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

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

(1) Staffs and Students

Professor: Masayuki Okazaki

Associate Professor: Kunio Wakasa

Research Associate: Yuji Nomura, Isao Hirata

Graduate Student: Takeo Suzuki, Ryo Nishikiori, Kohei Masuki

(2) Main Research Activities

- 1: Development of functional biomaterials with adhesion molecules
- 2: Biocompatibility of apatite-collagen composites
- 3: Interaction between living system and biomaterials with self-assembled monolayers
- 4: Dynamics 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: Synthetic osteopontin-derived peptide SVVYGLR can induce neovascularization in artificial bone marrow scaffold biomaterials : Hamada Y, Egusa H, Kaneda Y, Hirata I, Kawaguchi N, Hirao T, Matsumoto T, Yao M, Daito K, Suzuki M, Yatani H, Daito M, Okazaki M, Matsuura N : Dent Mater J 26, 487-492, 2007.
- 2: Immobilization of simulated reducing agent at the surface of SiO₂ fillers in dental composite resins : Shibata S, Hirata I, Nomura Y, Shirai K, Fujitani M, Shintani H, Okazaki M : Dent Mater J 26, 568-674, 2007.
- 3: Cell adhesion and proliferation patterns on mixed self-assembled monolayers carrying various ratios of hydroxyl and methyl groups : Fuse Y, Hirata I, Kurihara H, Okazaki M : Dent Mater J 26, 814-819, 2007.
- 4: Apoptotic and necrotic influence of dental resin polymerization initiators in human gingival fibroblast cultures : Masuki K, Nomura Y, Bhawal U K, Sawajiri M, Hirata I, Nahara Y, Okazaki

M : Dent Mater J 26, 861-869, 2007.

- 5: Acceleration of bone formation with BMP2 in frame-reinforced carbonate apatite-collagen sponge scaffolds : Hirata I, Nomura Y, Ito M, Shimazu A, Okazaki M : J Artif Organs 10, 212-217, 2007.
- 6: Expression of MMP-13 in osteoblast cells and rat tibia after exposure to gamma rays or accelerated carbon ions : Sawajiri M, Takinami S, Uchida T, Nomura Y, Mizoe J, Banik S, Tanimoto K : Physica Medica 23, 73-79, 2007.
- 7: High-risk human papillomavirus type 16 E7 oncogene associates with Cdc25A over-expression in oral squamous cell carcinoma : Bhawal U K, Sugiyama M, Nomura Y, Sawajiri M, Tsukinori K, Ikeda M, Kuniyama H : Virchows Arch 450, 65-71, 2007.
- 8: UCN-01 (7-hydroxystaurosporine) induces apoptosis and G1 arrest of both primary and metastatic oral cancer cell lines in vitro : Otsubo A, Bhawal U K, Nomura Y, Mitani Y, Ozawa K, Kuniyasu H, Sugiyama M : Oral Surgery, Oral Medicine, Oral pathology, Oral Radiology and Endodontics 103, 391-397, 2007.
- 9: Combinatorial protein display for the cell-based screening of biomaterials that direct neural stem cell differentiation : Nakajima M, Ishimuro T, Kato K, Ko I K, Hirata I, Arima Y, Iwata H : Biomaterials 28, 1048-1060, 2007.
- 10: High-Throughput Immunophenotyping by Surface Plasmon Resonance Imaging : Kato K, Ishimuro T, Arima Y, Hirata I, Iwata H : Analytical Chemistry 79(22), 8616-8623, 2007.
- 11: New development of adhesion theory —stress drop of resin layer—: Wakasa K : J Hiroshima Univ Dent Soc 39(1), 1-7, 2007 (in Japanese).

B) Review

- 1: Fabrication of artificial marrow scaffold biomaterial : Okazaki M.: The Japanese Journal of Artificial Organs 36(1), 90-91, 2007 (in Japanese).
- 2: Cooperation between dental and engineering. Present and Future (Part 2) —Cooperation between Dental Technology and Tissue Engineering— : Okazaki M.: Nippon Academy Journal of Dental Technology 28(1), 19-22, 2007 (in Japanese).
- 3: Biomaterial and My View of Life : Okazaki M.: Journal of Japanese Society for Biomaterial 25(6), 361-362, 2007 (in Japanese).

C) Publications

- 1: Tooth Magnesium: Okazaki M.: New Perspectives in Magnesium Research (Nishizawa Y, Morii H, Durlach J, Eds.) Springer-Verlag , London, pp. 359-366, 2007.
- 2: Chapter 15. Dental Implant: Okazaki M.: Artificial Organ Illustrated (Japanese Society for Artificial Organs, ed) Haru-Shobo, Tokyo, Japan, pp.72-75, 2007 (in Japanese).

D) Other Publications

E) Presentation at Scientific Meeting

- 1: 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, Japan, April 16, 2007 (in Japanese).
- 2: Experimental study of bone formation using carbonate apatite collagen sponges with different carbonate ions : Matsuura A, Kubo T, Doi K, Hirata I, Okazaki M, Akagawa Y : The 49th General Session of the Japanese Society for Dental Materials and Devices, Sapporo, Japan, May 12, 2007 (in Japanese).
- 3: New adhesion theory —Micromechanics of adhesive strength— : Wakasa K, Uno S, Okazaki M : The 49th General Session of the Japanese Society for Dental Materials and Devices, Sapporo, Japan, May 12, 2007 (in Japanese).
- 4: Osteoblast activity on CO₃ apatite-collagen sponges : Akamatsu M, Nagao M, Masunishi M, Yokota R, Hayashi H, Hirata I, Okazaki M : The 49th General Session of the Japanese Society for Dental Materials and Devices, Sapporo, Japan, May 12, 2007 (in Japanese).
- 5: Expression of GADD45 β in Osteoblast Cells after Exposure to Gamma Rays or Accelerated Carbon Ions : Sawajiri M, Takinami S, Nomura Y, Banik S, Mizoe J, Tanimoto : 16th International Congress of Dentomaxillofacial Radiology, Beijing, China, June 24, 2007.
- 6: Radiation Effect of Oral cancer cell- Osteoblast cell Interactions : Banik S, Sawajiri M, Nomura Y, Takinami S, Mizoe J, Tanimoto K : 16th International Congress of Dentomaxillofacial Radiology, Beijing, China, June 24, 2007.
- 7: Nano-analytical model of bond strength in dental adhesive biomaterials: Wakasa K. (Invited talk): ICCE/15, Hainantao, China, July 15-21, 2007.
- 8: Fabrication of CO₃apatite-collagen scaffold and evaluation of its cell activation: Nagao M, Masunishi M, Akamatsu M, Yokota R, Hayashi H, Hirata I, Okazaki M : Summer seminar of Kinki and Chu-Shikoku branch of Japanese society of dental material and device, Osaka, Japan, August 8, 2007 (in Japanese).
- 9: Development of highly functional hard tissue scaffold biomaterials : Okazaki M. (Invited talk): Composite at Lake Louise 2007, Lake Louise, Canada, October 30, 2007
- 10: Public symposium “Mineral and Health” Tooth and Mineral: Okazaki M.: 27th Annual Congress of the Japanese Society for Magnesium Reserch, Tokyo, Japan, November 9, 2007 (in Japanese).
- 11: Bone formation with reinforced CO₃Ap-collagen scaffolds : Tieliewuhan Y, Hirata I, Okazaki M : International Dental Materials Congress 2007, Bangkok, Thailand, November 24, 2007.
- 12: Evaluation of waveform-like pattern between surface composition and cell proliferation using self-assembled monolayers : Hirata I, Fuse Y, Okazaki M : International Dental Materials Congress 2007, Bangkok, Thailand, November 24, 2007.
- 13: Chemical, mechanical, and biological properties of titanium implant surface treated with polyphosphoric acid : Maekawa K, Yoshida Y, Hirata I, Okazaki M, Suzuki K, Kuboki T : International Dental Materials Congress 2007, Bangkok, Thailand, November 24, 2007.
- 14: Bone formation ability of newly developed CO₃Ap-collagen sponges. : Matsuura A, Kubo T, Doi K,

Hayashi K, Morita K, Hirata I, Okazaki, Akagawa Y : International Dental Materials Congress 2007, Bangkok, Thailand, November 24, 2007.

- 15: Establishment of Hydroxyapatite Synthesis Method and Its Application for Biomaterial : Okazaki M : The 29th Annual Meeting of Japanese Society for Biomaterials, Osaka, Japan, November 26, 2007 (in Japanese).
- 16: Development of titanium biosensor for nano-order analysis of titanium surface interaction : Hirata I, Hiasa K, Abe Y, Akagawa Y, Okazaki M, Yoshida Y, Kuboki T, Suzuki K : The 29th Annual Meeting of Japanese Society for Biomaterials, Osaka, Japan, November 26, 2007 (in Japanese).
- 17: Difficult Discussion on Teeth and bone without Apatites : Okazaki M : The 29th Annual Meeting of Japanese Society for Biomaterials, Osaka, Japan, November 26, 2007 (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), ¥2,500,000
- 2: Research Project, Grant-in-Aid for Scientific Research (C) (New) : Nomura Y.: A study about the endocrine disruptor activity evaluation of dentistry materials by the amphibians docimasy: (No.19592239) , ¥2,210,000
- 3: Research Project, Grant-in-Aid for Young Scientists (B) (Continued) : Hirata I.: Development of rapid analysis system of biointerface using surface factor array chip: (No.1870042) , ¥1,500,000
- 4: Nakatani Foundation of Electronic Measuring Technology Advancement (New) : Fabrication of Surface Factor Array Chip for Rapid Evaluation of Biomaterial and Development of Its Measurement System : Hirata I. ¥1,000,000

(5) Academic Awards, etc.

- 1: Hirata I.: The Japanese Society for Dental Materials and Devices: NOISHIKI AWARD 2006: October 31, 2007.
- 2: Okazaki M.: Japanese Society for Biomaterials: Award of Japanese Society for Biomaterials: November 26, 2007.

(6) Patents

- 1: Hamada Y, Matsuura N, Egusa H, Kaneda Y, Okazaki M : Growth Acceleration Agent for Mesenchymal Stem Cells and Skeletal Biomaterials contained it : PCT/JP2007/66756, August 29, 2007.

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

(1) Staffs and Students

Professor:	Yukio Kato
Associate Professor:	Mitsuhide Noshiro
Assistant Professor:	Takeshi Kawamoto
Research Associate:	Katsumi Fujimoto
Graduate Student:	Taichi Ueshima
Secretary:	Misano Kuramoto

(2) Main Research Activities

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

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

(3) Research Achievements

A) Original Papers (including Case Reports)

- 1: Comprehensive analysis of chemotactic factors for bone marrow mesenchymal stem cells. : Ozaki Y, Nishimura M, Sekiya K, Suehiro F, Kanawa M, Nikawa H, Hamada T, Kato Y : Stem Cells and Development, 2007 Feb 16(1), 119-29.
- 2: Differential regulation of DEC2 among hypoxia-inducible genes in endometrial carcinomas. : Yunokawa M, Tanimoto K, Nakamura H, Nagai N, Kudo Y, Kawamoto T, Kato Y, Hiyama E, Hiyama K, Nishiyama M. : Oncol Rep. 2007 Apr 17(4), 871-8.
- 3: Transcriptional repression by the basic helix-loop-helix protein Dec2: multiple mechanisms through E-box elements. : Fujimoto K, Hamaguchi H, Hashiba T, Nakamura T, Kawamoto T, Sato F, Noshiro M, Uk B, Suardita K, and Kato Y : International Journal of Molecular Medicine, 2007 Jun 19(6), 925-32.
- 4: Identification of marker genes distinguishing human periodontal ligament cells from human mesenchymal stem cells and human gingival fibroblasts. : Fujita T, Iwata T, Shiba H, Igarashi A, Hirata R, Takeda K, Mizuno N, Tsuji K, Kawaguchi H, Kato Y, Kurihara H. : J Periodontal Res. 2007 Jun 42(3), 283-6
- 5: Multiple mechanisms regulate circadian expression of the gene for cholesterol 7 α -hydroxylase (Cyp7a), a

- key enzyme in hepatic bile acid biosynthesis. : Noshiro M, Usui E, Kawamoto T, Kubo H, Fujimoto K, Furukawa M, Honma S, Makishima M, Honma K, Kato Y. : J Biol Rhythms. 2007 Aug 22(4), 299-311.
- 6: Selection of Common Markers for Bone Marrow Stromal Cells from Various Bones Using Real-Time RT-PCR: Effects of Passage Number and Donor Age. : Igarashi A, Segoshi K, Sakai Y, Pan H, Kanawa M, Higashi Y, Sugiyama M, Nakamura K, Kurihara H, Yamaguchi S, Tsuji K, Kawamoto T, Kato Y. : Tissue Eng. 2007 Oct 13(10), 2405-17.
- 7: Transforming Growth Factor- β Promotes Survival of Mammary Carcinoma Cells through Induction of Antiapoptotic Transcription Factor DEC1. : Ehata S, Hanyu A, Hayashi M, Aburatani H, Kato Y, Fujime M, Saitoh M, Miyazawa K, Imamura T, Miyazono K. : Cancer Res. 2007 Oct 15 67(20), 9694-703.
- 8: Collocational Analysis of Life Science English (4) - Lists of common collocates of affinity, aim, difference, growth, importance, knowledge, observation, understanding - .: Ohtake H, Fujita N, Kaneko S, Morren B, Kawamoto T : Studia Humana et Naturalia 41, 67-108, 2007.

B) Review

C) Publications

D) Other Publications

E) Presentation at Scientific Meeting

- 1: High HAS1 and low CD44 levels may contribute to viscosity of bone marrow aspirates. : M Nishimura, K Sekiya, Y Sakai, Y Kato. : Hyaluronan April 22-27, 2007, Charleston, USA.
- 2 : DEC1 modulates circadian phase of clock gene expression : Nakashima A, Kawamoto T, Honda K, Ueshima T, Noshiro M, Fujimoto K, Kubo H, Kato Y. : 2nd World Congress of Chronobiology, November 4-6, 2007, Tokyo.
- 3 : The liver X receptors (LXR α and LXR β) are potent regulators for hepatic Dec1 expression : Noshiro M, Usui E, Kawamoto T, Sato F, Nakashima A, Furukawa M, Ueshima T, Honda K, Fujimoto K, Honma S, Honma K, Kato Y. : 2nd World Congress of Chronobiology, November 4-6, 2007, Tokyo.

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

(5) Academic Awards, etc.

(6) Patents

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

(1) Staffs and Students

Professor : Takashi Uchida

Assistant : Shinji Hiyama, Emiko Yamanishi, 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 : Rat wct mutation induces a hypo-mineralization form of amelogenesis imperfecta and cyst formation in molar teeth. : Osawa M, Kenmotsu S, Masuyama T, Taniguchi K, Uchida T, Saito C, Ohshima H : Cell Tissue Res 330(1) , 97-109, 2007.
- 2 : Rat wct mutation prevents differentiation of maturation-stage ameloblasts resulting in hypo-mineralization in incisor teeth. : Osawa M, Kenmotsu S, Masuyama T, Taniguchi K, Uchida T, Saito C, Ohshima H : Histochem Cell Biol 128(3) , 183-193, 2007.
- 3 : In vitro differentiation of epithelial cells cultured from human periodontal ligament. : Shimonishi M, Hatakeyama J, Sasano Y, Takahashi N, Uchida T, Kikuchi M, Komatsu M : J Periodontal Res 42(5) , 456-465, 2007.
- 4 : Expression of MMP-13 in osteoblast cells and rat tibia after exposure to gamma rays or accelerated carbon ions. : Sawajiri M, Takinami S, Uchida T, Nomura Y, Mizoe J, Banik S, Tanimoto K : Phys Med 23(2) , 73-79, 2007.
- 5 : Expression and localization of calbindin D 28k in all intestinal segments of the laying hen. : Sugiyama T, Kikuchi H, Hiyama S, Nishizawa K, Kusuhara S : British Poultry Science 48(2) , 233-238, 2007.
- 6 : Glial-cytokine-neuronal interactions underlying the mechanisms of persistent pain. : Guo W, Wang H, Watanabe M, Shimizu K, Zou S, LaGraize SC, Wei F, Dubner R, Ren K. : J Neurosci 27(22) , 6006-6018, 2007.
- 7 : A treatment case of Angle Class II division 2 adult patient with molar distalization achieved by distal extension lingual arch. : Hasegawa T, Tanaka E, Watanabe M, Suekawa Y, Takahashi K, Tanne K. : Cyuu-Shikoku Kyousei Shika Gakkai Zasshi.19(1) , 57-65, 2007.(in Japanese)

B) Review

C) Publications

- 1 : Immunohistochemistry of the hard tissue : Uchida T, Hiyama S, Watanabe M, Akamatsu M : Histochemistry and Cytochemistry 2007, from the basic to the advanced technique (ed. By Japan Society of Histochemistry and Cytochemistry) , pp.153-163 , Japan Society of Histochemistry and Cytochemistry, Kyoto, 2007.

D) Other Publications

E) Presentation at Scientific Meeting

- 1 : Differentiation of bone marrow cells into osteoclasts during modularly bone formation : Hiyama S, Yamanishi E, Uchida T : The 112th Annual Meeting of Japanese Association of Anatomists (Osaka), 2007.
- 2 : Immunocytochemical localization of ameloblastin and osteopontin in the early stage of cementogenesis of the rat : Uchida T, Hiyama S, Yamanishi E : The 112th Annual Meeting of Japanese Association of Anatomists (Osaka), 2007.
- 3 : Immunocytochemical localization of ameloblastin and osteopontin in the early stage of cementogenesis of the rat molar tooth germ after administration of monesin : Uchida T, Hiyama S, Watanabe M, Shimadu A : The 49th Meeting of Japanese Association of Oral Biology (Sapporo), 2007.
- 4 : Differentiation of osteoclast precursor cells into the osteoclasts during medullary bone formation : Hiyama S, Watanabe M, Uchida T : The 49th Meeting of Japanese Association of Oral Biology (Sapporo), 2007.
- 5 : A rapid trigeminal nerve injury induces allodynia/hyperalgesia o facial region : Takahashi K, Watanabe M, Suekawa Y, Nishi M, Tanaka E, Uchida T, Tanne K : The 49th Meeting of Japanese Association of Oral Biology (Sapporo), 2007..
- 6 : Morphological and immunohistochemical observations on the collar enamel and ganoine in *Polypterus senegalus*, a bony fishn : Sasagawa I, Yokosuka H, Ishiyama M, Uchida T : The 49th Meeting of Japanese Association of Oral Biology (Sapporo), 2007.
- 7 : Osteoclast differentiation during modularly bone formation period in Japanese Quail bone marrow cell culture. : Hiyama S, Yamanishi E, Watanabe M, Uchida T : 29th Annual Meeting of the American Society for Bone and Mineral Research. (Honolulu) 2007.

F) Special lectures in academic meetings

- 1 : Immunohistochemistry of the hard tissue : Uchida T.: The 32nd Technical Seminar for the

Histochemistry and Cytochemistry : (Kyoto), 2007

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

- 1 : Grant-in-aid for Scientific Research from the Japanese Society for the Promotion of Science (C) : Molecular biological study of the role of matrix proteins in the tooth development with special reference to the cytodifferentiation and initial calcification. (No.18592002) .
¥1,700,000
- 2 : Grant-in-Aid for Young Scientists (B) from the Japanese Society for the Promotion of Science : Molecular biological and morphological studies of the role of sex hormone and its target factors in bone metabolism and stem cell niche. (No.18791351) . ¥1,400,000

(5) Academic Awards, etc.

(6) Patents

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

(1) Staffs and Students

Professor : Shiba Yoshiki

Associate Professor : Hirono Chikara

Assistant : Sugita Makoto, Iwasa Yoshiko

Graduate Student : Kongo Hiroyasu, Hara Kumiko, Maruyama Takane

(2) Main Research Activities

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

(3) Research Achievements

A) Original Papers (including Case Reports)

B) Review

- 1: Water transport and electrolyte secretory function in salivary glands : Shiba Y, Hirono C, Sugita M, Iwasa Y : G I. Research 15, 90-97, 2006.

C) Publications

D) Other Publications

E) Presentation at Scientific Meeting

- 1: Suppression of norepinephrine-induced oscillatory Cl secretion via b-adrenergic stimulation in acinar cells of rat submandibular glands : Hirono C, Shintani T, Sugita M, Iwasa Y, Shiba Y : The 84th Annual Meeting of the Physiological Society of Japan (Osaka), 2007.
- 2: Hyperplasia and hypertrophy induction through PCNA and p27 with isoproterenol in rat salivary gland. : Iwasa Y, Shiba Y, Hirono C, Sugita M : 49th Annual Meeting of Japanese Association for Oral Biology (Sapporo), 2007.
- 3: Suppression of carbachol-induced Cl secretion by cytochalasin D in rat parotid acinar cells. : Kongo H, Hirono C, Shiba Y, Sugita M, Iwasa Y : The 49th Annual Meeting of Japanese Association for Oral Biology (Sapporo), 2007.

- 4: Changes in rat salivary proteins with isoproterenol application. : Maruyama T, Iwasa Y, Sugita M, Hirono C, Shiba Y: The 49th Annual Meeting of Japanese Association for Oral Biology (Sapporo), 2007.
- 5: Changes in human salivary proteins with salivary gland massage and sour stimulation. : Hara K, Maruyama T, Iwasa Y, Sugita M, Hirono C, Amano H, Shiba Y: The 49th Annual Meeting of Japanese Association for Oral Biology (Sapporo), 2007.
- 6: The spatial distribution and the molecular characteristics of neurons in the nucleus of the solitary tract, labeled by the transsynaptic tracer originating from specific taste receptor cells: Sugita M: The 5th International Symposium on Molecular and Neural Mechanisms of Taste and Olfactory Perception (Fukuoka), 2007.

