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

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

(1) Staffs and Students

Professor: Masayuki Okazaki

Associate Professor: Kunio Wakasa

Research Associate: Yuji Nomura, Isao Hirata

Graduate Student: Ryo Nishikiori, Kohei Masuki, Yoshiko Sonoda, Tomomi Hayashida

(2) Main Research Activities

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

(3) Research Achievements

A) Original Papers (including Case Reports)

- 1: Van Landuyt K.L., Yoshida, Y., Hirata I., Snauwaert J., De Munck J., Okazaki M., Suzuki K., Lambrechts P., and Van Meerbeek B.: Influence of the chemical structure of functional monomers on their adhesive performance. *J Dent Res* 87: 757-761, 2008.
- 2: Hirata I., Okazaki M.: Higher Concentrations of Fluoride Ions Dramatically Inhibit the Survival of Osteoblasts. *J Oral Tissue Engin* 6: 3-8, 2008.
- 3: Nishikiori R., Nomura Y., Sawajiri M., Masuki K., Hirata I., Okazaki M.: Influence of chlorine dioxide on cell death and cell cycle of human gingival fibroblasts. *J Dent* 36: 993-998, 2008.
- 4: Bhawal UK., Sugiyama M., Nomura Y., Kuniyasu H., Tsukinoki K.: Loss of 14-3-3 Sigma Protein Expression and Presence of Human Papillomavirus Type 16 E6 in Oral Squamous Cell Carcinoma. *Arch Otolaryngol Head Neck Surg* 134: 1055-1059, 2008.
- 5: Toda M., Kitazawa T., Hirata I., Hirano Y., Iwata.: Complement activation on surfaces carrying amino groups. *Biomaterials* 29(4): 407-17, 2008.

B) Review

- 1: Establishment of apatite synthesis methods and their application to biomaterials: Okazaki M.: Journal of Japanese Society for Biomaterials 26(2), 101-110, 2008 (in Japanese).
- 2: Feature “Dental Ceramics”: Ceramics in dentistry -Apatites as medical and dental materials-: Okazaki M.: Bulletin of The Ceramic Society of Japan, 43(4), 283-285, 2008 (in Japanese).
- 3: Creation of CO₃Ap-collagen scaffold and its application to biomaterials: Okazaki M.: DE 166, 27-29, 2008 (in Japanese).

C) Publications

- 1: Chapter 2. Desired property of dental materials. I. Biocompatibility: Okazaki M.: Core Dental Materials (Ogura H., Eds.) Ishiyaku Pub., Tokyo, pp. 23-29, 2008 (in Japanese).

D) Other Publications

E) Presentation at Scientific Meeting

- 1: Symposium S1 “Frontiers of Bio-Ceramics Research” (keynote lecture): The new development of ceramics for dentistry: Okazaki M.: 2008 Spring Annual Meeting of The Japan Institute of Metals (Tokyo), 2008 (in Japanese).
- 2: Influence of bone metabolism for heavy particle irradiation: Sawajiri M., Nomuru Y., Takinami S., Tanimoto K.: Research announcement meeting of shared use heavy particle cancer treatment device (Chiba), 2008 (in Japanese).
- 3: New adhesion theory – Micromechanics of fracture strength -: Wakasa K., Uno S., Okazaki M.: The 51st General Session of the Japanese Society for Dental Materials and Devices, Yokohama, Japan, 2008 (in Japanese).
- 4: Promoted Bone Formation in Frame-Reinforced CO₃Ap-Collagen Composites with BMP2: Okazaki M., Hirata I.: The 8th World Biomaterials Congress (Amsterdam), 2008.
- 5: Evaluation of Waveform-like Pattern of Cell Proliferations on Self-Assembled Monolayers with a Series of Surface Composition Changes: Hirata I. Okazaki M.: ISNT2008 (Sapporo), 2008.
- 6: Application of Nano-crystal CO₃Ap as Hard Tissue Scaffold Biomaterials: Okazaki M., Hirata I.: ISNT2008 (Sapporo), 2008.
- 7: Nano-analysis Model of Adhesive Strength in Dental Bonding Biomaterials (Invited talk): Wakasa K.: ICCE-16 (Kunming Yunnan Province), 2008.
- 8: Bone Formation Ability of CO₃Ap-collagen Sponge Scaffolds with Cytokine: Okazaki M., Hirata I.: ISACB2008 (Manila), 2008.
- 9: New adhesion theory – Morphology of dentin bonding specimens -: Wakasa K., Uno S., Okazaki M.: The 52nd General Session of the Japanese Society for Dental Materials and Devices, Osaka, Japan, 2008 (in Japanese).

- 10: Deposition of calcium phosphate on self-assembled monolayers: Hirata I., Fujii E., Akamatsu M., Okazaki M.: The 52nd General Session of the Japanese Society for Dental Materials and Devices, Osaka, Japan, 2008 (in Japanese).
- 11: Cytotoxic and apoptotic studies of anti-infectives.: Nishikiori R., Nomura Y., Masuki K., Sonoda Y., Hirata I., Okazaki M.: The 52nd General Session of the Japanese Society for Dental Materials and Devices, Osaka, Japan, 2008 (in Japanese).
- 12: Symposium 8 -New materials as biomaterials-: Exploration of inmost apatite properties: Okazaki M.: Symposium 2008 of The Japanese Society for Biomaterials, Tokyo, Japan, 2008 (in Japanese).
- 13: Analysis of initially-deposition of calcium phosphate on self-assembled monolayers using surface plasmon resonance: Hirata I., Nomura Y., Okazaki M.: Symposium 2008 of The Japanese Society for Biomaterials, Tokyo, Japan, 2008 (in Japanese).
- 14: Expression of MMP13 in chondroblast cells and rat tibiae after exposure to accelerated carbon ions: Banik S., Sawajiri M., Nomura Y., Takinami S., Mizoe J., Tanimoto : K. The 7th Asian Congress of Oral and Maxillo-Facial Radiology (Nara), 2008.
- 15: Progress report of 2006 Grant –Development of Biomaterials for Artificial Marrow Scaffold-: Hirata I., Okazaki M.: The 45th Annual Meeting of the Japanese Society for Artificial Organs, Tokyo, Japan, 2008 (in Japanese).

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

- 1: Research Project, Grant-in-Aid for Scientific Research (B) (Continued): Okazaki M.: Affinity chemical treatment and function control of carboxyapatite-collagen composite scaffold: (No.18390515), ¥ 1,900,000
- 2: Research Project, Grant-in-Aid for Scientific Research (C) (Continued): Nomura Y.: A study about the endocrine disruptor activity evaluation of dentistry materials by the amphibians docimasy: (No.19592239), ¥ 800,000
- 3: Research Project, Grant-in-Aid for Young Scientists (B) (New) : Hirata I.: Development of functionalized titanium implant with cytokine immobilization: (No.20791467), ¥ 1,800,000

(5) Academic Awards, etc.

- 1: Hirata I., Nomura Y., Ito M., Simazu A., Okazaki M.: The Japanese Society for Artificial Organs: JAO Article Award: 2008.

(6) Patents

- 1: Fujita K., Nomura Y., Nguyen N. T., El-Shemy H. A.: Composition for treatment of tumor and this manufacturing method.: Patent application number 2008-206084.

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

(1) Staffs and Students

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

(2) Main Research Activities

- 1: Basic and clinical aspects of mesenchymal stem cells
- 2: Differentiation of chondrocytes
- 3: Molecular clocks
- 4: 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: Intravenous administration of bone marrow stromal cells increases survivin and Bcl-2 protein expression and improves sensorimotor function following ischemia in rats. : Okazaki T, Magaki T, Takeda M, Kajiwara Y, Hanaya R, Sugiyama K, Arita K, Nishimura M, Kato Y, Kurisu K. :Neurosci Lett. 2008 Jan 10;430(2):109-14.
- 2: Basic-helix-loop-helix (bHLH) transcription factor DEC2 negatively regulates vascular endothelial growth factor expression.: Sato F, Bhawal UK, Kawamoto T, Fujimoto K, Imaizumi T, Imanaka T, Kondo J, Koyanagi S, Noshiro M, Yoshida H, Kusumi T, Kato Y, Kijima H. : Genes Cells. 2008 Feb;13(2):131-44.
- 3: Period is involved in the proliferation of human pancreatic MIA-PaCa2 cancer cells by TNF-alpha.: Suzuki T, Sato F, Kondo J, Liu Y, Kusumi T, Fujimoto K, Kato Y, Sato T, Kijima H. : Biomedical Research, 2008 Apr;29(2):99-103.
- 4: DEC1 modulates the circadian phase of clock gene expression.: Nakashima A, Kawamoto T, Honda

- KK, Ueshima T, Noshiro M, Iwata T, Fujimoto K, Kubo H, Honma S, Yorioka N, Kohno N, Kato Y. :
Mol Cell Biol. 2008 Jun;28(12):4080-92.
- 5: Human mismatch repair gene, MLH1, is transcriptionally repressed by the hypoxia-inducible transcription factors, DEC1 and DEC2.: Nakamura H, Tanimoto K, Hiyama K, Yunokawa M, Kawamoto T, Kato Y, Yoshiga K, Poellinger L, Hiyama E, Nishiyama M.: Oncogene. 2008 Jul 10;27(30):4200-9.
- 6: Enhancement of Osteogenesis by Concanavalin A in Human Bone Marrow Mesenchymal Stem Cell Cultures.: Sekiya K, Nishimura M, Suehiro F, Nishimura H, Hamada T, Kato Y.: International Journal of Artificial Organs, 2008 Aug;31(8):708-15.
- 7: Activation of TGF- β /activin signaling resets circadian clock through rapid induction of Dec1 transcripts.: Kon N, Hirota T, Kawamoto T, Kato Y, Tsubota T, Fukada Y.: Nature Cell Biology, 2008 Dec;10(12):1463-9.

B) Review

C) Publications

D) Other Publications

E) Presentation at Scientific Meeting

- 1: HYALURONAN-degrading Capability and Multipotency of Synovial Fibroblasts in Comparison with Bone Marrow Mesenchymal Stem Cells and Skin Fibroblasts. : Yukio Kato : 13TH CONGRESS OF THE ASIA PACIFIC LEAGUE OF ASSOCIATIONS FOR RHEUMATOLOGY 9.23-27, 2007, Yokohama City
- 2: Roles of DEC1 and DEC2 in the core loop of the molecular clock outputs to proliferation and differentiation. : Yukio Kato : The 6th Annual Meeting for the Japanese Association for Cancer and Hypoxia Research 11.29-30, 2007, Hiroshima-City

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

(5) Academic Awards, etc.

(6) Patents

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

(1) Staff and Students

教授 : Takashi Uchida
助教 : Shinji Hiyama、Mineo Watanabe

(2) Main Research Activities

- 1 : Morphological and molecular biological studies of the amelogenesis
- 2 : Molecular biological and morphological studies of the mechanism of bone metabolism
- 3 : Referred pain involved with inflammatory cytokines on orofacial regions

(3) Research Achievements

A) Original Papers (including Case Reports)

- 1 : Spatiotemporal expression of ameloblastin isoforms during murine tooth development.
Ravindranath RM, Devarajan A, Uchida T., J. Biol. Chem. 282:36370-36376, 2007.
(additional data for 2007)
- 2 : A case of skeletal open bite treated with two-jaw surgery and tonguectomy : The Journal of Hiroshima University Dental Society : 40(2):136-144,2008.

B) Review

C) Publications

D) Other Publications

E) Presentation at Scientific Meeting

- 1 : IL-1beta in the trigeminal nucleus contributes to mechanical allodynia in rats with painful mononeuropathy induced by mental nerve transection. Takahashi, K., Watanabe, M., Suekawa, Y., Ito, G., Nishi, M., Uchida, T., Tanne, K. Hiroshima Conference on Education and Science in Dentistry (Hiroshima) 2008.
- 2 : A role of trigeminal gap junctions in the potential involvement in pain induced by trigeminal nerve injury. Suekawa, Y., Watanabe, M., Takahashi, K., Ito, G., Nishi, M., Uchida, T., Tanne, K. Hiroshima Conference on Education and Science in Dentistry (Hiroshima) 2008.
- 3 : Immunohistochemical study of amelogenins in reptiles. : Sasagawa. I., Yokosuka. H., Ishiyama. M., Mikami. M., Uchida. T., : The 112th Annual Meeting of Japanese Association of Anatomists (Oita),2008.
- 4 : Trigeminal gap junctions: Potential involvement in pain induced by trigeminal nerve injury.:SUEKAWA Y., WATANABE M., TAKAHASHI K., ITO G., UCHIDA T., TANNE K. The 50th Meeting of Japanese Association of Oral Biology (Tokyo),2008.
- 5 : Expression of osteoclasts in the estrogen-treated male Japanese quail during medullary bone formation.: Hiyama. S., Watanabe, M., Uchida. T. : The 50th Meeting of Japanese Association of Oral Biology (Tokyo),2008.
- 6 : Morphological and immunohistochemical study of the enamel in bony fishes. : Saasagawa. I., Yokosuka. H., Ishiyama. M., Uchida. T. : The 50th Meeting of Japanese Association of Oral Biology (Tokyo),2008.
- 7 : Histological study of the tooth germ in enamelin-gene deficient mice.: Oda. T., Sekiguchi. H., Shintani. Y., Sawada. T. Yanagisawa. T., Uchida. T. : The 50th Meeting of Japanese Association of Oral Biology (Tokyo),2008.
- 8 : Expression of retinoic acid early gene inducible gene-1 in the osteoblast. : Shimazu.A., Kawahara. K., Uchida. T.:The 50th Meeting of Japanese Association of Oral Biology (Tokyo),2008.

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

1 : Hiroshima University Research Grant for Young Researchers : Hiyama. S. : The role of estrogen and its target genes on the bone turnover and the niche of the stem cell. : 1,000,000yen.

Program for Biomedical Research, Division of Molecular Medical Science (Department of Bacteriology)

The study of infectious disease is a constantly challenging field that deals with the emergence and reemergence of diseases as threats to human beings, and drug resistance of bacteria through combat in host-parasite interaction. The research into the basic molecular mechanisms by which bacteria cause disease and become resistant to certain antimicrobial drug is essential for the development of new therapeutic interventions. Molecular bacterial pathogenesis, biogenesis and regulation of cell wall metabolism, and molecular aspect of host-parasite interaction are the research focus of our group of laboratory of bacteriology. Our work concentrates on human pathogens such as *Staphylococcus aureus*, *Pseudomonas aeruginosa*, and oral pathogens *Aggregatibacter actinomycetemcomitans*, oral streptococci and other oral pathogens.

Undergraduate areas of study

A major in Oral Microbiology is designed to offer you concise and comprehensive guide to understand microbiological principles and essential knowledge about microbes present in oral region. You will learn the role of bacteria, virus and fungus in diseases, including etiology of caries, periodontal diseases and other infectious diseases relevant to dentistry. We also participate in some courses, basic immunology, clinical cariology, periodontal medicine, and laboratory medicine.

Topics

We recently started genomic approach to understand pathogenicity and drug resistance mechanism of *S. aureus*. We are in collaboration with peoples in genome informatics lab. analyzing and evaluating thousands of genes in certain pathogenic strains by comparative genomic hybridization using microarray. We are also interested in regulation mechanism of gene expression in the bacteria infecting host and keen to know how bacterial genes are coordinatedly regulated by multiple regulators.

(1) Faculty members and students

Professor : Motoyuki Sugai
Research Associate : Tamaki Fujiwara, Fuminori Kato
Graduate Student : Shima Morioka D3, Panida Thanasrisung D3, Natsumi Fujiwara M2, Hiroaki Fujimoto M2, Akihiro Nishimoto M2, Ryuichi Kuwabara M1
Research Technician: Naomi Saeki, Naomi Kida, Natsumi Fujiwara

(2) Main Research Interests

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

(3) Research Accomplishments

A) Original Papers (including Case Reports)

- 1: Increased resistance to cationic antimicrobial peptide LL-37 in methicillin-resistant strains of *Staphylococcus aureus*: K. Ouhara, H. Komatsuzawa, T. Kawai, H. Nishi, T. Fujiwara, Y. Fujiue, M. Kuwabara, K. Sayama, K. Hashimoto, M. Sugai: *Journal of Antimicrobial Chemotherapy* 61, 1266-1269, 2008.
- 2: Cytotoxic distending toxin induces caspase-dependent and -independent cell death in MOLT-4 and Jurkat cells: M. Ohara, T. Hayashi, Y. Kusunoki, K. Nakachi, T. Fujiwara, H. Komatsuzawa, M. Sugai: *Infection and Immunity* 76(10):4783-4791, 2008
- 3: Transcriptional promoter analysis on the *nlpI* gene expression in *Escherichia coli* K12: Masaru Ohara, Hiroshi Yoshino, Tetsuji Ogawa, Motoyuki Sugai: *Hiroshima University Dental Journal* 40 (1), 30-37, 2008.
- 4: Staphylococcal scalded skin syndrome – two cases genetically proven as horizontal transfer: Egashira M, Tagawa M, Hirakata Y, Sugai M, Moriuchi H.: *Kansenshogaku Zasshi* 82, 34-37, 2008.
- 5: Detection of *Pseudomonas aeruginosa*, *Legionella pneumophilla*, MRSA from water supply of dental unit of Hiroshima University Hospital: Ohara M, Yoshino H, Tanaka R, Tamura Y, Ogawa I, Sugai M, Ogawa T: *Hiroshima University Dental Journal* 40, 129-135, 2008.

B) Reviews

- 1: Staphylococcal exfoliative toxins: “Molecular scissors” of bacteria that attack the cutaneous defense barrier in mammals: Nishifuji K, Sugai M, Amagai M: *Journal of Dermatological Science* 49, 21-31, 2008.

C) Books

- 1: Chapter 10 Oral Bacteriology.: Sasakawa C and Hayashi T. ed. : Motoyuki Sugai: Nankodo (Tokyo) *Medical Bacteriology* p. 319-324, 2008.

D) Other Publications

E) Presentation at Scientific Meeting

- 1: Peptidoglycan hydrolase and its substrate recognition mechanism.: Symposium “Renaissance of peptidoglycan research” Sugai M.: 81th Annual meeting for Japanese Society for Bacteriology (Kyoto).
- 2: The role of host lytic enzyme for phagic infection.: Symposium “Revival of bacteriophage”.: Fujiwara T.: 81th Annual meeting for Japanese Society for Bacteriology (Kyoto).
- 3: Expression analysis of pathogenic factors of *S. aureus* in serum.: Ohgai Y, Komatsuzawa H, Sugai M.: 81th Annual meeting for Japanese Society for Bacteriology (Kyoto).
- 4: Genetic analysis of novel aminoglycoside acetyltransferase detected in multi-drug resistant *Pseudomonas aeruginosa*.: Kobayashi K, Kouda S, Katou F, Fujiwara T, Itaha H, Oge H, Sugai M.: 62th Annual meeting of Japanese Society for Bacteriology Chugoku-Shikoku branch (Matsuyama).
- 5: Genetic analysis of mobile element containing *bla*_{IMP-1} integronic cassette derived from In113.: Kouda S, Ohara M, Sugai M.: 78th Japanese Society for Infectious Diseases Western branch (Hiroshima).
- 6: Genetic analysis of novel aminoglycoside acetyltransferase present in *bla*_{IMP-1} integronic cassette.: Kobayashi K, Kouda S, Itaha H, Oge H, Sugai M.: 78th Annual meeting of Japanese Society for Infectious Diseases Western branch (Hiroshima).
- 7: Phylogenetic analysis of *Staphylococcus aureus*.: Sugai M.: 56th Annual meeting of Japanese Society for Chemotherapy Western branch (Hiroshima).
- 8: Studies on nosocomial drug-resistant *Pseudomonas aeruginosa* in Hiroshima district in 2007.: Shimizu W, Kobayashi K, Kouda S, Oge H, Sugai M.: 56th Annual meeting of Japanese Society for Chemotherapy Western branch (Hiroshima).
- 9: Virulence of *Staphylococcus aureus*.: Sugai M.: 4th Scientific meeting of drug-resistant bacteria in Iwate (Morioka).

F) Invited speakers, Symposist and others

- 1: Peptidoglycan hydrolase and its substrate recognition mechanism.: Symposium “Renaissance of peptidoglycan research” Sugai M.: 81th Annual meeting for Japanese Society for Bacteriology (Kyoto).
- 2: The role of host lytic enzyme for phagic infection.: Symposium “Revival of bacteriophage”.: Fujiwara T.: 81th Annual meeting for Japanese Society for Bacteriology (Kyoto).
- 3: Phylogenetic analysis of *Staphylococcus aureus*.: Sugai M.: 56th Annual meeting of Japanese Society for Chemotherapy Western branch (Hiroshima).
- 4: Virulence of *Staphylococcus aureus*.: Sugai M.: 4th Scientific meeting of drug-resistant bacteria in Iwate (Morioka).

(4) Research grants.

- 1: Grant-in-Aid for Scientific Research C from the Ministry of Education, Science, Sports and Culture of Japan : Ssugai M. :Nucleolar effect of cell cycle specific inhibitor, CDT.
- 2 : Grant-in-Aid for Scientific Research for Young Investigator B from the Ministry of Education, Science, Sports and Culture of Japan : Fujiwara T.: Research on autolytic enzyme Aml produced by oral streptococci.
- 3 : Grant-in-Aid for Scientific Research C from the Ministry of Education, Science, Sports and Culture of Japan : Sugai M (share holder):. Development of oral care for the pregnant especially for prevention of premature birth.
- 4 : 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.

(5) Awards

(6) Patents

- 1: Sugai M, Komatsuzawa H : Bactericide against *Streptococcus mutans* and *Streptococcus sobrinus* (pat. Appl. to US, No. 10/583, 127)
- 2: Sugai M, Komatsuzawa H : Bactericide against *Streptococcus mutans* and *Streptococcus sobrinus* (pat. Appl. to NZ, No. 548511)

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

(1) Staffs and Students

Professor : Yoshiki Shiba

Associate Professor : Chikara Hirono

Assistant Professor : Makoto Sugita

Research Associate : Yoshiko Iwasa

Graduate Students : Takane Maruyama, Machiko Inoue

(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: Suppression of carbachol-induced oscillatory Cl^- secretion by forskolin in rat parotid and submandibular acinar cells: Shintani, T., Hirono, C., Sugita, M., Iwasa, Y., Shiba, Y.: *Am J Physiol Gastrointest Liver Physiol.* 294, G738-G747, 2008.
- 2: Involvement of cytoskeletal integrity in the regulation of Cl^- and amylase secretion from rat parotid acinar cells: Kongo, H., Hirono, C., Sugita, M., Iwasa, Y., Shiba, Y.: *Biomed Res.* 29, 131-139, 2008.
- 3: Irsogladine maleate counters the interleukin-1 beta-induced suppression in gap-junctional intercellular communication but does not affect the interleukin-1 beta-induced zonula occludens protein-1 levels in human gingival epithelial cells: Fujita, T., Ashikaga, A., Shiba, H., Kajiya, M., Kishimoto, A., Hirata, R., Tsunekuni, N., Hirono, C., Kawaguchi, H., Shiba, Y., Kurihara, H.: *J Periodontal Res.* 43, 96-102. 2008.

B) Review

C) Publications

- 1: *Basic Physiology for Dental Students* (Morimoto, T., Yamada, Y., Eds.): Shiba, Y.: Ishiyaku

Publishers. Inc. (Tokyo), pp.10-19, 2008.

- 2: Basic Physiology for Dental Students (Morimoto, T., Yamada, Y., Eds.): Shiba, Y.: Ishiyaku Publishers. Inc. (Tokyo), pp.58-66 , 2008.

D) Other Publications

E) Presentation at Scientific Meeting

- 1: Two phase regulation of Ca^{2+} -dependent anion secretion from intralobular duct cells of rat parotid glands: Hirono, C., Sugita, M., Iwasa, Y., Shiba, Y.: 50th Annual Meeting of Japanese Association for Oral Biology (Tokyo), 2008.
- 2: Characterization of the neurons in the nucleus of the solitary tract, labeled by the transsynaptic tracer originating from specific taste receptor cells: Sugita, M.: The 6th International Symposium on Molecular and Neural Mechanisms of Taste and Olfactory Perception (Fukuoka), 2008.

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

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

(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

Assistant professor: Tomoya Kitayama, Hiroko Oka

Graduate student: Koki Kifune

(2) Main Research Activities

- 1: Regulation by cyclic ADP-ribose of intracellular Ca^{2+} 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 : P2X(7) receptor stimulation in primary cultures of rat spinal microglia induces downregulation of the activity for glutamate transport: N. Morioka, M.J. Abdin, T. Kitayama, K. Morita, Y. Nakata and T. Dohi: *Glia*, 56, 528-538, 2008.
- 2: Cyclic ADP-ribose mediates formyl methionyl leucyl phenylalanine (fMLP)-induced intracellular Ca^{2+} rise and migration of human neutrophils: K. Morita, M. Saida, N. Morioka, T. Kitayama, Y. Akagawa and T. Dohi: *J. Pharmacol. Sci.*, 106, 492-504, 2008.
- 3: Glycinergic mediation of tactile allodynia induced by platelet-activating factor (PAF) through glutamate-NO-cyclic GMP signalling in spinal cord in mice: K. Morita, T. Kitayama, N. Morioka and T. Dohi: *Pain*, 138, 525-536, 2008.
- 4: Spinal antiallodynia action of glycine transporter inhibitors in neuropathic pain models in mice: K. Morita, N. Motoyama, T. Kitayama, N. Morioka, K. Kifune and T. Dohi: *J. Pharmacol. Exp. Ther.*, 326, 633-645, 2008.
- 5: The regulation of glycine transporter GLYT1 is mainly mediated by protein kinase α in C6 glioma cells: N. Morioka, M.J. Abdin, K. Morita, T. Kitayama, Y. Nakata and T. Dohi: *Neurochem. Int.*, 53, 248-254, 2008.
- 6: Group III metabotropic glutamate receptor activation suppresses self-replication of undifferentiated neocortical progenitor cells: N. Nakamichi, K. Yoshida, Y. Ishioka, J.O. Makanga, M. Fukui, M. Yoneyama, T. Kitayama, N. Nakamura, H. Taniura and Y. Yoneda: *J. Neurochem.*, 105, 1996-2012,

2008.

- 7:Promotion of neuronal differentiation through activation of N-methyl-D-aspartate receptors transiently expressed by undifferentiated neural progenitor cells in fetal rat neocortex: M. Yoneyama, N. Nakamichi, M. Fukui, T. Kitayama, DD. Georgiev, JO. Makanga, N. Nakamura, H. Taniura and Y. Yoneda: *J. Neurosci. Res.*, 86, 2392-2402, 2008.
- 8:Up-regulation of ciliary neurotrophic factor receptor expression by GABAA receptors in undifferentiated neural progenitors of fetal mouse brain: M. Fukui, N. Nakamichi, M. Yoneyama, K. Yoshida, S. Ozawa, T. Kitayama, N. Nakamura, H. Taniura and Y. Yoneda: *J. Neurosci. Res.*, 86, 2615-2623, 2008.
- 9:Down-regulation of norepinephrine transporter expression on membrane surface induced by chronic administration of desipramine and the antagonism by co-administration of local anesthetics in mice: L. Song, T. Kitayama, K. Morita, N. Morioka and T. Dohi: *Neurochem. Int.*, 52, 826-833, 2008.
- 10:Cementoblast response to low- and high-intensity ultrasound: DA. Dalla-Bona, E. Tanaka, T. Inubushi, H. Oka, A. Ohta, H. Okada, M. Miyauchi, T. Takata and K. Tanne: *Arch. Oral Biol.*, 53, 318-323, 2008.
- 11:Prostaglandin E2 inhibits mineralization and enhances matrix metalloproteinase-13 in mature cementoblasts mainly via the EP4 pathway: H. Oka, M. Miyauchi, K. Sakamoto, M. Kitagawa, K. Noguchi, MJ. Somerman and T. Takata: *Arch. Oral Biol.*, 53, 243-249, 2008.

B) Review

- 1:Painless—Symptom and Cause of a congenital insensitivity to pain with anhidrosis(CIPA)— : Watanabe M., Oue K., Kamiyama N., Shimada Y., Yanagi M., Oka H., Morioka N., Kitayama T. and Dohi T.: *The Journal of Hiroshima University Dental Society*, 40, 1-9, 2008.
- 2:Glycine transporter and Disease · Drug action: Morita K., Kitayama T. and Dohi T.: *Clinical Neuroscience suppl.*, 26, 10, 1102-1103, 2008.

C) Publications

D) Other Publications

E) Presentation at Scientific Meeting

- 1:Analysis of glycine signaling protein expression in neuropathic pain model during developing and established mechanical allodynia: Kitayama T., Morita K., Motoyama N., Oka H. and Dohi T.: *The 81th Annual Meeting of The Japanese Pharmacological Society (Yokohama)*, 2008.
- 2:Glutamate induces tactile allodynia by disinhibition of glycinergic control through NO-cGMP cascade in mouse spinal cord: Morita K., Motoyama N., Kitayama T., Kifune K. and Dohi T.: *The 81th Annual Meeting of The Japanese Pharmacological Society (Yokohama)*, 2008.
- 3:Alternative splicing regulates the expression and function of the catecholamine transporters: Sogawa

- C., Kumagai K., Mitsuhata C., Sogawa N., Kozai K., Morita K., Dohi T. and Kitayama S.: The 81th Annual Meeting of The Japanese Pharmacological Society (Yokohama), 2008.
- 4:Antinociceptive effect of inhibitors of glycine transporters on streptozotocin-induced diabetic neuropathy model in mice: Motoyama N., Morita K., Kitayama T., Nishimura F. and Dohi T.: The Spring Meeting in 2008 (the 128th): The Japanese Society of Conservative Dentistry (Niigata), 2008.
 - 5:Modulation of glutamate transporters via ATP receptor in the microglia of spinal cord: Morioka N., Kitayama T., Morita K., Nakata K. and Dohi T.: The 3rd Annual Meeting of the Japan Transporter Research Association (Kyoto), 2008.
 - 6:Role of Glycine transporter in neuropathic pain –possibility of pain control-: Kitayama T., Morita K., Motoyama N., Oka H. and Dohi T.: The 3rd Annual Meeting of the Japan Transporter Research Association (Kyoto), 2008.
 - 7:Ameliorating of neuropathic pain by inhibitor of platelet-activating factor (PAF): Morita K., Motoyama N., Kitayama T., Oka H., Nishimura F. and Dohi T.: The 113th Kinki Branch Meeting of Japanese Pharmacological Society (Okayama), 2008
 - 8:Glycine receptor $\alpha 3$ (GlyR $\alpha 3$) mediates the allodynia action of platelet-activating factor (PAF) in the mice spinal cord: Motoyama N., Morita K., Kitayama T., Nishimura F. and Dohi T.: The 50th Annual Meeting of Japanese Association for Oral Biology (Tokyo), 2008.
 - 9:Regulatory effects of nicotine on transcriptional activity of human dopamine transporter gene: Sogawa N., Ohyama K., Sogawa C., Hirai K., Morita K., Dohi T. and Kitayama S.: The 50th Annual Meeting of Japanese Association for Oral Biology (Tokyo), 2008.
 - 10:Analysis of dysfunction of glycine signaling during initiation of neuropathic pain: Kitayama T., Morita K., Motoyama N., Nishimura F. and Dohi T.: The 50th Annual Meeting of Japanese Association for Oral Biology (Tokyo), 2008.
 - 11:Activation of glycine signaling ameliorated mechanical allodynia in neuropathic pain model mice: Kitayama T., Morita K., Motoyama N., Nishimura F. and Dohi T.: 18th Annual Meeting of the Japanese Society of Clinical Neuropsychopharmacology joint with 38th Annual Meeting of Japanese Society of Neuropsychopharmacology (Tokyo), 2008.
 - 12:Brain-derived neurotrophic factor (BDNF) mediates the onset of neuropathic pain: Motoyama N., Morita K., Kitayama T., Nishimura F. and Dohi T.: The 47th Scientific Meeting of Hiroshima Prefecture Dental Association; The 92th Ordinary Meeting of Hiroshima University Dental Society (Hiroshima), 2008.
 - 13:Glycinergic moderation of pain sensation induced by nerve injured model in mice: Motoyama N., Morita K., Kitayama T., Nishimura F. and Dohi T.: The Autumn Meeting in 2008 (the 129th): The Japanese Society of Conservative Dentistry (Toyama), 2008.
 - 14:Analysis of Cl⁻ transporters expression in developing of neuropathic pain: Kitayama T., Motoyama N., Morita K., Oka H., Nishimura F. and Dohi T.: The 114th Kinki Branch Meeting of Japanese Pharmacological Society (Kobe), 2008.

E) Presentation at Scientific Meeting

- 1: Expression and Function of catecholamine transporter selective splicing variant in the peripheral tissue: Sogawa C., Kumagai K., Mitsuhata C., Sogawa N., Kozai K., Morita K., Dohi T. and Kitayama S.: The 3rd Annual Meeting of the Japan Transporter Research Association (Kyoto), 2008.
- 2: Eating disorder and Parkinson disease: Kitayama T., Onitsuka Y., Song L., Morioka N., Morita K. and Dohi T.: 18th Annual Meeting of the Japanese Society of Clinical Neuropsychopharmacology joint with 38th Annual Meeting of Japanese Society of Neuropsychopharmacology (Tokyo), 2008.

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

- 1: Grant-in Aid for Scientific Research (B) continuance: Dohi T., The molecular mechanism of development of allodynia and new drug development. Project number 18390491. Amount 2,210,000.
- 2: Grant-in Aid for Scientific Research (C) continuance : Mitsuhata C., Effects of endocrine disorders on developing dopaminergic system in brain. Project number 19592354. Amount 1,950,000
- 3: Grant-in-Aid for Young Scientists (B) continuance : Kitayama T., Development of neuroregeneration therapy on disease of oral area. Project number 19791365. Amount 1,820,000
- 4 : Grant-in-Aid for Young Scientists (B): Oka H., Study of the pain control mechanism in the oral and maxillofacial region mediated by specific component cells of the periodontal tissue. Project number 20791352. Amount 2,340,000

(5) Academic Awards

Japanese Society of Neuropsychopharmacology, Best Paper Award 2008; Kitayama T.; 2008.

