Tsuji K, Kato Y : Clin Calcium. Jul 15(7) ,99-104. Review. Japanese, 2005.
- 2 : Periodontal tissue regenerative therapy using bone marrow mesenchymal stem cells : Kawaguchi H, Kurihara H : Tanjyusan 4, 15, Review. Japanese, 2005..

E) Presentation at Scientific Meeting

- 1 : Self-antigens in gingival fibroblast cells reacted to autoantibodies in sera from patients with periodontitis : Yanagihara T, Hino T, Hayashida K, Hanaki K, Niitani M, Mizuno N, Shiba H, Kawaguchi H, and Kurihara H : 47th the spring meeting of the Japanese society of Periodontology (Nagasaki), 2005
- 2 : Histological study of periodontal tissue regeneration of mesenchymal stem cells : Yoshimatsu S, Hasegawa N, Kawaguchi H, Hirachi A, Mizuno N, Kiyota M, Takeda K, Kurihara H : 47th the spring meeting of the Japanese society of Periodontology (Nagasaki), 2005
- 3 : Periodontal regenerative process after transplantation of mesenchymal stem cells : Yoshimatsu S, Hasegawa N, Kawaguchi H, Hirachi A, Mizuno N, Kiyota M, Takeda K, Kurihara H : 88th The Hiroshima University Dental Society, 2005
- 4 : Proteome analysis of neutrophil chemotaxis dysfunction from patients with aggressive periodontitis : Niitani M, Mizuno N, Ozeki Y, Inui T, Fujita T, Shiba H, Kawaguchi H, Kurihara H : 88th The Hiroshima University Dental Society, 2005
- 5 : Effects on bone related protein co-cultured with human periodontal ligament cells : Hirata R, Fujita T, Mouri Y, Iwata T, Ashikaga A, Takeda K, Mizuno N, Ozeki Y, Shiba H, Kawaguchi H, Kurihara H : The spring meeting of Japanese society of conservative dentistry (Sapporo), 2005
- 6 : Proteome analysis of neutrophil dysfunction from patients with aggressive periodontitis : Niitani M, Mizuno N, Ozeki Y, Fujita T, Inui T, Hino T, Shiba H, Kawaguchi H, Kurihara H : The spring meeting of Japanese society of conservative dentistry (Sapporo), 2005
- 7 : Effects of neurotrophin-4 on proliferation and differentiation in human periodontal ligament cells : Inui T, Mizuno N, Takeda T, Hasegawa N, Kiyota M, Yoshimatsu S, Ozeki Y, Niitani M, Shiba H, Kawaguchi H, Kurihara H : The spring meeting of Japanese society of conservative dentistry (Sapporo), 2005
- 8 : Effect of human periodontal ligament cells to differentiation of human bone marrow derived mesenchymal stem cells : Ozeki Y, Mizuno N, Mouri Y, Inui T, Niitani M, Takeda K, Fujita T, Shiba H, Kawaguchi H, Kurihara H : The spring meeting of Japanese society of conservative dentistry (Sapporo), 2005

- 9 : Regulation of differentiation of Mesenchymal Stem Cells by bHLH type transcription factor DEC1 : Iwata T, Kawamoto T, Igarashi A, Fujimoto K, Noshiro M, Tsuji K, Kato Y, Kurihara H : 78th Annual Meeting of The Japanese Tissue Culture Association (Hiroshima), 2005
- 1 0 : Study of periodontal tissue regeneration of mesenchymal stem cells : Hasegawa N, Mizuno N, Hirachi A, Mouri Y, Takeda K, Kawaguchi H, Tsuji K, Kato Y, Kurihara H : 78th Annual Meeting of The Japanese Tissue Culture Association (Hiroshima), 2005
- 1 1 : Bone related protein mRNA expression in co-culture of human periodontal ligament cells. : Hirata R, Fujita T, Mouri Y, Iwata T, Takeda K, Mizuno N, Shiba H, Kawaguchi H, Kurihara H : 78th Annual Meeting of The Japanese Tissue Culture Association (Hiroshima), 2005
- 1 2 : The effects of IL-8 and Irsogladine maleate in intercellular communication on gingival keratinocytes. : Ashikaga A, Fujita T, Uchida Y, Shiba H, Kawaguchi H, Kurihara H : 78th Annual Meeting of The Japanese Tissue Culture Association (Hiroshima), 2005
- 1 3 : Effects of neurotrophin-4 on proliferation and differentiation in human periodontal ligament cells : Inui T, Mizuno N, Takeda K, Hasegawa N, Kiyota M, Yoshimatsu S, Ozeki Y, Niitani M, Shiba H, Kawaguchi H, Kurihara H : 78th Annual Meeting of The Japanese Tissue Culture Association (Hiroshima), 2005
- 1 4 : Effect of human periodontal ligament cells to differentiation of human bone marrow derived mesenchymal stem cells : Ozeki Y, Mizuno N, Mouri Y, Inui T, Niitani M, Takeda K, Fujita T, Shiba, Hiroyuki H, Kawaguchi H, Kurihara H : 78th Annual Meeting of The Japanese Tissue Culture Association (Hiroshima), 2005
- 1 5 : Establish for guideline of bio-endodontic therapy : Hayashi H, Hino T, Iwata T, Mizuno N, Shiba H, Kawaguchi H, Kurihara H : 26^h Annual Meeting of The Japan Endodontic Association (Tokyo), 2005
- 1 6 : Effects of neurotrophins on function in human pulp cells : Inui T, Mizuno N, Shiba H, Takeda K, Hasegawa N, Fujita T, Kawaguchi H, Kurihara H : 26^h Annual Meeting of The Japan Endodontic Association (Tokyo), 2005
- 1 7 : Histological study of Periodontal tissue regeneration after application of Brain Derived Neurotrophic Factor (BDNF) : Kiyota M, Hasegawa N, Takeda K, Yoshimatsu S, Mizuno N, Inui T, Shiba H, Kawaguchi H, Igarashi A, Tsuji K, Kurihara H : 48th the autumn meeting of the Japanese society of Periodontology (Sapporo), 2005
- 1 8 : Stress response system in periodontal tissues : Tsunekuni N, Yoshino H, Akazaki T, Ashikaga A, Niitani M, Nakamura S, Kawaguchi H, Kurihara H : 48th the autumn meeting of the Japanese society of Periodontology (Sapporo), 2005
- 1 9 : Periodontal tissue regenerative therapy using bone marrow mesenchymal stem cells : Hayashi H, Kawaguchi H, Mizuno N, Fujita T, Uchida Y, Yoshino H, Shiba H, Hino T, Hasegawa N, Fujioka D, Iwata T, Kudo Y, Takeda T, Igarashi A, Tsuji K, Kurihara H : 48th the autumn meeting of the Japanese society of Periodontology (Sapporo), 2005
- 2 0 : Study of periodontal tissue regeneration by transplantation of bone marrow mesenchymal stem cells : Hanaki K, Hayashida K, Hasegawa N, Ozeki Y, Kitamoto Y, Kawaguchi H, Yamanaka K, Tsuji K, Kurihara H : 48th the autumn meeting of the Japanese society of Periodontology (Sapporo),

2005

- 2 1 : Expression of adiposteroid activating enzyme, 11-HSD1, in cells from periodontal tissue : Akazaki T, Nakamura S, Yoshino H, Hayashida K, Kudo S, Hanaki K, Tsunekuni N, Shiba H, Kawaguchi H, Kurihara H : The Autumn Meeting of the Japanese Society of Conservative Dentistry (the 123rd) :Tokyo, 2005
- 2 2 : Self-antigens in gingival fibroblast cells reacted to autoantibodies in sera from patients with periodontitis : Yanagihara T, Hino T, Hayashida K, Hanaki K, Niitani M, Mizuno N, Shiba H, Kawaguchi H, Kurihara H : The Autumn Meeting of the Japanese Society of Conservative Dentistry (the 123rd) :Tokyo, 2005
- 2 3 : Autoantibodies in sera from patients with periodontitis reacted to self antigens from human gingival fibroblasts : Yanagihara T, Hino T, Kurihara H : 35th Meeting of Japanese Society of Immunology(Yokohama), 2005
- 2 4 : Histological study of Periodontal tissue regeneration after application of Brain Derived Neurotrophic Factor(BDNF) : Kiyota M, Hasegawa N, Takeda K, Yoshimatsu S, Mizuno N, Inui T, Shiba H, Kawaguchi H, Igarashi A, Tsuji K, Kurihara H : 89th The Hiroshima University Dental Society, 2005
- 2 5 : Establish for guideline of bio-endodontic therapy : Morimoto M, Hayashi H, Hino T, Iwata T, Mizuno N, Shiba H, Kawaguchi H, Kurihara H : 89th The Hiroshima University Dental Society, 2005
- 2 6 : Periodontal tissue regenerative therapy using bone marrow mesenchymal stem cells : Hayashi H, Kawaguchi H, Mizuno N, Fujita T, Uchida Y, Yoshino H, Shiba H, Hino T, Hasegawa N, Fujioka D, Iwata T, Kudo Y, Takeda T, Igarashi A, Tsuji K, Kurihara H : 89th The Hiroshima University Dental Society, 2005
- 2 7 : Effect of human periodontal ligament cells to differentiation of human bone marrow derived mesenchymal stem cells : Ozeki Y, Mizuno N, Mouri Y, Inui T, Niitani M, Takeda K, Fujita T, Shiba H, Kawaguchi H, Kurihara H : 89th The Hiroshima University Dental Society, 2005
- 2 8 : IL-8 and Irsogladine maleate in intercellular communication on gingival keratinocytes : Ashikaga A, Fujita T, Uchida Y, Shiba H, Kawaguchi H, Kurihara H : 83rd General session and Exhibition of the international association for dental research (Baltimore), 2005.

F) Special lectures in academic meetings

- 1 : BDNF(brain-derived neurotrophic factor) and mesenchymal stem cells : alternativetools for periodontal tissue regeneration : Kurihara H : 28th Meetong of the Chinese dental journal(Taipei), 2005

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

(5) Academic Awards, etc.

(6) Patents

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

(1) Staffs and Students

Professor : Ichiro Takahashi
Assistant Professor : Kei Tobiume
Research Associate : Atsushi Shimazu, Kazuko Kawahara, Keiko Tsuruda

(2) Main Research Activities

The common mucosal immune system (CMIS) consists of an integrated cross-communication pathway of lymphoid tissues made up of inductive and effector sites for host protection against pathogenic microorganisms. Major effector molecules of the CMIS are IgA antibodies. Secretory IgA (S-IgA) is induced by gut-associated lymphoreticular tissue (GALT)-derived B cells with the help of Th1- and Th2-type lymphocytes. Cytotoxic T lymphocytes in the mucosal epithelium, a subpopulation of intraepithelial lymphocytes (IELs), also help maintain the mucosal barrier. The CMIS is unique in that it can provide both positive and negative signals for the induction and regulation of immune responses in the mucosal tissues after oral or nasal antigen exposure. Prevention of infection through mucosal surfaces can be achieved by the CMIS through connections between inductive (GALT) and effector tissues. When vaccines are enterically administered together with mucosal adjuvants, antigen-specific Th1/Th2 and S-IgA responses are induced in the mucosal effector and systemic compartments. Our group's effort is focused on the elucidation of molecular aspect of the mucosal immune system as well as translational research for the realization of basic findings to the public health.

(3) Research Achievements

A) Original Papers (including Case Reports)

- 1 : Colitis in mice lacking common cytokine receptor- γ chain is mediated by IL-6-producing CD4⁺ T cells : Kai Y, Takahashi I, Ishikawa H, Hiroi T, Mizushima T, Kishi D, Hamada H, Tamagawa H, Ito T, Yoshizaki K, Kishimoto T, Matsuda H and KiyonH :Gastroenterology, 128, 922-938, 2005.
- 2 : Clonal expansion of double positive intraepithelial lymphocytes by MHC class I-related chain A expressed in mouse small intestinal epithelium. : Park E J, Takahashi I, Ikeda J,

Kawahara K, Okamoto T, Kweon M, Fukuyama S, Groh V, Spies T, Obata Y, Miyazaki J and Kiyono H : J. Immunol 171, 4131-4139, 2003.

3 : ASK1 is essential for endoplasmic reticulum stress-induced neuronal cell death triggered by expanded polyglutamine repeats. : Nishitoh H, Matsuzawa A, Tobiume K, Saegusa K, Takeda K, Inoue K, Hori S, Kakizuka A and Ichijo H : Genes & Development 16,1345-1355, 2002.

4 : ASK1 is required for sustained activations of JNK/p38 MAP kinases and apoptosis. : Tobiume K, Matsuzawa A, Takahashi T, Nishitoh H, Morita K, Takeda K, Minowa O, Miyazono K, Noda T and Ichijo H : EMBO Rep 2, 222-228, 2001.

B) Review

C) Publications

D) Other Publications

E) Presentation at Scientific Meeting

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

(5) Academic Awards, etc.

(6) Patents

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

(1) Staffs and Students

Professor : Keiji Tanimoto
Associate Professor : Minoru Fujita
Assistant Professor : Akira Taguchi, Yoshikazu Suei
Research Associate : Toshikazu Nagasaki, Masahiko Ohtsuka, Kaoru Lee,
Masahiko Sawajiri, Takashi Nakamoto
Graduate Student : Atsushi Yamashina, Parimal Chandra Mallick, Yuri Fujiwara,
Kohdo Ishii, Takeo Nakashima, Mika Samura

(2) Main Research Activities

- 1: Measurement of bone mineral density of the jaws by quantitative computed tomography
- 2: Early detection of postmenopausal women with osteoporosis by panoramic radiographs
- 3: Influence of osteoporosis on oral health
- 4: Effect of vitamin D and estrogen receptor gene polymorphisms on the jaw bones
- 5: Influence of oral health on cardiovascular diseases
- 6: Early detection of elderly with atherosclerosis by dental radiographs
- 7: Radiographic study for intraosseous carcinoma
- 8: Diagnosis of simple bone cyst of the jaw
- 9: Classification and diagnosis of mandibular osteomyelitis
- 10: Radiological diagnosis of oral cancer
- 11: Radiotherapy for oral cancer
- 12: Radiation effects on bone metabolism
- 13: Magnetoencephalographic study on human swallowing functions

(3) Research Achievements

A) Original Papers (including Case Reports)

- 1: Screening for osteoporosis in dental clinic by panoramic radiographs : Taguchi A, Nakamoto T, Ohtsuka M, Ishimoto K, Taniguchi M, Kawabata K, Miyagi M, Arakawa S, Tanimoto K : Journal of the Japan Dental Association 57, 13-20, 2005.

- 2:Relationship between self-reported periodontal status and skeletal bone mineral density in Japanese postmenopausal women : Taguchi A, Suei Y, Ohtsuka M, Nakamoto T, Lee K, Sanada M, Tsuda M, Ohama K, Tanimoto K, Bollen A M : *Menopause* 12, 144-8, 2005.
- 3:Clinical and panoramic predictors of femur bone mineral density : White S C, Taguchi A, Kao D, Wu S, Service S K, Yoon D, Suei Y, Nakamoto T, Tanimoto K : *Osteoporos Int* 16, 339-46, 2005.
- 4:Metastatic retinoblastoma of the maxilla and mandible: Taguchi A, Suei Y, Ogawa I, Naito K, Nagasaki T, Lee K, Fujita M, Tanimoto K : *Dentomaxillofac Radiol* 34, 126-31, 2005.
- 5:Diagnosis and classification of mandibular osteomyelitis : Suei Y, Taguchi A, Tanimoto K : *Oral Surg, Oral Med, Oral Pathol, Oral Radiol Endod* 100,207-14, 2005.
- 6:Visual assessment of the mandibular cortex on panoramic radiographs to identify postmenopausal women with low bone mineral densities : Lee K, Taguchi A, Ishii K, Suei Y, Fujita M, Nakamoto T, Ohtsuka M, Sanada M, Tsuda M, Ohama K, Tanimoto K, White S : *Oral Surg Oral Med Oral Pathol Oral Radiol Endod* 100 ,226-31, 2005.

B) Review

C) Publications

D) Other Publications

- 1:Screening for osteoporosis by dental panoramic radiographs- comparison with questionnaire-based screening tool- : Taguchi A, Sanada M, Suei Y, Ohtsuka M, Nakamoto T, Tsuda M, Kodama I, Tanimoto K, Ohama K : *Osteoporosis Jpn* 13, 623-625, 2005.
- 2:Usefulness of gamma-GTP activity as a new biochemical markers of bone turnover : Kodama I, Sanada M, Tsuda M, Taguchi A, Ueno T, Kudo Y, Ohama K : *Osteoporosis Jpn* 13, 603-605, 2005.
- 3:Establishment of active learning strategy in postgraduate clinical training course – standardization and individualization-. : Taguchi N, Ogawa T, Tanaka R, Sasahara H, Ushui K, Yoshino H, Tani R, Shimasue H, Taji T, Abekura H, Tanaka E, Amano H, Taguchi A, Takarada T, Nahara Y, Ogawa I : *The journal of Japanese Dental Education Association* 2, 196-204, 2005.
- 4:Skeletal calcium disturbances in heavy smokers may contribute to high salivary calcium concentration : Taguchi A : *J Evid Base Dent Pract* 5, 98-99, 2005.
- 5:Magnetoencephalography : Nagasaki T, Tanimoto K : *J Hiroshima Univ Dent Soc* 37, 151-153, 2005.
- 6: Radiation effects of heavy ion particles on bone metabolism : Sawajiri M, Nomura Y, Takinami S, Mizoe J : 2005Annual Report of the Research Project with Heavy Ions at NIRS-HIMAC: 98-99, 2005

E) Presentation at Scientific Meeting

- 1:International collaborative study on screening for osteoporosis by dental panoramic radiographs : influence of observer's characteristics on diagnostic efficacy: Taguchi A, Ohtaki M, Ohtani K, Asano A, Inagaki K, Noguchi T, Suei Y, Ohtsuka M, Nakamoto T, Tanimoto K, Tsuda M, Kodama I, Sanada M, Kudo M, Ohama K, OSPD international collaborative group : The 16th annual meeting of Osteoporosis on Gynecology (Tokyo, Japan), 2005.
- 2:Usefulness of dental panoramic radiographs on screening for younger postmenopausal osteoporosis : Taguchi A, Tsuda M, Kodama I, Sanada M, Suei Y, Ohtsuka M, Nakamoto T, Tanimoto K, Inagaki K, Noguchi T, Kudo Y, Ohama K : The 16th annual meeting of Osteoporosis on Gynecology (Tokyo, Japan), 2005.
- 3:Indicator of screening for osteoporosis by dental panoramic radiographs : Taguchi A, Ohtaki M, Ohtani K, Asano A, Inagaki K, Noguchi T, Tanimoto K : 2005 annual meeting of Japan Society of Biostatistics (Hiroshima, Japan), 2005.
- 4:Design of the international collaborative study (Osteoporosis Screening Project in Dentistry: OSPD) in identifying osteoporosis by panoramic radiographs : Taguchi A, Ohtsuka M, Nakamoto T, Suei Y, Seki K, Okano T, Tanimoto K : The 46th annual meeting of Japan Society of Oral and Maxillofacial Radiology (Niigata, Japan), 2005.
- 5:Mandibular osteopenia in patients with postmenopausal osteoporosis : Inagaki K, Noguchi T, Morita I, Nakagaki H, Miki T, Naka H, Taguchi A : The 7th annual meeting of Japan Osteoporosis Society (Osaka, Japan), 2005.
- 6:Osteoporosis screening by panoramic radiographs: comparison with Osteoporosis Self-Assessment Tool. : Taguchi A, Suei Y, Ohtsuka M, Nakamoto T, Sanada M, Tsuda M, Ohama K, Inagaki K, Noguchi T, Tanimoto K : IADR/AADR/CADR 83rd General Session (Baltimore, USA), 2005.
- 7:Periodontal status and panoramic radiographic measures in osteoporotic women : Inagaki K, Fuma D, Sugiishi T, Sakano M, Kurosu Y, Yoshinari N, Ishihara Y, Sobue T, Noguchi T, Morita I, Nakagaki H, Miki T, Naka H, Taguchi A, Tanimoto K, Krall E A. : IADR/AADR/CADR 83rd General Session (Baltimore, USA), 2005.
- 8:Correlation between Insertion Torques and Bone Quality by Intraoral Radiographs : Hirata M, Koretake K, Taguchi A, Nagai N, Tanimoto K, Akagawa Y : IADR/AADR/CADR 83rd General Session (Baltimore, USA), 2005.
- 9:New Method for Study on Initial Bone Healing around Implant : Miyamoto Y., Koretake K., Taguchi A, Hitata M, Tanimoto K, Akagawa Y : IADR/AADR/CADR 83rd General Session (Baltimore, USA), 2005.
- 10:Compute-aided system for measuring the mandibular cortical width on panoramic radiographs in osteoporosis diagnosis : Arifin A Z, Asano A, Taguchi A, Nakamoto T, Ohtsuka M, Tanimoto K : SPIE Medical Imaging 2005-Image Processing Conference (San Diego, USA), 2005.
- 11:Simple bone cyst-jaw bone lesions and extracranial bone lesions- : Suei Y, Nagasaki T, Lee K, Taguchi A, Fujita M, Tanimoto K : The 42th Kyushu 48th Kansai joint district congress of Japanese Society for Oral and Maxillofacial Radiology (Okayama), 2005

- 12: Calibration center of dosimeter for diagnostic X-rays –Present condition of Chugoku area center- : Ohtsuka M, Tanimoto K : 1st Chugoku-Shikoku Forum for Radiological Technology (Kurashiki), 2005.
- 13: Visual Support for Autistic at X-ray examination : Lee K, Itagaki J, Takarada M, Tanimoto K : The 42th Kyushu 48th Kansai joint district congress of Japanese Society for Oral and Maxillofacial Radiology (Okayama), 2005
- 14: Study on apatite-collagen composite part 1 Effect of carbon ion irradiated collagen on bone formation factors : Nishikiori R, Nomura Y, Sawajiri M, Teshima W, Hirata I, Wakasa K, Okazaki M : The 45th General Session of the Japanese Society for Dental Materials and Devices (Tokyo), 2005
- 15: Radiation effects of heavy ion particles on bone metabolism : Sawajiri M, Nomura Y, Takinami S, Mizoe J : The 48th Annual Meeting of Japan Radiation Research Society, The 1st Asian Congress of Radiation Research (Hiroshima), 2005
- 16: Hyperfractionated radiotherapy for oral cancer - Treatment results and late complications-: M.Fujita, Y. Murakami, K. Matsuura, Y. Hashimoto, M. Kenjyo, Y. Kaneyasu, K. Wadasaki, K. Ito: The 18th annual meeting of Japanese Association for Therapeutic Radiology and Pncology (Kawagoe), 2005.

(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 : Taguchi A : Effect of osteoporosis on jaw bones and periodontal tissue, (no. 16390616), ¥,500,000
- 2: Grant-in-aid for scientific research from the Japan Society for the Promotion of Science : Taguchi A : Development of new screening system to identify latent cardiovascular diseases by dental panoramic radiographs, (no. 1471786), ¥ 900,000
- 3: Grant-in-aid for scientific research from the Japan Society for the Promotion of Science : Lee K : Study of cerebrovascular disorder with Panoramic Radiography and measurement of endothelial function,(no. 17591961), ¥2,100,000
- 4: Grant-in-aid for scientific research in Hiroshima University : Taguchi A : Automatic diagnosis system to identify human diseases by dental panoramic radiographs, ¥,500,000
- 5: Fund from Furuno Corporation : Taguchi A : Development of new system to measure jaw bone mineral density, ¥300,000
- 6: Grant-in-aid for scientific research from the Japan Society for the Promotion of Science : Fujita M : Improvement of local control and QOL of oral cancer patients with use of hyperfractionated radiotherapy combined with chemotherapy,(no. 17591962), ¥1,700,000

(5) Academic Awards, etc.

- 1: Taguchi A : Outstanding Paper Award in Japan Society of Oral and Maxillofacial Radiology

2:Ohtsuka M : Japanese Society for Oral and Maxillofacial Radiology (Encouragement award)

(6) Patents

1:Taguchi A, Nakamoto T, Asano A : "Osteoporosis CAD using panoramic radiograph," Patent disclosed in Japan, (application no. 2003-001395), (disclosure no. 2004-209089)

2:Asano A, Taguchi A, Nakamoto T, Tanimoto K, Arifin A Z : "Osteoporosis diagnosis assistance system using dental X-ray images," Patent pending in Japan, (application no. 2004-304855)

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

(1) Staffs and Students

Professor : Maeda Norihiko
Associate Professor : Yoshiko Yuji
Research Associate : Suemune Setsuko, Hua Wang

(2) Main Research Activities

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

(3) Research Achievements

A) Original Papers (including Case Reports)

- 1: Stanniocalcin 1 acts as a paracrine regulator of growth plate chondrogenesis. : Wu S, Yoshiko Y, De Luca F : J. Biol. Biol. Chem. (Online Peer-Reviewed Article) 2005.
- 2: Constitutive activating mutation of the FGFR3b in oral squamous cell carcinomas. : Zhang Y, Hiraishi Y, Wang H, Sato J D, and Okamoto T : Int. J. Cancer (117)166-168, 2005.

B) Review

- 1: FGF23 and new insights into phosphate metabolism. : Yoshiko Y, Maeda N : J. Hiroshima Univ. Soc. 37 (2), 154-156, 2005.

C) Publications

D) Other Publications

E) Presentation at Scientific Meeting

- 1: Calvarial osteoblasts transdifferentiate into adipocytes when treated with a combination of

- PPA γ and α activators. : Hasegawa T, Hatano H, Tanne K, Maeda N, Aubin J E, Yoshiko Y : ASBMR 26th Annual Meeting (Seattle), 2004.
- 2:FGF23 expression during osteoblast development and matrix mineralization in vitro and vivo suggest that FGF23 may be a local regulator of bone formation. : Ijuin C, Wang H, Tanne K, Aubin J E, Maeda N, Yoshiko Y : ASBMR 26th Annual Meeting (Seattle), 2004.
- 3: Adenovirus-mediated overexpression of FGF23 suppresses osteoblast development and matrix mineralization in fetal rat calvaria cells.: Wang H, Yamamoto R, Maeda N, Yoshiko Y : ASBMR 27th Annual Meeting (Nashville), 2005.
- 4: Interaction of the PGE2 and JNL/p38 MAPK signaling pathways in osteoblast-adipocyte fate choices of bipotential progenitor cells in rat calvaria cell cultures. : Minamizaki T, Yoshiko Y, Kozai K, Aubin J E, Maeda N : ASBMR 27th Annual Meeting (Nashville), 2005.
- 5: FGF23 may act on bone mineralization as a local factor. : The 23th Annual Meeting of JBMR.(Osaka), 2005
- 6: PGE2 regulates osteoblast-adipocyte fate choices of bipotential progenitor cells in fetal rat calvaria cell cultures. : The 23th Annual Meeting of JBMR.(Osaka), 2005
- 7: The phenotypic diversity and transdifferentiation activity of osteoprogenitor cells derived from the fetal rat calvaria. : 47th JA OB (Sendai) 2005.

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

- 1: Grant-in-Aid for Scientific Research : N. Maeda, (No. 175919132) ¥ 2,200,000
- 2: Grant-in-Aid for Scientific Research : Y. Yoshiko, (No. 16591828) ¥ 1,600,000
- 3: Grant-in-Aid for Scientific Research : H.wang : (No. 17592086) ¥ 1,500,000
- 4: Grant from Raffinee International Corporation : ¥ 2,200,000

(5) Academic Awards, etc.

(6) Patents

Programs for Applied Biomedicine Division of Critical Medical Science (Department of Dental Anesthesiology)

(1) Staffs and Students

Professor	:	Kawahara Michio, M.D.,Ph.D.
Associate Professor	:	Irifune Masahiro, D.D.S.,Ph.D.
Assistant Professor	:	Takarada Thoru, D.D.S.,Ph.D., Endo Chie, D.D.S., Shimizu Yoshitaka, D.D.S.
Resident	:	Kobayashi Keiko, D.D.S., Sakata Keiko, D.D.S.
Graduate Student	:	Saida Takuya, D.D.S., Kikuchi Nobuhito, D.D.S., Onizuka Chiori, D.D.S.
Research Student	:	Kawamoto Hisao, D.D.S.
Clinical Trainee	:	Katayama Sotaro, D.D.S., Takahashi Kenichiro, D.D.S.

(2) Main Research Activities

1. Mechanism of General Anesthetics
2. Effects of Vasoconstrictor Added in Local Anesthetics on Circulation
3. Control of Respiration and Circulation during General Anesthesia
4. Pain Control for Malignant Tumor
5. Pain Clinic for Nerve Palsy
6. Dental treatment for Medically Compromised Patient
7. Acute Medicine for Emergency during Dental Treatment

(3) Research Achievements

A) Original Papers (including Case Reports)

- 1: Statistical Survey of the Cases that Received Dental Therapy at "Stress-free Dental Clinic", Newly Established in Hiroshima University Hospital : Keiko K, Thoru T, Masahiro I, Chie E, Yoshitaka S, Kenichiro T, Takuya S, Nobuhito K, Chiori O, Michio K : Journal of Japanese Society of Dental Anesthesiology 33,295-296, 2005.
- 2: Inhibition of serotonin transporters by cocaine and mepylcaine through 5-HT_{2C} receptor stimulation facilitates their seizure activities : Katsuya M, Masahiro H, Shigeaki A, Shigeo K, Masahiro I, Michio K, Kenji K, Toshihiro D : Brain Research 1057,153-160,2005.

B) Review

C) Publications

D) Other Publications

E) Presentation at Scientific Meeting

- 1: Statistical Survey of the Dental Treatment using conscious sedation in Hiroshima University Hospital ; The present state of "Stress-free Dental Clinic" : Keiko K, Chie E, Masahiro I, Tohru T, Yoshitaka S, Nobuhito K, Takuya S, Keiko S, Chiori O, Michio K : Japanese Society of Dental Anesthesiology, The 2nd Regional Meeting of CHUGOKU and SHIKOKU(TOKUSHIMA),2005.
- 2: A case report of the rhabdomyolysis after general anesthesia : Chiori O, Masahiro I, Tohru T, Chie E, Yoshitaka S, Nobuhito K, Takuya S, Keiko K, Keiko S, Michio K : The 2nd Chugoku Shikoku regional meeting of Japanese Dental Society of Anesthesiology(TOKUSHIMA), 2005.
- 3: Assessment of ICLS course for resident in Hiroshima University Hospital : Yoshitaka S, Chie E, Keiko K, Chiori O, Masahiro I, Tohru T, Keiko SAKATA, Takuya S, Nobuhito K, Kenichiro T, Tetsuji O, Michio K : The 2nd Chugoku Shikoku regional meeting of Japanese Dental Society of Anesthesiology(TOKUSHIMA), 2005.
- 4: Anesthetic action of riluzol (glutamic acid release inhibitor) : Nobuhito K, Masahiro I, Tohru T, Yoshitaka S, Chie E, Takuya S, Michio K : The 33rd Annual Meeting of Japanese Dental Society of Anesthesiology (KAGOSHIMA), 2005.
- 5: Nitrous oxide inhibits acetylcholine-induced catecholamine release in cultured adrenal chromaffin cells : Yoshitaka S, Katsuya M, Masahiro I, Thoru T, Chie E, Keiko K, Toshihiro D, Michio K : The 33rd Annual Meeting of Japanese Dental Society of Anesthesiology (KAGOSHIMA), 2005.
- 6: Usefulness of the Monitoring of Respiration on a Dental Chair by Respiration Heart Rate Meter RHR21 : Tohru T, Masahiro I, Chie E, Yoshitaka S, Takuya S, Nobuhito K, Chiori O, Keiko K, Keiko S, Michio K : The 33rd Annual Meeting of Japanese Dental Society of Anesthesiology (KAGOSHIMA), 2005.
- 7: A case report of asthma-like attack and urticarial eruption during introduction of general anesthesia : Chiori O, Masahiro I, Tohru T, Chie E, Yoshitaka S, Nobuhito K, Takuya S, Keiko K, Keiko S, Michio K : The 33th annual meeting of Japanese Dental Society of Anesthesiology (KAGOSHIMA), 2005.