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

- 1: Grant-in-Aid for Scientific Research (B) : Shiba Y : Regulation with secretory signals and neurotrophic factors of salivary secretion-related protein expression, ¥7,020,000.
- 2: Grant-in-Aid for Scientific Research on Priority Area of "Transportsome" : Sugita M : The molecular machinery regulating the biogenesis, degradation, and trafficking of CFTR, ¥2,600,000.
- 3: JST (PRESTO) : Sugita, M. : The neuronal mechanisms underlying the taste-evoked behavioral and emotional responses, ¥6,100,000.

(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: Tomoya Kitayama, Hiroko Oka

Graduate Student: Atsue Matsumoto, Naoyo Motoyama, Liqiu Song, Koki Kifune

(2) Main Research Activities

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

(3) Research Achievements

A) Original Papers (including Case Reports)

- 1:C-terminal region regulates the functional expression of human norepinephrine transporter splice variants : Sogawa C, Kumagai K, Sogawa N, Morita K, Dohi T and Kitayama S : Biochem. J. 401, 185-195, 2007.
- 2:Activation of GABA_A receptors facilitates astroglial differentiation induced by ciliary neurotrophic factor in neural progenitors isolated from fetal rat brain. : Yoneyama M, Fukui M, Nakamichi N, Kitayama T, Taniura H and Yoneda Y : J. Neurochem. 100, 1667-1679, 2007.
- 3:Increased γ -aminobutyric acid (GABA) levels in mouse Brain induce loss of righting reflex, but not immobility in response to noxious stimulation. : Katayama S, Irifune M, Kikuchi N, Takarada T, Shimizu Y, Endo C, Takata T, Dohi T, Sato T and Kawahara M : Anesthesia Anal. 104, 1422-1429, 2007.
- 4:Riluzole, a glutamate release inhibitor, induces loss of righting reflex, antinociception, and immobility in response to noxious stimulation in mice.: Irifune M, Kikuchi N, Saida T, Takarada T, Shimizu Y, Endo C, Morita K, Dohi T, Sato T and Kawahara M : Anesthesia Anal. 104, 1415-1421, 2007.
- 5:Assessing an eating disorder induced by 6-OHDA and the possibility of nerve regeneration therapy by transplantation of neural progenitor cells in rats. : Kitayama T, Onitsuka Y, Song L,

Morioka N, Motita K and Dohi T : Jpn. J. Neuropsychopharmacol. 27, 109-116, 2007.

B) Review

- 1: Role of $\alpha 7$ nicotinic acetylcholine receptor in spinal nociceptive transduction cascade.: Dohi T, Morioka N, Morita K, Kitayama T, Kitayama S and Nakashima T : Smoking research foundation annual research report, 598-613, 2007.
- 2: Structure, function, and regulated expression of neurotransmitter transporters.: Kitayama S, Sogawa C and Dohi T : Folia Pharmacologica Japonica 130, 444-449, 2007.
- 3: Antinociceptive effects of glycine transporter inhibitors in neuropathic pain models in mice.: Morita K, Motoyama N, Kitayama T, Morioka N and Dohi T : Folia Pharmacologica Japonica 130, 458-463, 2007.

C) Publications

- 1: Drugs and Dysphagia –How Medications Can Affect Eating and Swallowing–: Lynette L. Carl and Peter R. Johnson. Dohi T. Translation: Ishiyakusyuppan (Tokyo), 2007.

D) Other Publications

- 1: New expansion of neuronal transporter studies.: Kitayama S. and Dohi T : Folia Pharmacologica Japonica 130, 443, 2007.
- 2: Relay-essay –vox nova– what I think about transfer. : Kitayama T : Folia Pharmacologica Japonica 130, 438, 2007.

E) Presentation at Scientific Meeting

International Meeting

- 1: Platelet-activating factor induces tactile allodynia by disinhibition of glycinergic control through glutamate-cGMP cascade in mouse spinal cord. : Dohi T, Morita K, Kitayama T, Motoyama N, Morioka N and Kifune K : 3rd International Conference on Phospholipases A₂ and Lipid Mediators (Sorrento, Italy), 2007.
- 2: Glycine receptors are target molecules for induction of tactile allodynia by platelet-activating factor-glutamate-cGMP cascade in mouse spinal cord : Dohi T, Morita K, Kitayama T, Motoyama N, Morioka N and Kifune K : 8th World Congress on Inflammation (Copenhagen, Denmark), 2007.
- 3: Antinociceptive effects of glycine transporter inhibitors in various pain models in mice. : Dohi T, Morita K, Motoyama N, Kitayama T, Morioka N and Kifune K : 8th World Congress on Inflammation (Copenhagen, Denmark), 2007.
- 4: Anti-allodynia effects of glycine transporter inhibitors in neuropathic pain models in mice :

Morita K, Motoyama N, Kitayama T, Morioka N and Dohi T : 37th Annual Meeting of Society for Neuroscience (San Diego, CA, U.S.A.), 2007.

5: Spinal glycine receptor $\alpha 3$ subunit (GlyR $\alpha 3$) involvement of inhibitor of glycine transporter-induced anti-allodynia effects in neuropathic pain models in mice.: Dohi T, Morita K, Motoyama N, Kitayama T and Morioka N : 37th Annual Meeting of Society for Neuroscience (San Diego, CA, U.S.A.), 2007.

Domestic meeting

1: Improvable effects of transplantation of neural progenitor cells on eating disorder in parkinson model rats.: Kitayama T, Onitsuka Y and Dohi T : The 16th Meeting of young scientist of neurobehavioral pharmacology (Nagoya), 2007.

2: Immunohistochemical analysis of microglia activation and glycine signaling proteins on neuropathic pain by the partial sciatic nerve ligation in murine spinal cord. : Kitayama T, Morita K, Motoyama N, Morioka N and Dohi T : The 80th Annual Meeting of The Japanese Pharmacological Society (Nagoya), 2007

3: The involvement of μ -opioid and α_2 -adrenergic receptors in inducing immobility as one of anesthetic components. : Onitsuka C, Irifune M, Morita K, Dohi T and Kawahara M : The 80th Annual Meeting of The Japanese Pharmacological Society (Nagoya), 2007

4: Activation of P2X₇ receptor suppresses the transport of glutamate in cultured spinal microglia : Morioka N, Abdin Md J, Kitayama T, Morita K and Dohi T : The 80th Annual Meeting of The Japanese Pharmacological Society (Nagoya), 2007

5: Analgesic effect of inhibitors of glycine transporters in inflammatory pain models in mice.: Kifune K, Motoyama N, Morita K, Kitayama T and Dohi T : The 27th Annual Meeting of Japanese Society of Oral Therapeutics and Pharmacology (Tokyo), 2007.

6: Analgesic effect of inhibitors of glycine transporters in neuropathic pain models in mice.: Motoyama N, Morita K, Kitayama T, Morioka N and Dohi T : The 27th Annual Meeting of Japanese Society of Oral Therapeutics and Pharmacology (Tokyo), 2007.

10: Effects of NO/cGMP cascade and glycine receptor on development of allodynia induced by intrasubarachnoid injection with PAF or glutamate.: Morita K, Kitayama T, Morioka N, Motoyama N and Dohi T : The 111th Kinki Branch Meeting of Japanese Pharmacological Society (Nagoya), 2007.

11: Analgesic effect of inhibitors of glycine transporters in neuropathic pain models and its mechanism.: Motoyama N, Morita K, Kitayama T and Dohi T : The 40th Ordinary Meeting of Hiroshima University Dental society (Hiroshima), 2007.

12: Chronic treatment of local anesthetics and desipramine regulates NET expression in cell-surface.: Kitayama T, Song L, Morita K and Dohi T : The 37th Annual Meeting of the Japanes Society of Neuropsychopharmacology (Sapporo), 2007.

13: Glycine receptor $\alpha 3$ (GlyR $\alpha 3$) mediates the anti-allodynia action of glycine transporter inhibitors.: Morita K, Motoyama N, Kitayama T, Morioka N and Dohi T : The 29th Annual Meeting of Japanese Association for the Study of Pain (Yokohama), 2007.

- 14: Glycine transporter inhibitors by targeting glycine receptor $\alpha 3$ alleviate neuropathic pain in sciatic nerve injured mice.: Motoyama N, Morita K, Kitayama T and Dohi T : The 49th Annual Meeting of Japanese Association for Oral Biology (Sapporo), 2007.
- 15: Role of prostaglandinE2 and EP receptors on cementum destruction mechanism by cementoblast.: Oka H, Miyauchi M, Sakamoto K, Iitzuka S, Morita K, Dohi T and Takada T : The 49th Annual Meeting of Japanese Association for Oral Biology (Sapporo), 2007.
- 16: C-terminal region regulates the functional expression of human norepinephrine transporter.: Sogawa C, Sogawa N, Kumagai K, Oyama K, Morita K, Dohi T, Onodera N and Kitayama S : The 49th Annual Meeting of Japanese Association for Oral Biology (Sapporo), 2007.
- 17: Blockade of glycine transporters ameliorated mechanical allodynia developed in neuropathic pain model in mice.: Morita K, Motoyama N, Kitayama T, Morioka N and Dohi T : The 30th Annual Meeting of the Japan Neuroscience Society; The 50th Annual Meeting of the Japanese Society for Neurochemistry; The 17th Annual Meeting of the Japanese Neural Network Society (Yokohama), 2007.
- 18: Activation of P2X₇ receptor suppresses the function of glutamate transporter in cultured spinal microglia.: Morioka N, Kitayama T, Morita K, Nakata Y and Dohi T : The 30th Annual Meeting of the Japan Neuroscience Society; The 50th Annual Meeting of the Japanese Society for Neurochemistry; The 17th Annual Meeting of the Japanese Neural Network Society (Yokohama), 2007.
- 19: Mechanism of development of allodynia induced by ATP —relationships with glycinergic neuron. : Morita K, Motoyama N, Kitayama T and Dohi T : National Institute for Physiological Sciences Workshop (Okazaki), 2007.
- 20: The role of glycinergic neuron in the neuropathic pain. : Motoyama N, Morita K, Kitayama T and Dohi T : The 46th Scientific Meeting of Hiroshima Prefecture Dental Association; The 91th Ordinary Meeting of Hiroshima University Dental society (Hiroshima), 2007.
- 21: Role of PGE receptors on osteoclast and induced of osteoclast; and possibility of PGE receptor agonist is depressant of destruction of periodontal tissue.: Oka H, Miyauchi M, Ogawa I, Morita K, Dohi T and Takata T : The 46th Scientific Meeting of Hiroshima Prefecture Dental Association; The 91th Ordinary Meeting of Hiroshima University Dental society (Hiroshima), 2007.
- 22: Relationships with transport chloride ion on mechanism of neuropathic pain.: Kitayama T, Morita K, Motoyama N, Oka H and Dohi T : The 112th Kinki Branch Meeting of Japanese Pharmacological Society (Osaka), 2007.

F) Special lectures in academic meetings

- 1: Structure, Function and regulated expression of the neurotransmitter transporters.: Kitayama S, Sogawa C and Dohi T : The 80th Annual Meeting of The Japanese Pharmacological Society (Nagoya), 2007.
- 2: Antinociceptive effects of glycine transporter inhibitors in neuropathic pain models in mice.:

Morita K, Motoyama N, Kitayama T, Morioka N and Dohi T : The 80th Annual Meeting of The Japanese Pharmacological Society (Nagoya), 2007.

3: Molecular mechanisms for nociception and its disorder.: Dohi T : The 80th Annual Meeting of Japan Endodontic Association; The 5th KAE-JEA Joint Meeting (Hiroshima), 2007.

4: Activation of ATP receptor modulates the transport of glutamate in cultured spinal microglia.: Morioka N, Kitayama T, Morita K, Nakata Y and Dohi T : The 35th Symposium of Drug Activity (Hiroshima), 2007.

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

1: Grant-in Aid for Scientific Research (B)(2) continuance : Dohi T : The molecular mechanism of development of allodynia and new drug development. (Project number 18390491). ¥4,200,000.

2: Grant-in Aid for Scientific Research (C) continuance : Morita K: The role of new calcium signaling messenger cyclic ADP ribose on the mechanisms of pain and its regulation. (Project number 18592036) ¥ 1,100,000.

3 : Grant-in Aid for Scientific Research (C) : Mitsuata C : Effects of endocrine disorders on developing dopaminergic system in brain. (Project number 19592354). ¥ 1,900,000

4 : Grant-in-Aid for Young Scientists (B) continuance : Kitayama T : Development of neuroregeneration therapy on disease of oral area. (Project number 17791323). ¥ 1,500,000

5: Grant-in-Aid for Young Scientists (Start-up) : Oka H : Elucidation of roles of cyclic ADP-ribose on pain control and development of new therapeutic agents. (Project number 19890137). ¥ 1,320,000

(5) Academic Awards, etc.

(6) Patents

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

(1) Staffs and Students

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

(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 : Enamel Matrix Derivative Exhibits Anti-inflammation Properties in Monocytes. : Sato S , Kitagawa M , Sakamoto K , Iizuka S , Kudo Y , Ogawa I , Miyauchi M , Foster B L , Somerman M J , Takata T : J Periodontol. (in press).
- 2 : IFITM1 promotes the invasion at the early stage of head and neck cancer progression. : Hatanô H , Kudo Y , Ogawa I , Tsunematsu T , Kikuchi A , Abiko Y , Takata T : Clin Cancer Res. (in press).
- 3 : VEGF-C is associated with lymphatic status and invasion in oral cancer. : Siriwardena B S M S , Kudo Y , Ogawa I , Udagama M N G P K , Tilakaratne W M , Takata T : J Clin Pathol. 61(1) ,103-8, 2008.
- 4 : 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 M J , Takata T : Arch Oral Biol. 53(3) ,243-9, 2008.
- 5 : Biomechanical response of condylar cartilage-on-bone to dynamic shear. : Tanaka E , Rego E B , Iwabuchi Y , Inubushi T , Koolstra J H , van Eijden T M G J , Kawai N , Kudo Y , Takata T , Tanne K : J Biomed Mater Res A. 2007 Aug 9 [Epub ahead of print].
- 6 : Cultured cementoblast stimulation by low- and high- intensity ultrasound. : Dalla-Bona D A , Tanaka E , Inubushi T , Oka H , Ohta A , Okada H , Miyauchi M , Takata T , Tanne K : Arch Oral Biol. 2007 Dec 26 [Epub ahead of print]

- 7 : MK-801 enhances gabaculine-induced loss of the righting reflex in mice, but not immobility. : Irifune M , Katayama S , Takarada T , Shimizu Y , Endo C , Takata T , Morita K , Dohi T , Sato T , Kawahara M : *Can J Anaesth.* 54(12), 998-1005, 2007.
- 8 : Constitutive phosphorylation of Aurora-A on Ser51 induces its protein overexpression through the inhibition of APC/C^{Cdh1} mediated degradation in cancer. : Kitajima S , Kudo Y , Ogawa I , Tatsuka M , Kawai H , Pagano M , Takata T : *PLoS ONE.* 2(9), e944, 2007.
- 9 : Treatment with anti- γ -glutamyl transpeptidase antibody attenuates the osteolysis in the collagen-induced arthritis mice. : Ishizuka Y , Kawahara-Hanaoka M , Moriwaki S , Uemura Y , Serizawa I , Miyauchi M , Shibata S , Kanaya T , Takata T , Ikeda K , Taniguchi N , Niida S : *J Bone Miner Res.* 22(12), 1933-42, 2007.
- 1 0 : PGE2 activates cementoclastogenesis by cementoblasts via EP4. : Oka H , Miyauchi M , Sakamoto K , Moriwaki S , Niida S , Noguchi K , Somerman M J , Takata T : *J Dent Res.* 86(10), 974-9, 2007.
- 1 1 : Chronic Administration of Lipopolysaccharide and Proteases Induces Periodontal Inflammation and Hepatic Steatosis in Rats. : Tomofuji T , Ekuni D , Yamanaka R , Kusano H , Azuma T , Sanbe T , Tamaki N , Yamamoto T , Watanabe T , Miyauchi M , Takata T : *J Periodontol.* 78(10), 1999-2006, 2007.
- 1 2 : Immortalization and characterization of pleomorphic adenoma cells by transfection with the hTERT gene. : Kitagawa M , Ogawa I , Shima K , Hashimoto S , Kudo Y , Miyauchi M , Tahara H , Shimono M , Takata T : *Int J Oncol.* 31(2), 339-44, 2007.
- 1 3 : Immortalization and characterization of human pulp cells with odontoblastic differentiation. : Kitagawa M , Ueda H , Iizuka S , Sakamoto K , Oka H , Kudo Y , Ogawa I , Miyauchi M , Tahara H , Takata T : *Arch Oral Biol.* 52(8) ,727-31, 2007.
- 1 4 : Analysis of histopathological and immunohistochemical differences of oral squamous cell carcinoma in the young and the old patients in Sri Lanka. : Siriwardena B S M S , Tilakanatne A , Amaratunga E A P D , Udagama M N G P K , Ogawa I , Kudo Y , Takata T , Tilakaratne W M : *J Oral Pathol Med.* 36(6), 357-62, 2007.
- 1 5 : Increased γ -aminobutyric acid (GABA) levels in mouse brain induce loss of righting reflex, but not immobility in response to noxious stimulation. : Katayama S , Irifune M , Kikuchi N , Takarada T , Shimizu Y , Endo C , Takata T , Dohi T , Sato T , Kawahara M : *Anesth Analg.* 104(6), 1422-9, 2007.
- 1 6 : Cyclooxygenase-2-dependent prostaglandin E2 up-regulates interleukin(IL)-1 α -induced IL-6 generation in mouse cementoblasts. : Noguchi K , Miyauchi M , Oka H , Komaki M , Somerman M J , Ishikawa I , Takata T : *J Periodontol.* 78(1), 135-40, 2007.
- 1 7 : Skp2 expression is associated with down-regulation of p27 protein and cell proliferation in Salivary Adenoid Cystic Carcinoma. : Keikhaee M R , Kudo Y , Siriwardena B S M S , Wu L , Ogawa I , Takata T : *Virchows Arch.* 450(5), 567-74, 2007.
- 1 8 : Aurora-B expression and its correlation with cell proliferation and metastasis in oral cancer. : Qi G , Ogawa I , Kudo Y , Miyauchi M , Siriwardena B S M S , Shimamoto F , Tatsuka M , Takata T : *Virchows Arch.* 450(3), 297-302, 2007.
- 1 9 : Aurora-B Regulates RNA Methyltransferase NSUN2. : Sakita-Suto S , Kanda A , Suzuki F , Sato S , Takata T , Tatsuka M : *Mol Biol Cell.* 18(3), 1107-17, 2007.
- 2 0 : An updated clinical and epidemiological profile of the adenomatoid odontogenic tumour: a collaborative retrospective study. : Philipsen H P , Reichart P A , Siar C H , Ng K H , Lau S H , Zhang X , Dhanuthai K , Swasdison S , Jainkittivong A , Meer S , Jivan V , Altini M , Hazarey V , Ogawa I , Takata T , Taylor A A , Godoy H ,

Delgado W A, Carlos-Bregni R, Macias J F, Matsuzaka K, Sato D, Vargas P A, Adebayo E T : J Oral Pathol Med. 36(7), 383-93, 2007.

B) Review

- 1 : Periostin: novel diagnostic and therapeutic target for cancer. : Kudo Y, Siriwardena B S, Hatano H, Ogawa I, Takata T : Histol Histopathol. 22 (10), 1167-74, 2007.
- 2 : Classification System for Periodontal Diseases by The Japanese Society of Periodontology (2006). : Shimauchi H, Takashiba S, Nishihara T, Kawase T, Takata T, Hara Y, Yamazaki Y, Yamamoto M : Nihon Shishubyo Gakkai Kaishi (Journal of the Japanese Society of Periodontology). 49(1), 3-12, Japanese, 2007.
- 3 : Tissue Engineering and the roles of Oral Engineering : Takata T : Journal of Nippon Academy of Dental Technology. 28, 27-9, Japanese, 2007.

C) Publications

- 1 : Digestive Organs I. Oral and related regions : Color Atlas of Histopathology and Differential Diagnosis, 5th Edition (Editors : Akagi T, Matsubara O, Manabe T, Yoshino T) : Takata T, Ogawa I : Ishiyaku Publishers Inc, Tokyo, 127-49, Japanese, 2007.
- 2 : Odontogenic Tumors: Oral Tumors : Oral Surgery (Editor : Miyazaki T) Takata T, Mori M, Ishiyaku Publishers Inc, Tokyo, 217-53, Japanese, 2007.
- 3 : New WHO Classification of Odontogenic Tumours. ; Highlights of the Revision and Their Background. : Oral Surgery Year Book. Manual of Oral Surgery 2007. (Editors : Seto K, Hukuda H, Huruta I, Kurita K, Noma H, Asanami S) Takata T, Ogawa I, Takeda Y, Yamamoto H : Quintessence, Tokyo, 180-8, Japanese, 2007.

D) Other Publications

- 1 : Close up of Gingiva, Edematous periodontal tissues with dental calculus : Takahashi M, Takata T : DHstyle 1(1), 14-6, Japanese, 2007.
- 2 : Close up of Gingiva, Black discoloration of gingiva due to melanin pigmentation. : Watanabe T, Takahashi M, Takata T : DHstyle 1(2), 14-6, Japanese, 2007.
- 3 : Close up of Gingiva, Multiple bone enlargement of lingual area of mandible : Takagi N, Takahashi M, Ogawa I, Takata T : DHstyle 1(3), 12-3, Japanese, 2007.
- 4 : Close up of Gingiva, Internal dental fistula caused by dental pulp necrosis : Watanabe T, Takahashi M, Miyauchi M, Takata T : DHstyle(4), 12-4, Japanese, 2007.
- 5 : Close up of Gingiva, Lichen planus of palatal gingival : Takagi N, Takahashi N, Ogawa I, Takata T : DHstyle 1(5), 12-4, Japanese, 2007.
- 6 : Close up of Gingiva: Gingival discoloration caused by metal cutting : Watanabe T, Takahashi M, Miyauchi M, Takata T : DHstyle(6), 12-4, Japanese, 2007.
- 7 : Close up of Gingiva, Grayish-white spots of palatal gingival : Ono N, Nishio T, Ogawa I; Takata T : DHstyle 1(7), 12-4, Japanese, 2007.