(6) Patents

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

(1) Staffs and Students

Professor : Takashi Takata
Associate Professor : Mutsumi Miyauchi
Assistant Professor : Yasusei Kudo
Research Associate : Shojiro Kitajima
Graduate Student : Shinji Iizuka, Kiyako Sakamoto, B.S.M.Samadarani Siriwardena, Yusuke Kawazoe, Mohammad Reza Keikhaee, Guangying Qi, Maki Yoshida, Elsayed Deraz, Hisako Furusho

(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 : Oncogenic role of nuclear accumulated Aurora-A. : Tatsuka M, Sato S, Kanda A, Miki T, Kamata N, Kitajima S, Kudo Y, Takata T. : Mol Carcinog.(in press)
- 2 : Aberrant beta-catenin expression and adenomatous polyposis coli gene mutation in ameloblastoma and odontogenic carcinoma. : Siriwardena BS, Kudo Y, Ogawa I, Tilakaratne WM, Takata T. : Oral Oncol. (in press)
- 3 : Effects of mechanical stimulation by a powered toothbrush on healing of periodontal tissue in rat model of periodontal disease. Ekuni D, Yamanaka R, Yamamoto T, Miyauchi M, Takata T, Watanabe T. : J Periodontol.(in press).
- 4 : Effects of ultrasound on the proliferation and differentiation of cementoblast lineage cells. : Inubushi T, Tanaka E, Rego EB, Kitagawa M, Kawazoe A, Ohta A, Okada H, Koolstra JH, Miyauchi M, Takata T, Tanne K. : J Periodontol.79(10),1984-90, 2008.
- 5 : Brain-derived neurotrophic factor stimulates bone/cementum-related protein gene expression in cementoblasts. : Kajiyama M, Shiba H, Fujita T, Ouhara K, Takeda K, Mizuno N, Kawaguchi H, Kitagawa M, Takata T, Tsuji K, Kurihara H. : J Biol Chem. 283(23), 16259-67, 2008.

- 6 : IFITM1 promotes the invasion at the early stage of head and neck cancer progression. : Hatano H, Kudo Y, Ogawa I, Tsunematsu T, Kikuchi A, Abiko Y, Takata T. : Clin Cancer Res. 14(19), 6097-105, 2008.
- 7 : Enamel Matrix Derivative Exhibits Anti-inflammation Properties in Monocytes. : Sato S, Kitagawa M, Sakamoto K, Iizuka S, Kudo Y, Ogawa I, Miyauchi M, Foster BL, Somerman MJ, Takata T. : J Periodontol. 79(3), 535-40, 2008.
- 8 : Cementoblast response to low- and high-intensity ultrasound. : Dalla-Bona DA, Tanaka E, Inubushi T, Oka H, Ohta A, Okada H, Miyauchi M, Takata T, Tanne K. : Arch Oral Biol. 53(4), 318-23, 2008.
- 9 : Prostaglandin E2 inhibits mineralization and enhances matrix metalloproteinase-13 in mature cementoblasts mainly via the EP4 pathway. : Oka H, Miyauchi M, Sakamoto K, Kitagawa M, Noguchi K, Somerman MJ, Takata T. : Arch Oral Biol. 53(3), 243-9, 2008.
- 10 : VEGF-C is associated with lymphatic status and invasion in oral cancer. : Siriwardena BSMS, Kudo Y, Ogawa I, Udagama MNGPK, Tilakaratne WM, Takata T. : J Clin Pathol. 61(1), 103-8, 2008.
- 11 : Biomechanical response of condylar cartilage-on-bone to dynamic shear. : Tanaka E, Rego EB, Iwabuchi Y, Inubushi T, Koolstra JH, van Eijden TMGJ, Kawai N, Kudo Y, Takata T, Tanne K. : J Biomed Mater Res A. 85(1), 127-32, 2008.
- 12 : A case of angioleiomyoma in the cheek with remarkable lipidization. : Shintani T, Toratani S, Miyauchi M, Hayashido Y, Ochi Y, Okamoto T. Jpn J Mral Maxillofac. Surg. 54 (11) , 621-625, 2008.
- 13 : Non-synchronous double primary cancers consisting of cyst-like mucoepidermoid carcinoma arising in the accessory parotid gland as a possible candidate for the tumor origin and the lung cancers: A case report: Kayada Y, Miyauchi M, Ogawa I. Hiroshima Dental Journal, 36 : 43-47, 2008 (Japanese).

B) Review

- 1 : Lactoferrin and periodontal disease : Miyauchi M, Yamano E, Takata T.: J Hiroshima Univ Dent Soci. 40(1), 70-73, 2008.

C) Publications

- 1 : Diseases in marginal periodontal tissue, New textbook of oral pathology, Shimono M, Takata T. (Ed.): Miyauchi M, Takata T.: Ishiyaku Publishers, Inc., Tokyo, 84-103, 2008.
- 2 : Mechanisms of gingival bleeding and relationship with systemic diseases, National health promotion from the perspective of periodontology, Ogata Y, Shibukawa Y, Arai T. (Ed.): Miyauchi M, Takata T.: Ishiyaku Publishers, Inc., Tokyo, 116-119, 2008.
- 3 : Salivary gland tumors. Oral Pathology. (Editors: Shimono M, Takata T): Ogawa I, Takata T: Ishiyaku Publishers Inc., Tokyo, 273-285, Japan, Tokyo

4 : Periostin, Encyclopedia of Cancer, Schwab M.(Ed.) : Kudo Y, Takata T.: Springer, 2008.

D) Other Publications

- 1 : Periodontal disease and lactoferrin –from basic research to clinical application, Inhibitory effects of oral administration of liposomal lactoferrin on lipopolysaccharide-induced periodontal tissue destruction : Miyauchi M, Yamano E, Tanaka E, Ishikado A, Makino T, Tanne K, Takata T.: Dental outlook 112(4), Japanese 2008.
- 2 : Relationship between with gingival bleeding and systemic diseases.: Miyauchi M.:J Denat Hygiene 28(4), 338-352, Japanese 2008.
- 3 : Diagnostic pathology 2. Tooth and Jaw bone.: Mannual of Surgical Pathology. Pathol Clin Med (Editors: Fukayama M, Umemura S, Ohhashi K, Kuroda M, Sakamoto T, Morinaga S) Ogawa I, Kudo Y, Miyauchi M, Takata T:Bunkodo, Tokyo, 139-143. Japan, 2008.
- 4 : Close up of Oral disease, Mucous cyst of lower part of the tongue: Ando A, Sasaki A, Ogawa I, Takata T.: DHstyle 2(14), 10-12, Japan, 2008.
- 5 : Close up of oral disease: Oral Cancer arising left maxillar alveolar ridge : Ando A, Sasaki A, Kudo Y, Takata T.: DHstyle 2(15), 10-12, 2008.
- 6 : Close up of oral disease: Processus palatinus of maxilla : Watanabe T, Takahashi M, Kudo Y, Takata T.: DHstyle 2(16), 10-12, 2008.
- 7 : Close up of oral disease: Candidiasis in oral plate and apex of tongue : Ichinose K, Mamizuka K, Kudo Y, Takata T.: DHstyle 2(17), 10-12, 2008.
- 8 : Close up of oral disease: Fordyce's granule in buccal mucosa : Takagi N, Takahashi M, Kudo Y, Takata T: DHstyle 2(18), 10-12, 2008.
- 9 : Close up of oral disease, Tumor of tongue margin: Watanbabe T, Takahashi M, Miyauchi M, Takata T.: DHstyle 2(19) : 10-12, Japanese, 2008.
- 10 : Close up of of Oral disease, Dry mouth: Takagi N, Takahashi M, Kitagawa M, Ogawa I, Takata T: DHstyle 2(20), 10-12, Japan, 2008.
- 11 : Close up of Oral disease, Pleomorphic adenoma of the left palate: Takagi K, Onoda N, Ogawa I, Takata T: DHstyle 2(21) , 10-12, Japan, 2008.
- 12 : Close up of oral disease, Penphigus with desquamation of gingival mucosa as initial manifestation : Watanabe T, Takahashi M, Miyauchi M, Takata T.: DHstyle 2(22) : 10-13, Japanese, 2008.
- 13 : Close up of Oral disease, Malignant melanoma of the gingiva of left maxilla: Takagi K, Onoda N, Ogawa I, Takata T: DHstyle 2(24), 10-13, Japan, 2008.
- 14 : Close up of oral disease, White spot of enamel (Early stage of enamel caries): Kishida R, Tanaka G, Miyauchi M, Takata T.: DHstyle 2(25), 10-12, Japanese, 2008.
- 15 : Close up of Oral disease, Hemangioma of the right cheek: Takagi K, Onoda N, Ogawa I, Takata T: DHstyle 2(26), 10-12, Japan, 2008.
- 16 : Convincing Q & A, Melanin pigmentation associated with smoking. Miyauchi M.: J Denat Hygiene 28(12), 1176-1178,8 Japanese 2008.

E) Presentation at Scientific Meeting

- 1 : Relationship between evaluation of PET-CT and clinicopathological findings of the tongue cancer: Yoneda S, Miyauchi M, Nishi Y, Shigeishi H, Ono S, Shimasue H, Ninomiya Y, Ota K, Higashikawa K, Takechi M, Ogawa I, Takata T, Kamata N.: 26th Annual Meeting of the Japanese Society for Oral Tumor (Beppu), 2008.
- 2 : Mandibular lesion (central giant cell granuloma): Ogawa I, Tani R, Koizumi K, Tanamoto T, Iizuka S, Takata T.: 95th Slide Conference, Academic Meeting of Chugoku-Shikoku Branch of the Japanese Society of Pathology (Hiroshima), 2008.
- 3 : Abnormal regulation of Anaphase promoting complex dependent proteolysis by Emi1 disregulation in cancer: Kudo Y, Tsunematsu T, Kitajima S, Ogawa I, Takata T.: 3rd International Workshop on Cell Regulations in Division and Arrest (Okinawa) , 2008.
- 4 : Tongue tumor (Myxoid lipoma) : Ogawa I, Iizuka S, Mitani Y, Takata T. : The 51st Meeting of Hiroshima Pathological Conference (Hiroshima), 2008.
- 5 : Inhibitory effects of lactoferrin on osteoclastogenesis via osteoblasts. : Kawazoe A, Yamano E, Miyauchi M, Tanaka E, Ishikado A, Suido H, Imanaka H, Makino T, Tanne K, Takata T.: 51st Annual Meeting in Spring of the Japanese Society of Periodontology (Saitama), 2008.
- 6 : Inhibitory effects of oral administration of liposomal lactoferrin on lipopolysaccharide-induced periodontal tissue destruction, The 3rd report: Inhibitory effects of lactoferrin on osteoclastogenesis via osteoblasts. : Yamano E, Miyauchi M, Ishikado A, Tanaka E, Suido H, Imanaka H, Makino T, Tanne K, Takata T. : 51st Annual Meeting in Spring of the Japanese Society of Periodontology (Saitama), 2008.
- 7 : Emi1 overexpression and its role in oral cancer : Kudo Y, Tsunematsu T, Obayashi M, Ogawa I, Kitajima S, Takata T. : 97th Annual Meeting of the Japanese Society of Pathology (Kanazawa), 2008.
- 8 : High expression of RUNX3 and its role in oral cancer (student poster session) : Tsunemastu T, Kudo Y, Ogawa I, Takata T. : 97th Annual Meeting of the Japanese Society of Pathology (Kanazawa), 2008.
- 9 : Sclerosing polycystic adenosis of the parotid gland: Ogawa I, Takada S, Miyauchi M, Matsuura H, Takata T.: 97th Annual Meeting of the Japanese Society of Pathology (Kanazawa) , 2008
- 10 : Relationship between evaluation of FDG-PET-CT and histopathological findings of the tongue cancer : Miyauchi M, Yoneda S, Fujimoto S, Taki M, Nishi Y, Shigeishi H, Ono S, Takechi M, Ogawa I, Takata T, Kamata N.: 37th Chugoku-Shikoku Sectional Meeting of Japanese Society of Oral and Maxillofacial Surgery (Kurashiki), 2008.
- 11 : Overexpression of Survivin and Aurora-B and their roles in oral cancer: Qi G, Kudo Y, Ogawa I, Siriwardena BSMS, Yoshida M, Kitajima S, Miyauchi M, Takata T.: The 41st meeting of Hiroshima University Dental Society (Hiroshima), 2008.
- 12 : Periostin plays a role in invasion and metastasis in oral cancer : Siriwardena BSMS, Kudo Y, Ogawa I, Kitajima S, Miyauchi M, Takata T. : The 41st meeting of Hiroshima University Dental

- Society (Hiroshima), 2008.
- 13 : γ -gultamyl transpeptidase is a potent risk factor for alveolar bone destruction. : Kawazoe Y, Miyauchi M, Taguchi A, Furusyo H, Iizuka S, Kitagawa M, Tazuma S, Takata T.: The 41st meeting of Hiroshima University Dental Society (Hiroshima), 2008.
 - 14 : Effects of low-intensity ultrasound on root resorption: Analysis using in vitro culture system and animal experimenta model. Inubushi T, Rego EB, Yamano E, Miyauchi M, Takata T, Tanne K.: The 41st meeting of Hiroshima University Dental Society (Hiroshima), 2008.
 - 15 : IFITM1 promotes invasion of oral cancer: Takata T, Kudo Y, Hatano H, Ogawa I, Miyauchi M.: The 14th International Congress of Oral Pathology and Medicine (San Francisco) , 2008.
 - 16 : Abnormal regulation of Anaphase promoting complex dependent proteolysis by Emi1 disregulation in cancer : Kudo Y, Tsunematsu T, Kitajima S, Ogawa I, Takata T. : The 14th International Congress of Oral Pathology and Medicine (San Francisco) , 2008.
 - 17 : Parotid gland tumor (basal cell adenocarcinoma): Ogawa I, Sakaida N, Ohe T, Uemura Y, Takata T.: 96th Slide Conference, Academic Meeting of Chugoku-Shikoku Branch of the Japanese Society of Pathology (Izumo), 2008.
 - 18 : Degradation of Cdc25B by JNK-initiated and SCF/ β -TrCP-dependent Ubiquitination: Uchida S, Kudo Y, Yoshioka K, Matsunaga T, Yamashita K.: The 60th Annual Meeting of the Japan Society for Cell Bioloty (Yokohama), 2008.
 - 19 : PGE2 production in cementoblasts and PDL cells by ultrasound stimulation: Rego EB, Tanaka E, Inubushi T, Miyauchi M, Takata T, Ohta A, Okada H, Tanne K.: 86th IADR (Toronto) , 2008.
 - 20 : Mandibular tumor (odontogenic myxoma) : Miyauchi M, Furusyo H, Iizuka S, Shigeishi H, Fujita M, Ogawa I, Takata T.: 19th annual meeting of the Japanese society of oral pathology (Tokyo), 2008.
 - 21 : Parotid tumor (basal cell adenocarcinoma) : Ogawa I, Sakaida N, Ohe C, Uemura Y, Takata T. : 19th Annual Meeting of the Japanese Society for Oral Pathology (Tokyo) , 2008.
 - 22 : Periostin is involved in angiogenesis and lymphangiogenesis in oral cancer: Siriwardena BSMS, Kudo Y, Ogawa I, Yoshida M, Kitajima S, Udagama MNGPK, Tilakaratne WM, Takata T.: 19th Annual Meeting of the Japanese Society for Oral Pathology (Tokyo) , 2008.
 - 23 : Development of a possible periodontal diagnostic system using ganmma-glutamyl transpeptidase activity in gingival crevicular fluid. :Kawazoe Y, Miyauchi M, Tazuma S, Furusyo H, Suzuki K, Niida S, Takata T.: 1st annual meeting of Japanese society for evidence and the dental professional (Tokyo) 2008.
 - 24 : An analytical study the data of patch test and metal element analysis of suspected patients of metal allergy for the past 10 years in Dentistry of Hiroshima university hospital : Kitagawa M, Furusho H, Shintani T, Makihira S, Nikawa H, Ogawa I, Kurihara H.: 1st Annual Meeting of Japanese Society for Evidence and Dental Professional (Tokyo), 2008.
 - 25 : Introduction of “Center of Oral Clinical Examination in Hiroshima University” : Ogawa I, Shintani T, Kitagawa M, Furusho H, Kurihara H.: 1st Annual Meeting of Japanese Society for Evidence and Dental Professional (Tokyo), 2008.
 - 26 : Influence of elevation of γ -glutamyl transpeptidase by cholestatic liver disease on bone

- destruction : Kawazoe Y, Miyauchi M, Tazuma S, Furusyo H, Suzuki K, Niida S, Takata T.: 17th Annual Meeting of the Society of Hard Tissue Biology (Tokushima), 2008.
- 27 : Effects of ultrasound on experimentally-induced root resorption by excessive force : Inubushi T, Rego EB, Tanaka E, Yamano E, Kawazoe A, Miyauchi M, Takata T, Tanne K.: The 67th annual meeting of the Japanese orthodontic society. (Makuhari), 2008.
- 28 : The role of transmembrane protein IFITM1 and CD81 for invasion of oral cancer. : Yoshida M, Kudo Y, Ogawa I, Takata T. : 50th Japanese association for Oral Biology (Tokyo), 2008.
- 29 : CIP2A overexpression and its role in oral cancer. : Obayashi M, Kudo Y, Ogawa I, Takata T. : 50th Japanese association for Oral Biology (Tokyo), 2008.
- 30 : The oncogenic role of RUNX3 in oral cancer. : Tsunematsu T, Kudo Y, Ogawa I, Takata T. : 50th Japanese association for Oral Biology (Tokyo), 2008.
- 31 : Inhibitory effect of enamel protein on release of substance P from dorsal root ganglion cells. : Miyauchi M, Kawazoe Y, Furusyo H, Inoue A, Nakata Y, Takata T.: 50th Japanese association for Oral Biology (Tokyo), 2008.
- 32 : Bacterial GGT induces the bone destruction.: Moriwaki S, Suzuki K, Miyauchi M, Takata T, Niida S.: 50th Japanese association for Oral Biology (Tokyo), 2008.
- 33 : Inhibitory effects of oral administration of liposomal lactoferrin on lipopolysaccharide-induced periodontal tissue destruction.: Kawazoe A, Yamano E, Miyauchi M, Iahikado A, Makino T, Tanne K, Takata T.: 46th General Meeting of Hiroshima Association for Dental Science, The 91st meeting of Hiroshima University Dental Society (Hiroshima), 2008.
- 34 : Abnormal regulation of Anaphase promoting complex dependent proteolysis by Emi1 dysregulation in cancer : Kudo Y, Tsunematsu T, Kitajima S, Ogawa I, Takata T.: The 67th Annual Meeting of the Japanese Association for Cancer Research (Nagoya), 2008.
- 35 : Degradation of Cdc25B by JNK-initiated and SCF/ β -TrCP-dependent Ubiquitination: Uchida S, Kudo Y, Yoshioka K, Matsunaga T, Yamashita K.: The 67th Annual Meeting of the Japanese Association for Cancer Research (Nagoya), 2008.
- 36 : Runx3 has a oncogenic role in head and neck cancer: Tsunematsu T, Kudo Y, Ogawa I, Takata T.: The 67th Annual Meeting of the Japanese Association for Cancer Research (Nagoya), 2008.
- 37 : Influence of elevation of GGT by cholestatic liver disease on bone destruction. : Kawazoe Y, Miyauchi M, Taguchi A, Tazuma S, Suzuki K, Niida S, Takata T. : The 26th annual meeting of the Japanese society for bone and mineral research (Osaka), 2008.
- 38 : Regeneration of bone by Ameloblastin synthetic peptide: Iizuka S, Kitagawa M, Kudo Y, Miyauchi M, Ogawa I, Takata T.: The 21st General Meeting of the Japanese Association for Dental Science (Yokohama), 2008.
- 39 : Heparin-derivative promotes bone regeneration: Imai H, Iizuka S, Miyauchi M, Takata T.: The 21st general meeting of Japanese association for dental science (Yokohama), 2008.
- 40 : Upper gingival lesion (giant cell epulis): Yoshida M, Kudo Y, Tani R, Okamoto K, Sui Y, Ogawa I, Takata T.: 97th Slide Conference, Academic Meeting of Chugoku-Shikoku Branch of the Japanese Society of Pathology (Hiroshima), 2008.
- 41 : A case of inflammatory gingival hyperplasia with pseudomalignant change arising in lower

- gingiva : Ito Y, Yoshioka Y, Ogawa I, Kitagawa M, Tani R, Hayashido Y, Toratani S, Takata T, Okamoto T. : 56th Annual Meeting, The Japanese Stomatological Society, Chugoku-Shikoku Division (Yonago), 2008.
- 42 : Three cases of bisphosphonate-related osteonecrosis of the jaw treated surgically. : Kimura Y, Shintani T, Ito Y, Yoshioka Y, Tani R, Hayashido Y, Toratani S, Kitajima S, Okamoto T. : The 56th meeting of Chugoku-Shikoku division of Japanese Stomatological Society (Yonago), 2008.
- 43 : A case of myxolipoma of the edge of tongue: Okui T, Ono S, Mitani Y, Ogawa I, Miyauchi M, Takata T, Kamata N.: 56th Annual Meeting, The Japanese Stomatological Society, Chugoku-Shikoku Division (Yonago), 2008.
- 44 : Oral administration of soybean lecithin liposomal lactoferrin inhibits inflammation and bone resorption in rat LPS-induced periodontitis. Kawazoe A, Yamano E, Miyauchi M, Ishikado A, Tanaka E, Makino T, Tanne K, Takata T.: The 3rd Lactoferrin forum (Tokyo), 2008.
- 45 : Inhibitory effects of oral administration of liposomal lactoferrin on lipopolysaccharide-induced periodontal tissue destruction, Inhibitory effects of lactoferrin on osteoclastogenesis via osteoblasts.: Yamano E, Miyauchi M, Kawazoe A, Ishikado A, Tanaka E, Suido H, Imanaka H, Makino T, Inubushi T, Tanne K, Takata T. : The 3rd Lactoferrin forum (Tokyo), 2008.
- 46 : Activation of hypoxia-responsible genes in chondrocytes and osteoclastogenesis : Shirakura M, Tanimoto K, Nakamura H, Hiyama k, Miyauchi M, Takata T, Tanaka E, Tanne K.: The 6th Annual Meeting for the Japanese Association for Cancer and Hypoxia Research (Hiroshima), 2008.
- 47 : A case of basal cell adenocarcinoma with diffuse cribriform tumor nest formation : Ogawa I, Sakaida N, Ooe C, Uemura Y, Takata T. : The 53rd Annual Meeting of the Japanese Salivary Gland Society (Tokyo), 2008.
- 48 : The regulation of Cdc25B by SCF^{beta-Trop} : Uchida S, Yoshioka K, Kudo Y, Watanabe N, Matsunaga T, Yamashita K. : The 31st Annual Meeting of the Molecular Biology Society of Japan (Kobe), 2008.
- 49 : Expressions of hypoxia-responsible genes in chondrocytes. : Shirakura M, Tanimoto K, Hiyama K, Miyauchi M, Takata T, Tanaka E, Tanne K.: 31st Annual Meeting of the Molecular Biology Society of Japan (Kobe), 2008.

F) Special lectures in academic meetings

- 1 : Overexpression of Aurora-A Caused by Constitutive Phosphorylation of Ser51.: Kitajima S, Kudo Y, Ogawa I, Tatsuka M, Takashi T.: Anglo-Japanese Symposium: Network for International Education and Research in Advanced Dental Sciences (Tokyo) , 2008
- 2 : Panel discussion: Inhibitory effects of oral administration of liposomal lactoferrin on lipopolysaccharide-induced periodontal tissue destruction Miyauchi M, Yamano e, Tanaka E, Ishikado A, Makino T, Tanne K, Takata T.: 1st periodontal disease-lactoferrin forum (Saitama), 2008.
- 3 : Special Lecture: Regulation of cell division by proteolysis and the roles of abnormal regulation of

proteolysis for carcinogenesis. : Kudo Y. : The 7th Tumor Meeting in Minami Kyushu (Kagoshima), 2008.

- 4 : A Lecture: Molecular pathological study of proliferation and invasion of oral cancer -Abnormal regulation of ubiquitin mediated proteolysis of cell cycle regulators in oral cancer- : Kudo Y. : The 54th Autumn Special Meeting of the Japanese Society of Pathology (Matsuyama) , 2008

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

- 1 : Grants-in-Aid for Scientific Research (Grant-in-Aid for Young Scientists (A)) New : Yasusei Kudo : Abnormal regulation of APC/C ubiquitin ligase complex inhibitor Emi1 and its role for carcinogenesis. (No.20689033) . ¥13,520,000
- 2 : Grants-in-Aid for Scientific Research (Grant-in-Aid for Exploratory Research) Continue : Yasusei Kudo : Function of newly identified invasion related factor of oral cancer and application of them for diagnosis. (No.19659481). ¥1,400,000
- 3 : Grants-in-Aid for Scientific Research (Grant-in-Aid for Young Scientists (B)) New : Shojiro Kitajima : Regulation of Aurora-A stabilization by phosphorylation and its abnormal regulation in oral cancer. (No.2079133800) . 2,210,000
- 4 : Grants-in-Aid for Scientific Research (Grant-in-Aid for JSPS Fellows) New : Shinji Iizuka : The study of bone regeneration by using Ameloblastin synthetic peptides. (No. 20・1351) . ¥600,000
- 5 : Grants-in-Aid for Scientific Research (Grant-in-Aid for JSPS Fellows) New : Guangying Qi : Overexpression of Survivin and Aurora-B and their roles in oral cancer: (No. 20・3632) . ¥600,000
- 6 : Research for Promoting Technological Seeds (A discovery type) New : Mutsumi Miyauchi : Development of a possible periodontal diagnostic system and novel periodontal therapy using gamma-glutamyl transpeptidase activity for dental implant. (12-067), ¥2,000,000.
- 7 : Takeda Science Foundation. Grand for Medical Science in 2008 New : Yasusei Kudo : Abnormal regulation of APC/C ubiquitin ligase complex inhibitor Emi1 and its role for carcinogenesis. ¥2,000,000
- 8 : Trustee research expenses (Applied Cell Biotechnologies, Inc.) New : Takashi Takata : Animal experiment using anti human GGT antibodies. ¥525,000.
- 9 : Trustee research expenses (Seikagaku corporation) New : Takashi Takata : Study on bone regeneration using heparin and heparin-derivatives. ¥1,050,000
- 10 : Donated fund (Seikagaku corporation) New : Takashi Takata : Research on Emdogein. ¥500,000
- 11 : Trustee research expenses (Ito Co. Ltd.) New : Takashi Takata : Effects of ultrasound-application to periodontal tissue. ¥500,000
- 12 : Donated fund (Mitsubishi-Mihara Hospital) Continuance : Takashi Takata : Study on diagnosis for oral disease. ¥135,000
- 13 : Donated fund (Clinical laboratory center, Hiroshima city medical association) Continuance : Takashi Takata : Study on diagnosis for oral disease. ¥200,000
- 14 : Trustee research expenses (Earth chemical Co. Ltd.) New : Takashi Takata : Effects of polyphosphate on cytokines production caused by LPS from periodontal pathogen. ¥1,300,000

(5) Academic Awards, etc.

- 1 : Samadarani Siriwardena : Encouragement Award at The 41st meeting of Hiroshima University Dental Society
- 2 : Guangying Qi : Encouragement Award at The 41st meeting of Hiroshima University Dental Society
- 3 : Takaaki Tsunamatsu : Best Poster Presentation Award for undergraduate student at 50th Japanese association for Oral Biology
- 4 : Maki Yoshida : Best Poster Presentation Award at 50th Japanese association for Oral Biology
- 5 : Yasusei Kudo : Encouragement Research Award of Japanese Society of Pathology at The 54th Autumn Special Meeting of the Japanese Society of Pathology

(6) Patents

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

(1) Staffs and Students

Professor: Hidemi Kurihara

Associate Professor: Hiroyuki Kawaguchi

Research Associate: Hideki Shiba

Assistant: Takamune Hino, Naohiko Hasegawa, Noriyoshi Mizuno, Tsuyoshi Fujita, Yuushi Uchida,
Katsuhiko Takeda, Tomoyuki Iwata, Koichi Hayashida, Miyuki Niitani

Resident: Noriko Tsunekuni, Yasuto Kawamura, Fumino Ogawa

Graduate Student: Yasuko Kitamoto, Yoriko Iwasaki, Mikihiro Kajiya, Akiyoshi Kishimoto, Nobuyuki
Sakai, Takayoshi Nagahara, Yoshie Niitani, Shinji Matsuda, Takeshi Ueda, Yusuke
Taniguchi

(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 neurotrophins
- 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: Humoral factors released from human periodontal ligament cells influence calcification and proliferation in human bone marrow mesenchymal stem cells.: Mizuno N., Ozeki Y., Shiba H., Kajiya M., Nagahara T., Takeda K., Kawaguchi H., Abiko Y., Kurihara H.: J Periodontol. 2008, Dec;79(12):2361-70.
- 2: Effect of neurotrophin-4/5 on bone/cementum-related protein expressions and DNA synthesis in

- cultures of human periodontal ligament cells.: Mizuno N., Shiba H., Inui T., Takeda K., Kajiya M., Hasegawa N., Kawaguchi H., Kurihara H.: *J Periodontol.* 2008, Nov;79(11):2182-9.
- 3: Irsogladine maleate abolishes the increase in interleukin-8 levels caused by outer membrane protein 29 from *Aggregatibacter (Actinobacillus) actinomycetemcomitans* through the ERK pathway in human gingival epithelial cells.: Kishimoto A., Fujita T., Shiba H., Komatsuzawa H., Takeda K., Kajiya M., Hayashida K., Kawaguchi H., Kurihara H.: *J Periodontal Res.*, 2008 Oct;43(5):508-13. Epub 2008 Jun 28.
 - 4: Brain-derived neurotrophic factor stimulates bone/cementum-related protein gene expression in cementoblasts.: Kajiya M., Shiba H., Fujita T., Ouhara K., Takeda K., Mizuno N., Kawaguchi H., Kitagawa M., Takata T., Tsuji K., Kurihara H.: *J Biol Chem.*, 2008 Jun 6;283(23):16259-67. Epub 2008 Apr 3.
 - 5: Irsogladine maleate counters the interleukin-1 beta-induced suppression in gap-junctional intercellular communication but does not affect the interleukin-1 beta-induced zonula occludens protein-1 levels in human gingival epithelial cells.: Fujita T., Ashikaga A., Shiba H., Kajiya M., Kishimoto A., Hirata R., Tsunekuni N., Hirono C., Kawaguchi H., Shiba Y., Kurihara H.: *J Periodontal Res.*, 2008 Feb;43(1):96-102.
 - 6: Irsogladine maleate abolishes the increase in interleukin-8 levels caused by outer membrane protein 29 from *Aggregatibacter (Actinobacillus) actinomycetemcomitans* through the ERK pathway in human gingival epithelial cells.: Kishimoto A., Fujita T., Shiba H., Komatsuzawa H., Takeda K., Kajiya M., Hayashida K., Kawaguchi H., Kurihara H.: *J Periodontal Res.* 2008 Oct;43(5):508-13. Epub 2008 Jun 28.
 - 7: Priming of neutrophil oxidative burst in diabetes requires preassembly of the NADPH oxidase.: Omori K., Ohira T., Uchida Y., Ayilavarapu S., Batista EL Jr., Yagi M., Iwata T., Liu H., Hasturk H., Kantarci A., Van Dyke TE.: *J Leukoc Biol.*, 2008 Jul;84(1):292-301. Epub 2008 Apr 7.
 - 8: Effects of LL37 on expression of inflammatory cytokines in human pulp cells: Shiba H., Takeda K., Ouhara K., Kajiya M., Fujita T., Mizuno N., Hino T., Kawaguchi H., Kurihara H.: *The Journal of Japan Endodontic Association.* 2008 Jan.;29:147-154

B) Review

- 1: Clinical trial of periodontal tissue regeneration.: Kawaguchi H., Kurihara H.: *Nippon Rinsho*, 2008 May;66(5):948-54. Review. Japanese.

C) Publications

- 1: Clinical study of periodontal tissue regeneration by transplantation of bone marrow mesenchymal stem cells.; Health promotion of general public as viewed from the perspective of periodontology: Kawaguchi H., Kurihara H. (Editors: the Japanese society of periodontology): Ishiyaku publishers, INC. Tokyo, 69-77, 2008. Japanese.