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

(5) Academic Awards, etc.

(6) Patents

**Programs for Applied Biomedicine Division of Cervico-Gnathostomatology
(Department of Dental Science for Health Promotion)
Department of Preventive and Restorative Dentistry
(Operative and Esthetic Dentistry)**

(1) Staffs and Students

Professor:	Fusanori Nishimura (from September 1, 2006)
Associate professor:	Morioki Fujitani
Assistant professor:	Nobuyuki Tanaka
Research associate:	Masashi Fujii, Ryo Oda, Kenichi Shirai, Takahiro Harima, Makoto Arakawa
Resident:	Satoshi Kitagawa
Intern:	Kazuhiro Iwaizumi, Takuji Kouno
Graduate Student:	Hirota Ueda, Satoki Shibata, Naoyo Motoyama
Research Student:	Kenjun Toyota

(2) Main Research Activities

1: Studies on restorative materials

- Mechanical properties and clinical evaluation of restorative materials
- Development of biocompatible materials and their clinical application
- Adhesive mechanism of restorative materials to tooth substance
- Decontamination methods of glass-fillers in resin composites
- Curing behaviors of multifunctional monomers

2: Basic and clinical studies of discolored teeth

3: Development and educational evaluation of computerized clinical simulation systems

4: Studies on lasers in operative dentistry

5: Studies on CAD/CAM and castable ceramic restorations

6: Healing of dentin/pulp complex and regeneration of dentinal tissue

(3) Research Achievements

A) Original Papers (including Case Reports)

- 1: Alveolar bone marrow as a cell source for regenerative medicine : differences between alveolar and iliac bone marrow stromal cells: Matsubara T, Suardita K, Ishii M, Sugiyama M, Igarashi A, Oda R, Nishimura M, Saito M, Nakagawa K, Yamanaka K, Miyazaki K, Shimizu M, Bhawal U K, Tsuji K, Nakamura K, Kato Y : Journal of Bone and Mineral Research 20(3), 399-409, 2005.
- 2: Effect of evaporation of primer components on ultimate tensile strengths of primer-adhesive mixture : Ikeda T, De

- Munck J, Shirai K, Hikita K, Inoue S, Sano H, Lambrechts P, Van Meerbeek B : *Dental Materials* 21(11), 1051-1058, 2005.
- 3: Effect of fracture strength of primer-adhesive mixture on bonding effectiveness : Ikeda T, De Munck J, Shirai K, Hikita K, Inoue S, Sano H, Lambrechts P, Van Meerbeek B : *Dental Materials* 21(5), 413-420, 2005.
 - 4: Effect of cavity configuration and aging on the bonding effectiveness of six adhesives to dentin : Shirai K, De Munck J, Yoshida Y, Inoue S, Lambrechts P, Suzuki K, Shintani H, Van Meerbeek B : *Dental Materials* 21(2), 110-124, 2005.
 - 5: Temporary restorative resins using non-phthalate ester plasticizers : Tanaka N, Nomura Y, Nishikiori R, Shibata S, Shirai K, Fujitani M : *Journal of Dentistry* 33(7), 557-583, 2005.
 - 6: A case of inflammatory resorption of a tooth impacted in the mandibular notch : Ninomiya Y, Higashikawa K, Tohmori H, Nobumori T, Fujitani M, Kamata N : *Japanese Journal of Oral & Maxillofacial Surgery* 51(11), 559-562, 2005.
 - 7: Detection of periodontal pathogen *Porphyromonas gingivalis* by loop-mediated isothermal amplification method : Maeda H, Koikeguchi S, Fujimoto C, Tanimoto I, Yoshizumi W, Nishimura F, Takashiba S. : *FEMS Immunology and Medical Microbiology* 43, 233-239, 2005.
 - 8: Role of helper T cells in the humoral immune responses against 53-kDa outer membrane protein from *Porphyromonas gingivalis* : Kato N, Ohyama H, Nishimura F, Matsushita S, Takashiba S, Murayama Y. : *Oral Microbiology and Immunology* 20, 112-117, 2005.
 - 9: Thiazolidinedione (pioglitazone) blocks *P. gingivalis*- and *F. nucleatum*, but not *E. coli*, lipopolysaccharide (LPS)-induced interleukin-6 (IL-6) production in adipocytes : Yamaguchi M, Nishimura F, Naruishi H, Soga Y, Koikeguchi S, Takashiba S. : *Journal of Dental Research* 84, 240-244, 2005.
 - 10: Polymorphism of the 5' flanking region of the IL-12 receptor beta2 gene partially determines the clinical types of leprosy through impaired transcriptional activity : Ohyama H, Ogata K, Takeuchi K, Namisato M, Fukutomi M, Nishimura F, Naruishi H, Ohira T, Hashimoto K, Liu T, Suzuki M, Uemura Y, Matsushita S. : *Journal of Clinical Pathology* 58, 740-743, 2005.
 - 11: Transcriptional regulation of beta-defensin-2 by lipopolysaccharide in cultured human cervical carcinoma (HeLa) cells : Mineshiba J, Myokai F, Mineshiba F, Matsuura K, Nishimura F, Takashiba S. : *FEMS Immunology and Medical Microbiology* 45, 37-44, 2005.
 - 12: Isolation and expression of FIP-2 in wounded pulp of the rat : Oyama M, Myokai F, Ohira T, Shiomi N, Yamashiro K, Arai H, Nishimura F, Takashiba S. : *Journal of Dental Research* 84, 842-847, 2005.
 - 13: A proposed model linking inflammation to obesity, diabetes, and periodontal infections : Genco R J, Grossi S G, Ho A, Nishimura F, Murayama Y. : *Journal of Periodontology* 76, 2075-2084, 2005.
 - 14: $\alpha 2$ integrin +807 polymorphism in drug-induced gingival overgrowth : Ogino M, Kido J, Bando M, Hayashi N, Wada C, Nagata T, Nishimura F, Soga Y, Takashiba S, Kubota T, Itagaki M, Shimada Y, Tai H, Yoshie H, Yamazaki N, Shinohara Y, Kataoka M. : *Journal of Dental Research* 84, 1183-1186, 2005.
 - 15: Periodontal treatment in severe aplastic anemia : Oyaizu K, Mineshiba F, Mineshiba J, Takaya H, Nishimura F, Tanimoto I, Arai H, Takashiba S. : *Journal of Periodontology* 76, 1211-1216, 2005.

B) Review

1. Periodontal disease as part of the insulin resistance syndrome in diabetic patients. : Nishimura F, Soga Y, Iwamoto Y, Kudo C, Murayama Y. : *Journal of International Academy of Periodontology* 7, 16-20, 2005.

C) Publications

D) Other Publications

- 1: Precautions in finishing and polishing of tooth-colored restorative materials : Fujitani M.: Dental Diamond 30(extra issue), 116-119, 2005.
- 2: Capture points of CR restorative treatments in WSD-multiengine patients : Fujitani M.: Dental Diamond 30(extra issue), 122-123, 2005.
- 3: Effective response or approach to repair, fracture, and/or loss of ceramometal or metal-free restorations : Fujitani M.: Dental Diamond 30(extra issue), 132-137, 2005.

E) Presentation at Scientific Meeting

- 1: Effects of rubbing conditioning on reduction in application time of various one-step adhesive systems : Shibata S, Kitagawa S, Arakawa M, Harima T, Shirai K, Fujitani M : The Spring Meeting of Japanese Society of Conservative Dentistry in 2005 (the 122nd) (Sapporo), 2005.
- 2: Effect of irradiation using violet LEDs on polymerization behavior of dental resins supplemented with various photoinitiators (Part3) -Leachability of components from polymerized resins- : Teshiam W, Nomura Y, Nishikiori R, Shirai K, Tanaka N, Okazaki M, Nahara Y : The 45th General Session of the Japanese Society for Dental Materials and Devices (Tokyo), 2005.
- 3: Immobilization of reducing agent on SiO₂ filler surface and analysis of this property : Shibata S, Shirai K, Hirata I, Nomura Y, Fujitani M, Okazaki M : 38th General Meeting of Hiroshima University Dental Society (Hiroshima), 2005.
- 4: Effect of enamel matrix derivative on the proliferation and differentiation of human pulp cell : Ueda H, Kitagawa M, Saito A, Miyauchi M, Ogawa I, Oda R, Fujitani M, Takada T : 38th General Meeting of Hiroshima University Dental Society (Hiroshima), 2005.
- 5: Clinical assessment of adhesive tooth coating material -Causes and measures learned from cases of failure- : Shimoda T, Dainobu K, Shimada M, Hara N, Kitagawa S, Shibata S, Hatakeyama T, Yano K, Miyakawa K, Yamashita S, Oda R, Shirai K, Ueda H, Motoyama T, Tamura H, Fujitani M : The 16th Congress of Japan Academy of Esthetic Dentistry (Osaka), 2005.
- 6: Long-term durability of resin composites containing S-PRG fillers : Shirai K, Shibata S, Kitagawa S, Nagata M, Fujitani M, Shintani H : The 2nd Meeting of the Society for Interfacial Functional Glass (Tokyo), 2005.
- 7: Adhesive properties of resinous materials to lased dentin and ultra-structure of lased dentin surface -Effects of output energy level- : Harima T, Fujitani M : The 17th Annual Meeting of The Japanese Society for Laser Dentistry (Niigata), 2005.
- 8: Dental esthetic tooth coating material -Whitecoat®- : Mishima K, Motoyama T, Ohmoto M, Nanra I, Hikiji N, Shimoda T, Tamura H, Fujitani M : 44th Scientific Meeting of Hiroshima Prefecture Dental Association, 89th Scientific Meeting of Hiroshima University Dental Society (Hiroshima), 2005.
- 9: Property of composite resin using reducing agent immobilized fillers : Masuki K, Nomura Y, Shibata S, Hirata I, Nahara Y, Okazaki M : The 46th General Session of the Japanese Society for Dental Materials and Devices (Nagasaki),

2005.

- 10: Short-term clinical assessment of adhesive tooth coating material -Causes and measures to various evaluation items- :
Oda R, Shibata S, Kitagawa S, Ueda H, Motoyama T, Shirai K, Fujitani M : The Autumn Meeting of Japanese Society
of Conservative Dentistry in 2005 (the 123rd), The 7th Joint –Scientific Meeting between JSCD&KACD (Tokyo), 2005.

F) Special lectures in academic meetings

- 1: Clinical Seminar “Strategy for MI Esthetically Adhesive Restorations” : Fujitani M. : The 16th Congress of Japan
Academy of Esthetic Dentistry (Osaka), 2005.
- 2: Symposium “Adhesive Properties of Resin Bonding System to Er : YAG or CO2 Lased Dentin”: Fujitani M. : The
17th Annual Meeting of The Japanese Society for Laser Dentistry (Niigata), 2005.
- 3: Lecture “Adhesion Update and Strategy for MI Esthetic Restorations” : Fujitani M. : Scientific Meeting of Izumi-sano
Sennan Dental Association in Osaka Prefecture, 2005 (Osaka), 2005.
- 4: Lecture “Science and Practice update in MI Esthetically Adhesive Restorations” : Fujitani M.: Scientific Meeting of
Uma Dental Association (Matsuyama), 2005.

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

- 1: Grant-in-Aid for Scientific Research (B) New : Nishimura F : Study on periodontal medicine - Hepatic responses
against periodontal infection. (Project Number 17390562). ¥7,200,000
- 2: Grant-in-Aid for Scientific Research (C) Continued : Fujitani M : Ultra-morphological and analytical-chemical
changes of lased carious dentin and adhesive properties of resin bonding systems. (Project Number 15592020).
¥1,300,000
- 3: Grant-in-Aid for Scientific Research (C) New : Fujitani M : Surface analysis of lased dentin and development of new
resin bonding system. (Project Number 17591992). ¥1,700,000 yen
- 4: Grant-in-Aid for Scientific Research (A) (1) Continued : Fujitani M. (Partaker) : Rationalization and Improving
Efficiency of Dental Clinical Education Using Simulation Systems. (Project Number 16209055). ¥900,000
- 5: Grant-in-Aid for Scientific Research (C) : Shirai K : Development and establishment of high performance functional
monomers. (Project Number 16591914.) ¥800,000
- 6: Grant-in-Aid for Scientific Research (C) : Tanaka N : Development of the safety assessment methods of dental
materials using bone metabolic system. (Project Number 16591913). ¥800,000
- 7: Grant-in-Aid for Young Scientists (B) : Oda R : The study of dentin regeneration using mesenchymal stem cells treated
with concanavalin A. (Project Number 16791157). ¥900,000
- 8: Grant-in-Aid for Exploratory Research New : Nishimura F : Development of new therapeutic strategy against drug-
induced gingival overgrowth targeting drug responsive elements of cathepsin-L-promoter region. (Project Number
17659657). ¥1,200,000
- 9: Entrusted Accounting (Kuraray Medical Co., Ltd.) : Fujitani M, ¥400,000
- 10: Entrusted Accounting (Shofu Co., Ltd) : Fujitani M, ¥300,000
- 11: Entrusted Accounting (Sun Medical Co., Ltd) : Fujitani M, ¥500,000

(5) Academic Awards, etc.

- 1: Harima T, Fujitani M : Adhesive properties of resinous materials to lased dentin and ultra-structure of lased dentin surface -Effects of output energy level- : Presentation of Excellence, The 17th Annual Meeting of The Japanese Society for Laser Dentistry, (Niigata), 2005.

(6) Patents

**Programs for Applied Biomedicine Division of Cervico-Gnathostomatology
(Department of Oral and Maxillofacial Surgery)
Department of Oral & Maxillofacial Surgery and Oral Medicine
(Oral and Maxillofacial Reconstructive Surgery)**

(1) Staffs and Students

Professor	: Nobuyuki Kamata
Associate Professor	: Sugiyama Masaru (~ March)
Assistant Professor	: Inoue Singo, Miyauchi Miwa (学内)
Research Associate	: Tohmori Hidetoshi, Higashikawa Koichiro, Ohta Kouji, Ninomiya Yoshiaki, Shimasue Hiroshi, Ono Shigehiro
Resident	: Nobumori Takeshi, Shigeishi Hideo, Nishi Hiromi, Taki Masayuki
Intern	: Tada Masaharu, Shimasue Osamu, Minami Masahiko
Graduate Student	: Mizuta Kuniko, Mitani Yoshitugu, Yoneda Shingo, Sugiyama Shinichi, Hiraoka Misato, Fujii Masayuki
Research Student	: Kiyomihara Masaki, Ozaki Kennryu, Kinoshita Masae
Registered Intern	: Inoue Yoshihisa, Kawahara Toshiya, Kubo Miki

(2) Main Research Activities

- 1 : Technical improvement and evaluation of oral and maxillofacial reconstruction
- 2 : Genomic studies of oral disease
- 3 : Studies on biological characteristics and therapy of oral tumors
- 4 : Molecular biology of invasion and metastasis of oral cancer
- 5 : Studies on causative genes of cemento-osseous lesions in jawbones
- 6 : Cellular biological studies on regenerative therapy of human dental and periodontal tissues

(3) Research Achievements

A) Original Papers (including Case Reports)

- 1 : Histone H3 acetylation is associated with reduced p21WAF1/CIP1 expression by gastric carcinoma : Mitani Y, Oue N, Hamai Y, Aung P P, Matsumura S, Kamata N, Yasui W : *Journal of Pathology*. 205, 65-73. 2005
- 2 : Loss of heterozygosity and histone hypoacetylation of the PINX1 gene are associated with reduced expression in gastric carcinoma : Kondo T, Oue N, Mitani Y, Kuniyasu H, Noguchi T, Kuraoka K, Nakayama H, Yasui W : *Oncogene*. 24, 157-64. 2005
- 3 : Correlation of CENP-F gene expression with tumor-proliferating activity in human salivary gland tumors. : Shigeishi H, Mizuta K, Higashikawa K, Yoneda S, Ono S, Kamata N. : *Oral Oncology* 41,

716-722, 2005

- 4 : Molecular cloning and characterization of the murine Gnathodiaphyseal Dysplasia gene GDD1 :
Tsutsumi S, Inoue H, Sakamoto Y, Mizuta K, Kamata N, Itakura M. : *Biochem Biophys Res Commun.*331,1099-106.
2005r
- 5 : Molecular markers distinguish bone marrow mesenchymal stem cells from fibroblasts : Ishi M,
Koike C, Igarashi A, Yamanaka K, Pan H, Higashi Y, Kawaguchi H, Sugiyama M, Kamata N,
Iwata T, Matsubara T, Nakamura K, Kurihara H, Tsuji K, Kato Y : *Biochem Biophys Res Commun.*
332,297-303. 2005
- 6 : Expression and localization of Reg IV in human neoplastic and non-neoplastic tissues : Reg IV expression is
associated with intestinal and neuroendocrine differentiation in gastric adenocarcinoma : Oue N, Mitani Y, Aung PP,
Sakakura C, Takeshima Y, Kaneko M, Noguchi T, Nakayama H, Yasui W : *Journal of Pathology.*207,185-198. 2005
- 7: Genes involved in invasion and metastasis of gastric cancer identified by array-based hybridization
and serial analysis of gene expression. : Oue N, Aung PP, Mitani Y, Kuniyasu H, Nakayama H,
Yasui W. : *Oncology.* 69, 7-22, 2005
- 8 : A case of Tooth Extraction of the Patient with Bernard-Soulier Syndrome.: Yuasa T, Takechi M, Taki M, Maeda E,
Kamata N, Nagayama M : *Shikoku Society of Dental Research* 17(2), 253-256, 2005.
- 9: Oral cancer patients successfully rehabilitated using disposable intraoral pressure probe. : Utanohara Y, R Hayashi , M
Yoshida , T Kubo , K Tsuga , Y Fuziwara , T Okamoto , N Kamata , Y Akagawa : *The J Jpn Society of
Stomatognathic Function* 11(2), 158-159, 2005.
- 10: Correlation of CENP-F mRNA expression and lymph node metastasis in oral squamous cell carcinomas. : Shigeishi
H, Mizuta K, Higashikawa K, Shimasue H, Ohta K, Ono S, Sugiyama M, Kamata N : *Jpn J Oral Maxillofac Surg* 51,
77-81, 2005.
- 11: A case of cemento-osseous dysplasia appearing to be a cystic lesion of the mandible on radiographs. : Higashikawa K,
Shigeishi H, Miyauchi M, Inoue S, Ogawa I, Kamata N : *Jpn. J. Oral Maxillofac. Surg* 51(4), 184-187, 2005
- 12: A case of lung carcinoma metastasized to the tongue, suspected by the autopsy.: Ono S, Nobumori T, Yoneda S,
Tohmori H, Ninomiya Y, Ogawa I, Takata T, Kamata N : *J. Hiroshima Univ. Dent. Soc* 37(1), 82-86, 2005.
- 13: Establishment of Active Learning Strategy in Postgraduate Clinical Training Course – Standardization and
Individualization. : Taguchi N, Ogawa T, Tanaka Y, Sasahara H, Shirai K, Yoshino H, Tani R, Shimasue H, Taji T,
Abekura H, Tanaka E, Amano H, Taguchi A, Takarada T, Nahara Y and Ogawa I. : *JIDEA.* 21(2), 196-204, 2005
- 14: Identification of metastasis-related genes in cell lines derived from a primary tongue squamous cell carcinoma and its
lymph node metastasis. : Nobumori T, Taki M, Higashikawa K, Ono S, Shigeishi H, Yoneda S, Ninomiya Y,
Sugiyama M, Kamata N : *Jpn.J.Oral Maxillofac.Surg* 51, 482-488, 2005.
- 15: A case of jaw trismus caused by an isolated calcified mass in the temporal muscle and a hyperplasia-like lesion of the
mandibular coronoid process. : Nawa A, Shimasue H, Shigeishi H, Ninomiya Y, Ogawa I, Kamata N. : *Jpn.J.Oral
maxillofac.Surg.* 51(11), 547-550, 2005.
- 16: A case of inflammatory resorption of a tooth impacted in the mandibular notch. : Ninomiya Y, Higashikawa K,
Tohmori H, Nobumori T, Fujitani M, Kamata N : *Jpn.J.Oral Maxillofac.Surg* 51, 559-562, 2005.
- 17: Study on deformation of fixation devices of RED system in maxillary distraction osteogenesis. : Ohta K, Tohmori H,
Sugiyama M, Nobumori T, Inoue S, Tanimoto K, Tanne K, Kamata N : *The Japanese Society for Jaw Deformities*
15(3), 126-132, 2005.

- 18: A case of congenital tooth with cleft uvula. : Ono S, Higashikawa K, Miyauchi M, Nobumori T, Shigeishi H, Ninomiya Y, Sugiyama M, Nishi H, Yoneda S, Saito A, Kamata N : *Pediatric Oral and Maxillofacial Surgery* 15 (2), 131-134, 2005.
- 19: The Treatment of the Maxillofacial Bone Fractures with the Bioabsorbable Poly-L-Lactide Bone Mini Plate. : Tohmori H, Inoue S, Miyauchi M, Higashikawa K, Ohta K, Ninomiya N, Shimasue H, Ono S, Sugiyama M, Nobuyuki K. : *J. Hiroshima Univ.Dent. Soc* 37(2), 145-150, 2005.
- 20: The Clinical Investigation of the Emergency Case of Pediatric Patients with Oral and Maxillofacial Lesions in our hospital during 11 years. : Miyauchi M, Inoue S, Tohmori H, Nobumori T, Ono S, Shimasue H, Ohta K, Higashikawa K, Ninomiya Y, Kamata N : *J. Jpn. Soc. O. M. F. Trauma* 4(2), 47-51, 2005

B) Review

C) Publications

D) Other Publications

E) Presentation at Scientific Meeting

- 1: Lung carcinoma suspected to have metastasized to the tongue by the autopsy : Report of a case: Ono S, Nobumori T, Yoneda S, Tohmori H, Ninomiya Y, Kamata N : *The 57th Annual Meeting of the Japanese Stomatological Society (Tokushima)*, 2005.
- 2: A case of inflammatory resorption of a tooth impacted in the mandibular notch.: Ninomiya Y, Higashikawa K, Tohmori H, Nobumori T, Fuzitani M, Kamata N : *The 34th Tyusikoku Meeting of the Japanese Society of Oral and Maxillofacial Surgeon (Yonago)*, 2005.
- 3: A case of concrescence of teeth showing a cemental union between the crown of an impacted tooth and the roots of an erupted tooth : Sugiyama M, Tohmori H, Higashikawa K, Miyauchi M, Inoue S, Kamata N : *The 34th Tyusikoku Meeting of the Japanese Society of Oral and Maxillofacial Surgeon (Yonago)*, 2005.
- 4: Study on deformation of fixation devices of RED system in maxillary distraction osteogenesis. : Ohta K, Tohmori H, Kubo M, Inoue S, Sugiyama M, Kamata N, Tanimoto K, Tanne K : *The 15th Annual Meeting of the Society for Jaw Deformities (Tokushima)*, 2005.
- 5: Two cases of sagittal splitting ramus osteotomy that were applied repositioning system by using Poly-L-Lactide Bone Mini Plate to fix bone fragments without extraoral incision. : Tohmori H, Sugiyama M, Inoue S, Miyauchi M, Ono S, Ohta K, Nobuyuki K, Nakata Y, Tabe H, Tanne K : *The 15th Annual Meeting of the Society for Jaw Deformities (Tokushima)*, 2005.
- 6: Analysis of up-regulation of MMP-2 expression accompanied with epithelial-mesenchymal transition in squamous cell carcinoma cells. : Taki M, Kamata N : *The 38th Annual Meeting of the Hiroshima University Dental Society (Hiroshima)*, 2005.
- 7: Correlation of the presence of human papillomavirus-16 in oral squamous cell carcinoma and 5-year survival : Sugiyama M, Bhawal U K, Kawamura M, Ishioka Y, Shigeishi H, Fujimoto H, Kamata N. : *The 38th Annual Meeting of the Hiroshima University Dental Society (Hiroshima)*, 2005.

- 8: The Clinical Investigation of the Emergency Case of Pediatric Patients with Oral and Maxillofacial Lesions in our hospital during 11 years. : Miyauchi M, Ono S, Ohta K, Ninomiya Y, Inoue S, Kamata N: The 7th Annual Meeting of the Japanese Society of Oral and Maxillofacial Traumatology (Chiba), 2005.
- 9: Chemokine expression in immortalized human oral keratinocytes and gingival fibroblasts. : Ohta K, Ono S, Shigeishi H, Nobunori T, Taki M, Inoue S, Kamata N : The 15th Annual Meeting of the Japanese Society for Oral Mucous Membrane (Kumamoto), 2005.
- 10: Analysis of the GDD1 gene expression.: Mizuta K, Inoue H, Tutumi S, Itakura M, Nobuyuki K : The 23rd Annual Meeting of the Japanese Society for Bone and Mineral Research (Osaka), 2005
- 11: A case of jaw trismus caused by the ectopic calcification mass in the mandibular coronoid process and the temporal muscle. : Shimasue H, Nawa A, Shigeishi H, Ninomiya Y, Ogawa I, Kamata N : The 18th Annual Meeting of the Japanese Society for the Temporomandibular Joint (Matsue), 2005.
- 12: Promoter Hypermethylation of CCND2 Gene in Oral Squamous Cell Carcinoma. : Ono S, Yoneda S, Shigeishi H, Taki M, Higashikawa K, Yasui W, Kamata N : 64th Annual Meeting of the Japanese Cancer Association (Sapporo), 2005.
- 13: Reg IV is a marker for prediction of response to 5-Fluorouracil-based chemotherapy. : Mitani Y, Oue N, Yoshida K, Kuniyasu H, Kamata N, Yasui W : 64th Annual Meeting of the Japanese Cancer Association (Sapporo), 2005.
- 14: Calmin; a possible cell adhesion molecule which is down-regulation on epithelial-mesenchymal transition. : Takaishi M, Taki M, Kamata N, Huh N : 64th Annual Meeting of the Japanese Cancer Association (Sapporo), 2005.
- 15: Profiling analysis of methylated DNA region in oral cancer using BAC-arrar.: Nakagawa T, Yokoi S, Inoue J, Suzuki E, Pimkhaokham A, Kamata N, Omura K, Imoto I, Inazawa J : 64th Annual Meeting of the Japanese Cancer Association (Sapporo), 2005.
- 16: Expression of p63 in progression of squamous cell carcinomas (SCC) via epithelial-mesenchymal transition (EMT) : Higashikawa K, Taki M, Yoneda S, Shigeishi H, Ono S, Kamata N : 64th Annual Meeting of the Japanese Cancer Association (Sapporo), 2005.
- 17: Analysis of regulation of gene expression by Snail and Ets-1 in squamous cell carcinoma cells. : Taki M, Higashikawa K, Yoneda S, Ono S, Shigeishi H, Kamata N : 64th Annual Meeting of the Japanese Cancer Association (Sapporo), 2005.
- 18: Study of metastasis-related genes in cell lines derived from a primary tongue squamous cell carcinoma and its lymph node metastasis. : Nobunori T, Taki M, Higashikawa K, Ono S, Shigeishi H, Yoneda S, Ninomiya Y, Sugiyama M, Kamata N : The 50th Annual Meeting of the Japanese Society of Oral and Maxillofacial Surgeons (Osaka), 2005.
- 19: Expressions of CCND2 in Oral Squamous Cell Carcinoma. : Ono S, Yoneda S, Shigeishi H, Taki M, Nobunori T, Higashikawa K, Kamata N : 50th Annual Meeting of the Japanese Society of Oral and Maxillofacial Surgeons (Osaka), 2005.
- 20: Expression analysis of CENP-F in salivary gland carcinomas. : Shigeishi H, Mizuta K, Higashikawa K, Ono S, Kamata N : 50th Annual Meeting of the Japanese Society of Oral and Maxillofacial Surgeons (Osaka), 2005.
- 21: Expression analysis of p63 in progression of squamous cell carcinomas (SCC) via epithelial-mesenchymal transition (EMT) : Higashikawa K, Taki M, Yoneda S, Shigeishi H, Ono S, Kamata N : The 50th Annual Meeting of Japanese Society of Oral and Maxillofacial Surgeons (Osaka), 2005.
- 22: A case of Kimura's disease of submandibular gland. : Miyauchi M, Shimasue H, Shigeishi H, Ogawa I, Sugiyama M, Miyauchi M, Kamata N : The 50th Annual Meeting of Japanese Society of Oral and Maxillofacial Surgeons (Osaka),

2005.

- 23: Gene's expression profiling analysis by Snail and Ets-1 in in squamous cell carcinoma cells. : Taki M, Higashikawa K, Yoneda S, Ono S, Shigeishi H, Kamata N : 50th Annual Meeting of Japanese Society of Oral and Maxillofacial Surgeons. (Osaka), 2005.
- 24: Induced differentiation of mouse bone marrow stromal cells into odontogenic lineage. : Maeda E, Satomura K, Tokuyama R, Taki M, Kudo K, Yamasaki Y, Kamata N, Nagayama M : 50th Annual Meeting of Japanese Society of Oral and Maxillofacial Surgeons. (Osaka), 2005.
- 25: A case of congenital tooth with cleft uvula. : Ono S, Higashikawa K, Miiuchi M, Nobumori T, Taki M, Nishi H, Kamata N : The 53th Tyusikoku Meeting of the Japanese Stomatological Society (Takamatu), 2005.
- 26: The Treatment of the Maxillofacial Bone Fractures with the Bioabsorbable Poly-L-Lactide Bone Mini Plate. : Tohmori H, Inoue S, Miyauchi M, Higashikawa K, Ohta K, Ninomiya N, Shimasue H, Ono S, Sugiyama M, Nobuyuki K : The 44th Annual Meeting Meeting of the Hiroshima prefecture Dental Science Association and The 89th Annual Meeting of the Hiroshima University Dental Society (Hiroshima), 2005.
- 27: Chemokine expression in immortalized human oral keratinocytes and gingival fibroblasts. : Ohta K, Taki M, Nishi H, Shigeishi H, Kamata N : 42th Annual Meeting of Japanese Society of Tissue Culture for Dental Research. (Hiroshima), 2005.
- 28: Gene's expression profiling analysis via Snail and Ets-1 by epithelial-mesenchymal transition in in squamous cell carcinoma cells. : Taki M, Higashikawa K, Yoneda S, Ohta K, Ono S, Shigeishi H, Kamata N : 42th Annual Meeting of Japanese Society of Tissue Culture for Dental Research. (Hiroshima), 2005.

F) Special lectures in academic meetings

- 1: Causative genes of cemento-osseous lesion in jaw bone: Kamata N: The 59th Annual Meeting of the Japanese Stomatological Society (Tokushima), 2005.
- 2: Calcification mechanisms of human oral tissue derived cells by enamel matrix protein. : Musasi T, Nagai H, Hatayama N, Oonuki K, Miyosi Y, Hukuda M, Kamata N, Nagayama M, Miyamoto Y : The 59th Annual Meeting of the Japanese Stomatological Society (Tokushima), 2005.
- 3: Functional analysis of p63 in progression of squamous cell carcinomas via epithelial-mesenchymal transition (EMT) : Higashikawa K, Yoneda S, Taki M, Shigeishi H, Ono S, Kamata N : The 59th Annual Meeting of the Japanese Stomatological Society (Tokushima), 2005.
- 4: Significance of induction of Wnt-5a expression accompanied with epithelial-mesenchymal transition in squamous cell carcinoma cells. : Taki M, Kamata N, Tomonari M, Nagayama M : The 59th Annual Meeting of The Japanese Stomatological Society (Tokushima), 2005.
- 5: Expression and Functional Roles of the Gnathodiaphyseal Dysplasia Gene (GDD1) : Mizuta K, Inoue H, Tutumi S, Nobuyuki K, Itakura M : The 59th Annual Meeting of The Japanese Stomatological Society (Tokushima), 2005.
- 6: Expression analysis of CENP-F in oral squamous cell carcinomas. : Shigeishi H, Mizuta K, Higashikawa K, Ono S, Sugiyama M, Kamata N : The 59th Annual Meeting of The Japanese Stomatological Society (Tokushima), 2005.