- 8 : Close up Gingiva: Aphtha at buccal gingival mucosa of mandible : Watanabe T , Takahashi M , Miyauchi M , Takata T : DHstyle(8), 12-4, Japanese, 2007.
- 9 : Close up of Gingiva, Gingival hyperplasia caused by antihypertensive drug. : Yamada K , Hayashi M , Kudo Y , Takata T : DHstyle 1(9), 12-4, Japanese, 2007.
- 1 0 : Close up of Gingiva, Gestational Epulis : Yamada K , Hayashi M , Kudo Y , Takata T : DHstyle 1(10) , 12-4, Japanese, 2007.
- 1 1 : Close up of Gingiva Epulis in mandible lingual gingival : Takagi N , Takahashi M , Kudo Y , Takata T : DHstyle 1(11), 12-4, Japanese, 2007.
- 1 2 : Close up of Gingiva: Gingival recession caused by tooth brushing : Watanabe T , Takahashi M , Miyauchi M , Takata T : DHstyle(12), 12-4, Japanese, 2007.
- 1 3 : Oral administration of liposomal lactoferrin inhibits the LPS-induced periodontal tissue destruction. : Miyauchi M , Yamano E , Sakamoto K , Tanaka E , Ishikado A , Imanaka H , Suido H , Makino T , Tanne K , Takata T : 2nd Hiroshima Conference on Education and Science in Dentistry, 69-73, 2007.
- 1 4 : Anti-inflammatory effects of liposomal lactoferrin: Inhibitory effects of liposomal lactoferrin on model of LPS-induced periodontal tissue destruction. : Yamano E , Miyauchi M , Tanaka E , Ishikado A , Imanaka H , Suido H , Makino T , Tanne K , Takata T : Lactoferrin. Japan Medical Publisher. 129-33, Japanese, 2007.

E) Presentation at Scientific Meeting

- 1 : Parotid tumor (salivary duct carcinoma, sarcomatoid variant) : Kudo Y , Ogawa I , Sakaida Y , Uemura Y , Miyamoto M , Takata T : 92nd Chugoku-Shikoku Sectional Meeting of the Japanese Stomatological Society (Tokushima) , 2007.
- 2 : Abnormal degradation and overexpression of Aurora-A in oral cancer. : Kitajima S , Kudo Y , Ogawa I , Miyauchi M , Tatsuka M , Takata T : 96th Annual Meeting of the Japanese Society of Pathology (Osaka) , 2007.
- 3 : VEGF-C is associated with lymph vessel density, lymphatic invasion and nodal metastasis in oral squamous cell carcinoma. : Siriwardena B S M S , Kudo Y , Ogawa I , Udagama M N G P K , Tilakaratne W M , Miyauchi M , Takata T : 96th Annual Meeting of the Japanese Society of Pathology (Osaka) , 2007.
- 4 : Four cases of pleomorphic adenoma showing atypical histological features suggestive for malignancy (low-grade malignant pleomorphic adenoma).: Ogawa I , Kudo Y , Miyauchi M , Shimamoto F , Takata T : 96th Meeting of The Japanese Society of Pathology (Osaka) , 2007.
- 5 : High expression of SAKI in oral squamous cell carcinoma and dysplasia. : Sato S , Ogawa I , Kitajima S , Kudo Y , Miyauchi M , Shimamoto F , Toyosawa S , Kanda A , Tatsuka M , Takata T : 96th Annual Meeting of the Japanese Society of Pathology (Osaka) , 2007.
- 6 : Identification and its roles of novel factors of oral cancer invasion. (student poster presentation) : Hatano H , Kudo Y , Siriwardena S , Kitajima S , Kitagawa M , Ogawa I , Miyauchi M , Takata T : 96th Annual Meeting of the Japanese Society of Pathology (Osaka) , 2007.
- 7 : Effects of low-intensity ultrasound on mineralization of PDL cells. : Inubushi T , Tanaka E , Rego E B , Tanne K , Miyauchi M , Takata T : 3rd Shika Butsurishigeki Kenkyukai (Gifu) , 2007.
- 8 : Role of Wnt/ β -catenin signaling pathway on cementoblast metabolism associated with low-intensity ultrasound. : Tanaka E , Inubushi T , Dalla-Bona D A , Rego E B , Tanne K , Kudo Y , Miyauchi M , Takata T : 3rd Shika

- Butsurishigeki Kenkyukai (Gifu), 2007.
- 9 : A case of peripheral ameloblastoma with histological features suggestive for low-grade malignancy arising in buccal mucosa. : Gohda K, Nakashiro K, Ogawa I, Takata T, Hamakawa H : 61st Annual Meeting of the Japanese Stomatological Society (Kobe), 2007.
- 10 : Clinical and histopathological study on boundary area between Lugol- stained and unstained of oral dysplastic lesions. : Ohta K, Ono S, Mizuta K, Taki M, Miyauchi M, Ogawa I, Takata T, Kamata N : 61st Annual Meeting of the Japanese Stomatological Society (Kobe), 2007.
- 11 : Study on the development of regeneration therapy of bone tissues by synthetic peptide of ameloblastin. : Iizuka S, Yoshida M, Kitagawa M, Sakamoto K, Kawazoe Y, Miyauchi M, Takata T : 50th Annual Meeting in Spring of the Japanese Society of Periodontology (Yokosuka), 2007.
- 12 : Expression and roles of Toll-like receptors in periodontal tissue cells. : Sakamoto K, Miyauchi M, Oka H, Kitagawa M, Iizuka S, Kawazoe Y, Takata T : 50th Annual Meeting in Spring of the Japanese Society of Periodontology (Yokosuka), 2007.
- 13 : Effect of toothbrushing on liver disease in the rat periodontitis model. : Sambe T, Tomofuji T, Ekuni D, Yamanaka R, Azuma T, Tamaki T, Yamamoto T, Watanabe T, Miyauchi M, Takata T : 50th Annual Meeting in Spring of the Japanese Society of Periodontology (Yokosuka), 2007.
- 14 : Biological effects of ultrasound exposure on the metabolism of the periodontal ligament cells. : Inubushi T, Tanaka E, Dalla-Bona D A, Yamano E, Tanne K, Ohta A, Okada H, Kudo H, Mutsumi M, Takata T : 50th Annual Meeting in Spring of the Japanese Society of Periodontology (Yokosuka), 2007.
- 15 : Two cases of orthokeratinized odontogenic cyst. : Taki M, Ohta K, Ono S, Fujimoto S, Ogawa I, Takata T, Kamata N : 36th Chugoku-Shikoku Sectional Meeting of Japanese Society of Oral and Maxillofacial Surgery (Hiroshima), 2007.
- 16 : A case of mucocutaneous angiomyolipoma in the cheek. : Shintani T, Toratani S, Miyauchi M, Hayashido Y, Ochi Y, Okamoto T : 36th Chugoku-Shikoku Sectional Meeting of Japanese Society of Oral and Maxillofacial Surgery (Hiroshima), 2007.
- 17 : Influence of elevation of g-glutamyl transpeptidase (GGT) by cholestatic liver disease on bone. : Kawazoe Y, Miyauchi M, Kanno K, Hyougo H, Niida S, Tazuma S, Takata T : 15th The Japanese Study Group for the Pathophysiology of Liver (Tokyo), 2007.
- 18 : Inhibitory effects of oral administrated liposomal lactoferrin on LPS-induced periodontal tissue destruction. : Yamano E, Miyauchi M, Sakamoto K, Ishikado A, Imanaka H, Suido H, Makino T, Tanaka E, Tanne K, Takata T : 40th general meeting of Hiroshima University Dental Society (Hiroshima), 2007.
- 19 : High expression of Runx3 and its role in oral cancer. : Tsunematsu T, Kudo Y, Siriwardena S, Hatano H, Kitajima S, Ogawa I, Takata T : 40th Plenary Meeting of the Hiroshima University Dental Society (Hiroshima), 2007.
- 20 : Palatal tumor (mucoepidermoid carcinoma, clear cell variant) : Ogawa I, Takata T, Igarashi T, Tanaka H : 93rd Slide Conference, Academic Meeting of Chugoku-Shikoku Branch of the Japanese Society of Pathology (Kurashiki), 2007.
- 21 : Different expressions of cytokeratin13 and Ki-67 in the boundary area between Lugol' iodine-stained and -unstained of oral dysplastic lesions. : Ohta K, Ono S, Mizuta K, Taki M, Miyauchi M, Ogawa I, Takata T, Kamata N : 17th Annual Meeting of the Japanese Society for Oral Mucous Membrane (Tokyo), 2007.

- 2 2 : Tumor of buccal mucosa (Peripheral ameloblastoma, border line malignancy) : Kitajima S, Ogawa I, Gouda H, Nakashiro K, Takata T : 18th Annual Meeting of the Japanese Society for Oral Pathology (Gifu), 2007.
- 2 3 : The mechanism of Aurora-A overexpression through abnormal regulation of phosphorylation in oral cancer. : Kitajima S, Kudo Y, Ogawa I, Miyauchi M, Takata T : 49th Japanese association for Oral Biology (Sapporo), 2007.
- 2 4 : Roles of prostaglandin E2 and EP receptors on regulatory mechanisms for cementum-destruction by cementoblasts. : Oka H, Miyauchi M, Sakamoto K, Iizuka S, Morita K, Dohi T, Takata T : 49th Japanese association for Oral Biology (Sapporo), 2007.
- 2 5 : Oral administration of liposomal lactoferrin inhibits periodontal tissue destruction in rat LPS-induced periodontitis. The second report: Lactoferrin effect on MMP-1 production caused by LPS and its transfer pathway : Yamano E, Ishikado A, Miyauchi M, Tanaka E, Imanaka H, Suido H, Makino T, Tanne K, Takata T : 50th Memorial Meeting in Spring of the Japanese Society of Periodontology (Tokyo), 2007.
- 2 6 : Influence of elevation of g-glutamyl transpeptidase (GGT) by cholestatic liver disease on bone and LPS induced alveolar bone destruction. : Kawazoe Y, Miyauchi M, Kitagawa M, Sakamoto K, Iizuka S, Taguchi A, Niida S, Tazuma S, Takata T : 50th Memorial Meeting of the Japanese Society of Periodontology (Tokyo), 2007.
- 2 7 : Brain-derived neurotrophic factor promotes expressions of bone-cementum-related proteins through a trkB - p44/42 - Elk-1 signalling pathway in human cementoblast-like cells : Kajiyama M, Shiba H, Fujita T, Takeda K, Mizuno T, Kawaguchi H, Takata T, Kitagawa M, Tsuji K, Kurihara H : 50th Memorial Meeting of the Japanese Society of Periodontology (Tokyo), 2007.
- 2 8 : Mechanical Stimulation of Gingiva Heals Liver Injuries in Rat Periodontitis : Yamamoto T, Tomofuji T, Ekuni D, Yamanaka R, Azuma T, Sanbe T, Tamaki N, Watanabe T, Miyauchi M, Takata T : 42nd annual meeting of IADR-Continental European and Israeli Divisions (Thessaloniki, Greece), 2007.
- 2 9 : Effects of ultrasound on the metabolism of periodontal ligament cells : Inubushi T, Tanaka E, Rego E B, Ohta A, Okada H, Kudo Y, Miyauchi M, Takata T, Tanne K : 42nd annual meeting of IADR-Continental European and Israeli Divisions (Thessaloniki, Greece), 2007.
- 3 0 : Parotid gland tumor (acinic cell carcinoma) : Ogawa I, Yoshida M, Takata T, Yoneda G, Wada N, Tomita H : 50th Meeting of Hiroshima Pathological Conference (Hiroshima), 2007.
- 3 1 : Skp2 Expression is Associated with Down Regulation of p27 Protein and Cell Proliferation in Salivary Adenoid Cystic Carcinoma. : Keikhaee M R, Kudo Y, Siriwardena S, Wu L, Ogawa I, Takata T : 2nd Hiroshima conference on education and science in dentistry (Hiroshima), 2007.
- 3 2 : Expression and roles of Toll-like receptors in periodontal tissue cells. : Sakamoto K, Miyauchi M, Oka H, Kitagawa M, Iizuka S, Takata T : 2nd Hiroshima Conference on Education and Science in Dentistry (Hiroshima), 2007.
- 3 3 : ProstaglandinE2 inhibits mineralization and enhances cementoblast-mediated degradation and cementoclastogenesis mainly via EP4 pathway : Oka H, Miyauchi M, Sakamoto K, Morita K, Dohi T, Takata T : 2nd Hiroshima Conference on Education and Science in Dentistry (Hiroshima), 2007.
- 3 4 : Influence of elevation of GGT by cholestatic liver disease on bone and LPS induced alveolar bone destruction. : Kawazoe Y, Miyauchi M, Kitagawa M, Sakamoto K, Iizuka S, Taguchi A, Niida S, Tazuma S, Takata T : 2nd Hiroshima Conference on Education and Science in Dentistry (Hiroshima), 2007.
- 3 5 : Transcription factor, Runx3 can be a useful marker for predicting malignant behavior of oral cancer :

- Tsunematsu T, Kudo Y, Ogawa I, Takata T : 2nd Hiroshima Conference on Education and Science in Dentistry (Hiroshima) , 2007.
- 3 6 : Liposomal lactoferrin via oral route suppresses LPS-induced osteoclast increase in periodontal tissue : Ishikado A, Yamano E, Miyauchi M, Suido H, Imanaka H, Takata T, Makino T : 8th International Conference on Lactoferrin (Nice, France) , 2007.
- 3 7 : Roles of PGE receptors on osteoclastogenesis and cementoclastogenesis and analysis on a possibility of PGE receptor antagonist as inhibitor of periodontal tissue destruction. : Oka H, Miyauchi M, Ogawa I, Morita K, Dohi K, Takata T : 46th General Meeting of Hiroshima Association for Dental Science, The 91st meeting of Hiroshima University Dental Society (Hiroshima), 2007.
- 3 8 : Development of dental treatment specific probe for ultrasound exposure : Kawazoe A, Tanaka E, Nikawa H, Inubushi T, Rego EB, Nakamura A, Yamano E, Ohta A, Okada H, Takata T, Tanne K : 46th General Meeting of Hiroshima Association for Dental Science, The 91st meeting of Hiroshima University Dental Society (Hiroshima), 2007.
- 3 9 : Accelerated healing of liver injuries by mechanical stimulation of gingiva in rat periodontitis model : Yamamoto T, Tomofuji T, Ekuni D, Yamanaka R, Azuma T, Sanbe T, Tamaki N, Watanabe T, Miyauchi M, Tanaka T : 95th FDI (Dubai, UAE) , 2007.
- 4 0 : A case of condylar hyperplasia resulting in marked displacement of mandible and malocclusion. : Fujii Y, Koizumi K, Toratani S, Takesue N, Matsumoto S, Hayashidoh Y, Ueki M, Takata T, Ogawa I, Okamoto T : 55th Annual Meeting, The Japanese Stomatological Society, Chugoku-Shikoku Division (Tokushima), 2007.
- 4 1 : A case of ossifying fibromyxoid tumor of the tongue. : Taki M, Ohta K, Ono S, Ogawa I, Takata T, Kamata N : 55th Annual Meeting, The Japanese Stomatological Society, Chugoku- Shikoku Division (Tokushima) , 2007.
- 4 2 : Pleomorphic adenoma with atypical histopathological features suggestive of low-grade malignancy -Low-grade malignant pleomorphic adenoma : Ogawa I, Abdelrazk MM, Kudo Y, Miyauchi M, Shimao Y, Takata T : 3rd Meeting of Asian Society of Oral & Maxillofacial Pathology (Taipei, Taiwan) , 2007.
- 4 3 : Elevated serum lipopolysaccharide induces liver injury in the rat periodontitis model. : Tomofuji T, Ekuni D, Yamanaka R, Kusano H, Azuma T, Sanbe T, Tamaki N, Yamamoto T, Watanabe T, Miyauchi M, Takata T : 7th Congress of Asian Academy of Preventive Dentistry (Okayama) , 2007.
- 4 4 : Parotid gland lesion (nodular oncocytic hyperplasia) : Ogawa I, Kushitani K, Takashia Y, Miyauchi M, Inai Y, Takata T : 9th Meeting of Society of Salivary Gland Tumor Pathology (Tokyo) , 2007.
- 4 5 : Knockdown of Skp2 inhibits cell growth through the accumulation of p27 protein in salivary adenoid cystic carcinoma. : Keikhae MR , Kudo Y, Siriwardena S , Wu L , Ogawa I , Takata T : 52nd Annual Meeting of the Japanese Salivary Gland Society (Tokyo) , 2007.
- 4 6 : A case of epithelial-myoepithelial carcinoma showing diverse histological features with squamous cell carcinoma component caused by dedifferentiation. : Ogawa I, Utsumi Y, Kano M, Takata T : The 52nd Annual Meeting of the Japanese Salivary Gland Society (Tokyo) , 2007.
- 4 7 : Stabilization and overexpression of Aurora-A protein by abnormal regulation of phosphorylation : Kitajima S, Kudo Y, Ogawa I, Tatsuka M, Takata T : 30th Annual Meeting of the Molecular Biology Society of Japan & 80th Annual meeting of the Japanese Biochemical Society(BMB2007) (Yokohama) , 2007.
- 4 8 : Abnormal expression of Emil in cancer. : Kudo Y, Tsunematsu T, Obayashi M, Ogawa I, Kitajima S, Takata T : 30th Annual Meeting of the Molecular Biology Society of Japan & 80th Annual meeting of the Japanese

Biochemical Society(BMB2007) (Yokohama) ,2007.

F) Special lectures in academic meetings

- 1 : Histological diagnosis of salivary gland tumors □process of diagnosis and important points of differential diagnosis□
(Special lecture) : Ogawa I , Takata T : 36th Academic Meeting of Kinki Branch of the Japanese Society of Pathology (Osaka) ,2007.
- 2 : Identification and characterization of new invasion relating molecules of oral squamous cell carcinoma. : Takata T, Kudo Y, Hatano H, Ogawa I, Siriwardena S, Kitajima S, Kitagawa M, Miyauchi M : Korean Academy of Oral and Maxillofacial Pathology (Seoul) ,2007.
- 3 : Symposium-1 “Recent knowledge of structure,function and pathology of salivary glands” : Classification of salivary gland tumors, WH02005. : Ogawa I , Takata T : 18th Annual Meeting of The Japanese Society for Oral Pathology (Gifu),2007.
- 4 : Symposium-2 “The mechanism of proliferation and progression of oral cancer” : Abnormality of Aurora-A degradation and protein overexpression in oral cancer : Kudo Y, Kitajima S, Ogawa I, Takata T : 18th Annual Meeting of the Japanese Society for Oral Pathology (Gifu),2007.
- 5 : Symposium-3 “Destruction and regeneration of oral tissue”: Exploratory study on the development of novel therapies based on the understanding of periodontal tissue destruction mechanism : Miyauchi M, Kitagawa M, Sakamoto K, Iizuka S, Takata T : 18th Annual Meeting for Japanese Society for Oral Pathology (Gifu),2007.
- 6 : Poster workshop 「Biology of tumor in oral cavity」 : Emil overexpression in oral cancer. : Kudo Y, Kitajima S, Ogawa I, Miyauchi M, Takata T : 49th Annual Meeting of Japanese Society of Oral Biology (Sapporo),2007.
- 7 :Symposium in dental hygienist section 2 “Consideration of systemic disease from gingival bleedings” Mechanisms of gingival bleeding and relationship with systemic diseases : Miyauchi M : 50th memorial meeting of the Japanese Society of Periodontology (Tokyo),2007.
- 8 : Identification and characterization of new invasion relating molecules of oral squamous cell carcinoma. : Takata T, Kudo Y : IX Congresso Nazionale Societa Italiana Di Patologia E Medicina Orale (Capri, Italy) ,2007.
- 9 : Abnormal regulation of cell cycle regulators in oral squamous cell carcinoma. : Takata T, Kudo Y, Kitajima S, Ogawa I, Miyauchi M : 3rd Meeting of Asian Society of Oral and Maxillofacial Pathology (Taipei) ,2007.
- 10 : Identification and characterization of new invasion relating molecules of oral squamous cell carcinoma. : Takata T, Kudo Y, Hatano H, Ogawa I, Siriwardena S, Kitajima S, Kitagawa M, Miyauchi M : Annual Scientific Meeting of the Association for Dental Sciences of the Republic of China (Taipei, Taiwan) ,2007.
- 11 : Oral Administration of Liposomal Lactoferrin Inhibits the LPS-induced Periodontal Tissue Destruction. : Miyauchi M, Yamano E, Sakamoto K, Tanaka E, Ishikado A, Imanaka H, Suido H, Makino T, Tanne K, Takata T : 2nd Hiroshima Conference on Education and Science in Dentistry (Hiroshima) ,2007.
- 12 : Inhibitory effects of oral administrated liposomal lactoferrin on LPS-induced periodontal tissue destruction. : Miyauchi M, Yamano E, Tanaka E, Ishikado A, Makino T, Tanne K, Takata T : 35th Drug Activity Symposium (Hiroshima),2007.

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

(5) Academic Awards, etc.