D) Other Publications

- 1: Infection control in dentistry :Kurihara H., Yoshino H., Miyuki N.: Infection control 2008 vol.17 no.6 . Medica shuppan co.,ltd. Tokyo, 63-70, 2008. Japanese

E) Presentation at Scientific Meeting

- 1: Irsogladine maleate inhibits S100 protein expression in gingival epithelial cells: Uchida Y., Fujita T., Shiba H., Kajiya M., Matsuda S., Kawaguchi H., Kurihara H.: 86th General session & exhibition of the IADR (Toronto), 2008
- 2: Molecular analysis of immuno-pathogenic OMP29-antigen of *A. actinomycetemcomitans* in periodontitis.: Ouhara K., Mayer M.P.A., Taubman M.A., Komatsuzawa H., Kurihara H., , Kawai T., 86th General session & exhibition of the IADR (Toronto), 2008
- 3: IgG-Antigen-Immune Complex Transportation across Gingival Epithelium by Neonatal Fc Receptor (FcRn) Ouhara K., Cory. W. O. Ernst, Martin A. Taubman, Philip Stashenko, Kurihara H., Kawai T.: The International Association for Biological and Medical Research, (Boston,), 2008
- 4: Neonatal-Fc-Receptor-Mediated Transport of Bacterial Immune Complex into Periodontal Tissue. Ouhara K., Martin A. Taubman, Philip Stashenko, Kurihara H., Kawai T.: American Association for Dental Research (Dallas), 2008.
- 5: BDNF/hyaluronic acid enhances periodontal tissue regeneration: Sakai N., Kurihara H., Takeda K., Shiba H., Kawaguchi H.: 86th General Session & Exhibition of the International Association for Dental Research (Toronto), 2008.
- 6: Regulatory mechanism by BDNF in human cementoblast-like cells: Kajiya, M., Shiba, H., Fujita, T., Takeda K., Kitagawa T., Takata T., Kurihara H.: 86th General Session & Exhibition of the International Association for Dental Research (Toronto), 2008.
- 7: Irsogladine Maleate inhibits S100 protein expression in gingival epithelial cells: Uchida Y., Fujita T., Shiba H., Kajiya M., Matsuda S., Kawaguchi H., Kurihara H.: 86th General Session & Exhibition of the International Association for Dental Research (Toronto), 2008.
- 8: Utility of bacterial examination with anaerobic culture system for samples from root canal in root canal treatment: Kitamoto Y., Hino T., Uchida Y., Shiba H., Kawaguchi H., Kurihara H.: 29th the meeting of the society of Japan endodontic association (Chiba), 2008
- 9: Irsogladine maleate suppressed on filtration of inflammatory cells in a rat periodontitis model. : Kishimoto A., Fujita T., Shiba H., Hayashida K., Uchida Y., Kawaguchi H., Tsuji K., Kurihara H.: 51st the spring meeting of the Japanese society of Periodontology (Ohmiya), 2008
- 10: Brain-derived neurotrophic factor regulates survival of human cementoblasts through trkB-PI3Kinase-Akt signaling: Kajiya M., Shiba H., Fujita T., Takeda K., Nagahara T., Matsuda S., Kawaguchi H., Kitagawa M., Takata T., Tsuji K., Kurihara H.: 51st the spring meeting of the Japanese society of Periodontology (Ohmiya), 2008
- 11: Clinical validity of fingertip-plasma IgG titer examination for laboratory test on periodontal bacteria: Kudo C., Naruishi K., Hisaeda A., Abiko Y., Ogata Y. Shimauchi H., Nagasawa T., Nagata

- T., Numabe Y., Noguchi T., Hino T., Murakami S., Yamazaki K., Yoshimura A., Arai H., Takashiba.: 51th the spring meeting of the Japanese society of Periodontology (Ohmiya), 2008
- 12: Periapical lesion treatment by topical application of antibiotics ; Case report : Kitamoto Y., Hino T., Uchida Y., Shiba H. Kawaguchi H., Kurihara H.: 128th the spring meeting of Japanese society of conservative dentistry (Niigata), 2008
- 13: Development of a newly medical device for periodontal tissue regeneration using Brain-derived neurotrophic factor/hyaluronic acid complex: Sakai N., Takeda K., Shiba H., Hayashida K., Kajiya M., Fujita T., Kawaguchi H., Hashimoto M., Tsuji K., Kurihara H.: 51st the spring meeting of the Japanese society of Periodontology (Ohmiya), 2008
- 14: Brain-derived neurotrophic factor regulates survival of human cementoblasts through trkB-PI3Kinase-Akt signaling: Kajiya M, Shiba H, Fujita T, Takeda T, Nagahara T, Matsuda S, Kawaguchi H, Kitagawa M, Takata T, Tsuji K, Kurihara H: 41stThe Hiroshima University Dental Society, 2008
- 15: Anti-inflammatory effect of irsogladine maleate on the periodontitis and its regulatory mechanism: Fujita T., Hayashida K., Kajiya M., Shiba H., Abiko Y., Kurihara H.: 29th the meeting of the Japanese society of Inflammation and regeneration (Tokyo), 2008
- 16: Study of halitosis patients by Oralchroma: Iwasaki Y., Hasegawa N., Kawamura Y., Ogawa F., Hino T., Kawaguchi H., Kurihara H.: First meeting of the Japanese society of Evidence and the Dental Professional (Tokyo),2008
- 17: Bacterial examination with anaerobic culture system in root canal treatment: Kitamoto Y., Hino T., Ogawa F., Ogawa I., Shiba H., Kawaguchi H., Kurihara H.: First meeting of the Japanese society of Evidence and the Dental Professional (Tokyo), 2008
- 18: The diagnosis of sterilization in the root canal using bacterial examination with anaerobic culture system: Ogawa F., Hino T., Kitamoto Y., Ogawa I., Shiba H., Kawaguchi H., Kurihara H.: First meeting of the Japanese society of Evidence and the Dental Professional (Tokyo), 2008
- 19: The serum IgG titer examination for periodontal pathogens: Kawamura M., Hino T., Shintani T., Ogawa I., Shiba H., Kawaguchi H., Kurihara H.: First meeting of the Japanese society of Evidence and the Dental Professional (Tokyo), 2008
- 20: Analysis of autoantigens in human gingival fibroblasts on patients with periodontitis: Hino T., Niitani M., Mizuno N., Shiba H., Kawaguchi H., Kurihara H.: First meeting of the Japanese society of Evidence and the Dental Professional (Tokyo), 2008
- 21: Irsogladine maleate suppressed on filtration of inflammatory cells in a rat periodontitis induced by *Aggregatibacter actinomycetemcomitans*: Fujita T., Hayashida K., Kajiya M., Shiba H., Abiko Y., Kurihara H.: The 50th meeting of Japanese association for oral biology (Tokyo), 2008
- 22: Brain-derived neurotrophic factor regulates survival of human cementoblasts through trkB-NF- κ B signaling: Kajiya M., Shiba H., Fujita T., Takeda K., Uchida Y., Matsuda S., Kawaguchi H., Kitagawa M., Takata T., Tsuji K., Kurihara H.: 51st the autumn meeting of the Japanese society of Periodontology (Yokkaichi), 2008
- 23: Development of a newly medical device for periodontal tissue regeneration using Brain-derived neurotrophic factor/hyaluronic acid complex –Effects of root debridement– : Sakai N., Takeda K.,

- Shiba H., Hayashida K., Kajiya M., Fujita T., Kawaguchi H., Hashimoto M., Tsuji K., Kurihara H.: 51st the autumn meeting of the Japanese society of Periodontology (Yokkaichi), 2008
- 24: Brain-derived neurotrophic factor regulates survival of human cementoblasts through trk B—PI3Kinase—Akt—NF-kB—Bcl-2signaling: Kajiya M., Shiba H., Fujita T., Takeda K., Kurihara H.: The 27th annual meeting of the Japanese society for bone and mineral research (Osaka), 2008
- 25: Development of a newly medical device for periodontal tissue regeneration using Brain-derived neurotrophic factor/hyaluronic acid complex—Effects of β -TCP— : Sakai N., Takeda K., Shiba H., Hayashida K., Kajiya M., Fujita T., Kawaguchi H., Hashimoto M., Tsuji K., Kurihara H.: 128th the autumn meeting of Japanese society of conservative dentistry (Toyama), 2008
- 26: Brain-derived neurotrophic factor (BDNF) enhances endothelial cell migration: Matsuda S., Fujita T., Kajiya M., Takeda K., Shiba H., Kawaguchi H., Kurihara H.: 128th the autumn meeting of Japanese society of conservative dentistry (Toyama), 2008
- 27: Preventive effect of irsogladine maleate for periodontal disease: Fujita T., Shiba H., Shiba H., Kishimoto A., Uchida Y., Kajiya M., Takeda K., Hayashida K., Matsuda S., Kawaguchi H., Kurihara H.: The 21st general meeting of the Japanese association for dental science (Yokohama), 2008
- 28: Development of a newly medical device for periodontal tissue regeneration using Brain-derived neurotrophic factor/hyaluronic acid complex: Sakai N., Takeda K., Shiba H., Kawaguchi H., Hashimoto M., Tsuji K., Kurihara H.: The 21st general meeting of the Japanese association for dental science (Yokohama), 2008

F) Special lectures in academic meetings

- 1: Periodontal tissue regeneration by mesenchymal stem cell: Kawaguchi H., Kurihara H.: Symposium 'Hard tissue materials-regeneration of periodontal tissue and alveolar bone', The 30th Meeting of the Japanese society for biomaterials (Tokyo), 2008
- 2: Gene associated with dysfunction of neutrophil in aggressive periodontitis: Mizuno N.: Symposium 'Analysis of gene related to periodontal disease sensitivity', 51st the spring meeting of the Japanese society of Periodontology (Ohmiya), 2008

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

- 1: Grants-in aid for scientific research (A): Shiba H.: 18209057.
- 2: Grants-in aid for scientific research (A): Hino T.: 18209061.
- 3: Grants-in aid for scientific research (B): Kurihara H.: 18390560.
- 4: Grants-in aid for exploratory research: Kurihara H.: 19659550.
- 5: Grants-in aid for young scientists (B): Hasegawa N.: 19791612.
- 6: Grants-in aid for young scientists (B): Mizuno N.: 19791614.
- 7: Grants-in aid for young scientists (B): Hayashida K.: 19791613.
- 8: Grants-in aid for scientific research (C): Shiba H.: 20592430.
- 9: Grants-in aid for young scientists (B): Takeda K.: 20791466.

10: Grants-in aid for young scientists (B): Fujita T.: 20791613.

(5) Academic Awards, etc.

(6) Patents

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

(1) Staffs

Professor: Ichiro Takahashi

Associate Professor: Kei Tobiume

Research Associate: Atsushi Shimazu, Kazuko Kawahara, Keiko Tsuruda

(2) Main Research Activities

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

(3) Research Achievements

A) Original Papers

- 1: Gene expression profiling to identify genes associated with high-invasiveness in human squamous cell carcinoma with epithelial-to-mesenchymal transition.: Higashikawa K, Yoneda S, Taki M, Shigeishi H, Ono S, Tobiume K, Kamata N.: *Cancer Lett.*, 264 (2), 256-64, 2008.
- 2: Hedgehog signaling overrides p53-mediated tumor suppression by activating Mdm2.: Abe Y, Oda-Sato E, Tobiume K, Kawauchi K, Taya Y, Okamoto K, Oren M, Tanaka N.: *Proc. Natl. Acad. Sci. USA*, 105 (12), 4838-43, 2008.
- 3: p53 regulates glucose metabolism through an IKK-NF-kappaB pathway and inhibits cell transformation.: Kawauchi K, Araki K, Tobiume K, Tanaka N.: *Nature Cell. Biol.*, 10 (5), 611-618, 2008.
- 4: Activated p53 induces NF-kappaB DNA binding but suppresses its transcriptional activation.: Kawauchi K, Araki K, Tobiume K, Tanaka N.: *Biochem. Biophys. Res. Commun.*, 372 (1), 137-41, 2008.
- 5: Cycloprodigosin hydrochloride activates the Ras-PI3K-Akt pathway and suppresses protein synthesis inhibition-induced apoptosis in PC12 cells.: Kawauchi K, Tobiume K, Iwashita K, Inagaki H, Morikawa T, Shibukawa Y, Moriyama Y, Hirata H, Kamata H.: *Biosci. Biotechnol. Biochem.*, 72 (6), 1564-70, 2008.

B) Review

1. Induction of IgA production by NKG2D ligands. Shimazu A., Tsuruda K.: *Clinical Immunology &*

Allergology, 49(1):22-27, 2008.

C) Presentation at Scientific Meeting

- 1: Expression of MICA in the periodontal tissue and regulatory factors of the gene : Kawahara K, Shimazu, A Kajiya M, Shiba H, Kawaguchi H. : The 50th Annual Meeting of Japanese Association for Oral Biology (Tokyo), 2008.
- 2: Expression of RAE-1 in osteoblast : Shimazu A, Kawahara K, Uchida T. : The 50th Annual Meeting of Japanese Association for Oral Biology (Tokyo), 2008.

D) Other Publications

E) Presentations

- 1: 歯周組織におけるストレス誘導性タンパク質 MICA 遺伝子発現と調節因子：河原和子，島津篤，加治屋幹人，柴秀樹，河口浩之：第50回歯科基礎医学会学術大会（東京），2008.
- 2: 骨芽細胞における retinoic acid early inducible gene-1 の発現について：島津篤，河原和子，内田隆：第50回歯科基礎医学会学術大会（東京），2008.
- 3: Expression of retinoic acid early inducible gene-1 in mouse osteoblastic cells. Shimazu A., Kawahara K., Uchida T.: 50th Annual meeting of Japanese association for Oral biology (Tokyo), 2008.
- 4: Expression of retinoic acid early inducible gene-1 in MC3T3-E1 cells. Shimazu A., Kawahara K.: 57th Annual meeting of Japanese society for Dental health (Saitama), 2008.
- 5: Analysis of retinoic acid early inducible gene-1 (RAE-1) in osteoblastic development. Shimazu A.: 1st research meeting for joint study in QOL advancement from dental research (Hiroshima), 2008.
- 6: Study of stress inductive protein MICA in periodontal tissue. Kawahara K., Shimazu, A.: 57th Annual meeting of Japanese society for Dental health (Saitama), 2008.
- 7: Expression and regulation of stress inductive protein MICA in periodontal tissue. Kawahara K., Shimazu A., Kajiya M., Shiba H., Kawaguchi H.: 50th Annual meeting of Japanese association for Oral biology (Tokyo), 2008.
- 8: Expression of MHC class I-related chain A (MICA) in human periodontal ligament cells. Kawahara K., Shimazu A., Kajiya M., Nagahara T., Fujita T., Shiba H.: 51th spring meeting of the Japanese society of Periodontology (Saitama), 2008.

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

- 1: Grant for the Basic Science (C) from the Ministry of Education, Science, Sports, and Culture. : K. Kawahara: Analysis of stress-inducible MICA expression in the periodontal tissue derived cells. (No.18592280) ¥2,800,000.
- 2: Grant for the Basic Science (C) from the Ministry of Education, Science, Sports, and Culture. : A.

Shimazu: Involvement of stress-inducible MICA in periodontal diseases. (No.20592456) ¥ 3, 500, 000.

- 3: Grant-in-aid for Scientific Research(C), No.20592456, New : Shimazu A. (representative) :Study for expression of Raet-1 in periodontal disease. 2,300,000yen.

(5) Academic Awards, etc.

(6) Patents

Programs for Applied Biomedicine, Division of Medical Intelligence and Informatics
(Department of Oral and Maxillofacial Radiology)
O r a l a n d M a x i l l o f a c i a l R a d i o l o g y

(1) Staffs and Students

Professor	:Keiji Tanimoto
Associate Professor	:Minoru Fujita
Assistant Professor	:Akira Taguchi , Yoshikazu Suei, Takashi Nakamoto
Assistant Professor	:Toshikazu Nagasaki, Masahiko Ohtsuka, Masahiko Sawajiri
Resident	:Masaru Konishi
Graduate Student	:Samir Banik, Masaru Konishi, Yukimi Yasuhara, Yuri Fujiwara, Takeo Nakashima, Pipop Sutthiprapaporn

(2) Main Research Activities

- 1: Radiographic classification of simple bone cyst of the jaw
- 2: Radiographic study of osteomyelitis of the jaw
- 3: Measurement of bone mineral density of the jaws by quantitative computed tomography
- 4: Early detection of postmenopausal women with osteoporosis by panoramic radiographs
- 5: Influence of osteoporosis on oral health
- 6: Effect of vitamin D and estrogen receptor gene polymorphisms on the jaw bones
- 7: Influence of oral health on cardiovascular diseases
- 8: Early detection of elderly with atherosclerosis by dental radiographs
- 9: Effects of medication for osteoporosis on oral health
- 10: Study on the swallowing using medical imaging
- 11: Magnetoencephalography Study on the higher brain function of swallowing
- 12: Research on interstitial brachytherapy for oral cancer

(3) Research Achievements

A) Original Papers (including Case Reports)

- 1: Observer performance in diagnosing osteoporosis by dental panoramic radiographs: results from the osteoporosis screening project in dentistry (OSPD): Taguchi A., Asano A., Ohtsuka M., Nakamoto T., Suei Y., Tsuda M., Kudo Y., Inagaki K., Noguchi T., Tanimoto K., Jacobs R., Klemetti E., White S.C., Horner K. OSPD International Collaborative Group: Bone, 43, 209-213, 2008.
- 2: Detection of post-menopausal women with low bone mineral density and elevated biochemical

- markers of bone turnover by panoramic radiographs: Taguchi A., Ohtsuka M., Nakamoto T., Suei Y., Kudo Y., Tanimoto K., Bollen A-M.: *Dentomaxillofacial Radiology*, 37, 433-437, 2008.
- 3: A computer-aided diagnosis system to screen for osteoporosis using dental panoramic radiographs : Nakamoto T., Taguchi A., Ohtsuka M., Suei Y., Fujita M., Tsuda M., Sanada M., Kudo Y., Asano A., Tanimoto K. : *Dentomaxillofacial Radiology* 37, 274-281, 2008.
- 4: Influence of chlorine dioxide on cell death and cell cycle of human gingival fibroblasts. : Nishikiori R., Nomura Y., Sawajiri M., Masuki K., Hirata I., Okazaki M. : *Journal of Dentistry*, 36(12), 993-998, 2008.
- 5: Positional changes of oropharyngeal structures due to gravity in the upright and supine positions: Sutthiprapaporn P., Tanimoto K., Ohtsuka M., Nagasaki T., Iida Y., Katsumata A.: *Dentomaxillofacial Radiology*, 37, 130-136, 2008.
- 6: A morphological comparison of the piriform sinuses in head-on and head-rotated views of seated subjects using cone-beam computed tomography: Yamashina A., Tanimoto K., Ohtsuka M., Nagasaki T., Sutthiprapaporn P., Iida Y., Katsumata A.: *Oral Radiology*, 24, 64-70, 2008.
- 7: Improved inspection of the lateral pharyngeal recess using cone-beam computed tomography in the upright position: Sutthiprapaporn P., Tanimoto K., Ohtsuka M., Nagasaki T., Konishi M., Iida Y., Katsumata A.: *Oral Radiology*, 24, 71-75, 2008.
- 8: The reliability of CT values and dimensional measurements of the oropharyngeal region using cone beam CT: comparison with multidetector CT: Yamashina A., Tanimoto K., Sutthiprapaporn P., Hayakawa Y.: *Dentomaxillofacial Radiology*, 37, 1-7, 2008.

B) Review

C) Publications

D) Other Publications

E) Presentation at Scientific Meeting

- 1: Expression of MMP13 in chondroblast cells and rat tibiae after exposure to accelerated carbon ions : Banik S., Sawajiri M., Nomura Y., Takinami S., Mizoe J., Tanimoto K. : The 7th Asian Congress of Oral and Maxillo-Facial Radiology (Nara), 2008.
- 2: Radiation effects of heavy ion particles on bone metabolism: Sawajiri M., Nomura Y., Takinami S., Mizoe J., Tanimoto K.: 2007 Annual meeting of the research project with heavy ion at NIRS-HIMAC (Chiba), 2008.
- 3: Film-less system in Hiroshima University (Dental) Hospital: Ohtsuka M., Konishi M., Nakamoto T., Yamane Y., Tamura M., Takaba J., Sumida H., Tanimoto K.: 4th Chugoku-Shikoku Forum for Radiological Technology (Tokushima, Japan), 2008.
- 4: Are panoramic radiographs useful for the evaluation of bone quality in screening for

- postmenopausal osteoporosis?: Taguchi A., Ohtsuka M., Nakamoto T., Suei Y., Tanimoto K.:
The 49th annual meeting of Japan Society of Oral and Maxillofacial Radiology (Nagoya,
Japan), 2008.
- 5: Observer performance in screening for postmenopausal osteoporosis by panoramic
radiographs: Taguchi A., Ohtsuka M., Nakamoto T., Suei Y., Seki K., Okano T., Tanimoto K.:
The 49th annual meeting of Japan Society of Oral and Maxillofacial Radiology (Nagoya,
Japan), 2008.
- 6: Ultrasonographic appearance of lingual abscess -report of 2 cases-: Fujita M, Nakamoto T,
Konishi M, Suei Y, Tanimoto K.: The 7th Asian Congress of Oral and Maxillo-Facial
Radiology and The 13th Conference of Clinical Diagnostics of JSOMR, Nara, 2008.
- 7: Food and Non-food visual discrimination: A magnetoencephalography study : Nagasaki T,
Hashizume A, Fujiwara Y, Kurisu K, Ogawa T, Tanimoto K : The 16th Annual Dysphagia
Research Society Meeting (Isle of Plams, USA) , 2008.
- 8: Swallowing sound analysis for healthy adults and dysphagic patients : Yoshikawa M, Nagasaki
T, Yoshida M, Akagawa Y : The 16th Annual Dysphagia Research Society Meeting (Isle of
Plams, USA) , 2008.
- 9: Laryngeal position for dysphagic patients at the opening of esophagus during swallowing :
Nagasaki T, Yoshikawa M, Tanimoto K : The 14th Annual Meeting of the Japanese Society of
Dysphagia Rehabilitation (Makuhari, Japan) , 2008.
- 10: Swallowing sound analysis for cerebrovascular disorder and dysphagic patients : Yoshikawa M,
Nagasaki T, Yoshida M, Tanaka K, Sasamura K, Akagawa Y : The 14th Annual Meeting of the
Japanese Society of Dysphagia Rehabilitation (Makuhari, Japan) , 2008.
- 11: Laryngeal movement for dysphagic patients—Do the laryngeal elevation give an indication of
safety swallowing?— : Nagasaki T, Konishi M, Yoshikawa M, Yoshida M, Tanimoto K : The
92th annual meeting of the Hiroshima University Dental Society (Hiroshima, Japan) , 2008.

(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 : Nakamoto
T, Computer aided diagnosis system to screen for osteoporosis based on trabecular pattern of jaw.
(no. 18791381). ¥2,100,000
- 2: Grant-in-aid for scientific research from the Japan Society for the Promotion of Science: Sawajiri
M : Radioprotective assay on bone metabolism with Japanese Medaka (*Oryzias latipes*). (no.
20592201) ¥4,040,000
- 3: Grant-in-aid for scientific research (C) Nagasaki T: Therapeutic research for the dysphagic patient
with dementia, using Magnetoencephalography and Neuro Fiber Tractography, (No.20592202).
¥3,380,000

(5) Academic Awards, etc.

(6) Patents

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

(1) Staffs and Students

Professor: Maeda Norihiko

Associate Professor: Yoshiko Yuji

Research Associate: Minamizaki Tomoko, Yoshioka Hiroataka

Researcher: Suzuki Sayaka

Student: Kma Yoshiaki, Kitaura Yoshiaki

(2) Main Research Activities

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

(3) Research Achievements

A) Original Papers (including Case Reports)

- 1: The PPAR γ -selective ligand BRL-49653 differentially regulates the fate choices of rat calvaria versus rat bone marrow stromal cell populations. Hasegawa T, Oizumi K, Yoshiko Y, Tanne K, Maeda N, Aubin JE. *BMC Dev Biol* 14, 8, 71, 2008.
- 2: Overexpression of fibroblast growth factor 23 suppresses osteoblast differentiation and matrix mineralization in vitro. Wang H, Yoshiko Y, Yamamoto R, Minamizaki T, Kozai K, Tanne K, Aubin JE, Maeda N. *J Bone Miner Res.* 23(6), 939-48, 2008.
- 3: EP2 and EP4 receptors differentially mediate MAPK pathways underlying anabolic actions of prostaglandin E₂ on bone formation in rat calvaria cell cultures. Minamizaki T, Yoshiko Y, Kozai K, Aubin JE, Maeda N. *Bone*, Feb 21, 2009 [Epub ahead of print]
- 4: Dynamic nuclear organization of constitutive heterochromatin during fetal male germ cell development in mice. Yoshioka H, McCarrey JR, Yamazaki Y. *Biology of Reproduction*. Epub 2009 Jan 7.

B) Review

- 1: New Insights into the Roles of Fibroblast Growth Factor 23. Yoshiko Y, Minamizaki T, Maeda N.

Clin Rev Bone Miner Met 6 (1-2), 17-23, 2008.

C) Publications

D) Other Publications

E) Presentation at Scientific Meeting

1: FGF23 and FGF2 share a common but also have distinct signaling pathways for negative regulation of bone nodule mineralization in cultured osteoblasts. Minamizaki T, Yoshiko, Suzuki S, Aubin JE, Maeda N. The 30th Annual Meeting of the American Society for Bone and Mineral Research, Montreal, September, 2008.

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

- 1: Grant-in-Aid for Scientific Research: Y. Yoshiko: (No. 20592139) ¥ 1,690,000, 2008
- 2: Grant from Raffinee International Cooperation: Y. Yoshiko: ¥ 3,600,000, 2008
- 3: Grant-in-Aid for Scientific Research: T. Minamizaki: (No. 19890140) ¥ 1,340,000, 2007
- 4: Grant from Hiroshima University: H. Yoshioka ¥1,000,000

(5) Academic Awards, etc.

(6) Patents

Introduction of Department of Growth and Developmental Biology

[Education]

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

[Research]

We mainly focus on the following research subjects.

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

The final goal of our research is to contribute to the high quality of the human life in the world. So, we collaborate on the research not only with some research groups of other universities and research institutes in Japan but also with the research group of the University of Toronto in Canada.

Programs for Applied Biomedicine, Division of Clinical Medical Science (Department of Dental Anesthesiology, and Dental Anesthesiology)

(1) Staffs and Students

Professor	: Irifune Masahiro, D.D.S., Ph.D.
Research Associate	: Shimizu Yoshitaka, D.D.S., Ph.D., Doi Mitsuru, D.D.S., Saida Takuya, D.D.S., Ph.D.
Resident	: Miura Kan-na, D.D.S., Hanzawa Yasunori, D.D.S., Onizuka Chiori, D.D.S., Ph.D.
Graduate Student	: Mukai Akari, D.D.S., Miyahara Takeshi, D.D.S.
Clinical Trainee	: Kawahara Michio, M.D., Ph.D., Katayama Sohtaro, D.D.S., Ph.D., Kobayashi Keiko, D.D.S., Nagata Masa-aki, D.D.S., Kawahara Toshiya, D.D.S.

(2) Main Research Activities

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

(3) Research Achievements

A) Original Papers (including Case Reports)

- 1: Perioperative management of a patient with Sotos syndrome using visual pedagogy. Doi M, Nogami K, Tominaga S, Katoh Y, Kubota T, Taniguchi S. *Journal of Japanese Dental Society of Anesthesiology* 36 (1): 33-37, 2008.
- 2: Treatments and diagnosis of myofascial pain syndrome presented as odontalgia. Doi M, Shimizu Y, Saida T, Onizuka C, Nagata M, Miura K, Hanzawa Y, Mukai A, Irifune M, Taniguchi S, Kawahara M. *The Journal of Hiroshima Dental Association* 35 (1): 47-53, 2008.
- 3: A case of cluster headache presented as odontalgia. Doi M, Nogami K, Tominaga S, Manabe Y, Taniguchi S. *The Journal of Fukuoka Dental College* 34 (1): 1-6, 2008.
- 4: A case of syncope suffered independently of trigemino-vagal reflex during dental treatment. Irifune M, Shimizu Y, Saida T, Nagata M, Miura K, Hanzawa Y, Sakita N, Onizuka C, Mukai A, Kawahara M. *Journal of Japanese Dental Society of Anesthesiology* 36 (2): 188-189, 2008.

5: A patient with Down's syndrome and undiagnosed hypertrophic cardiomyopathy developing acute heart failure during general anesthesia. Shimizu Y, Irifune M, Doi M, Kawahara M, Kurushima S, Tanigawa K. *Journal of Clinical Anesthesia (Japan)* 32 (10): 1647-1650, 2008.

B) Review

C) Publications

D) Other Publications

E) Presentation at Scientific Meeting

- 1: Effect of general anesthetics on substance P release from rat primary afferent neurons. Onizuka C, Irifune M, Inoue A, Nakata Y, Kawahara M. The 81st Annual Meeting of The Japanese Pharmacological Society (Yokohama), 2008.
- 2: A case with drug eluting coronary stent who underwent radical neck operation under general anesthesia. Shimizu Y, Doi M, Onizuka C, Miura K, Hanzawa Y, Mukai A, Miyahara T, Hukushima R, Fujishiro Y, Saida T, Irifune M. The 5th Scientific Meeting of Japanese Dental Society of Anesthesiology Chugoku and Shikoku branch (Tokushima), 2008.
- 3: A case suffered alveolar bleeding at awakening period from general anesthesia. Mukai A, Doi M, Shimizu Y, Saida T, Onizuka C, Miura K, Hanzawa Y, Irifune M. The 5th Scientific Meeting of Japanese Dental Society of Anesthesiology Chugoku and Shikoku branch (Tokushima), 2008.
- 4: Usefulness of dental silicone for a patient who is expected difficult mask ventilation. Hanzawa Y, Shimizu Y, Doi M, Saida T, Miura K, Onizuka C, Mukai A, Miyahara T, Hukushima R, Fujishiro Y, Irifune M. The 5th Scientific Meeting of Japanese Dental Society of Anesthesiology Chugoku and Shikoku branch (Tokushima), 2008.
- 5: A case of migraine whose chief complaint was odontalgia. Doi M, Shimizu Y, Onizuka C, Miura K, Hanzawa Y, Mukai A, Miyahara T, Hukushima R, Fujishiro Y, Saida T, Irifune M. The 5th Scientific Meeting of Japanese Dental Society of Anesthesiology Chugoku and Shikoku branch (Tokushima), 2008.
- 6: The study on efficacy of amitriptyrine for a patient with intractable traumatic trigeminal neuropathy. Doi M, Irifune M, Kawahara M, Taniguchi S. The 42nd Annual Meeting of the Japan Society of Pain Clinic (Fukuoka), 2008.
- 7: Perioperative general management of a patient with acquired angioneurotic edema. Saida T, Miura K, Shimizu Y, Doi M, Onizuka C, Hanzawa Y, Mukai A, Irifune M. The 36th Annual Meeting of Japanese Dental Society of Anesthesiology (Osaka), 2008.
- 8: A Case of pain disorder successfully treated with psychosocial approach. Doi M, Shimizu Y, Miyahara T, Hukushima R, Fujishiro Y, Saida T, Irifune M. The 36th Annual Meeting of Japanese Dental Society of Anesthesiology (Osaka), 2008.
- 9: The role of Substance P in immobility as one of anesthetic components - effect of pentobarbital on

substance P release from rat primary afferent neurons-. Onizuka C, Irifune M, Shimizu Y, Mukai A, Inoue A, Nakata Y. The 36th Annual Meeting of Japanese Dental Society of Anesthesiology (Osaka), 2008.

10: Evaluation of dental students' skill of "Hands only CPR." Shimizu Y, Doi M, Saida T, Hanzawa Y, Miura K, Onizuka C, Mukai A, Miyahara T, Irifune M. The 47th Scientific Meeting of Hiroshima Prefecture Dental Association and 92th Scientific Meeting of Hiroshima University Dental Society, 3rd Scientific Meeting of Nippon Academy of Dental Technology Chugoku and Shikoku Branch (Hiroshima), 2008.

11: The epidemiology investigation of the primary headache in the dental students. Doi M, Irifune M, Shimizu Y, Shimizu Y, Taniguchi S. The 36th congress of the Japanese headache society (Tokyo), 2008.

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

1: Grant-in-Aid No. 20592373 for Scientific Research (C) from the Ministry of Education, Culture, Sports, Science, and Technology of Japan (New): Irifune M: The role of Substance P in antinociception and immobility as general anesthetic components, ¥4,000,000.

2: Grant-in-Aid No. 20791524 for Young Scientists (B) from the Ministry of Education, Culture, Sports, Science, and Technology of Japan (New): Doi M: Possibility of symptom specificity for patients with intractable chronic pain, and quantitative evaluation of sociopsychological factors –MEG and f-MRI-, ¥3,200,000.

(5) Academic Awards, etc.

(6) Patents

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

(1) Staffs and Students

Professor: Fusanori Nishimura

Associate Professor: Morioki Fujitani

Assistant Professor: Masashi Fujii

Research Associate: Ryo Oda, Kenichi Shirai, Takahiro Harima, Makoto Arakawa, Satoki Shibata,
Naoyo Motoyama, Akane Mineoka, Akiko Yamashita

Graduate Student: Misaki Iwashita, Sonoko Kumamoto, Junko Yonehiro, Yuuki Jinnin, Hideo Nakarai,
Sakiko Fujii

(2) Main Research Activities

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

(3) Research Achievements

A) Original Papers (including Case Reports)

- 1: DNA microarray analyses of genes expressed differentially in 3T3-L1 adipocytes co-cultured with murine macrophage cell line RAW264.7 in the presence of the toll-like receptor 4 ligand bacterial endotoxin: Yamashita A., Soga Y., Iwamoto Y., Asano T., Li Y., Abiko Y., Nishimura F.: *International Journal of obesity*, 32, 1725-1729, 2008.
- 2: Spinal antiallodynia action of glycine transporter inhibitors in neuropathic pain models in mice: Morita K., Motoyama N., Kitayama T., Morioka N., Kifune K., Dohi T.: *J. Pharmacol. Exp., Ther.* 326, 633-645, 2008.
- 3: Effect of air-drying and solvent evaporation on the strength of HEMA-rich versus HEMA-free one-step adhesives: Ikeda T., De Munck J., Shirai K., Hikita K., Inoue S., Sano H., Lambrechts P.,

- Van Meerbeek B.: *Dental Material*, 24(10), 1316-1323, 2008.
- 4: Antimicrobial effects of the saliva substitute, Oralbalance[®], against microorganisms from oral mucosa in the hematopoietic cell transplantation period: Sugiura Y., Soga Y., Tanimoto I., Koikeguchi S., Nishide S., Kono K., Takahashi K., Fujii N., Ishimaru F., Tanimoto M., Yamabe K., Tsutani S., Nishimura F., Takashiba S.: *Supportive Care Cancer*, 16, 421-424, 2008.
 - 5: Polymorphisms in the 5' flanking region of *IL12RB2* are associated with susceptibility to periodontal diseases in the Japanese population: Takeuchi-Hatanaka K., Ohyama H., Nishimura F., Kato-Kogoe N., Soga Y., Matsushita S., Nakasho K., Yamanegi K., Yamada N., Terada N., Takashiba S.: *J Clin Periodontol*, 35, 317-323, 2008.
 - 6: Differential effects of polymorphisms in the 5' flanking region of *IL12RB2* on NK and T cell activity: Ohyama H., Kato-Kogoe N., Nishimura F., Takeuchi-Hatanaka K., Matsushita S., Yamanegi K., Yamada N., Hata M., Nakasho K., Terada N.: *J Interferon Cytokine Res*, 28, 563-569, 2008.
 - 7: Evaluation of xerostomia in hematopoietic cell transplantation by a simple capacitance: Sugiura Y., Soga Y., Nishide S., Kono K., Takahashi K., Fujii N., Ishimaru F., Tanimoto M., Nishimura F., Takashiba S.: *Supportive Care Cancer*, 16, 1197-1200, 2008.
 - 8: IL-6/sIL-6 enhance cathepsin B and L production via caveolin-1-mediated JNK-AP-1 pathway in human gingival fibroblasts: Yamaguchi T., Naruishi K., Arai H., Nishimura F., Takashiba S.: *J Cell Physiol*, 217, 423-432, 2008.
 - 9: Rapid and simple detection of eight major periodontal pathogens by the loop-mediated isothermal amplification method: Miyagawa J., Maeda H., Murauchi T., Koikeguchi S., Yamabe K., Tanimoto I., Nishimura F., Fukui K., Takashiba S.: *FEMS Immunol Med Microbiol*, 53, 314-321, 2008.
 - 10: Examination of $\alpha 2$ integrin polymorphism in drug-induced gingival overgrowth. $-\alpha 2$ integrin + 1648 G/A polymorphism-: Mihara-Wada T., Bando M., Kataoka M., Kubota T., Itagaki M., Shimada S., Tai H., Yoshie H., Nishimura F., Soga Y., Takashiba S., Nagata T., Kido J.: *Jpn J Conserv Dent*, 51, 464-471, 2008.
 - 11: Appearance of Multi-Drug-Resistant Opportunistic Bacteria on the Gingiva during Leukemia Treatment—A case report: Soga Y., Saito T., Nishimura F., Ishimaru F., Mineshiba J., Mineshiba F., Takaya H., Sato H., Kudo C., Koikeguchi S., Fujii N., Tanimoto M., Takashiba S.: *J Periodontol*, 79, 181-186, 2008.