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

- 1: Grant-in-Aid for Scientific Research (B) : Kamata N. : Study of invasion and metastasis of oral cancer via epithelial-mesenchymal transition (No. 15390616.) ¥1,700,000
- 2: Grant-in Aid for Scientific Research ((B) (2)) continuing : Sugiyama M, Miyauchi M, Higashikawa K : The association of human papillomavirus with the development of oral squamous cell carcinoma. (Project No. 16390590). ¥3,100,000
- 3: Grant-in-Aid for Scientific Research (C) : Higashikawa K. : The role of p63 expression in progression of squamous cell carcinomas via epithelial-mesenchymal transition (No. 17592085). ¥1,700,000
- 4: Grant-in-Aid for Young Scientists (B) : Ohta K. : Cell biological research on etiology of chronic inflammatory disease of oral mucosa (Project No 17791460). ¥1,300,000
- 5: Grant-in-Aid for Young Scientists (B) : Shigeishi H.: Expression analysis of CENP gene in salivary gland tumors (Project No. 17791461). ¥ 1,600,000
- 6: Grant-in-Aid for Young Scientists (B) : Ono S.: The mutation, amplification and expression of EGFR gene and basic study of the molecular target-based therapy in oral cancer (Project No. 17791462). ¥ 2,600,000
- 7: Grant-in-Aid for Scientific Research (Sprout) : Kamata N. : Identification and functional analysis of the causative gene of Gnathodiaphyseal Dysplasia Dysplasia.(Project No.16659555.) ¥1,300,000

(5) Academic Awards, etc.

- 1: Ono S.: "The Excellent Poster Prize" 57th Annual Meeting of the Japanese Stomatological Society (Tokushima), 2005.
- 2: Higashikawa K.: "Goldribbon Award "50th Annual Meeting of Japanese Society of Oral and Maxillofacial Surgeons. (Osaka), 2005
- 3: Taki M.: "MEDARTIS® Award" 50th Annual Meeting of Japanese Society of Oral and Maxillofacial Surgeons. (Osaka), 2005.

(6) Patents

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

(1) Staffs and Students

Professor	: Yasumasa Akagawa
Associate Professor	: Kazuhiro Tsuga
Assistant Professor	: Takayasu Kubo, Yasuhiko Abe, Mitsuyoshi Yoshida
Research Associate	: Tsuyoshi Taji, Kyo Hiasa, Takenori Yamanaka, Katsunori Koretake, Chihiro Masaki (to March), Ryo Hayashi (from November)
Secretary	: Satoko Sota, Akiko Shindo
Resident	: Kyoko Sato (to March) , Maho Takeuchi (from April), Ryo Hayashi (from April to October)
Intern	: Maho Takeuchi (to March), Nobuo Nagai (to March), Mineka Yoshikawa (from April)
Graduate Student	: Iku Yasuda (to March), Zhao Yang, Kazuya Doi, Kazuhiko Hayashi, Yuri Utanohara, Tomohisa Komoto, Makoto Hirata, Yasunari Miyamoto, Hidehiko Morikawa, Gentaro Okada, Takahisa Kawamura, Ayumu Matsuura, Koji Morita, Yoshimasa Ikuma, Yayoi Kanehisa (from April)
Research Resident	: Ryo Hayashi (to March)
Others	: Mineka Yoshikawa (Visiting researcher, Northwestern University, USA; to March)

(2) Main Research Activities

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

(3) Research Achievements

A) Original Papers (including Case Reports)

- 1: Fatigue behavior of packable composites : Abe Y, Braem M J A, Lambrechts P, Inoue S, Takeuchi M and Van Meerbeek B : *Biomaterials* 26(17), 3405-3409, 2005.
- 2: Bone response around immediately versus delayed loaded oral implants supporting ill-fitting prostheses : Duyck J, Vrielinck L, Lambrichts I, Abe Y, Schepers S, Politis C and Naert I : *Clinical Implant Dentistry & Related Research* 7(3), 150-158, 2005.
- 3: Possibility of OSCE in summation evaluation of postgraduate clinical training course : Taguchi N, Ogawa T, Sasahara H, Shirai K, Yoshino H, Tani R, Shimasue H, Taji T, Abekura H, Tanaka E, Amano H, Taguchi A, Takarada T, Nahara Y and Ogawa I : *The Journal of Japanese Dental Education Association* 20(1), 127-134, 2005.
- 4: Effect of general condition and tongue pressure on meal form selection for elderly care recipient : Tsuga K, Yoshida M, Urabe H, Hayashi R, Yoshikawa M, Utanohara Y, Morikawa H and Akagawa Y : *J. Masticat. & Health Soc.*14(2), 62-67, 2005.
- 5: In utero and lactational exposure to 2,3,7,8-tetrachlorodibenzo-p-dioxin (TCDD) affects tooth development in rhesus monkeys : Yasuda I, Yasuda M, Sumida H, Tsusaki H, Arima A, Ihara T, Kubota S, Asaoka K, Tsuga K, Akagawa Y : *Reproductive Toxicology* 20(1),21-30, 2005.
- 6: Influence of mental status on removable prosthesis compliance in institutionalized elderly persons : Taji T, Yoshida M, Hiasa K, Abe Y, Tsuga K and Akagawa Y : *Int. J. Prosthodont.* 18(2),146-149, 2005.
- 7: Effects of functional oral health care for lingual function in elderly people requiring long-term care: Kikutani T, Tamura F, Suda M, Kayanaka H, Nishiwaki K, Ino Y, Yoshida M, Hayashi R, Tsuga K, Akagawa Y, Adachi M, Yoneyama T, Itoh H, Oishi N and Inaba S: *Japanese Journal of Gerodontology* 19(4), 300-306, 2005.
- 8: Application of a palatal plate in amyotrophic lateral sclerosis : a case report : Nagasaki T, Yoshida M, Yamashina A, Sueti Y and Tanimoto K : *Oral Radiol.* 20, 76-79, 2004.
- 9: Aspects of swallowing in healthy dentate elderly persons older than 80 years : Yoshikawa M, Yoshida M, Nagasaki T, Tanimoto K, Tsuga K, Akagawa Y and Komatsu T : *Journal of Gerontology: MEDICAL SCIENCES* 60A(4),506-509, 2005.
- 10: The relationship between tongue pressure and selected meal form of elderly people taking "Geriatric Soft Food" : Tsuga K, Shimada M, Kuroda R, Hayashi R, Yoshikawa M, Sato K, Saito N, Yoshida M, Maeda Y, Kida O and Akagawa Y : *The Japanese Journal of Dysphagia Rehabilitation* 9(1), 56-61, 2005.
- 11: Establishment of active learning strategy in postgraduate clinical training course; Standardization and Individualization : Taguchi N, Ogawa T, Tanaka Y, Sasahara H, Shirai K, Yoshino H, Tani R, Shimasue H, Taji T, Abekura H, Tanaka E, Amano H, Taguchi A, Takarada T, Nahara Y and Ogawa I : *The Journal of Japanese Dental Education Association* 21(2), 196-204, 2005.
- 12: New surface modification of titanium implant with phospho-amino acid : Abe Y, Hiasa K, Takeuchi M, Yoshida Y, Suzuki K and Akagawa Y : *Dental Materials Journal* 24(4), 536-540, 2005.

- 13: Eight year mortality associated with dental occlusion and denture use in community- dwelling elderly persons : Yoshida M, Morikawa H, Yoshikawa M, Tsuga K, Akagawa Y : Gerodontology 22,234-237, 2005.
- 14: Reconstruction of bilateral occlusal-supporting area with removable partial dentures : a case report : Hiasa K : J. Jpn. Prosthodont. Soc. 49(2), 294-297, 2005.

B) Review

C) Publications

D) Other Publications

- 1: Functional dental occlusion may prevent falls in elderly individuals with dementia : Yoshida M, Morikawa H, Kanehisa Y, Taji T, Tsuga K, Akagawa Y : J Am Geriatr Soc 53(9), 1631, 2005.

E) Presentation at Scientific Meeting

- 1: New Method for Study on Initial Bone Healing around Implant : Miyamoto Y, Koretake K, Taguchi A, Hirata M, Tanimoto K, Akagawa Y : The International Association for Dental Research (Baltimore), 2005.
- 2: Correlation between Insertion Torques and Bone Quality by Intraoral Radiographs : Hirata M, Koretake K, Taguchi A, Nagai N, Tanimoto K, Akagawa Y : The International Association for Dental Research (Baltimore), 2005.
- 3: Validity of handy tongue pressure measurement : Yoshida M, Tsuga K, Utanohara Y, Hayashi R, Yoshikawa M and Akagawa Y : The 113th Scientific Meeting of Japan Prosthodontic Society (Osaka), 2005.
- 4: Maximum Voluntary Tongue Pressure in Healthy Japanese Adults -A Multi-center Study- : Tsuga K, Utanohara Y, Hayashi R, Nokubi T, Terada Y, Hayakawa I, Shimoyama K, Sakurai K, Ichikawa T, Kikutani T, Kawasaki T, Akagawa Y : The 113th Scientific Meeting of Japan Prosthodontic Society (Osaka), 2005.
- 5: The effects of bFGF for cadherin expression in osteoblast-like cells : Komoto T, Yamanaka T, Masaki T and Akagawa Y : The 113th Scientific Meeting of Japan Prosthodontic Society (Osaka), 2005.
- 6: Bone formation by mesenchymal stem cells with newly-developed interconnected porous hydroxyapatite scaffold : A beagle dog study: Doi K, Kubo T, Masaki T, Hayashi K, Imura K, Akagawa Y : The 11th Meeting of the International College of Prosthodontists (Creta), 2005.
- 7: Initial crestal bone loss of early loaded implants with different modified surfaces : Matsuura A, Hirata M, Kubo T, Akagawa Y : The 4th Biennial Congress of Asian Academy of Prosthodontics (Bangkok), 2005.
- 8: Development of a compound carrier system for impression and muscle trimming : Taji T, Hayashi

R, Yoshikawa M, Yoshida M, Abe Y, Kubo T, Tsuga K, Akagawa Y and Yuasa Y : Joint meeting of Chugoku-shikoku branch and Kyushu branch of Japan Prosthodontic Society (Yamaguchi), 2005.

- 9: A Study of Bone Regeneration using Hybrid Artificial Bone Combine Bone Marrow Stromal Cells : Evaluation of Bone Formation on Periods of Differentiation : Doi K, Kubo T, Hayashi K, Imura K, Asamori T and Akagawa Y : 35th Annual Meeting of Japanese Society of Oral Implantology (Hirosaki), 2005.
- 10: An effect to crestal bone reduction around early loaded implants with different modified surfaces : Kubo T, Hirata M, Matsuura A, Akagawa Y, Motokawa H and Okane H : The 114th Scientific Meeting of Japan Prosthodontic Society (Niigata), 2005.
- 11: Relationship between occlusion and falls among community dwelling elderly people - Examination of dynamic physical function - : Morikawa H, Yoshida M, Utanohara Y, Okada G, Kawamura T, Yoshikawa M, Hayashi R, Yoneyama T, Tsuga K, Kikutani T and Akagawa Y : The 114th Scientific Meeting of Japan Prosthodontic Society (Niigata), 2005.
- 12: New Biochemical Modification of Titanium Implant with Phospho-RGD Peptide : Takeuchi M, Abe Y, Zhao Y, Hiasa K, Akagawa Y : The 1st Congress of Asian Academy of Osseointegration (Seoul), 2005.
- 13: A novel evaluation of bone quality : Correlation between Insertion Torque and Bone Quality as Evaluated by Intraoral Radiographs : Hirata M, Koretake K, Miyamoto Y, Akagawa Y : The 1st Congress of Asian Academy of Osseointegration (Seoul), 2005.
- 14: Edentulism and Nutritional Status among Community-Dwelling Elderly in Japan : Kawamura T, Yoshida M, Kikutani T, Tamura F, Akagawa Y : The 53th Annual Meeting of Japanese Association for Dental Research (Okayama), 2005.

F) Special lectures in academic meetings

- 1: Lecture by the President: Future Value of Prosthodontics : Akagawa Y.: The 113th Scientific Meeting of Japan Prosthodontic Society (Osaka), 2005.
- 2: Symposium II:Health and Long Life Cultivated by Occlusion and Mastication - An Occlusion that Overlooks Life Stage - Relationship between Health and Occlusion in the Elderly : Akagawa Y. : The 113th Scientific Meeting of Japan Prosthodontic Society (Osaka), 2005.
- 3: Public Symposium: Oral care for the institutionalized elderly : Yoshida M. : The 53th Annual Meeting of Japanese Association for Dental Research (Okayama), 2005.

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

- 1: Grant-in-Aid : Akagawa Y : Development of diagnostic system for predicting loss of osseointegration (No.17390519)
- 2: Grant-in-Aid : Tsuga K : Development of oral power rehabilitation method for improving the effect of denture treatment in the older people (No.17390520)

- 3: Grant-in-Aid : Koretake K : Development of diagnostic system for initial bone anchorage of oral implants (No.17791392)
- 4: Grant-in-Aid : Takeuchi M : Biological surface modification of titanium implant with phosphorylated peptides (No.17791391)
- 5: Grant-in-Aid : Akagawa Y : Development of bio-hybrid artificial bone with mesenchymal stem cell: (No.16659536)
- 6: Grant-in-Aid : Kubo T : Novel intra oral X-ray bone diagnosis using trabeculae area and fractal dimension (No.16659535)
- 7: Grant-in-Aid : Kubo T : Development of Guideline for successful immediate loaded oral implants: (No.16390558)
- 8: Grant-in-Aid : Abe Y : Surface modification of titanium implant for aligning adherent cells (No.16591951)
- 9: Grant-in-Aid : Yoshida M : Food bolus holding by tongue as a key for preventing dysphagia: (No.16591954)
- 10: Grant-in-Aid : Taji T : Evidence based diagnostic strategy for denture treatment of elderly people: (No.16591952). ¥ 1,400,000
- 11: Grant-in-Aid : Hiasa K : Application of mechanical analysis for occlusal surface formation on super structures of oral implants (No.16791192)
- 12: Grant-in-Aid : Yamanaka T : Relationship between Osteoblast ability and FGF super family (No.16791190)

(5) Academic Awards, etc.

(6) Patents

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

(1) Staffs and Students

Professor	: Taizo Hamada
Associate Professor	: Shinsuke Sadmori
Assistant Professor	: Hiroshi Murata, Hitoshi Abekura (in the university)
Research Associate	: Masahiro Nishimura, Seicho Makihira, Shunji Inoue, Hong Guang
Secretary	: Michiko Miyagawa
Resident	: Kazuko Kagawa, Hiroe Uchiyama
Intern	: Haruki Nishimura, Kae Harada, Miyoko Sigeoka, Kaori Nakano (Until September) , Hiroyuki Miyoshi, Kaori Okubo, Akitoshi Kawagoe, Taketo Hukuda, Shinichi Hujimoto
Graduate Student	: Mie Aoki, Yoshie Ozaki, Sinichi Nakanoda, Kensuke Sekiya, Li YingAi, Fumio Suehiro, Kentaro Hayashida, Takeshi Maeda, Wataru Mizumachi
International Student	:Seiko Seo (Until June)
Registered Intern	:Masami Furuebisu, Yutaka Fukanogi, Eiko Hujita, Seiji Hirashio

(2) Main Research Activities

- 1 : Development of effective transplantation systems of mesenchymal stem cells
- 2 : Molecular biology of mesenchymal stem cells towards osteogenic differentiation
- 3 : Development of low invasive alveolar ridge augmentation systems
- 4 : Relation between prosthetic treatment and general condition in elderly with dementia
- 5 : Psychiatric disorders in dental practice
- 6 : Development of Denture Adhesive
- 7 : Rheology of dental materials and development of denture lining materials
- 8 : Round-Robin test of resilient Denture Liners
- 9 : Electromyographic study of conservative treatments for stomatognathic dysfunction syndrome
- 10 : Studies on adhesive technique for short span bridge prosthesis and mobilized tooth splint

(3) Research Achievements

A) Original Papers (including Case Reports)

- 1 : Intercellular Adhesion Molecule 1-Dependent Activation of Interleukin 8 Expression in Candida albicans- Infected Human Gingival Epithelial Cells : Egusa H, Nikawa H, Makihira S, Jewett A, Yatani H, Hamada T. : Infection and Immunity 73, 622-626, 2005.
- 2 : Physical Properties and Additional Characteristics of Current elastomeric impression materials : Hong G, Murata H, Li Y A, Hamada T : Int Chin J Dent 5, 80-90, 2005.
- 3 : Compatibility of Tissue Conditioners and Dental Stones : Effect on Surface Roughness: Murata H, Hong G, Li Y A, Hamada T : J Prosthet Dent 93, 274-281, 2005.
- 4 : Viscoelasticity of Dental Tissue Conditioners during the Sol-gel Transition : Murata H, Chimori H, Hamada T, McCabe J F : J Dent Res 84, 376-381, 2005.
- 5 : Clock Gene Expression in the Submandibular Glands : Furukawa M, Kawamoto T, Noshiro M, Honda K K, Sakai M, Fujimoto K, Honma S, Honma K, Hamada T, Kato Y : J Dent Res 84, 1193-1197, 2005.
- 6 : Tissue-Specific Disruption of Rhythmic Expression of Dec1 and Dec2 in Clock Mutant Mice : Noshiro M, Furukawa M, Honma S, Kawamoto T, Hamada T, Honma K, Kato Y : J Biological Rhythms 20, 404-418, 2005.
- 7 : Alveolar Bone Marrow as a Cell Source for Regenerative Medicine : Differences Between Alveolar and Iliac Bone Marrow Stromal Cells: Matsubara T, Suardita K, Ishii M, Sugiyama M, Igarashi A, Oda R, Nishimura M, Saito M, Nakagawa K, Yamanaka K, Miyazaki K, Shimizu M, Bhawal U, Tsuji K, Nakamura K, Kato Y : J Bone Miner Res 20, 399-409, 2005.
- 8 : Association of Expression of Receptor for Advanced Glycation end Products and Invasive Activity of Oral Squamous Cell Carcinoma : Bhawal UK, Ozaki Y, Nishimura M, Sugiyama M, Sasahira T, Nomura Y, Sato F, Fujimoto K, Sasaki N, Ikeda M A, Tsuji K, Kuniyasu H, Kato Y : Oncology 69, 246-255, 2005.
- 9 : Evaluation of Setting Behavior of Resilient Denture Liners Using Displacement Rheometer : Zhao J, Hong G, Li Y A, Murata H, Hamada T, Jin C : Clinic Med Chin 21, 779-781, 2005. (in Chinese)
- 1 0 : The Development of the Measuring Method of the Working Time and Setting Time of the Tissue Conditioner : Zhao J, Hong G, Li Y A, Murata H, Hamada T, Jin C : J Capit Univ Med Scienc 26, 505-508, 2005. (in Chinese)
- 1 1 : Immobilization of Octadecyl Ammonium Chloride on the Surface of Titanium and Its Effects on Microbial Colonization In Vitro : Nikawa H, Ishida K, Hamada T, Satoda T, Murayama T, Takemoto T, Tamamoto T, Tajima H, Shimoe S, Fujimoto H, Makihira S : Dent Mater J 24, 4, 570-582, 2005.
- 1 2 : Compatibility of tissue conditioners and dental stones: effect on surface roughness : Murata H, Hong G, Li Y A, Hamada T : J Prosthet Dent 93, 274-281, 2005.
- 1 3 : Comparison of the recognition of denture adhesive between Japanese and Indonesian dentists : A pilot study: Sadamori S, Hamada T, Hong G, Nakai N, Kawamura M, Razak A : Dent J 38, 189-193, 2005.
- 1 4 : Candida adherence and biofilm formation on oral surfaces : Nikawa H, Makihira S, Egusa H, Fukushima H, Kawabata R, Hamada T, Yatani H : Japan J Med Myco 46, 233-242,

2005. (in Japanese)
- 1 5 : Survey of insurance against medical malpractice and accident insurance carried by dentists in the postgraduate clinical training course and graduate students at the dental section of Hiroshima university hospital : Sasahara H, Kawamura M, Sadamori S, Taguchi N, Ogawa T : J Japan Dent Educ Assoc (JJDEA). (in Japanese)
- 1 6 : Semi-permeable membrane formation by high molecular weight hyaluronan : HA-proteoglycan-fibronectin network is a natural bandage for injured tissues -conservation throughout evolution : Kato Y, Nishimura M, Nakamura S: Clin. Rheumatol 17, 113-117, 2005. (in Japanese)
- 1 7 : The denture cleanser comprised of photo-catalyst (TiO₂) and the new concept for denture cleansing : Nikawa H, Makihira S, Nishimura M, Sasaki M, Hamada T : J. Hiroshima Dent. Assoc. 32, 1-11, 2005.(in Japanese)
- 1 8 : Effect of denture adhesives : Murata H, Hamada T, Nikawa H.: Year Book 2005, The Quintessence, Supplement, 96-97, 2005. (in Japanese)
- 1 9 : Availability of the data on patch test and metal analysis of suspected patients of metal allergy. : Makihira S, Nikawa H, Uchiyama H, Abekura H, Sadamori S, Ogawa I, Tanaka T, Takada T, Kouzai K, Hamada T : J. Hiroshima Dent. Assoc 33,32-36, 2005. (in Japanese)
- 2 0 : Application of dental implant in our clinic- A progress of five years treatment : Nishimura M, Makihira S, Sugiyama M, Kamata N, Sadamori S, Hamada T : J. Hiroshima Dent. Assoc. 33, 27-31, 2005. (in Japanese)

B) Review

C) Publications

- 1 : Improvement of Poor Retention of Upper Denture (Case 7) : Sadamori S : New Magnetic Applications in Clinical Dentistry, Quintessence Publishing Co., Ltd., 123-124, 2004.

D) Other Publications

- 1 : Dental practice for elderly with dementia : Sadamori S. : J Takamatsu. Dent Assoc 336, 17-26, 2005.(in Japanese)
- 2 : Prosthesis for missing teeth and splint of mobile teeth with adhesion bridge : Karadanokagaku (zoukan) Koudosennsiniroyou (Idezuki Y): Abekura H, Hamada T : Nippon-Hyoron-Sha Co.,Ltd. (Tokyo), 157-160, 2005 (in Japanese).

E) Presentation at Scientific Meeting

- 1 : TRAF1 Negatively Regulates RANKL Mediated TRAF6 Signaling in Osteoclastogenesis : Kawai T, Makihira S, Oyoshi M K, Nakanishi T, Lee J E, Tsitsikov E N, Taubman M A :

- IADR (Baltimore), 2005.
- 2 : Influence of Denture Cleansers on Colour Stability of Denture Base Resin : Hong G, Li Y A, Murata H, Hamada T, Inoue S : The 113th Scientific Meeting of Japan Prosthodontic Society (Osaka), 2005.
 - 3 : Effect of Thermocycling on the Rupture Energy of Intact and Relined Denture Bases : Seo R S, Murata H, Hong G, Hamada T : The 113th Scientific Meeting of Japan Prosthodontic Society (Osaka), 2005.
 - 4 : Development of the method for inhibition of alveolar bone resorption –The effect of TRAF6-RNAi on the osteoclastogenesis : Makihira S, Kawai T, Nikawa H, Taubman M A, Hamada T : The 113th Scientific Meeting of Japan Prosthodontic Society (Osaka), 2005.
 - 5 : Durability of Newly Developed Heat-cured Acrylic Soft Denture Liners - Influence of Enzymes - : Murata H, Li Y A, Hong G, Nishimura M, Hamada T, Hishimoto M : The 113th Scientific Meeting of Japan Prosthodontic Society (Osaka), 2005.
 - 6 : Rheology and adhesive properties to a denture base resin of denture adhesives : Murata H, Hamada T, Seo S, Hong G, Yuda S, Tujimoto K, Kato Y, Ymada H : The 7th general session of the society for soft denture liners (Yokohama), 2005.
 - 7 : Development of denture storage liquid : Hong G, Hamada T, Murata H, Li Y A, Yuda S, Tujimoto K, Kato Y, Ymada H : The 7th general session of the society for resilient denture liner (Yokohama), 2005.
 - 8 : Influence of Composition on Temperature Characteristics of Viscoelastic Properties of Tissue Conditioners : Hong G, Murata H, Sadamori S, Hamada T : The 45th General Session of the Japanese Society for Dental Materials and Devices (Tokyo), 2005.
 - 9 : TRAF1 negatively regulates RANKL-TRAF6 signaling network during osteoclastogenesis : Makihira S, Kawai T : The 23rd Annual meeting of the Japanese society for bone and mineral research (Osaka), 2005.
 - 10 : Circadian rhythm of cartilage : Analysis at molecular level : Honda K, Kawamoto T, Nakashima A, Fujimoto K, Nishimura M, Oda R, Nakamura S, Noshiro M, Kato Y : The 23rd Annual meeting of Japanese society for bone and mineral research (Osaka), 2005.
 - 11 : Oral status of elderly in a health care facility –five years study- : Yamada K, Makihira S, Sadamori S, Hamada T : The 16th Scientific Meeting of the Japanese Society of Gerodontology (Tokyo), 2005.
 - 12 : Denture adhesives and Japanese Industrial Standard : Hamada T, Hong G, Maeda T, Murata H, Mizumachi W, Sadamori S : Chugoku/Sikoku Branch/Kyushu Branch Joint Scientific Meeting of the Japan Prosthodontic Society (Yamaguchi), 2005.
 - 13 : Relationship between the elderly with dementia and the wearing of denture : Inoue S, Sadamori S, Hamada T, Kagawa K, Ozaki Y, Sekiya K : Chugoku/Sikoku Branch/Kyushu Branch Joint Scientific Meeting of the Japan Prosthodontic Society (Yamaguchi), 2005.
 - 14 : An investigation of the data on patch test and metal analysis of suspected patients of metal allergy during the last seven years : Uchiyama H, Nikawa H, Makihira S, Harada K, Nishimura H, Hamada T : Chugoku/Sikoku Branch/Kyushu Branch Joint Scientific Meeting

- of the Japan Prosthodontic Society (Yamaguchi), 2005.
- 1 5 : Relationship between type of monomer and dynamic viscoelasticity of cold-cured acrylic soft denture liners : Murata H, Chimori H, Hong G, Hamada T : The 46th General Session of the Japanese Society for Dental Materials and Devices (Nagasaki), 2005.
 - 1 6 : Report of High Technology Modern Medicine for Ten Years in Hiroshima University Dental Hospital –Prosthesis for missing teeth and splint of mobile teeth with adhesion bridge- : Abekrua H, Hamada T, Sadamori S, Murata H, Nishimura M, Makihira S, Kagawa K, Nikawa H, Tamamoto M : The 44th Scientific Meeting of Hiroshima Prefecture Dental Association and 89th Scientific Meeting of Hiroshima University Dental Society.(Hiroshima), 2005.
 - 1 7 : Studies about patients visited the clinic of psychosomatic dentistry for 5 years : Sadamori S, Hamada T, Abekura H, Inoue S, Kagawa K, Nishimura H : The 44th Annual Meeting of The Hiroshima Prefectural Dental Association and The 89th Annual Meeting of Hiroshima University Dental Society (Hiroshima), 2005.
 - 1 8 : Investigation of home page of dental clinics : Murata H, Li Y A, Nikawa H, Nishimura H, Hong G, Sadamori S, Hamada T : The 44th Scientific Meeting of Hiroshima Prefecture Dental Association and 89th Scientific Meeting of Hiroshima University Dental Society.(Hiroshima), 2005.
 - 1 9 : Water Sorption, Solubility and Color Stability of New Resilient Denture Liner “Physio Soft Rebase” : Li Y A, Murata H, Hong G, Nishimura M & Hamada T : The 44th Scientific Meeting of Hiroshima Prefecture Dental Association and The 89th Scientific Meeting of Hiroshima University Dental Society.(Hiroshima), 2005.
 - 2 0 : Availability of the data on patch test and metal analysis of suspected patients of metal allergy: Makihira S, Nikawa H, Uchiyama H, Shigeoka M, Nakano K, Miyoshi H, Ogawa I, Takada T, Hamada T : The 44th Scientific Meeting of Hiroshima Prefecture Dental Association and The 89th Scientific Meeting of Hiroshima University Dental Society (Hiroshima), 2005.
 - 2 1 : Analysis of circadian rhythm gene 2 : Analysis in vivo (at growth plate of rib cartilage): Honda K, Kawamoto T, Ueda Y, Noshiro M, Fujimoto K, Nakasima A, Nishimura M, Oda R, Nakamura S, Hashimoto S, Kato Y. : The 78th Annual meeting of Japanese tissue culture association (Hiroshima), 2005.
 - 2 2 : Semi-permeable membrane formation by high molecular weight hyaluronan : HA-proteoglycan-fibronectin network is a natural bandage for injured tissues-conservation throughout evolution : Kato Y, Nishimura M, Nakamura S : The 26th Annual meeting of Japanese society of inflammation and regeneration, symposium (Tokyo), 2005.
 - 2 3 : Biological actions of hyaluronan in joint tissues and HA-dependent maintenance of cartilage elasticity : Kato Y, Nishimura M, Nakamura S : The 33rd Annual meeting of Japanese society of rheumatism and joint surgery. (Tokyo), 2005.
 - 2 4 : Effect of living mesenchymal stem cells for bone augmentation : Sekiya K, Nishimura M, Suehiro F, Ozaki Y, Hamada T, Kato Y : The 25th Annual meeting of Japanese society of oral implantology, Chugoku · Shikoku Branch, (Okayama), 2005.
 - 2 5 : Circadian rhythm of cartilage differentiation : Comprehensive analysis : Honda K,

Kawamoto T, Yamada X, Ueda Y, Noshiro M, Fujimoto K, Nakashima A, Nishimura M, Oda R, Nakamura S, Kojima T, Hashimoto S, Kato Y : The 28th Annual meeting of molecular biology society of Japan (Fukuoka), 2005.

- 2 6 : Relationship between the general condition and the oral condition of the elderly with dementia : Inoue S, Sadamori S, Furuebisu M : The 6th Meeting of Japanese Society for Dementia Care (Shimane), 2005.
- 2 7 : The relationship between oral status and general condition of elderly with dementia – in a group home - : Furuebisu M, Sadamori S, Hamada T, Sasahara H : The 22nd Japanese society for disability and oral health (Koufu), 2005.