(6) Patents

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

(1) Staffs and Students

Professor : Hidemi Kurihara
Associate Professor : Hiroyuki Kawaguchi
Assistant Professor : Hiroshi Yoshino, Hideki Shiba
Assistant : Takamune Hino, Shigeo Nakamura, Noriyoshi Mizuno, Naohiko Hasegawa,
Hideaki Hayashi, Tsuyoshi Fujita, Yuushi Uchida, Daisuke Fujioka, Katsuhiro
Takeda, Tomoyuki Iwata, Koichi Hayashida
Secretary : Mako Akagi
Resident : Miyuki Niitani, Mari Kiyota, Noriko Tsunekuni, Mayumi Morimoto
Graduate Student : Hidehiro Tsuda, Reika Hirata, Yasuko Kitamoto, Yoriko Iwasaki, Mikihito
Kajiya, Akiyoshi Kishimoto, Nobuyuki Sakai, Takayoshi Nagahara, Yoshie Niitani,
Shinji Matsuda

(2) Main Research Activities

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

(3) Research Achievements

A) Original Papers (including Case Reports)

- 1: Effect of neurotrophins on differentiation, calcification and proliferation in cultures of human pulp cells. : Mizuno N, Shiba H, Xu WP, Inui T, Fujita T, Kajiya M, Takeda K, Hasegawa N, Kawaguchi H, Kurihara H. : Cell Biol Int. 2007 Dec 31(12) ,1462-9. Epub 2007 Jul 17.
- 2: Cell adhesion and proliferation patterns on mixed self-assembled monolayers carrying various ratios

of hydroxyl and methyl groups. : Fuse Y, Hirata I, Kurihara H, Okazaki M. : Dent Mater J. 2007 Nov 26(6) ,814-9.

- 3: Selection of common markers for bone marrow stromal cells from various bones using real-time RT-PCR: effects of passage number and donor age. : Igarashi A, Segoshi K, Sakai Y, Pan H, Kanawa M, Higashi Y, Sugiyama M, Nakamura K, Kurihara H, Yamaguchi S, Tsuji K, Kawamoto T, Kato Y. : Tissue Eng. 2007 Oct 13(10);2405-17.
- 4: Identification of marker genes distinguishing human periodontal ligament cells from human mesenchymal stem cells and human gingival fibroblasts. : Fujita T, Iwata T, Shiba H, Igarashi A, Hirata R, Takeda K, Mizuno N, Tsuji K, Kawaguchi H, Kato Y, Kurihara H. : J Periodontal Res. 2007 Jun 42(3) , 283-6.
- 5: Susceptibility of periodontopathogenic and cariogenic bacteria to defensins and potential therapeutic use of defensins in oral diseases. : Komatsuzawa H, Ouhara K, Kawai T, Yamada S, Fujiwara T, Shiba H, Kurihara H, Taubman MA, Sugai M. : Curr Pharm Des. 2007 13(30) , 3084-95. Review.
6. Bacterial examination with anaerobic culture system for samples from root canals for the achievement of biological root canal treatment : Iwata T, Hino T, Kitamoto Y, Shiba H, Ogawa I, Morimoto M, Kawaguchi H, Nikawa H, Kurihara H : The Journal of Japan Endodontic Association. 2007 Jan. 28(1) , 1-8.

B) Review

2. Infected root canal treatment with topical application of antibiotics based on bacterial examination: A case report : Morimoto M, Hino T, Shiba H, Iwata T, Kawaguchi H, Kurihara H : The Journal of Japan Endodontic Association. 2007 Jan. 28(1) , 9-15.

C) Publications

D) Other Publications

E) Presentation at Scientific Meeting

- 1: Effect of Brain-derived neurotrophic factor in cementoblast like cell. : Kajiya M, Shiba H, Fujita T, Ouhara K, Takeda K, Kawaguchi H, Kitagawa M, Takata T, Kurihara H : 85th General session and Exhibition of the international association for dental research (New Orleans), 2007.
- 2: Role of marrow mesenchymal stem cells on gingival epithelial cells function : Hirata R, Fujita T, Iwata T., Kajiya M, Shiba H, Kawaguchi H, Tsuji K, Kurihara H : 85th General session and Exhibition of the international association for dental research (New Orleans), 2007.
- 3: Irsogladine maleate regulates CXC-chemokine expression in human gingival epithelial cells : Fujita T, Takeda K, Shiba H, Mizuno N, Kawaguchi H, Abiko Y, Kurihara H : 85th General session and Exhibition of the international association for dental research (New Orleans), 2007.
- 4: Brain-derived neurotrophic factor promotes expressions of bone-cementum-related proteins through

- trk-p44/42-Elk-1 signaling pathway in in cementoblast like cells. : Kajiya M, Shiba H, Fujita T, Ouhara K, Takeda K, Kawaguchi H, Kitagawa M, Takata T, Kurihara H, Kajiya M : 50th the spring meeting of the Japanese society of Periodontology (Yokosuka), 2007
- 5: Irsogladine maleate abolishes OMP29-induced increase in IL-8 through p44/42 signaling pathway in human gingival epithelial cells : Kishimoto A, Shiba H, Fujita T, Kajiya M, Takeda K, Hayashida K, Kawaguchi H, Kurihara H : 50th the spring meeting of the Japanese society of Periodontology (Yokosuka), 2007
- 6: A study to elucidate the appearance of Aggressive Periodontitis : N Mizuno, M Niitani, T Hino, T Yanagihara, H Yoshino, N Tsunekuni, T Fujita, H Shiba, H Kawaguchi, H Kurihar : 50th the meeting of the Japanese society of Periodontology (Tokyo), 2007
- 7: Brain-derived neurotrophic factor (BDNF) enhances periodontal tissue regeneration : Takeda K, Shiba H, Kiyota M, Kajiya M, Nagahara T, Hasegawa N, Mizuno N, Sakai N, Fujita T, Kawaguchi H, Tsuji K, Kurihara H : 50th the spring meeting of the Japanese society of Periodontology (Tokyo), 2007
- 8: Takeda K : 50th the meeting of the Japanese society of Periodontology (Tokyo), 2007
- 9: The effects of irsogladine maleate on intercellular communication in human gingival epithelial cells stimulated by IL-1 β : Fujita T, Ashikaga A, Shiba H, Kajiya M, Kishimoto A, Takeda K, Hayashida K, Kawaguchi H, Kurihara H : 50th the meeting of the Japanese society of Periodontology (Tokyo), 2007
- 10: Treatment of Aggressive Periodontitis for a Patient with Mental Retardation : A Case Report : Hatakeyama T, Okada M, Tokikazu T, Hayashida K, Aoki M, Tokikazu T, Hayashida T, Hino T, Kawaguchi H, Tamura H, and Kurihara H : 50ththe autumn meeting of the Japanese society of periodontology (Tokyo), 2007
- 11: The Report of the Case that Used Nitrous Oxide Inhalation Sedation for a Periodontitis Treatment Induction of the Mentally-Disabled Person : Hatakeyama T, Hayashida K, Aoki M, Tokikazu T, Hayashida T, Hino T, Kawaguchi H, Tamura H, and Okada M : 91th The Hiroshima University Dental Society, 2007

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

(5) Academic Awards, etc.

(6) Patents

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

(1) Staffs and Students

Professor: Ichiro Takahashi

Associate Professor: Kei Tobiume

Instructor: Atsushi Shimazu, Kazuko Kawahara, Keiko Tsuruda

(2) Main Research Activities

1. Analysis of the mucosal immune system
2. Molecular analysis of cell-death

(3) Research Achievements

A) Original Papers

1. Intraepithelial lymphocytes: their shared and divergent immunological behaviors in the small and large intestine.: Kunisawa, J, I Takahashi, and H Kiyono. *Immunological Reviews*. 215, 136-153, 2007.
2. Apoptosis signal regulating kinase (ASK) 2 functions as a mitogen-activated protein kinase kinase in a heteromeric complex with ASK1. : Takeda K, R Shimozone, K Tobiume, H Ichijo, et al.: *J. Biol. Chem.* 282, 7522-7531, 2007.
3. Snail-induced down regulation of DeltaN63alpha acquires invasive phenotype of human squamous cell carcinoma. : Higashikawa K, S Yoneda, K Tobiume, and N Kamata.: *Cancer Res.* 67, 9207-9213, 2007.
4. Suppression of AP-1 activity by cycloprodigosin hydrochloride. : Kawauchi K, K Tobiume, S Kaneko, et al.: *Biol. Pharm. Bull.* 30, 1792-1795, 2007.
5. Acceleration of bone formation with BMP2 in frame-reinforced carbonate apatite-collagen sponge scaffolds. : Hirata I, Y Nomura, A Shimazu, et al.: *J. Artif. Organs.* 10, 212-217, 2007.
6. Host defense mechanism in the gastrointestinal tract. : Takahashi I.: *The Nippon Rinsho.* 65, 102-106, 2007.
7. The mucosal vaccine development. : Takahashi I.: *The Nippon Rinsho.* 65, 632-636, 2007.
8. The mucosal immune system as an adoptive phenomenon for stress response. : Takahashi I: *Inflammation and Immunity.* 15, 689-694, 2007.
9. Onko-chishin in the mucosal immunity. : Takahashi I and H Kiyono: *Inflammation and Immunity.* 15, 687-688, 2007.

B) Presentation at Scientific Meeting

1. Sustained intestinal MICA expression prevents Th1 and Th2 mediated colitis. : Takahashi I, E Park, S Fukuyama et al.: The 13th International congress of mucosal immunology, Tokyo, 2007.

C) Publications

D) Other Publications

E) Presentation at Scientific Meeting

(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

(5) Academic Awards, etc.

(6) Patents

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

(1) Staffs and Students

Professor	:Keiji Tanimoto
Associate Professor	:Minoru Fujita
Assistant Professor	:Akira Taguchi, Yoshikazu Suei
Research Associate	:Toshikazu Nagasaki, Masahiko Ohtsuka, Kaoru Lee, Masahiko Sawajiri, Takashi Nakamoto
Graduate Student	:Takeo Nakashima, Mika Samura, Samir Banik

(2) Main Research Activities

- 1: Clinical research on radiotherapy for oral cancer
- 2: Clinical research on radiologic diagnosis of oral tumors
- 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: Radiographic findings of simple bone cyst
- 11: MRI Study on the dynamic image of swallowing
- 12: Magnetoencephalography Study on the higher brain function of swallowing

(3) Research Achievements

A) Original Papers (including Case Reports)

- 1: Ultrasonography-guided interstitial brachytherapy using Iridium hairpins for stage I and II squamous cell carcinoma of the mobile tongue : Fujita M, Wadasaki K, Murakami Y, Matsuura K, Yuki S, Kenjyo M, Kaneyasu Y, Ito K : Jpn J Head Neck Cancer 33 (4), 460-4, 2007
- 2: Simple bone cyst of the jaws: evaluation of treatment outcome by review of 132 cases :

- Suei Y, Taguchi A, Tanimoto K : J Oral Maxillofac Surg 65, 918-923, 2007.
- 3: A comparative study of simple bone cysts of the jaw and extracranial bones : Suei Y, Taguchi A, Tanimoto K : Dentomaxillofacial Radiology 36, 125-129, 2007.
 - 4: Concrescence of teeth : Cemental union between the crown of an impacted tooth and the roots of an erupted tooth : Sugiyama M, Ogawa I, Suei Y, Tohmori H, Higashikawa K, Kamata N : J Oral Pathol Med 36, 60-62, 2007.
 - 5: Expression of MMP-13 in osteoblast cells and rat tibia after exposure to gamma rays or accelerated carbon ions : Sawajiri M, Takinami S, Uchida T, Nomura Y, Mizoe J, Banik S, Tanimoto K : Physica Medica 23, 73-79, 2007.
 - 6: High-risk human papillomavirus type 16 E7 oncogene associates with Cdc25A over-expression in oral squamous cell carcinoma : Bhawal UK, Sugiyama M, Nomura Y, Sawajiri M, Tsukinori K, Ikeda M, Kuniyama H : Virchows Arch 450, 65-71, 2007
 - 7: Apoptotic and necrotic influence of dental resin polymerization initiators in human gingival fibroblast cultures : Masuki K, Nomura Y, Bhawal UK, Sawajiri M, Hirata I, Nahara Y, Okazaki M : Dent Mater J 26, 861-869, 2007.
 - 8: Diagnostic efficacy of alveolar bone loss of the mandible for identifying postmenopausal women with femoral osteoporosis : Ishii K, Taguchi A, Nakamoto T, Ohtsuka M, Sutthiprapaporn P, Tsuda M, Kodama I, Kudo Y, Sumida H, Suei Y, Tanimoto K : Dentomaxillofac Radiol 36, 28-33, 2007.
 - 9: Identification of postmenopausal women at risk of osteoporosis by trained general dental practitioners using panoramic radiographs : Taguchi A, Ohtsuka M, Nakamoto T, Naito K, Tsuda M, Kudo Y, Motoyama E, Suei Y, Tanimoto K : Dentomaxillofac Radiol 36, 149-54, 2007.
 - 10: Risk for vertebral osteoporosis in postmenopausal women with alterations of the mandible : Taguchi A, Ohtsuka M, Tsuda M, Nakamoto T, Kodama I, Inagaki K, Noguchi T, Kudo Y, Suei Y, Tanimoto K : Dentomaxillofac Radiol 36, 143-8, 2007.
 - 11: Interaction of obesity and skeletal bone mineral density on tooth retention in Japanese postmenopausal women : Taguchi A, Tsuda M, Ohtsuka M, Nakamoto T, Inagaki K, Noguchi T, Kudo Y, Yoshizumi M, Higashi Y, Suei Y, Tanimoto K : Menopause 14, 500-4, 2007.
 - 12: Developing computer-aided osteoporosis diagnosis system using fuzzy neural network : Arifin A Z, Asano A, Taguchi A, Nakamoto T, Ohtsuka M, Tsuda M, Kudo Y, Tanimoto K : Journal of Advanced Computational Intelligence and Intelligent Informatics 11, 1049-1058, 2007.
 - 13: Treatment results of interstitial brachytherapy for Stage I/II tongue cancer: H. Kodama, K. Wadasaki, M. Fujita, Y. Murakami, K. Matsuura, M. Kenjyo, Y. Kaneyasu, K. Ito : Hiroshima Igaku, 60 : 13-17, 2007.
 - 14: Treatment results of chemoradiotherapy using CDDP+5-Fu/CDGP+5-Fu for Oro- and Hypopharyngeal carcinoma : K. Wadasaki, K. Matsuura, Y. Murakami, M. Kenjyo, Y. Kaneyasu, M. Fujita, K. Ito, R. Tatsukawa, Y. Takeno, K. Hirakawa : Gann to Kagakuryouhou, 34 : 1393-1396, 2007.

B) Review

C) Publications

D) Other Publications

- 1: A Prospective Study of Periodontal Disease and Pancreatic Cancer in US Male Health Professionals : Taguchi A : J Natl Cancer Inst 99, 738-739, 2007.
- 2: Bone mineral density and mandibular bone quality in patients receiving dental implants : Taguchi A : Osteoporos Int 18, 121-2, 2007.

E) Presentation at Scientific Meeting

- 1: Ultrasonography-guided interstitial brachytherapy using Iridium hairpins for stage I and II squamous cell carcinoma of the mobile tongue : Fujita M, Wadasaki K, Murakami Y, Matsuura K, Yuki S, Kenjyo M, Kaneyasu Y, Ito K : 31th Annual Meeting of the Japanese Society for Head and Neck Cancer (Yokohama), 2007
- 2: Expression of GADD45 β in Osteoblast Cells after Exposure to Gamma Rays or Accelerated Carbon Ions : Sawajiri M, Takinami S, Nomura Y, Banik S, Mizoe J, Tanimoto K : 16th International Congress of Dentomaxillofacial Radiology (Beijing, China) , 2007
- 3: Radiation Effect of Oral cancer cell- Osteoblast cell Interactions : Banik S, Sawajiri M, Nomura Y, Takinami S, Mizoe J, Tanimoto K : 16th International Congress of Dentomaxillofacial Radiology (Beijing, China), 2007.
- 4: The evaluation of tongue motion using the high resolution MRI (3Tesla) : Nagasaki T, Yoshida M, Abe N, Akiyama Y, Tanimoto K : The 13th annual meeting of the Japanese society of Dysphgia Rehabilitation (Oomiya), 2007.
- 5: Swallowing sound analysis for healthy Adults and dysphagic patients : Yoshikawa M, agasaki T, Yoshida M, Tanimoto K, Tanaka K, Sasamura K, Akagawa Y : The 13th annual meeting of the Japanese society of Dysphgia Rehabilitation (Oomiya), 2007.
- 6: A pilot study of TMJ imaging using a 3 Tesla MRI system with a microscopy coil : Nagasaki T, Sueti Y, Taguchi A, Tanimoto K : The 48th annual meeting of the Japanese society of Oral Radiology (Oomiya), 2007.
- 7: Visual evoked field by quarter-field pattern reversal : Hashizume A, Nagasaki T, Shishida K, Kurisu K, Tanimoto K : The 9th annual meeting of Japan Human Brain Mapping Society (Akita), 2007.
- 8: The reliability of CT values and dimensional measurements of the oropharyngeal region using cone-beam computed tomography : Comparison with multi-detector computed tomography: Tanimoto K, Yamashina A, Sutthiprapaporn P, Hayakawa Y : The 16th International Congress of Dento-Maxillo-Facial Radiology (Beijing), 2007.
- 9: Three dimensional computed tomographic evaluation of the oral and pharyngeal structures in

- comparison with sitting upright and supine position. 2nd report –Changes at the level of pharyngeal recess- : Sutthiprapaporn P, Tanimoto K, Ohtsuka M, Iida Y, Katsumata K : The 48th annual meeting of the Japanese society of Oral Radiology (Oomiya), 2007.
- 10: The reliability of CT values and dimensional measurements of the oropharyngeal region using cone-beam computed tomography : Comparison with multi-detector computed tomography: Tanimoto K, Yamashina A, Sutthiprapaporn P, Hayakawa Y : The 48th annual meeting of the Japanese society of Oral Radiology (Oomiya), 2007.
- 11: Treatment results of chemoradiotherapy using CDDP+5-Fu/CDGP+5-Fu for Oro- and Hypopharyngeal carcinoma : K. Wadasaki, K. Matsuura, Y. Murakami, M. Kenjyo, Y. Kaneyasu, M. Fujita, K. Ito: The 66th annual meeting of the Japanese society of Radiology (Yokohama), 2007.
- 12: Treatment results of interstitial brachytherapy for Stage III tongue cancer: M. Fujita, S. Yuki, Y. Murakami, M. Kenjyo, Y. Kaneyasu, K. Wadasaki, K. Ito: The 20th annual meeting of the Japanese society for Therapeutic Radiology and Oncology(YHakata), 2007.

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

- 1: Grant-in-aid for scientific research from the Japan Society for the Promotion of Science : Taguchi A : Effect of osteoporosis on jaw bones and periodontal tissue (no. 16390616), ¥1,500,000
- 2: Grant-in-aid for scientific research from the Japan Society for the Promotion of Science : Taguchi A : Development of new screening system to identify latent cardiovascular diseases by dental panoramic radiographs, (no. 1471786), ¥900,000
- 3: Grant-in-aid for scientific research from the Japan Society for the Promotion of Science : Lee K : Study of cerebrovascular disorder with Panoramic Radiography and measurement of endothelial function, (no. 17591961), ¥2,100,000
- 4: Grant-in-aid for scientific research in Hiroshima University : Taguchi A : Automatic diagnosis system to identify human diseases by dental panoramic radiographs, ¥1,500,000
- 5: Fund from Furuno Corporation : Taguchi A : Development of new system to measure jaw bone mineral density, ¥300,000
- 6: Grant-in-aid for scientific research from the Japan Society for the Promotion of Science : Fujita M : Improvement of local control and QOL of oral cancer patients with use of hyperfractionated radiotherapy combined with chemotherapy, (no. 17591962), ¥800,000
- 7: Casio Research Foundation : Taguchi A : Development of automatic diagnosing system by using dental panoramic radiographs, ¥500,000
- 8: Fund from Furuno Corporation : Taguchi A : Development of new system to measure jaw bone mineral density, ¥300,000

(5) Academic Awards, etc.

1: Taguchi A : 18th meeting for osteoporosis on Obstetrics and Gynecology research award

(6) Patents

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

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

Programs for Applied Biomedicine Division of Critical Medical Science

(Department of Oral Growth and Developmental Biology)

(1) Staffs and Students

Professor : Maeda Norihiko
Associate Professor: Yoshiko Yuji
Research Associate: Suemune Setsuko, Hua Wang
Researcher : Minamizaki Tomoko, Suzuki Sayaka

(2) Main Research Activities

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

(3) Research Achievements

A) Original Papers (including Case Reports)

- 1: Osteoblast autonomous Pi regulation via Pit1 plays a role in bone metabolism. : Yoshiko Y, Candelieri G A, Maeda N, Aubin J E. : Mol Cell Biol 27, 4465-4474, 2007.
- 2: Mineralized tissue cells are a principle source of FGF23. : Yoshiko Y, Wang H, Minamizaki T, Ijuin C, Yamamoto R, Suemune S, Kozai K, Tanne K, Aubin JE, Maeda N. : Bone 40, 1565-1573, 2007.

B) Review

C) Publications

D) Other Publications

E) Presentation at Scientific Meeting

- 1: 1,25(OH)2D3 inhibits bone nodule mineralization through the FGF23-mediating ERK pathway in rat calvaria osteoblast cultures. : Minamizaki T, Yoshiko Y, Wang H, Suzuki S, Kozai K, Aubin JE, Maeda N. : The 29th Annual Meeting of the American Society for Bone and Mineral Research (Honolulu), September, 2007.