B) Review

C) Publications

- 1: Chapter 5. The role of dentistry in the improvement of systemic status 4. Periodontal therapy and systemic diseases; 「Immediate Learning Geriatric Dentistry—Medical knowledge necessary for dentistry—」 (Kotani J., Tanaka Y. chief ed. Adachi R., Kawai M., Sakuma T., Tamida K. ed): Kono T., Nishimura F.: Nagasue Publishers, 224-225, 2008.
- 2: §4. Infectious diseases 1. Pathogenesis of periodontal diseases and related trait; *Oral Medicine*

(Ozaki T. ed.): Nishimura F., Kurirara H.: Asuka Publishers, 367-375, 2008.

- 3: Metabolic syndrome and periodontal diseases; Health promotion of general people from the viewpoints of Periodontology (Japanese Society of Periodontology Ogata Y., Shibukawa Y., and Arai T. ed.): Nishimura F.: Ishiyaku Publishers (Tokyo), 204-206, 2008.
- 4: Importance of periodontal management as part of the total management of diabetes; Diabetic Care 2008 (Japan Society of Diabetes): Nishimura F.: Shindan-to-Chiryō-sha , 119-122, 2008.
- 5: Chronic complications Diabetes mellitus and periodontitis; Japan Rinsho New Diabetology 4—Progress in pathogenesis, diagnosis and treatment research—: Nishimura F., Taniguchi A., Fukushima M., Nakai Y.: Japan Rinsho (Tokyo), 450-453, 2008.

D) Other Publications

- 1: Is there any association between infectious disease and vascular diseases? Type 2 diabetes and periodontitis: Taniguchi A., Isogai O., Nishimura F., Nakai Y., Nomura Y., Fukushima M., Seino Y.: Vascular Medicine-Journal of Vascular Medicine, 4, 16-21, 2008.
- 2: The association between periodontitis and systemic disease. (2)Diabetes mellitus and periodontitis; Quintessence Year Book 2008 (spec issue) Current guideline for the treatment Periodontal treatment and others: Nishimura F., Iwamoto Y.: Quintessence, 48-49, 2008.
- 3: Special issue II. New research era on periodontitis and treatment strategy 「Re-evaluating the association between periodontitis and systemic health」 ; Inflammation and Immunity: Nishimura F.: 16, 60-64, 2008.
- 4: The association between diabetes mellitus and other diseases. (3)Periodontitis and diabetes mellitus: Nishimura F.: Nursing, 28, 24-29, 2008.
- 5: Insulin resistance; Inflammation and periodontitis: Nishimura F.: Diabetes Frontier, 19, 65-68, 2008.
- 6: Diabetes mellitus and periodontitis: Nishimura F., Soga Y., Yamashita A., Iwamoto Y.: Diabetes Journal, 36,9-13, 2008.
- 7: Diabetes mellitus and periodontitis; “Regional health”: Sawada H., Nishimura F.: 39(7), 57-61, 2008.
- 8: Periodontitis is a life-style-related disease: Nishimura F.: Asahi Medical, 8, 28-29, 2008.

E) Presentation at Scientific Meeting

- 1: Analysis of glycine signaling proteins expression in neuropathic pain model during developing and established mechanical allodynia: Kitayama T., Morita K., Motoyama N., Oka H., Dohi T.: The 81th Annual Meeting of The Japanese Pharmacological Society (Yokohama), 17-19, March, 2008.
- 2: Glutamate induces tactile allodynia by disinhibition of glycinergic control through NO-cGMP cascade in mouse spinal cord: Morita K., Motoyama N., Kitayama T., Kifune K., Dohi T.: The 81th Annual Meeting of The Japanese Pharmacological Society (Yokohama), 5-6, July, 2008.
- 3: Cytokine array analysis of molecules produced from macrophage-adipocyte co-cultures

- stimulated with low dose LPS: Yamashita A., Nishimura F., Iwamoto Y., Kokeyuchi S., Takashiba S.: The 51st Japanese Society of Periodontology Meeting (Ohmiya), 24-26, April, 2008.
- 4: Antinociceptive effect of inhibitors of glycine transporters on streptozotocin-induced diabetic neuropathy model in mice: Motoyama N., Morita K., Kitayama T., Nishimura F., Dohi T.: The 128th Japanese Society of Conservative Dentistry(Niigata), 5-6, July, 2008.
 - 5: Establishment of demineralization assessment model using rat anterior teeth: Yonehiro J., Arakawa M., Shirai K., Nishimura F.: The 128th Japanese Society of Conservative Dentistry(Niigata), 5-6, July, 2008.
 - 6: Role of Glycine transporter in neuropathic pain -possibility of pain control-: Kitayama T., Morita K., Motoyama N., Oka H., Dohi T.: The 3rd Annual Meeting of The Japan Transporter Research Association (Kyoto), 7-8, July, 2008.
 - 7: Amplification mechanism of inflammation in obesity: Yamashita A., Nishimura F.: The 41st Hiroshima University of Dental Society Meeting (Hiroshima), 15, July, 2008.
 - 8: Ameliorating of neuropathic pain by inhibitor of platelet-activating factor (PAF): Morita K., Motoyama N., Kitayama T., Oka H., Nishimura F., Dohi T.: The 113th Kinki Branch Meeting (Okayama), 20, July, 2008.
 - 9: Cytokine Profile Produced from LPS-stimulated Macrophage-Adipocyte Co-cultures: Yamashita A., Nishimura F., Soga Y., Iwamoto Y., Takashiba S.: The 86th International Association for Dental Research (Toronto), 2-5, July, 2008.
 - 10: Dentin siloprotein and dentin phosphoprotein have specific roles in dentin mineralization: Suzuki S.: The 86th International Association for Dental Research (Toronto), 2-5, July, 2008.
 - 11: The baseline study for establishing the reference index that measure the relation between periodontitis and metabolic syndrome: Yamashita A., Soga Y., Iwamoto Y., Takashiba S., Nishimura F.: The 1st Japanese Society for Evidence and Dental Professional Meeting (Tokyo), 23, August, 2008.
 - 12: Validity of high sensitivity CRP measurement for assessing severity periodontitis, chronic inflammatory: Nishimura F., Yamashita A.: The 1st Japanese Society for Evidence and Dental Professional Meeting (Tokyo), 23, August, 2008.
 - 13: Glycine receptor $\alpha 3$ (GlyR $\alpha 3$) mediates the allodynia action of platelet-activating factor (PAF) in the mice spinal cord: Motoyama N., Morita K., Kitayama T., Nishimura F., Dohi T.: The 50th Annual Meeting of Japanese Association for Oral Biology (Tokyo), 23-25, September, 2008.
 - 14: Analysis of dysfunction of glycine signaling during initiation of neuropathic pain: Kitayama T., Morita K., Motoyama N., Nishimura F., Dohi T.: The 50th Annual Meeting of Japanese Association for Oral Biology (Tokyo), 23-25, September, 2008.
 - 15: Activation of glycine signaling ameliorated mechanical allodynia in neuropathic pain model mice: Kitayama T., Morita K., Motoyama N., Nishimura F., Dohi T.: Joint Meeting of the 18th Annual Meeting of Japanese Society of Clinical Neuropsychopharmacology (JSCP) and the 37th Annual Meeting of Japanese Society of Neuropsychopharmacology (JSNP) (Tokyo), 1-3, October, 2008.
 - 16: Microarray analyses of the genes differentially expressed in adipocytes co-cultured with macrophages stimulated with LPS: Yamashita A., Soga Y., Iwamoto Y., Takashiba S., Abiko Y., Nishimura F.: The 51st Japanese Society of Periodontology Meeting (Yokkaichi), 18-19, October, 2008.
 - 17: Brain-derived neurotrophic factor (BDNF) mediates the onset of neuropathic pain: Motoyama N., Morita K., Kitayama T., Nishimura F., Dohi T.: The 47th Scientific Meeting of Hiroshima

Prefecture Dental Association; The 92th Ordinary Meeting of Hiroshima University Dental Society (Hiroshima), 19, October, 2008.

- 18: Glycinergic moderation of pain sensation induced by nerve injured model in mice: Motoyama N., Morita K., Kitayama T., Nishimura F., Dohi T.: The 129th Autumn Meeting of The Japanese Society of Conservative Dentistry (Toyama), 6-7, November, 2008.
- 19: Analysis of Cl⁻ transporters expression in developing of neuropathic pain: Kitayama T., Motoyama N., Morita K., Oka H., Nishimura F., Dohi T.: The 114th Kinki Branch Meeting of Japanese Pharmacological Society; Special lectures in academic meetings (Kobe), 14, November, 2008.

F) Special lectures in academic meetings

- 1: Periodontitis is an oral chronic inflammation accelerating the aging (Symposium 10 Biology of Aging) : Nishimura F.: The 29th Japan Inflammation and Regeneration Society (Tokyo), 10, July, 2008.
- 2: Periodontal Medicine. (Symposium “Local and systemic effects of periodontitis and its measure”): Nishimura F.: Japan Society of Clinical Periodontology 2nd Kansai Branch Meeting, 30, December, 2008.
- 3: Lecture Management of special diabetes “The importance of periodontal management as part of the overall management of diabetes”: Nishimura F.: Progress in Diabetology (Takamatsu), 16, February, 2008.
- 4: Education lecture 6 “Periodontitis and diabetes mellitus”: Nishimura F.: The 51th Japan Diabetes Society Annual Meeting (Tokyo), 22, May, 2008.
- 5: The periodontal host response with metabolic syndrome: Nishimura F.: The International Symposium on “Oral Sciences to Improve the Quality of Life” (Tokushima), 6, September, 2008.
- 6: New treatment strategy of periodontitis against subjects with diabetes: Nishimura F.: The 21th Japanese Association of Dental Science Annual Meeting Society of Dental- Luncheon Seminar (Yokohama), 15, November, 2008.

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

- 1: Grant-in-Aid for Exploratory Research: Nishimura F., Elucidation of the association between nutrition and caries susceptibility. No. 20659298. ¥1,600,000
- 2: Grant-in-Aid for Scientific Research (C): Shirai K., Development of adhesive system with capacity of self-repair applied by Sr-CaPO₄ complex. No. 20592227. ¥1,500,000 (¥450,000)
- 3: Entrusted Accounting (Shofu Co., Ltd) : Nishimura F. ¥500,000
- 4: Grant-in-Aid for Young Scientist (Start-up): Yamashita A., The baseline and clinical study of relationship between periodontal disease and metabolic syndorome. No20890143.¥1,742,000

(5) Academic Awards, etc.

(6) Patents

Programs for Applied Biomedicine, Division of Cervico-Gnathostomatology
(Department of Advanced Prosthodontics)
Implants and Prosthodontics

(1) Staffs and Students

Professor	: Yasumasa Akagawa
Associate Professor	: Kazuhiro Tsuga, Takayasu Kubo
Assistant Professor	: Yasuhiko Abe, Tsuyoshi Taji, Kyou Hiasa
Research Associate	: Katsunori Koretake, Mineka Yoshikawa, Kazuya Doi
Secretary	: Rinko Kurumi
Resident	: Maho Takeuchi, Kazuhiko Hayashi, Yasunari Miyamoto
Clinical Trainee	: Takahisa Kawamura, Koji Morita
Graduate Student	: Yayoi Kanehisa, Mariko Maruyama, Ryo Takeshita
Research Student	: Yuri Utanohara

(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: Comparison of surface electromyographic (sEMG) activity of submental muscles between the head lift and tongue press exercises as a therapeutic exercise for pharyngeal dysphagia : Yoshida M, Grohe M E, Crary M A, Mann G C and Akagawa Y : Gerodontology, 24, 111-116, 2008.
- 2: Standard values of maximum tongue pressure taken using newly developed disposable tongue pressure measurement device : Utanohara Y, Hayashi R, Yoshikawa M, Yoshida M, Tsuga K and Akagawa Y : Dysphagia, 23, 286-290, 2008.
- 3: Influence of static overload on the bony interface around implants in dogs : Miyamoto Y, Koretake K,

Hirata M, Kubo T and Akagawa Y : Int. J. Prosthodont., 21 : 437-444, 2008.

- 4: Effect on tooth loss and denture wear on tongue tip motion in dentulous and edentulous older people : Yoshikawa M, Yoshida M, Nagasaki T, Tanimoto K, Tsuga K and Akagawa Y : J. Oral Rehabil., 35(12), 882-888, 2008.

B) Review

C) Publications

- 1: Anatomy and physiology of orofacial regions. In the elementary knowledge for oral health care (ed. Kikutani T). : Yoshida M : Gakken, Tokyo, 15-28, 2008.
- 2: The relationship between fall and dental occlusion. In thesaurus of prevention of falls (ed. Muto Y). : Yoshida M and Kikutani T : Japan Medical Journal Co. Ltd. 100-102, 2008.
- 3: Assessment of oral function. In Oral function for the elderly (ed. Japan Dental Association). : Yoshida M and Kikutani T : Nihon-Shika-Sogo-Kenkyu-Kiko, Tokyo, 138-155, 2008.
- 4: Prosthodontic Treatment for Edentulous Patients 12th Edition, Chapter 25 The Superstructure for Edentulous Patients : Zarb G A, Bolender C B, Eckert S E, Fenton A H, Jacob R F, Mericske-Stern R, Akagawa Y and Koretake K : Ishiyaku Publishers Inc, Tokyo, 2008.
- 5: Prosthodontic Treatment for Edentulous Patients 12th Edition, Chapter 26 Science of osseointegration : Zarb G A, Bolender C B, Eckert S E, Fenton A H, Jacob R F, Mericske-Stern R, Akagawa Y and Koretake K : Ishiyaku Publishers Inc, Tokyo, 2008.
- 6: Prosthodontic Treatment for Edentulous Patients 12th Edition, Chapter 26 Protocol of overdenture based on Implant : Zarb G A, Bolender C B, Eckert S E, Fenton A H, Jacob R F, Mericske-Stern R, Akagawa Y and Koretake K : Ishiyaku Publishers Inc, Tokyo, 2008.
- 7: In Practice in prevention of long-term care-oral care, rehabilitation for dysphagia, and nutrition support team. : Kanehisa Y : Kosei-Kagaku-Kenkyusyo, Tokyo, 252-259, 2008.

D) Other Publications

- 1: Practice of Biodentistry : Dental technology of occlusion –occlusal theory and handling of articulators, Part 4, Put the right man in the right place on handling articulators! Manuals for dental technology in various treatment methods, treatment areas and states of edentulism. 3. Implants 2 Partial edentulism- Free end edentulism at molor region : Kato R, Kubo T, Hiasa K and Akagawa Y : The Journal of Dental Technology, 137-143, 2008.
- 2: Removable denture treatment for elderly persons -Decision making of treatment- : Taji T and Akagawa Y. : The nippon dental review, 68(2), 123-130, 2008.
- 3: Surface science and vision for oral implant materials : Yasuhiko A, Kyou H : Monthly Report in Dentistry (Hyogo Dental Association), 684, 38-43, 2008.
- 4: Influence of mental status on removable denture treatment : Taji T and Akagawa Y : Monthly Report in Dentistry (Hyogo Dental Association), 685, 2008.

- 5: A report of summer school by the JPS, a branch of chugoku-shikoku branch at Naruto in a good view: Bando E, Tsuga K, Shimono K : Practice in Prosthodontics Practice, 41(1) , 104-107, 2008.
- 6: A report of the 12th annual meeting of ICP : Tsuga K : Practice in Prosthodontics Practice, 41(1) , 108-109, 2008.
- 7: Silicone denture soft liner "Mucopren® soft" : Yasuhiko Abe : The Nippon Dental Review, 68(8), 113-118, 2008.

E) Presentation at Scientific Meeting

- 1: Swallowing sound analysis for healthy adults and dysphagic patients : Yoshikawa, M., Nagasaki, T., Yoshida, M. and Akagawa, Y. : 16th Annual Dysphagia Research S (South Carolina) , 2008.
- 2: Quantification of swallowing-related tongue function with a handy tongue pressure measurement system : Kawamura T, Tsuga K, Yoshikawa M, Hayashi R, Maruyama M, Okada G, Utanohara Y, Yoshida M and Akagawa Y : The 40th scientific meeting of the Japanese society of stomatognathic function (Morioka), 2008.
- 3: Bone regeneration ability of newly developed polyphosphate-coated interporous hydroxyapatite : Morita, K., Doi, K., Matsuura, A., Takeshita, R., Koretake, K., Kubo T. and Akagawa, Y. : The International scientific meeting Nagoya 2008 (Nagoya), 2008.
- 4: The effect of daily tongue exercise on resting saliva flow rate and maximum voluntary tongue pressure : Okada, G., Tsuga, K., Kawamura, T., Maruyama, M., Yoshikawa M., Hayashi, R., Yoshida, M. and Akagawa, Y. : The International scientific meeting Nagoya 2008 (Nagoya), 2008.
- 5: Swallowing pressure measurement that uses disposable tongue pressure measurement device : Kawamura T, Yoshikawa M, Utanohara Y, Okada G, Maruyama M, Hayashi R, Yoshida M, Tsuga K and Akagawa Y : The 117th Annual meeting of Japan Prosthodontic Society (Nagoya), 2008.
- 6: Bone formation of biomimetic bone graft material “carbonate apatite collagen sponges” : Matsuura A, Kubo T, Doi K, Morita K, Hirata I, Okazaki M and Akagawa Y : The 117th Annual Meeting of Japan Prosthodontic Society (Nagoya), 2008.
- 7: Effect of combined application of bFGF and inorganic polyphosphate on bioactivities of osteoblasts and initial bone regeneration : Takeshita R, Yuan Q, Kubo T, Doi K, Morita K and Akagawa Y : The 41th Annual Meeting of Hiroshima University Dental Society (Hiroshima), 2008.
- 8: A handy and portable dental tool to support elderly patient's body : Tsuga K, Hayashi R, Taji T, Maruyama M, Kawamura T, Okada G, Utanohara Y, Morikawa H, Yoshikawa M, Yoshida M and Akagawa Y : The 19th annual meeting of Japanese society of Gerodontology (Okayama), 2008.
- 9: Approach for prevention from accidental ingestion of prosthesis in elderly people : Tomiki H, Kanehisa Y, Yamane T, Itaki S, Kawahara E and Taji T, The 16th annual meeting of Nippon Ryouyou byousyou kyokai (Fukuoka), 2008.
- 10: Bone regeneration around fenestrated implants by different bFGF-gelatin hydrogel complexes : Morita, K., Hayashi, K., Doi, K., Koretake, K., Kubo, T., Tabata, Y. and Akagawa, Y. : 86th General Session & Exhibition of the IA (Toronto) , 2008.
- 11: A handy manometric evaluation of swallowing-related tongue function : Kawamura, T., Tsuga, K.,

- Okada, G, Yoshikawa, M., Hayashi, R., Yoshida, M. and Akagawa, Y. : 86th General Session & Exhibition of the IA (Toronto) , 2008.
- 12: Maximum voluntary tongue pressure in Eichner's group C denture wearers : Tsuga, K., Utanohara, U., Okada, G, Kawamura, T., Yoshikawa, M., Hayashi, R., Yoshida, M. and Akagawa, Y. : 86th General Session & Exhibition of the IA (Toronto) , 2008.
- 13: An assessment of effectiveness of custom made mouth guard to prevent trauma of karate athletes: Ikuma Y, Tsuga K : The 19th annual meeting of Japanese Academy of Sports Dentistry (Sapporo), 2008.
- 14: A case report , removable denture treatment make institutionalized patient to become independent : Taji T, Kawamura T, Yoshikawa M, Kanehisa Y, Yoshida M, Oda M, Tsuga K, and Akagawa Y : Annual Scientific Meeting of Japan Prosthodontic Society Kyushu, Chugoku and Shikoku Branches (Beppu), 2008.
- 15: Swallowing sound analysis of stroke patients and ALS patients : Yoshikawa M, Nagasaki S, Yoshida M, Tanimoto K, Tanaka K, Sasamura K, Okada G and Akagawa Y : The 14th annual meeting of the Japanese society of Dysphagia (Makuhari), 2008.
- 16: Correlation between occlusal contact and swallowing function : Yoshikawa M, Kawamura T, Yoshida M, Tsuga K and Akagawa Y : The 19th annual meeting of Japanese society for mastication science and health promotion (Tokyo), 2008.
- 17: Effect of combined application of bFGF and inorganic polyphosphate on bioactivities of bone regeneration : Takeshita R : The 38th Annual Meeting of Japanese Society of Oral Implantology (Tokyo), 2008.
- 18: A handy and portable dental tool using air pressure to support patient's body : Tsuga K, Hayashi R, Taji T, Maruyama M, Kawamura T, Okada G, Utanohara Y, Morikawa H, Yoshikawa M, Yoshida M and Akagawa Y : 47th meeting of Hiroshima Prefecture Dental Association (Hiroshima), 2008.
- 19: Activity report of the dental department in Hiroshima City General Rehabilitation Center. : Yoshida M and Akagawa Y : 47th meeting of Hiroshima Prefecture Dental Association (Hiroshima), 2008.

F) Special lectures in academic meetings

- 1: The symposium about the relationship dentistry and long-term care insurance and medical insurance for the old elderly. : Yoshida M : 19th meeting of the Japanese Society of Gerodontology (Okayama), 2008.
- 2: Rehabilitation for the swallowing disorder patients. : Yoshida M : 15th meeting of Japanese Society of Dental Welfare (Hiroshima), 2008.
- 3: Importance of mastication : Tsuga K : The citizens open lecture at Annual Scientific Meeting of Japan Prosthodontic Society Kyushu, Chugoku and Shikoku Branches (Beppu), 2008.
- 4: Evidences for implant therapy – Is the success standard of implant therapy changed? - : Akagawa Y : Symposium Panel at Annual scientific meeting of Japanese society of oral implantology (Tokyo), 2008.
- 5: Considering dental medical care in Japan, A role of a joint care improving health of national

citizen. : Akagawa Y : 51th Annual scientific meeting of Japanese society of Periodontology (Yokkaiti), 2008.

- 6: State of art on the bone substitute for implant treatment- From site of artificial bone material development. : Kubo T : Panel discussion at 28th Annual scientific meeting of chugoku and shikoku branch of Japanese society of oral implantology (Hiroshima), 2008.
- 7: Selection of safety and reliable implant treatments. : Akagawa Y : The citizens open lecture at 28th Annual scientific meeting of chugoku and shikoku branch of Japanese society of oral implantology (Hiroshima), 2008.

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

- 1: Grant-in Aid for scientific Research (B) from the Ministry of Education, Culture, Sports, Science and Technology, Japan : Akagawa Y : Development of new implant augmentation GBR using a intelligent gelatin hydrogel – bFGF complex. (Grant No. 19390498) . ¥8,970,000
- 2: Grant-in Aid for exploratory Research from the Ministry of Education, Culture, Sports, Science and Technology, Japan : Akagawa Y : Molecular biological approach for the relationship between loss of dental occlusion and progress of Alzheimer's dementia. (Grant No. 19659508) . ¥900,000
- 3: Grant-in Aid for scientific Research (C) from the Ministry of Education, Culture, Sports, Science and Technology, Japan : Tsuga K, A new multifactorial functional evaluation for enhancing anti aging effects of prosthodontic treatments. (Grant No.20592269) . ¥2,600,000
- 4: Grant-in Aid for scientific Research (C) from the Ministry of Education, Culture, Sports, Science and Technology, Japan : Taji T, A development of occlusal support index for removable partial denture design. (Grant No. 20592270) . ¥1,95,000
- 5: Grant-in Aid for scientific Research (C) from the Ministry of Education, Culture, Sports, Science and Technology, Japan : Hiasa K, Development of multiphysics simulator to high intelligent implant diagnosis and treatment systems. (Grant No. 18592129) . ¥1,950,000
- 6: Grant-in Aid for Young scientists (B) from the Ministry of Education, Culture, Sports, Science and Technology, Japan : Koretake K, The new method of bone regeneration by bone modeling at adding implant. (Grant No. 19791443) . ¥1,430,000
- 7: Grant-in Aid for Young scientists (B) from the Ministry of Education, Culture, Sports, Science and Technology, Japan : Yoshikawa M, Anti-aging on swallowing function by maintenance and restoration of occlusion. (Grant No.19791442) . ¥1,430,000
- 8: Grant-in Aid for Young scientists (B) from the Ministry of Education, Culture, Sports, Science and Technology, Japan : Doi K : Jaw-bone regeneration technique using intelligent artificial bone. (Grant No. 20791428). ¥2,210,000
- 9: Grant-in Aid for Longevity science total research from the Ministry of Health, Labour and Welfare, Japan : Establishment of oral care and management. (Grant No. KOSE202001) . ¥3,430,000

(5) Academic Awards, etc.

1: Yoshikawa M : The 19th annual meeting of Japanese society for mastication science and health promotion Best poster award

(6) Patents

**Programs for Applied Biomedicine Division of Cervico-Gnathostomatology
(Department of Advanced Prosthodontics)
Department of Preventive and Restorative Dentistry
(I m p l a n t s a n d P r o s t h o d o n t i c s)**

(1) Staffs and Students

Professor	: Taizo Hamada (Until March)
Associate Professor	: Shinsuke Sadmori
Assistant Professor	: Hitoshi Abekura (in the university), Masahiro Nishimura (in the university)
Assistant	: Shunji Inoue, Hong Guang, Kazuko Kagawa
Secretary	: Michiko Miyagawa
Resident	: Kae Harada, Syouji Hyashi
Intern	: Fumio Suehiro, Kouji Kamata (Until March), Tsuka Hiroki (Until March), Masahiro Tsuboi (Until March), Isami Fujiwara, Tomoharu Hori
Graduate Student	: Li YingAi (Until March), Fumio Suehiro (Until March), Kentaro Hayashida (Until March), Takeshi Maeda, Wataru Mizumachi, Syouji Hyashi, Kouji Kamata, Tsuka Hiroki, Masahiro Tsuboi, Dhirinuru(From October)
Registered Intern	: Masami Furuebisu, Yutaka Fukanogi, Isami Fujiwara (Until March)

(2) Main Research Activities

- 1: Molecular analysis of transcription factors on mesenchymal stem cells osteogenesis
- 2: Geriatric Dentistry (Elderly with Dementia)
- 3: Psychiatric Disorders in Dental Practice
- 4: Development of Denture Adhesive
- 5: Rheology and Development of Resilient Denture Liners
- 6: Establishment of ISO Standard of Denture Liners
- 7: Development of low invasive alveolar ridge augmentation method
- 8: Studies of conservative treatments for Temporomandiblar Disfunction
- 9: Studies on adhesive technique for short span bridge prosthesis and mobilized tooth splint

(3) Research Achievements

A) Original Papers (including Case Reports)

- 1: Enhancement of osteogenesis by concanavalin A in human bone marrow mesenchymal stem cell cultures: Sekiya K., Nishimura M., Suehiro F., Nishimura H., Hamada T., Kato Y.: Int J Art Org, 31, 708-715, 2008.

- 2: Influence of storage methods on the surface roughness of tissue conditioners: Hong G., Li Y.A., Maeda T., Mizumachi W., Sadamori S., Hamada T., Murata H.: *Dent Mater J*, 27(2), 153-158, 2008.
- 3: A questionnaire survey of dentists and dental students in China about denture adhesives: Hong G., Lian Y.M., Sadamori S., Hamada T., Murata H.: *Int Chin J Dent*, 8, 33-37, 2008.
- 4: The pre-surgical modification of the provisional over-denture through 3-dimensional image analysis supports the mini dental implant treatment: A clinical report: Makihira S., Mizumachi W., Harada K., Shimoe S., Sadamori S., Nikawa H.: *Int Chin J Dent*, 8, 39-41, 2008.
- 5: The initial effects of occlusal splint vertical thickness on the nocturnal EMG activities of masticatory muscles in subjects with a bruxism habit : Abekura H., Yokomura M., Sadamori S., Hamada T. : *Int J Prothodont*, 21, 116-120, 2008.
- 6: The relationships between oral status, physical and mental health, nutritional status and diet type in elderly Japanese women with dementia: Sadamori S., Hayashi S., Hamada T.: *Gerodontology*, 25, 205-209, 2008.
- 7: Three dimensional changes in maxillary complete dentures immersed in water for seven days after polymerization: Sadamori S., Ishii T., Hamada T., Razak A.: *Dent J*, 41, 1-4, 2008.
- 8: Influence of denture cleansers on the color stability of three types of resin: Hong G., Murata H., Li Y.A., Sadamori S., Hamada T.: *J Prosthet Dent*, 101, 205-213, 2009.
- 9: An implant treatment case of using the novel interconnective porous hydroxyapatite ceramics (NEOBONE): Miyauchi M, Sugiyam M, Nishimura M, Shimasue H, Shigeishi H, Hiraoka M, Takechi M, Okamoto T, Akagawa Y, Kamata N: *J Hiroshima Dent Soc*, 40, 62-65, 2008.

B) Review

- 1: Relationship between viscoelastic properties of soft denture liners and clinical efficacy: Murata H., Hamada T., Sadamori S.: *Japanese Dental Science Review*, 44, 128-132, 2008.

C) Publications

- 1: Duplicate Denture: Hamada T., Jiang T., Jin C., Hong G., Bai X.Q.: People's Military Medical Press, Beijing, China, 149, 2008.
- 2: Crown Bridge Technique: Sadamori S (Allotment): *Ishiyaku*, 1-183, 2008.
- 3: Oral Care : Basic Knowledge: Hamada T, Sadamori S (Allotment): *Nagasue*, 153-154, 2008.
- 4: Oral Care : Basic Knowledge: Sadamori S, Hamada T (Allotment): *Nagasue*, 284-285, 2008.