F) Special lectures in academic meetings

- 1 : Oral Health care in Geriatric Persons : S Sadamori(Main Speaker), Hamada T. : The 22nd Indonesian Dental Association Congress (Makassar-Indonesia):2005.3.20.
- 2 : The influence of oral function (chewing) to the condition of brain and mental status : Sadamori S. : World brain week/Hiroshima event Open class for high school student and the teacher (Hiroshima), 2005.
- 3 : Relation between oral function and general conditions (to the condition of Brain?) : Sadamori S. : International Gospel League group, Meeting for facility staff (Hiroshima), 2005.
- 4 : How to apply new technique and materials—Soft denture liners : Murata H. : Chugoku/Sikoku Branch/Kyushu Branch Joint Scientific Meeting of the Japan Prosthodontic Society (Yamaguchi), 2005.
- 5 : Relation elderly with dementia and denture : Sadamori S. : The Meeting of Japanese Society for Dementia Care/Educational Lecture (Shimane)
- 6 : Oral Health : Furuebisu M. : The meeting for staff of regional rehabilitation in 2005 (Higashi-hiroshima)

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

- 1 : Grand-in-Aid for Scientific Research ((B)(2)) continued : Sadamori S : Influence of denture wearing for elderly with dementia to the status of dementia, general conditions, and QOL. (No.16390617). ¥1,900,000.
- 2 : Grant-in-Aid for Scientific Research (C)(2) continued : Murata H : Development of a moisturized soft denture liner for a patient having dry mouth. (No. 16591953). ¥1,200,000.
- 3 : Grant-in-Aid for Scientific Research (C)(2) continued : Abekura H : The effects of oral appliance on sleep apnea syndrome and influence of oral appliance on jaw muscle activities. (No. 16591950), ¥1,100,000.
- 4 : Grand-in-Aid for Scientific Research ((B)(2)) continued : Inoue S : Cognitive behavioral approach by the stress reaction analysis for the chronic head and neck pain.(No.16591942), ¥ 700,000.

- 5 : Grant-in-Aid for Scientific Research (Young researchers B) New : Nishimura M :
Development of non cellular bone augmentation technique for elderly severe jaw resorption.
(No. 17791390), ¥2,100,000.
- 6 : Japan Science and Technology Agency (Innovation plaza Hiroshima), continued : Leader Kato
Y, Sub-leader Nishimura M : Commercialization of cellular treatment for periodontal and
bone diseases: Systems for stem cell transplantation. Total ¥90,000,000 for 3 years.
- 7 : Japan Science and Technology Agency (Licensing program), continued : Leader Nikawa H,
Sub-leader Nishimura M : Development of new serum free medium for stem cells
containing antibacterial reagent. Total ¥60,000,000 for 2.5 years.

(5) Academic Awards, etc.

- 1 : Hamada T : Gold Pin Award: 2005.7.4

(6) Patents

- 1: Nikawa H, Nishimura M, Kato Y, Tsuji K : New serum free culture medium for animal stem
cells. (Patent pending No. 2005-223242)(Applicant: Twocells. Co., Ltd. & Nikawa H.) (The
filling date: 2005.8.1)
- 2: Nikawa H, Nishimura M, Tsuji K, Kawabata R, Katagiri N : New anti-bacterial peptides (Patent
pending No. 2005-277121) (Applicant: JST, Hiroshima Univ., Twocells. Co., Ltd.) (The filling
date: 2005.9.26)

**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	:	Eiji Tanaka
Assistant Professor	:	Toshitsugu Kawata, Hiroshi Ueda
Research Associate (Faculty of Dentistry)	:	Sigeru Ohno, Koutarou Tanimoto, Tadashi Fujita, Kobun Honda
Research Associate (Hospital)	:	Masato Kaku, Mineo Watanabe
Resident	:	Mie Harada, Cise Ijuin, Nobuaki Tanaka, Sinya Kohno, Hideki Tabe, Keisuke, Tsutsui, Yukiko Myouishi
Resident (Intern)	:	Yuiko Thoma, Jungi Ohtani, Aya Suzuki, Yoshiko Nakata, Mika Nishi, Kouichi Hanaoka, Masahide Motokawa, Kiyoshi Yoneno
Graduate Student	:	Maiko Ohno-Nakahara, Eka Matsumoto, Masashi Ueki, Nobuhiko Kawai, Yuki Nakatani, Mao Nakano, Miho Hirose, Diego Dalla-Bona, Hiroko Kamata Reiko Kitamura, Koh Myongsun, Takurou Hasegawa, Tamami Yanagida, Lin Yu-Yu, Youhei Suekawa, Masako Tai, Yuki Tanne, Eizo Yamano, Ryouko Yamamoto, Toshihiro Inubushi, Akira Ohkuma, Takashi Kamiya, Ryouta Sano, Maya Shirakura, Koji Takahashi, Natsumi Tsuka, Tetsuji Nagayama
Professor (part-time)	:	Kazuhiro Ueki, Toshitsugu Kojima, Hiroharu Tsuka, Hiroshi Hanaoka, Kunimichi Souma, Keiji Moriyama
Registered Intern	:	Kazuaki Kikuchi, Kuniaki Tanaka, Keiko Nagaoka, Kouichi Ohno, Kazuo Hashimoto
Dental Hygienist	:	Miho Hidaka, Kana Dainobu

(2) Main Research Activities

- 1: Viscoelastic property of temporomandibular joint disks.
- 2: Effects of growth factors on the proliferation and differentiation of condylar cartilage and the disk cells.
- 3: Biomechanical investigation of TMJ loading and assessment of lubricating function.
- 4: Mechanisms of pain transmission during experimental tooth movement and clarification of

pain control.

- 5: Changes in stomatognathic functions from orthodontic surgery.
- 6: Association between nasal respiratory disturbances and craniofacial morphology and masticatory and respiratory functions.
- 7: Influences of mechanical stimuli on the proliferation and differentiation of chondrocytes.
- 8: Clarification of PDL regeneration mechanism.
- 9: Metabolism of hyaluronan in TMJ synovial fluid.
- 10: Influences of food consistency on neuropathological changes in the cerebral cortex.
- 11: Regeneration of bone and cartilage with mesenchymal stem cells.
- 12: Control mechanism of bone growth and development with sex hormone.

(3) Research Achievements

A) Original Papers (including Case Reports)

- 1: Neutralizing effects of an anti-vascular endothelial growth factor antibody on tooth movement : Kohno S, Kaku M, Kawata T, Fujita T, Tsutsui K, Ohtani J, Tenjo K, Tohma Y, Motokawa M, Shigekawa M, Kamada H, Tanne K : *The Angle Orthodontist* 75, 797-804, 2005.
- 2: Effects of Cyclic Tensile Forces on the Expression of Vascular Endothelial Growth Factor (VEGF) and Macrophage-colony-stimulating Factor (M-CSF) in Murine Osteoblastic MC3T3-E1 Cells : Motokawa M, Kaku M, Tohma Y, Kawata T, Fujita T, Kohno S, Tsutsui K, Ohtani J, Tenjo K, Shigekawa M, Kamada H, Tanne K : *J Dent Res* 84, 422-427, 2005.
- 3: Induction of MMP-3 by hyaluronan oligosaccharides in temporomandibular joint chondrocytes. : Ohno S, Ohno-Nakahara M, Knudson C B, Knudson W : *J Dent Res* 84, 1005-1009, 2005.
- 4: Activation of signaling pathways in articular chondrocytes by hyaluronan oligosaccharides : Ohno S, Im H J, Knudson C B, Knudson W : *Arthritis & Rheumatism*, 52, 800-809, 2005.
- 5: Mechanical Regulation of Terminal Chondrocyte Differentiation via RGD-CAP/beta ig-h3 induced by TGF-beta : Ohno S, Tanaka N, Ueki M, Honda K, Tanimoto K, Yoneno K, Ohno-Nakahara M, Fujimoto K, Kato Y, Tanne K : *Connective Tissue Research* 46, 227-234, 2005.
- 6: The metabolism of hyaluronan in cultured rabbit growth plate chondrocytes during differentiation. : Suzuki A, Tanimoto K, Ohno S, Nakatani Y, Honda K, Tanaka N, Doi T, Ohno-Nakahara M, Yoneno K, Ueki M, Tanne K : *Biochem Biophys Acta* 1743, 57-63, 2005.
- 7: Influence of functional appliances on masticatory muscle activity : Tabe H, Ueda H M, Kato M, Nagaoka K, Nakashima Y, Matsumoto E, Shikata N, Tanne K : *The Angle Orthodontist* 75(4), 616-624, 2005.

- 8: An adult case of skeletal open bite with a large lower anterior facial height : Tanaka E, Iwabe T, Kawai N, Nishi M, Dalla-Bona D A, Hasegawa T, Tanne K : *The Angle Orthodontist* 75(3), 414-420, 2005.
- 9: Longitudinal measurements of tooth mobility during orthodontic treatment using a Periotest : Tanaka E, Ueki K, Kikuzaki M, Yamada E, Takeuchi M, Dalla-Bona D A, Tanne K : *The Angle Orthodontist* 75(1), 101-105, 2005.
- 10: The effect of experimental cartilage damage and impairment and restoration of synovial lubrication on the friction in the temporomandibular joint. : Tanaka E, Iwabe T, Dalla-Bona D A, Kawai N, van Eijden T, Tanaka M, Kitagawa S, Takata T, Tanne K : *J Orofacial pain* 19, 331-336, 2005.
- 11: Vascular endothelial growth factor plays an important autocrine/paracrine role in the progression of osteoarthritis : Tanaka E, Aoyama J, Miyauchi M, Takata T, Hanaoka K, Iwabe T, Tanne K : *Histochemistry and Cell Biology* 123(3), 275-281, 2005.
- 12: Cyclic mechanical strain regulates the PTHrP expression in cultured chondrocytes via activation of the Ca²⁺ channel : Tanaka N, Ohno S, Honda K, Tanimoto K, Doi T, Ohno-Nakahara M, Tafolla E, Kapila S, Tanne K : *J Dent Res* 84(1), 64-68, 2005.
- 13: Burst characteristics of daily jaw muscle activity in juvenile rabbits : van Wessel T, Langenbach G E J, Kawai N, Brugman P, Tanaka E, van Eijden T M G J : *Journal of Experimental Biology* 208(13), 2539-2547, 2005.
- 14: Fiber type composition of rabbit jaw muscles is related to their daily activity. : van Wessel T, Langenbach G E J, Korfage J A M, Brugman P, Kawai N, Tanaka E, van Eijden T M G J : *Eur J Neurosci* 22, 2783-2791, 2005.
- 15: Antibody array analysis of peripheral and blood cytokine levels in rats after masseter inflammation : Watanabe M, Guo W, Zou S P, Sugiyo S, Dubner R, Ren K : *Neurosci Lett* 382(1-2), 128-133, 2005.
- 16: Multidifferentiation potential of mesenchymal stem cells in three-dimensional collagen gel cultures : Yoneno K, Ohno S, Tanimoto K, Honda K, Tanaka N, Doi T, Kawata T, Tanaka E, Kapila S, Tanne K : *Journal of Biomedical Materials Research* 75(A), 733-741, 2005.
- 17: WA · DA · I Teeth Bank : Tanne K : *Medical Technology* 33(2): 10-11, 2005.
- 18: Two orthodontic treatment cases of open bite with temporomandibular joint disorders : Yoneno K, Tanaka E, Ohno S, Hasegawa T, Tanne K. : *The Journal of Chu-shikoku Orthodontic Society* 17, 25-35, 2005.
- 19: A case of mandibular protrusion with temporomandibular joint disorder : Nakatani Y, Tanimoto K, Suzuki A, Yanagida T, Tanne Y, Tanne K : *The Journal of Chu-shikoku Orthodontic Society* 17, 49-59, 2005.
- 20: Orthodontic treatment for the patients with temporomandibular joint disorders : Tanaka E : *The Journal of Chu-shikoku Orthodontic Society* 17, 9-14, 2005.
- 21: Investigation of newly designed tooth transplantation with PDL repair regeneration and cryopreservation : Tanne K, Kamada H, Kohno S, Kaku M, Kawata T : *Dental Diamond*

30, 74-78, 2005.

- 22: Mutual association of the masticatory function and the memory and learning ability for children in the elementary school : Honda K, Tanaka E, Harada M, Nakata Y, Myonson K, Yamano E, Uenosono T, Aizawa M, Daimatsu Y, Takemoto H, Tanne K : The Annals of Educational Research 34, 493-498, 2005.
- 23: Study on Deformation of Fixation Devices of RED System in Maxillary Distraction Osteogenesis : Ohta K, Tohmori H, Sugiyama M, Nobumori T, Inoue S, Tanimoto K, Tanne K, Kamata N : The Japanese Journal of Jaw Deformities 15, 126-132, 2005.
- 24: Establishment of active learning strategy in postgraduate clinical training course : Taguchi N, Ogawa T, Tanaka Y, Sasahara H, Shirai K, Yoshino H, Tani R, Shimasue H, Taji T, Abekura H, Tanaka E, Amano H, Taguchi A, Takarada T, Nahara Y, Ogawa I. : The Journal of Japanese Dental Education Association 21,196-204, 2005.

B) Review

C) Publications

- 1: Comprehensive Orthodontic Treatment : Tanna K, Tanaka E : Tokyo Rinsyo Syuppan Inc. (Tokyo), 1-237, 2005.

D) Other Publications

E) Presentation at Scientific Meeting

- 1: Enamel Protein Detection at Simulation Dentino-Enamel Junction Using Mass Spectrometry : Varanasi V, Tanimoto K, Harbelitz S, Hall S, Enatkowska H E, Li W, DenBesten P, Marshall S, Marshall G. : SF Dentin Conference (Birmingham), 2005.
- 2: Effect of Interleukin-1 on NR1-Serine 896 phosphorylation in the rat spinal trigeminal nucleus : W Guo, M Watanabe, S Zou, R Dubner, K Ren. : Society for Neuroscience 35th annual meeting (Washington DC), 2005.
- 3: Effects of ultrasound stimulation on the proliferation and metabolism of cementoblast cells in vitro : Dalla-Bona D A, Tanaka E, Oka H, Yamano E, Kawai N, Miyauchi M, Takata T, Tanne K : The 27th meeting of the American Society for Bone and Mineral Research (Nashville), 2005.
- 4: Establishment of newly-designed tooth transplantation with a magnetic field program freezer : Kamada H, Kawata T, Kaku M, Kohno S, Tsutsui K, Motokawa M, Tohma Y, Fujita T, Ohtani J, Shigekawa M, Tai M, Tanne K : The 38th Annual Scientific Meeting of Korean Association of Orthodontists (Jeju), 2005.
- 5: Effect of mechanical loading on hyaluronan catabolism in cultured synovial membrane and articular cartilage cells : Kitamura R, Honda K, Ohno S, Tanaka N, Ueki M, Tanimoto K, Ohno-Nakahara M, Yoneno K, Suzuki A, Lin Y, Tanne Y, Tanne K : The 38th Annual

- Scientific Meeting of Korean Association of Orthodontists (Jeju), 2005.
- 6: Hyaluronan synthesis affected by chemical mediators in cultured synovial fibroblasts : Yanagida T, Tanimoto K, Ohno S, Honda K, Tanaka N, Ohno-Nakahara M, Yoneno K, Suzuki A, Ueki M, Nakatani Y, Kitamura R, Lin Y, Tanne Y, Tanne K : The 38th Annual Scientific Meeting of Korean Association of Orthodontists (Jeju), 2005.
 - 7: Two orthodontic treatment cases of openbite with temporomandibular joint disorders induced by splint therapy : Yoneno K, Tanaka E, Ohno S, Okuma S, Tanne K : The 38th Annual Scientific Meeting of Korean Association of Orthodontists (Jeju), 2005.
 - 8: Influence of PDGF-BB on the regenerative responses of rat temporomandibular joint (TMJ) disk : Hanaoka K, Tanaka E, Takata T, Miyauchi M, Ogawa I, Aoyama J, Kawai N, Tanne K : The 5th Asian-Pacific Orthodontic Conference (Beijing), 2005.
 - 9: Changes in stomatognathic function induced by orthognathic surgery in patients with jaw deformity : Nakata Y, Ueda M H, Kato M, Tabe H, Shikata-Wakisaka N, Matsumoto E, Tanaka E, Tanne K : The 5th Asian-Pacific Orthodontic Conference (Beijing), 2005.
 - 10: Effect of sex hormone and TGF-beta1 in newborn mice : Ohtani J, Fujita T, Shigekawa M, Kawata T, Kaku M, Kohno S, Tsutsui K, Tenjo K, Motokawa M, Tohma Y, Kamada H, Tai M, Tanne K : The 5th Asian-Pacific Orthodontic Conference (Beijing), 2005.
 - 11: The metabolism of hyaluronan during chondrocyte differentiation : Suzuki A, Tanimoto K, Ohno S, Honda K, Tanaka N, Doi T, Ohno M, Yoneno K, Ueki M, Nakatani Y, Yanagida T, Kitamura R, Rin Y, Tanne Y, Tanne K : The 5th Asian-Pacific Orthodontic Conference (Beijing), 2005.
 - 12: Vascular Endothelial Growth Factor (VEGF) Induces Osteoclast Differentiation via both Flt-1 and Flk-1 Receptors : Tohma Y, Kaku M, Motokawa H, Kawata T, Fujita T, Kohno S, Tsutsui K, Ohtani J, Tenjo K, Shigekawa M, Kamata H, Tai M, Ishihara M, Tanne K : The 5th Asian-Pacific Orthodontic Conference (Beijing), 2005.
 - 13: Masticatory muscle activity in freely moving rats measured with radio-telemetry : Kawai K, Tanaka E, G E J Langenbac, T van Wessel, T M G J van Eijden, Tanne K : The 83rd International Association for Dental Research (Baltimore), 2005.
 - 14: Mastication suppresses inflammation-related VR1 immunoreactive cell expression in rat trigeminal ganglion : Nishi M, Iwabe T, Watanabe M, Hattori Y, Tanaka E, Tanne K : The 83rd International Association for Dental Research (Baltimore), 2005.
 - 15: Induction of MMP-13 by hyaluronan oligosaccharide in temporomandibular joint chondrocytes : Ohno S, Ohno-Nakahara M, Knudson C B, Knudson W : The 83rd International Association for Dental Research (Baltimore), 2005.
 - 16: The principal role of TMJ disc on the joint lubrication : Tanaka E, Dalla-Bona D A, Iwabe T, Kawai N, Yamano E, van Eijden T, Takata T, Tanne K : The 83rd International Association for Dental Research (Baltimore), 2005.
 - 17: Trigeminal cytokine activation and orofacial hyperalgesia : Watanabe M, Zou S, Guo W, Dubner R, Ren K : The 83rd International Association for Dental Research (Baltimore), 2005.

- 18: Hyaluronan promotes hard tissue generation from mesenchymal stem cells : Yoneno K, Ohno S, Doi T, Tanne K : The 83rd International Association for Dental Research (Baltimore), 2005.
- 19: Vascular endothelial growth Factor (VEGF) induces osteoclast differentiation via both Flt-1 and Flk-1 receptors : Tohma Y, Kaku M, Kohno S, Motokawa M, Tsuka N, Kawata T, Tanne K : The 8th International Conference on the Biological Mechanisms of Tooth Eruption Resorption and Movement (Phuket), 2005.
- 20: Osteoclasts induction by vascular endothelial growth factor (VEGF)-C and the signaling pathway : Tsuka N, Kohno S, Kaku M, Kawata T, Motokawa M, Tohma Y, Tanne K : The 8th International Conference on the Biological Mechanisms of Tooth Eruption Resorption and Movement (Phuket), 2005.
- 21: Increased binding and decreased degradation of amelogenin on HAP may result in X-linked amelogenesis imperfecta : Zhu L, Tanimoto K, Le T, Zhang Y, Wang S W, Chen J, DenBesten P, Wu L : UCSF Research day (California), 2005.
- 22: Two cases of skeletal III mandibular asymmetry treated with orthognathic surgery; A consideration of the masticatory muscle activity : Koh M, Nakata Y, Shikata-Wakisaka N, Tanaka E, Tanne K : The 24th Korean Association of Orthodontics (Jeonju), 2005.
- 23: Subchondral bone damage affects the cartilage matrix metabolism : Lin Y Y, Tanaka N, Ohno-Nakahara M, Kamiya T, Ohkuma S, Honda K, Tanimoto K, Ohno S, Tanne K : The 53rd Annual Meeting of Japanese Association for Dental Research (Okayama), 2005.
- 24: Effects of mandibular condyle growth to the mandibular bone : Shigekawa M, Fujita T, Ohtani J, Tanne K : The 15th Annual Meeting of the Japanese Society for Jaw Deformities (Tokushima), 2005.
- 25: Two cases of sagittal split ramus osteotomy by intraoral positioning system with Poly-L-Lactide Acid plate : Tohmori H, Sugiyama M, Inoue S, Miyauti M, Ono S, Ohta K, Kamata N, Nakata Y, Tabe H, Tanne K : The 15th Annual Meeting of the Japanese Society for Jaw Deformities (Tokushima), 2005.
- 26: The effects of hyaluronic acid on temporomandibular joint disc-derived cell proliferation and biosynthesis in vitro : Hanaoka K, Tanaka E, Kawai N, Yoneno K, Tanne K : The 18th Annual Meeting of the Japanese Society for Temporomandibular Joint (Matsue), 2005.
- 27: Effect of low molecular weight hyaluronan on metabolism in temporomandibular joint chondrocytes : Ohno S, Yoneno K, Honda K, Tanimoto K, Tanaka N, Nakatani Y, Yanagida T, Tanne Y, Kitamura R, Tanne K : The 18th Annual Meeting of the Japanese Society for Temporomandibular Joint (Matsue), 2005.
- 28: Expression Profile of Superficial Zone Protein in Temporomandibular Joint Condyle Cartilage : Tanne Y, Yoneno K, Honda K, Tanimoto K, Tanaka N, Nakatani Y, Ohno S, Kitamura R, Yanagida T, Tanne K : The 18th Annual Meeting of the Japanese Society for Temporomandibular Joint (Matsue), 2005.
- 29: Histological changes of rat condylar cartilage with immobile mandible and the comparative examination different ages : Tanaka N, Ueki M, Ohno S, Honda K, Tanimoto K,

- Yoneno K, Nakatani Y, Kitamura R, Yanagida T, Tanne Y, Tanne K : The 18th annual meeting of the Japanese society for the temporomandibular joint (Matsue), 2005.
- 30: Hyaluronan promotes chondrogenic differentiation from mesenchymal stem cells : Yoneno K, Ohno S, Tanimoto K, Honda K, Tanaka N, Nakatani Y, Kitamura R, Tanne Y, Hanaoka K, Tanaka E, Tanne K : The 18th Annual Meeting of the Japanese Society for Temporomandibular Joint (Matsue), 2005.
- 31: Influences of excessive cyclic tensile stress on hyaluronan metabolism in cultured rabbit synoviocytes : Kitamura R, Honda K, Tanaka N, Tanimoto K, Ueki M, Nakatani Y, Yanagida T, Tanne Y, Ohkuma S, Kamiya T, Tanne K : The 18th annual meeting of the Japanese society for the temporomandibular joint (Matsue), 2005.
- 32: Analysis of TMJ stress during continuous maximum clenching - The effect of lateral pterygoid muscle activity : Hirose M, Tanaka E, Tanaka M, Tanne K : The 18th Annual Meeting of the Japanese Society for Temporomandibular Joint (Matsue), 2005.
- 33: FGF23 regulates bone mineralization as a local factor : Yamamoto R, Wang H, Ijuin C, Suemune S, Tanne K, Maeda N, Yoshiko Y : The 23rd Annual Meeting of the Japanese Society for Bone and Mineral Research (Osaka), 2005.
- 34: Investigation of bone regeneration by mesenchymal stem cells : Tenjo K, Kawata T, Kaku M, Yamanaka K, Koto Y, Tsuji K, Fujita T, Tohma Y, Tanne K : The 29th Annual Meeting of Japanese Cleft Palate Association (Tokyo), 2005.
- 35: Orthodontic treatment for the anterior cross bite with oblique facial and palate clefts : Yoneno K, Hanaoka M, Mishima K, Sugahara T, Tanaka E, Tanne K : The 29th Annual Meeting of Japanese Cleft Palate Association (Tokyo), 2005.
- 36: Expression of superficial zone protein in mandibular condyle cartilage : Kamiya T, Honda K, Yoneno K, Tanne Y, Okuma S, Yanagida T, Lin Y, Tanimoto K, Tanaka N, Nakatani Y, Kitamura R, Ohno S, Tanne K : The oral tissue culture association (Hiroshima), 2005.
- 37: Phenotypic Diversity and Transdifferentiation Activity in Fetal Rat CalvariaOsteoprogenitor Cells : Hasegawa T, Yoshiko Y, Hatano H, Tanne K, Maeda N : The 47th Annual Meeting of Japanese Association for Oral Biology (Sendai), 2005.
- 38: A case of impacted lower first molar attributed to follicular dental cyst : Harada M, Honda K, Tanaka N, Ueki M, Kitamura R, Tanaka E, Tanne K : The 48th Annual Meeting of the Tyugoku-Shikoku Orthodontic Society (Takamatsu), 2005.
39. Occlusal Force and Range of Condylar Motion in Patients with Facialpalsy : Tanne Y, Honda K, Nakata Y, Nakatani Y, Yanagida T, Tanimoto K, Tanne K : The 48th Annual Meeting of the Tyugoku-Shikoku Orthodontic Society (Takamatsu), 2005.
- 40: A case of edge to edge bite with ankylosed maxillary central incisors : Ijuin C, Yamamoto R, Tanne K : The 48th Annual Meeting of the Tyugoku-Shikoku Orthodontic Society (Takamatsu), 2005.
- 41: An orthodontic treatment case with implant-anchor applied to an adult patient malocclusion with severe periodontal disease. : Yamano E, Tanaka E, Kawai N, Watanabe M, Tanne K : The 48th Annual Meeting of the Tyugoku-Shikoku Orthodontic Society

- (Takamatsu), 2005.
- 42: A case of skeletal open bite treated with two-jaw surgery : Nishi M, Myoishi Y, Watanabe M, Tanaka E, Tanne K : The 48th Annual Meeting of the Tyugoku-Shikoku Orthodontic Society (Takamatsu), 2005.
- 43: Evaluation of treatment effects in growing patients by use of visual treatment objectives (VTO): Ohtani J, Fujita T, Shigekawa M, Tanne K : The 48th Annual Meeting of the chu-shikoku Orthodontic Society (Yokohama), 2005.
- 44: Association between hard and soft tissue changes produced by two-jaw surgery for patients with mandibular prognathism : Lin Y, Tanaka N, Ueki M, Honda K, Ohno S, Tanaka E, Tanne K : The 48th annual meeting of the Chu-Shikoku orthodontic society (Takamatsu), 2005.
- 45: Biological effects of vascular endothelial growth factor during experimental tooth movement : Kaku M : The 64th Annual Meeting of the Japanese Orthodontic Society Joint Seminar of Japan and Korea (Yokohama), 2005.
- 46: Examination of osteoclast induction by vascular endothelial growth factor (VEGF-C) and their signaling pathways : Kohno S, Kaku M, Kawata T, Fujita T, Tsutsui K, Motokawa M, Tohma Y, Ohtani J, Shigekawa M, Kamada H, Tai M, Tanne K : The 64th Annual Meeting of the Japanese Orthodontic Society (Yokohama), 2005.
- 47: Serotonin influences increase of VR1 immunoreactive cells in rat trigeminal ganglion following orofacial inflammation : Nishi M, Myoishi Y, Iwabe T, Watanabe M, Hasegawa T, Suekawa Y, Tanaka E, Tanne K : The 64th Annual Meeting of the Japanese Orthodontic Society (Yokohama), 2005.
- 48: Masticatory muscle activity in freely moving rats measured with radio-telemetry system during whole day : Kawai N, Tanaka E, Yamano E, Dalla-Bona D A, Hanaoka K, Watanabe M, Tanne K : The 64th Annual Meeting of the Japanese Orthodontic Society (Yokohama), 2005.
- 49: Dissociation of HA-chondrocyte interaction induces the MMP expression via NFkappaB activation : Ohno S, Ohno-Nakahara M, Honda K, Tanimoto K, Tanaka N, Yoneno K, Suzuki A, Ueki M, Nakatani Y, Tanne Y, Kitamura R, Yanagida T, Tanne K : The 64th Annual Meeting of the Japanese Orthodontic Society (Yokohama), 2005.
- 50: Dissociation of HA-chondrocyte interaction induces apoptosis of cultured chondrocytes : Ohno-Nakahara M, Ohno S, Honda K, Tanimoto K, Tanaka N, Yoneno K, Suzuki A, Ueki M, Nakatani Y, Tanne Y, Kitamura R, Yanagida T, Tanne K : The 64th Annual Meeting of the Japanese Orthodontic Society (Yokohama), 2005.
- 51: The effects of hyaluronan metabolic changes on the growth and matrix syntheses in the cultured periodontal ligament cells : Nakatani Y, Tanimoto K, Ohno S, Honda K, Tanaka N, Suzuki A, Yanagida T, Tanne Y, Tanne K : The 64th Annual Meeting of the Japanese Orthodontic Society (Yokohama), 2005.
- 52: Stomatognathic function of two cases with hemifacial microsomia : Nakata Y, Tanaka E, Koh M, Tabe H, Matsumoto E, Fujita T, Yamano E, Tanne. : The 64th Annual Meeting of

the Japanese Orthodontic Society (Yokohama), 2005.

- 53: Two treatment cases of maxillary protrusion with excessive overjet : Kitamura R, Honda K, Tanaka N, Harada M, Ueki M, Tanne K : The 64th Annual Meeting of the Japanese Orthodontic Society (Yokohama), 2005.
- 54: Gene expression of VEGF and M-CSF in murine periodontal ligament during experimental tooth movement : Motokawa M, Kaku M, Tohma Y, Kawata T, Fujita T, Kohno S, Tsutsui K, Ohtani J, Shigekawa M, Kamada H, Tai M., Tanne K : The 64th Annual Meeting of the Japanese Orthodontic Society (Yokohama), 2005.
- 55: Hyaluronidase expression in cultured growth plate chondrocytes during differentiation : Suzuki A, Tanimoto K, Ohno S, Honda K, Tanaka N, Ohno-Nakahara M, Yoneno K, Nakatani Y, Ueki M, Yanagida T, Kitamura R, Tanne Y, Tanne K : The 64th Annual Meeting of the Japanese Orthodontic Society (Yokohama), 2005.
- 56: Establishment of newly designed tooth transplantation with PDL repair regeneration and cryopreservation : Kamada H, Kawata T, Kaku M, Kohno S, Tsutsui K, Motokawa M, Tohma Y, Fujita T, Ohtani J, Shigekawa M, Tai M, Tanne K : The 64th Annual Meeting of the Japanese Orthodontic Society (Yokohama), 2005.

F) Special lectures in academic meetings

- 1: Stress analysis in the TMJ with and without disc displacement during mouth opening : Tanaka E.: The 22nd Indonesian Dental Association Congress (South Sulawesi), 2005.
- 2: A problem-oriented therapeutic system integrated with orthodontic occlusal reconstruction for temporomandibular joint disorders : Tanne K.: The 38th Annual Scientific Meeting of Korean Association of Orthodontists (Jeju), 2005.
- 3: Mechanisms of condylar resorption in TMJ-osteoarthritis and the therapeutic cues : Tanne K.: The 5th Asian-Pacific Orthodontic Conference (Beijing), 2005.
- 4: Diagnostic methods and tools for orthodontic patients with temporomandibular joint disorders : Tanne K.: The 6th International Orthodontic Congress (Paris), 2005.
- 5: Mechanisms of osteoclastic bone resorption induced by VEGF during experimental tooth movement : Tanne K, Kaku M, Kohno S, Motokawa M, Tohma Y, Kawata T : The 8th International Conference on the Biological Mechanisms of Tooth Eruption Resorption and Movement (Phuket), 2005.
- 6: Alteration in the diagnostic skills and treatment techniques in clinical orthodontics : Tanne K : The 18th Annual Meeting of the Japanese Society for Temporomandibular Joint (Matsue), 2005.