- 2: Gene expression profiling of FGF23-overexpression, mineralization defective rat calvaria osteoblasts uncovers both known and novel mineralization mechanisms. : Yoshiko Y, Wang H, Minamizaki T, Aubin J E, Maeda N. : The 17th Scientific Meeting of International Bone and Mineral Society. Montrea (June), 2007.

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

- 1: Grant-in-Aid for Scientific Research : Y. Yoshiko : (No. 18592001) ¥ 3,950,000, 2006~2007
- 2: Grant from Raffinee International Corporation : Y.Yoshiko : ¥ 5,000,000, 2007
- 3: Grant-in-Aid for Scientific Research : T, Minamizaki : (No. 19890140) ¥ 1,500,000, 2007
- 4: Research for Promoting Technological Seeds from Japanese Science and Technology Agency (10-068) : Y. Yoshiko : ¥3,950,000, 2006~2007

(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 fate choice and plasticity in osteoblast-lineage cells
- 4: Study on the molecular mechanisms of bone 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.

[Recent highlight]

- 1: We applied the patent to the Japan Patent Office: Analysis of the factors that regulate the bone formation and mineralization, and the screening method (No. 2006-194078)..
- 2: We won following academic awards: 1) President Poster Award : Combined Meeting of the 3rd IOF Asia-Pacific Regional Conference on Osteoporosis and the 16th Annual Meeting of the ANZ Bone and Mineral Society, T. Hasegawa, 2006, 2) Travel award: 24th Japan International Bone and Mineral Society, T. Hasegawa, 2006, 3) Plenary Poster Award and Travel Award: The 17th Scientific Meeting of International Bone and Mineral Society. Y. Yoshiko, 2007, 4) Plenary Poster award and

Travel Award: The 29th Annual Meeting of the American Society for Bone and Mineral Research. T.
Minamizaki. 2007

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

(1) Staffs and Students

Professor	:	Kawahara Michio M.D.,Ph.D.
Associate Professor	:	Irifune Masahiro D.D.S.,Ph.D.
Research Associate	:	Takarada Thoru D.D.S.,Ph.D. , Endo Chie D.D.S., Shimizu Yoshitaka D.D.S.,DOI, Mitsuru D.D.S.
Resident	:	Nagata Masateru D.D.S., Miura Kanna D.D.S., Hanzawa Yasunori D.D.S.
Graduate Student	:	Saida Takuya D.D.S., Onizuka Chiori D.D.S., Mukai Akari D.D.S.
Research Student	:	Kawamoto Hisao D.D.S.
Clinical Trainee	:	Katayama Sotaro D.D.S., Takahashi Kenichiro D.D.S.

(2) Main Research Activities

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

(3) Research Achievements

A) Original Papers (including Case Reports)

- 1: An Alternative Approach to the Monitoring of Respiration by Dynamic Air-Pressure Sensor : T Takarada, M Kawahara, M Irifune, C Endo, Y Shimizu, K Kobayashi, K Sakata, N Kikuchi, T Saida, C Onizuka : *Anesth Prog* 54, 2-6, 2007.
- 2: Increased γ -Aminobutyric Acid Levels in Mouse Brain Induce Loss of Righting Reflex, but Not Immobility, in Response to Noxious Stimulation : S Katayama, M Irifune, N Kikuchi, T Takarada, Y Shimizu, C Endo, T Takata, T Dohi, T Sato, M Kawahara : *Anesth Analg* 104, 1422-1429, 2007.
- 3: Riluzole, a Glutamate Release Inhibitor, Induces Loss of Righting Reflex, Antinociception, and Immobility in Response to Noxious Stimulation in Mice : M Irifune, N Kikuchi, T Saida, T Takarada, Y Shimizu, C Endo, K Morita, T Dohi, T Sato, M Kawahara : *Anesth Analg* 104, 1415-1421, 2007.

B) Review

C) Publications

D) Other Publications

E) Presentation at Scientific Meeting

- 1 :A case of a patient with dentalphobia who is treatable using psychological sedation : M Irifune, Y Shimizu, C Endo, M Nagata, K Miura, Y Hanzawa, T Saida, C Onizuka, A Mukai and M Kawahara : The 4th Scientific Meeting of Japanese Dental Society of Anesthesiology Chugoku and Shikoku branch (Hiroshima), 2007.
- 2:Anesthetic Management of Von Willbrand disease : M Nagata, Y Shimizu , M Irifune, C Endo, K Miura, Y Hanzawa, T Saida , C Onizuka, A Mukai and M Kawahara : The 4th Scientific Meeting of Japanese Dental Society of Anesthesiology Chugoku and Shikoku branch (Hiroshima), 2007.
- 3:The effect which sedative drugs exert on ulcer of stomach and hormone of adrenal glands when water immersion restraint stress is given to mice : T Saida , M Irifune , M Kawahara : The 36th Annual Meeting of Japanese Dental Society of Anesthesiology (Kitakyusyu), 2007.
- 4: Effects of opioid, alpha2-adrenergic and glycine receptor agonists on analgesic effect and immobility as one of anesthetic components - comparison with intravenous anesthetic - : C Onizuka , M Irifune , M Kawahara , T Dohi and K Morita : The 36th Annual Meeting of Japanese Dental Society of Anesthesiology (Kitakyusyu), 2007.
- 5: The Examination of the effectiveness of the amylase measurement out of the saliva in preoperative uneasiness : C Endo , M Irifune , Y Shimizu , M Doi , M Nagata , K Miura , A Mukai and M Kawahara : The 36th Annual Meeting of Japanese Dental Society of Anesthesiology (Kitakyusyu), 2007.
- 6:Experience of general anaesthesia in complication of down's syndrome for hypertrophic cardiomyopathy : Yoshitaka S , M Irifune , T Takarada , C Endo , T Saida , C Onizuka , M Kawahara : The 36th Annual Meeting of Japanese Dental Society of Anesthesiology (Kitakyusyu), 2007.
- 7:One case of the trigeminal neuropathy effectively treated with high dose amitriptyline and risperidone : M Doi , S Iwamoto , M Miyasada , T Katho , S Tominaga , S Taniguchi : The 36th Annual Meeting of Japanese Dental Society of Anesthesiology (Kitakyusyu), 2007.
- 8 : Which Diprivan injection kit should we use for intravenous sedation?: S Tominaga , M Doi , K Mise , Y Tsuru , S Iwamoto , K Nogami , S Taniguchi : The 36th Annual Meeting of Japanese Dental Society of Anesthesiology (Kitakyusyu), 2007.
- 9:Statistical Surver of the Dental Treatment in "STRESS FREE DENTAL CLINIC" of Hiroshima University Hospital : C Endo , M Irifune , Y Shimizu , M Doi , M Nagata , K Miura , Y Hannzawa , T Saida , C Onizuka , A Mukai , M Kawahara : The 46th Scientific Meeting of Hiroshima Prefecture Dental Association and 91th Scientific Meeting of Hiroshima University Dental Society, 2nd Scientific Meeting of Nippon Academy of Dental Technology Chugoku and Shikoku Branch (Hiroshima), 2007.
- 10:Is the cause of the pain really a dental disease? -Treatment and diagnosis with the trigger point injection for Myofascial pain syndrome- : M Doi , Y Shimizu , T Saida , K Miura , M Nagata , M Irifune , M Kawahara : The 46th Scientific Meeting of Hiroshima Prefecture Dental Association and 91th Scientific Meeting of Hiroshima University

- Dental Society, 2nd Scientific Meeting of Nippon Academy of Dental Technology Chugoku and Shikoku Branch (Hiroshima), 2007.
- 11: Is the cause of the pain really a dental disease? - : The cluster headache presents toothache - : M Doi , Y Shimizu , C Onizuka , Y Hanzawa , A Mukai , C Endo , M Irifune , M Kawahara : The 46th Scientific Meeting of Hiroshima Prefecture Dental Association and 91th Scientific Meeting of Hiroshima University Dental Society, 2nd Scientific Meeting of Nippon Academy of Dental Technology Chugoku and Shikoku Branch (Hiroshima), 2007.
- 12: Two cases of Syncope Suffered Independently of Trigemino-vagal Reflex during Dental Treatment : M Irifune , Y Shimizu , C Endo , M Doi , M Nagata , K Miura , Y Hanzawa , T Saida , C Onizuka , A Mukai , M Kawahara : The 46th Scientific Meeting of Hiroshima Prefecture Dental Association and 91th Scientific Meeting of Hiroshima University Dental Society, 2nd Scientific Meeting of Nippon Academy of Dental Technology Chugoku and Shikoku Branch (Hiroshima), 2007.
- 13: The Perioperative Management for the Sotos Syndrome Patient applied Visual Pedagogy. : M Doi , S Tominaga , S Iwamoto , Y Tsuru , S Taniguchi : The 17th Symposium of Japanese Dental Society of Anesthesiology Kyushu branch (Fukuoka), 2007.
- 14: A case of Delusional Disorder with oral dysesthesia and odontalgia : M Doi , S Tominaga , H Kawata , S Taniguchi : The 8th Scientific Meeting of the Society of Orofacial Pain (Matsumoto), 2007.
- 15: The involvement of μ -opioid and $\alpha 2$ -adrenergic receptors in inducing immobility as one of anesthetic components : C Onizuka , M Irifune , K Morita , T Dohi and M Kawahara : The 80th Annual Meeting of Japanese Pharmacological Society (Nagoya), 2007.

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

(5) Academic Awards, etc.

(6) Patents

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

(1) Staffs and Students

Professor	: Fusanori Nishimura
Associate Professor	: Morioki Fujitani
Assistant Professor	: Nobuyuki Tanaka
Assistant	: Masashi Fujii, Ryo Oda, Kenichi Shirai, Takahiro Harima, Makoto Arakawa, Satoki Shibata
Resident	: Akane Mineoka
Graduate Student	: Naoyo Motoyama, Misaki Iwashita, Sonoko Kumamoto, Junko Yonehiro

(2) Main Research Activities

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

(3) Research Achievements

A) Original Papers (including Case Reports)

1. Oligonucleotide array analysis of cyclic tension-responsive genes in human periodontal ligament fibroblasts : Yamashiro K, Myokai F, Hiratsuka K, Yamamoto T, Senoo K, Arai H, Nishimura F, Abiko Y, Takashiba S : Int J Biochem Cell Biol 39, 910-921, 2007.
2. Focal adhesion kinase (FAK) mediates human leukocyte histocompatibility antigen (HLA) class II-induced signaling in gingival fibroblasts : Yoshizawa S, Meguro M, Ohyama H, Takeuchi-Hatanaka K, Matsushita S, Takashiba S, Nishimura F : J Periodontal Res 42 , 572-579, 2007.
3. Macrophage-adipocyte interaction: Marked IL-6 production by co-cultures stimulated with LPS :

- Yamashita A, Soga Y, Iwamoto Y, Yoshizawa S, Iwata H, Kokeyuchi S, Takashiba S, Nishimura F : *Obesity* 15 , 2549-2552, 2007.
4. Relationship of periodontal infection to serum antibody levels to periodontopathic bacteria and inflammatory markers in periodontitis patients with coronary heart disease : Yamazaki K, Honda T, Domon H, Okui T, Kajita K, Amanuma R, Kudoh C, Takashiba S, Kokeyuchi S, Nishimura F, Kodama M, Aizawa Y, Oda H : *Clin Exp Immunol* 149 , 445-452, 2007.
 5. High glucose up-regulates lipopolysaccharide-stimulated inflammatory cytokine production via c-jun N-terminal kinase in monocytic cell line THP-1 : Iwata H, Soga Y, Meguro M, Yoshizawa S, Okada Y, Iwamoto Y, Yamashita A, Takashiba S, Nishimura F : *J Endotoxin Res* 13 , 227-234, 2007.
 6. Antimicrobial effects of the saliva substitute, Oralbalance[®], against microorganisms from oral mucosa in the hematopoietic cell transplantation period : Sugiura Y, Soga Y, Tanimoto I, Kokeyuchi S, Nishide S, Kono K, Takahashi K, Fujii N, Ishimaru F, Tanimoto M, Yamabe K, Tsutani S, Nishimura F, Takashiba S : *Supportive Care Cancer*, epub ahead of print, 2008.
 7. Microrotary fatigue resistance of a HEMA-free all-in-one adhesive bonded to dentin : De Munck J, Arita A, Shirai K, Van Landuyt K L, Coutinho E, Poitevin A, Peumans M, Lambrechts P, Van Meerbeek B : *J Adhes Dent* 9(4), 373-379, 2007.
 8. Immobilization of simulated reducing agent at the surface of SiO₂ fillers in dental composite resins : Shibata S, Hirata I, Nomura Y, Shirai K, Fujitani M, Shintani H, Okazaki M : *Dent Mater J* 26(4), 568-574, 2007.
 9. 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* in press, 2008.
 10. Effect of air-drying, evaporation of solvents on Ultimate tensile strengths of one-step self-etch adhesives : Ikeda T, De Munck J, Shirai K, Hikita K, Inoue S, Sano H, Lambrechts P, Van Meerbeek B : *Dental Materials*, in press, 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, Kokeyuchi S, Fujii N, Tanimoto M, Takashiba S : *J Periodontol* 79, 181-186, 2008.

B) Review

1. Nishimura F, Iwamoto Y, Soga Y : Periodontal host response with diabetes ; *Periodontology* 2000, 43 ,245-253, 2007.
2. Nishimura F, Periodontal disease and Diabetes mellitus : *Diabetic Complications* 21 ,56-58, 2007.

C) Publications

1. Iwamoto Y, Nishimura F : II. Chapter 8. Periodontal Medicine, pp. 210-219; Yoshie H, Ito K, Murakami S, Shin K ed. "Clinical Periodontology", Ishiyaku Publishers, Tokyo, 2007.
2. Iwamoto Y, Nishimura F : Periodontal disease and other disorders of the teeth ; "Diabetology Basics and Clinics", Nishimura Publishers, in press, 2007.
3. Iwamoto Y, Nishimura F : Chapter 2. 7 Diseases 1. Diabetes Mellitus, pp. 16-33 ; Yoshie H, Takashiba S ed. "Periodontal Disease and 7 diseases, 8 News", Nagasue Publishers, Tokyo, 2007.
4. Kono T, Nishimura F : Chapter 3. Periodontal Medicine 3. Influences of Periodontitis on Diabetes, pp. 78-83 ; Kamoi K, Hanada N, Sato T, Nomura Y ed. "PREVENTIVE PERIODONTOLOGY", Ishiyaku Publishers, Tokyo, 2007.
5. Nishimura F, Yamashita A, Iwata H, Iwamoto Y, Soga Y : Over-nutrition, inflammatory periodontal disease, and metabolic syndrome ; in Proceedings of the 2nd Hiroshima Conference on Education and Science in Dentistry. Hiroshima University Faculty of Dentistry, 65-68, 2007.
6. Fujitani M : Bond to dentin – Dentin adhesion and pulpal response ; THE NIPPON Dental Review Extra edition, 93-96, 2007.
7. Fujitani M : Dental pulp management ; "Adhesive Dentistry for Dental Technisian" ; Oral Health Association of Japan, 2008.

D) Other Publications

1. Shimoe M, Iwamoto Y, Nishimura F : Treatment guideline for risk factors (1) Treatment guideline for periodontal disease in subjects with diabetes ; Quintessence Year Book (suppl.) 2006-2007 Current Treatment Guideline Conservative, Esthetic & Cariology, and Other Area, 134-135, 2007.
2. Nishimura F : Periodontal therapy as part of the management of diabetes ; Diabetes Master, 5:222-223, 2007.
3. Nishimura F : Periodontal disease and systemic diseases ; Clinics and Reserach 84 ,23-26, 2007.
4. Nishimura F : Periodontal treatment plays an important role in subjects with diabetes; CLINIC magazine, November:42-43, 2007.
5. Nishimura F, Taniguchi A, Isogai O, Nakai Y, Fukushima M, Seino Y : Bi-directional relationship between periodontal disease and diabetes; General Clinics 56 , 2854-2858, 2007.
6. Nishimura F : Diabetes and Periodontal disease ; Clinical Nutrition 111 ,863-66, 2007.
7. Nishimura F : Association between periodontal disease and diabetes, and diabetic complications ①; Abbott Diabetes News vol. 8, 2007.
8. Nishimura F : Association between periodontal disease and diabetes, and diabetic complications ②; Abbott Diabetes News vol. 9, 2007.
9. Nishimura F : Periodontal disease and metabolic syndrome ; PTM Recent Treatment Manual 13(3), 2007.
10. Nishimura F : Strange associations among obesity, diabetes and periodontitis ; Oral Health and Systemic Health , 17-18, P & G

11. Fujitani M : Tooth-colored adhesive (indirect) restorations involving proximal surfaces: Consensus & Treatment of indirect restorations; Current Treatment Guideline Conservative, Esthetic & Cariology, and Other Area, p44-45, Quintessence Year Book (suppl.) 2006-2007.
12. Taniguchi A, Isogai O, Nishimura F, Nakai Y, Nomura Y, Fukushima M, Seino Y : How does infectious disease associate with vascular diseases-type 2 diabetes and periodontitis; Vascular Medicine-Journal of Vascular Medicine 4 , 16-21, 2008.
13. Nishimura F, Iwamoto Y : Association between periodontitis and systemic diseases(2) Diabetes and periodontitis; Quintessence Year Book 2008 (suppl.) Current trends for treatment, Periodontology and other areas, 48-49, 2008.
14. Nishimura F : Special issue II. New directions in periodontal research and therapy 'Re-concerning about the relationship between periodontitis and systemic diseases'; Inflammation and Immunity 16 , 60-64, 2008.
15. Nishimura F : Diabetes and other diseases 3 Periodontitis and Diabetes. Nursing 28, 24-29, 2008.
16. Nishimura F : Insulin resistance, inflammation and periodontal diseases ; Diabetes Frontier 19 ,65-68, 2008.
17. Nishimura F, Soga Y, Yamashita A, Iwamoto Y : Diabetes and periodontal disease ; Diabetes Journal, in press, 2008.
18. Fujitani M : Guidelines on excavation in decay (infected tooth substance); Quintessence Year Book 2008 (suppl.) Current trends for treatment, Periodontology and other areas, pp.234-235, 2008.

E) Presentation at Scientific Meeting

1. Shibata S, Shirai K, Arakawa M, Iwaizumi H, Kohno T, Fujitani M, Nishimura F : Study on durability of resin composites containing S-PRG filler under alkaline condition ; The Japanese Society of Conservative Dentistry (Spring Issue), 2007.
2. Mineoka A, Harima T, Fujitani M, Nishimura F : Adhesive properties of resinous materials to lased dentin. Assessment of optimal irradiation parameters; The Japanese Society of Conservative Dentistry (Autumn Issue), 2007.
3. Harima T, Fujitani M, Mineoka A, Nishimura F : Ultramorphology of dentin after preparation and finishing with an Er:YAG laser; The 19th Annual Meeting of the Japanese Society for Laser Dentistry, 2007.

F) Special lectures in academic meetings

1. Situation of acceptance of application for grant- : Nishimura F : Periodontal disease and Metabolic Syndrome ; Symposium I "Health promotion from Periodontal Treatment"; 50th Spring Meeting of the Japanese Society of Periodontology, May 18,2007, Yokosuka.
2. Nishimura F : Metabolic syndrome and periodontal disease Open Forum 'Healthy Life from the Prevention of Periodontitis'; 50th Anniversary Meeting of the Japanese Society of Periodontology September 22, 2007, Tokyo, 49: 144.

3. Nishimura F : Overnutrition, inflammatory periodontal disease, and metabolic syndrome (in symposium IV "Nutrition and Diseases"); 2nd Hiroshima Conference on Education and Science in Dentistry, Oct 7, 2007, Hiroshima.
4. Fujitani M : Clinical Seminar IV, The forefront of esthetic adhesive restoration with minimal invasion ; The 18th Joint meeting of Japan Academy of Esthetic Dentistry and Japan Society for Adhesive Dentistry, November 17, 18, 2007, Adhesive Dentistry 25(2), 69, 2007.
5. Nishimura F : Periodontal disease and Metabolic Syndrome; 35th Drug Action Symposium, November 30, 2007, Hiroshima, abstract, pp.74-75.
6. Nishimura F : Kyushu University Graduate School of Dentistry, Initiative for Attractive Graduate Course Education, 2nd Oral Science Symposium, Special Lecture 2 "Toward development of Oral Health Science Periodontal disease as a complication of metabolic syndrome-New concepts", February 15, 2007, Fukuoka.
7. Nishimura F : lecture-Management of special diabetes "Periodontal management plays an important part in overall management of diabetes"; 42nd Symposium of the Development of Diabetology, February 16, 2008, Takamatsu, abstract pp.130.

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

- 1: Grant-in-Aid for Scientific Research (B) Continued : F. Nishimura : Mechanisms on Periodontal Medicine— particularly on liver response against periodontal infection —.(No. 17390562.)
¥1,550,000
- 2: Grant-in-Aid for Scientific Research (C) : M Fujitani : Assessment of optimal irradiation parameters and development of polyacid-based adhesives for lased dentin. (No.19592202.) ¥1,800,000
- 3: Grant-in-Aid for Scientific Research (C) : K Shirai : Development of high performance of silane coupling agents by nano-technology. (No.18592090) ¥800,000
- 4: Grant-in-Aid for Young Scientists (C) : M Fujii : Various approaches to regeneration of dental hard tissues using dental pulp (No. 18592091). ¥1,00,000
- 5: Entrusted Accounting (Kuraray Medical Co., Ltd.) : Fujitani M ¥500,000
- 6: Entrusted Accounting (Shofu Co., Ltd) : Fujitani M ¥300,000
- 7: Entrusted Accounting (Sun Medical Co., Ltd) : Fujitani M ¥500,000

(5) Academic Awards, etc.