D) Other Publications

E) Presentation at Scientific Meeting

- 1: Strict selection of transcription factors involved in mesenchymal stem cells osteogenesis: Suehiro F., Nishimura M., Kamada K., Tsuboi M., Sekiya K., Sadamori S., Hamada T.: 86th IADR

- (Totonto, Canada), 2008. 7.2
- 2: Effect of CMC Content on Mechanical Properties of Denture Adhesives: Hong G., Maeda T., Murata H., Sadamori S., Hamada T.: The 4th Sino-Japan Conference on Stomatology (Xi'an, China), 2008. 9.28-29
 - 3: Influence of Component on Viscoelasticity of Tissue Conditioners: Maeda T., Hong G., Mizumachi W., Tsuka H., Sadamori S., Hamada T.: The 4th Sino-Japan Conference on Stomatology (Xi'an, China), 2008. 9.28-29
 - 4: Interface, implant, regenerated bone and recipient alveolar bone: Nishimura M., Sakai Y., Suehiro F., Tsuboi M., Kamada K., Hori T., Sakai M., Takeda M., Tsuji K., Hamada T.: The 3rd International Symposium for Interface Oral Health Science in Sendai, 2009. 1.15-16
 - 5: The influence of Sericin solution on wettability and antifungal effect of resin surface: Hong G., Hamada T., Maeda T., Yuda S., Yamada H., Tsujimoto K., Sadamori S.: The 3rd International Symposium for Interface Oral Health Science in Sendai, 2009. 1.15-16
 - 6: Influence that addition of the PMMA gives to viscoelasticity of trial tissue conditioners: T. Maeda, G. Hong, S. Sadamori, T. Hamada: The 51th Japanese Society for Dental Materials and Devices (Yokohama), 2008.4.26
 - 7: Influence of plastisizer and polymer gives to viscoelasticity of tissue conditioners: T Tsuka, G. Hong, T. Maeda, T. Hamada, H. Murata: The 51th Japanese Society for Dental Materials and Devices (Yokohama), 2008.4.27
 - 8: Influence of Component on Initial Viscosity and Adhesive Strength of Denture Adhesives: Hong G, Hayasida K, Murata H, Maeda T, Mizumachi W, Hamada T: The 117th Scientific Meeting of Japan Prosthodontic Society (Nagoya), 2008. 6.7
 - 9: The 117th Scientific Meeting of Japan Prosthodontic Society (Nagoya), 2008. 6.7
 - 10: Evaluation of Denture Wearing, Feeding Status, Physical and Mental Status of Care-required elderly over 80 years: Hayashi S, Sadamori S, Inoue S, Hamada T, Abekura H, Fujiwara I: The 117th Scientific Meeting of Japan Prosthodontic Society (Nagoya), June 7, 2008
 - 11: Selection of new transcription factors of human mesenchymal stem cells toward osteogenetic differentiation.: Suehiro F., Nishimura M., Kamada K., Tsuboi M., Sekiya K., Sadamori S., Hamada T.: The 117th Scientific Meeting of Japan Prosthodontic Society (Nagoya), 2008. 6.8
 - 12: Selection for osteogenic cells from oral cells using ALCAM as a marker: Kamada K, Nishimura M, Suehiro F, Tsuboi M, Fujii M, Oda R, Miyauchi M, Nishi Y, Kamata N, Kato Y, Sadamori S: 41th Scientific Meeting of Hiroshima University Dental Society, 2008. 6.15
 - 13: Evaluation of Oral Status, Feeding Status, Physical and Mental Status of Care-required elderly in Nursing Home: Hayashi S, Sadamori S, Inoue S, Hamada T, Abekura H, Fujiwara I: The 41th General Meeting of Hiroshima University Dental Society (Hiroshima), June 15, 2008.
 - 14: Studies of the changes of Feeding status, Physical and Mental Status of Care-required elderly in Nursing Home: Hayashi S, Sadamori S, Inoue S, Hamada T, Abekura H: The 19th Annual Meeting of The Japanese Society of Gerodontology (Okayama), June 19, 2008.
 - 15: Alveolar Ridge Augmentation by Alveolar derived Mesenchymal Stem Cells: Tsuboi M, Nishimura M, Suehiro F, Kamada K, Hori T, Sdamori S: 2008 Annual Scientific Meeting of Japan

- Prostheodontic Society Kyushu, Chugoku&Shikoku Branches (Beppu), 2008. 8.30
- 16: Influence of PVM-MA and CMC contents on the mechanical properties of trial cream type denture adhesive: Hong G, Hayashida K, Maeda T, Mizumachi W, Tsuka H, Sadamori S, Murata H: Annual Scientific Meeting of Japan Prosthodontic Society Kyushu, Chugoku and Shikoku Branches, (Beppu, Oita, Japan), 2008. 8.30
 - 17: Low invasive alveolar ridge augmentation using autologous mesenchymal stem cells: Tsuboi M, Nishimura M, Kamada K, Sadamori S: 38th Japanese Society of Oral Implantology (Tokyo), 2008. 9.13
 - 18: Fractionation of osteogenetic cells from oral tissues using membrane antigen: Kamada K, Nishimura M, Tsuboi M, Miyauchi M, Kamata N, Sadamori S: 38th Japanese Society of Oral Implantology (Tokyo), 2008. 9.14
 - 19: A case of occusal reconstruction treated by endosteal implants for edentulous mandible after marginal mandibulectomy: Shimasue H, Takechi M, Shigeishi H, Ohta K, Minami M, Miyauchi M, Nishimura M, Kamata N: 38th Japanese Society of Oral Implantology (Tokyo), 2008. 9.14
 - 20: A case of sinus lift with simultaneous dental implantation using interconnected porous calcium hydroxyapatite: Shigeishi H, Takechi M, Nishimura M, Ohta K, Minami M, Shimasue H, Miyauchi M, Akagawa Y, Kamata N: 38th Japanese Society of Oral Implantology (Tokyo), 2008. 9.14
 - 21: Examination of Feeding Status, Physical and Mental Status of elderly with Dementia-Follow-up Study after One Year- : Hayashi S, Sadamori S, Inoue S, Furuebisu M: The 9th Scientific Meeting of Japanese Society for Dementia Care(Kagawa), 2008. 9.27
 - 22: The relationship between oral habits and change of salivary chromogranin A caused by experimental psychosomatic stress.: H. Abekura, S. Sadamori, G Hong, K. Harada, T. Maeda, K. Kamada, M. Tuboi, H. Tuka, K. Kazuko, S. Hayashi: The 47 th Scientific Meeting of Hiroshima Prefecture Dental Association, The 92 th Hiroshima University Dental Society, The third Nippon Academy of Dental Technology Chugoku and Shikoku branch, 2008.10.19
 - 23: Examination One Year later about Denture Wearing, Nutritional status, Physical and Mental Status of Care-required elderly in Nursing Home.: Hayashi S, Sadamori S, Inoue S, Fujiwara I, Nishimura M, Abekura H: The 47th Scientific Meeting of Hiroshima Prefecture Dental Association, The 92th Scientific Meeting of Hiroshima University Dental Society, The Third Scientific Meeting of Nippon Academy Dental Technology Chugoku and Shikoku branch, October 19, 2008

F) Special lectures in academic meetings

- 1: Alveolar ridge augmentation using alveolar bone mesenchymal stem cells: NishimuraM, First meeting of Academy of Prosthetic and Regenerative Sciences: Nagoya, 2008.11.28
- 2: Selection of new transcription factors of human mesenchymal stem cells toward osteogenetic differentiation.: Suehiro F.: 18th , 2008.7.12
- 3: Clinics of the adhesion bridge: Hitoshi Abekura: The 486th meeting of dental technology (Department of Dental Technology, School of Dentistry, Aichi Gakuin University), 2008. 9.11

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

- 1: Grant-in-Aid for Scientific Research (B): Nishimura M, Development of alveolar ridge augmentation using autologous cells. assignment number 19390497. 3,600 thousand yen
- 2: Grant-in-Aid for Scientific Research (C): Inoue S, Exploration of stem cells suitable for alveolar ridge augmentation from oral tissue. assignment number 18592128. 910 thousand yen
- 3: Chugoku Industrial Innovation Center, New Industry Developing Grant: Nishimura M, Development of alveolar ridge augmentation technique using MSC for dental implantation. assignment number -. 1,000 thousand yen
- 4: Donation for research: Nishimura M, Development of new scaffold for bone regeneration. assignment number -. 250 thousand yen
- 5: Grant for Industrial Creation by Hiroshima Prefecture: Nishimura M, Development of new scaffold for bone regeneration. assignment number -. 915 thousand yen
- 6: Grant-in-Aid for Scientific Research (C): Kagawa K, assignment number 19592238. 1,200 thousand yen
- 7: Grant-in-Aid for Young Scientists (B): Hong G, assignment number 19791441. 1,100 thousand yen
- 8: Grant for Scientific Research from the Japan China Medical Association: Hong G, Research on the salivation of trial crude drug combination denture adhesives. . 1,000 thousand yen
- 9: Grant-in-Aid for Scientific Research (C): Abekura H, assignment number 19592242. 1,000 thousand yen

(5) Academic Awards, etc.

- 1: Fumio Suehiro: The 117th Scientific Meeting of Japan Prosthodontic Society Oral presentation Award: 2008. 6.8
- 2: Fumio Suehiro: 86th IADR Arthur R. Frechette Finalist: 2008. 7.2
- 3: Kouichi Kamada: Fractionation of osteogenic cells from oral tissues using membrane antigen Japanese Society of Oral Implantology 38th display award: 2008. 9.14
- 4: Shouji Hyashi: 9th Japanese Society for Dementia Care Ishizaki Prize: 2008. 9.27
- 5: Masahiro Nishimura: Excellent Young Investigator Award at The 3rd International Symposium for Interface Oral Health Science in Sendai: 2009. 1.16

(6) Patents

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

(1) Staffs and students

Professor	: Kazuo Tanne
Associate Professor	: Eiji Tanaka (Tokushima University from April)
Assistant Professor	: Toshitsugu Kawata, Hiroshi Ueda
Research Associate	: Koutarou Tanimoto, Tadashi Fujita, Nobuaki Tanaka, Junji Ohtani, Masato Kaku, Masahide Motokawa
Resident	: Yuiko Tohma, Mika Nishi, Nobuhiko Kawai
Intern	: Myongsun Koh, Takuro Hasegawa, Youhei Suekawa, Masako Tai, Yuki Tanne, Eizou Yamano, Ryouko Yamamoto,
Graduate Student	: Toshihiro Inubushi, Satoru Ohkuma, Takashi Kamiya, Ryouta Sano, Maya Shirakura, Kouji Takahashi, Natsumi Tsuka, Yasunori Iwabuchi, Ryou Kunitatsu, Genki Watanabe, Emanuel Braga Rego, Rene Arturo Marquez Hernandez, Huang Yu-ching, Goshi Ito, Noritsugu Ozaki, Aki Kawazoe, Hiroyuki Koseki, Hiroko Sunagawa, Tomoko Sasamoto, Saika Nakamura, Naoto Hirose, Atsushi Horihata, Masahiko Michida, Motoko Yoshioka
Professor (part-time)	: Kazuhiro Ueki, Toshitsugu Kojima, Hiroharu Tsuka, Hiroshi Hanaoka, Kunimichi Souma, Hideo Kinami(未)
Registered Intern	: Kuniaki Tanaka, Kouichi Ohmyou, Kazuo Hashimoto, Keisuke Tsutsui, Masashi Ueki, Hiroko Kamada, Reiko Kitamura, Tamami Yanagida
Dental Hygienist	: Miho Okada, Atsuko Wakita

(2) Main academic activity

- 1: Viscoelastic property of temporomandibular joint disks.
- 2: Effects of growth factors on the proliferation and differentiation of condylar cartilage and the disk cells.
- 3: Biomechanical investigation of TMJ loading and assessment of lubricating function.
- 4: Mechanisms of pain transmission during experimental tooth movement and clarification of pain control.
- 5: Changes in stomatognathic functions from orthodontic surgery.
- 6: Association between nasal respiratory disturbances and craniofacial morphology and masticatory and respiratory functions.
- 7: Influences of mechanical stimuli on the proliferation and differentiation of chondrocytes.
- 8: Clarification of PDL regeneration mechanism.

- 9: Metabolism of hyaluronan in TMJ synovial fluid.
- 10: Influences of food consistency on neuropathological changes in the cerebral cortex.
- 11: Regeneration of bone and cartilage with mesenchymal stem cells.
- 12: Control mechanism of bone growth and development with sex hormone.

(3) Research achievement

A) Original article

- 1: Inhibition of the proliferation of human periodontal ligament fibroblasts by hyaluronidase: Tanimoto K., Nakatani Y., Tanaka N., Ueki M., Yanagida T., Kitamura R., Tanne Y., Lin Y.Y., Kunimatsu R., Tanne K.: Archives of oral biology, 53, 330-336, 2008.
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- 4: Expression and activity of Runx2 mediated by hyaluronan during chondrocyte differentiation: Tanne Y., Tanimoto K., Tanaka N., Ueki M., Lin Y.Y., Ohkuma S., Kamiya T., Tanaka E., Tanne K.: Archives of oral biology, 53:478-487, 2008.
- 5: Dynamic shear behavior of mandibular condylar cartilage is dependent on testing direction: Tanaka E., Iwabuchi Y., Rego E.B., Koolstra J.H., Yamano E., Hasegawa T., Kawazoe A., Kawai N., Tanne K.: Journal of Biomechanics, 41, 1119-1123, 2008.
- 6: The effect of mechanical loading on the metabolism of growth plate chondrocytes: Ueki M., Tanaka N., Tanimoto K., Nishio C., Honda K., Lin Y.Y., Tanne Y., Ohkuma S., Kamiya T., Tanaka E., Tanne K.: Annals of Biomedical Engineering, 36, 793-800, 2008.
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- 10: Comparative properties of recombinant human and bovine matrix metalloproteinase-20: Zhu L., Tanimoto K., Robinsin S., Chen J., Witkowska E., Hall S., Le T., Denbesten P.K., Li W.: Archives of oral biology, 53, 785-790, 2008.
- 11: Effects of fluoride on the interactions between amelogenin and apatite crystals: Tanimoto K., Le T.,

- Zhu L., Chen J., Featherstone J.D., Li W., DenBesten P.: *Journal of Dental Research*, 87, 39-44, 2008.
- 12: Reduced amelogenin-MMP20 interactions in amelogenesis imperfecta: Tanimoto K, Le T, Zhu L, Witkowska HE, Robinson S, Hall S, Hwang P, Denbesten P, Li W.: *Journal of Dental Research*, 451-455, 2008.
- 13: An adolescent patient with multiple impacted teeth: Tanaka E., Kawazoe A., Nakamura S., Ito G., Hirose N., Tanne Y., Kawai N., Tanimoto K., Tanne K.: *Angle Orthodontist*, 78, 1110-1118, 2008.
- 14: Overexpression of fibroblast growth factor 23 suppresses osteoblast differentiation and matrix mineralization in vitro: Wang H., Yoshiko Y., Yamamoto R., Minamizaki T., Kozai K., Tanne K., Aubin J.E., Maeda N.: *Journal of Bone and Mineral Research*, 23, 939-948, 2008.
- 15: The PPAR gamma-selective ligand BRL-49653 differentially regulates the fate choices of rat calvaria versus rat bone marrow stromal cell populations: Hasegawa T., Oizumi K., Yoshiko Y., Tanne K., Maeda N., Aubin J.E.: *BMC Developmental Biology*, 8, 17, 2008.
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- 20: Changes in occlusal contact area during oral appliance therapy assessed on study models: Ueda H., Almeida F.R., Lowe A.A., Ruse N.D.: *Angle Orthodontist*, 78, 866-872, 2008.
- 21: Stability of mini screw as an implant anchorage placed onto rat maxilla: Ohtani J., Sunagawa H., Fujita T., Kawata T., Kaku M., Tohma Y., Motokawa M., Tsuka N., Marquez Hernandez R., Koseki H., Sano R., Tanne K.: *Orthodontic Waves - Japanese Edition*, 67, 125-131, 2008.
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B) Review

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- 2: Lubrication of the temporomandibular joint: Tanaka E., Detamore MS., Tanimoto K., Kawai N.: Ann Biomed Eng, 36, 14-29, 2008.
- 3: Medical and Social Cooperation Center Hiroshima University promotes venture business company and patent licencing by creating a consosium with regional companies: Tanne K.: Medical Management, 283, 94-96, 2008.
- 4: A new development of medicine in association with industry-university cooperation: Development of industry-university cooperation in the field of advanced medicine and biotechnology: Tanne K.: New Medical, 35, 153-157, 2008.
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- 6: The function of periodontal tissue regeneration by PDL cells. -The significance of PDL cells and the role of dentists-: Kaku M., Kawata T., Motokawa M., Koseki H., Tohma Y., Fujita T., Ohtani J., Tsuka N., Niki Y., Iyama H., Kohno S., Koumoto Y., Tanne K.: Dental Diamond, 33, 61-67, 2008.
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- 8: A new oral appliance for obstructive sleep apnea patients- What's the next? A message from Hiroshima -: Ueda H., Watanabe G., Horihata A., Ueno M., Inao T., Tanne K.: Journal of Hiroshima University Dental Society, 35, 9-12, 2008.
- 9: Food education in the elementary school - Association of the occlusal changes and eating habit for children in the elementary school: Tabe H., Tanaka E., Ueda H., Koh M., Watanabe G., Horihata A., Aizawa M., Ohmatsu Y., Takemoto H., Tanne K.: Proceeding of coacting research institution of Hiroshima University faculty and school, 36, 271-274, 2008.

C) Books

- 1: Characteristics of orthodontic materials: Tanne K.: Orthodontics for Dental Students: Sohma K *et al.*,(ed) The fifth edition, Ishiyaku(Tokyo), 193-196, 2008.
- 2: Orthodontic treatment of temporomandibular disorders: Tanne K.: Orthodontics for Dental Students: Sohma K *et al.*,(ed) The fifth edition, Ishiyaku(Tokyo), 326-331, 2008.

- 3: Condroid bone: Kawata *et al.*: Curent Experimental Study for Treatment of Cleft Lip and Palate: Kawai T *et al.*, (ed) The first edition, Quintessence (Tokyo), 80-86, 2008.
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D) Other publications

E) Presentation at Scientific Meeting

- 1: Notch1 Signaling During Osteogenic Differentiation of Mesenchymal Stem Cells.: Huang Y.C., Tanimoto K., Tanne Y., Lin Y.Y., Kamiya T., Kunimatsu R., Michida M., Nishio C., Tanaka N., Tanne K.: 86th Genereal Session and Exhibition of the IADR (Toronto, Canada), 2008.
- 2: PGE2 production in cementoblasts and PDL cells by ultrasound stimulation.: Rego E.B., Tanaka E., Inubushi T., Miyauchi M., Takata T., Ohta A., Okada H., Tanne K.: 86th Genereal Session and Exhibition of the International Association for Dental Research (Toronto, Canada), 2008.
- 3: Amelogenesis Imperfecta Is Related to Decreased Amelogenin-MMP20 Interactions: Li W., Tanimoto K., Zhu L., Le T.Q., Habelitz S., Denbesten P.: 86th Genereal Session and Exhibition of the International Association for Dental Research (Toronto, Canada), 2008.
- 4: Comparison of Response to Mechanical Loading between Two Articular cartilages. Nishio C., Ueki M., Tanaka N., Tanimoto K., Tanaka E, Lin Y.Y., Huang Y.C., Mendes A.D.M., Quintao C.C.A., Tanne K. : 86th Genereal Session and Exhibition of the International Association for Dental Research (Toronto, Canada), 2008.
- 5: Overeruption of unopposed periodontally affected rat molars.: Fujita T., Montet X., Tanne K., Kiliaridis S.: 84th Congress of the European Orthodontic Society (Lisbon, Portugal), 2008.
- 6: Recent advances in clinical orthodontics: Evidence-based strategic therapeutic system with use of teeth cryopreservation and metallic implant as an anchorage: Tanne K.: 2008 Annual Meeting of Taiwan Orthodontic Society (Taipei, Taiwan), 2008.
- 7: Treatment of a severe open bite using mini-screw anchorage: Koseki H., Kaku M., Kawazoe Aki, Tsuka N., Sasamoto T., Motokawa M., Ohtani J., Yamamoto R., Fujita T., Kawata T., Sara A., Matsuda Y., Tanne K.: 2nd Joint Meeting of the Korean Association of Orthodontists and the Japanese Orthodontic Society (Seoul, South Korea), 2008.
- 8: Establishment of reliable implantation method of mini-screw: Investigation by animal experiment and clinical survey: Ohtani J., Hiroko Sunagawa, Marquez Hernandez R., Fujita T., Kawata T., Kaku M., Tohma Y., Motokawa M., Tsuka N., Koseki H., Matsuda Y., Hayashi H., Sano R., Tanne K.: 2nd Joint Meeting of the Korean Association of Orthodontists and the Japanese Orthodontic Society (Seoul, South Korea), 2008.
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- 10: A case of bimaxillary protrusion treated by two-jaw surgery and genioplasty: Motokawa M., Yamamoto R., Kaku M., Kawata T., Tuka N., Sasamoto T., Koseki H., Tanne K. 2nd Joint Meeting of the Korean Association of Orthodontists and the Japanese Orthodontic Society (Seoul, South Korea), 2008.
 - 11: Localization of sex hormones receptors during growth in newborn: Marquez Hernandez R., Ohtani J., Kawata T., Kaku M., Tohma Y., Motokawa M., Tsuka N., Sunagawa H., Koseki H., Tanne K.: 2nd Joint Meeting of the Korean Association of Orthodontists and the Japanese Orthodontic Society (Seoul, South Korea), 2008.
 - 12: Cryopreservation of PDL cells by use of program freezer with magnetic field for teeth banking: Kaku M., Koseki H., Kawata T., Motokawa M., Sara A., Matsuda Y., Tsuka N., Fujita T., Ohtani J., Sunagawa H., Marquez Hernandez R., Tanne K.: 2nd Joint Meeting of the Korean Association of Orthodontists and the Japanese Orthodontic Society (Seoul, South Korea), 2008.
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 - 15: A treatment case of mandibular prognathism with transplantation of the third molar: Sasamoto T., Motokawa M., Kaku M., Kawata T., Yamamoto R., Tsuka N., Koseki H., Ozaki N., Matsuda Y., Tanne K.: 2nd Joint Meeting of the Korean Association of Orthodontists and the Japanese Orthodontic Society (Seoul, South Korea), 2008.
 - 16: Application of skeletal anchorage system to the treatment of severe maxillary protrusion: Hasegawa T., Nishi-Sasaki A., Hirose N., Tanne K.: 2nd Joint Meeting of the Korean Association of Orthodontists and the Japanese Orthodontic Society (Seoul, South Korea), 2008.
 - 17: Enhancement of screw stability under varying twisting torques: Ohtani J., Sunagawa H., Ryota Sano R., Fujita T., Marquez Hernandez R., Tanne K.: 2nd Asian Micro Implant Anchorage Congress (Daegu, South Korea), 2008.
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 - 19: Trigeminal gap junctions: Potential involvement in pain induced by trigeminal nerve injury: Suekawa Y., Watanabe M., Takahashi K., Ito G., Uchida T., Tanne K.: 50th Annual Meeting of Japanese Association for Oral Biology (Tokyo), 2008.
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- 21: Induction ability of bone and suture regeneration by bone marrow-derived mesenchymal stem cells: Kaku M., Tai M., Motokawa M., Tohma Y., Ohtani J., Fujita T., Kawata T., Kato Y., Tsuji K., Sakai Y., Tanne K.: 32th Japanese Cleft Palate Association (Hiroshima), 2008.
- 22: Clinical statistical assessment of cleft lip and palate patients with aurogenesis iliac bone graft in Hiroshima University Orthodontic Clinic: Nishi M., Tohma Y., Tsutsui K., Kaku M., Kawata T., Tanaka E., Miyamoto Y., Hayashidou Y., Okada T., Tanne K.: 32nd Japanese Cleft Palate Association (Hiroshima), 2008.
- 23: A clinical study for orthodontic treatment of CLP patients in the Department of Orthodontics, Hiroshima University Hospital for latest ten years: Watanabe G., Horihata A., Ueda H., Tanne K.: 32nd Japanese Cleft Palate Association (Hiroshima), 2008.
- 24: A treatment case of cleft palate with maxillary distraction osteogenesis using a rigid external distraction (RED) system: Yoshioka M., Tanimoto K., Tanne Y., Kamiya T., Tanne K.: 32nd Japanese Cleft Palate Association (Hiroshima), 2008.
- 25: A case of unilateral cleft lip and palate patient with retro-positioned maxilla treated with maxillary distraction osteogenesis: Hirose N., Tanaka E., Hasegawa T., Kamata N., Tanne K.: 32th Japanese Cleft Palate Association (Hiroshima), 2008.
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- 29: Low-intensity ultrasound stimulation inhibits resorption of the tooth root: in vitro and in vivo study.: Inubushi T., Rego E.B., Miyauchi M., Takata T., Tanne K.: 41st Annual Meeting of Hiroshima University Dental Society (Hiroshima), 2008.
- 30: Fujita T.: 41st Annual Meeting of Hiroshima University Dental Society (Hiroshima), 2008.
- 31: The relationship between scoliosis, maxillofacial figure and temporomandibular arthrosis: Sunagawa H., Ohtani J., Fujita T., Sano R., Tanne K.: 18th The Japanese Journal of Jaw Deformities (Nagoya), 2008.
- 32: Clinical study of Two-jaw surgery for 5 years in Hiroshima University Hospital: Ito G., Koh M., Watanabe G., Nakamura S., Kawai N., Tanne K.: 18th The Japanese Journal of Jaw Deformities (Nagoya), 2008.
- 33: Survey about consciousness of respiratory disturbance and sleep disorder in elementary school children: Horihata A., Watanabe G., Ueda H.: 33rd Annual Meeting of Japanese Society of Sleep

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 - 35: Change in force distribution during oral appliance therapy assessed on study models in sleep apnea patients: Ueda H., Watanabe G., Horihata A.: 33rd Annual Meeting of Japanese Society of Sleep Research (Koriyama), 2008.
 - 36: Involvement of Smad in Runx2 suppression by hyaluronan oligosaccharides: Tanne Y., Tanimoto K., Tanaka N., Kamiya T., Tanne K.: 21st Annual Meeting of Japanese Society for Temporomandibular joint (Osaka), 2008.
 - 37: Expressions of hypoxia-inducible factor-1-target genes during chondrocyte differentiation: Shirakura M., Tanimoto K., Tanaka E., Tanaka N., Tanimoto K., Tanne Kazuo: 21st Annual Meeting of Japanese Society for Temporomandibular joint (Osaka), 2008.
 - 38: Interaction between SZP and phospholipid on the surface layer of mandibular cartilage: Kamiya T., Tanimoto K., Tanaka N., Tanne Y., Tanaka E., Tanne K.: 21st Annual Meeting of Japanese Society for Temporomandibular joint (Osaka), 2008.
 - 39: Anisotropic behavior of mandibular condylar cartilage in dynamic shear: Iwabuchi Y., Tanaka E., Kawazoe A., Kamiya T., Kawai N., Tanimoto K., Tanne K.: 21st Annual Meeting of Japanese Society for Temporomandibular joint (Osaka), 2008.
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 - 41: An orthodontic treatment case of edge-to-edge occlusion with congenital missing of the maxillary premolars subjected to autotransplantation of the mandibular premolars: Kawazoe A., Tanaka E., Kohno S., Tanne K.: 51st Annual Meeting of Chu-Shikoku Orthodontic Society (Fukuyama), 2008.
 - 42: A case of bimaxillary protrusion treated by two-jaw surgery and genioplasty: Motokawa M., Yamamoto R., Kaku M., Kawata T., Tsuka N., Sasamoto T., Koseki H., Tanne K.: 51st Annual Meeting of Chu-Shikoku Orthodontic Society (Fukuyama), 2008.
 - 43: A case of severe open bite treated with mini-screw anchorage: Kaku M. Koseki H., Kawazoe A., Tsuka N., Sasamoto T., Motokawa M., Tohma Y., Ohtani J., Fujita T., Kawata T., Tanne K.: 51st Annual Meeting of Chu-Shikoku Orthodontic Society (Fukuyama), 2008.
 - 44: Clinical survey of patients with malocclusions treated in Orthodontic Clinic, Hiroshima University Hospital for the past 40 years: Nakamura S., Kawai N., Yamano E., Inubushi T., Ueda H., Tanne K.: 51st Annual Meeting of Chu-Shikoku Orthodontic Society (Fukuyama), 2008.
 - 45: A treatment case of mandibular prognathism with transplantation of the third molar: Sasamoto T., Motokawa M., Kaku M., Kawata T., Yamamoto R., Tsuka N., Tanne K.: 51st Annual Meeting of Chu-Shikoku Orthodontic Society (Fukuyama), 2008.
 - 46: A study of prognosis for autotransplantation of cryopreserved teeth: Kaku M., Niki Y., Nakanishi M., Kawata T.: 38th Annual Meeting of the Japanese Society of Oral Implantology (Tokyo), 2008.
 - 47: A case of autotransplantation of immature root apex after cryopreservation: Niki Y., Ayumu K., Nakanishi M., Hiroshi A., Kaku M., Kawata T.: 38th Annual Meeting of the Japanese Society of Oral Implantology (Tokyo), 2008.

- 48: A case of report of occlusal reconstruction by an autotransplantation of cryopreserved tooth for a congenital missing tooth: Nakanishi M., Niki Y., Hiroshi A., Kaku M., Kawata T.: 38th Annual Meeting of the Japanese Society of Oral Implantology (Tokyo), 2008.
- 49: Bone regeneration after an autotransplantation of cryopreserved tooth: Iyama Y., Niki Y., Nakanishi M., Kaku M., Kawata T.: 38th Annual Meeting of the Japanese Society of Oral Implantology (Tokyo), 2008.
- 50: Effect of ultrasound on experimentally-induced root resorption by excessive force: Inubushi T., Rego E. B., Tanaka E., Yamano E., Kawazoe A., Miyauchi M., Takata T., Tanne K.: 67th Annual Meeting of the Japanese Orthodontic Society (Chiba), 2008.
- 51: The nature of 24-hour jaw-muscle activity in rats fed a fine-grained diet: Sano R., Kawai N., Nakamura S., Ueda H., Tanaka E., Tanne K.: 67th Annual Meeting of the Japanese Orthodontic Society (Chiba), 2008.
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- 55: Establish safety and reliable implantation method of mini-screw as an orthodontic anchorage : Investigation by animal experiment and clinical survey: Ohtani J., Sunagawa H., Fujita T., Kawata T., Kaku M., Tohma Y., Motokawa M., Tsuka N., Marquez R.A., Koseki H., Sano R., Tanne K.: 67th Annual Meeting of the Japanese Orthodontic Society (Chiba), 2008.
- 56: Bone regeneration of cleft palate by mesenchymal stem cells derived from bone marrow: Yoshioka M., Tanimoto K., Tanaka N., Kamiya T., Okuma S., Kunimatsu R., Sugiyama M., Kato Y., Tanne K.: 67th Annual Meeting of the Japanese Orthodontic Society (Chiba), 2008.
- 57: Effects of recombinant human amelogenin on the metabolism of cementoblast: Kunimatsu R., Tanimoto K., Tanaka N., Tanne Y., Kamiya T., Ohkuma S., Huang Yu-Ching, Yoshioka M., Tanne K.: 67th Annual Meeting of the Japanese Orthodontic Society (Chiba), 2008.
- 58: Effects of FKO used for adolescents on pharyngeal airway morphology: Horihata A., Watanabe G., Ueda H., Tanne K.: 67th Annual Meeting of the Japanese Orthodontic Society (Chiba), 2008.
- 59: Circadian expression profiles of nuclear receptors including thyroid hormone receptor in rat cartilage: Ozaki N., Noshiro M., Tanimoto K., Tanne K., Kato Y.: 67th Annual Meeting of the Japanese Orthodontic Society (Chiba), 2008.
- 60: Stability of self-drilling screw under various conditions examined by histomorphometric study: Sunagawa H., Ohtani J., Marquez R.A., Fujita T., Kawata T., Kaku M., Tohma Y., Motokawa M.,

- Tsuka N., Koseki H., Tanne K.: 67th Annual Meeting of the Japanese Orthodontic Society (Chiba), 2008.
- 61: Oral administration of liposomal lactoferrin inhibits inflammation and bone resorption in rat LPS-induced periodontitis: Kawazoe A., Yamano E., Miyauchi M., Ishikado A., Makino T., Tanne K., Takata T.: 47th Scientific Meeting of Hiroshima Prefecture Dental Association, 92th Scientific Meeting of Hiroshima University Dental Society, 3rd Scientific Meeting of Nippon Academy of Dental Technology Chugoku and Shikoku branch (Hiroshima), 2008.
- 62: Aiming to make new snack for improvement of bone volume loss: Ohtani J., Ishikawa I., Tanne K.: 47th Scientific Meeting of Hiroshima Prefecture Dental Association, 92nd Scientific Meeting of Hiroshima University Dental Society, 3rd Scientific Meeting of Nippon Academy of Dental Technology Chugoku and Shikoku branch (Hiroshima), 2008.
- 63: Combined two-jaw surgical treatment and autotransplantation of a premolar in mandibular prognathic patient with severe crowding: Michida M., Tanaka N., Tanimoto K., Tanne K.: 47th Scientific Meeting of Hiroshima Prefecture Dental Association, 92nd Scientific Meeting of Hiroshima University Dental Society, 3rd Scientific Meeting of Nippon Academy of Dental Technology Chugoku and Shikoku branch (Hiroshima), 2008.
- 64: Expressions of hypoxia-responsible genes in chondrocyte: Shirakura M., Tanimoto K., Hiyama K., Miyauchi M., Takada T., Tanaka E., Tanne K.: The 31st Biochemistry and molecular Biology(Koube), 2008.

F) Academic society symposium and special lecture

- 1: A significant role of orthodontic tooth alignment with tooth transplantation in the treatment of tooth defect: Tanne K.: The 2nd Joint Meeting of the Korean Association of Orthodontists and the Japanese Orthodontic Society (Seoul, South Korea), 2008.
- 2: Availability of micro-implant anchorage in clinical orthodontics: relevant factors key to higher success rate in implantation and the subsequent better treatment outcomes: Tanne K.: The 2nd Asian Micro Implant Anchorage Congress (Daegu, South Korea), 2008.
- 3: Current status of tooth transplantation and the future development: availability of a teeth bank: Tanne K.: The 50th Japanese association for oral biology, public program, (Tokyo), 2008.
- 4: Biting or chewing is to train the brain everyday: To take a good care of teeth and bite well with the teeth would lead to the prevention of dementia: Tanne K.: Hiroshima prefecture dental association, The 100th anniversary memorial lecture, (Hiroshima), 2008.
- 5: To learn from the patients introduced or transferred to Hiroshima University Hospital: Tanne K.: Hiroshima association of orthodontics academic lecture, (Hiroshima), 2008.
- 6: Communication between oral cavity and general body and the professional approach: To take a good care of teeth and bite well with the teeth would lead to brain activation: Tanne K.: H20 Hiroshima University faculty of dentistry open lecture for high school student, (Hiroshima), 2008.

- 7: An active and healthy life by maintaining oral health, Reconsider an importance of dental medicine on general health: Bite well by your own teeth and train the brain: Tanne K.: Hirshoshima University faculty of dentistry open lecture, (Matsuyama), 2008.
- 8: Application of mesenchymal stem cells to maxillary bone regeneration: Tanimoto K.: The 63rd Japanese Society for the Research of Stem Cells, (Hiroshima), 2008.
- 9: Development of the research project “Application of low-intensity pulsed ultrasound to the treatment of temporomandibular disorders”; Tanimoto K.: 1st meeting of Association of Industry-Academia- Government collaboration for creation of new industry (Hiroshima), 2008.
- 10: “Application of low-intensity pulsed ultrasound to the treatment of temporomandibular disorders”: Results of basic research and trial to clinical application: Tanimoto K.:2nd meeting of Association of Industry-Academia-Government collaboration for creation of new industry (Hiroshima), 2008.
- 11: Application of mesenchymal stem cells to maxillary bone regeneration in patients with cleft lip and palate: Tanimoto K.: 4th meeting of collaboration research for “QOL” from dental field; category of “bioengineering” (Hiroshima) 2008.
- 12: A role of the dental hygienist for obstructive sleep apnea patients : The dental hygienist study club in Hiroshima University Hospital: Ueda H.: The 2nd workshop of dental hygienist (Hiroshima), 2008.

(4) Scientific research grant -in-aid

- 1 : Research Project: Tanne K., Association of nose obstruction and breathing mode with lateral soft tissue profile in children. 64,000 yen
- 2 : Grant-in-Aid for Scientific Research: Tanne K., Biological responses of mandibular cartilage layers to external stimuli and teh association with progressive condylar resorption. No.20390523. 7,540,000 yen
- 3 : Grant-in-Aid for Scientific Research: Tanimoto K., Clarification of the onset mechanism of amelogenesis imperfecta (AI) using an enamel biomineralization model. No.20390522. 2,600,000 yen
- 4 : Grant-in-Aid for Scientific Research: Ueda H., Clinical application of a new oral appliance aiming less side effects in the dentition for obstructive sleep apnea patients. No.20592403. 3200000 yen
- 5 : Grant-in-Aid for Scientific Research: Tanimoto K., Regeneration of bone and cartilage by use of mesenchymal stem cells, and its application to the treatment of patients with cleft palate. No.19659540. 1,900,000 yen
- 6 : Grant-in-Aid for Scientific Research: Fujita T., Effects of sex hormone on TMD. No.20791577. 1,950,000 yen
- 7 : Grant-in-Aid for Scientific Research: Tanaka N., Elucidation of the aging mechanism and the medical treatment for anti-aging in gingival fibroblast. No.20791578. 2,500,000 yen
- 8 : Grant-in-Aid for Scientific Research: Motokawa M., Analysis of function of VEGF receptor and investigation of inhibitional effects of VEGF receptor antibody to bone resorption. No.