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

- 1: Grant-in-Aid for Scientific Research : Tanne K : Establishment of therapeutic system to aim the inhibition of condylar cartilage resorption in TMJ-osteoarthritis. (No.15390636)

¥1,900,000

- 2: Grant-in-Aid for Scientific Research : Tanaka E : Glutamate receptor antagonist reduces pain following experimental tooth movement. (No.16592045) ¥1,300,000
- 3: Grant-in-Aid for Scientific Research : Fujita T : Examination of condylar growth ability for growth of craniofacial morphology. (No.16791286). ¥1,300,000
- 4: Grant-in-Aid for Scientific Research : Tanaka E : Research survey for TMJ replacement and tissue engineering. (No.17639020) ¥3,100,000
- 5: Grant-in-Aid for Scientific Research : Tanaka N : The research for mechanism and control of mandibular growth by mechanical stimulation. (No.17791525) ¥2,800,000
- 6: Grant-in-Aid for Scientific Research : Honda K : Molecular rhythm of tissues loaded orthodontic force. (No.17791526) ¥2,500,000
- 7: Grant-in-Aid for Scientific Research : Watanabe M : Study of descending pain modulation system following oral inflammation in rats. (No.17791527) ¥1,700,000
- 8: Grant-in-Aid for Scientific Research : Kaku M : Effects of Cyclic Tensile Forces on the Expression of Vascular Endothelial Growth Factor (VEGF) in Murine Osteoblastic MC3T3-E1 Cells. (No.17791528) ¥1,400,000

(5) Academic Awards, etc.

- 1: Association between craniofacial growth and urinary bone metabolic markers (Pyridinoline, Deoxypyridinoline) in growing rats : Tanimoto K : Alumni association encouragement award in Hiroshima University faculty of dentistry, 2005.
- 2: Effects of vascular endothelial growth factor on osteoclast induction during tooth movement in mice. : Kaku M : The 9th Alumni Association Encouragement Award in Hiroshima University Faculty of Dentistry, 2005.
- 3: Magnetic Orthodontic Appliance : Kamada H : The 3th Campus Venture First Prize Chugoku, 2005.
- 4: Expression Profile of Superficial Zone Protein in Temporomandibular Joint Condyle Cartilage : Tanne Y, Yoneno K, Honda K, Tanimoto K, Tanaka N, Nakatani Y, Ohno S, Kitamura R, Yanagida T, Tanne K : The 18th Annual Meeting of the Japanese Society for Temporomandibular Joint (Matsue), Poster award, 2005.
- 5: Investigation of bone regeneration by mesenchymal stem cells : Tenjo K, Kawata T, Kaku M, Yamanaka K, Koto Y, Tsuji K, Fujita T, Tohma Y, Tanne K : The 29th Annual Meeting of Japanese Cleft Palate Association (Tokyo), Best Poster Award, 2005.
- 6: Fiber type composition of rabbit jaw muscles is related to their daily activity. European Journal of Neuroscience 2005, 22(11),2783-2791 : van Wessel T, Langenbach G E J, Korfage J A M, Brugman P, Kawai N, Tanaka E, van Eijden T M G J : Award of the Dutch Interuniversity School of Dentistry for the best international scientific publication of 2004 and 2005, 2005.
- 7: Hyaluronan promotes hard tissue generation from mesenchymal stem cells : Yoneno K,

Ohno S, Doi T, Tanne K : The 82nd International Association for Dental Research (Baltimore), Hatton Travel Award of International Association for Dental Research, 2005.

(6) Patents

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

(1) Staffs and Students

Professor	: Katsuyuki Kozai
Associate Professor	: Junji Suzuki
Assistant Professor	: Hideaki Amano (~March), Mitsugi Okada (~March)
Research Associate	: Yasutaka Kaihara, Fumiko Hayashi, Yoshiko Taniguchi (~March), Chieko Mitsuhata, Ryujiro Mizuno, Kaori Saiga
Resident	: Hisami Nakae, Kumiko Takeda, Mari Takebe, Kozue Miura, Mika Makihira (~March), Yoko Miyamoto (~March)
Intern	: Mihaya Ariki, Ryoko Hirata (, Ayako Banshoudani Kozue Aoki, Satoko Otani, Mariko Okamoto, Nami Miyake
Graduate Student	: Noriko Kadomoto, Tomoko Minamizaki, Meiko Kuramoto, Aya Tsuboi
Research Student	: Yoko Hayashi, Mika Makihira
Registered Intern	: Hiroki Shintani, Mami Yamashiro
Others	: Chieko Mitsuhata (from September, she is a foreign student at Uniformed Service University, U.S.A.)

(2) Main Research Activities

- 1 : Automutanolysin in oral streptococci
- 2 : Resarch in oral bacteria especially stapholococcus aureus in children
- 3 : Effect of PG agonist differentiation of osteoblast
- 4 : Molecular analysis of cell-cell communication in differentiation of osteoblast
- 5 : Bacteriological and epidemiological research in periodontal diseases in children
- 6 : Development of oral ultra-small sized scanner for recording of oral condition
- 7 : Behavior evaluation of psychological stress in dental treatment in children
- 8 : Transmission of mutans streptococci, seeking for anti-cariogenic substance from natural foods and denaturalization of tooth by low pH beverage

(3) Research Achievements

A) Original Papers (including Case Reports)

- 1 : Three-dimensional analysis of the effects of the treatment on anterior crossbite in the primary

- dentition. : Kaihara Y, Amano H, Miura K, Kozai K : *Pediatric Dental Journal* 15(1), 20-27, 2005.
- 2 : Longitudinal study of dental caries incidence associated with *Streptococcus mutans* and *Streptococcus sobrinus* in pre-school children. : Okada M, Soda Y, Hayashi F, Doi T, Suzuki J, Miura K, Kozai K : *J Med. Microbiol.* 54, 661-665, 2005.
 - 3 : The report of collaboration between pediatric dentistry in University Hospital and primary dental clinic : Kuramoto M, Suzuki J, Amano H, Kozai K : *The Journal of Hiroshima Dental Association* 33(1), 22-26, 2005.
 - 4 : Assay of the Concentration of Chromogranin A as Stress Indicator in Children's Saliva : Mitsuata C, Suzuki J, Makihira M, Yoshiko Soda, Kozai K : *Jpn J Ped Dent* 43(5), 645-651, 2005.
 - 5 : The effectiveness of salivary chromogranin A and amylase as stress indicators in children : Mitsuata C, Suzuki J, Kozai K : *Japanese Journal of Psychosomatic Dentistry* 20(2), 41-45, 2005.
 - 6 : Development of Computer Programs for the Ability to Evaluate Periodontal Status of School Children. : Nakae H, Okada M, kawamura M, Saiga K, Hayashi F, Miura K, Kozai K : *Jpn J Ped Dent* 43, 442-448, 2005.
 - 7 : A Longitudinal Study on growth and development of Dentition and Occlusion in Children — Change of Occlusion — : Kaihara Y, Saiga K, Nakae H, Meiko K, Makihira M, Miyamoto Y, Suzuki J, Amano H, Miura K, Kawabata Y, Kozai K : *Jpn J Ped Dent* 43(5), 661-668, 2005.
 - 8 : Participation of Pediatric Dentistry in Web-based Child care Support Project. : Kaihara Y, Amano H, Miura K, Kozai K : *Journal of Hiroshima University of Dental Society* 27(2), 129-135, 2005.
 - 9 : Utility of Web-based Child care Support Project in Pediatric Dentistry : Kaihara Y, Kozai K, Kawasaki H, Katano T, Deji A, Kawano N : *Hiroshima Shouni Hoken* 17, 53-54, 2005.
 - 10 : The status of oral condition of type 1 diabetes mellitus children : Suzuki J, Nakaoka M, Miura K, Kozai K, Mikami A : *Hiroshima Shouni Hoken* 17, 53-54, 2005.
 - 11 : Approach from Pediatric Dentistry to Maintain the Quality of Life of Type I Diabetes Mellitus Children. : Suzuki J, Nakaoka M, Mitsuata C, Hayashi F, Kuramoto M, Yoshimura G, Minamizaki T, Miura K, Kozai K : *Jpn. J. D. W.* 10, 1-5, 2005.
 - 12 : Tumor-like hyper growth of the oral mucosa caused by graft-versus-host-diseases (GVHD) : case report : Nakae H, Suzuki J, Taniguchi Y, Amano H, Kozai K : *Pediatric Oral and Maxillofacial Surgery* 15(2), 125-130, 2005.
 - 13 : Clinical Study on Safe Use of Local Dental Anesthetics for Children. : Inoue M, Asari J, Kozai K other 30 authors. : *Jpn J Ped Dent* 43 (5) , 561-570, 2005.
 - 14 : Availability of the Data on Patch Test and Metal Analysis of Suspected Patients of Metal Allergy. ; Makihira S, Nikawa H, Kozai K, other 7 authors. : *The Journal of Hiroshima Dental Association* 33(1), 32-36, 2005.

B) Review

- 1 : Special Issue (1) Transmission of mutans streptococci and design of prevention from dental caries. : Kozai K : *Japanese Journal of clinical dentistry for children*, 10 (8) , 53-61, 2005.
- 2 : Special Issue (2) Exploration into substances as dental caries inhibitor. : Kozai K : *Japanese*

Journal of clinical dentistry for children, 10 (9) , 71-78, 2005.

- 3 : Special Issue (3) Pediatric Dentistry and Oral Bacterium : Kozai K. : Japanese Journal of clinical dentistry for children, 10 (10) , 73-80, 2005.
- 4 : Chat between osteoblast : Suzuki J, Kozai K : The Journal of Hiroshima University Dental Society, 37, 90-92, 2005.
- 5 : Treatment of Traumatic Primary and Immature Permanent Teeth : Suzuki J, Kozai K : The Journal of Hiroshima Dental Association 33(1), 1-6, 2005.

C) Publications

- 1 : A Guide to Oral Health Check-ups for Infants – Helping the Parent for Healthy Growth of the Child.: Kozai K. : Editor Japanese society of pediatric dentistry : Ishiyaku Publishers Inc, 2005.
- 2 : Condition of re-implantation of primary teeth : Suzuki J, Kozai K : Diagnosis and treatment of traumatic teeth in primary dentition. : Editor, Kimura M, Takagi Y, Kozai K, Asada Y : p48-49, Quintessence, Tokyo, 2005.
- 3 : Endodontics of traumatic primary tooth : Amano H, Kozai K : Diagnosis and treatment of traumatic teeth in primary dentition. : Editor, Kimura M, Takagi Y, Kozai K, Asada Y. : p52-53, Quintessence, Tokyo, 2005.
- 4 : Prevention from Trauma of Primary Tooth : Kozai K : Diagnosis and treatment of traumatic teeth in primary dentition: Editor, Kimura M, Takagi Y, Kozai K, Asada Y : p108-109, Quintessence, Tokyo, 2005.

D) Other Publications

- 1 : Annual Event of Oral Health for Children and Parents (an article) : The Chugoku Shimbun, 2005.

E) Presentation at Scientific Meeting

- 1 : Prevalence of Four Putative Periodontal Pathogens in Children with Age. : Hayashi F, Okada M, Soda Y, Kozai K : 83rd General Session and Exhibition of the International Association for Dental Research (Baltimore) , 2005.
- 2 : Late Established Mutans Streptococci in Children Over 3 Years Old. : Okada M, Soda Y, Hayashi F, Miyamoto Y, Doi T, Suzuki J, Kozai K : 83rd General Session and Exhibition of the International Association for Dental Research (Baltimore) , 2005.
- 3 : The effectiveness of salivary Chromogranin as a stress indicator in children : Mitsuhashi C, Suzuki J, Kozai K : 20th IAPD International Congress (Sydney), 2005.
- 4 : Epidemiological survey of maxillofacial and oral diseases in residents around Semipalatinsk Nuclear Test Site : Mineoka M, Anara Z, Ikeda J, Yoshioka Y, Kuramoto M, Oda R, Okada M, Amano H, Okamoto T : The 59th congress of Japanese Stomatological Society (Tokushima), 2005.
- 5 : agr types relates to production of Exfoliative Toxin from clinical isolates of S.aureus : Kadomoto N,

- Komathuzawa H, Fujiwara T, Yamaguchi T, Kozai K, Sugai M : The 78th congress of Japanese Society for Bacteriology (Tokyo) ,2005
- 6: Participation of Pediatric Dentistry in Web-based Child care Support Project : Kaihara Y, Kozai K : The 43th congress of Japanese Society of Pediatric Dentistry (Sendai) , 2005.
 - 7: Relation between agr types and ET production of S.aureus from Impetigo : Kadomoto N, Kozai K : The 43th congress of Japanese Society of Pediatric Dentistry (Sendai) , 2005.
 - 8: An examination on clinical Path of denture guidance with surgical treatment --Treatment of impacted supernumerary teeth -- : Saiga K, Miura K, Amano H, Suzuki J, Kozai K : The 43th congress of Japanese Society of Pediatric Dentistry (Sendai) , 2005.
 - 9: A study on specific bacteriolytic activity of cell wall lytic enzyme named Automutanolysin (Aml) :: Yoshimura G, Kozai K : The 43th congress of Japanese Society of Pediatric Dentistry (Sendai) , 2005.
 - 10: A study on gingival health of school children using the ORI-C -5-year longitudinal study- : Nakae H, Miyamoto Y, Okada M, Kozai K : The 43th congress of Japanese Society of Pediatric Dentistry (Sendai) , 2005.
 - 11: Lipopolysaccharides from A.actinomycetemcomitans inhibit differentiation in osteoblast : Kuramoto M, Wang Y, Suzuki J, Kozai K : The 43th congress of Japanese Society of Pediatric Dentistry (Sendai) , 2005.
 - 12: Relation between agr types and Exfoliative Toxin production of S.aureus from Impetigo patients : Kadomoto N, Komathuzawa H, Fujiwara T, Kozai K, Sugai M : The 38th congress of The Hiroshima University Dental Society (Hiroshima),2005.
 - 13: Denture guidance of impacted secondary premolar with winding root, Case report : Kozai K, Suzuki J : 17th Conference of Pediatric Oral and Maxillofacial Surgery (Okayama), 2005.
 - 14: Dental examination of cleidocranial dysplasia. : Banshoudani A, Kaihara Y, Arika M, Kozai K : The 89th Congress of The Hiroshima University Dental Society (Hiroshima), 2005.
 - 15: The status of the oral condition of type I diabetes mellitus children. : Arika M, Suzuki J, Hayashi F, Takebe M, Miura K, Nakaoka M, Kozai K : The 89th Congress of The Hiroshima University Dental Society (Hiroshima), 2005.
 - 16: Treatment of Intruded Primary Tooth.: Hirata R, Hayashi Y, Mizuno R, Suzuki J, Kozai K : The 89th Congress of The Hiroshima University Dental Society (Hiroshima), 2005.
 - 17: A case report of cleidocranial dysplasia in biovular twins. : Banshoudani A, Kaihara Y, Arika M, Suzuki J, Kozai K : The 24th congress of Japanese Society Of Pediatric Dentistry Chushikoku Branch (Tokushima) , 2005.
 - 18: The status of the oral condition of participants in summer-camp for type 1 DM children : Arika M, Suzuki J, Hayashi F, Takebe M, Miura K, Nakaoka M, Kozai K : The 24th congress of Japanese Society Of Pediatric Dentistry Chushikoku Branch (Tokushima) , 2005.
 - 19: Management of Trauma of Praimary tooth : Repoart of Intrusion cases. : Hirata R, Hayashi Y, Mizuno R, Suzuki J, Kozai K : The 5th Japan Association of Dental Traumatology (Okayama), 2005.
 - 20: The status of dental treatment for mentally disabled patients in Department of Pediatric Dentistry,

Hiroshima University Hospital : Miura K, Suzuki J, Nakaoka M, Amano H, Kozai K : The 12th Japanese Society of Dental Welfare (Nagoya), 2005.

- 21: PGE2 Regulates Osteoblast-Adipocyte Fate Choice of Osteoprogenitor Cells destined for Osteoblasts Cooperatively with JNK/p38 MAPK in Fetal Rat Calvaria Cell : Minamizaki T, Yoshiko Y, Kozai K, Maeda N : The 23rd Annual Meeting of The Japanese Society for Bone and Mineral Research (Osaka), 2005.
- 22 : Interaction of the PGE2 and JNK/p38 MAPK signaling pathways in osteoblast-adipocyte fate choices of bipotential progenitor cells in rat calvaria cell cultures : Minamizaki T, Yoshiko Y, Kozai K, J Aubin E, Maeda N : The 27th Annual Meeting of the American Society for Bone and Mineral Research (Nashville), 2005.

F) Special lectures in academic meetings

- 1: Topic in Pediatric Dentistry : Kozai K : Academic workshop Yamaguchi Prefecture Dental Association, (Tokuyama) 2005. 5.21.
- 2: To foster teeth and oral health for children. : Kozai K : 9th Japanese Society for Care and Education in Pediatrics.Hiroshima, 2005 .8.27.
- 3: Lecture of oral health for children : Kozai K : 16th Hiroshimakko Health Festa, (Hiroshima), 2005. 9.4.
- 4 : Clinical Treatment in Pediatric Dentistry : Kozai K : Chongqing University of Medical Sciences, (China), 2005 .9.28.
- 5 : Treatment and Prognosis of Traumatic Tooth in Childhood. : Kozai K : 44th Scientific Meeting of Hiroshima Prefecture Dental Association, 89th Scientific Meeting of Hiroshima University Dental Society, Symposium of Trauma of Tooth in Childhood. (Hiroshima)2005.11.13.
- 6 : To Foster Teeth and Oral Health for Infants. : Kozai K : 2005 Workshop in Hiroshima Private Kinder Gardens Society. (Hiroshima), 2005.
- 7 : To Foster Oral Health for Children – Transmission of cariogenic bacterium— : Kozai K.: Higashi-Hiroshima Dental Association, (Higashi-Hiroshima), 2005.
- 8 : Suzuki J : Prevention and Treatment of Early Childhood Caries : The First National Scientific Meeting in Pediatric Dentistry (Indonesia), 2005.
- 9 : Okada, M. : Prevention and Treatment of Early Childhood Caries, The First National Scientific Meeting in Pediatric Dentistry (Indonesia), 2005.
- 10 : Suzuki J.: Oral care for children with epilepsy, Seminar of oral health for mother and children (Fukuyama Sukoyaka Center) 2005.11.21.
- 11 : Suzuki J.: Hint for better dental treatment for children, 44th Conference of Hiroshima Dental Association (Hall of Hiroshima Dental Association) 2005.11.13.
- 12 : Suzuki J.: Denture guidance in Pediatric Dentistry, Seminar of Dental Study Group Asunaro-kai (Hall of Health Insurance of Hiroshima Dental Association) 2005.12.3.
- 13 : Pediatric Dentistry for Pediatrician : Kozai K.: 3th Workshop in Fukuyama Pediatrician Association, (Fukuyama), 2005.

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

- 1 : Grant-in-Aid for Scientific Research from the Ministry of Education, Science, Sports and Culture of Japan : Hayashi F. : Evaluation for the risk of the incidence of Periodontal diseases among children. : (No.16791287) , ¥1,700,000 .
- 2 : Grant-in-Aid for Scientific Research from the Ministry of Education, Science, Sports and Culture of Japan : Okada M : An analysis on fMLP receptor gene SNPs in human genome. (No.15592164) , ¥1,900,000 yen.
- 3 : Grant-in-Aid for Scientific Research (C) : Kozai K : Effect of specific bacteriolytic enzyme produced by cariogenic bacterium against clinical strains of oral streptococci. (No.17592140). ¥2,100,000 yen.

(5) Academic Awards, etc.

- 1 : Yoshimura G : 2005 Dentsply Merit Award, , 2005.5.26
- 2 : Kuramoto M: 2005 JSPD Distinguished Scientists Awards at the 43 rd Annual Meeting of JSPD, 2005.5.26.
- 3 : Hayashi F : The 8th Alumni Association of Hiroshima University Faculty of Dentistry Incentive Awards., 2005.5.29.
- 4 : Kadomoto N : Scientific Meeting of Hiroshima University Dental Society, Incentive Awards, 2005.

(6) Patents

Division of Oral Health Science (Department of Oral Health Research)

(1) Staffs and Students

Professor : Masaru Sugiyama

Associate Professor : Hitomi Fujimoto

(2) Main Research Activities

- 1: Study on what school health activities should be like
2. Study on non-attendance at school and the role of yogo teachers in the matter
3. Study on what the duties of yogo teachers should be like
4. Study on what oral health at school should be like
- 5: Study on the association of oral microorganisms with development of oral lesions and their characteristics.

(3) Research Achievements

A) Original Papers (including Case Reports)

- 1 : Alveolar bone marrow as a cell source for regenerative medicine: Differences between alveolar and iliac bone marrow stromal cells : Matsubara T, Suardita K, Ishii M, Sugiyama M, Igarashi A, Oda R, Nishimura M, Saito M, Nakagawa K, Yamanaka K, Miyazaki K, Shimazu M, Bhawal U, Tsuji K, Nakamura K, Kato Y : J Bone Miner Res 20(3), 399-409 , 2005.
- 2 : Molecular markers distinguish bone marrow mesenchymal stem cells from fibroblasts : Ishii M, Koike C, Igarashi A, Yamanaka K, Pan H, Higashi Y, Kawaguchi H, Sugiyama M, Kamata N, Iwata T, Mastubara T, Nakamura K, Kurihara H, Tsuji K, Kato Y : Biochem Biophys Res Commun 332, 297-303, 2005.
- 3 : Association of expression of receptor for advanced glycation end products and invasive activity of oral squamous cell carcinoma : Bhawal U K, Ozaki Y, Nishimura M, Sugiyama M, Sasahira T, Nomura Y, Sato F, Fujimoto K, Sasaki N, Ikeda M, Tsuji K, Kuniyasu H, Kato Y : Oncology-69, 246-55, 2005.
- 4 : Correlation of CENP-F mRNA expression and lymph node metastasis in oral squamous cell carcinomas. : Shigeishi H, Mizuta K, Higashikawa K, Shimasue H, Ohta K, Ono S, Sugiyama M, Kamata N : Jpn J Oral Maxillofac Surg 51, 77-81, 2005 (in Japanese).

- 5: Identification of metastasis-related genes in cell lines derived from a primary tongue squamous cell carcinoma and its lymph node metastasis. : Nobumori T, Taki M, Higashikawa K, Ono S, Shigeishi H, Yoneda S, Ninomiya Y, Sugiyama M, Kamata N : Jpn. J. Oral Maxillofac. Surg, 51, 482-488, 2005 (in Japanese).
- 6: Study on deformation of fixation devices of RED system in maxillary distraction osteogenesis : Ohta K, Tohmori H, Sugiyama M, Nobumori T, Inoue S, Tanimoto K, Tanne K, Kamata N : The Jpn. J. Jaw Deform. 15(3) , 126-132, 2005 (in Japanese).
- 7: The treatment of the maxillofacial bone fractures with the bio-absorbable poly-L-lactide bone mini plate. : Tohmori H, Inoue S, Miyauchi M, Higashikawa K, Ohta K, Ninomiya N, Shimasue H, Ono S, Sugiyama M, Nobuyuki K : J. Hiroshima Univ. Dent. Soc. 37(2) ,145-150, 2005 (in Japanese).
- 8: Application of dental implant in our clinic: a progress of five years treatment. : Nishimura M, Makihira S, Sugiyama M, Kamata N, Sadamori S, Hamada T : Hiroshima Dent J 33, 27-31, 2005 (in Japanese).

B) Review

C) Publications

- 1: Lesions of Salivary Glands; Oral Surgery for Dental Hygienist (Komori T. ed.) : Sugiyama M. : Nagasue (Tokyo), in press.
- 2: Removal of Sialolith; Oral Surgery for Dental Hygienist (Komori T. ed.) : Sugiyama M. : Nagasue (Tokyo), in press.

D) Other Publications

E) Presentation at Scientific Meeting

- 1: A case of concrescence of teeth showing a cemental union between the crown of an impacted tooth and the roots of an erupted tooth : Sugiyama M, Tohmori H, Higashikawa K, Miyauchi M, Inoue S, Kamata N : The 34th Chu-shikoku Meeting of the Japanese Society of Oral and Maxillofacial Surgeons (Yonago), 2005.
- 2: Study on deformation of fixation devices of RED system in maxillary distraction osteogenesis. : Ohta K, Tohmori H, Kubo M, Inoue S, Sugiyama M, Kamata N, Tanimoto K, Tanne K : The 15th Annual Meeting of the Society for Jaw Deformities (Tokushima) , 2005.
- 3: Two cases of sagittal splitting ramus osteotomy that were applied repositioning system by using poly-L-lactide bone mini plate to fix bone fragments without extra-oral incision. : Tohmori H, Sugiyama M, Inoue S, Miyauchi M, Ono S, Ohta K, Kamata N, Nakata Y, Tabe H, Tanne K : The 15th Annual Meeting of the Society for Jaw Deformities (Tokushima) , 2005.
- 4: Correlation of the presence of human papillomavirus-16 in oral squamous cell carcinoma and 5-year

- survival : Sugiyama M, Bhawal U K, Kawamura M, Ishioka Y, Shigeishi H, Fujimoto H, Kamata N : The 38th Meeting of Hiroshima University Dental Society (Hiroshima), 2005.
- 5: Identification of metastasis-related genes in cell lines derived from a primary tongue squamous cell carcinoma and its metastatic lymph node : Nobumori T, Taki M, Higashikawa K, Ono S, Shigeishi H, Yoneda S, Ninomiya Y, Sugiyama M, Kamata N : The 50th Annual Meeting of Japanese Society of Oral and Maxillofacial Surgeons (Osaka), 2005.
 - 6: A case of Kimura's disease of submandibular gland. : Miyauchi M, Shimasue H, Shigeishi H, Ogawa I, Sugiyama M, Miyauchi M, Kamata N : The 50th Annual Meeting of Japanese Society of Oral and Maxillofacial Surgeons (Osaka), 2005.
 - 7: The treatment of the maxillofacial bone fractures with the bio-absorbable poly-L-lactide bone, mini plate. : Tohmori H, Inoue S, Miyauchi M, Higashikawa K, Ohta K, Ninomiya N, Shimasue H, Ono S, Sugiyama M, Kamata N : The 44th Annual Meeting of the Hiroshima Prefecture Dental Association and 89th Regular Meeting of the Hiroshima University Dental Society (Hiroshima), 2005.
 - 8: Remodeling of a health center planned by yogo teachers (coloring of a health center and consideration about the function of the center). : The 37th Annual Meeting of the Chugoku-Shikoku Association of School Health (Okayama), 2005.
 - 9: The post-graduate state of junior high school and high school students experienced non-attendance at school.: Fujimoto H. : The 51st Annual Meeting of the Chugoku Society of Public Health (Matsue), 2005.
 - 10: Sex education by the use of health study leading to the mental development. : Fujimoto H. (Sub-coordinator) : The 14th Annual Meeting of the Society of Health Study (Ohmiya), 2005.
 - 11: Educational curriculum in Hiroshima University, Faculty of Dentistry, School of Oral Health Science : Tamamoto M, Takemoto T, Amano H, Nikawa H, Sugiyama M, Satoda T, Murayama T, Fujimoto H, Tajima H, Shimoe S, Hara K, Matsumoto A, Niitani Y : The 44th Annual Meeting of Hiroshima Prefecture Dental Association and 89th Regular Meeting of the Hiroshima University Dental Society (Hiroshima), 2005.
 - 12: Program for kids from elementary schools, Dental Kids, "Let's be a dentist!" : Nikawa H, Amano H, Satoda T, Takemoto T, Murayama T, Sugiyama M, Tamamoto M, Hara K, Shimoe S, Fujimoto H, Matsumoto A, Tajima H, Niitani Y, Ogawa I, Morita K, Ohara M, Suei Y, Takada T, Sugai M, Tanimoto K, Okamoto T, Kurihara H.: The 44th Annual Meeting of Hiroshima Prefecture Dental Association and 89th Regular Meeting of the Hiroshima University Dental Society (Hiroshima), 2005.

F) Special lectures in academic meetings

- 1: How to grasp the daily environment of junior high school and high school students experienced non-attendance at school and the role of yogo teachers. : Fujimoto H. : The Training Session of the Society of Health Education for Private Schools in Japan (Tokyo), 2005.

- 2: Specialty of yogo teachers on emergency measures. : Fujimoto H.: The 6th Meeting of High School Education in Hiroshima Prefecture (Yogo Teachers Section) and its Study Meeting (Hiroshima), 2005.
- 3: Expression analysis of CENP-F in oral squamous cell carcinomas.: Shigeishi H, Mizuta K, Higashikawa K, Ono S, Sugiyama M, Kamata N : The 59th Annual Meeting of The Japanese Stomatological Society (Tokushima), 2005.

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

- 1: Grant-in Aid for Scientific Research ((B) (2)) : Sugiyama M, Miyauchi M, Higashikawa K : The association of human papillomavirus with the development of oral squamous cell carcinoma. (Project Number 16390590), ¥ 3,100,000.
- 2 Joint Research of Faculty and Attached School (Research Project) : Fujimoto H, Tsushima H, Tennma M, Yasuda R, Mizogami N, Kensoku Y, Aizawa M, Morisada T, Yumiba N, Higashi K, Aratani M, Yanagida Y, Yabe H : Study on the system of yogo teaching practice in Hiroshima University. ¥ 118,000.
- 3: Joint Research of Faculty and Attached School (Research Project) : Amano H, Hara K, Fujimoto H, Kawamura M, Okada M, Mizogami N, Morinaga S, Ishihara Y, Hashimoto N, Iga Y : Application of intra-oral scanning images to health promotion. ¥ 50,000.
- 4: Joint Research of Faculty and Attached School (Research Project) : Satoda T, Shimoe S, Fujimoto H, Shiragami S, Inoue J, shinbori M, Itoh K, Ohtsuji A, Sera A, Hashimoto N, Yamashita K : Introduction of embryological anatomical models into high school education of biology and health.

(5) Academic Awards, etc.

- 1: Tohmori H, Sugiyama M, Inoue S, Miyauchi M, Ono S, Ohta K, Nobuyuki K, Nakata Y, Tabe H, Tanne K : The 15th Annual Meeting of the Society Award for Jaw Deformities: Two cases of sagittal splitting ramus osteotomy that were applied repositioning system by using poly-L-lactide bone mini plate to fix bone fragments without extra-oral incision.: The 15th Annual Meeting of the Society for Jaw Deformities (Tokushima) , 2005.

(6) Patents

Division of Oral Health Science (Department of Team Care for Oral Health)

(1) Staffs and Students

Professor : AMANO Hideaki (Chief of the School of Oral Health Science)

Assistant Professor : HARA Kumiko

(2) Main Research Activities

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 education program for graduate dental hygienists

(3) Research Achievements

A) Original Papers (including Case Reports)

1 : A Trial of Objective Structured Clinical Examination in Dental Hygienist Education - The second report : a study for evaluation method - : Hara K, Matsumoto A, Morioka S, Takemoto T, Akagawa Y : Annual Reports of JADHE Autumn Meeting, 24-31, 2005.

2 : Three-dimensional analysis of the effects of the treatment on anterior crossbite in the primary dentition : Kaihara Y, Amano H, Miura K and Kozai K : Pediatric Dental Journal 15(1), 20-27, 2005.

3 : Tumor-like hyper growth of the oral mucosa caused by graft-versus-host-disease(GVHD):case report : Nakae H, Suzuki J, Taniguchi Y, Amano H, Kozai K : Pediatric Oral and Maxillofacial Surgery 15(2), 125-130, 2005.

4 : A study on Growth and Development of Dentition and Occlusion in Children -Changes of Occlusion- : Kaihara Y, Saiga K, Nakae H, Kuramoto M, Makihira M, Miyamoto Y, Amano H, Suzuki J, Kawabata Y and Kozai K : Journal of Pediatric Dentistry 43(5), 660-668, 2005.