(6) Patents

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

(1) Staffs and Students

Professor	: Nobuyuki Kamata
Associate Professor	: Takechi Masaaki
Assistant Professor	: Miyauchi Miwa
Research Assistant	: Higashikawa Koichiro, Ohta Kouji, Ninomiya Yoshiaki, Shimasue Hiroshi, Ono Shigehiro, Shigeishi Hideo, , Nishi Hiromi
Resident	: Taki Masayuki, Mitani Yoshitugu, Mizuta Kuniko, Yoneda Shingo
Graduate Student	: Hiraoka Misato, Fuzimoto Shinichi, Minami Masahiko, Tamnaka Fumi, Matushima Sayako
Registered Intern	: Kiyomihara Masaki, Inoue Yoshihisa, Sakata Keiko, Ozaki Kennryu, Ochi Atushi,
Research Student	: Nakamoto Yukio

(2) Main Research Activities

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

(3) Research Achievements

A) Original Papers (including Case Reports)

- 1) PRTFDC1, a possible tumor-suppressor gene, is frequently silenced in oral squamous-cell carcinomas by aberrant promoter hypermethylation. : Suzuki E, Imoto I, Pimkhaokham A, Nakagawa T, Kamata N, Kozaki K I, Amagasa T, Inazawa J : Oncogene26(57), 7921-32, 2007.

- 2) Molecular characterization of GDD1/TMEM16E, the gene product responsible for autosomal dominant gnathodiaphyseal dysplasia. : Mizuta K, Tsutsumi S, Inoue H, Sakamoto Y, Miyatake K, Miyawaki K, Noji S, Kamata N, Itakura M : *Biochem:Biophys Res Commun.*357(1),126-32,2007.
- 3) Reg IV is a serum biomarker for gastric cancer patients and predicts response to 5-fluorouracil-based chemotherapy. : Mitani Y, Oue N, Matsumura S, Yoshida K, Noguchi T, Ito M, Tanaka S, Kuniyasu H, Kamata N, Yasui W : *Oncogene* 26(30), 4383-93, 2007.
- 4) Concrescence of teeth: cemental union between the crown of an impacted tooth and the roots of an erupted tooth. : Sugiyama M, Ogawa I, Suei Y, Tohmori H, Higashikawa K, Kamata N : *J Oral Pathol Med.*36(1), 60-2, 2007.
- 5) Human papillomavirus-16 in oral squamous cell carcinoma: Clinical correlates and 5-year survival. : Sugiyama M, Bhawal UK, Kawamura M, Ishioka Y, Shigeishi, H, Higashikawa K, Kamata N. : *Br J Oral Maxillofac Surg.* 45(2), 116-22, 2007.
- 6) Osteopetrosis complicated by osteomyelitis of the mandible : a case report including characterization of the osteopetrotic bone. : Satomura K, Kon M, Tokuyama R, Tomonari M, Takechi M, Yuasa T, Tatehara S, Nagayama M. : *Int J Oral Maxillofac Surg.* 36(1), 86-93, 2007.
- 7) Histological evaluation of apatite cement containing atelocollagen. : Takechi M, Miyamoto Y, Ishikawa K, Momota Y, Yuasa T, Tatehara S, Takano H, Minamiguchi S, Nagayama M. : *Dent Mater J.* 26(2),194-200,2007.
- 8) Comparison of genes expressed in cell lines derived from a primary lesion and metastasized lymph nodes of tongue squamous cell carcinoma –a trial study of identifying metastasis-related genes - : Nobumori T, Taki M, Higashikawa K, Ono S, Shigeishi H, Yoneda S, Ninomiya Y, Sugiyama M, Kamata N. : *Dentistry in Japan* 48, 64-69, 2007
- 9) Snail-induced down-regulation of Δ Np63 α acquires invasive phenotype of human squamous cell carcinoma. : Higashikawa K, Yoneda S, Tobiume K, Taki M, Shigeishi H, Kamata N. : *Cancer Res.* 67(19), 9207-13, 2007.
- 10) Basic research on aw-AC/PLGA composite scaffolds for bone tissue engineering. : Minamiguchi S, Takechi M, Yuasa T, Momota Y, Tatehara S, Takano H, Miyamoto Y, Satomura K, Nagayama M. : *J Mater Sci Mater Med.* Aug 15, 2007. (Epub ahead of print)
- 11) PLGA-apatite cement containing atelocollagen composite scaffolds for bone tissue engineering. : Minamiguchi S, Takechi M, Momota Y, Miyamoto Y, Satomura K, Nagayama M. : *Archives of Bioceramics Research* 7, 121–124, 2007.
- 12) Evaluation of bone regeneration of osteoblasts derived from human jaw bone cultured on interconnected porous hydroxyapatite ceramics. : Hiraoka M, Takechi M, Shigeishi H, Minami M, Kamata N. : *Archives of Bioceramics Research* 7, 255–260, 2007.
- 13) Hemostatic management for tooth extraction in patients receiving anticoagulant therapy. : Ohta K, Tohmori H, Taki M, Shimasue H, Ninomiya Y, Ono S, Shigeishi H, Nishi H, Higashikawa K, Miyauchi M, Takechi M, Kamata N : *J. Hiroshima Univ. Dent. Soc.* 39(1), 19-23, 2007

- 14) Two Cases of Synovial Osteochondromatosis of the Temporomandibular Joint. : Shimasue H, Miyauchi M, Hiraoka M, Shigeishi H, Nobumori T, Nishi H, Minami M, Ogawa I, Kudo Y, Takata T, Kamata N : J. Hiroshima Univ.Dent. Soc39(1), 57-61, 2007.
- 15) A case of Hemangioma in the Masseter Muscle. : Shigeishi H, Higashikawa K, Hiraoka M, Mitani Y, Ogawa Y, Takata T, Kamata N : J. Hiroshima Univ.Dent. Soc. 39(1), 62-64, 2007.
- 16) Application of the novel interconnective porous hydroxyapatite ceramics for defects in jaw bone. : Miyauchi M, Yoshioka Y, Higashikawa K, Koizumi K, Ohta K, Tani R, Hayashido Y, Toratani S, Sugiyama M, Kamata N, Okamoto T, Akagawa Y : J. Jpn. Stomatol. Soc. 56(4), 400-404, 2007.
- 17) Experimental study of HAP-PLGA composite scaffold for jaw bone regeneration. : Tatehara S, Takechi M, Momota Y, Yuasa T, Takano H, Tokuyama R, Miyamoto Y, Nagayama M : JapaneseJournal of Oral and Maxillofacial Surgery vol 53 10, 588-593, 2007
- 18) A case of osteonecrosis of the jaw associated with oral application of bisphosphonates. : Yoneda S, Takechi M, Shigeishi H, Ohta K, Taki M, Ninomiya Y, Kamata N : J. Hiroshima Univ.Dent.Soc. 39(2), 168-173, 2007.
- 19) Two cases of maxillary distraction osteogenesis using Rigid External Distraction (RED) system and Leipzig retention plate for maxillary hypoplasia. : Ohta K, Ninomiya Y, Higashikawa K, Shigeishi H, Mitani Y, Takechi M, Tanimoto K, Tanne Y, Touma Y, Nishi M, Harada M, Tanaka E, Sugiyama M, Tanne K, Kamata N : Hiroshima Univ.Dent. Soc. 39(2), 173-180, 2007.
- 20) GDD1, the responsible gene of Gnathodiaphyseal Dysplasia. : Kamata N: Hiroshima Univ.Dent. Soc. 39(2), 181-184, 2007.
- 21) Dental management for a von Willebrand disease patient who had difficulty in communication. : Nishi H, Miyauchi M, Takechi M, Minami M, Kuramoto M, Kadomoto N, Suzuki J, Kouzai K, Kamata N : Journal of Pediatric Oral and Maxillofacial Surgery. 17(2), 101-107, 2007.

B) Review

C) Publications

Oral and Maxillofacial Surgery I. Surgery of Maxillofacial Deformity

Oral and Maxillofacial Surgery II. Surgery of Oral and Maxillofacial Implant

D) Other Publications

E) Presentation at Scientific Meeting

- 1) Analysis of growth mechanism in osseous dysplasia derived cell line and study of marker gene in osseous dysplasia. : Shigeishi H, Yamaguchi S, Mizuta K, Nakakuki K,

- Fuzimoto S, Amagasa T, Kamata N. : 25th Annual Meeting of Japan Society for Oral Tumors, in Nagoya, 2007
- 2) A case of chondrosarcoma arising in the mandibular condyle. : Nishi H, Nobumori T, Ohta K, Higashikawa K, Tohmori H, Sato A, Kamata N : The 61th Annual Meeting of the Japanese Stomatological Society (kobe), 2007.
 - 3) Cyto-biological characterization of synovial osteochondromatosis occurring in the temporomandibular joint. : H Shimasue, M Hiraoka, M Taki, H Nishi, K Ohta, M Takechi, M Miyauchi and N Kamata. : The 61th Annual Meeting of the Japanese Stomatological Society (kobe), 2007.
 - 4) A case of implant treatment with the novel interconnective porous hydroxyapatite ceramics. : Miyauchi M, Shimasue H, Shigeishi H, Hiraoka M, Takechi M, Sugiyama M, Kamata N : The 61th Annual Meeting of the Japanese Stomatological Society (kobe), 2007.
 - 5) Basic study on application of low crystalline carbonate apatite in jaw reconstruction: the fifth report : investigation of absorption fact in vivo.; Fukuda M, Miyamoto Y, Iwanami Y, Nakata A, Takano H, Nagai H, Momota Y, Takechi M : The 61th Annual Meeting of the Japanese Stomatological Society (kobe), 2007.
 - 6) A study on bone regeneration by hydroxyapatite containing atelocollagen-PLGA composite scaffolds. : Minamiguchi S, Takechi M, Momota Y, Miyamoto Y, Satomura K, Nagayama M : The 61th Annual Meeting of the Japanese Stomatological Society (kobe), 2007.
 - 7) The analysis of the EMT target gene, Δ Np63 α -dependent invasive ability in squamous cell carcinoma. : Yoneda S, Higashikawa K, Taki M, Shigeishi H, Ono S, Mitani Y, Kamata N. : The 61th Annual Meeting of the Japanese Stomatological Society (Kobe), 2007.
 - 8) Clinical and histopathological study on boundary area between Lugol-stained and unstained of oral dysplastic lesions. : Ohta K, Ono S, Mizuta K, Taki M, Miyauchi M, Ogawa I, Takata T, Kamata N : The 61th Annual Meeting of the Japanese Stomatological Society (kobe), 2007.
 - 9) The analysis of Δ Np63 α -dependent invasive ability in squamous cell carcinoma through epithelial-mesenchymal transition. : Yoneda S, Higashikawa K, Taki M, Shigeishi H, Ono S, Mitani Y, Kamata N : The 80th Annual Meeting of the Japanese Tissue Culture Association (Osaka), 2007.
 - 10) Dental management for a von Willebrand disease patient who had difficulty in communication. : Nishi H, Miyauchi M, Takechi M, Minami M, Kamata N : The 36th Tyusikoku Meeting of the Japanese Society of Oral and Maxillofacial Surgeon (Hiroshima), 2007.
 - 11) Two cases of orthokeratinised odontogenic cyst. : M Taki, K Ohta, S Ono, S Fujimoto, I Ogawa, T Takashi, N Kamata : The 36th Tyushikoku Meeting of the Japanese Society of Oral and Maxillofacial Surgeon (Hiroshima), 2007.

- 12) Two Cases of Synovial Osteochondromatosis of the Temporomandibular Joint. : Shimasue H, Miyauchi M, Hiraoka M, Shigeishi H, Ohta K, Nishi H, Minami M, Ogawa I, Kudo Y, Takata T, Kamata N. : The 40th Annual Meeting of the Hiroshima University Dental Society (Hiroshima), 2007.
- 13) Hemostatic management for tooth extraction in patients receiving anticoagulant therapy. : Ohta K, Tohmori H, Taki M, Shimasue H, Ninomiya Y, Ono S, Shigeishi H, Nishi H, Higashikawa K, Miyauchi M, Takechi M, Kamata N : The 40th Annual Meeting of the Hiroshima University Dental Society (Hiroshima), 2007.
- 14) Culture of human oral gingival fibroblast in a chemically-defined medium. : Nishi H, Ohta K, Yoneda S, Hiraoka M, Shigeishi H, Kamata N : The 17th Annual Meeting of the Japanese Society for Oral Mucous Membrane (Tokyo), 2007
- 15) Different expressions of cytokeratin13 and Ki-67 in the boundary area between Lugol' iodine-stained and -unstained of oraldysplastic lesions. : Ohta K, Ono S, Mizuta K, Taki M, Miyauchi M, Ogawa I, Takata T, Kamata N. : The 17th Annual Meeting of the Japanese Society for Oral Mucous Membrane (Tokyo), 2007
- 16) Cyto-biological characterization of synovial osteochondromatosis occurring in the temporomandibular joint : H Shimasue, M Hideo Shigeishi, H Nishi, K Ohta, M Takechi, M Miyauchi and N Kamata. : The20th Annual Meeting of the Japanese Society for the Temporomandibular Joint (Sendai), 2007.
- 17) Evaluation of bone regeneration of osteoblasts derived from human jaw bone cultured on novel interconnective porous hydroxyapatite ceramics (NEOBONE®) : Hiraoka M, Takechi M, Shigeishi H, Minami M, Kamata N : The 25th Annual Meeting of the Japanese Society for Bone and Mineral Research (Osaka), 2007.
- 18) Treatment of the Maxillofacial Fractures for the Psychiatric patients. : M Miwa, O Shigehiro, N Hiromi, O Kouji, H Koichiro, T Masaaki, K Nobuyuki. : The 9th Annual Meeting of the Japanese Society of Oral and Maxillofacial Traumatology (Nagoya), 2007
- 19) Evaluation of the Dental Implant Stability using Wireless Resonance Frequency Analyzer – Effect of the Density, Thickness and Width of Cortical Bone -. : Takechi M, Ohta K, Minami M, Hiraoka M, Shigeishi H, Nishimura M, Kamata N : 37th Annual Meeting of Japanese Society of Oral Implantology (Kumamoto), 2007.
- 20) Effect of the factors related with dental Implant stability on resonance frequency value : Ohta K, Takechi M, Minami M, Hiraoka M, Shigeishi H, Nishimura M, Kamata N : The 37th Academic Conference of the Japanese Society of Oral Implantology (Kumamoto), 2007.
- 21) PLGA-apatite cement containing atelocollagen composite scaffolds for bone tissue engineering. : Minamiguchi S, Takechi M, Momota Y, Miyamoto Y, Satomura K, Nagayama M : 7 th Asian BioCeramics Symposium(Osaka), 2007.
- 22) Evaluation of bone regeneration of osteoblasts derived from human jaw bone cultured on interconnected porous hydroxyapatite ceramics. : Hiraoka M, Takechi M, Shigeishi H, Minami Y, Kamata N. : 7 th Asian BioCeramics Symposium (Osaka) , 2007.

- 23) Study of marker gene in ossifying fibroma by means of cDNA microarray analysis of ossifying fibroma cell lines. : Shigeishi H, Nishi H, Kamata N. : 52th Annual Meeting of the Japanese Society of Oral and Maxillofacial Surgeon, in Nagoya, 2007.
- 24) A basic research on novel interconnective porous hydroxyapatite ceramics(NEOBONE[®]) for jaw bone issue regeneration : Hiraoka M, Takechi M, Shigeishi H, Minami M, Kamata N : The 50th Annual Meeting of the Japanese Society of Oral and Maxillofacial Surgeons (Nagoya), 2007.
- 25) Immunohistochemical analysis of GDD1 gene product in mouse bone/muscle tissues : Mizuta K, Inoue H, Itakura M, Kamata N : The 52th Annual Meeting of the Japanese Society of Oral and Maxillofacial Surgeons (Nagoya), 2007.
- 26) Overexpression of h-prune promotes cancer metastasis in oral squamous cell carcinomas. : Mitani Y, Yoneda S, Taki M, Ono S, Higaashikawa K, Kamata N. : The 52th Annual Meeting of the Japanese Society of Oral and Maxillofacial Surgeons (Nagoya), 2007.
- 27) Overexpression of h-prune involves cancer metastasis of oral squamous cell carcinomas : Mitani Y, Yoneda S, Taki M, Ono S, Higashikawa K, Kamata N. : 66th Annual Meeting of the Japanese Cancer Association (Yokohama), 2007.
- 28) Expressions of the EMT target gene VEGF-C and disease progression in Oral Squamous Cell Carcinomas : Ono S, Mitani Y, Shigeishi H, Yoneda S, Takechi M, Higashikawa K, Kitadai Y, Kamata N : 66th Annual Meeting of the Japanese Cancer Association (Yokohama), 2007.
- 29) A case of ossifying fibromyxoid tumor of the tongue.: M Taki, K Ohta, S Ono, I Ogawa, T Takashi, N Kamata. : The 55th Tyushikoku Meeting of the Japanese Stomatological Society (Tokushima), 2007
- 30) A case of osteonecrosis of the jaw associated withoral application ofbisphosphonates. : Yoneda S,Shigeishi H,Ohta K,Taki M,Ninomiya Y,Takechi M,Kamata N : The 55th Tyugoku-Shikoku Meeting of the Japanese Stomatological Society(Tokushima),2007.
- 31) Evaluation of bone regeneration of osteoblasts derived from human jaw bone cultured on interconnected porous hydroxyapatite ceramics : Hiraoka M, Takechi M, Shigeishi H, Minami M, Kamata N : The 29th Annual Meeting of the Japanese Society for Biomaterials (Osaka), 2007
- 32) Basic research on anti-washout apatite cement containing antibiotics – Basic property and release -. : Ohta K, Takechi M, Hiraoka M, Minami M, Ishikawa K, Kamata N : The 29th Annual Meeting of Japanese Society for Biomaterials (Osaka), 2007.
- 33) Evaluation of dental implants stability in the artificial bone with various defect models : Minami M, Takechi M, Ohta K, Hiraoka M, Ono S, Shimasue H, Ninomiya Y, Taki M, Miyauchi M, kamata N : 11th Annual Meeting of Japanese Academy of Maxillofacial Implant (Niigata), 2007.

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

(5) Academic Awards, etc.

(6) Patents

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

(1) Staffs and Students

Professor	: Yasumasa Akagawa
Associate Professor	: Kazuhiro Tsuga, Takayasu Kubo
Assistant Professor	: Yasuhiko Abe, Mitsuyoshi Yoshida, Tsuyoshi Taji
Assistant	: Kyō Hiasa, Katsunori Koretake, Ryo Hayashi
Secretary	: Satoko Sota, Akiko Shindo
Resident	: Maho Takeuchi, Mineka Yoshikawa, Kazuya Doi, Kazuhiko Hayashi, Tomohisa Komoto, Makoto Hirata, Yasunari Miyamoto
Graduate Student	: Gentaro Okada, Takahisa Kawamura, Ayumu Matsuura, Koji Morita, Yayoi Kanehisa, Mariko Maruyama, Ryo Takeshita

(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: Dental Support for Nutrition Care and Management : Kikutani T, Yoshida M, Suga T, Watanabe Y, Fujimoto A, Ishitobi S, Tamura F, Akagawa Y, Morito M, Ohi K, Yamane G : Journal of the Japanese Association for Dental Science. 26, 36-41, 2007.
- 2: Chemical interaction between Titanium implant surface and amino acids : Hiasa K, Abe Y, Yoshida Y, Taji T, Suzuki K and Akagawa Y : Dental Materials Journal. 26, 156-161, 2007.
- 3: Development of new implant augmentation drug delivery system using a basic fibroblast growth

- factor - gelatin hydrogel complex : Hayashi K, Kubo T, Doi K, Tabata Y and Akagawa Y : Dental Material Journal. 26, 170-177, 2007.
- 4: Development of cell-hybridized artificial bone : Effect of osteogenic differentiation of bone marrow stromal stem cells on bone formation with newly developed interconnected porous calcium hydroxyapatite : Doi K, Kubo T, Hayashi K, Imura K and Akagawa Y : Dental Materials Journal. 26(2), 162-169, 2007.
 - 5: Relationship between dental occlusion and balance ability among community-dwelling elderly : Morikawa H : Journal of Hiroshima University Dental Society 39(1), 24-36, 2007.
 - 6: A cellular biological study on effect of Fibroblast growth factor-2 on migration and differentiation of Osteoblast-like cells : Koumoto T : Journal of Hiroshima University Dental Society. 39(1), 37-49, 2007.
 - 7: 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, Groher M E, Crary M A, Mann G C and Akagawa Y : Gerodontology. 24, 111-116, 2007.
 - 8: Influence of bite force and tongue pressure on oro-pharyngeal residue in the elderly : Ono T, Kumakura I, Arimoto M, Hori K, Dong J, Iwata H, Nokubi T, Tsuga K and Akagawa Y : Gerodontology. 24, 143-150, 2007.
 - 9: Application of a novel interconnective porous hydroxyapatite ceramic for defects in jaw bone : Miyauchi M, Yoshioka Y, Higashikawa K, Koizumi K, Ohta K, Tani R, Higashido Y, Toratani S, Sugiyama M, Kamata N, Okamoto T, Akagawa Y : Journal of Japan Stomatology Society 56(4), 400-404, 2007.

B) Review

- 1: Influence of dental occlusion on mortality : Yoshida M, Akagawa Y : Japanese Journal of Gerodontology. 21, 365-368, 2007.
- 2: Guideline for infection control in Prosthodontic Treatment : Akagawa Y, Hirai T, Inoue H, Ichikawa T, Nikawa H, Nakamura Y, Ohnishi M, Taniguchi H, Okuda K, Miyake Y, Miyazaki T, Saka H, Koyano K, Tamazawa Y, Yoshino H, Nagao K, Ishida O, Heishima Y, Iwamoto Y : Journal of Japan Prosthodontic Society. 51(3), 627-689, 2007.
- 3: Guideline for Denture Relining : Shiga H, Terada Y, Ikebe K, Akagawa Y, Hirai T and Inoue H : Prosthodontic Research & Practice 6(4), 209-216, 2007.