20791576. 1,600,000 yen

- 9 : Grant-in-Aid for Scientific Research: Kaku M., Analysis of VEGF receptor function for osteoblast differentiation. No.19791580. 1,900,000 yen
- 10 : Grant-in-Aid for Scientific Research: Ohtani J., Effects of sex hormone and growth factors on the craniofacial skeletal development. No.19890139. 1,755,000 yen
- 11 : Grant-in-Aid for Scientific Research: Kawai N., Influence of food consistency on the maxillary bone and masticatory muscle development. No.19890138. 1,729,000 yen
- 12 : Grant-in-Aid for Clinical Research: Tanne K., Application of low-intensity ultrasound for promoting the healing of bone and periodontal tissues in the craniofacial area. 500,000 yen
- 13 : Industry-academia collaboration research:Tanimoto K., Application of low-intensity pulsed ultrasound to the treatment of temporomandibular disorders. 1,000,000 yen
- 14 : Regional innovation create total assistant project : Tanaka E., Application of low-intensity pulsed ultrasound to the treatment of temporomandibular disorders.

(5) Commendation

- 1: Kaku M.: Cryopreservation of PDL cells by use of program freezer with magnetic field for teeth banking: Poster award: 2nd Joint Meeting of the Korean Association of Orthodontists and the Japanese Orthodontic Society (Seoul, South Korea), 2008.
- 2: Watanabe G.: Influence of oral appliance for the treatment of obstructive sleep apnea on occlusal function: Poster award: 2nd Joint Meeting of the Korean Association of Orthodontists and the Japanese Orthodontic Society (Seoul, South Korea), 2008.
- 3: Kunimatsu R.: Modulation of the metabolism of periodontal ligament and gingival fibroblasts by amelogenin: Poster award: 2nd Joint Meeting of the Korean Association of Orthodontists and the Japanese Orthodontic Society (Seoul, South Korea), 2008.
- 4: Tanne K.: H20 Prize giving of Hiroshima University Presidents, 2008
- 5: Inubushi T.: Low-intensity ultrasound stimulation inhibits resorption of the tooth root.: in vitro and in vivo study: 41st Annual Meeting of Hiroshima University Dental Society (Hiroshima), 2008
- 6: Inubushi T.: Effect of ultrasound on experimentally-induced root resorption by excessive force: Presentation award (oral): 67th Annual Meeting of the Japanese Orthodontic Society (Chiba), 2008.
- 7: Yoshioka M.: Bone regeneration of cleft palate by mesenchymal stem cells derived from bone marrow: Poster award: 67th Annual Meeting of the Japanese Orthodontic Society (Chiba), 2008.
- 8: Kamiya T: Hiroshima University excellent student scholar ship, 2008.
- 9: Sano R: Hiroshima University excellent student scholar ship, 2008.

(6) Patents

Programs for Applied Biomedicine, Division of Cervico-Gnathostomatology
(Department of Pediatric Dentistry)
Pediatric Dentistry

(1) Staffs and Students

Professor	: Katsuyuki Kozai
Associate Professor	: Junji Suzuki
Research Associate	: Yasutaka Kaihara, Fumiko Hayashi, Chieko Mitsuata, Ryujiro Mizuno(~July) Goh Yoshimura, Noriko Kadomoto(April~), Meiko Kuramoto(August~),
Physician	: Noriko Kadomoto(~March), Meiko Kuramoto(April~June) Kozue Miura, Mihaya Ariki, Satoko Otani, Nami Miyake
Intern	: Yukari Ohara(~March)
Graduate Student	: Meiko Kuramoto(~March), Aya Tsuboi, Yukari Ohara(April~),
Research Student	: Kaori Saiga, Ryoko Hirata, Ayako Banshoudani, Mie Hirakawa
Registered Intern	: Mami Yamashiro

(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 : Investigation on eating habits of elementary school children.: Hayashi F., Kaihara Y., Aizawa M., Omatsu Y., Kozai K.: The annals of educational research 279-286, Japanese, 2008.
- 2 : Status of Dental Caries in Hospitalized Children: Suzuki J., Yoshimura G., Ohtani S., Ariki M., Miura K., Kadomoto N, Kuramoto M., Kozai K.: Journal of the Japanese Society for Disability and Oral Health 29(2), 187-191, Japanese, 2008.
- 3 : Study of the Dental plaque in children mouth which take on yellow-brown color : Yoshimura G,

Suzuki J., Nakaoka M, Tuboi A., Otani S., Ohara Y., Kozai K.: Jpn J Ped Dent 46(4), 415-422, Japanese, 2008.

- 4 : The investigation on oral condition of 1-year-old infants and the contents of dental consultation with their parents at the time of oral examination. : Kaihara Y., Noriko K., Banshodani A., Mitsuhashi C., Saiga K., Suzuki J., Kozai K.: Jpn J Ped Dent 46(4), 455-462, Japanese, 2008.
- 5 : Remarkable factors related to preventing relapse of deciduous anterior crossbite.: Kaihara Y., Hayashi F., Miura K., Kozai K: Ped Dent J, 18(2), 116-123, 2008.
- 6 : Current State of Education of Pediatric Dentistry in Dental Schools in Japan. : Education problem research committee, the Japanese Society of Pediatric Dentistry, Kozai K., Suzuki J., Uchikawa, Y., Kimoto S., Tamura Y., Nakajima I., Ono T., Arita K., Shintani S., Fukumoto S., Kaihara Y., Hayashi F., Tsuchiya T.: Jpn J Ped Dent 46(5), 517-523, Japanese, 2008.
- 7 : Simultaneous interrelationship between the oral health behavior and oral health status of mothers and their children : Okada M., Kawamura M., Hayashi Y., Takase N., Kozai K. Journal of Oral Science, 50(4), 447-452, 2008.

B) Review

C) Publications

- 1 : Pediatric Dentistry Glossary 2008: Katsuyuki Kozai, Editors, The Japanese Society of Pediatric Dentistry : Ishiyaku Publisher, Inc., Japanese, 2008.
- 2 : Cariology – Programs of prevention and recovery at chair-side -, Kozai K., Editors; Tagami J., et. al. 28-45, Magasue-shoten., Japanese, 2008.
- 3 : Saliva and Oral Health, 3rd edition, Kozai K., Mitsuhashi C.: Editors; M. Edgar, C. Dawes, D.O'Mullane. Supervisor of translation; Shigeru Watanabe, Ishiyaku Publisher, Inc., 87-101, English - Japanese, 2008.

D) Other Publications

- 1 : Aiming at the overall development of teeth and oral health: The meeting of the garden, the kindergarten section, Kozai K., Journal of the Japanese Association of School Dentists, No.99 , p40, Japanese, 2008.
- 2 : Guidance to support young children who are anxious about how to eat. -Proposal from Dentistry- (pamphlet), Kozai K., Working group conference committee of regional dental health medical treatment promotion), Hiroshima Prefecture Dental Hygiene Liaison Council, Japanese, 2008.
- 3 : Emergency treatment and prevention to injury of teeth and mouths. -Do to help healthy development-, Kozai K. (advisory committee of oral injury, promotion project of 8020 movements at 2008) and Hiroshima Prefecture Dental Hygiene Liaison Council, Japanese, 2008.
- 4 : Educational Guidance for Dental Medicine(2007 revision), Kozai K. (Committee of Experts,

section of clinical dentistry, and field of Pediatric Dentistry), and edit: The Council of the President of Dental University and Dean of School of Dentistry, Ishiyaku Publisher Inc, 161-166, Japanese, 2008.

E) Presentation at Scientific Meeting

- 1 : The oral care system of young patients after chemotherapy and radiotherapy against malignant tumor: Tsuboi A., Suzuki J., Yoshimura G., Nakaoka M., Miura K., Kuramoto M., Mitsuhata C., Kozai K.: 15th General Session and Exhibition of Japanese Society of Dental Welfare (Hiroshima), 2008.
- 2 : Investigation on eating habits of elementary school children.: Hayashi F., Kaihara Y., Aizawa M., Omatsu Y., Kozai K.: The 46th congress of Japanese Society of Pediatric Dentistry (Saitama), 2008.
- 3 : A pilot study for investigation on eating habits of children.: Kaihara Y., Hayashi F., Kadomoto M., Banshodani A., Suzuki J., Kozai K.: The 46th congress of Japanese Society of Pediatric Dentistry (Saitama), 2008.
- 4 : Oral condition of participants in young type 1 diabetic camp for young patients :longitonal changes for three years. : Arika M., Hayashi F., Nakaoka M., Miura K., Tsuboi A., Kadomoto N., Suzuki J., Kozai K.: The 46th congress of Japanese Society of Pediatric Dentistry (Saitama), 2008 .
- 5 : The effectiveness of using BANA on pediatric dental patients.: Nakaoaka M., Mitsuhata C., Hayashi F., Suzuki J., Kozai K.: The 46th congress of Japanese Society of Pediatric Dentistry (Saitama), 2008 .
- 6 : The study of saliva and oral mucosa in young patients after hematopoietic stem cell transplantation: Tsuboi A., Suzuki J., Yoshimura G., Hayashi H., Nakaoka M., Kadomoto N., Kuramoto M., Miura K., Ootani S., Kozai K.: The 46th congress of Japanese Society of Pediatric Dentistry (Saitama), 2008.
- 7 : Case report of intensive dental treatment for severe physically and intellectually disabled patients with von willebrand disease under general anesthesia: Kuramoto M., Kadomoto N., Mizuno R., Suzuki J., Takarada T., Kozai K., The 46th congress of Japanese Society of Pediatric Dentistry (Saitama), 2008.
- 8 : A five-year survey on oral findings of inpatients at a University Hospital. : Otani S., Yoshimura G., Tsuboi A., Kaihara Y., Mizuno R., Mitsuhata C., Arika M., Miyake N., Suzuki J., Kozai K., The 46th congress of Japanese Society of Pediatric Dentistry (Saitama), 2008.
- 9 : PCR Assay for Quantitative Detection of Porphyromonas gingivalis in Children.: Hayashi F., Okada M., Suzuki J., Kozai K.: 86th General Session and Exhibition of the International Association for Dental Research (Toronto) , 2008.
- 10 : Novel role of lipopolysaccharide derived from Aggregatibacter actinomycetemcomitans in periodontitis: Kuramoto M, Suzuki J, Kozai K : The 86th General Session& Exhibition of the

IADR(Toronto), 2008.

- 11 : The effectiveness of salivary chromogranin A as children's stress index: Mitsuhashi C., Suzuki J., Kozai K.: The 23rd Annual meeting of the Japanese Society of Psychosomatic Dentistry (Tokyo), 2008.
- 12 : A case report that uses picture card that a child patient with autism oneself made for odontotherapy : 25th General Session and Exhibition of Japanese society for disability and oral health (Tokyo), 2008.
- 13 : A case of intrusion of primary tooth that caused lip dysraphicus and disturbance in eruption of the successional permanent teeth: Miura K., Kaihara Y., Suzuki J., Kozai K. : The 8th Annual Meeting of Japan Association of Denal Traumatology(Okinawa), 2008.
- 14 : A case report of denture guidance toward molar tooth using by simple and easy system. : Yoshimura G, Kaihara Y, Hayashi F, Kozai K. : The 27h congress of Japanese Society of Pediatric Dentistry Chushikoku Branch (Tokushima), 2008.
- 15 : A study of Kiso-Wet as a saliva test for children: Otani S., Tsuboi A., Kadomoto M., Miura K., Ohara Y., Nakaoka M., Suzuki J., Kozai K.: The 27h congress of Japanese Society Of Pediatric Dentistry Chushikoku Branch (Tokushima), 2008.
- 16 : The research of extraordinary tooth numbers of patients at a University Hospital.: Ohara Y., Mitsuhashi C., Arika M., Hirata R., Otani S., Miyake N., Suzuki J., Kozai K. :The 27h congress of Japanese Society Of Pediatric Dentistry Chushikoku Branch (Tokushima), 2008.

F) Special lectures in academic meetings

- 1 : Countermeasures of periodontal diseases aimed by pediatric dental specialist. Kozai K.: 2008 Seminar for pediatric dental specialist in JAPD, Kojin-Kaikan, Hiroshima University, 2008.
- 2 : Opinions offered concerning nutrition education from Pediatric Dentistry.: Kozai K.: Meeting of the Society of Hiroshima Clinical Pediatric Dentistry, Kokuho-Kaikan for dentist of Hiroshima prefecture, 2008.
- 3 : Mutans streptococcal transmission and caries prevention.: Kozai K.: Special Lecture at Maraya University, Kuala Lumpur, Malaysia, 2008..
- 4 : Mutans streptococcal transmission and caries prevention.: Kozai K.: Airlangga University, Surabaya, Indonesia, 2008.
- 5 : Treatment and Prevention of Dental Trauma in children; To foster a healthy growth. Kozai K.: Meeting of Dental Traum, Promotional Council of 8020 appeal in Hiroshima Prefecture, The Hall for Dentist in Hiroshima Prefecture, August. 20 2008 and The East Citizen Center in Fukuyama City, 2008.
- 6 : Mechanism and Prevention of Dental Caries. Open seminar for senior high-school students in Hiroshima Prefecture. The 4th lecture room in Faculty of Dentistry, Hiroshima University, 2008.

- 7 : Behavior Management of Uncooperative young patients: Suzuki J.: Seminar in Department of Oral and Maxillofacial Radiology, Hiroshima University, 2008.
- 8 : Contribution to prevention of child abuse by Dental Service.: Kozai K.: Symposium in Dental Section., The 8th JaSPCAN in Hiroshima 2008, The 6th building in Hiroshima Syu-Do University, 2008.
- 9 : The Future of Tooth and Oral Conditions in Junior High-School Children., What should we do to foster a life power to them?: Kozai K.: The basic lecture in a junior high-school section, The 72nd meeting of Japanese school dental health research, Pacifico Yokohama, 2008.

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

- 1 : Grant-in-Aid for Scientific Research (B): Kozai K.: Resolution of mechanism of transmission of periodontitis related bacterial strains in children and development of prevention from adult periodontitis. ¥2,200,000
- 2 : Grant-in-aid scientific research (C) : Suzuki J. : Unknown virulence factors produced by periodontal pathogen. (No.18592236). ¥600,000
- 3 : Grant-in-Aid for Scientific Research(C) : Mitsuhashi C. : Effects of endocrine disorders on developing dopaminergic system in Brain. (No.19592354). ¥1,500,000
- 4 : Grant-in-Aid for Scientific Research from the Ministry of Education, Science, Sports and Culture of Japan (B) : Goh Yoshimura : Probability of the Order-made treatment, analyzed of Biofilm of children's mouths. (No.19791581). ¥1000,000
- 5 : Fostering Project of Junior Researcher, Junior Researcher of Kasumi campus/ Experimental Research : Yoshimura G: Research and Development of the simple evaluation system of microorganisms of oral cavity and the effective preventive method. ¥200,000
- 6 : Grant-in-Aid of Futoku-kai: 2008: Kadomoto N.: ¥300,000 yen
- 7 : Hiroshima University Educational research: Investigation on eating habits of elementary school children.:Hayashi F.: ¥96,000 yen

(5) Academic Awards, etc.

- 1 : Banshoudani A: 2008 JPSD Award for the best paper published in the Japanese Journal of Pediatric Dentistry.

(6) Patents

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

(1) Staffs and Students

Professor : Masaru Sugiyama

Assistant Professor : Maki Noso

(2) Main Research Activities

- 1: Study on the association of oral microorganisms with development of oral lesions and their characteristics.
- 2: Study on what oral health at school should be like

(3) Research Achievements

A) Original Papers (including Case Reports)

- 1: Loss of 14-3-3 sigma protein expression and presence of human papillomavirus types 16 E6 in oral squamous cell carcinoma: Bhawal U K, Sugiyama M, Nomura Y, Kuniyasu H, Tsukinoki K : Arch Otolaryngol Head Neck Surg 134, 1055-1059, 2008.
- 2: A study on the health-promotion effects of oral relaxation –Effects on the secretion rates of saliva and sIgA–: Matsumoto A, Hara K, Amano H, Noso M, Sugiyama M, Takemoto T: Japanese Journal of Psychosomatic Dentistry 23, 17-23, 2008.
- 3: Application of three-dimensional model for oral and maxillofacial surgery: Ohta K, Minami M, Takechi M, Taki M, Miyauchi M, Higashikawa K, Ninomiya Y, Shimasue H, Ono S, Shigeishi H, Nishi H, Makihira S, Tamamoto M, Shimoe S, Noso M, Murayama T, Satosa T, Nikawa H, Kamata N: The Journal of Hiroshima University Dental Society 40, 55-61, 2008.
- 4: An Implant treatment case of using the novel interconnective porous hydroxyapatite ceramics (NEOBONE): Miyauchi M, Sugiyama M, Nishimura M, Shimasue H, Shigeishi H, Hiraoka M, Takechi M, Okamoto T, Akagawa Y, Kamata N: The Journal of Hiroshima University Dental Society 40,62-65, 2008.

B) Review

C) Publications

D) Other Publications

- 1: Application of CAD/CAM and Rapid Prototyping in Dentistry : Murayama T, Eguchi T, Tamamoto

M, Shimoe S, Makihira S, Satoda T, Nikawa H, T, Niitani Y, Noso M, Matsumoto A, Hara K, Takemoto T, Sugiyama M, Amano H : 2007 Activity Report of JSPE Technical Committee for Integrated Manufacturing Systems, 22-31, 2008.

E) Presentation at Scientific Meeting

- 1: Association of Cdc25A over-expression with the presence of human papillomavirus (HPV)-16 DNA in oral squamous cell carcinoma (OSCC): Sugiyama M, Miyauchi M, Higashikawa K, Shigeishi H, Mitani Y, Kamata N : The 62nd annual meeting of the Japanese Syomatological Society, Fukuoka, 2008.
- 2: Education of the subjects related with oral surgery in School of Oral Health Sciences, Hiroshima University Faculty of Dentistry: Sugiyama M, Koizumi K, Ohta K, Okamoto T, Kamata N: The 37th annual meeting of the Chu-Shikoku Branch of the Japanese Society of Oral Surgeons, Kurashiki, 2008.
- 3: Alteration of salivary immunoglobulin A secretion by oral relaxation training: Matsumoto A, Niitani Y, Hara K, Sugiyama M, Amano H, Takemoto T: The 19th annual meeting of the Kinki-Chuugoku-Shikoku Branch of the Japanese Society for Dental Health, Tokushima, 2008.
- 4: Educational program to raise infection control dental hygienists in dental practice. – Curriculum in Program for Oral Health Science in School of Oral Health Science, Hiroshima University Faculty of Dentistry: Takemoto T, Sugiyama M: The 17th annual meeting of the Japanese Association of Oral Infectious Diseases, Kobe, 2008.
- 5: Application of the contra-angle screwdriver system for screw and plate fixation in sagittal splitting ramus osteotomy: Ohta K, Ono S, Taki M, Mizuta K, Ninomiya Y, Tohmori H, Miyauchi M, Takechi M, Tsuka N, Tanaka E, Tanne K, Sugiyama M, Kamata N: The 18th annual meeting of the Japanese Society for Jaw Deformities, Nagoya, 2008.
- 6: Reduction of caries risk by probiotics : Nikawa H, Makihira S, Mimura S, Hiyama A, Noso M : The 22nd Annual Meeting of Bacterial Adherence & Biofilm, Awaji, 2008.
- 7: Curriculum Design of "Clinical Dental Education" for Undergraduate Students in Oral Health Science Course. : Takemoto T, Ogawa T, Kageyama I, Taguti N, Niitani Y, Matsumoto A, Hara K, Noso M, Sugiyama M, Amano H, Satoda T : The 27th Annual Meeting of Japanese Dental Education Association, Tokyo, 2008.
- 8: Training of the research ability through an extracurricular activity (Biotechnology Club: Bitec) in Hiroshima University Faculty of Dentistry : Mine Y, Nikawa H, Makihira S, Shimoe S, Tamamoto M, Satoda T, Murayama T, Amano H, Takemoto T, Sugiyama M, Hara K, Matsumoto A, Noso M, Niitani Y : The 27th Annual Meeting of Japanese Dental Education Association, Tokyo, 2008.
- 9: What we studied in the practicum of rehabilitation making by Kazuki Reiko : Hiyama A, Nikawa H, Makihira S, Shimoe S, Tamamoto M, Satoda T, Murayama T, Sugiyama M, Hara K, Noso M : The 27th Annual Meeting of Japanese Dental Education Association, Tokyo, 2008.
- 10: Multi-media Assistance on Studing Patient Reception and Medical Interview -The Efficacy of Self-checking on Roll-playing Practice by Movie. : Takemoto T, Niitani Y, Matsumoto A, Hara K,

Noso M, Sugiyama M, Amano H, Satoda T, Shimoe S, Tamamoto M, Murayama T, Nikawa H, :
The 27th Annual Meeting of Japanese Dental Education Association, Tokyo, 2008.

- 11: Consideration for the method of measuring effectiveness of massage of salivary glands for patients with xerostomia : Hara K, Niitani Y, Noso M, Matsumoto A, Makihira S, Nikawa H, Takemoto T, Sugiyama M, Amano H, Kitagawa M, Ogawa I, Kurihara H : The 1st Annual Meeting of Japanese Society for Evidence and the Dental Professional, Tokyo, 2008.

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

(5) Academic Awards, etc.

(6) Patents

School of Oral Health Science, Division of Oral Health Science

(Department of Team Care for Oral Health)

(1) Staff and Students

Professor : AMANO Hideaki

Assistant Professor : HARA Kumiko

(2) Specialized Fields

1 : Clinical research of the growth and development of dento-maxillofacial complex in children

2 : Study on the Dentistry for children and disabilities

3 : Study on the activation of the function of salivary glands

4 : Study on the methods for Oral health care

5 : Study on the education program for Oral health

6 : Study on education program for graduate dental hygienists

(3) Achievements

A) Original Papers (including Case Reports)

1: Analysis of the relationship between fun of feeding behavior and salivary property for better feeding instruction : Shiba Y., Iwasa K., Hara K., Tarumoto K., Yasuda R.: : Proceedings of Hiroshima University and Attached Schools for Scientific Research 36,275-278, 2008

2: A study for effect of gland massage on salivary secretion : Hara K.: J. of Hiroshima University Dental Society, 40(1),10-29, 2008..

B) Reviews

1 : Application of CAD/CAM and Rapid Prototyping in Dentistry : Murayama T, Eguchi T, Tamamoto M, Shimoe S, Makihiro S, Satoda T, Nikawa H, T, Niitani Y, Noso M, Matsumoto A, Hara K, Takemoto T, Sugiyama M, Amano H : 2007 Activity Report of JSPE Technical Committee for Integrated Manufacturing Systems, 22-31, 2008.

C) Books

1 : Basic Knowledges for Oral Health Care - Standards for 4th and 5th Certified Professional - : Hara K: Nagasue Bookstore. (Tokyo) 2008. (in Japanese)

D) Other Publications

- 1: Actual condition of Clinical Training at the "Control room for Oral Health" : Hara K. :Dental Hygiene 28(6), 568-569 2008.

E) Presentations

- 1: An Under Graduate Education to grow up good educator - Curriculum Design of "Clinical Dental Education" for Students in Oral Health Science Cours- : Takemoto T., Ogawa T., Taguchi N., Niitani Y.,Matsumoto A., Hara K.,Nosou M., Sugiyama M., Amano H., Taguchi k., Shimoe S.,Makihira S., Tamamoto T., Murayama T.,Satoda T.Nikawa H.: 41th annual Meeting of the Hiroshima University Dental Society (Hiroshima) , 2008.
- 2: Video Movie Assistance on Studing Patient Reception and Medical Interview -The Efficacy of Self- by Movie.:Takemoto T., Niitani Y., Matsumoto A., Hara K*, Nosou M., SugiyamaM., Amano H.,Shimoe S., Tamamoto M., Murayama T., Nikawa H.: 41th annual Meeting of the Hiroshima University Dental Society (Hiroshima) , 2008.
- 3: Consideration for the method of objective assessment of the maintenance of better oral functions for minimizing care needs :Aimi R., Miyagwa K., Niitani Y., Matsumoto A., Hara K., Maruyama M., Okada G., Kawamura T., Yoshida M., Tsuga K., Amano H.: 19th Annual Meeting of Japanese Society of Gerodontology (Okayama), 2008.
- 4: A Case of improved xerostomia with continued massage of salivary glands: Hara K., Matsumoto A., Amano H.:15th Japanese Society of Dental Welfare (Hiroshima),
- 5: Alteration of salivary immunoglobulin A secretion by oral relaxation training: Matsumoto A, Niitani Y, Hara K, Sugiyama M, Amano H, Takemoto T: The19th annual meeting of the Kinki-Chuugoku-Shikoku Branch of the Japanese Society for Dental Health, Tokushima, 2008.
- 6: Multi-media Assistance on Studing Patient Reception and Medical Interview -The Efficacy of Self-checking on Roll-playing Practice by Movie. Takemoto T*, Niitani Y., Matsumoto A., Hara K., Nosou M., Sugiyama M., Amano H.,Shimoe S., Tamamoto M., Murayama T., Nikawa H.: The 27th Annual Meeting of Japanese Dental Education Association, Tokyo, 2008.
- 7: Curriculum Design of "Clinical Dental Education" for Undergraduate Students in Oral Health Science Course : Takemoto T., Ogawa T., Kageyama I., Taguchi N., Niitani Y., Matsumoto A., Hara K.,Nosou M., Sugiyama M., Amano H., Satoda T.: The 27th Annual Meeting of Japanese Dental Education Association, Tokyo, 2008.
- 8: Consideration for the method of measuring effectiveness of massage of salivary glands for patients with xerostomia : Hara K, Niitani Y, Noso M, Matsumoto A, Makihira S, Nikawa H, Takemoto T, Sugiyama M, Amano H, Kitagawa M, Ogawa I, Kurihara H : The 1st Annual Meeting of Japanese Society for Evidence and the Dental Professional, Tokyo, 2008.
- 9: Training of the research ability through an extracurricular activity (Biotechnology Club: Bitec) in Hiroshima University Faculty of Dentistry : Mine Y, Nikawa H, Makihira S, Shimoe S, Tamamoto M, Satoda T, Murayama T, Amano H, Takemoto T, Sugiyama M, Hara K,

Matsumoto A, Noso M, Niitani Y : The 27th Annual Meeting of Japanese Dental Education Association, Tokyo, 2008.

- 10: Some cases with Periodontal Treatment of the Patients with Anxious and Tense Tendency :Kondo H., Arita K., Hara K., : 51th Annual Autumn Meeting of Japanese Society Periodontology (Mie),2008.
- 11: Breakthrough of the Human Mastication and Swallowing Functions: Shiba Y.,Hirono T., Sugita M., Iwasa K., Inoue M., Maruyama T., Hara K., Nitta E. : Workshop of Mastication and Swallowing (Tokushima),2008.
- 12: A Rehabilitation Therapy for Oral Function with massage of salivary glands : Hara K., Amano H., Shiba Y., Hirono T., Sugita MIwasa K., Inoue M., Maruyama T.,: Workshop of Mastication and Swallowing (Tokushima),2008.

F) Lectures

- 1: Some Techniques for Oral Health Care : Hara K. : 16th Conference for Practical Oral Care (Hiroshima) : 2008.
- 2: Practical Oral Health Care : Hara K. : Workshop for the staff of nursing service department in Healthcare Corporation Kousei-kai Kusatsu Hospital (Hiroshima) : 2008.
- 3: Practical Oral Health Care : Hara K. : Workshop for the Dieticians of Mental Hospital in Hiroshima (Hiroshima) : 2008.
- 4: Some Techniques for Mouth Cleaning - Basic of the skills- : Hara K. : 9th Seminar for Practical Oral Care (Hiroshima) : 2008.
- 5: Some Techniques for Mouth Cleaning - Application of the skills- : Hara K. : 9th Seminar for Practical Oral Care (Hiroshima) : 2008..

G) Social Contributions

- 1: Program for kids from elementary schools, Dental Kids, "Let's Be a Dentist!": Hiroshima University Faculty of Dentistry, 2008.
- 2: Program for high school students, Dental Kids: Hiroshima University Faculty of Dentistry, 2008.

(4) Grant-in-Aid for Scientific Research

- 1 : 2008th grant-in-aid for scientific research : Hara K.: A study for effect of gland massage on salivary secretion.

(5) Awards

(6) Patents

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

(1) Staffs and Students

Professor: Toshinobu Takemoto
Associate professor: Atsue Matsumoto
Assistant professor: Yoshie Nitani

(2) Main Research Activities

- 1: Dental hygienists education
- 2: Research about halitosis
- 3: Periodontal 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: [Evaluation of usefulness of self-made Electronic Device for Gingival massage- Part 1: Effects on Changes of gingival blood flow][ja]: Matsumoto A., J Jpn Soc Dent Hyg, 3(1), 35-40, 2008.
- 2: [Evaluation of usefulness of self-made Electronic Device for Gingival massage- Part 2: Efficacy for experimental gingivitis in rats][ja]: Matsumoto A., J Jpn Soc Dent Hyg, 3(1), 41-46, 2008.
- 3: [A Study on the Health-Promotion effects of oral Relaxation -Effects on the secretion rates of saliva and sIgA-][ja]: Matsumoto A., Hara K., Amano H., Nosou M., Sugiyama M., Takemoto T, Jpn J Psychosomatic Dent, 23(1), 17-23, 2008.

B) Review

C) Publications

D) Other Publications

- 1: [Application of CAD/CAM and Rapid Prototyping in Dentistry][ja]: Murayama T, Eguchi T,

Tamamoto M, Shimoe S, Makihira S, Satoda T, Nikawa H, T, Niitani Y, Noso M, Matsumoto A, Hara K, Takemoto T, Sugiyama M, Amano H : 2007 Activity Report of JSPE Technical Committee for Integrated Manufacturing Systems, 22-31, 2008.

E) Presentation at Scientific Meeting

- 1: [Undergraduate program for patient reception using video movie- the efficacy of self checking][ja]: Takemoto T., Niitani Y., Matsumoto A., Hara K., Nosou M., Sugiyama M., Amano H., Taguchi K., Shimoe S., Makihira S., Tamamoto M., Murayama T., Satoda T., Nikawa H.: 41st annual Meeting of the Hiroshima University Dental Society (Hiroshima), 2008.
- 2: [Undergraduate program aimed to be a good teacher. -Introduction of "Clinical Dental Education Method" into the curriculum of School of Oral Health Science.][ja]: Takemoto T., Ogawa T., Taguchi N., Niitani Y., Matsumoto A., Hara K., Nosou M., Sugiyama M., Amano H., Shimoe S., Makihira S., Tamamoto M., Murayama T., Satoda T., Nikawa H. : 41st annual Meeting of the Hiroshima University Dental Society (Hiroshima) , 2008.
- 3: [Multi-media assistance on studying patient reception and medical interview -The efficacy of self-checking on roll-playing practice by movie.][ja]: Takemoto T., Niitani Y., Matsumoto A., Hara K., Nosou M., Sugiyama M., Amano H., Shimoe S., Tamamoto M., Murayama T., Nikawa H.: 27th Scientific Meeting of Japanese Association for Dental Education (Tokyo) , 2008.
- 4: [Curriculum design of "Clinical Dental Education" for undergraduate students in Oral Health Science Course.][ja]: Takemoto T., Ogawa T., Kageyama I., Taguchi N., Niitani Y., Matsumoto A., Hara K., Nosou M., Sugiyama M., Amano H., Satoda T.: 27th Scientific Meeting of Japanese Association for Dental Education (Tokyo) , 2008.
- 5: [Alteration of salivary immunoglobulin A secretion by oral relaxation training.][ja]: Matsumoto A, Niitani Y, Hara K, Sugiyama M, Amano H, Takemoto T: The19th annual meeting of the Kinki-Chuugoku-Shikoku Branch of the Japanese Society for Dental Health (Tokushima), 2008.
- 6: [Educational program to raise infection control dental hygienists in dental practice.–Curriculum in Program for Oral Health Science in School of Oral Health Science, Hiroshima University Faculty of Dentistry.][ja]: Takemoto T, Sugiyama M: The 17th annual meeting of the Japanese Association of Oral Infectious Diseases (Kobe), 2008.
- 7: [Training of the research ability through an extracurricular activity (Biotechnology Club: Bitec) in Hiroshima University Faculty of Dentistry.][ja]: Mine Y, Nikawa H, Makihira S, Shimoe S, Tamamoto M, Satoda T, Murayama T, Amano H, Takemoto T, Sugiyama M, Hara K, Matsumoto A, Noso M, Niitani Y: The 27th Annual Meeting of Japanese Dental Education Association (Tokyo), 2008.
- 8: [Consideration for the method of measuring effectiveness of massage of salivary glands for patients with xerostomia.][ja]: Hara K, Niitani Y, Noso M, Matsumoto A, Makihira S, Nikawa H, Takemoto T, Sugiyama M, Amano H, Kitagawa M, Ogawa I, Kurihara H: The 1st Annual Meeting of Japanese Society for Evidence and the Dental Professional (Tokyo), 2008.
- 9: [Research about male dental hygienists in Japan- Investigation to the dentists in Hiroshima

- Prefecture.][ja]: Imari N., Takemoto T.: 92nd Meeting of Hiroshima University Dental Society, 47th Meeting of Hiroshima Prefecture Dental Association (Hiroshima), 2008.
- 10: [Evaluation of usefulness of self-made electronic device for gingival massage on rats.][ja]: Matsumoto A., Niitani Y., Hara K., Amano H., Sugiyama M., Takemoto T.: The 3rd scientific meeting of Japan Society for Dental Hygiene (Yokohama) , 2008.
- 11: [Subjective evaluation of oral function in the prevention care service of long-term care insurance.] [ja]: Aimi R., Miyagawa K., Tamura H., Niitani Y., Matsumoto A., Hara K., Maruyama M., Okada G., Kawamura T., Hayashi R., Tsuga K., Yoshida M., Amano H., Akagawa Y.: The 19th Annual Meeting of Japanese journal of Gerodontology (Okayama), 2008.
- 12: [One case of dry mouth which improved by salivary grand-massage.][ja]: Hara K., Matsumoto A., Amano H.: The 15th annual meeting of the Japanese Society of Dental Welfare (Hiroshima), 2008
- 13: [Quantification of Rehabilitation Make Done by Reiko Kazki (Biotechnology Club: Bitec) in Hiroshima University Faculty of Dentistry.][ja]:Kihara T, Nikawa H, Makihira S, Shimoe S, Tamamoto M, Satoda T, Murayama T, Matsumoto A, Niitani Y, Kazki R: The 27th Annual Meeting of Japanese Dental Education Association (Tokyo), 2008.