5 : The report of collaboration between pediatric dentistry in University Hospital and primary dental clinic : Kuramoto M, Suzuki J, Amano H, Kozai K : Journal of Hiroshima Dental Society 33, 22-26, 2005.

6 : Educational Effects of Plaque Control Suspension Practice for Dental Hygiene Students : Matsumoto A, Hara K, Morioka S, Takemoto T, Morishita Mand Akagawa Y : JJDEA.20,333-338, 2005.

7: The current situation of patients at “Oral Health Care Section”.: Morioka S, Mathumoto A, Takemoto T, Akagawa Y : Journal of Hiroshima Prefecture Dental Hygienists Association 17(1),2-5,2005.

B) Review

C) Publications

1 : Endodontic treatments for the injured primary teeth : Diagnoses and Treatments for injured teeth in the primary dentition (kimura K, Takagi Y, Kozai K and Asada Y) : Amano H and Kozai K : Quintessence Pub., Inc.(Tokyo) : 52-53, 2005. (in Japanese)

D) Other Publications

1 : Special Round-table Discussion – Study in University and Postgraduate School- : Hara K, Tsutui M, Kanehisa Y, Maruyama T, Ogata K : Dental Hygiene , Ishiyaku Pub., Inc. : 25(11),1131-1136, 2005. (in Japanese)

E) Presentation at Scientific Meeting

1 : Comparison of bacteriocidal effect between various mouth wash medicaments and various dilution ratio.: Suga K, Dainobu K, Watanabe S, Matsumoto A, Takemoto T, Hara K, Akagawa Y : 20th Scientific Meeting of Hiroshima Prefecture Dental Hygienists Association (Hiroshima), 2005.

2 : Study about water splashing by scaling and root planing. Kouno I, Kawada M, Matsumoto A, Takemoto T, Hara K, Akagawa Y : 20th Scientific Meeting of Hiroshima Prefecture Dental Hygienists Association (Hiroshima), 2005.

3 : The effect of salivary glands massage on the secretion and buffering ability of saliva: Hara N, Harada K, Moritsugu M, Matsumoto A, Takemoto T, Hara K, Akagawa Y : 20th Scientific Meeting of Hiroshima Prefecture Dental Hygienists Association (Hiroshima), 2005.

4 : Study about unpleasant-feeling brushing pressure: Okada A, Kawakami N, Hara K, Takemoto T, Matsumoto A, Akagawa Y : 20th Scientific Meeting of Hiroshima Prefecture Dental Hygienists Association (Hiroshima), 2005.

5 : Comparison of dental plaque removing effect between BONIKA and other dental brushes. : Arita M, Ishizuti A, Matsumoto A, Takemoto T, Hara K, Akagawa Y : 20th Scientific Meeting of Hiroshima Prefecture Dental Hygienists Association (Hiroshima), 2005.

6 : The tendency for tooth staining after mechanical polishing. –Comparison between polishing pastes.: Suga K, Dainobu K, Shishido K, Hara K, Takemoto T, Matsumoto A, Akagawa Y : 20th Scientific Meeting of Hiroshima Prefecture Dental Hygienists Association (Hiroshima), 2005.

7 : The change in gingival blood flow by gingival massage : Shimada M, Shiraishi M, Hara K, Takemoto

- T, Matsumoto A, Akagawa Y : 20th Scientific Meeting of Hiroshima Prefecture Dental Hygienists Association (Hiroshima), 2005.
- 8 : A Study on the Efficacy of a Educational Program for Oral Health - Survey by Questionnaire in one Hospital- : Hara K, Kajitani K, Yaegaki S, Yamamoto H, Tsuji H, Nishimura T, Kanehisa Y, Maruyama T : 20th Scientific Meeting of Hiroshima Prefecture Dental Hygienists Association (Hiroshima), 2005.
- 9 : General Introduction of the Recurrent Workshop in the School of Dental Hygienist , Faculty of Dentistry Hiroshima University : Tomomura S, Matsumoto A, Hara K : 20th Scientific Meeting of Hiroshima Prefecture Dental Hygienists Association (Hiroshima), 2005.
- 10 : A Case Report of Dry Mouth Improved by Salivary Glands Massage : Hara K, Matsumoto A, Takemoto T, Yoshida M, Tsuga K, Akagawa Y : 16th Scientific Meeting of the Japanese Society of Gerodontology (Tokyo), 2005. (in Japanese)
- 11 : A Study on the Dental Hygienist's work in the Medical Center for the Severe Handicapped Children - A Fact-finding of the Dental Management in Fukuyama-Wakakusa-En in Hiroshima prefecture - : Amano H, Satou M, Niitani Y, Hara K, Suzuki J, Kozai K : 38th annual Meeting of the Hiroshima University Dental Society (Hiroshima), 2005.
- 12 : The education about halitosis –education program in dental hygienists school- : Takemoto T, Hara K, Matsumoto A, Niitani Y : 38th General Meeting of Hiroshima University Demntal Society (Hiroshima), 2005.
- 13 : A Study on the Efficacy of a Educational Program for Oral Health in the seminar of one Hospital : Hara K, Kajitani K, Yaegaki S, Yamamoto H, Tsuji H, Nishimura T, Kanehisa Y, Maruyama T: 12th annual Meeting of the Japanese Society of Dental Welfare (Nagoya), 2005.
- 14 : A Study on the Clinical Pass for the Occlusal Guidance with Surgical Procedure - For the Cases of (Impacted) Supernumerary Tooth - : Saiga K, Miura K, Amano H, Suzuki J, Kozai K : 43th Annual Meeting of the Japanese Society of Pediatric Dentistry (Sendai),2005.
- 15 : A Clinical Research on the Dental Management in the Medical Center for the Severe Handicapped Children, Fukuyama-Wakakusa-En in Hiroshima Prefecture : Satou M, Suzuki J, Kozai K, Hara K, Amano H : 12th annual Meeting of the Japanese Society of Dental Welfare (Nagoya), 2005.
- 16 : Education of Halitosis for dental and co-dental students and staffs. –Trial and evaluation of the education program in dental hygienists school. : 24th Scientific Meeting of Japanese Association for Dental Education (Tokushima), 2005.
- 17 :An Outline of the Objective Structured Clinical Examination(OSCE) for Dental Hygienist Education in Hiroshima University : Hara K, Smida T, Hatakeyama T, Hidaka M, Kawashima A, Nakaoka M, Iwasaki Y, Tamura H, Morioka S, Niitani Y, Matsumoto A : 38th Annual Meeting of JADHE (Sapporo), 2005.
- 18 : Educational curriculum in Hiroshima University ,Faculty of Dentistry, School of Oral Health Science : Tamamoto M, Takemoto T, Amano H, Nikawa H, Sugiyama M, Satoda T, Murayama T, Fujimoto H, Tajima H, Shimoe S, Hara K, Matsumoto A, Niitani Y : 89th Meeting of Hiroshima

University Dental Society, 44th Meeting of Hiroshima Prefecture Dental Association (Hiroshima), 2005.

- 19 : Program for Kids from Elementary Schools, Dental Kids, "Let's Be a Dentist!" : Nikawwa H, Amano H, Satoda T, TakemotoT, Murayama T, Sugiyama M, Tamamoto M, Hara K, Shimoe S, Fujimoto H, Matsumoto A, Tajima H, Niitani Y, Ogawa I, Morita K, Obara M, Suei Y, Takada T, Sugai M, Tanimoto K, Okamoto T, Kurihara H. : 89th Meeting of Hiroshima University Dental Society, 44th Meeting of Hiroshima Prefecture Dental Association (Hiroshima), 2005. (in Japanese)
- 20 : A Concept for Denture Plaque Control and a Newly Developed Denture Cleanser : Nikawa H, Amano H, Satoda T, Sugiyama M, Murayama T, Takemoto T, Tamamoto M, Fujimoto M, Tajima M, Hara K, Shimoe S, Matsumoto A, Niitani Y, & Matsushita N : 2005 Sino-Japanese Conference on Stomatology (Shanghai), 2005.
- 21 : A Case Report of the Salivary Glands Massage Program Improve the QOL of the Patient : Hara K, Amano H : 2005 Scientific Meeting of the chu-shikoku branch of the Japanese Society of Dental Practice Administration (Hiroshima), 2005.
- 22 : A Plan of the Information Technology System for the Medical Histories Using the World Wide Web : Amano H, Hara K : 2005 Scientific Meeting of the chu-shikoku branch of the Japanese Society of Dental Practice Administration (Hiroshima), 2005.

F) Special lectures in academic meetings

- 1 : Try to improve health care for the People reside in All Life Stages : Amano H. : Scientific Meeting of Hiroshima City Dental Association (Hiroshima), 2005.
- 2 : The School aimed at preventing elderly people requiring nursing care from further losing physical and mental strength : Hara K. : Workshop in Healthcare Corporation Shinsei-kai (Hiroshima):2005.
- 3 : Important basis for Oral Health Care : Hara K. : Workshop for the staff of nursing service department in Healthcare Corporation Kousei-kai Kusatsu Hospital (Hiroshima) : 2005.
- 4 : Important basis for Oral Health Care : Hara K. : Workshop for the staff in Kousei-do Nagasaki Hospital (Hiroshima) : 2005.
- 5 : Basic Methods for Oral Health Care : Hara K. : 2005 Autumn Plaza Meeting of the patient with receiving hemodialysis, sponsored by Study Group for the QOL of the Patients with RF (Hiroshima) : 2005.
- 6 : How to the mouth cleaning ; Hara K. : Child-care course of a community program of the nursery school, Social welfare corporation Mimyo-Fukushi-Kai (Hiroshima) : 2005.
- 7 : Important basis for Oral Health Care : Hara K. : Workshop for the staff of the day service section in the adult day car office of the social welfare corporation Kousei-en (Hiroshima) : 2005.
- 8 : Basic Methods for Oral Health Care : Hara K. : Workshop for the staff in the section of the Day Service ASAHI , Grand Home ASAHI, ASAHI MEDICO Co., Ltd. (Hiroshima) : 2005.

- 9 : Some Techniques for Mouth Cleaning : 6th Seminar for Practical Oral Care (Hiroshima) : 2005.
- 10 : Some Techniques for Mouth Cleaning - application of the skills- : 6th Seminar for Practical Oral Care (Hiroshima) : 2005.

G) Social Contributions

- 1 : Program for Kids from Elementary Schools, Dental Kids, "Let's Be a Dentist!" : Nikawwa H, Amano H, Satoda T, Takemoto T, Murayama T, Sugiyama M, Tamamoto M, Hara K, Shimoe S, Fujimoto H, Matsumoto A, Tajima H, Niitani Y, Ogawa I, Morita K, Ohara M, Suei Y, Takata T, Sugai M, Tanimoto K, Okamoto T, Kurihara H. : Hiroshima University Public Program (Hiroshima), 2005.
- 2 : Program for Kids from Elementary Schools, Dental Kids, "Let's Be a Dentist!" in Higashi-Hiroshima City : Nikawwa H, Amano H, Satoda T, Takemoto T, Murayama T, Sugiyama M, Tamamoto M, Hara K, Shimoe S, Fujimoto H, Matsumoto A, Tajima H, Niitani, Kurihara H. : IIHANOHI Events in Higashi-Hiroshima (Higashi-Hiroshima), 2005.
- 3 : Program for High School Students, Dental Kids : Nikawwa H, Amano H, Satoda T, Takemoto T, Murayama T, Sugiyama M, Tamamoto M, Hara K, Shimoe S, Fujimoto H, Matsumoto A, Tajima H, Niitani Y, Ogawa I, Morita K, Ohara M, Suei Y, Takata T, Sugai M, Tanimoto K, Okamoto T, Kurihara H. : Hiroshima University Public Program (Hiroshima), 2005.
- 4 : Program for Kids from the University Elementary Schools, Dental Kids, "Let's Be a Dentist!" : Nikawwa H, Amano H, Satoda T, Takemoto T, Murayama T, Sugiyama M, Tamamoto M, Hara K, Shimoe S, Fujimoto H, Matsumoto A, Tajima H, Niitani Y, Suei Y, Tanimoto K, Okamoto T, Kurihara H. : Faculty of Dentistry, Hiroshima University Public Program (Hiroshima), 2005.

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

- 1 : 2005th Grant of The Joint Organization of Hiroshima University and Attached Schools for Scientific Research : Amano H : A Program for Oral Health Promotion using Intra Oral Scanner System
- 2 : 2005th Grant of the Japan Science and Technology Agency for practicable Research : Amano H : A New Method for Diagnosis of Oral Soft Tissues with Infra Red Measurement.

(5) Academic Awards, etc.

(6) Patents

Division of Oral Health Science (Department of Oral Health Management)

(1) Staffs and Students

Professor: Toshinobu Takemoto(2005.4-)
Assistant Professor: Atsue Matumoto(2005.4-)
Research Associate: Yoshie Niitani (2005.4-)

(2) Main Research Activities

- 1 : Dental Hygienists Education
- 2 : Educational program about halitosis
- 3 : Peridontal health management
- 4 : Oral relaxation method
- 5 : Relation between saliva flow and emotion
- 6 : Education about counseling
- 7 : Infection control in dentistry

(3) Research Achievements

A) Original Papers (including Case Reports)

- 1 : Immobilization of octanyl ammonium chloride on the surface of titanium and its effect on microbial colonization in vitro : Nikawa H, Ishida K, Hamada T, Satoda T, Murayama T, Takemoto T, Tamamoto M, Tajima H, Shimoe S, Fujimoto H, Makihiro S: Dental Materials Journal 24(4), 570-582, 2005.
- 2 : [The current situation of patients at “Oral Health Care Section”] [ja] : Morioka S, Matsumoto A, Takemoto T, Akagawa Y : Journal of Hiroshima Prefecture Dental Hygienists Association 17(1), 2-5, 2005.
- 3 : [Educational effects of plaque control suspension practice for dental hygiene students] [ja] : Matsumoto A, Hara K, Morioka S, Takemoto T, Morishita M, Akagawa Y : J Jpn Assoc Dent Educ 20(2), 333-338, 2005.
- 4 : [A Trial of objective structured clinical examination in dental hygienist education – The second report : a study for evaluation method–] [ja] : Hara K, Matsumoto A, Morioka S, Takemoto T, Akagawa Y : Reports of JADHE Autumn Meeting in 2004, 24-31, 2005.

B) Review

C) Publications

- 1 : [Infection control manual for home nursing] [ja] : Niitani Y. (contributor), edited by ICHG Study Group, Japanese Planning Center Co.,Ltd. (Matsudo), 2005.
- 2 : [Manual for practical standard precaution] [ja] : Niitani Y. (contributor), edited by ICHG Study Group, Nankodo Co.,Ltd. (Tokyo), 2005.

D) Other Publications

- 1 : [Please support and cheer the strong will of the School of Oral Health Science!] [ja] : Takemoto T. : Monthly Report of Hiroshima Prefecture Dental Association 607, 7, 2005.
- 2 : [Let dental hygienists from 'para-'staff to 'co-'staff - not only in name but in reality-] [ja] : Takemoto T. : Journal of the Alumni Association of Hiroshima University Faculty of Dentistry 28, 6, 2005.

E) Presentation at Scientific Meeting

- 1 : [The effect of salivary glands massage on the secretion and buffering ability of saliva] [ja] : Hara N, Harada K, Moritsugu M, Matsumoto A, Takemoto T, Hara K, Akagawa Y : 20th Scientific Meeting of Hiroshima Prefecture Dental Hygienists Association (Hiroshima), 2005.
- 2 : [Comparison of bacteriocidal effect between various mouth wash medicaments and various dilution ratio] [ja] : Yamasaki R, Yamashita S, Watanabe S, Matsumoto A, Takemoto T, Hara K, Akagawa Y : 20th Scientific Meeting of Hiroshima Prefecture Dental Hygienists Association (Hiroshima), 2005.
- 3 : [The tendency for tooth staining after mechanical polishing. -Comparison between polishing pastes] [ja] : Suga K, Dainobu K, Shishido K, Hara K, Takemoto T, Matsumoto A, Akagawa Y : 20th Scientific Meeting of Hiroshima Prefecture Dental Hygienists Association (Hiroshima), 2005.
- 4 : [Study about water splashing by scaling and root planing] [ja] : Kouno I, Kawada M, Matsumoto A, Takemoto T, Hara K, Akagawa Y : 20th Scientific Meeting of Hiroshima Prefecture Dental Hygienists Association (Hiroshima), 2005.
- 5 : [Study about unpleasant-feeling brushing pressure] [ja] : Okada A, Kawakami N, Hara K, Takemoto T, Matsumoto A, Akagawa Y : 20th Scientific Meeting of Hiroshima Prefecture Dental Hygienists Association (Hiroshima), 2005.
- 6 : [Comparison of dental plaque removing effect between BONIKA and other dental brushes] [ja] : Arita M, Ishizuti A, Matsumoto A, Takemoto T, Hara K, Akagawa Y : 20th Scientific Meeting of Hiroshima Prefecture Dental Hygienists Association (Hiroshima), 2005.
- 7 : [The change in gingival blood flow by gingival massage] [ja] : Shimada M, Shiraiishi M, Hara K, Takemoto T, Matsumoto A, Akagawa Y : 20th Scientific Meeting of Hiroshima Prefecture Dental Hygienists Association (Hiroshima), 2005.

- 8 : [General introduction of the recurrent workshop in the School of Dental Hygienist , Faculty of Dentistry Hiroshima University] [ja] : Tomomura S, Matsumoto A, Hara K : 20th Scientific Meeting of Hiroshima Prefecture Dental Hygienists Association (Hiroshima), 2005.
- 9 : [A case report of dry mouth improved by salivary glands massage] [ja] : Hara K, Matsumoto A, Takemoto T, Yoshida M, Tsuga K, Akagawa Y : 16th Scientific Meeting of the Japanese Society of Gerodontology (Tokyo), 2005.
- 1 0 : [A study on the dental hygienist's work in the medical center for the severe handicapped children - A fact-finding of the dental management in Fukuyama-Wakakusa-En in Hiroshima prefecture-] [ja] : Amano H, Satou M, Niitani Y, Hara K, Suzuki J, Kozai K : 38th annual Meeting of the Hiroshima University Dental Society (Hiroshima), 2005.
- 1 1 : [The education about halitosis –education- program in dental hygienists school-] [ja] : Takemoto T, Hara K, Matsumoto A, Niitani Y : 38th General Meeting of Hiroshima University Demntal Society (Hiroshima), 2005.
- 1 2 : [Education of Halitosis for dental and co-dental students and staffs. –Trial and evaluation of the education program in dental hygienists school] [ja] : Takemoto T, Hara K, Matsumoto A, Niitani Y : 24th Scientific Meeting of Japanese Association for Dental Education (Tokushima), 2005.
- 1 3 : [An outline of the objective structured clinical examination (OSCE) for dental hygienist education in Hiroshima University] [ja] : Hara K, Smida T, Hatakeyama T, Hidaka M, Kawashima A, Nakaoka M, Iwasaki Y, Tamura H, Morioka S, Niitani Y, Matsumoto A : 38th Annual Meeting of JADHE (Sapporo), 2005.
- 1 4 : [Effects of oral relaxation on secretion of saliva and CgA] [ja] : Matsumoto A, Kitayama T, Morioka N, Morita Kand Dohi T : The 47th Annual Meeting of Japanese Association for Oral Biology (Sendai), 2005.
- 1 5 : A Concept for denture plaque control and a newly developed denture cleanser : Nikawa H, Amano H, Satoda T, Sugiyama M, Murayama T, Takemoto T, Tamamoto M, Fujimoto M, Tajima M, Hara K, Shimoe S, Matsumoto A, Niitani Y, & Matsushita N. : 2005 Sino-Japanese Conference on Stomatology (Shanghai), 2005.
- 1 6 : [Measurement of CgA and IgA in salivary induced by oral relaxation] [ja] : Matsumoto A, Kitayama T, Morioka N, Morita Kand Dohi T : The 44th Scientific Meeting of Hiroshima Prefecture Dental Association ; The 89th Ordinary Meeting of Hiroshima University Dental Society (Hiroshima), 2005.
- 1 7 : [Program for kids from elementary schools, Dental Kids, “Let’ s Be a Dentist!” .] [ja] : Nikawa H, AmanoH, Satoda T, TakemotoT, Murayama T, Sugiyama M, Tamamoto M, Hara K, Shimoe S, Fujimoto H, Matsumoto A, Tajima H, Niitani Y, Ogawa I, Morita K, Obara M, Suei Y, Takada T, Sugai M, Tanimoto K, Okamoto T, Kurihara H : 44th Annual Meeting of Hiroshima Prefecture Dental Association and 89th Regular Meeting of the Hiroshima University Dental Society (Hiroshima), 2005.
- 1 8 : [Educational curriculum in Hiroshima University ,Faculty of Dentistry,School of Oral Health Science] [ja] : Tamamoto M, Takemoto T, AmanoH, Nikawa H, Sugiyama M, Satoda T,

Murayama T, Fujimoto H, Tajima H, Shimoe S, Hara K, Matsumoto A, Niitani Y : 89th Meeting of Hiroshima University Dental Society, 44th Meeting of Hiroshima Prefecture Dental Association (Hiroshima), 2005.

- 19 : [Trends in patients in hakitosis clinic of Hiroshima Univeraity Hospital] [ja] : Hasegawa N, Kudoh S, Kiyota M, Ashikaga S, Kajitani K, Takemoto T, Kawaguchi H, Kurihara H : The 6th Chugoku area conference of the Japanese Association of Periodontal Research (Tottori), 2005.

F) Special lectures in academic meetings

- 1 : [Dental hygienists education as a bachelor's course] [ja] : Takemoto T.: The 23th Scientific meeting of the Association for Hiroshima Prefecture Dental Hygienists Education (Hiroshima), 2005.
- 2 : [The vision of School of Oral Health Science –The process for the establishment and expectation for the future-] [ja] : Takemoto T. : Scientific meeting of Association of Department of Periodontology and Endodontology, Hiroshima University Faculty of Dentistry (Hiroshima), 2005.
- 3 : [How to the mouth cleaning] [ja] : Matsumoto A. : Child-care course of a community program of the nursery school, Social welfare corporation Mimyo-Fukushi-Kai (Hiroshima) : 2005.

G) Social Contributions

- 1 : Program for kids from elementary schools, Dental Kids, “Let’s Be a Dentist!” : Nikawa H, Amano , Satoda T, TakemotoT, Murayama T, Sugiyama M, Tamamoto M, Hara K, Shimoe S, Fujimoto H, Matsumoto A, Tajima H, Niitani Y, Ogawa I, Morita K, Ohara M, Suei Y, Takata T, Sugai M, Tanimoto K, Okamoto T, Kurihara H : Hiroshima University Public Program (Hiroshima), 2005.
- 2 : Program for kids from elementary schools, Dental Kids, “Let’s Be a Dentist!” in Higashi-Hiroshima City : Nikawa H, Amano H, Satoda T, Takemoto T, Murayama T, Sugiyama M, Tamamoto M, Hara K, Shimoe S, Fujimoto H, Matsumoto A, Tajima H, Niitani Y, Kurihara H : IIHANOHI Events in Higashi- Hiroshima (Higashi-Hiroshima), 2005.
- 3 : Program for high school students, Dental Kids : Nikawa H, Amano H, Satoda T, TakemotoT, Murayama T, Sugiyama M, Tamamoto M, Hara K, Shimoe S, Fujimoto H, Matsumoto A, Tajima H, Niitani Y, Ogawa I, Morita K, Ohara M, Suei Y, Takata T, Sugai M, Tanimoto K, Okamoto T, Kurihara H : Hiroshima University Public Program (Hiroshima), 2005.
- 4 : Program for kids from the university elementary schools, Dental Kids, “Let’s Be a Dentist!” : Nikawa H, Amano H, Satoda T, TakemotoT, Murayama T, Sugiyama M, Tamamoto M, Hara K, Shimoe S, Fujimoto H, Matsumoto A, Tajima H, Niitani Y, Suei Y, Tanimoto K, Okamoto T, Kurihara H : Faculty of Dentistry , Hiroshima University Public Program (Hiroshima), 2005.

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

(5) Academic Awards, etc.

(6) Patents

Division of Oral Health Engineering (Department of Oral Basic Science)

(1) Staffs and Students

Professor : Takahiro Satoda
Assistant Professor : Saiji Shimoe

(2) Main Research Activities

- 1 : Development of the teaching materials for anatomical education
- 2 : Morphological study of neuronal circuits of jaw movement
- 3 : Study on bonding prosthetic materials to dental alloys
- 4 : Study on effective denture marking for individual identification
- 5 : Study on dental materials for esthetic

(3) Research Achievements

A) Original Papers (including Case Reports)

- 1 : Control of oro-facio-lingual movements by the substantia nigra pars reticulata: high-frequency electrical microstimulation and GABA microinjection findings in rats : Inchul P, Amano N, Satoda T, Murata T, Kawagishi S, Yoshino K, Tanaka K : *Neuroscience*. 134(2),677-89.
- 2 : Application of a preliminary light-curing unit for enhanced bonding between a gold alloy and veneering materials : Tanoue N, Shimoe S, Atsuta M, Matsumura H : *American journal of Dentistry* 18(2), 73-114, 2005.
- 3 : Repair and re-seating of resin-bonded fixed partial denture performed after minimal abutment reduction : A clinical report: Tanoue N, Shimoe S, Nemoto M, Matsumura H : *international Chinese Journal of Dentistry* 5(4), 97-100, 2005.
- 4 : Immobilization of octadecyl ammonium chloride on surface of titanium and its effect on microbial colonization in vitro : Nikawa H, Ishida K, Hamada T, Satoda T, Murayama T, Takemoto T, Tamamoto M, Tajima H, Shimoe S, Fujimoto H, Makihiro S : *Dental Materials Journal* 24(4), 570-582, 2005.

B) Review

C) Publications

- 1 : All Ceramics Restoration :Clinical techniques of all ceramics 2. Laminate veneer (edited

by Shinya A et al) : Matsumura H Shimoe S, Tanoue N (in Japanese) : Ishiyaku Publishers, Inc. (Tokyo), 164-169, 2005.

D) Other Publications

- 1 : Production of crown restoration by use of low-fusing ceramic and refractory model, and its surface treatment in dental laboratory : Shimoe S (in Japanese) : Dental Care 2005 spring issue 19(2), 11-18, 2005.
- 2 : "Infrared Thermometer" useful in temperature management : Tsuga K, Shimoe S, Akagawa Y (in Japanese) : The Nippon Dental Review 65(12), 67-70, 2005.

E) Presentation at Scientific Meeting

- 1 : A model for functional instruction of the ear ossicles (in Japanese) : Satoda T, Shimoe S, Hiyama S, Yamanishi E, Uchida T (in Japanese) : 38th General Meeting of Hiroshima University Dental Society (Hiroshima), 2005.
- 2 : Comparative strength of metal-ceramic and metal-composite bonds after extended thermocycling (in Japanese) : Shimoe S, Tajima H, Tamamoto M, Satoda T, Murayama T, Nikawa H (in Japanese) : 38th General Meeting of Hiroshima University Dental Society (Hiroshima), 2005.
- 3 : Dental CAD/CAM and Research History of Industrial CAD/CAM : Murayama T, Tamamoto M, Shimoe S, Tajima H, Satoda T, Nikawa H (in Japanese) : 38th General Meeting of Hiroshima University Dental Society (Hiroshima), 2005.
- 4 : Current Status of Laboratory Prescription Card by Questionnaire Survey : Tamamoto M, Shimoe S, Tajima H, Satoda T, Murayama T, Nikawa H (in Japanese) : 38th General Meeting of Hiroshima University Dental Society (Hiroshima), 2005.
- 5 : Records of dental technicians school attached to Hiroshima University Faculty of Dentistry during the past 33 years: Analysis of students' data (in Japanese) : Shimoe S, Tajima H, Tamamoto M, Satoda T, Murayama T, Nikawa H (in Japanese) : 27th Scientific Meeting/ Nippon Academy of Dental Technology (Tokyo), 2005.
- 6 : A model for functional instruction of the temporomandibular joint(in Japanese) : Satoda T, Shimoe S, Nikawa H, Tamamoto M, Tajima H, Murayama T, Oura S, Yamaguchi T, Yamanishi E, Hiyama S, Uchida T (in Japanese) : 60th annual meeting of the Japanese Association of Anatomists (Cyugoku-Shikoku regional meeting)(Tokushima)2005.
- 7 : A model for functional instruction of the temporomandibular joint(in Japanese) : Satoda T, Shimoe S, Nikawa H, Tamamoto M, Tajima H, Murayama T, Oura S, Yamaguchi T, Yamanishi E, Hiyama S, Uchida T (in Japanese) : 89th Meeting of Hiroshima University Dental Society, 44th Meeting of Hiroshima Prefecture Dental Association (Hiroshima), 2005.
- 8 : Records of dental technicians school attached to Hiroshima University Faculty of Dentistry during the past 33 years: Analysis of students' data (in Japanese) : Shimoe S, Tajima H,

Tamamoto M, Satoda T, Murayama T, Nikawa H (in Japanese) : 89th Meeting of Hiroshima University Dental Society, 44th Meeting of Hiroshima Prefecture Dental Association (Hiroshima), 2005.

- 9 : Educational curriculum in Hiroshima University , School of Oral Health Science : Tamamoto M, Takemoto T, Amano H, Nikawa H, Sugiyama M, Satoda T, Murayama T, Fujimoto H, Tajima H, Shimoe S, Hara K, Matsumoto A, Niitani Y (in Japanese) : 89th Meeting of Hiroshima University Dental Society, 44th Meeting of Hiroshima Prefecture Dental Association (Hiroshima), 2005.
- 10 : Program for Kids from Elementary Schools, Dental Kids, "Let's Be a Dentist!" : Nikawwa H, AmanoH, Satoda T, TakemotoT, Murayama T, Sugiyama M, Tamamoto M, Hara K, Shimoe S, Fujimoto H, Matsumoto A, Tajima H, Niitani Y, Ogawa I, Morita K, Obara M, Suei Y, Takata T, Sugai M, Tanimoto K, Okamoto T, Kurihara H (in Japanese) : 89th Meeting of Hiroshima University Dental Society, 44th Meeting of Hiroshima Prefecture Dental Association (Hiroshima), 2005.
- 11 : Health Monitoring System using a Denture involving IC tags with sensors- Basic Design : Murayama T, Shimoe S, Nikawa H, Tamamoto M, Tajima H, Satoda T, Kishimoto H, Kitani Y (in Japanese): 89th Meeting of Hiroshima University Dental Society, 44th Meeting of Hiroshima Prefecture Dental Association (Hiroshima), 2005.
- 12 : A Concept for Denture Plaque Control and a Newly Developed Denture : Nikawa H, Amano H, Satoda T, Sugiyama M, Murayama T, Takemoto T, Tamamoto M, Fujimoto M, Tajima M, Hara K, Shimoe S, Matsumoto A, Niitani Y, Matsushita N : 2005 Sino-JapaneseConference on Stomatology, 2005.

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

- 1 : Hiroshima University Grant in Aid for Collaborative study by the faculty and the attached school [The Introduction of Embryological models for Senior high school Biology and Health education] Satoda T, Shimoe S, Fujimoto H et al. ¥78,000

(5) Academic Awards, etc.