C) Publications

- 1: Oral health care learning from basic (Edited by Kikutani T.): Yoshida M (coauthor) : Gakken, Tokyo, 16-27, 2007.

D) Other Publications

- 1: Pain and anxiety following the placement of dental implants (Japanese translation) : Maruyama

- M, Koretake K, Akagawa Y : Quintessence Dental Implantology. 14(3), 398-406, 2007.
- 2: Bone defect formation during implant placement following alveolar distraction (Japanese translation) : Morita K, Koretake K, Akagawa Y : Quintessence Dental Implantology. 14(4), 552-558, 2007.
 - 3: The radiographic bone loss pattern adjacent to immediately placed, immediately loaded implants (Japanese translation) : Morita K, Koretake K, Akagawa Y : Quintessence Dental Implantology. 14(5): 706-715, 2007.
 - 4: The effect of thermal cycling and air abrasion on cement failure loads of 4 provisional luting agents used for the cementation of implant-supported fixed partial dentures (Japanese translation) : Takeshita R, Koretake K, Akagawa Y : Quintessence Dental Implantology. 14(6), 84-86, 2007.
 - 5: Immediate and delayed restoration of dental implants in periodontally susceptible patients : 1-year results (Japanese translation) : Takeshita R, Koretake K, Akagawa Y : Quintessence Dental Implantology. 14(6), 105-113, 2007.
 - 6: Light-curing composite resin for indirect restoration; SR Adoro® system : Abe Y : Nippon Dental Review 779 ,97-103, 2007.
 - 7: Remark; handy dust chamber made from PET bottle for health promotion in clinical environment of dental practice : Tsuga K : The Journal of the Japan Dental Technologists Association. (459) ,8, 2007.
 - 8: Infection control for dentists and dental technicians - to make prosthodontic treatment more reliable : Akagawa Y, Hirai T, Ichikawa T : The International Journal of Dental Technology 35(9), 1202-1203, 2007.
 - 9: Infection control for dentists and dental technicians - to make prosthodontic treatment more reliable : Akagawa Y, Hirai T, Ichikawa T : Practice in Prosthodontics 40(5), 488-489, 2007.

E) Presentation at Scientific Meeting

- 1: Evaluation of bone augmentation in rabbits with a carbonate apatite collagen sponge : Matsuura A, Kubo T, Hayashi K, Doi K, Morita K, Hirata I, Okazaki M, Akagawa Y : 26th Chugoku Shikoku Branch of Japanese Society of Oral Implantology (Yamaguchi), 2007
- 2: Experimental study of bone formation using carbonate apatite collagen sponges with different carbonate ions : Matsuura A, Kubo T, Doi K, Hirata I, Okazaki M, Akagawa Y : 49th Japanese Society of Dental Materials and Devices (Sapporo), 2007
- 3: An experimental study on the influence of excessive static and dynamic loading on the bone tissue around implant : Miyamoto Y, Koretake K, Hirata M, Kubo T, Akagawa Y : 116th Japan Prosthodontic Society (Kobe), 2007
- 4: Standard value for tongue pressure test (TPT) based on a large scale sample : Utanohara Y, Hayashi R, Okada G, Kawamura T, Morikawa H, Yoshikawa M, Yoshida M, Tsuga K, Akagawa Y : 116th Japan Prosthodontic Society (Kobe), 2007
- 5: Effectiveness of a novel system of muscle trimming for educational use on denture impression : Taji T, Hayashi R, Koretake K, Hiasa K, Yoshida M, Abe Y, Kubo T, Tsuga K, Akagawa Y :

- 26th Japanese Dental Education Association (Gifu), 2007
- 6: Development of Compound Carrier System simplifying muscle trimming : Taji T, Hayashi R, Tsuga K, Akagawa Y : 17th The Japan Society of Dental Equipments (Tokyo), 2007
 - 7: Field study for oral function of elderly people : Tsuga K : Japan Prosthodontic Society Chugoku-Shikoku Branch Summer School 2007 Naruto (Naruto), 2007
 - 8: Reducing dust dispersal with a vacuum holed denture brush : Tsuga K, Hayashi R, Taji T, Kohada A, Ueda Y, Moriya N, Takagi M, Sasaki H, Akagawa Y : 2007 Chugoku-Shikoku Branch of Japan Prosthodontic Society (Tokushima), 2007
 - 9: Bone regeneration ability of newly developed polyphosphate-coated interporous hydroxyapatite : Takeshita R, Kubo T, Doi K, Morita K, Matsuura A and Akagawa Y : 12th Meeting of the International College of Prosthodontists(Fukuoka), 2007
 - 10: Subjective Estimation of Mouthguards in Karate Athletes; A Questionnaire Survey : Tsuga K, Ikuma Y, Akagawa Y : 12th Meeting of the International College of Prosthodontists(Fukuoka),2007
 - 11: Relationship between dental occlusion and body balance ability of the elderly : Yoshida M, Tsuga K and Akagawa Y : 12th Meeting of the International College of Prosthodontists(Fukuoka), 2007
 - 12: Swallowing sounds of dysphagia patient and healthy adults : Yoshikawa M, Nagasaki T, Yoshida M, Tanimoto K, Tanaka K, Sasamura K, Akagawa Y : 13rd Japanese Society of Dysphagia Rehabilitation (Saitama), 2007
 - 13: Application of bone regeneration with a newly developed efflux drug artificial bone by coated-polyphosphate : Doi K, Morita K, Kubo T, Matsuura A, Hayashi K, Akagawa Y : 37th Japanese Society of Oral Implantology (Kumamoto), 2007
 - 14: Influence of static load induced torque of osseointegrated implant on peri-implant bone : Miyamoto Y, Koretake K, Hirata M, Akagawa Y : 3rd Congress of Asian Academy of Osseointegration(Taipei), 2007
 - 15: Saliva secretion is stimulated by tongue exercise : Okada G, Tsuga K, Kawamura T, Hayashi R, Yoshikawa M and Akagawa Y : 2nd Hiroshima Conference on Education and Science in Dentistry(Hiroshima), 2007
 - 16: Application of newly developed interconnected porous Hydroxyapatite for implant guided bone regeneration : Doi K, Kubo T, Hayashi K, Takeshita R, Imura K and Akagawa Y : 2nd Joint Meeting of the Japan Prosthodontic Society and the Greater New York Academy of Prosthodontics(Tokyo), 2007
 - 17: Development of clean environment for prosthodontic clinic - handy dust chamber and modified denture brush- : Tsuga K, Hayashi R, Taji T, Maruyama M, Akagawa Y : 91th Hiroshima University Dental Society and 46th Hiroshima Prefectural Dental Society (Hiroshima), 2007
 - 18: Development of a novel oral power rehabilitation - application to nursing-cared elderly people - : Hayashi R, Okada G, Kawamura T, Maruyama M, Yoshikawa M, Tsuga K, Akagawa Y : 91th Hiroshima University Dental Society and 46th Hiroshima Prefectural Dental Society (Hiroshima), 2007
 - 19: Bone formation ability of newly developed CO₃Ap-collagen sponges : Matsuura A, Kubo T,

Doi K, Hayashi K, Morita K, Hirata I, Okazaki M and Akagawa Y : International Dental Materials Congress(Bangkok), 2007

- 20: Development of titanium biosensor for nano-order analysis of titanium surface interaction : Hirata I, Hiasa K, Abe Y, Akagawa Y, Okazaki M, Yoshida Y, Kuboki T, Suzuki K : 29th Japanese Society for Biomaterials (Osaka), 2007

F) Special lectures in academic meetings

- 1: Invited lecture Geriatric Dentistry in Japan : Yoshida M : Schweizerische Gesellschaft für die zahnmedizinische Betreuung Behinderter und Betagter(Basel), 2007
- 2: Open symposium for citizens; Pleasure of eating created by patient and dentist : Akagawa Y : 116th Japan Prosthodontic Society (Kobe), 2007
- 3: Symposium; Oral health care management for institutionalized elderly people : Yoshida M : 18th Japanese Society of Gerodontology (Sapporo), 2007
- 4: Educational Lecture II ; Future of tissue engineering : Akagawa Y : 18th Japan Academy of Esthetic Dentistry and 26th Japan Society of Adhesive Dentistry (Fukuoka), 2007

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

(5) Academic Awards, etc.

(6) Patents

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

(1) Staffs and Students

Professor	: Taizo Hamada
Associate Professor	: Shinsuke Sadamori
Assistant Professor	: Hitoshi Abekura, Masahiro Nishimura
Assistant	: Syunji Inoue, Guang Hong, Haruki Nishimura, Kazuko Kagawa
Secretary	: Michiko Miyagawa
Physician Dentistry	: Kae Harada, Syouji Hayashi
Intern (Later Period)	: Kaori Okubo, Kensuke Sekiya, Kouichi Kamada, Hiroki Tuka, Masahiro Tuboi
Graduate Student	: Yingai Li, Fumio Suehiro, Kentarou Hayashida, Takeshi Maeda, Wataru Mizumachi, Syouji Hayashi , Kouichi Kamada, Hiroki Tuka, Masahiro Tuboi, Isamu Fujiwara
Research Student	: M.Dilinure
Registered Intern	: Masami Furuebisu, Yutaka Fukanogi, Isamu Fujiwara
Others	: Kenji Yamada, Masami Furuebisu, Yasufumi Narasaki

(2) Main Research Activities

- 1 : Development of bone regenerative medicine using mesenchymal stem cells
- 2 : Magnetic Attachment in Clinical Dentistry
- 3 : Geriatric Dentistry
- 4 : Psychiatric Disorders in Dental Practice
- 5 : Development of Denture Adhesive
- 6 : Development of Denture Cleanser
- 7 : Rheology and Development of Resilient Denture Liners
- 8 : Round Robin test of Resilient Denture Liners
- 9 : Studies of conservative treatments for Temporomandiblar Disfunction
- 10 : Studies on adhesive technique for short span bridge prosthesis and mobilized tooth splint

(3) Research Achievements

A) Original Papers (including Case Reports)

- 1 : Evaluation of the mechanical properties of new tissue conditioner : Hong G, Maeda T, Hamada T : J J Gerodont 22(2), 90-100, 2007.
- 2 : A comparison of three deimensional change in maxillary complete dentures between conventional heat polymerizing and microwave polymerizing techniques. : Sadamori S, Ishii T, Hamada T, Razak A : Dent J 40, 6-10, 2007.
- 3 : Comprehensive analysis of chemotactic factors for bone marrow mesenchymal stem cells : Ozaki Y, Nishimura M, Sekiya K, Suehiro F, Kanawa M, Nikawa H, Hamada T, Kato Y : Stem Cells Develop 16, 119-129, 2007.
- 4 : Importance of diagnosis by computer tomography for mini dental implants planning : A clinical report : Nishimura M, Sadamori S, Suehiro F, Sekiya K, Nishimura H, Hamada T : Int Chin J Dent 7, 31-34, 2007.
- 5 : Intravenous administration of bone marrow stromal cells increased 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 : Nerurosci Lett 430, 109-114, 2007.
- 6 : Quantitative analysis of occlusal force balance in intercuspatal position using the Dental Prscale system in patients with temporomandibular disorders : Sadamori S, Kotani H, Abekura H, Hamada T : Int Chin J Dent 7, 43-47, 2007.
- 7 : The difference of antibacterial effect of neem leaves and stick extracts : Siswomihardjo W, Badawi S S, Nishimura M, Hamada T : Int Chin J Dent 7, 27-29, 2007.

B) Review

- 1 : Migration, oncogenicity, pathogenicity of mesenchymal stem cells : Kato Y, Sakai Y, Honda K, Igarashi A, Tsuji K, Nishimura M : BIO Clinica 22(12), 43-48, 2007.
- 2 : Mini implant:Stabilization of complete dentures for elderly edentulous patients : Nishimura M, Sadamori S, Hamada T : J Hiroshima Univ Dent Soc 39(2), 2007. (in press)

C) Publications

- 1 : Tissue conditioners : Hamada T, Murata H, Nishimura M, Hong G, Urabe S : Dental diamond(Tokyo, Japan), 101pages, 2007.
- 2 : Contemporary treatment at Hiroshima University Hospital:Practical explanation for the treatment of a small number of missing teeth (High Technology Modern Medicine/Prosthesis for missing teeth and splint of mobile teeth with adhesion bridge) : Abekrua H : Nannan Shya(Hiroshima, Japan), 746-750, 2007.
- 3 : Contemporary treatment at Hiroshima University Hospital : Treatment of edentulous patients with severe absorbed ridge : Nishimura M : Nannan Shya(Hiroshima, Japan), 751-756, 2007.

- 4 : Contemporary treatment at Hiroshima University Hospital : Psychosomatic Dentistry: Sadamori S : Nannan Shya(Hiroshima, Japan), 757, 2007.
- 5 : Denture Adhesive (in chinese) : Hamada T, Hong G, Lian Y M : Japan Resilient denture liner Society, 85 pages, 2007.
- 6 : Denture Lining (in chinese) : Hamada T, Murata H, Hong G, Lian Y M : Japan Resilient denture liner Society, 127 pages, 2007.
- 7 : Denture Plaque Control (in chinese) : Hamada T, Hong G, Jin C : Japan Resilient denture liner Society, 100 pages, 2007.

D) Other Publications

- 1 : Extra Feature/Construction of the system for the trial complete denture production using rapid prototyping technology ; Nakanoda S, Sadamori S, Nishimura M, Hamada T : The International Journal of Dental Technology 35, 619-636, 2007.

E) Presentation at Scientific Meeting

- 1 : Implant supported overdenture using ball attachment- 2 years followup study : Nishimura M, Nakai N, Sadamori S, Hamada T : The 2nd MDI Mini Implant Research Society(Osaka, Japan), 2007. 2.18
- 2 : Alveolar ridge augmentation using mesenchymal stem cells : Nishimura M, Sekiya K, Suehiro F, Ozaki Y, Nishimura H, Hamada T : The 6th Japanese Society for Regenerative Medicine(Yokohama, Japan) , 2007. 3.23
- 3 : Influence of polymer molecular weight on setting behavior and dynamic viscoelasticity of trial resilient denture liners Polymer : Mizumachi W, Murata H, Hong G, Maeda T, Hamada T : 9th resilient denture liner society (Nagasaki, Japan), 2007. 3.1
- 4 : Influence of PVM-MA contents on viscosity and adhesive strength of denture adhesives : Hayashida K, Hong G, Murata H, Maeda T, Hamada T : 9th resilient denture liner society (Nagasaki, Japan), 2007. 3.1
- 5 : Dynamic viscoelasticity and dimensional stability of trial denture adhesives contains hydro-gel : Maeda T, Hong G, Li Y A, Mizumachi W, Hamada T : 9th resilient denture liner society (Nagasaki, Japan), 2007. 3.1
- 6 : Influence of component on change of viscosity and adhesive strength of denture adhesives : Hong G, Murata H, Maeda T, Hamada T : The 49th general session of the Japanese society for dental materials and devices (Sapporo, Japan), 2007. 5.13
- 7 : Influence of combination of component on durability of viscoelasticity of tissue conditioners : Maeda T, Hong G, Sadamori S, Hamada T : The 49th general session of the Japanese society for dental materials and devices (Sapporo, Japan), 2007. 5.13
- 8 : Evaluation of oral status, feeding condition in care-required elderly : Hayashi S, Sadamori S, Inoue S, Hamada T, Abekura H : 116th Scientific Meeting of Japan Prosthodontic Society

- (Kobe, Japan), 2007. 5.18-20
- 9 : Influence of plasticizer on mechanical properties of heat polymerizing acrylic resilient denture liners : Li Y A, Hong G, Maeda T, Tsuka H, Hamada T, Murata H : The 40th General Session of the Hiroshima University Dental Society (Hiroshima, Japan), 2007. 6.16
 - 10 : Analysis of new transcription factors of human mesenchymal stem cells toward osteogenic differentiation : Suehiro F, Nishimura M, Sekiya K, Nishimura H, Kubo H, Igarashi A, Kawamoto K, Kato Y, Hamada T : 40th General Session of the Hiroshima University Dental Society (Hiroshima, Japan), 2007. 6.16
 - 11 : Influence of water solubility polymer contents on viscosity and adhesive strength of denture adhesives : Hayashida K, Hong G, Li Y A, Maeda T, Mizumachi W, Hamada T, Murata H : The 40th General Session of the Hiroshima University Dental Society (Hiroshima, Japan), 2007. 6.16
 - 12 : valuation of oral status, feeding condition, physical and mental state in care-required elderly : Hayashi S, Sadamori S, Inoue S, Hamada T, Abekura H : 18th Scientific Meeting of the Japanese Society of Gerodontology (Sapporo, Japan), 2007. 6.20-22
 - 13 : The change of dynamic viscoelasticity of home reliners : Maeda T, Hong G, Hamada T, Sadamori S : The 18th general session of the Japanese society of gerodontology (Sapporo, Japan), 2007. 6.22
 - 14 : The mechanical properties of new tissue conditioner HBTC-06 : Hong G, Maeda T, Sadamori S, Hamada T, Hashiguti M : The 18th general session of the Japanese society of gerodontology (Sapporo, Japan), 2007. 6.22
 - 15 : A case that needs carefulness for the intraosseous course of the mandibular incisive nerve in mandibular bone : Harada K, Nishimura H, Nishimura M, Hamada T : The 3rd MDI Mini Implant Research Society (Fukuoka, Japan), 2007. 8.26
 - 16 : A case report to insert mini implant to a patient with aplastic anemia anamnesis : Maeda T, Sekiya K, Nishimura M, Hamada T : The 3rd MDI Mini Implant Research Society (Fukuoka, Japan), 2007. 8.26
 - 17 : Survey of osteogenic related transcription factor in mesenchymal stem cells : Sekiya K : Summer school 2007 of prosthetic dentistry in Naruto(Naruto, Japan), 2007. 8.31
 - 18 : Effect of the factors related with dental implant stability on resonance frequency value : Ohta K, Takechi M, Minami M, Hiraoka M, Shigeishi H, Nishimura M, Kamata N : The 37th Academic Conference of the Japanese Society of Oral Implantology(Kumamoto, Japan) , 2007. 9.16
 - 19 : Evaluation of the dental implant stability using wireless resonance frequency analyzer - effect of the density, thickness and width of cortical bone- : Takechi M, Ota K, Minami M, Hiraoka M, Shigeishi H, Nishimura M, Kamata N : The 37th Academic Conference of the Japanese Society of Oral Implantology(Kumamoto, Japan) , 2007. 9.16
 - 20 : Impression and evaluation by patients for the conservative therapy of TMD mainly with occlusal splint : Abekura H, Hamada T, Sadamori S, Kagawa K : Scientific Meeting

of Hiroshima Prefecture Dental Association (46th), Hiroshima University Dental Society (91th) and Nippon Academy of Dental Technology Chugoku and Shikoku branch (2nd) (Hiroshima, Japan), 2007. 10.21

- 21 : Evaluation of oral status, nutritional condition, ADL and mental state in care-required elderly after one year : Hayashi S, Sadamori S, Inoue S, Hamada T, Abekura H : Scientific Meeting of Hiroshima Prefecture Dental Association (46th), Hiroshima University Dental Society (91th) and Nippon Academy of Dental Technology Chugoku and Shikoku branch (2nd) (Hiroshima, Japan), 2007. 10.21
- 22 : "Novel transcription factors for mesenchymal stem cells osteogenesis : Sekiya K, Nishimura M, Suehiro F, Kato Y, Hamada T : 85th General Session & Exhibition of the IADR 36th Meeting of the AADR 31st Meeting of the CADR (New Orleans, USA), 2007. 3.23"
- 23 : ELL2: A novel transcription factor for mesenchymal stem cells osteogenesis : Sekiya K, Nishimura M, Suehiro F, Hamada T : 5th Biennial Congress of Asian Academy of Prosthodontics and 116th Scientific Meeting of Japan Prosthodontic Society (International Session) (Kobe, Japan), 2007. 5.19
- 24 : The effect of cross-linking agent on the mechanical properties of heat-polymerizing acrylic resilient denture liner : Hong G, Li Y A, Murata H, Hamada T : 5th Biennial Congress of AAP (Kobe, Japan), 2007. 5.2
- 25 : A trical appliance of tailor made tissue engineered bone for alveolar ridge augmentation : Kamada K, Nishimura M, Suehiro F, Sekiya K, Sakai Y, Sakai M, Nakamura D, Tsuboi M, Kato Y, Hamada T : 2nd Hiroshima Conference on Education and Science in Dentistry (Hiroshima, Japan), 2007. 10.6

F) Special lectures in academic meetings

- 1 : Capsulation of cell/scaffold toward regenerative medicine : Nishimura M : Industrial Cluster Forum in Hiroshima Kasumi Campus, 2007. 2.28
- 2 : Guideline of diagnosis and treatment for psychosomatic dentistry : Sadamori S : 22th Science Meeting of Japanese Journal of Psychosomatic Dentistry(Tokyo, Japan), 2007. 3.18
- 3 : Fundamental techniques for regenerative medicine using autologous stem cells : Nishimura M : New Technology Presentation Meetings(Osaka, Japan), 2007. 8.24
- 4 : Systematic review of mini implants : Nishimura M : The 3rd MDI Mini Implant Research Society(Fukuoka, Japan), 2007. 8.26
- 5 : Significance and points of case presentation : Sadamori S : 3rd conference of MDI Mini Implant(Hakata, Japan), 2007. 8.26
- 6 : Contribution of cell biology to prosthodontics : Nishimura M : Summer school 2007 of prosthetic dentistry in Naruto(Naruto, Japan), 2007. 8.31
- 7 : Oral in aging society -for healthy elderly- : Sadamori S : 2007 Tyuugoku Frontier Storekeeper Workshop(Hiroshima, Japan), 2007. 10.23