F) Lectures

- 1: [Lecture about mouth, group instruction of tooth-1][ja]: Matsumoto A. : Child-care course of a community program of the nursery school, Social welfare corporation Mimyo-Fukushi-Kai (Hiroshima) : 2008.
- 2: [Lecture about mouth, group instruction of tooth-2][ja]: Matsumoto A.: Child-care course of a community program of the nursery school, Social welfare corporation Mimyo-Fukushi-Kai (Hiroshima) : 2008.
- 3: [Education for dental surgery in the Oral Health Science Course, Hiroshima University Faculty of Dentistry][ja]: Matsumoto A., Symposium for Dental Hygienists in the 53rd annual meeting of Japanese Society of Oral and Maxillofacial Surgeons (Tokushima), 2008.
- 4: [The career design of students in the Oral Health Science Course, Hiroshima University Faculty of Dentistry][ja]: Matsumoto A., Annual meeting of Hiroshima Association of Dental Hygienist Education (Hiroshima), 2008.
- 5: [Dental co-staff education in Europe][ja]: Takemoto T., Annual meeting of Hiroshima Association of Dental Hygienist Education (Hiroshima), 2008.
- 6: [Oral care for pregnant woman and new born infant][ja]: Matsumoto A, Niitani Y. : School for pregnant women in Gynecology department of Hiroshima University Hospital (Hiroshima) , 2008.

G) Social Contributions

- 1: Program for kids from elementary schools, Dental Kids, “Let’s Be a Dentist!”: Hiroshima University Faculty of Dentistry, 2008.
- 2: Program for high school students, Dental Kids: Hiroshima University Faculty of Dentistry, 2008.

- 3: Collaboration for oral functional assessment: Hara K, Matsumoto A, Niitani Y. : Care center for visitors “Kouseien” (Hiroshima) , 2008.
- 4: Project team committee for the new life-long training : Matsumoto A. Japan Dental Hygienists’ Association (Tokyo) 2008.
- 5: Member of Dental Hygienists’ Examination committee: Matsumoto A. : Foundation of Promoting Dental Care and Training, 2008.
- 6: Secretary of the regional association of Kinki , Chugoku and Shikoku area for Japanese Society for Dental Health: Matsumoto A, 2008.
- 7: Member in the committee of National University Hospital infection control association: Niitani Y., 2008
- 8: Chairperson in the 3rd Scientific Meeting of Japan Society for Dental Hygiene (Yokohama): Matsumoto A., 2008.
- 9: Member of dental hygienists authorization committee: Matsumoto A., Japan Dental Hygienists’ Association, 2008.
- 10: United conference of Kansa University of Social Welfare and Kansai Women’s College (Okayama): Matsumoto A., 2008.

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

(5) Academic Awards, etc.

(6) Patents

School of Oral Health Science, 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 Effective model for anatomy education
- 2: Morphological Research on masticatory neuronal network
- 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: Influence of Endopeduncular nucleus stimulation upon Electromiogram Activity of Masticatory Muscles : K.Tanaka, N. Anamo, T. Satoda, T. Murata, S. Kawagishi, K. Yoshino, N. Mizuno : Neuroscience 155, 969-983, 2008.
- 2: A model for functional instruction of the swallowing : T. Satoda, S. Shimoe, S.Makihira, M. Tamamoto, T. Murayama, H. Nikawa : Acta Anatomica Nipponica, 83, 51-57, 2008.

B) Review

C) Publications

- 1: The New Series of Textbooks for Dental Technologist-Dental Technology Practical Training : Kanai M, Kuwata M, Shimoe S, Maeda Y, Matsumura H, Miura H et al : ISHIYAKU PUBLISHERS, INC (Tokyo), 207, 2008.

D) Other Publications

- 1: The introduction of functional anatomical models to the teaching of biology for senior high school students(2). : Hiroshima University The annals of Educational Research 36, 405—408, 2008.

E) Presentation at Scientific Meeting

- 1: A model for functional instruction of swallowing : Satoda T, Shimoe S, Tamamoto M, Makihira S, Murayama T, Nikawa The 113th Annual Meeting of Japanese Association of Anatomists (Oita), 2008.
- 2: Functional model of the facial expression muscle around the Oral Cavity: K.Fujimoto,A.Ito, K.Kusano,Y.Araki,S.Shimoe, S.Makihira, M. Tamamoto, T. Murayama,H.Nikawa,T.Satoda , The 92th annual meeting of Hiroshima University Dental Society(Hiroshima), 2008.
- 3: Functional model of Extrinsic and intrinsic Lingual muscles : A.Ito,K.Fujimoto, K.Kusano,Y.Araki,S.Shimoe, S.Makihira, M. Tamamoto, T. Murayama,H.Nikawa,T.Satoda , The 92th annual meeting of Hiroshima University Dental Society(Hiroshima), 2008.
- 4: Functional model of the facial expression muscle around the Oral Cavity: T.Satoda, K.Fujimoto, A.Ito, K.Kusano, Y.Araki, S.Shimoe, The 63nd Annual Meeting of Japanese Association of Anatomists Cyugoku Shikoku regional meeting (Izumo), 2008.
- 5: Effectiveness of surface preparations on bonding between a zirconia ceramic material and an indirect composite : Kusano K, Shimoe S, Satoda T, Murayama T, Nikawa H, Tanoue N, Matsumura H : 4th International Congress of Dental Technology , (Osaka) , 2008.
- 6: Bonding characteristics of indirect composites to a zirconia framework material : Araki Y, Shimoe S, Satoda T, Murayama T, Nikawa H, Tanoue N, Matsumura H : 4th International Congress of Dental Technology , (Osaka) , 2008.
- 7: A new training program for anaplastologists - Practice for fabricating auricle correction prostheses - Practice for fabricating auricle correction prosthesis - : Takahashi A, Shimoe S, Morishita Y, Nagami M, Murayama T, Satoda T, Nikawa H : 4th International Congress of Dental Technology , (Osaka) , 2008.

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

(5) Academic Awards, etc.

(6) Patents

School of Oral Health Science, Division of Oral Health Engineering (Department of Biomaterial Engineering)

(1) Staffs and Students

Professor : Takeshi Murayama
Associate Professor : Mitsuhiro Tamamoto
Graduation Research Students : Kozue Miyamoto, Ai Miyoshi, Takuya Kihara, Hironori Manabe, Moe Yanagibashi, Kazuki Tatehata, Keita Yauchi, Sakie Fujita, Yuta Takumi, Daigo Tomonari, Mana Kawakami, Shougo Iwaguro, Harumi Kaneishi

(2) Main Research Activities

- 1: Application of CAD/CAM and rapid prototyping to dentistry
- 2: Concurrent engineering in dentistry
- 3: 3d-modeling and computer simulation in dentistry
- 4: Development and clinical application of maxillofacial prosthetic apparatus for treatment and protection
- 5: Study on esthetic dentistry
- 6: Study on dental education
- 7: Health monitoring system using wearable sensors involved in a denture
- 8: Analysis of dental techniques using sensors
- 9: Simulation-based analysis of work processes in dental technology
- 10: Study on sports dentistry (mouthguard)
- 11: Study on musical dentistry (adapter)

(3) Research Achievements

A) Original Papers (including Case Reports)

- 1 : BI-CRITERIA DYNAMIC JOB SHOP SCHEDULING TO MEET DUE-DATES AND MINIMIZE SETUP TIME : Toru Eguchi, Hiroaki Kawai, Takeshi Murayama, Fuminori Oba: Proceedings of 2008 ISFA (2008 International Symposium on Flexible Automation), JS010, 1-4, 2008.
- 2 : Model for the functional instruction of swallowing : Satoda T, Shimoe S, Makihira S, Tamamoto M, Murayama T, Nikawa H : Acta anatomica Nipponica, 83, 51-57, 2008.
- 3 : Application of three-dimensional model for oral and maxillofacial surgery: Kouji Ohta, Masahiko Minami, Masaaki Takechi, Masayuki Take, Miwa Mayauchi, Koichiro Higashikawa, Yoshiaki Ninomiya, Hiroshi Shimasue, Shigehiro Ono, Hideo Shigeishi, Hiromi Nishi, Seicho Makihira, Mitsuhiro Tamamoto, Saiji Shimoe, Maki Noso, Takeshi Murayama, Takahiro Satoda, Hiroki Nikawa,

Nobuyuki Kamata: The Journal of Hiroshima University Dental Society, 40, 50-61,2008

- 4 : Chewing Gum Containing Citric Acid Reduces the Burden of Periodontal Pathogens : Hiroki Nikawa, Sachiyo Igarashi, Osamu Takasu, Hideaki Tataka, Fumio Harano, Shigeo Shinohara, Seicho Makihira, Toshinobu Takemoto, Takeshi Murayama, Takahiro Satoda, Hideaki Amano, Hidemi Kurihara. : The Open Food Science Journal, 2, 29-37, 2008.

B) Review

C) Publications

- 1 :“Metal free restoration : All ceramic crown and bridge” Adhesion – I want to know here – Volume Dental technologist – (edited by Japan Society for Adhesive Dentistry) : Mitsuhiro Tamamoto, Saiji Shimoe : Oral Health Association of Japan (Tokyo, Japan) , 73-82, 2008.

D) Other Publications

- 1 : Application of CAD/CAM and Rapid Prototyping in Dentistry : Murayama T, Eguchi T, Tamamoto M, Shimoe S, Makihira S, Satoda T, Nikawa H, Niitani Y, Noso M, Matsumoto A, Hara K, Takemoto T, Sugiyama M, Amano H : 2007 Activity Report of JSPE Technical Committee for Integrated Manufacturing Systems, 22-31, 2008.
- 2 : Application of Computer-aided Manufacturing Technologies to Medicine : Murayama T : Proceedings of 6th Symposium on Biomedical Engineering Center, 11-18, 2008.
- 3 : Job shop Scheduling with Capacity Adjustment : Eguchi T, Yoda M, Murayama T, Oba F : 2007 Activity Report of JSPE Technical Committee for Integrated Manufacturing Systems, 32-37, 2008.

E) Presentation at Scientific Meeting

- 1 : Development of a system that evaluates abutment teeth for CAD/CAM : Miyamoto K, Murayama T, Tamamoto M, Shimoe S, Makihira S, Satoda T, Nikawa H : 4th International Congress of Dental Technology (30th Meeting of the Nippon Academy of Dental Technology)(Osaka), 2008.
- 2 : Evaluation of Polishing Methods for Ethylene Vinyl Acetate (EVA) Mouthguard Sheet Materials : Manabe H, Tamamoto M, Murayama T, Shimoe S, Makihira S, Satoda T, Nikawa H : 4th International Congress of Dental Technology (30th Meeting of the Nippon Academy of Dental Technology)(Osaka), 2008.
- 3 : Quantitative evaluation of rehabilitation make-up : Kihara T, Nikawa H, Makihira S, Shimoe S, Tamamoto M, Satoda T, Murayama T, Kaduki R : 4th International Congress of Dental Technology (30th Meeting of the Nippon Academy of Dental Technology)(Osaka), 2008.
- 4 : Investigation and analysis of requirements for abutment teeth and development of a system for evaluating abutment teeth : Yanagibashi M , Murayama T , Tamamoto M , Shimoe S , Makihira S , Satoda T, Nikawa H: 4th International Congress of Dental Technology (30th Meeting of the Nippon

- Academy of Dental Technology)(Osaka), 2008.
- 5 : Practice for fabricating orbital and ocular prostheses : Fujimoto K, Tamamoto M, Morishita Y, Nagami M, Murayama T, Satoda T, Nikawa H : 4th International Congress of Dental Technology (30th Meeting of the Nippon Academy of Dental Technology)(Osaka), 2008.
 - 6 : Model for the functional instruction of swallowing: Satoda T, Shimoe S, Makihira S, Tamamoto M, Murayama T, Nikawa H: 113ed Annual Meeting of Japanese Association for Anatomists (Oita), 2008.
 - 7 : Application of three-dimensional model for oral and maxillofacial surgery: Masahiko Minami, Kouji Ohta, Masaaki Takechi, Miwa Miyauchi, Koichiro Higashikawa, Hiroshi Shimasue, Shigehiro Ono, Yoshiaki Ninomiya, Hideo Shigeishi, Hiromi Nishi, Masayuki Taki, Yuko Araki, Takahiro Suto, Airi Takahashi, Kana Fujimoto, Yuichi Mine, Sumiyo Mimura, Seicho Makihira, Mitsuhiro Tamamoto, Saiji Shimoe, Takeshi Murayama, Takahiro Satoda, Hiroki Nikawa, Nobuyuki Kamata: 41st Annual Meeting of Hiroshima University Dental Society (Hiroshima), 2008.
 - 8 : Education before graduation for developing good instructors- Introduction of dental clinical pedagogy into the curriculum of School of Oral Health Science : Toshinobu Takemoto, Tetsuji Ogawa, Norihiro Taguchi, Yoshie Niitani, Atsue Matsumoto, Kumiko Hara, Maki Noso, Masaru Sugiyama, Hideki Amano, Saiji Shimoe, Seicho Makihira, Mitsuhiro Tamamoto, Takeshi Murayama, Takahiro Satoda, Hiroki Nikawa : 41st Annual Meeting of Hiroshima University Dental Society (Hiroshima), 2008.
 - 9 : Education using videos for receiving patients - The effect of self-checking by students : Toshinobu Takemoto, Yoshie Niitani, Atsue Matsumoto, Kumiko Hara, Maki Noso, Masaru Sugiyama, Hideki Amano, Saiji Shimoe, Seicho Makihira, Mitsuhiro Tamamoto, Takeshi Murayama, Takahiro Satoda, Hiroki Nikawa : 41st Annual Meeting of Hiroshima University Dental Society (Hiroshima), 2008.
 - 10 : Model for the functional instruction of mimic muscles around oral cavity : Kana Fujimoto, Akiko Ito, Kenta Kusano, Yuko Araki, Saiji Shimoe, Seicho Makihira, Mitsuhiro Tamamoto, Takeshi Murayama, Hiroki Nikawa, Takahiro Satoda : 92nd Regular Meeting of Hiroshima University Dental Society (Hiroshima), 2008.
 - 11 : Model for the functional instruction of tongue : Akiko Ito, Kana Fujimoto, Kenta Kusano, Yuko Araki, Saiji Shimoe, Seicho Makihira, Mitsuhiro Tamamoto, Takeshi Murayama, Hiroki Nikawa, Takahiro Satoda : 92nd Regular Meeting of Hiroshima University Dental Society (Hiroshima), 2008.
 - 12 : Effectiveness of surface preparations on bonding between a zirconia ceramic material and an indirect composite : Kusano K, Shimoe S, Satoda T, Murayama T, Nikawa H, Tanoue N, Matsumura H : 4th International Congress of Dental Technology (30th Meeting of the Nippon Academy of Dental Technology)(Osaka), 2008.
 - 13 : Bonding characteristics of indirect composites to a zirconia framework material : Araki Y, Shimoe S, Satoda T, Murayama T, Nikawa H, Tanoue N, Matsumura H : 4th International Congress of Dental Technology (30th Meeting of the Nippon Academy of Dental Technology)(Osaka), 2008.
 - 14 : A new training program for anaplastologists - Practice for fabricating auricle correction prostheses - : Takahashi A, Shimoe S, Morishita Y, Nagami M, Murayama T, Satoda T, Nikawa H : 4th International Congress of Dental Technology (30th Meeting of the Nippon Academy of Dental Technology)(Osaka), 2008.

- 15 : Development of research ability through extracurricular activities (Bio-technology Club) in Faculty of Dentistry, Hiroshima University : Yuichi Mine, Hiroki Nikawa, Seicho Makihira, Saiji Shimoe, Mitsuhiro Tamamoto, Takahiro Satoda, Takeshi Murayama, Hideki Amano, Toshinobu Takemoto, Masaru Sugiyama, Kumiko Hara, Atsue Matsumoto, Maki Noso, Yoshie Niitani : 27th Scientific Meeting of Japanese Association for Dental Education (Tokyo), 2008.
- 16 : What we learn through rehabilitation make-up authorized by Reiko Kazuki : Aya Hiyama, Hiroki Nikawa , Seicho Makihira, Saiji Shimoe, Mitsuhiro Tamamoto, Takahiro Satoda, Takeshi Murayama, Masaru Sugiyama, Kumiko Hara, Maki Noso : 27th Scientific Meeting of Japanese Association for Dental Education (Tokyo), 2008.
- 17 : Quantitative evaluation of rehabilitation make-up authorized by Reiko Kazuki : Takuya Kihara, Hiroki Nikawa, Seicho Makihira, Saiji Shimoe, Mitsuhiro Tamamoto, Takahiro Satoda, Takeshi Murayama, Atsue Matsumoto, Yoshie Niitani, Reiko Kazuki : 27th Scientific Meeting of Japanese Association for Dental Education (Tokyo), 2008.
- 18 : Fabrication of 3-dimensional models in clinical practice of Oral Health Engineering Course and its application to surgery : Sumiyo Mimura, Masahiko Minami, Hiromi Nishi, Hiroshi Shimasue, Masaaki Takechi, Nobuyuki Kamata, Hiroki Nikawa, Seicho Makihira, Takahiro Satoda, Takeshi Murayama : 27th Scientific Meeting of Japanese Association for Dental Education (Tokyo), 2008.
- 19 : Practice for fabricating finger prostheses with application of denture procedures : Miyoshi A, Makihira S, Nagami M, Morishita Y, Satoda T, Murayama T, Nikawa H : 4th International Congress of Dental Technology (30th Meeting of the Nippon Academy of Dental Technology)(Osaka), 2008.

F) Special lectures in academic meetings

- 1 : Murayama T: Application of Computer-aided Manufacturing Technologies to Medicine : Proceedings of 6th Symposium of Biomedical Engineering Center(Kyoto), 2008.3.18.

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

- 1 : JST Potentiality Verification Stage : Hiroki Nikawa, Takeshi Murayama, Eiji Tanaka, Shinichi Nagasaki, et al. (Representative: Digital Solutions Inc. Kanji Ueda) , Development of FEM System using 3T-MRI and Novel Micro coil. ¥7,769,000
- 2 : Grant for New Industry Creation : Hiroki Nikawa, Takeshi Murayama, Eiji Tanaka, Shinichi Nagasaki, et al. (Representative: Hiroki Nikawa) , Development of System assisting Diagnosis and Surgery for Jaw and Oral Function. ¥1,000,000
- 3 : Regional Innovation Grant : Hiroki Nikawa, Takeshi Murayama, Eiji Tanaka, Shinichi Nagasaki, et al. (Representative: Digital Solutions Inc. Kanji Ueda) , Development of System assisting Diagnosis and Treatment of Joints by FEM Analysis. ¥33,360,000

(5) Academic Awards, etc.

(6) Patents

School of Oral Health Science, Division of Oral Health Engineering (Department of Medical Design & Engineering)

(1) Staffs and Students

Professor : Hiroki Nikawa
Associate Professor : Seicho Makihira
Secretary : Miki Onji
Research Assistant : Kaori Taguchi

(2) Main Research Activities

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

(3) Research Achievements

A) Original Papers (including Case Reports)

- 1: Chewing Gum Containing Citric Acid Reduces the Burden of Periodontal pathogens : Nikawa H., Igarashi S., Takasu O., Tataka H., Harano F., Shinohara S., Makihira S., Takemoto T., Murayama T., Satoda T., Amano H., Kurihara H.: The Open Food Science Journal, 2,29-37,2008.
- 2: Impact of the Microgravity Environment in a Three-dimensional Clinostat on Osteoblast- and Osteoclast-like Cells : Makihira S., Kawahara Y., Louis Yuge., Mine Y.,Nikawa H.:Cell Biology International,32,1176-1181,2008.
- 3: The pre-surgical modification of the provisional over-denture through 3-dimensional image analysis supports the mini dental implant treatment : Makihira S., Mizumachi W., Harada K., Shimoe S., Sadamori S. and Nikawa H.: A clinical report. International Chinese Journal of Dentistry,8,39-41, 2008.

B) Review

C) Publications

D) Other Publications

E) Presentation at Scientific Meeting

- 1: Immobilized-OPG-Fc on a Titanium Surface Inhibits RANKL-dependent Osteoclast Differentiation : Makihira S, Eduardo Kosaka, Mine Y, Nikawa H : IADR (Toronto),2008.

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

(5) Academic Awards, etc.

(6) Patents

Central research laboratory

(1) Staffs and Students

Director : Norihiko Maeda (by-work)

Research Associate : Ikue Hayashi

(2) Main Research Activities

1 : Proteomics approach for interest targets in eukaryotic cells

2 : Structural analysis of biologically active substances

(3) Research Achievements

A) Original Papers (including Case Reports)

B) Review

C) Publications

D) Other Publications

E) Presentation at Scientific Meeting

- 1: Overexpression of NlpI induces alteration of peptidoglycan in *Escherichia coli* K12 : Masaru Ohara, Ikue Hayashi and Motoyuki Sugai : International *E. coli* Alliance 2008 (Hinxton) 2008.
- 2: The role of nucleolin in H2AX-related DNA damage response:Junya Kobayashi, Jun Sato, Ikue Hayashi and Kenshi Komatsu: The international Ataxia-Telangiectasia Workshop 2008 (Otsu) 2008.
- 3: Relationship of intestinal- and diffuse-type gastric cancer risks to IL-10 haplotypes and effects of radiation exposure on the relationship: Hayashi T, Morishita Y, Nagamura H, Maki M, Imai K, Yoshida K, Kusunoki Y, Hayashi I, Tahara E, Nakachi K: 20th European Association for Cancer Research (Lyon) 2008.
- 4: Effects of IL-10 and IL-6 gene polymorphisms and atomic-bomb radiation exposure on gastric cancer risk: Hayashi T, Morishita Y, Nagamura H, Maki M, Imai K, Yoshida K, Kusunoki Y, Hayashi I, Tahara E, Nakachi K: IARC-EACR-AACR-ECNIS Symposium (Lyon) 2008.
- 5: Acceleration of aging-associated increase in inflammatory markers and attenuation of the immune system among atomic-bomb survivors: Hayashi T, Kusunoki Y, Morishita Y, Nagamura H, Maki M, Kubo Y, Yamaoka M, Hayashi I, Yoshida K, Nakachi K: 7th Joint Meeting of the International Society for Interferon and Cytokine Research and the International Cytokine Society (Montreal) 2008.

- 6: The role of nucleolin in DNA damage response: Kobayashi J, Hayashi I, Komatsu T: The 51st Annual Meeting of The Japan Radiation Research Society (Kitakyusyu) 2008.
- 7: The role of nucleolin in H2AX-related DNA damage response: Kobayashi J, Hayashi I, Komatsu T: Joint Annual Meeting of the Molecular Biology Society of Japan and the Japanese Biochemical Society (Kobe) 2008.
- (4) Status of Receiving Grants-in Aid for Scientific Research, etc.
- (5) Academic Awards, etc.
- (6) Patents

Department of General Dentistry, General Dentistry

(1) Staffs and Students

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

(2) Main Research Activities

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

(3) Research Achievements

A) Original Papers (including Case Reports)

- 1: Japanese Dental Trainees Perceptions of Educational Environment Measurement in Postgraduate Training. Taguchi N., Ogawa T. and Sasahara H. Medical Teacher 30, e189-e193, 2008.
- 2: Bacterial Examination in the Dental Unit Water Liners at Department of Advanced General Dentistry in Hiroshima University Hospital. Ohara M., Yoshino H., Taguchi N., Tanaka Y., Tamura H., Ogawa I., Sugai M. and Ogawa T. The Journal of Hiroshima University Dental Society 40, 129-135, 2008.
- 3: Visiting Report of International Medical and Dental Education Meeting. Association for Medical Education in Europe 2009. Journal of Japanese Association in Dental Education 24, 102-103, 2008.
- 4: Outcome Evaluation of Postgraduate Dental Training Course in terms of Career Design. Taguchi N., Ogawa T., Tanaka Y., Ohara M. and Sasahara H. Journal of Japanese Association in Dental Education 24, 261-266, 2008.
- 5: Educational Objectives and Curriculum Structure in Future Health Communication Training. What the Curriculum Structure should be. Taguchi N. Journal of Japanese Association in Dental Education 24, 263 - 264, 2008.
- 6: Educational Objectives and Curriculum Structure in Future Health Communication Training. Ogawa T., Yoshida T., Ogata T., Suzuki K., Oishi M., Chiba I., Taguchi N., Ito T. and Hori H. Journal of Japanese Association in Dental Education 24, 261 - 266, 2008.

- 7: Cytotoxic distending toxin induces caspase-dependent and -independent cell death in MOLT-4 cells. : Masaru Ohara, Tomonori Hayashi, Yoichiro Kusunoki, Kei Nakachi, Tamaki Fujiwara, Hitoshi Komatsuzawa, Motoyuki Sugai : *Infection and Immunity* vol 76, 4783-91, 2008.
- 8: Transcriptional promoter analysis on the nlpI gene expression in Escherichia coli K12. : Masaru Ohara, Hiroshi Yoshino, Tetsuji Ogawa and Motoyuki Sugai : *The Journal of Hiroshima University Dental Society* vol 40, 30-37, 2008.

B) Review

C) Publications

- 1: Coaching: Actual Medical Interview in Dental Practice. Ed. Ito T and Teranaka T. Ogawa T. Quintessence, Tokyo, 2008. 46–50
- 2: Specific Case: Actual Medical Interview in Dental Practice. Ed. Ito T and Teranaka T. Taguchi N. Quintessence, Tokyo, 2008. 80–87, 164–167.

D) Other Publications

E) Presentation at Scientific Meeting

- 1: Undergraduate program aimed to be a good teacher. -Introduction of "Clinical Dental Education Method" into the curriculum of School of Oral Health Science. Takemoto T., Ogawa T., Taguchi N., Niitani Y., Matsumoto A., Hara K., Nosou M., Sugiyama M., Amano H. Taguchi K., Shimoe S., Makihira S., Tamamoto M., and Satoda T. The Hiroshima University Dental Society, Hiroshima, 2008.
- 2: Outcome Survey on Compulsory Postgraduate Dental Training in Light of Career Design. Taguchi N., Ogawa T., Tanaka Y., Sasahara H., Ohara M. and Okada M. 27th Meeting of Japanese Dental Education Association, Tokyo, 2008.
- 3: Training Session of Medical Interview with Simulated Patients in Dental Clinical Training Course. Ogawa T., Taguchi N., Tanaka Y., Ohara M. and Sasaki T. 27th Meeting of Japanese Dental Education Association, Tokyo, 2008.
- 4: Learning Style for Self-directed Learning. Ogawa T., Taguchi N., Tanaka Y., Ohara M. and Sasaki T. 27th Meeting of Japanese Dental Education Association, Tokyo, 2008.
- 5: A Customer Satisfaction Survey on Simulated Patient Activity. Sasaki T., Maeda J., Taguchi N. and Ogawa T. 27th Meeting of Japanese Dental Education Association, Tokyo, 2008.
- 6: Curriculum Design of “Clinical Dental Education” for Undergraduate Students in Oral Health Science Course. Takemoto T., Ogawa T., Kageyama I., Taguchi N., Niitani Y., Matsumoto A., Hara K., Nosou M., Sugiyama M., Amano H. and Satoda T. 27th Meeting of Japanese Dental Education Association, Tokyo, 2008.
- 7: Medical Interview for Elderly Person. Taguchi N., Tanaka Y., Ohara M., Ogawa T., Doi N.,

- Katayama S., Segawa K., Matsumoto N., Nakamura M., Kajii M., Yamano R., Miyamura K., Ichinose T., Nishino H., Tsushima T. and Santanda T. Research Seminar in General Dental Medicine 2008. Hiroshima, 2008.
- 8: Bacterial Examination in the Dental Unit Water Lines in Terms of Safety Management of Dental Practice. Ohara M., Yoshino H., Taguchi N., Tanaka Y., Tamura H., Ogawa I., Sugai M. and Ogawa T. Research Seminar in General Dental Medicine 2008. Hiroshima, 2008.
- 9: Communication with Elderly Person. Hiroshima Prefecture Dental Association Members' Perspective. Taguchi N., Tanaka Y., Ohara M., Ogawa T., Doi N., Katayama S., Segawa K., Matsumoto N., Nakamura M., Kajii M., Yamano R., Miyamura K., Ichinose T., Nishino H., Tsushima T. and Santanda T. Hiroshima Prefecture Dental Association, Hiroshima University Dental Society, Hiroshima, 2008.
- 10: Dental Clinical Training Program; Perception of Community Trainers and Trainees. Motoyama T., Morimoto K., Doe K., Kawahara M., Kumagai H., Nakamoto M., Yamasaki T., Yamamoto T., Aratani Y., Mito A., Kubo K., Uryu K., Shimasue K., Mitsuyama T., Nakamura R., Kishi T., Seo H., Ogawa T., Taguchi N., Mishima K., Kamata N. and Takada T. Hiroshima Prefecture Dental Association, Hiroshima University Dental Society, Hiroshima, 2008.
- 11: Communication with Elderly Person. Hiroshima Prefecture Dental Association Members' Perspective. Taguchi N., Tanaka Y., Ohara M., Ogawa T., Doi N., Katayama S., Segawa K., Matsumoto N., Nakamura M., Kajii M., Yamano R., Miyamura K., Ichinose T., Nishino H., Tsushima T. and Santanda T. Communication Association in Japan Chugoku-Shikoku branch, Educational Research Seminar in Health Communication, Hiroshima, 2008.
- 12: Communication Training and Learning Style. Ogawa T., Taguchi N., Tanaka Y. and Ohara M. Communication Association in Japan Chugoku-Shikoku branch, Educational Research Seminar in Health Communication, Hiroshima, 2008.

F) Implementation of Seminars / Workshops

- 1: Workshop for postgraduate trainees 2008 (Hiroshima)
- 2: Research Seminar in General Dental Medicine 2008 (Hiroshima)
- 3: Communication Association in Japan Chugoku-Shikoku branch, Educational Research Seminar in Health Communication, Hiroshima, 2008.

G) Lecturer • Symposiast

- 1: Educational Objectives and Curriculum Structure in Future Health Communication Training. Ogawa T. Dental Education Seminar in Showa University, Tokyo, 2008.
- 2: Postgraduate Training Instruction Facilitating Self-directed Learning. Ogawa T. Workshop for Postgraduate Training Program Manager and Co-manager. Tokyo, 2008.
- 3: Portfolio Reflection and Self-directed learning. Taguchi N. 10th Seminar for postgraduate training educator. Hiroshima, 2008.

- 4: Educational Objectives and Curriculum Structure in Future Health Communication Training. What the Curriculum Structure should be. Taguchi N. 27th Meeting of Japanese Dental Education Association, Tokyo, 2008.

H) Attending of Lectures, Seminars, and Workshops

- 1: Seminar for Postgraduate Training Program Manager 2008. Ogawa T. Foundation of Promoting Dental Care and Training, Tokyo, 2008.
- 2: 3rd RIAS Training Workshop. Ogawa T., Taguchi N. RIAS Japan, Nagoya, 2008.
- 3: 2008 University Management Seminar [Education]. Ogawa T. The Japan Association of national Universities. Tokyo. 2008.
- 4: Workshop for Postgraduate Training Program Manager and Co-manager. Ohara M. Japanese Dental Education Association. Tokyo. 2008.
- 5: 2nd Seminar in Health Communication Facilitator Training. Sasaki T. Japanese Dental Education Association. Nagoya. 2008.

I) Implementation of OSCE, CSA

- 1: 2nd Advanced OSCE for Postgraduate Trainees 2007-2008
- 2: 1st Advanced OSCE for Postgraduate Trainees 2008-2009

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

- 1: Grant-in-Aid Scientific Research, Scientific Research (C). Taguchi N.: Behavioral Research and its Application in Denture Wearers; Can We Understand Patients' Recognition Model? (Program No. 19592240),

(5) Academic Awards, etc.

(6) Patents

Department of Oral Health and Development Preventive Dentistry

(1) Staffs and Students

Assistant Professor : Makoto Kawamura

Research Associate : 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: Teenagers' dental health attitudes and behavior in Japan: comparison by sex and age group.
Kawamura M., Takase N., Sasahara H., Okada M. : *Journal of Oral Science*, 50(2): 167-174, 2008.
- 2: Dental students' ability to assess gingival health status with DAAGS software. Camgoz M., Gurgan C.A., Kajiwara K., Kawamura M.: *Journal of Dental Education*, 72:59-66, 2008.
- 3: Investigating the relationship between self-reported oral health status, oral health-related behaviours and self-consciousness in Romania. Dumitrescu A. L., Kawamura M., Dogaru B., Dogaru C.: *Oral Health and Preventive Dentistry*, 6(2):95-103., 2008.
- 4: Simultaneous interrelationship between the oral health behavior and oral health status of mothers and their children. Okada M., Kawamura M., Hayashi Y., Takase N., Kozai K. : *Journal of Oral Science*, 50(4): 447-452, 2008.
- 5: Nursing students' attitudes towards preventive dentistry. (In Greek, abstract in English). Gatou T., Polychronopoulou A., Kawamura M.: *Hellenic Stomatological Review*, 52:309-314 2008.
- 6: Health behaviour, metabolic control and periodontal status in medically treated Chinese with type 2 diabetes mellitus. Leung W. K., Movva L.R.K., Wong M.C.M., Corbet E.F., Siu S-C, Kawamura M.: *Ann Roy Australas Coll Dent Surg*, 19: 102-110, 2008.
- 7: Exploring the relationships between sense of hopelessness, worry, self-rated oral health status and

behavior in a Romanian adult population. Dumitrescu A. L., Kawamura M.: *The Journal of Contemporary Dental Practice*, (in press), 2008.