(6) Patents

Division of Oral Health Engineering (Department of Biomaterial Engineering)

(1) Staffs and Students

Professor : Takeshi Murayama

Associate Professor : Mitsuhiro Tamamoto

(2) Main Research Activities

- 1: Application of CAD/CAM and rapid prototyping to dentistry
- 2: Health Monitoring System using Wearable Sensors involved in a Denture
- 3: Cybernetic maxillofacial prostheses
- 4: Development and clinical application of maxillofacial prosthetic apparatus for treatment and protection
- 5: Study on esthetic dentistry
- 6: Study on dental education

(3) Research Achievements

A) Original Papers (including Case Reports)

- 1 : Dynamic Job Shop Scheduling Using the Mixture of a Genetic Algorithm and a Priority Rule : Eguchi T, Dougakiuchi M, Oba F, Murayama T : Proceedings of 18th International Conference on Production Research, 1-5, 2005.
- 2 : Self-improving System for Assembly Sequence Planning : Murayama T, Eguchi T, Oba F : Proceedings of International Conference on Instrumentation, Control and Information Technology (SICE Annual Conference 2005), 884-889, 2005.
- 3 : Dynamic Scheduling with Processing Time Uncertainty Using the Mixture of Real-time Scheduling and Periodic Optimization : Eguchi T, Oba F, Kozaki S, Murayama T : Proceedings of International Conference on Instrumentation, Control and Information Technology (SICE Annual Conference 2005) , 482-487, 2005.
- 4 : Production Planning and Simulation for Reverse Supply Chain : Murayama T, Yoda M, Eguchi T, Oba F : Proceedings of The 3rd International Conference on Leading Edge Manufacturing in the 21st Century (LEM21), 385-390, 2005.
- 5 : Adaptive Production Planning by Information Sharing for Reverse Supply Chain : Murayama T, Yoda M, Eguchi T, Oba F : Proceedings of 4th International Symposium on Environmentally Conscious Design and Inverse Manufacturing (EcoDesign2005), 1-6, 2005.

- 6 : Current Status of Team Communication Considered from a Questionnaire Survey on the Laboratory Prescription Card : Tamamoto M : J Jpn Prosthodont Soc 49(3), 414-424, 2005.
- 7 : Immobilization of Octadecyl Ammonium Chloride on the Surface of Titan and Its Effects on Microbial Biofilm Formation In Vitro : Nikawa H, Ishida K, Hamada T, Satoda T, Murayama T, Takemoto T, Tamamoto M, Tajima H, Shimoe S, Fujimoto H, Makihira S : Dental Mater. J.24, 570-582, 2005.

B) Review

C) Publications

D) Other Publications

E) Presentation at Scientific Meeting

- 1 : Comparative strength of metal-ceramic and metal-composite bonds after extended thermocycling : Shimoe S., Tajima H., Tamamoto M, Satoda T, Murayama T, Nikawa H : 38th General Meeting of Hiroshima University Dental Society (Hiroshima) , 2005.
- 2 : Records of Dental Technicians School Hiroshima University Faculty of Dentistry during the Past Thirty Three Years. -Analysis of Students' Data- : Shimoe S, Tajima H, Tamamoto M, Satoda T, Murayama T, Nikawa H : 27th Conference of Nippon Academy of Dental Technology(Tokyo), 2005.
- 3 : A Model for Functional Instruction of the Temporomandibular Joint (in Japanese) : Satoda T, Shimoe S, Nikawa H, Tamamoto M, Tajima H, Murayama T, Oura S, Yamaguchi T, Yamanishi E, Hiyama S, Uchida T : Japanese Association of Anatomists The 60th Annual Meeting of Cyugoku- Shikoku district (Tokushima), 2005.
- 4 : A Model for Functional Instruction of the Temporomandibular Joint (in Japanese) : Satoda T, Shimoe S, Nikawa H, Tamamoto M, Tajima H, Murayama T, Oura S, Yamaguchi T, Yamanishi E, Hiyama S, Uchida T : 44th Scientific Meeting of Hiroshima Prefecture Dental Association / 89th Regular Meeting of Hiroshima University Dental Society (Hiroshima) , 2005.
- 5 : Records of Dental Technicians School Hiroshima University Faculty of Dentistry during the Past Thirty Three Years. -Analysis of Students' Data- : Shimoe S, Tajima H, Tamamoto M, Satoda T, Murayama T, Nikawa H : 44th Scientific Meeting of Hiroshima Prefecture Dental Association / 89th Regular Meeting of Hiroshima University Dental Society (Hiroshima) , 2005.
- 6 : Production Planning and Simulation for Reverse Supply Chain : Murayama T, Yoda M, Eguchi T, Oba F : 49th Annual Conference of the Institute of Systems, Control and Information Engineers(Kyoto), 2005.
- 7 : Dynamic Job Shop Scheduling Using the Mixture of a Genetic Algorithm and a Priority Rule -

- The Effect of Priority Rule with Consideration to the Due-Date Allowance - : Dougakiuchi M, Eguchi T, Oba F, Murayama T . : JSME Manufacturing Systems Conference2005 (Tokyo), 2005.
- 8 : Dental CAD/CAM and Research History of Industrial CAD/CAM : Murayama T, Tamamoto M, Shimoe S, Tajima H, Satoda T, Nikawa H : 38th General Meeting of Hiroshima University Dental Society(Hiroshima), 2005.
- 9 : Health Monitoring System using a Denture involving IC tags with sensors - Basic Design : Murayama T, Shimoe S, Nikawa H, Tamamoto M, Tajima H, Satoda T, Kishimoto H, Kitani Y : 44th Scientific Meeting of Hiroshima Prefecture Dental Association / 89th Regular Meeting of Hiroshima University Dental Society (Hiroshima), 2005.
- 10: Current Status of Laboratory Prescription Card by Questionnaire Survey : Tamamoto M, Shimoe S, Tajima H, Satoda T, Murayama T, Nikawa H : 38th General Meeting of Hiroshima University Dental Society (Hiroshima), 2005.
- 11: Educational curriculum in Hiroshima University , Faculty of Dentistry , School of Oral Health Science : Tamamoto M, Takemoto T, Amano H, Nikawa H, Sugiyama M, Satoda T, Murayama T, Fujimoto H, Tajima H, Shimoe S, Hara K, Matsumoto A, Niitani Y : 44th Scientific Meeting of Hiroshima Prefecture Dental Association / 89th Regular Meeting of Hiroshima University Dental Society (Hiroshima), 2005.
- 12: Report of High Technology Modern Medicine for Ten Years in Hiroshima University Dental Hospital - Prosthesis for missing teeth and splint of mobile teeth with adhesion bridge -: Abekura J, Hamada T, Sadamori S, Murata H, Nishimura M, Makihira S, Kagawa K, Nikawa H, Tamamoto M : 44th Scientific Meeting of Hiroshima Prefecture Dental Association / 89th Regular Meeting of Hiroshima University Dental Society (Hiroshima), 2005.
- 13: A Concept for Denture Plaque Control and a Newly Developed Denture Cleanser : Nikawa H, Amano H, Satoda T, Sugiyama M, Murayama T, Takemoto T, Tamamoto M, Fujimoto M, Tajima M, Hara K, Shimoe S, Matsumoto A, Niitani Y, Matsushita N : 2005 Sino-Japanese Conference on Stomatology(Shanghai) , 2005.
- 14: Program for Kids from Elementary Schools, Dental Kids, "Let' s Be a Dentist!" : Nikawa H, Amano H, Satoda T, Takemoto T, Murayama T, Sugiyama M, Tamamoto M, Hara K, Shimoe S, Fujimoto H, Matsumoto A, Tajima H, Niitani Y, Ogawa I, Morita K, Ohara M, Suei Y, Takata T, Sugai M, Tanimoto K, Okamoto K, Kurihara H : 44th Scientific Meeting of Hiroshima Prefecture Dental Association / 89th Regular Meeting of Hiroshima University Dental Society (Hiroshima), 2005.

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

(5) Academic Awards, etc.

(6) Patents

Division of Oral Health Engineering (Department of Medical Design & Engineering)

(1) Staffs and Students

Professor: Hiroki Nikawa
Assistant Professor: Hideaki Tajima
Secretary: Nobue Hiromoto, Ryouko Kawabata, Miki Onji

(2) Main Research Activities

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

(3) Research Achievements

A) Original Papers (including Case Reports)

- 1: Immobilization of Octadecyl Ammonium Chloride on the Surface of Titan and Its Effects on Microbial Biofilm Formation In Vitro : Nikawa H, Ishida K, Hamada T, Satoda T, Murayama T, Takemoto T, Tamamoto M, Tajima H, Shimoe S, Fujimoto H, Makihira S : Dental Mater. J. 24, 570-582, 2005.
- 2: Intercellular Adhesion Molecule 1-Dependent Activation of Interleukin 8 Expression in Candida albicans_Infected Human Gingival Epithelial Cells : Egusa H, Nikawa H, Makihira S, Jewett A, Yatani H, Hamada T : Infection and Immunity 73(1), 622-626, 2005.
- 3: Patch tests on metal-allergy suspected patients. Usefulness of metal element analysis : Nikawa H : Journal of HPDA

B) Review

- 1: Reduction of caries risk by Lactobacillus reuteri : Nikawa H : Food Industry 48(20), 37-52, 2005 (in Japanese)
- 2: Maintenance of Denture -whether are the denture adhesives effective or not : Murata H, Hamada T, Nikawa H : The Quintessence 2005 YEARBOOK 96-97, 2005 (in Japanese)
- 3: Adherence and biofilm formation of Oral Candida : Nikawa H, Makihira S, Egusa H, Fukushima M, Kawabata R, Hamada T, Yatani H : Jpn. J. Med. Mycol. 46, 233-242, 2005 (in Japanese)

C) Publications

D) Other Publications

E) Presentation at Scientific Meeting

- 1: A Concept for Denture Plaque Control and a Newly Developed Denture Cleanser : Nikawa H, Amano H, Satoda T, Sugiyama M, Murayama T, Takemoto T, Tamamoto M, Fujimoto H, Tajima H, Hara K, Shimoe S, Matsumoto A, Niitani Y & Matsushita N : Sino-Japanese Conference on Stomatology (Shanghai) 2005 (in Japanese)
- 2: Program for Kids from Elementary Schools, Dental Kids, "Let's Be a Dentist!" : Nikawa H, Amano H, Satoda T, Takemoto T, Murayama T, Sugiyama M, Tamamoto M, Hara K, Shimoe S, Fujimoto H, Matsumoto A, Tajima H, Niitani Y, Ogawa I, Morita K, Obara M, Suei Y, Takada T, Sugai M, Tanimoto K, Okamoto T, Kurihara H : (Hiroshima) 2005 (in Japanese), 44th Annual Meeting of Hiroshima Prefecture Dental Association and 89th Regular Meeting of the Hiroshima University Dental Society.
- 3: Application of critical pass in the periodontal treatment.- How to prepare the critical pass - : Hamasaki T, Aimi R, Hagiwara Y, Koda F, Nikawa Y, Nikawa H : 20th Meeting of Hiroshima Prefecture Dental Hygienist Association. (Hiroshima) 2005 (in Japanese)
- 4: Application of critical pass in the periodontal treatment.-a case report- : Aimi R, Hamasaki T, Hagiwara Y, Koda F, Nikawa Y, Nikawa H : 20th Meeting of Hiroshima Prefecture Dental Hygienist Association. (Hiroshima) 2005 (in Japanese)
- 5: Analysis on Homepages of Dental Office in Hiroshima and Tokyo : Murata H, Li Y, Nikawa H, Nishimura H, Hong G, Sadamori S, Hamada T : 89th Conference for Hiroshima University Dental Society, 44th Conference for Hiroshima Prefecture Dental Association (Hiroshima)2005 (in Japanese)
- 6: 当診療科における高度先進医療約 10 年間の報告-接着ブリッジによる欠損補綴並びに動揺歯固定- : Abekura H, Hamada T, Sadamori S, Murata H, Nishimura M, Makihira S, Kagawa K, Nikawa H, Tamamoto M : 89th Conference for Hiroshima University Dental Society, 44th Conference for Hiroshima Prefecture Dental Association (Hiroshima) 2005 (in Japanese)
- 7: The Procedure and Method of Preparing the Critical Pass : Hamasaki T, Aimi R, Nikawa Y, Nikawa H : Heisei 17th Scientific Meeting of Chugoku Branch of Japan Society of Dental Practice (Hiroshima) 2005 (in Japanese)
- 8: Availability of the data on patch test and metal analysis of suspected patients of metal allergy : Makihira S, Nikawa H, Uchiyama H, Shigeoka M, Nakano K, Miyoshi H, Ogawa I, Takada T, Hamada T : 89th Conference for Hiroshima University Dental Society, 44th Conference for Hiroshima Prefecture Dental Association (Hiroshima) 2005 (in Japanese)

F) Special lectures in academic meetings

- 1: Quarterly ammonium salts for antimicrobial processing : Nikawa H : Industrial Cluster Fair,

2005 (in Japanese)

- 2: Oral Candida and denture cleansers : Nikawa H : , (hiroshima) 2005 (in Japanese)
- 3: Immobilization of Antimicrobial Agents on medical and dental devices : Nikawa H : Innovation Japan 2005 (Tokyo) 2005 (in Japanese)
- 4: Skills Improvement Seminar for Submitting Articles to the Prosthodontic Research & Practice Journal The Manner to Prepare and Submit the Scientific Articles to English Journal : Nikawa H : 114th General meeting of Japan Prosthodontic Society (Niigata) 2005 (in Japanese)
- 5: Skills Improvement Seminar for Submitting Articles to the Prosthodontic Research & Practice Journal The Manner to Prepare and Submit the Scientific Articles to English Journal : Nikawa H : Annual Meeting of Toukai Branch of Japan Prosthodontic Society (Nagoya) 2005 (in Japanese)

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

- 1: Experiments for the acquisition of various patent rights The development of synthetic medium for the large-scale proliferation of the stem cells using antimicrobial peptides. H16-03 ¥28,789,000 (2004-2006 ¥60,000,000) (Head; Nikawa H)
- 2: Entrusted expenses Otsuka Pharmaceutical Co. Ltd. ¥500,000 (Nikawa H)

(5) Academic Awards, etc.

(6) Patents

- 1: 鎌田 健資, 二川 浩樹:「抗菌剤水溶液及びその保存方法」:特願 2005-212600 :出願人 株式会社ヒロマイト 広島大学
- 2: 二川 浩樹, 西村 正宏, 加藤 幸夫, 辻 紘一郎:「動物幹細胞培養用無血清培地」:特願 2005-223242 :出願人 辻 紘一郎, 二川 浩樹, 加藤 幸夫
- 3: 二川 浩樹:「抗菌性医療用補綴部材及び医療用補綴部材の抗菌処理方法」:特願 2005-233130 出願人: 広島大学
- 4: 二川 浩樹, 西村 正宏, 辻 紘一郎, 川端 涼子, 片桐 延枝:「新規抗菌性ペプチド」:特願 2005-277121 :出願人 独立行政法人科学技術振興機構, 広島大学, 株式会社 ツーセル
- 5: 二川 浩樹:「合成樹脂の抗菌方法及び抗菌性合成樹脂」:特願 2005-320308 :出願人 広島大学 和田精密歯研株式会社
- 6: 二川 浩樹:「義歯洗浄剤」:特願 2005-321546 :出願人 広島大学
- 7: 二川 浩樹, 濱田 泰三, 西村 正宏, 辻 紘一郎:「新規塩基性抗菌ペプチド及びその利用」特願 2004-098896 :出願人 独立行政法人科学技術振興機構 : 国際出願番号 PCT/JP2005/005724(2005/03/28 国際出願) 国際公開番号 WO2005/095445 A1 (2005/10/13 公開) 指定国 ; アメリカ, カナダ, 中国, 韓国, EP (全指定) (平成 17 年 3 月 28 日国際出願)

Central research laboratory

(1) Staffs and Students

Director :Norihiko Maeda (by-work)

Educational Staff :Takeyoshi Doi (~Feb.), Ikue Hayashi , Yasuhumi Myouishi (Mar.~)

(2) Main Research Activities

- 1 : Clarification of homeostasis of periodontal ligament
- 2 : Analytical approach for the determination of physiologically active substances
- 3 : マウス ES 細胞からの顎顔面組織誘導
- 4 : マウス骨髄幹細胞からの顎顔面組織誘導

(3) Research Achievements

A) Original Papers (including Case Reports)

- 1 : The metabolism of hyaluronan in cultured rabbit growth plate chondrocytes during differentiation : Suzuki A, Tanimoto K, Ohno S, Nakatani Y, Honda K, Tanaka N, Doi T, Ohno-Nakahara M, Yoneno K, Ueki M, Tanne K : Biochem Biophys Acta 1743, 57-63, 2005.
- 2 : Cyclic mechanical strain regulates the PTHrP expression in cultured chondrocytes via activation of the Ca²⁺ channel : Tanaka N, Ohno S, Honda K, Tanimoto K, Doi T, Ohno-Nakahara M, Tafolla E, Kapila S, Tanne K : J Dent Res 84(1), 64-68, 2005.
- 3 : Multidifferentiation potential of mesenchymal stem cells in three-dimensional collagen gel cultures : Yoneno K, Ohno S, Tanimoto K, Honda K, Tanaka N, Doi T, Kawata T, Tanaka E, Kapila S, Tanne K : Journal of Biomedical Materials Research 75(A), 733-741,2005
- 4 : Long-term effects of radiation dose on inflammatory markers in atomic bomb survivors : Hayashi T, Morishita Y, Kubo Y, Kusunoki Y, Hayashi I, Kasagi F, Hakoda M, Kyoizumi S, Nakachi K : Am J Med 118, 83-86, 2005.
- 5 : Rapid and multi-sample determination of reactive oxygen species in human sera : Hayashi T, Morishita Y, Hayashi I, Masuda M, Fujita K, Kusunoki Y, Jitsukata K, Nakachi K : Nihon Rinsho Kensa Jidoka Gakkai Kaishi [JJCLA] 30(3),216-20, 2005.
- 6 : Identification and molecular characterization of an N-acetylmuramyl-L-alanine amidase Sle1 involved in cell separation of Staphylococcus aureus : Kajimura J, Fujiwara T, Yamada S, Suzawa Y, Nishida T, Oyamada Y, Hayashi I, Yamagishi J, Komatsuzawa H, Sugai M : Molecular Microbiology 58(8), 1087-1101, 2005.

B) Review

C) Publications

D) Other Publications

E) Presentation at Scientific Meeting

- 1: The metabolism of hyaluronan during chondrocyte differentiation : Suzuki A, Tanimoto K, Ohno S, Honda K, Tanaka N, Doi T, Ohno M, Yoneno K, Ueki M, Nakatani Y, Yanagida T, Kiitamura R, Rin Y, Tanne Y, Tanne K : The 5th Asian-Pacific Orthodontic Conference (Beijing), 2005.
- 2 : Hyaluronan promotes hard tissue generation from mesenchymal stem cells : Yoneno K, Ohno S, Doi T, Tanne K : The 83rd International Association for Dental Research (Baltimore), 2005.
- 3 : A study on specific bacteriolytic activity of cell wall lytic enzyme named Automutanolysin : Yoshimura G, Kouzai K, Komatsuzawa H, Fujiwara T, Hayashi I, Yamada S, Sugai M : The 43rd congress of Japanese Society of Pediatric Dentistry (Sendai)2005.
- 4 : Risk of radiation-related stomach cancer differs among atomic-bomb survivors due to different HLA class I genotypes : Hayashi T, Morishita Y, Nagamura H, Imai K, Hayashi I, Kusunoki Y, Nakachi K, Tahara E : The 14th International HLA and Immunogenetics Workshop(Melbourne), 2005.

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

- 1 : Grant-in-Aid for Scientific Research (C) : Myouishi Y

(5) Academic Awards, etc.

(6) Patents

Department of General Dentistry (General Dentistry)

(1) Staffs and Students

Professor : Tetsuji Ogawa
(* Head of sub-hospital (clinical training):(Additional post)
Chairman of postgraduate dental clinical training committee: (Additional post)
Chairman at dental clinical, educational training center: (Additional post)

Research Associate : Norihiro Taguchi (Overseas training from Feb. 2005 in Centre for Medical Education, University of Dundee, UK), Yoshiharu Tanaka (from Feb. 2005)

Intern : Takaomi Sakurai, Kouichirou Nagai, Nobuhito Tanaka,
Masato Yoshiwara, Yukenn Outa, Masaaki Nagata, Kanna Miura

(2) Main Research Activities

- 1: Study for patient-oriented and narrative-based medicine
- 2: Study for advanced general dentistry
- 3: Study for postgraduate dental clinical training program
- 4: Study for medical and dental communication skills
- 5: Study for strategy of dental education
- 6: Study for clinical assessment of performance and competence
- 7: Study for training and standardizing of simulated patients

(3) Research Achievements

A) Original Papers (including Case Reports)

- 1: Establishment of Active Learning Strategy in Postgraduate Clinical Training Course - Standardization and Individualization - : Norihiro T, Tetsuji O, Hisako S, Kenichi S, Hiroshi Y, Ryoji T, Hiroshi S, Tsuyoshi T, Hitoshi A, Eiji T, Hideaki A, Akira T, Tohru T, Yukinori N and Ikuko O : The Journal of Japanese Dental Education Association 21, 196-204, 2005.
- 2: Management of Clinical Training for Junior residents in General Dental Clinics - Analyses of Data Obtained from a Questionnaire - : Hisako S, Makoto K, Norihiro T and Tetsuji O. : The Journal of Japanese Dental Education Association 21, 242-249, 2005.
- 3: A project of ICLS introduction in the dental clinical training. - Trial of ICLS simulation course - : Yoshiharu T, Norihiro T and Tetsuji O : The Journal of Japanese Dental Education Association in press 2005.

B) Review

C) Publications

D) Other Publications

E) Presentation at Scientific Meeting

- 1: Assessment of Medical Communication Ability : Tetsuji O, Norihiro T, Yoshiharu T, Yuko I : CAJ in Matsuyama 2005.
- 2: Seminar for Medical Communication : Tetsuji O, Norihiro T, Yoshiharu T, and Yuko I : 24th Annual Meeting of Japanese Association of Dental Education at Tokushima in 2005.
- 3: Introduction to ICLS in Postgraduate Dental Training Course : Yoshiharu T, Norihiro T, and Tetsuji O : 24th Annual Meeting of Japanese Association of Dental Education at Tokushima in 2005.
- 4: Educational Outcome in Trust Practice in Hiroshima University Hospital : Miho H, Miyuki N, Yoriko I, Yuko T, Tetsuji O and Tetsuji O : 24th Annual Meeting of Japanese Association of Dental Education at Tokushima in 2005.
- 5: Experience of Attending a Lecture of ICLS Simulation in Postgraduate Dental Training Course : Humino O, Yoshiharu T, Yoshitaka S, Michio K, Norihiro T, Tetsuji O, and Kouichi T : 44th Annual Meeting of Hiroshima Dental Society and 89th Regular Meeting of Hiroshima University Dental Society in 2005.
- 6: About the Dental Volunteer Work in Vietnam of the Advanced General Dentistry Dental : Nobuhito T, Masaaki N, Masato Y, Yoshiharu T, Eiko F, Toshihiko T and Tetsuji O : 44th Annual Meeting of Hiroshima Dental Society and 89th Regular Meeting of Hiroshima University Dental Society in 2005.

F) Holding of seminars and workshops

- 1: 2nd Seminar for Medical Communication in 2005 : Hiroshima, 2005.
- 2: 3rd Seminar for Medical Communication in 2005 : Hiroshima, 2005.
- 3: Workshop for Residents in Dental Clinical Training Course in 2005 : Hiroshima, 2005.
- 4: 1st Training Course of ICLS Simulation in 2005 : Hiroshima, 2005.
- 5: 4th Training Program for Dental Trainer (Chugoku/Shikoku area) : Hiroshima, 2005.
- 6: 2nd Training Course of ICLS Simulation in 2005: Hiroshima, 2005.

G) Presentation of Seminars and Workshops , Facilitator, Taskforce

- 1: Taskforce/Facilitator : Tetsuji O : Workshop for Evaluator Training of Common Achievement Dental OSCE in Kyushu Dental College : Kitakyushu, Jan., 2005.
- 2: Taskforce/Facilitator : Tetsuji O, Norihiro T : 2nd Seminar for Medical Communication in 2005 : Hiroshima, Feb., 2005.

- 3: Taskforce/Facilitator : Tetsuji O : 3rd Seminar for Medical Communication in 2005 : Hiroshima, March, 2005.
- 4: Taskforce/Facilitator : Tetsuji O, Yoshiharu T : Workshop for Residents in Dental Clinical Training Course in 2005: Hiroshima, April, 2005.
- 5: Taskforce/Facilitator : Tetsuji O : 1st Workshop for Evaluator Training of Common Achievement Dental OSCE in 2005 : Sapporo, June, 2005.
- 6: Taskforce/Facilitator : Tetsuji O : 2nd Workshop for Evaluator Training of Common Achievement Dental OSCE in 2005 : Niigata; Aug., 2005.
- 7: Taskforce/Facilitator : Tetsuji O : 3rd Workshop for Evaluator Training of Common Achievement Dental OSCE in 2005 : Fukuoka, June, 2005.
- 8: Taskforce/Facilitator : Tetsuji O : 2nd Chugoku-Shikoku Training Course for Postgraduate Dental Clinical Instructor : Tokushima, March, 2005.
- 9: Taskforce/Facilitator : Tetsuji O : Training Course for Postgraduate Dental Clinical Instructor : Kagoshima in Kagoshima University Hospital: Kagoshima, March, 2005.
- 10: Taskforce/Facilitator : Tetsuji O : 3rd Chugoku-Shikoku Training Course for Postgraduate Dental Clinical Instructor : Okayama, May, 2005.
- 11: 1st Training Course of ICLS Simulation in 2005 : Hiroshima, June, 2005.
- 12: Taskforce/Facilitator : Tetsuji O : 4th Chugoku-Shikoku Training Course for Postgraduate Dental Clinical Instructor: Hiroshima, July, 2005.
- 13: Taskforce/Facilitator : Tetsuji O : Training Course of Postgraduate Dental Clinical Instructor: Kyushu University Hospital, July, 2005.
- 14: Taskforce/Facilitator : 2nd Training Course of ICLS Simulation in 2005: Hiroshima, Sep., 2005.
- 15: Taskforce/Facilitator : Tetsuji O : 5th Chugoku-Shikoku Training Course of Postgraduate Dental Clinical Instructor : Tokushima, Oct., 2005.
- 16: Taskforce/Facilitator : Tetsuji O : 6th Chugoku-Shikoku Training Course of Postgraduate Dental Clinical Instructor : Okayama, Nov, 2005.
- 17: Taskforce/Facilitator : Tetsuji O : Seminar for Communication Training using PBL-tutorial.: Okayama, Nov, 2005.

H) Attending of outreach programme

- 1: 9th Workshop for Director and Instructor of Postgraduate Dental Clinical Training Course : Yoshiharu T : Susono, Nov., 2005.
- 2: 1st Workshop for Education of Dental Ethics : Tetsuji O : Funabashi, Nov. 2005.

I) Implementation of OSCE ,CSA etc.

- 1: Hiroshima University Hospital 3rd Advanced OSCE for Junior Residents in 2005
- 2: Hiroshima University Hospital Advanced OSCE (CSA) for Senior Residents in 2005
- 3: Hiroshima University Hospital 1st Advanced OSCE for Junior Residents in 2005

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

1:International standardization of the clinical ability evaluation : Norihiro T : Overseas, Advanced, Educational practice program in Ministry of Education, Culture, Sports, Science and Technology, (Grant No. 16-kai-324.)

(5) Academic Awards, etc.

(6) Patents

Department of Oral Health and Development (Preventive Dentistry)

(1) Staffs and Students

Assistant Professor : Makoto Kawamura (Manager)
Research Assistant : Hisako Sasahara

(2) Main Research Activities

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

(3) Research Achievements

A) Original Papers (including Case Reports)

1. A comparative study of oral health attitudes and behaviour using the Hiroshima University - Dental Behavioural Inventory (HU-DBI) between dental students in Britain and China. : Komabayashi T, Kwan S Y L, Hu D-Y, Kajiwara K, Sasahara H, Kawamura M : Journal of Oral Science 47(1), 1-7, 2005.
2. An exploratory study on cultural variations in oral health attitudes, behaviour and values of freshman (first-year) dental students. : Kawamura M, Wright F A C, Declerck D, Freire M C M, Hu D-Y, Honkala E, Lévy G, Kalwitzki M, Polychronopoulou A, Yip H-K, Kinirons M J, Eli I, Petti S, Komabayashi T, Kim K-J, Razak A A A, Srisilapanan P, Kwan S Y L : International Dental Journal 55, 205-211, 2005.
3. Dental education in India and Japan: Implications for U.S. dental programs for foreign-trained dentists. : Komabayashi T, Raghuraman K, Raghuraman R, Toda S, Kawamura M, Levine S M, Bird W F : Journal of Dental Education 69, 461-469, 2005.
4. Étude comparée des comportements des étudiants français et de leurs pairs japonais face à leur santé orale en utilisant un questionnaire de l'Université d'Hiroshima, Hiroshima University – Dental Behavioral Inventory (HU-DBI). (In French, abstract in English). : Lévy G, Kawamura M, Misawa A, Sasahara H : Journal dentaire du Québec 42, 211-219, 2005.
5. Oral self-care behaviours: comparing Greek and Japanese dental students. : Polychronopoulou A, Kawamura M : European Journal of Dental Education 9, 164-70, 2005.
6. Comparison of the recognition of denture adhesive between Japanese and Indonesian

- dentists : A pilot study.: Sadamori S, Hamada T, Hong G, Nakai N, Kawamura M, Razak A :
Maj Ked Gigi (Dent J) 38, 189-193, 2005.
7. A trial of environmental/behavioral assessment based on the causal relationships among seven oral health-related factors at the community level. (In Japanese, abstract in English). : Kawamura M, Sasahara H, Tomita H, Takahashi H, Fujii H, Yoshioka H, Iwasaki Y, Kajiwara K : J Dent Hlth55 (2),95-99, 2005.
 8. Development of computer programs for the ability to evaluate periodontal status of school children. (In Japanese, abstract in English) : Nakae F, Okada M, Kawamura M, Saiga K, Hayashi F, Miura K, Kozai K : The Japanese Journal of Pediatric Dentistry 43,442-448, 2005.
 9. Development of Japanese version scales for evidence-based practice and confirmation of equivalence. (In Japanese, abstract in English). : Oka M, Ishida S, Kawamura M, Chaboyer W, Creedy D : The Japanese Journal of Health Behavioral Science 20,100-113, 2005.
 10. A study on the evaluation and improvement of clinical trainings for dental hygienist students in the preventive dentistry of Hiroshima University Hospital. (In Japanese) .: Shimoda T, Iwasaki Y, Sasahara H, Kawamura M : J. Hiroshima Univ. Dent. Soc.37,61-65, 2005.
 11. Development of an oral self-care appraisal (OSCA) questionnaire for youth and test-retest reliability of its items. (In Japanese). : Kawamura M, Okada M, Sasahara H : J. Hiroshima Univ. Dent. Soc.37,72-81, 2005.
 12. Management of clinical training for junior residents in general dental clinics – analyses of data obtained from a questionnaire. (In Japanese, abstract in English). : Sasahara H, Kawamura M, Taguchi N, Ogawa T : The Journal of Japanese Dental Education Association 21(3),242-249, 2005.

B) Review

C) Publications

1. Chapter 9 Communications and Informed Consents. Kawamura M. (translator) : G. Kent, R. Croucher : Shinsyo F, Yamazaki K, Mataka S.(chief translators): Achieving Oral Health: The social context of dental care. Ishiyaku, Tokyo, 220-46, 2005.

D) Other Publications

1. Survey of insurance against medical malpractice and accident insurance carried by dentists in the postgraduate clinical training course and graduate students at the dental section of Hiroshima University Hospital. (In Japanese, abstract in English). : Sasahara H, Kawamura M, Sadamori S, Taguchi N, Ogawa T : The Journal of Japanese Dental Education Association 20(2),390-395, 2005.
2. Dynamic simulation for prediction of oral health related factors in young people. (In Japanese, abstract in English) .: Kawamura M, Sasahara H, Takase N, Taguchi H, Koga H, Ogawa T : J

Dent Hlth (Short communication)55(2),118-120, 2005.