- 8: Effect of educational dental system using a computer training soft 'Picar' on the improvement of school nurse students' ability to assess periodontal status. Kajiwara K., Kawamura M., Tanaka Y., Miyakoshi Y., Tsushima H.: *Jpn J School Health*, 50(3):166-174, 2008.
- 9: Japanese Dental Trainees Perceptions of Educational Environment Measurement in Postgraduate Training. Taguchi N., Ogawa T., Sasahara H. : *Medical Teacher*, 30: e189-e193, 2008.
- 10: Outcome Evaluation of Postgraduate Dental Training Course in terms of Career Design. Taguchi N., Ogawa T., Tanaka Y., Ohara M. and Sasahara H. *Journal of Japanese Association in Dental Education*, 24, 182-189, 2008.

B) Reviews

C) Books/Book Chapters

D) Proceedings/Others

- 1: A survey on dental caries experience in school children. Okada M., Kawamura M., Yasuda R., Kunikiyo A.: *The Annals of Educational Research of Hiroshima University (Faculties and Schools Attached to Hiroshima University)*, 36: 503-505, 2008.
- 2: Reasons for dental visits and needs for oral health/disease after 50 years in the poisoning patients caused by dried milk. Kawamura M., Sasahara H., Ogawa T.: *H18-19 Reports of Results at Grant-in-aid for Scientific Research(C)*, 1-64, 2008.
- 3: Logistic Regression Analysis on the Possibility of Graduation at Hiroshima University of Economics. Sasagara H., Sasahara H.: *Logistic Regression Analysis on the Possibility of Graduation at Hiroshima University of Economics*, 1-10, 2008.
- 4: Logistic Regression Analysis on the Possibility of Graduation at Hiroshima University of Economics (2). Sasagara H., Sasahara H.: *Logistic Regression Analysis on the Possibility of Graduation at Hiroshima University of Economics*, 11-18, 2008.

E) Presentations

- 1: Health behaviours, metabolic control and periodontal status in medically treated Chinese subjects with type 2 diabetes mellitus. Leung W.K., Movva L.R.K., Wong M.C.M., Corbet E.F., Siu S.C., Kawamura M.: *Royal Australasian College of Dental Surgeons Meeting (Hong Kong)*, May, 2008.
- 2: Outcome Survey on Compulsory Postgraduate Dental Training in Light of Career Design. Taguchi N., Ogawa T., Tanaka Y., Sasahara H., Ohara M. and Okada M. 27th Meeting of Japanese Dental

Education Association (Tokyo), July, 2008.

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

- 1: Grant-in-aid for Scientific Research(C), No.20592455, New : Kawamura M. (representative) , Okada M., Taguchi N., Sasahara H., Ogawa T.: Calibration of GO and G for school dental health on the basis of CAD. 600,000yen.
- 2: Grant-in-aid for Scientific Research(C), No.19592240, Continued : Taguchi N. (representative) , Ogawa T., Tanaka R., Kawamura M., Sasahara H.: Study and application of denture wearers' behavioral science.- Can we understand what they intend?-. 1,000,000yen.

(5) Academic Awards, etc.

(6) Patents

Department of Oral Health and Development (Special Care Dentistry)

(1) Staffs and Students

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

(2) Main Research Activities

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

(3) Research Achievements

A) Original Papers (including Case Reports)

- 1: Teenagers' oral health attitudes and behavior in Japan: Kawamura M, Takase N, Sasahara H, Okada M: J Oral Sci: 50: 167-174, 2008.
- 2: Simultaneous interrelationship between the oral health behavior and oral health status of mothers and their children: Okada M, Kawamura M, Hayashi Y, Takase N, Kozai K: J Oral Sci 50: 447-452, 2008.
- 3: Irsogladine maleate abolishes the increase in interleukin-8 levels caused by outer membrane protein 29 from *Aggregatibacter (Actinobacillus) actinomycetemcomitans* through the ERK pathway in human gingival epithelial cells. Kishimoto A, Fujita T, Shiba H, Komatsuzawa H, Takeda K, Kajiya M, Hayashida K, Kawaguchi H, Kurihara H. J Periodont Res 43(5): 508-513, 2008.

B) Review

C) Publications

D) Other Publications

E) Presentation at Scientific Meeting

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

2: PCR assay for quantitative detection of *Porphyromonas gingivalis* in children: Hayashi F, Okada M, Suzuki J, Kozai K: The 86th general session & exhibition of the IADR (Toronto), 2008

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

(5) Academic Awards, etc.

(6) Patents

C e n t r a l C l i n i c a l S e c t i o n s

(Special Dental Clinic Section)

(1) Staffs and Students

Chief Professor : Katsuyuki Kozai
Research Associate : Yuri Fujiwara (~Mar.)
 Yukimi Yasuhara (Apr.~)

(2) Main Research Activities

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

(3) Research Achievements

A) Original Papers (including Case Reports)

B) Review

C) Publications

D) Other Publications

E) Presentation at Scientific Meeting

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

(5) Academic Awards, etc.

(6) Patents

Central Clinical Sections, Center of Oral Clinical Examination

(1) Staffs and Students

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

(2) Main Research Activities

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

(3) Research Achievements

A) Original Papers (including Case Reports)

- 1: Shintani T., Toratani S., Miyauchi M., Hayashido Y., Ochi Y., Okamoto T. A case of mucocutaneous angiomylipoma in the cheek Japanese journal of oral maxillofacial surgery 54(11):621-625, 2008.
- 2: A Tend of patch test and metal element analysis of suspected patients of metal allergy in dentistry of Hiroshima university hospital. - first report, achievements for 10 years-: Kitagawa M, Furusho H, Shintani T, Makihira S, Nikawa H, Ogawa I, Kurihara H: J Hiroshima Univ Dent Soc 40(2) , 124-128, 2008.
- 3: Aberrant beta-catenin expression and adenomatous polyposis coli gene mutation in ameloblastoma and odontogenic carcinoma: Siriwardena BS, Kudo Y, Ogawa I, Tilakaratne WM., Takata T : Oral Oncol 45, 103-108, 2008.
- 4: Effects of ultrasound on the proliferation and differentiation of cementoblast lineage cells: Inubushi T, Tanaka E, Rego EB, Kitagawa M, Kawazoe A, Ohta A, Okada H, Koolstra JH, Miyauchi M, Takata T, Tanne K: J Periodontol 79, 1984-1990, 2008.
- 5: Brain-derived neurotrophic factor stimulates bone/cementum-related protein gene expression in cementoblasts: Kajiya M, Shiba H, Fujita T, Ouhara K, Takeda K, Mizuno N, Kawaguchi H, Kitagawa M, Takata T, Tsuji K, Kurihara H: J Biol Chem 283, 16259-16267, 2008.

- 6: IFITM1 promotes the invasion at the early stage of head and neck cancer progression: Hatano H, Kudo Y, Ogawa I, Tsunematsu T, Kikuchi A, Abiko Y, Takata T: Clin Cancer Res 14, 6097-6105, 2008.
- 7: Enamel Matrix Derivative Exhibits Anti-inflammation Properties in Monocytes: Sato S, Kitagawa M, Sakamoto K, Iizuka S, Kudo Y, Ogawa I, Miyauchi M, Foster BL, Somerman MJ, Takata T: J Periodontol 79, 535-540, 2008.
- 8: Prostaglandin E2 inhibits mineralization and enhances matrix metalloproteinase-13 in mature cementoblasts mainly via the EP4 pathway: Oka H, Miyauchi M, Sakamoto K, Kitagawa M, Noguchi K, Somerman MJ, Takata T: Arch Oral Biol 53, 243-249, 2008.
- 9: VEGF-C is associated with lymphatic status and invasion in oral cancer: Siriwardena BSMS, Kudo Y, Ogawa I, Udagama MNGPK, Tilakaratne WM, Takata T: J Clin Pathol 61, 103-108, 2008
- 10: Bacterial examination in the dental unit water lines at Department of Advanced General Dentistry in Hiroshima University Hospital: Ohara M, Yoshino H, Taguchi N, Tanaka Y, Tamura H, Ogawa I, Sugai M, Ogawa T: J Hiroshima Univ Dent Soc 40(2) , 129-125, 2008.

B) Review

C) Publications

- 1: Salivary gland tumors. Oral Pathology. (Editors: Shimono M, Takata T): Ogawa I, Takata T: Ishiyaku Publishers Inc., Tokyo, 273-285, Japan, Tokyo.
- 2: Diagnostic pathology 2. Tooth and Jaw bone.: Manual of Surgical Pathology. Pathol Clin Med (Editors: Fukayama M, Umemura S, Ohhashi K, Kuroda M, Sakamoto T, Morinaga S) Ogawa I, Kudo Y, Miyauchi M, Takata T: Bunkodo, Tokyo, 139-143. Japan, 2008.

D) Other Publications

- 1: Close up of Oral disease, Mucous cyst of lower part of the tongue: Ando A, Sasaki A, Ogawa I, Takata T.: DHstyle 2(14), 10-12, Japan, 2008.
- 2: Close up of Oral disease, Dry mouth: Takagi N, Takahashi M, Kitagawa M, Ogawa I, Takata T: DHstyle 2(20), 10-12, Japan, 2008.
- 3: Close up of Oral disease, Pleomorphic adenoma of the left palate: Takagi K, Onoda N, Ogawa I, Takata T: DHstyle 2(21) , 10-12, Japan, 2008.
- 4: Close up of Oral disease, Malignant melanoma of the gingiva of left maxilla: Takagi K, Onoda N, Ogawa I, Takata T: DHstyle 2(24), 10-13, Japan, 2008.
- 5: Close up of Oral disease, Hemangioma of the right cheek: Takagi K, Onoda N, Ogawa I, Takata T: DHstyle 2(26), 10-12, Japan, 2008.

E) Presentation at Scientific Meeting

- 1: Relationship between evaluation of PET-CT and clinicopathological findings of the tongue cancer: Yoneda S, Miyauchi M, Nishi Y, Shigeishi H, Ono S, Shimasue H, Ninomiya Y, Ota K, Higashikawa K, Takechi M, Ogawa I, Takata T, Kamata N: 26th Annual Meeting of the Japanese Society for Oral Tumor (Beppu), 2008.
- 2: Role of over expression of Emi1 in oral cancer: Kudo Y, Tsunematsu T, Obayashi M, Ogawa I, Kitajima S, Takata T: 97th Annual Meeting of the Japanese Society of Pathology (Kanazawa) , 2008.
- 3: Role of high expression of Runx3 in oral cancer (student poster presentation): Tsunematsu T, Kudo Y, Ogawa I, Takata T: 97th Annual Meeting of the Japanese Society of Pathology (Kanazawa) , 2008.
- 4: Sclerosing polycystic adenosis of the parotid gland: Ogawa I, Takada S, Miyauchi M, Matsuura H, Takata T: 97th Annual Meeting of the Japanese Society of Pathology (Kanazawa) , 2008.
- 5: Relationship between evaluation of FDG-PET-CT and histopathological findings of the tongue cancer : Miyauchi M, Yoneda S, Fujimoto S, Taki M, Nishi Y, Shigeishi H, Ono S, Takechi M, Ogawa I, Takata T, Kamata N: 37th Chugoku-Shikoku Sectional Meeting of Japanese Society of Oral and Maxillofacial Surgery (Kurashiki) , 2008.
- 6: Role of high expression of Survivin and Aurora-B in oral cancer: Qui K, Kudo Y, Ogawa I, Siriwardena BSMS, Yoshida M, Kitajima S, Miyauchi M, Takata T: 90th Annal Meeting of the Hiroshima University Dental Society (Hiroshima), 2008.
- 7: Periostin plays a role in invasion and metastasis in oral cancer : Siriwardena BSMS, Kudo Y, Ogawa I, Kitajima S, Miyauchi M, Takata T: 90th Annal Meeting of the Hiroshima University Dental Society (Hiroshima), 2008.
- 8: γ -glutamyl transpeptidase is a risk factor of bone destruction: Kawazoe Y, Miyauchi M, Taguchi A, Furusho H, Iizuka S, Kitagawa M, Tazuma S, Takata T: 90th Annal Meeting of the Hiroshima University Dental Society (Hiroshima), 2008.
- 9: Mandibular tumor (odontogenic myxoma) : Miyauchi M, Furusho H, Iizuka S, Shigeishi H, Fijita M, Ogawa I, Takata T: 19th Annual Meeting of the Japanese Society for Oral Pathology (Tokyo) , 2008.
- 10: Parotid tumor (basal cell adenocarcinoma) : Ogawa I, Sakaida N, Ohe C, Uemura Y, Takata T : 19th Annual Meeting of the Japanese Society for Oral Pathology (Tokyo) , 2008.
- 11: Periostin is involved in angiogenesis and lymphangiogenesis in oral cancer: Siriwardena BSMS, Kudo Y, Ogawa I, Yoshida M, Kitajima S, Udagama MNGPK, Tilakaratne WM, Takata T. : 19th Annual Meeting of the Japanese Society for Oral Pathology (Tokyo) , 2008.
- 12: An analytical study the data of patch test and metal element analysis of suspected patients of metal allergy for the past 10 years in Dentistry of Hiroshima university hospital : Kitagawa M, Furusho H, Shintani T, Makihira S, Nikawa H, Ogawa I, Kurihara H: 1st Annual Meeting of Japanese Society for Evidence and Dental Professional (Tokyo), 2008.
- 13: Introduction of “Center of Oral Clinical Examination in Hiroshima University” : Ogawa I, Shintani T, Kitagawa M, Furusho H, Kurihara H: 1st Annual Meeting of Japanese Society for Evidence and Dental Professional (Tokyo), 2008.

- 14: Study of halitosis patients by Oralchroma: Iwasaki Y, Hasegawa N, Kawamura Y, Ogawa F, Hino T, Kawaguchi H, Kurihara H: 1st Annual Meeting of Japanese Society for Evidence and Dental Professional (Tokyo), 2008.
- 15: Bacterial examination with anaerobic culture system in root canal treatment: Kitamoto Y, Hino T, Ogawa F, Ogawa I, Shiba H, Kawaguchi H, Kurihara H: 1st Annual Meeting of Japanese Society for Evidence and Dental Professional (Tokyo), 2008.
- 16: The diagnosis of sterilization in the root canal using bacterial examination with anaerobic culture system: Ogawa F, Hino T, Kitamoto Y, Ogawa I, Shiba H, Kawaguchi H, Kurihara H: 1st Annual Meeting of Japanese Society for Evidence and Dental Professional (Tokyo), 2008.
- 17: The serum IgG titer examination for periodontal pathogens: Kawamura M, Hino T, Shintani T, Ogawa I, Shiba H, Kawaguchi H, Kurihara H: 1st Annual Meeting of Japanese Society for Evidence and Dental Professional (Tokyo), 2008.
- 18: Analysis of autoantigens in human gingival fibroblasts on patients with periodontitis: Hino T., Niitani M., Mizuno N., Shiba H., Kawaguchi H., Kurihara H.: 1st Annual Meeting of Japanese Society for Evidence and Dental Professional (Tokyo), 2008.
- 19: Influence of elevation of g-glutamyl transpeptidase (GGT) by cholestatic liver disease on bone destruction: Kawazoe Y, Miyauchi M, Tazuma S, Kitagawa M, Suzuki K, Niida S, Takata T: 17th Annual Meeting of the Society for Hard Tissue Regenerative Biology (Tokushima) , 2008.
- 20: Effects of IFITM1 and CD81 on invasion of oral cancer : Yoshida M, Kudo Y, Ogawa I, Takata T: 50th Annual Meeting of the Japanese association for Oral Biology (Tokyo), 2008.
- 21: Role of high expression of CIP2A in oral cancer : Obayashi M, Kudo Y, Ogawa I, Takata T: 50th Annual Meeting of the Japanese association for Oral Biology (Tokyo), 2008.
- 22: Runx3 has a oncogenic role in oral cancer : Tsunematsu T, Kudo Y, Ogawa I, Takata T.: 50th Annual Meeting of the Japanese association for Oral Biology (Tokyo), 2008.
- 23: Abnormal regulation of Anaphase promoting complex dependent proteolysis by Emi1 dysregulation in cancer : Kudo Y, Tsunematsu T, Kitajima S, Ogawa I, Takata T.: 67th Annual Meeting of the Japanese Cancer Association (Nagoya), 2008.
- 24: Runx3 has a oncogenic role in head and neck cancer: Tsunematsu T, Kudo Y, Ogawa I, Takata T.: 67th Annual Meeting of the Japanese Cancer Association (Nagoya), 2008.
- 25: Study on the development of bone regeneration therapy with synthetic ameloblastin peptide: Iizuka S, Kitagawa M, Kudo Y, Miyauchi M, Takata T: 21st Annual Meeting of the Japanese Association of Dental Science (Yokoshuka), 2008.
- 26: Three cases of Bisphosphonate-related osteonecrosis of the jaw with surgery: Kimura Y, Shintani T, Ito T, Yoshioka Y, Tani R, Hayashido Y, Toratani S, Kitajima S, Okamoto T: 56th Annual Meeting, The Japanese Stomatological Society, Chugoku-Shikoku Division (Yonago), 2008.
- 27: A case of inflammatory gingival hyperplasia with pseudomalignant change arising in lower gingiva : Ito Y, Yoshioka Y, Ogawa I, Kitagawa M, Tani R, Hayashido Y, Toratani S, Takata T, Okamoto T. : 56th Annual Meeting, The Japanese Stomatological Society, Chugoku-Shikoku Division (Yonago), 2008.
- 28: A case of myxolipoma of the edge of tongue: Okui T, Ono S, Mitani Y, Ogawa I, Miyauchi M, Takata

- T, Kamata N: 56th Annual Meeting, The Japanese Stomatological Society, Chugoku-Shikoku Division (Yonago), 2008.
- 29:A case of basal cell adenocarcinoma showing extensive cribriform pattern in parotid gland : Ogawa I, Sakaida N, Ohe C, Uemura Y, Takata T: 53rd Annual Meeting of the Japanese Salivary Gland Society (Tokyo) , 2008.
- 30:Abnormal regulation of Anaphase promoting complex dependent proteolysis by Emi1 dysregulation in cancer: Kudo Y, Tsunematsu T, Kitajima S, Ogawa I, Takata T: 3rd International Workshop on Cell Regulations in Division and Arrest (Okinawa), 2008.
- 31:IFITM1 promotes invasion of oral cancer: Takata T, Kudo Y, Hatano H, Ogawa I, Miyauchi M: The 14th International Congress of Oral Pathology and Medicine (San Francisco, USA), 2008.
- 32:Abnormal regulation of Anaphase promoting complex dependent proteolysis by Emi1 dysregulation in cancer : Kudo Y, Tsunematsu T, Kitajima S, Ogawa I, Takata T : The 14th International Congress of Oral Pathology and Medicine (San Francisco, USA), 2008.
- 33:Tongue tumor (myxolipoma): Ogawa I, Iizuka S, Mitani Y, Takata T: The 51st Meeting of Hiroshima Pathological Conference (Hiroshima), 2008.
- 34:Mandibular lesion (central giant cell granuloma): Ogawa I, Tani R, Koizumi K, Tanamoto T, Iizuka S, Takata T: 95th Slide Conference, Academic Meeting of Chugoku-Shikoku Branch of the Japanese Society of Pathology (Hiroshima) , 2008.
- 35:Parotid gland tumor (basal cell adenocarcinoma): Ogawa I, Sakaida N, Ohe T, Uemura Y, Takata T: 96th Slide Conference, Academic Meeting of Chugoku-Shikoku Branch of the Japanese Society of Pathology (Yonago) , 2008.
- 36:Upper gingival lesion (giant cell epulis): Yoshida M, Kudo Y, Tani R, Okamoto K, Suei Y, Ogawa I, Takata T: 97th Slide Conference, Academic Meeting of Chugoku-Shikoku Branch of the Japanese Society of Pathology (Hiroshima) , 2008.
- 37:Utility of bacterial examination with anaerobic culture system for samples from root canal in root canal treatment: Kitamoto Y, Hino T, Uchida Y, Shiba H, Kawaguchi H, Kurihara H: 29th the meeting of the society of Japan endodontic association (Chiba), 2008.
- 38:Periapical lesion treatment by topical application of antibiotics ; Case report : Kitamoto Y, Hino T, Uchida Y, Shiba H, Kawaguchi H, Kurihara H: 128th the spring meeting of Japanese society of conservative dentistry (Niigata), 2008.

F) Special lectures in academic meetings

- 1: Overexpression of Aurora-A caused by constitutive phosphorylation of Ser51: Kitajima S, Kudo Y, Ogawa I, Tatsuka M, Takashi T: Anglo-Japanese Symposium: Network for International Education and Research in Advanced Dental Sciences (Tokyo), 2008.

G) Others (Social contribution)

- 1: Examination of risk of dental caries: Ogawa I, Kitagawa M, Furusho H: Hiroshima University

extension lecture for senior high-school students (Hiroshima), 2008.

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

- 1: Research project, Grant-in-Aid for Scientific Research (C) (New):Ogawa I: Histological and molecular biological study of standardization of the pathological diagnosis of salivary gland tumors:(No.20592141) ¥1,300,000
- 2: Research project, Grant-in-Aid for Young Scientists (B) (New):Shintani T: Development of molecular target therapy of oral cancer targeting with FGF binding protein (FGFBP/HBp17):(No. 20791519) ¥2,100,000
- 3: Research project, Grant-in-Aid for Young Scientists (B) (New):Kitagawa M: Study on application of spondin to regeneration of periodontal tissues:(No.20791339) ¥2,210,000

(5) Academic Awards, etc.

(6) Patents

C e n t r a l C l i n i c a l S e c t i o n s

(Dental Technicians Section)

(1) Staffs and Students

Director of Dental Technicians Section : Hiroki Nikawa (Prof.)

Chief Dental Technician : Hirotaka Okura

Supervisor Dental Technician : Masanobu Yamamoto, Eisaku Habu, Yoshihiro Otani, Meiji Yamamoto, Ryoji Kato

Research Fellow of Dental Technician : Satoko Kawamura, Haruka Koide

(2) Main Research Activities

1: Management of the patients' information by the use of implanted devices in the denture.

2: Radioprotective prostheses for irradiation therapies

3: Clinical analysis of superstructure of implant.

4: Esthetic dentistry

5: Accuracy of castings

6: Information processing in the dental laboratory

(3) Research Achievements

A) Original Papers (including Case Reports)

1 : The pre-surgical modification of the provisional over-denture through 3-dimensional image analysis supports the mini dental implant treatment A clinical report. : Seicho Makihira, Wataru Mizumachi, Kae Harada, Saiji Shimoe, Shinsuke Sadamori ,Hiroki Nikawa : International Chinese Journal of Dentistry, 8: 39-41, 2008

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

C e n t r a l C l i n i c a l S e c t i o n s

(Oral Hygien Section)

(1) Staffs and Students

Director of Dental Hygien Section : Nobuyuki Kamata

Chief Dental Hygienist : Hiroko Tamura

Supervisor Dental Hygienist : Yoriko Iwasaki, Miyuki Nakaoka

Dental Hygienist : Akiko Kawashima, Miho Yoneda, Tomoko Hatakeyama,
Kayo Kajitani, Tetsuko Hayashida, Kumi Miyakawa,
Tomoko Tokikazu, Kanako Matsui, Kanako Yano, Kana Dainobu,
Naomi Hara, Miho Okada, Rie Kanna, Ayumi Kouchi,
Megumi Takamoto, Itsuka Kouno

Dental Assistant : Yuri Ota, Yuka Tamamoto, Hisako Ozaki, Mayumi Yatabe

(2) Main Research Activities

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

(3) Research Achievements

A) Original Papers (including Case Reports)

B) Review

C) Publications

D) Other Publications

E) Presentation at Scientific Meeting

- 1: Dental spectrophotometer is useful for whitening teeth at home. - a case report- : Kanako Yano, Morioki Fujitani, Hiroko Tamura : The Journal of Hiroshima Society for Dental Hygiene (Hiroshima).2008
- 2: Evaluation of Banaperio, a detection kit on the periodontal bacteria in pediatric dentistry : Miyuki Nakaoka, Chieko Mitsuhata, Fumiko Hayashi, Jyunji Suzuki, Katsuyuki Kozai : 46th Japanese Society of Pediatric Dentistry(Saitama).2008.

- 3: The effect of oral hygiene on pneumonia-prophylaxis : Kayo Kajitani : 21st Hiroshima Academy for Infection Control (Hiroshima).2008
- 4: Implementation of Dental Education work shop for Dental Hygienist - Curriculum Design- : Akiko Kawashima, Miyuki Nakaoka, Yoriko Iwasaki, Miho Yoneda, Norihiro Taguchi, Mitsugi Okada, Tetsuji Ogawa : 27th Japanese Dental Education Association(Tokyo).2008
- 5: Gas composition in oral halitosis : Yoriko Iwasaki, Naohiko Hasegawa, Masato Kawamura, Fumino Ogawa, Takamune Hino, Hiroyuki Kawaguchi, Hidemi Kurihara : 1st Japanese Society for Evidence and the Dental Professional
- 6: Dental spectrophotometer is useful for whitening teeth at home. - a case report- : Kanako Yano, Morioki Fujitani, Satoki Shibata, Keniti Shirai, Hiroko Tamura : 19th Japan Academy of Esthetic Dentistry(Nigata).2008

F) Special lectures in academic meetings

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

- 1: Grants in Aid for Encouragement of Scientist, Tomoko Tokikazu, A dental caries risk study on distributions of *streptococcus mutans* in patients with disabled, Grant No.20931007, ¥510.000

(5) Academic Awards, etc.

(6) Patents

Dental Clinical

(1) Staffs and Students

Assistant Professor : Hiroshi Yoshino

Research Associate : Masaru Ohara

(2) Main Research Activities

- 1: Multi drug-resistant *Pseudomonas aeruginosa*
- 2: Construction of HIV patients treatment network system

(3) Research Achievements

A) Original Papers (including Case Reports)

- 1: Bacterial examination in the dental unit water lines at department of advanced general dentistry in Hiroshima university hospital. : Ohara M., Yoshino H., Taguchi N., Tanaka R., Tamura Y., Ogawa I., Sugai M., Ogawa T. : J. Hiroshima Univ. Dent Soc. 40, 30-37, 2008
- 2: Transcriptional promoter analysis on the nlpI gene expression in Escherichia coli K12. : Ohara M., Yoshino H., Ogawa T., Sugai M. : J. Hiroshima Univ. Dent Soc., 40, 30-37, 2008.
- 3: Cytotoxic distending toxin induces caspase-dependent and -independent cell death in MOLT-4 cells. : Ohara M., Hayashi T., Kusunoki Y., Nakachi K., Fujiwara T., Komatsuzawa H., Sugai M.: Infection Immunity, 76(10), 4783-4791, 2008

B) Review

C) Publications

D) Other Publications

- 1: Kurihara H., Yoshino H., Nakaoka M., : Practice of Infection control in dental health care setting : Infection control 17(6), 63-70, 2008

E) Presentation at Scientific Meeting

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

- 1: Trust research expense : Study of construction of dental care system to HIV patients in Chugoku

and Sikoku district 3,000,000 yen

(5) Academic Awards, etc.

(6) Patents

Dental Medical Information Section

(1) Staffs and Students

Director	: Katsuyuki Kozai (Co.)
Professor	: Hideaki Amano (Co.)
Assistant	: Masahiko Ohtsuka (Co.), Takeshi Tanaka
Technician	: Tokue Yanagida (Co.)

(2) Main Research Activities

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

(3) Research Achievements

A) Original Papers (including Case Reports)

- 1: Disaster-victim information system combined with regional EHR and health IT cards : T Tanaka, K Ishikawa, N Iwata, H Tsukuma, M Ikeuchi, Y Iwasaki : J. of Japan Soc. for Healthcare Administration 45 Suppl. pp. 120, 2008.
- 2: A numerical simulation using hazard map information toward construction of a disaster victim information system : T Tanaka, K Ishikawa, H Tsukuma, N Iwata, M Ikeuchi, Y Iwasaki, N Konishi : Japan Journal of Medical Informatics 28 Suppl. pp. 737-740, 2008.
- 3: A Study on Training of the Healthcare Information Technologists in a Local City : T Iwamoto, N Wakabayashi, M Okada, T Fujii, K Morimoto, N Iwata, T Tanaka, M Ikeuchi, H Tsukuma, K Ishikawa : Japan Journal of Medical Informatics 28 Suppl. pp. 342-344, 2008.
- 4: Consideration for keeping availability on maintenance in hospital information system : N Iwata, T Tanaka, H Tsukuma, K Ishikawa : Japan Journal of Medical Informatics 28 Suppl. pp. 354-355, 2008.
- 5: A Prerequisite for Rescue Process at the Time of Emergency or Wide Regional Disaster - A Simulation Study on the Emergency state by the Parties Concerned - : K Ishikawa, T Tanaka, H Tsukuma, N Iwata, Y Iwasaki, G Ushio, M Murai, M Ishiguro, Y Houshaku, T Masuike : Japan Journal of Medical Informatics 28 Suppl. pp. 741-744, 2008.
- 6: Usefulness of Community Health Cooperation System based on Outside Prescription : H Tsukuma, N Iwata, T Tanaka, M Ikeuchi, Y Iwasaki, N Konishi, Y Nomura, K Ishikawa : Japan Journal of Medical Informatics 28 Suppl. pp. 1076-1077, 2008.
- 7: EHR as Strategic Tool to Improve Safety Healthcare - Structural Change for Clinical Process Assessment at Educational Training Hospitals - : K Ishikawa, H Kusuoka, T Tanaka, H Tsukuma, Y Matsumura, A Kawamura, K Sakata, N Iwata, Y Iwasaki : J. of Japan Soc. for Healthcare

Administration Vol. 45 Suppl. pp. 91, 2008.

- 8: Data Layering with considering the security for healthcare information : N Iwata, T Tanaka, H Tsukuma, K Ishikawa : J. of Japan Soc. for Healthcare Administration Vol. 45 Suppl. pp. 109, 2008.
- 9: The requirements for disaster-victim information system combined with regional EHR and health IT cards : T Tanaka, K Ishikawa, H Tsukuma, N Iwata, M Ikeuchi ,Y Iwasaki : Proceedings of the 10th China-Japan-Korea Joint Symposium on Medical Informatics, pp. 2-4. (Zhuhai, 2008).

B) Review

C) Publications

D) Other Publications

E) Presentation at Scientific Meeting

- 1: A simulation model on constructing the disaster-victim information system using hazard map information : T Tanaka, K Ishikawa, H Tsukuma, N Iwata, M Ikeuchi, Y Iwasaki, N Konishi : The 12th Spring Meeting of Japan Association for Medical Informatics (Symposium 2008 in Akita), 2008.
- 2: Disaster-victim information system combined with regional EHR and health IT cards : T Tanaka, K Ishikawa, N Iwata, H Tsukuma, M Ikeuchi, Y Iwasaki : J. of Japan Soc. for Healthcare Administration 45 Suppl. pp. 120, 2008.
- 3: A numerical simulation using hazard map information toward construction of a disaster victim information system : T Tanaka, K Ishikawa, H Tsukuma, N Iwata, M Ikeuchi, Y Iwasaki, N Konishi : The 28th Joint Conference on Medical Informatics (Yokohama), 2008.
- 4: A Study on Training of the Healthcare Information Technologists in a Local City : T Iwamoto, N Wakabayashi, M Okada, T Fujii, K Morimoto, N Iwata, T Tanaka, M Ikeuchi, H Tsukuma, K Ishikawa : The 28th Joint Conference on Medical Informatics (Yokohama), 2008.
- 5: Consideration for keeping availability on maintenance in hospital information system : N Iwata, T Tanaka, H Tsukuma, K Ishikawa : The 28th Joint Conference on Medical Informatics (Yokohama), 2008.
- 6: A Prerequisite for Rescue Process at the Time of Emergency or Wide Regional Disaster - A Simulation Study on the Emergency state by the Parties Concerned - : K Ishikawa, T Tanaka, H Tsukuma, N Iwata, Y Iwasaki, G Ushio, M Murai, M Ishiguro, Y Houshaku, T Masuike : The 28th Joint Conference on Medical Informatics (Yokohama), 2008.
- 7: Usefulness of Community Health Cooperation System based on Outside Prescription : H Tsukuma, N Iwata, T Tanaka, M Ikeuchi, Y Iwasaki, N Konishi, Y Nomura, K Ishikawa : The 28th Joint Conference on Medical Informatics (Yokohama), 2008.
- 8: EHR as Strategic Tool to Improve Safety Healthcare - Structural Change for Clinical Process

Assessment at Educational Training Hospitals - : K Ishikawa, H Kusuoka, T Tanaka, H Tsukuma, Y Matsumura, A Kawamura, K Sakata, N Iwata, Y Iwasaki : J. of Japan Soc. for Healthcare Administration Vol. 45 Suppl. pp. 91, 2008.

- 9: Data Layering with considering the security for healthcare information : N Iwata, T Tanaka, H Tsukuma, K Ishikawa : J. of Japan Soc. for Healthcare Administration Vol. 45 Suppl. pp. 109, 2008.
- 10: The security matter of the next generation Electronic Medical Record system - Mainly on narrative data - : N Iwata, T Tanaka, M Ikeuchi, H Tsukuma, K Ishikawa : The 12th Spring Meeting of Japan Association for Medical Informatics (Symposium 2008 in Akita), 2008.
- 11: A New Emergency Relief and Evaluation Information System- Real Time Communication Support System at Wide Area Disaster - : K Ishikawa, T Tanaka, H Tsukuma, Y Iwasaki, N Iwata, M Ishiguro, Y Houshaku, T Masuike, M Murai, T Sakaue : The 12th Spring Meeting of Japan Association for Medical Informatics (Symposium 2008 in Akita), 2008.
- 12: The requirements for disaster-victim information system combined with regional EHR and health IT cards: T Tanaka, K Ishikawa, H Tsukuma, N Iwata, M Ikeuchi, Y Iwasaki : Proceedings of the 10th China-Japan-Korea Joint Symposium on Medical Informatics, pp. 2-4. (Zhuhai, 2008).

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

- 1: The research grant of the Okawa Foundation in 2007 (No. 07-23).

(5) Academic Awards, etc.

(6) Patents