3. Development of Japanese scales for evidence-based practice (EBP) and comparison of attitudes toward EBP between Japanese and Australian nurses. (In Japanese, abstract in English). : Oka M, Ishida S, Kawamura M, Takahashi N : Report of Research Project Grant-in-aid for Scientific Research C(2), 2002-2004, Kanagawa, 1-74, 2005.
4. Establishment of active learning strategy in postgraduate clinical training course - Standardization and individualization- (In Japanese, abstract in English). : Taguchi N, Ogawa T, Tanaka Y, Sasahara H, Shirai K, Yoshino H, Tani R, Shimasue H, Taji T, Abekura H, Tanaka E, Amano H, Taguchi A, Takarada T, Nahara Y, Ogawa I : The Journal of Japanese Dental Education Association 21(2),196-204, 2005.

E) Presentation at Scientific Meeting

1. Demonstration of 'Dr. Picar' as a computer-aided program for periodontal health, developed in Japan .: Kawamura M, Okada M, Uchiyama Y, Sasahara H : Workshop-seminar for the First International Conference on Tropical Oral Health (England), 2005.
2. Studies on nursing students' ability to evaluate periodontal health status using a computer training soft named 'Dr. Picar'. : Okada M, Kawamura M, Kajiwara K, Uchiyama Y, Sasahara H, Amano H : Workshop-seminar for the First International Conference on Tropical Oral Health (Poole, 1st-2nd September), 2005.
3. Correlation of the presence of human papillomavirus-16 in oral squamous cell carcinoma and 5-year survival : Sugiyama M, Bhawal U K, Kawamura M, Ishioka Y, Shigeishi H, Fujimoto H, Kamata N : The 38th Meeting of Hiroshima University Dental Society (Hiroshima, H17.6.18), 2005.
4. Development of computer-aided diagnosis scheme for periodontal disease. (In Japanese, abstract in English) .: Uchiyama Y, Kawamura M, Sasahara H, Okada M : 24th Conference of Medical Imaging Technology (Tokyo, H17.7.26-27), CD-ROM #P2-3, p1-8, 2005.
5. The relationship between oral status and general condition of elderly with dementia -in a group home - : Furuebisu M, Sadamori S, Hamada T, Sasahara H : The 22nd Japanese society for disability and oral health (Koufu), 2005.

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

- 1: Grant-in-aid for Scientific Research (Houga) Continued : Kawamura M. (representative) : Development of computer-aided diagnosis scheme for periodontal disease on the basis of pictures sent from mobile phones with camera. (No.16659585). ¥1,100,000
- 2: Grant-in-aid for Scientific Research(C), Continued : Sasahara H. (representative) : Causal relationships between people's dental health behavior and community dental health activity - Differences between a model and the reality-. (No.16592090). ¥500,000

(5) Academic Awards, etc.

(6) Patents

Department of Oral Health and Development (Special Care Dentistry)

(1) Staffs and Students

Associate Professor : Mitsugi Okada Head
Research Associate : Taku Kanda (August to December)

(2) Main Research Activities

- 1: A study on caries risk of patients with disabled
- 2: A study on risk of periodontal disease of patients with disabled
- 3: A study on dental problems of patients with disabled
- 4: A study on PBL task for dental problem of patients with mental retardation

(3) Research Achievements

A) Original Papers (including Case Reports)

- 1: Longitudinal study of dental caries incidence associated with *Streptococcus mutans* and *Streptococcus sobrinus* in pre-school children.: Okada M, Soda Y, Hayashi F, Doi T, Suzuki J, Miura K, Kozai K : J. Med. Microbiol 54, 661-665, 2005.
- 2: Development of an oral self-care appraisal (OSCA) questionnaire for youth and test-retest reliability of its items : Makoto K, Mitsugi O, Hisako S : Journal of Hiroshima University Dental Society 37, 72-81, 2005.
- 3: Development of computer programs for the ability to evaluate periodontal status of school children : Hisami N, Mitsugi O, Makoto K, Kori S, Fumiko H, Kazuo M, Katsuyuki K : Japanese Journal of Pediatric Dentistry 43, 442-448, 2005.

B) Review

C) Publications

- 1: School dental health and periodontal treatment: a review of pediatric dental clinic 6 : One more step!! –school dental health- : (Editor Shinichirou M, Akinori S) : Mitsugi O : Tokyo Rinsho Shuppan (Tokyo), 95-104, 2005.

D) Other Publications

- 1: The practice of oral environment investigation with the aim of improvement of hygienic control ability –change of periodontal pathogens and oral hygienic education effect- : Kimiko D, Takamune H, Yuko Y, Fukumi U, Takafumi I, Masao I, Eri T, Yukihisa F, Tomoko H, Reiko H, Mitsugi O, Hidemi K : Proceeding of Hiroshima University Faculty and attached school collaborations 33, 435-442, 2005.
- 2: A longitudinal study on questionable caries for observation (CO) in oral health examination : Rie Y, Hirokazu S, Naomi M, Mitsugi O : Proceeding of Hiroshima University Faculty and attached school collaborations 33, 447-449, 2005.

E) Presentation at Scientific Meeting

- 1: Late established mutans streptococci in children over 3 years old. : Okada M, Soda Y, Hayashi F, Miyamoto Y, Doi T, Suzuki J, Kozai K : 83rd General Session and Exhibition of the International Association for Dental Research (Baltimore), 2005.
- 2: Prevalence of four putative periodontal pathogens in children with age. : Hayashi F, Okada M, Soda Y, Kozai K : 83rd General Session and Exhibition of the International Association for Dental Research (Baltimore), 2005.
- 3: Periodontal disease in children and its treatment. : Okada M : The first Indonesian National Scientific Meeting in Pediatric Dentistry (Surabaya), 2005.
- 4: Computer aided screening of oral condition. : Okada M, Kawamura M, Kajihara K, Uchiyama Y, Sasahara H, Amano H : International Working Group Meeting on Tropical Oral Health (Poole), 2005.

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

(5) Academic Awards, etc.

(6) Patents

Central Clinical Sections (Special Dental Clinic Section)

(1) Staffs and Students,

Chief Professor :Katsuyuki Kozai

Research Associate :Yuri Fujiwara

(2) Main Research Activities

1:Evaluation of Cleft Palate Speech

2:Clinical Application of Electropalatography

(3) Research Achievements

A) Original Papers (including Case Reports)

B) Review

1:Survey on rehabilitation services for swallowing disorders : Okada S, Kuri ., Kumakura I, Kojima C, Shiina H, Shimizu M, Fujiwara Y, Yamori M : Japanese Journal of Speech, Language, and Hearing Research 2, 114-118, 2005.

C) Publications

D) Other Publications

E) Presentation at Scientific Meeting

1: A trial of home training, using electropalatography, for a case with residual cleft palate speech : Fujiwara Y, Inoue M, Yamamoto I : The 29th annual meeting of Japanese Cleft Palate Association (Tokyo), 2005.

2: Trials of EPG home training, using a portable training unit, for Japanese children with cleft palate : Fujiwara Y, Inoue M, Muraguchi K, Yamamoto I : The 4th International EPG Symposium (Edinburgh), 2005.

3: A study on perceptual assessment of nasality -a preliminary experiment- : Fujiwara Y : The 50th annual meeting of Japan Society of Logopedics and Phoniatics (Yokohama), 2005.

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

(5) Academic Awards, etc.

(6) Patents

Central Clinical Sections (Center of Oral Clinical Examination)

(1) Staffs and Students

Director : Takashi Takata (concurrent position)

Assistant Professor : Ikuko Ogawa

Research Associate : Keiko Oue, Keiko Morita

Research Assistant : Keiko Banno

(2) Main Research Activities

- 1 : Clinicopathological study on head and neck lesions
- 2 : Molecular pathological study on proliferation and development of oral squamous cell carcinoma
- 3 : Study on cellular differentiation of salivary gland tumors

(3) Research Achievements

A) Original Papers (including Case Reports)

- 1 : Small interfering RNA targeting of S phase kinase-interacting protein 2 inhibits cell growth of oral cancer cells by inhibiting p27 degradation. : Kudo Y, Kitajima S, Ogawa I, Kitagawa M, Miyauchi M, Takata T : *Molecular Cancer Therapy* 4, 471-476, 2005.
- 2 : Establishment of cementoblast cell lines from rat cementum lining cells by transfection with temperature-sensitive simian virus-40 T-antigen gene. : Kitagawa M, Kitagawa S, Kudo Y, Ogawa I, Miyauchi M, Tahara H, Ide T, Takata T : *Bone* 37, 220-226, 2005.
- 3 : Overexpression of Aurora-A potentiates HRAS-mediated oncogenic transformation and is implicated in oral carcinogenesis. : Tatsuka M, Sato S, Kitajima S, Suto S, Kawai H, Miyauchi M, Ogawa I, Maeda M, Ota T, Takata T : *Oncogene* 24, 1122-1127, 2005.
- 4 : Metastatic retinoblastoma of the maxilla and mandible.: Taguchi A, Sui Y, Ogawa I, Naito K, Nagasaki T, Lee K, Fujita M, Tanimoto K : *Dentomaxillofacial Radiology* 34, 126-131, 2005.
- 5 : A case of epithelial-myoepithelial carcinoma of the parotid gland showing predominantly papillary-cystic growth pattern with area of cellular atypia.: Ogawa I, Nishida T, Hirakawa H, Miyauchi M, Takata T : *Japanese Journal of Diagnostic Pathology* 22, 231-234, 2005. (in Japanese)
- 6 : A case of lung carcinoma metastasized to the tongue, suspected by the autopsy. : Ono S, Nobumori T, Yoneda S, Tohmori H, Ninomiya Y, Ogawa I, Takata T, Kamata N : *The Journal of Hiroshima University Dental Society* 37, 82-86, 2005. (in Japanese)

B) Review

- 1 : Down-regulation of Cdk inhibitor p27 in oral squamous cell carcinoma. : Kudo Y, Kitajima S, Ogawa I, Miyauchi M, Takata T : Oral Oncology 41, 105-116, 2005.
- 2 : Pathological diagnosis of odontogenic tumors. : Ogawa I, Miyauchi M, Kudo Y, Takata T : Pathology and Clinical Medicine 23, 1186-1193, 2005. (in Japanese)
- 3 : Molecular pathology of salivary gland tumors. : Ogawa I, Kitagawa M, Kudo Y, Miyauchi M, Takata T : Journal of the Japanese Salivary gland Society 46, 57-68, 2005. (in Japanese)

C) Publications

- 1 : Myoepithelioma, Myoepithelial carcinoma : Atlas of Salivary Gland Tumors (Morinaga S. eds) : Ogawa I : Kanehara Shuppan (Tokyo), 51-56, 128-129, 2005. (in Japanese)

D) Other Publications

E) Presentation at Scientific Meeting

- 1 : Molecular analyses of oral cancer in Korea and Japan. : Kudo Y, Ogawa I, Hong S D, Lim J J, Miyauchi M, Lee J I, Hong S P, Takata T : 2nd Meeting of Asian Society of Oral and Maxillofacial Pathology (Soul), 2005.
- 2 : Disorder of Aurora A degradation in oral cancer. : Kitajima S, Kudo Y, Sato S, Ogawa I, Miyauchi M, Tatsuka M, Takata T : 2nd Meeting of Asian Society of Oral and Maxillofacial Pathology (Soul), 2005.
- 3 : Histologic diversity and differential diagnosis of epithelial-myoepithelial carcinoma. : Ogawa I, Miyauchi M, Kitagawa M, Kitajima S, Kudo Y, Takata T : 2nd Meeting of Asian Society of Oral and Maxillofacial Pathology (Soul), 2005.
- 4 : Establishment of human cementoblast cell line. : Kitagawa M, Oka H, Saito A, Ogawa I, Miyauchi M, Tahara H, Ide H, Takata T : 48th Annual Meeting in Spring of the Japanese Society of Periodontology (Nagasaki), 2005. (in Japanese)
- 5 : Effect of heparin and heparin derivative on proliferation and differentiation of osteoblasts. : Saito A, Yoshida M, Nakata A, Oka H, Kitagawa M, Ogawa I, Miyauchi M, Takata T : 48th Annual Meeting in Spring of the Japanese Society of Periodontology (Nagasaki), 2005. (in Japanese)
- 6 : Effect of enamel matrix derivative on the proliferation and the differentiation of human pulp cells.: Ueda H, Kitagawa M, Saito A, Miyauchi M, Ogawa I, Oda R, Fujitani M, Takata T : The 38th Plenary Meeting of the Hiroshima University Dental Society (Hiroshima), 2005. (in Japanese)
- 7 : Disorder of Aurora-A in Oral Cancer: Kitajima S, Kudo Y, Tatsuka M, Ogawa I, Miyauchi M, Takata T : The 38th Plenary Meeting of the Hiroshima University Dental Society (Hiroshima),

2005. (in Japanese)
- 8 : The study on the development of regeneration therapy of periodontal and bone tissues by synthetic peptide of ameloblastin : Yoshida M, Nakata A, Iizuka S, Oka H, Kitagawa M, Kitagawa S, Kudo Y, Ogawa I, Miyauchi M, Takata T : The 38th Plenary Meeting of the Hiroshima University Dental Society (Hiroshima), 2005. (in Japanese)
- 9 : Effect of heparin and heparin derivative on proliferation and differentiation of osteoblasts. : Saito A, Yoshida M, Nakata A, Oka H, Kitagawa M, Ogawa I, Miyauchi M, Takata T : The 38th Plenary Meeting of the Hiroshima University Dental Society (Hiroshima), 2005.(in Japanese)
- 10 : Disorder of Aurora-A in oral cancer : Kitajima S, Kudo Y, Tatsuka M, Ogawa I, Miyauchi M, Takata T : The Summer School of The Network of Leading-edge Dental Science (Miura), 2005. (in Japanese)
- 11 : Identify of Periostin as a novel factor for oral cancer invasion : Kudo Y, Ogawa I, Kitajima S, Kitagawa M, Siriwardena B S M S, Miyauchi M, Takata T : 16th Annual Meeting of the Japanese Society for Oral Pathology (Morioka), 2005. (in Japanese)
- 12 : Studies on the regulatory mechanism of proliferation and function of the cementoblast. □. Responses of cementoblast cell line, OCCM-30 to prostaglandin E₂-stimulation and the role of PGE receptor subtypes in the responses : Oka H, Miyauchi M, Furusho H, Saito A, Kitagawa M, Sakamoto K, Iizuka S, Ogawa I, Noguchi K, Ishikawa I, Takata T : 48th Annual Meeting in Autumn of the Japanese Society of Periodontology, (Sapporo), 2005. (in Japanese)
- 13 : Effects of representative physiologically active substance on the proliferation and differentiation of established human cementoblast cell line. : Kitagawa M, Iizuka S, Sakamoto K, Kawazoe Y, Oka H, Saito A, Kudo Y, Ogawa I, Miyauchi M, Takata T : The 47st Annual Meeting of the Japanese Society of Oral Biology (Sendai), 2005. (in Japanese)
- 14 : Effect of enamel matrix derivative on human pulp cells. : Ueda H, Kitagawa M, Saito A, Miyauchi M, Ogawa I, Oda R, Fujitani M, Takata T : The 47st Annual Meeting of the Japanese Society of Oral Biology (Sendai), 2005. (in Japanese)
- 15 : Disorder of Aurora-A degradation in oral cancer : Kitajima S, Kudo Y, Ogawa I, Miyauchi M, Tatsuka M, Takata T : The 47st Annual Meeting of the Japanese Society of Oral Biology (Sendai), 2005. (in Japanese)
- 16 : The mechanism of degradation of Aurora A protein and disorder of its degradation in Oral Cancer : Kitajima S, Kudo Y, Ogawa I, Miyauchi M, Tatsuka M, Takata T : The 28th Annual Meeting of Molecular Biology Society of Japan (Hakata), 2005. (in Japanese)
- 17 : Program for kids from elementary schools, Dental Kids, "Let's be a dentist!" : Nikawa H, Amano H, Satoda T, Takemoto T, Murayama T, Sugiyama M, Tamamoto M, Hara K, Shimoe S, Fujimoto H, Matsumoto A, Tajima H, Niitani Y, Ogawa I, Morita K, Obara M, Suei Y, Takata T, Sugai M, Tanimoto K, Okamoto T, Kurihara H : 44th Annual Meeting of Hiroshima Prefecture Dental Association and 89th Regular Meeting of the Hiroshima University Dental Society (Hiroshima), 2005. (in Japanese)
- 18 : Availability of the data on patch test and metal analysis of suspected patients of metal allergy.: Makihira S, Nikawa H, Uchiyama H, Shigeoka M, Nakano K, Miyoshi H, Ogawa I, Takata T,

- Hamada T : 44th Annual Meeting of Hiroshima Prefecture Dental Association and 89th Regular Meeting of The Hiroshima University Dental Society (Hiroshima), 2005. (in Japanese)
- 1 9 : Aurora kinases and signal for carcinogenesis : Tatsuka M, Kawai H, Kanda A, Maeda M, Ohta T, Sato S, Kitajima S, Kudo Y, Miyauchi M, Ogawa I, Takata T : The 64th Annual Meeting of Japanese Cancer Association (Sapporo), 2005. (in Japanese)
- 2 0 : Parotid gland tumor (Epithelial-myoepithelial carcinoma). : Ogawa I, Nishida T, Kimura T, Miyauchi M, Takata T : 86th Slide Conference. Academic Meeting of Chugoku-Shikoku Branch of The Japanese Society of Pathology, (Takamatsu), 2005. (in Japanese)
- 2 1 : Mandibular tumor (Ameloblastic carcinoma, secondary type, intraosseous) : Kitagawa M, Saito A, Oka H, Miyauchi M, Toratani S, Lee K, Ogawa, Takata T : 16th Annual Meeting of the Japan Society for Oral Pathology (Morioka), 2005. (in Japanese)
- 2 2 : Mandibular Tumor (Squamous odontogenic tumor) : Iizuka S, Oka H, Nakayama H, Ogawa I, Toratani S, Lee K, Yoshimura Y, Miyauchi M, Takata T : 88th Slide Conference, Academic Meeting of Chugoku-Shikoku Branch of the Japanese Society of Pathology. (Okayama), 2005. (in Japanese)
- 2 3 : Salivary gland tumor (Acinic cell carcinoma) : Kitagawa M, Saito A, Kudo Y, Ogawa I, Sugita A, Takata T : 7th Meeting of Society of Salivary Gland Tumor Pathology (Tokyo), 2005. (in Japanese)
- 2 4 : A case of oncocytic carcinoma with cystic change.: Ogawa I, Nishida T, Kimura T, Saitoh A, Kitagawa M, Miyauchi M, Takata T : 50th Annual Meeting of the Japanese Salivary Gland Society (Tokyo), 2005. (in Japanese)
- 2 5 : A case of squamous odontogenic tumor in the region of anterior tooth of mandible. : Fukui Y, Tani R, Toratani S, Ogawa I, Hayashi D, Yoshimura Y, Takata T, Okamoto T : The 53rd Chugoku-Shikoku Sectional Meeting of the Japanese Stomatological Society (Takamatsu), 2005. (in Japanese)
- 2 6 : A case of Kimura's disease of submandibular gland. : Miyauchi M, Shimasue H, Shigeishi H, Ogawa I, Sugiyama M, Miyauchi M, Kamata N : The 50th Annual Meeting of Japanese Society of Oral and Maxillofacial Surgeons (Osaka), 2005. (in Japanese)

F) Special lectures in academic meetings

- 1 : Slide seminar "Salivary gland tumors". : Ogawa I, Takata T : 16th Annual Meeting of the Japanese Society for Oral Pathology (Morioka), 2005. (in Japanese)
- 2 : Pathology of Salivary gland tumors - Process and key points of pathological diagnosis - : Ogawa I : 8th Meeting of Osaka Pathological Society (Suita), 2005. (in Japanese)

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

- 1 : Grants-in-Aid from the Ministry of Education, Science and Culture of Japan (Basic Research (C)(2)) continuation : Ogawa I. (representative) : Studies on genes and proteins associated with

development, progression and specific morphology of salivary gland tumors, (No. 15591935),
¥1,100,000.

2 : Grants-in-Aid from the Ministry of Education, Science and Culture of Japan (Exploratory
Research) new : Oue K (representative): Identification of novel factors associated with invasion
and metastasis of oral squamous cell carcinoma,(No.17659635), ¥2,000,000.

(5) Academic Awards, etc.

(6) Patents

Central Clinical Sections (Dental Technicians Section)

(1) Staffs and Students

Director of Dental Technician Section	: Hiroki Nikawa (Prof.)
Chief Dental Technician	: Hirotaka Okura
Dental Technician	: Masanobu Yamamoto, Eisaku Habu, Yoshihiro Otani, Meiji Yamamoto, Ryoji Kato
Trainee of Dental Technician	: Tomohiro Umetani, Shizuka Kitajima, Megumi Saiki, Yuji teshim, Yukihiro Nishida, Kiyoshi Nomura, Yuki Murakami, Kazuyuki Mori,,Masazumi Yoshida, Tomomi Yoshimura, Hirotaka Yamane

(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

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

(5) Academic Awards, etc.

(6) Patents

Central Clinical Sections (Oral Hygien Section)

(1) Staffs and Students

Director of Dental Hygien Section	: Okamoto Tetsuji
Chief Dental Hygienist	: Tamura Hiroko
Supervisor Dental Hygienist	: Iwasaki Yoriko, Nakaoka Miyuki
Dental Hygienist	: Kawashima Akiko, Hidaka Miho : Hatakeyama Tomoko, Kajitani Kayo, Shimoda Tetsuko, Miyakawa Kumi, Fukuda Akiko (till March), Tokikazu Tomoko (from December), Matsui Kanako (from May), Yano Kanako, Shimada Masae (from April), Dainobu Kana (from April), Hara Nomi (from April), Yamashita Satomi (from April)

(2) Main Research Activities

- 1 : A study about the dentistry health guidance that dental hygienist performs
- 2 : A study about improvement of local dentistry health
- 3 : About a role of dental hygienist in dentistry medical examination and treatment

(3) Research Achievements

A) Original Papers (including Case Reports)

B) Review

C) Publications

D) Other Publications

E) Presentation at Scientific Meeting

- 1 : Longitudinal study of gingival health in children : Nakaoka M, Shimoda T, Miyakawa K, Matsui K, Tamura H : 83th International Association for Dental Research (Baltimore), 2005.
- 2 : Participating in the basic training for Dental Hygienist course just after graduation. ~The result of one year~ : Yano K, Hatakeyama T, Tamura H : The 20th Hiroshima Dental

- Hygienist Association Meeting for reading research papers (Hiroshima), 2005
- 3 : Education Effects of Trust Clinical Training in Hiroshima University Hospital : Hidaka M, Nakaoka M, Iwasaki Y, Tamura H : Japanese Dental Education Association (Tokushima), 2005
 - 4 : Clinical assessment of adhesive tooth coating material – Causes and measures learned from cases of failure – : Shimada T, Dainobu K, Shimada M, Hara N, Kitagawa S, Shibata S, Hatakeyama T, Yano K, Miyakawa K, Yamashita S, Oda R, Shirai K, Ueda H, Motoyama T, Tamura H, Fujitani M : Japan Academy of Esthetic Dentistry (Osaka), 2005
 - 5 : Role of dental hygienists in scaling and root planing for periodontal treatment : Hatakeyama T, Shimada M, Yamashita S, Dainobu K, Hara N, Shimoda T, Yano K, Kawashima A, Tamura H, Kawaguchi H : The Japanese Society of Periodontology (Tottori), 2005
 - 6 : 某病院の教育研修会における口腔保健教育活動の有効性に関する検討 : Hara K, Kajitani K, Yaegaki S, Yamamoto H, Tsuji H, Nishimura T, Kanehisa Y, Maruyama T : Japanese Society of Dental Welfare (Aichi), 2005
 - 7 : 歯科衛生士教育における客観的臨床能力試験 (OSCE) について : Hara K, Shimada T, Hatakeyama T, Hidaka M, Nakaoka M, Kawashima A, Iwasaki Y, Tamura H, Morioka S, Niitani Y, Matsumoto A : Japan Dental Hygienist's Association 学術大会 (Tokushima), 2005
 - 8 : Dental Esthetic Tooth Coating Material – Whitecoat® – : Mishima K, Motoyama T, Omoto M, Shimoda T, Tamura H, Fujitani M : The 89th congress of The Hiroshima University Dental Society (Hiroshima), 2005
 - 9 : The status of the oral condition of type I diabetes mellitus children : Arika M, Suzuki J, Hayashi F, Takebe M, Miura K, Nakaoka M, Kozai K : The 89th congress of The Hiroshima University Dental Society (Hiroshima), 2005
 - 10 : The status of the oral condition of participants in summer-camp for type I DM children : Arika M, Suzuki J, Hayashi F, Takebe M, Miura K, Nakaoka M, Kozai K : The 24th congress of Japanese Society of Pediatric Dentistry Chushikoku Branch (Tokushima), 2005

F) Special lectures in academic meetings

- 1 : Food and life ~ The future of children's health ~ Discussion about appetite environment surrounding children Exposition of Oral health care : Tamura H : Japanese Midwives' Association Tyugoku-Shikoku block (Hiroshima), 2005

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

- 1 : Scientific Research Grant : Hatakeyama T : Quantitative change of bacteria in periodontal pocket by using sonic toothbrush. (no.17926009). ¥760,000

(5) Academic Awards, etc.

(6) Patents

Dental Medical Information Section

(1) Staffs and Students

Chief : Katsuyuki Kozai (Co.)

Professor : Hideaki Amano (Co.)

Research Associate : Masahiko Ohtsuka (Co.), Takeshi Tanaka

Research Assistant : Akie Kawamura (Co.), Tokue Yanagida (Co.)

(2) Main Research Activities

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

2: Research on Medical Informatics.

(3) Research Achievements

A) Original Papers (including Case Reports)

- 1 : A Relation between the Living Area of Patients and Their Home Pharmacies after Introducing the Automatic Facsimile Sending System of Prescription Information to Pharmacies outside the Hospital : T Tanaka, H Tsukuma, N Iwata, Y Nomura, F Katayama, K Ishikawa : J. Journal of Medical Informatics 25 (Suppl.), 818-819, 2005.
- 2 : Evaluation of the use conditions of image content for Patient participatory Health Care Support : H Tsukuma, K Sakata, A Kawamura, T Tanaka, N Iwata, K Ishikawa : J. Journal of Medical Informatics 25 (Suppl.), 259-262, 2005.
- 3 : Development of image content for Patient participatory Health Care Support : H Tsukuma, A Kawamura, K Sakata, T Tanaka, K Ikemoto, T Ikeda, T Fujii, Y Itoh, T Oka, F Nakamura, I Fujii, Y Mori, K Itoh, K Egami, K Ishikawa : J. Journal of Medical Informatics 25 (Suppl.), 410-411, 2005.
- 4 : Effect of using diagnosis and treatment nursing process support system -Analysis of result of the questionnaire intended for nurse- : K Sakata, A Kawamura, M Sugimura, F Kikkawa, T Sainohara, H Tsukuma, T Tanaka, K Kozai, K Ishikawa : J. Journal of Medical Informatics 25 (Suppl.), 410-411, 2005.
- 5 : Evaluation of the usefulness and utilization method of nursing practical-term (chapter of nursing action) -Analysis of the actual survey of utilization after 1.5-year-use - : A Kawamura, K Sakata, M Sugimura, F Kikkawa, T Sainohara, H Tsukuma, T Tanaka, K Kozai, K Ishikawa : J. Journal of Medical Informatics 25 (Suppl.), 438-439, 2005.
- 6 : Evaluation of safety of checking system in injection management -Analysis of system log and questionnaire to nurse 5 months after its introduction- : S Kotani, A Kawamura, K Sakata, M Sugimura, K Nishinaka, F Kikkawa, T Sainohara, H Tsukuma, T Tanaka, K Kozai, K Ishikawa : J.

Journal of Medical Informatics 25 (Suppl.), 464-465, 2005.

- 7 : Effect of computerization medical treatment record of safe medical treatment and operating effectiveness : K Sakata, K Ishikawa, A Kawamura, M Sugimura, T Sainohara, H Tsukuma, T Tanaka, K Kozai : J. Journal of Medical Informatics 25 (Suppl.), 29-30, 2005.

B) Review

C) Publications

D) Other Publications

E) Presentation at Scientific Meeting

- 1 : A Relation between the Living Area of Patients and Their Home Pharmacies after Introducing the Automatic Facsimile Sending System of Prescription Information to Pharmacies outside the Hospital : T Tanaka, H Tsukuma, N Iwata, Y Nomura, F Katayama, K Ishikawa : The 25th Joint Conference on Medical Informatics (Yokohama), 2005.
- 2 : Evaluation of the use conditions of image content for Patient participatory Health Care Support : H Tsukuma, K Sakata, A Kawamura, T Tanaka, N Iwata, K Ishikawa : The 25th Joint Conference on Medical Informatics (Yokohama), 2005.
- 3 : Development of image content for Patient participatory Health Care Support : H Tsukuma, A Kawamura, K Sakata, T Tanaka, K Ikemoto, T Ikeda, T Fujii, Y Itoh, T Oka, F Nakamura, Fujii, I Mori, Y Itoh, K Egami, K Ishikawa : J. Journal of Medical Informatics 25 (Suppl.), 410-411, 2005.
- 4 : Effect of using diagnosis and treatment nursing process support system -Analysis of result of the questionnaire intended for nurse- : K Sakata, A Kawamura, M Sugimura, F Kikkawa, T Sainohara, H Tsukuma, T Tanaka, K Kozai, K Ishikawa : The 25th Joint Conference on Medical Informatics (Yokohama), 2005.
- 5 : Evaluation of the usefulness and utilization method of nursing practical-term (chapter of nursing action) -Analysis of the actual survey of utilization after 1.5-year-use- : A Kawamura, K Sakata, M Sugimura, F Kikkawa, T Sainohara, H Tsukuma, T Tanaka, K Kozai, K Ishikawa : The 25th Joint Conference on Medical Informatics (Yokohama), 2005.
- 6 : Evaluation of safety of checking system in injection management -Analysis of system log and questionnaire to nurse 5 months after its introduction- : S Kotani, A Kawamura, K Sakata, M Sugimura, K Nishinaka, F Kikkawa, T Sainohara, H Tsukuma, T Tanaka, K Kozai, K Ishikawa : The 25th Joint Conference on Medical Informatics (Yokohama), 2005.
- 7 : Effect of computerization medical treatment record of safe medical treatment and operating effectiveness : K Sakata, K Ishikawa, A Kawamura, M Sugimura, T Sainohara, H Tsukuma, T Tanaka, K Kozai : The 25th Joint Conference on Medical Informatics (Yokohama), 2005.
- 8 : The Automatic Facsimile Sending System of Prescription Information to Pharmacies outside the hospital : T Tanaka, H Tsukuma, N Iwata, N Morimoto, H Amano, Y Nomura, F Katayama, N

Noda, K Ishikawa : e-Government & e-Health 2nd International conference & Exhibition (Desio, Italy), 2005.

9 : The Healthcare Navigation System to assure the Safety Management and Patient Participatory Health Care Support – To confirm the patients right and team practice : K Ishikawa, H Tsukuma, N Konishi, A Kawamura, K Sakata, N Iwata, T Tanaka : e-Government & e-Health 2nd International conference & Exhibition (Desio, Italy) , 2005.

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

(5) Academic Awards, etc.

(6) Patents

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