- 8 : Development of alveolar ridge augmentation using mesenchymal stem cells : Nishimura M : The 61th Stem cell meeting(Hiroshima, Japan), 2007. 12.20
- 9 : Analysis of new transcription factors of human mesenchymal stem cells toward osteogenic differentiation : Suehiro F.: The 61th Stem cell meeting(Hiroshima, Japan), 2007. 12.20
- 10 : The role of saliva and denture adhesives : Hamada T : TianJin Medical University (China), 2007. 4.4
- 11 : The role of saliva and denture adhesives : Hamada T : Peking University (China), 2007. 5.8
- 12 : Oral rehabilitaion for the edentulous persons : Hamada T : Dalian University (China), 2007. 8.5
- 13 : Oral rehabilitaion for the elderly edentulous persons : Hamada T : Capital Medical University (China), 2007. 9.25
- 14 : Oral rehabilitaion for the elderly edentulous persons : Hamada T : TianJin Medical University (China), 2007. 9.27
- 15 : Oral rehabilitaion for the elderly edentulous persons : Hamada T : Taipei Medical University (Taiwan), 2007. 11.29
- 16 : Oral rehabilitaion for the elderly edentulous persons : Hamada T : National Taiwan University (Taiwan), 2007. 11.29

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

- 1 : Grant-in-Aid for Scientific Research (B) (2) general continue : Sadamori S : Evaluation of the affect of denture wearing to dementia symptom, general health, QOL in elderly with dementia. (No.16390617). ¥2,860,000
- 2 : Grant-in-Aid for Scientific Research (C) (2) general continue : Inoue S : Exploration of stem cells in oral tissues for alveolar ridge augmentation. (No.18592128). ¥1,690,000
- 3 : Grant-in-Aid for Young Scientists (B) continue : Nishimura H : Parturition of ultimate bone prosthetic material using autologous stem cells. (No.18799007). ¥1,300,000
- 4 : Grant-in-Aid for Scientific Research (B) (2) general new : Nishimura M : Development of alveolar bone regenerative medicine using regulated autologous cells. (No.19390497). ¥10,270,000
- 5 : Grant-in-Aid for Scientific Research (C) (2) general new : Kagawa K : The development of crude drug combination oral moisture gel for dry mouth. (No.19592238) . ¥1,950,000
- 6 : Grant-in-Aid for Scientific Research (C) (2) general new : Abekura H : Study on relationship between metal stress and oral habit with parmeter of Chromognanin in saliva . (No.19592242). ¥1,690,000
- 7 : Grant-in-Aid for Young Scientists (B) new : Hong G : Research on the evaluation of trail crude drug combination tissue conditioner for halitosis. (No.19791441). ¥2,200,000
- 8 : Donation from SEIREN Corporation : Hamada T : ¥500,000

- 9 : Donation from Medical Corporation Yuuwa Corporation : Sadamori S : Dental treatment and instruction for patients with mental disorder. ¥300,000
- 10 : Donation from Medical Corporation Yuuwa Corporation : Sadamori S : Dental treatment and oral care for patients with mental disorder. ¥200,000
- 11 : Donation from GC Corporation : Nishimura M : Development of alveolar bone regenerative medicine. ¥250,000
- 12 : Donation from GC Corporation : Nishimura M : Development of new bone scaffold. ¥ 250,000
- 13 : Given in trust research from TWO CELLS Company : Nishimura M : Survey of alveolar ridge augmentation technique by MSC for implantation. ¥1,998,000

(5) Academic Awards, etc.

- 1 : K Sekiya : IADR Prosthodontics Research Group Pre-Prosthetic Regenerative Science Award for Young Investigators : 2007. 3.20

(6) Patents

- 1 : Nikawa H, Nishimura M, Tsuji K, Hiromoto N : Cell growth agent comprising of antimicrobial peptide and application for cell growth containing growth accelerating agent in serum free medium (Patent pending 2007-33318) (applicant: JST,Hiroshima Univ,TWO CELLS, Co.,Ltd)
- 2 : Nishimura M, Tsuji K, Tochio N : Tissue regenerative capsule (Patent pending 2007-48174) (applicant: Hiroshima Univ,TWO CELLS, Co.,Ltd)
- 3 : Kato Y, Nishimura M, Sekiya K, Kubo Y, Tsuji K : Agent to monitor and to regulate osteogenic differentiation of cells (Patent pending 2007-120305) (applicant: Hiroshima Univ,TWO CELLS, Co.,Ltd)

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

(1) Staffs and Students

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

(2) Main Research Activities

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

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

(3) Research Achievements

A) Original Papers (including Case Reports)

- 1: Activities of the muscles involved in swallowing in patients with cleft lip and palate : Nagaoka K, Tanne K : *Dysphagia* 22, 140-144, 2007.
- 2: Influences of reduced masticatory sensory input from soft-diet feeding upon spatial memory/learning ability in mice : Tsutsui K, Kaku M, Motokawa M, Tohma Y, Kawata T, Fujita T, Kohno S, Ohtani J, Tenjo K, Nakano M, Kamada H, Tanne K : *Biomedical Research* 28, 1-7, 2007.
- 3: Daily jaw muscle activity in freely moving rats measured with radio-telemetry : Kawai N, Tanaka E, Langenbach G E J, van Wessel T, Brugman P, Sano R, van Eijden T M G J, Tanne K : *European Journal of Oral Sciences* 115, 15-20, 2007.
- 4: Changes in stomatognathic function induced by orthognathic surgery in patients with mandibular prognathism : Nakata Y, Ueda H, Kato M, Tabe H, Shikata-Wakisaka N, Matsumoto E, Tanaka E, Tanne K : *Journal of Oral and Maxillofacial Surgery* 65, 444-451, 2007.
- 5: Sleep architecture and the apnea-hypopnea index in children with obstructive-sleep apnea syndrome : Matsumoto E, Tanaka E, Tabe H, Wakisaka N, Nakata Y, Ueda H, Hori T, Abe T, Tanne K : *Journal of Oral Rehabilitation* 34, 112-120, 2007.
- 6: Dynamic shear properties of the porcine molar periodontal ligament : Tanaka E, Inubushi T, Takahashi K, Shirakura M, Sano R, Dalla-Bona D A, Nakajima A, van Eijden T M G J, Tanne K : *Journal of Biomechanics* 40, 1477-1483, 2007.
- 7: Mineralized tissue cells are principal source of FGF23 : Yoshiko Y, Wang H, Minamizaki T, Ijuin C, Yamamoto R, Suemune S, Kozai K, Tanne K, Aubin J E, Maeda N : *Bone* 40, 1565-1573, 2007.
- 8: Viscoelastic material model for the temporomandibular joint disc derived from dynamic shear

- tests or strain-relaxation tests : Koolstra J H, Tanaka E, van Eijden T M G J : *Journal of Biomechanics* 40(10), 2330-2334, 2007.
- 9: Hyaluronic acid promotes osteochondrogenic differentiation from mesenchymal stem cells in a three-dimensional culture system : Yoneno K, Tanaka E, Ohno S, Tanimoto K, Honda K, Tanaka N, Lin Y-Y, Tanne Y, Okuma S, Tanne K : *Journal of Stem Cells* 2(3), 1-10, 2007.
 - 10: Effect of food consistency on the degree of mineralization in the rat mandible : Tanaka E, Sano R, Kawai N, Langenbach G E J, Brugman P, Tanne K, van Eijden T M G J : *Annals of Biomedical Engineering* 35(9), 1617-1621, 2007.
 - 11: The effect of hyperactivity of the lateral pterygoid muscle on the temporomandibular joint disc. : Tanaka E, Hirose M, Inubushi T, Koolstra J H, van Eijden T M G J, Suekawa Y, Fujita R, Tanaka M, Tanne K : *Journal of Biomechanical Engineering* 129(6), 890-97, 2007.
 - 12: Biomechanical response of condylar cartilage-on-bone to dynamic shear. : Tanaka E, Rego E B, Iwabuchi Y, Inubushi T, Koolstra J H, van Eijden T M G J, Kawai N, Kudo Y, Takata T, Tanne K : *Journal of Biomedical Materials Research Part A* 85A(1), 127-132, 2007.
 - 13: Heterogeneity of fiber characteristics in the rat masseter and digastric muscles. : Sano R, Tanaka E, Korfage J A M, Langenbach G E J, Kawai N, van Eijden T M G J, Tanne K : *Journal of Anatomy* 211(10), 464-470, 2007.
 - 14: Effect of friction at articular surfaces on displacement of the temporomandibular joint disc during prolonged clenching. : Tanaka E, Hirose M, Koolstra J H, van Eijden T M G J, Fujita R, Tanaka M, Iwabuchi Y, Tanne K : *Journal of Oral and Maxillofacial Surgery* 66(3), 462-468, 2008.
 - 15: Development of three-dimensional FE modeling system from a limited cone beam CT images for orthodontic tooth movement. : Nakajima A, Murata M, Tanaka E, Arai Y, Fukase Y, Nishi Y, Sameshima G T, Shimizu N : *Dental Materials Journal* 26(6), 882-891, 2007.
 - 16: Cryopreservation of PDL cells by use of program freezer with magnetic field for teeth banking. : Kaku M, Kamata H, Kawata T, Tai M, Kohno S, Motokawa M, Tohma Y, Fujita T, Ohtani J, Tsuka N, Ohwada T, Tanne K : *Dentistry in Japan* 43, 82-86, 2007.
 - 17: Two Cases of Mandibular Protrusion Treated with Maxillary Protraction Appliance : Ueki M, Honda K, Kitamura R, Tanaka N, Lin Y Y, Harada M, Yanagida T, Kunimatsu R, Tanne K : *Journal of Hiroshima University Dental Society* 39, 50-56, 2007.
 - 18: A treatment case of Angle Class \square division 2 adult patient with molar distalization achieved by distal extension lingual arch : Hasegawa T, Tanaka E, Watanabe M, Suekawa Y, Takahashi K, Tanne K : *The journal of Chu-Shikoku Orthodontic Society* 19(1), 57-65, 2007.
 - 19: An orthodontic case of maxillary protrusion with temporomandibular joint disorders : Ohkuma S, Tanaka N, Kunimatsu R, Huang Yu-ching, Tanaka E, Tanne K : *The Journal of Chu-Shikoku Orthodontic Society* 19(1), 47-55, 2007.
 - 20: Nasal pressure recordings to detect obstructive sleep apnea. : Almeida F R, Ayas N T, Otsuka R, Ueda H, Hamilton P, Ryan F C, Lowe A A : *Sleep and Breath* 10, 62-69, 2007.

B) Review

C) Publications

- 1: The role of orthodontist in the management of sleep apnea syndrome -Dental/Occlusal side effects of oral appliances- : Ueda H, Watanabe G, Tabe H, Tanne K, Lowe A A, Almeida FR : Journal of Orthodontic Practice 23(8), 11-25, 2007.
- 2: Clinical points in the oral appliance therapy for obstructive sleep apnea patients -A report of dental/occlusal side effects- : Ueda H, Tanne K, Lowe A A, Almeida F R : 日本歯科評論 67(8), 145-152, 2007.

D) Other Publications

E) Presentation at Scientific Meeting

- 1: Nonlinear FE analysis using model constructed by CT image for tooth movement. : Murata M, Nakajima A, Nishi Y, Arai Y, Tanaka E : 107th American Association of Orthodontists (Seattle, USA), 2007.
- 2: Identification of stress distribution comparing with different PDL strain-rates using non-linear FEA. : Nakajima A, Murata M, Nishi Y, Tanaka E, Sameshima G T, Shimizu N : 107th American Association of Orthodontists (Seattle, USA), 2007.
- 3: Subchondral bone damage alters the cartilage metabolism : mechanisms of osteoarthritis : Yu-Yu Lin, Tanaka N, Ueki M, Tanimoto K, Tanne K : 第40回広島大学歯学会総会(広島), 2007.
- 4: Histomorphometric study by using self-drilling screw : Ohtani J : Temporary Anchorage Device study group in tyu-sikoku seminar(Hiroshima), 2007.
- 5: Characteristics of a new type Dual-Top screw and its clinical application : Tanaka E : Temporary Anchorage Device study group in tyu-sikoku seminar(Hiroshima), 2007.
- 6: Invention of ultrasound probe for dental use. : Inubushi T, Tanaka E, Miyauchi M, Takata T, Tanne K : Young researcher cultivation project (Hiroshima), 2007.
- 7: Development of sterilization management system : Ohtani J : Young researcher cultivation project (Hiroshima), 2007.
- 8: Examination of new food aim to improvement of osteoporosis , : Ohtani J : Young researcher cultivation project (Hiroshima), 2007.
- 9: The development of new fixed appliance after orthodontic treatment : Tohma Y : Young researcher cultivation project (Hiroshima), 2007.
- 10: Autotransplantation of cryopreservation tooth. (Basic and clinical research) : Kaku M, Kawata T, Tanne K : The 15th Annual Meeting of the Ibaraki Association for Dental Science (Mito), 2007.
- 11: Induction ability of bone regeneration by bone marrow-derived mesenchymal stem cells in rat cranial bone defect : Tai M, Kaku M, Sakai Y, Katou Y, Tuji K, Tohma Y, Kawata T, Tanne K : The 31th Annual Meeting of Japanese Cleft Palate Association (Kusatsu), 2007.

- 12: The effect of ultrasound on the process of mineralization in human periodontal cells. : Inubushi T, Tanaka E, Rego E B, Miyauchi M, Takata T, Tanne K : 3rd Shika Butsuri Shigeki Kenkyukai (Gifu), 2007.
- 13: The role of low-intensity ultrasound on the cementoblast metabolism via Wnt/ β -catenin signaling pathway : Tanaka E, Inubushi T, Dalla-Bona D A, Rego E B, Tanne K, Kudo Y, Miyauchi M, Takata T : 3rd Shika Butsuri Shigeki Kenkyukai (Gifu), 2007.
- 14: The effect of ultrasound on the metabolism of human periodontal ligament cells. : Inubushi T, Tanaka E, Dalla-Bona D A, Yamano E, Kudo Y, Miyauchi M, Takata T, Tanne K : The Meeting of the Japanese Society of Periodontology (Yokosuka), 2007.
- 15: Oral administration of liposomal lactoferrin inhibits bone resorption in rat LPS-induced periodontitis : Yamano E, Miyauchi M, Oka H, Sakamoto K, Eiji Tanaka E, Ishikado A, Imanaka H, Suido H, Makino T, Tanne K, Takata T : The 40th Hiroshima University Dentistry meeting (Hiroshima), 2007.
- 16: Study of enamel matrix proteins in UCSF orofacial sciences : Tanimoto K : The 40th Hiroshima University Dentistry meeting (Hiroshima), 2007.
- 17: Influences of excessive cyclic tensile load on hyaluronan metabolism in cultured rabbit synoviocytes : Kitamura R, Tanimoto K, Tanaka N, Ueki M, Yanagida T, Tanne Y, Kamiya T, Tanne K : The 20th Annual Meeting of the Japanese Society for Temporomandibular Joint (Sendai), 2007.
- 18: Influences of fluid flow pressure on lubricant metabolism in joint tissue : Yanagida T, Tanimoto K, Tanaka N, Ueki M, Kitamura R, Tanne Y, Kamiya T, Tanne K : The 20th Annual Meeting of the Japanese Society for Temporomandibular Joint (Sendai), 2007.
- 19: Influences of hyaluronan on the expression and activity of Runx2 during chondrocyte differentiation : Tanne Y, Tanimoto K, Tanaka N, Ueki M, Kitamura R, Yanagida T, Kamiya T, Tanne K : The 20th Annual Meeting of Japanese Society for the Temporomandibular Joint (Sendai), 2007.
- 20: Effect of tensile stress on synthesis of superficial zone protein in chondrocytes : Kamiya T, Tanimoto K, Tanaka N, Ueki M, Kitamura R, Yanagida T, Tanne Y, Tanne K : The 20th Annual Meeting of the Japanese Society for the Temporomandibular Joint (Sendai), 2007.
- 21: The long-term change of masticatory function in patients with jaw deformities after surgical orthodontic treatment : Watanabe G, Kou M, Kawai N, Shirakura M, Tabe H, Ueda H, Tanne K : The 17th Annual Meeting of Japanese Society for Jaw Deformities(Niigata), 2007.
- 22: A clinical survey on traumatic injury in patients of orthodontic clinic, Hiroshima University Hospital : Kawai N, Ueki M, Ohtani J, Motokawa M, Tohma Y, Nishi M, Tanaka E, Tanne K : The 50th Annual Meeting of Chu-Shikoku Orthodontic Society(Okayama), 2007.
- 23: A clinical study on anterior open bite patients in the Department of Orthodontics at Hiroshima University Hospital past five years : Watanabe G, Kou M, Tabe H, Ueda H, Tanne K : The 50th Annual Meeting of Chu-Shikoku Orthodontic Society(Okayama), 2007.
- 24: A case of unilateral cleft lip and palate treated with iliac bone grafting and tooth

- transplantation onto the bone defect : Takeuchi M, Tanaka E, Kikuzaki M, Tanimoto K, Tanne K : The 50th Annual Meeting of Chu-Shikoku Orthodontic Society(Okayama), 2007.
- 25:A spared trigeminal nerve injury induces allodynia/Hyperalgesia on facial regions : Takahashi K, Watanabe M, Suekawa Y, Nishi M, Tanaka E, Utida T, Tanne K : The 49th Annual Meeting of the Japanese Association for oral biology(Sapporo), 2007.
- 26:Yamamoto R, Yoshiko Y, Hasegawa T, Maeda N, Tanne K : The 66th Annual Meeting of Japanese Orthodontic Society (Osaka), 2007.
- 27:Influence of oral appliance on dental arch and occlusion in patients with obstructive sleep apnea : Watanabe G, Tabe H, Ueda H, Tanne K : The 66th Annual Meeting of Japanese Orthodontic Society(Osaka), 2007.
- 28:Effect of Ultrasound on the Biometabolism of Periodontal Ligament Cells : Inubushi T, Tanaka E, Rego E B, Ohta H, Okada H, Kudo M, Miyauchi T, Takata T, Tanne K : The 42nd annual meeting IADR-continental European and Israel Divisions (Thessaloniki, Greece), 2007.
- 29:Heterogeneity of fiber characteristics in rat masseter and digastric muscles : Sano R, Tanaka E, Korfage J A M, Langenbach G E J, Kawai N, Van Eijden T M F J, Tanne K : The 42nd annual meeting IADR-continental European and Israel Divisions (Thessaloniki, Greece), 2007.
- 30:The relationship between jaw muscle activity and fiber type composition : Kawai N, Tanaka E, Langenbach G E J, Korfage J A M, Sano R, van Eijden T M G J, Tanne K : The 42nd Annual Meeting of IADR-Continental European and Israeli divisions (Thessaloniki, Greece), 2007.
- 31:Effects of sexhormone and TGF-beta1 on bone growth in newborn mice : Marquez R A, Ohtani J, Fujita T, Kawata T, Kaku M, Tohma Y, Motokawa M, Kamada H, Rikita(Tai) M, Tsuka N, Sunagawa H, Koseki H, Tanne K : 2nd hiroshima conference on education and science in dentistry (Hiroshima), 2007.
- 32:Dynamic shear properties of porcine mandibular condylar cartilage : Rego E B, Tanaka E, Iwabuchi Y, Inubushi T, Kawai N, Yamano E, Sano R, Kawazoe A, Nakamura S, Tanne K : 2nd Hiroshima Conference on Education and Science in Dentistry (Hiroshima), 2007.
- 33:Effects of bite opening on daily jaw muscle activity : Ohnuki Y, Kawai N, Tanaka E, Tanne K, Saeki Y : The 49th Annual meeting of the Japanese Association of Oral Biology (Sapporo), 2007.
- 34:A spared trigeminal nerve injury induces allodynia/hyperalgesia on facial regions : Takahashi K, Watanabe M, Suekawa Y, Nishi M, Tanaka E, Utida T, Tanne K : The 49th Annual meeting of the Japanese Association of Oral Biology(Sapporo), 2007.
- 35:Oral administration of liposomal lactoferrin inhibits periodontal tissue destruction in rat LPS-induced periodontitis. The second report: Lactoferrin effect on MMP-1 production and it's the transfer pathway of caused by LPS. : Yamano E, Atsushi Ishikado A, Miyauchi M, Tanaka E, Imanaka H, Hirohisa Suido H, Makino T, Tanne K, Takata T : The 50th Anniversary Meeting of the Japanese Society of Periodontology (Tokyo), 2007.
- 36:Development of probe for ultrasonic irradiation that specialized dental treatment :

- Kawazoe A, Tanaka E, Nikawa H, Inubushi T, Rego E, Nakamura S, Yamano E, Ota A, Okada H, Takata T, Tanne K : The 46th Hiroshima Prefecture Dental Association/The 91th Hiroshima University Dental Society (Hiroshima), 2007.
- 37: Stability of mini-screw examined by animal experiment and clinical study : Sunagawa H, Otani J, Kawata T, Kaku M, Fujita T, Touma Y, Motokawa M, Kamata H, Tai M, Tsuka N, Koseki H, Tanne K : The 46th Hiroshima Prefecture Dental Association/The 91th Hiroshima University Dental Society (Hiroshima), 2007.
- 38: Effects of proinflammatory cytokines on the degradation of hyaluronan in synovial cells : Tanimoto K, Tanaka N, Ueki M, Yanagida T, Kitamura R, Tanne Y, Lin Y Y, Kamiya T, Ohkuma S, Huang Y C, Kunimatsu R, Yoshioka M, Tanne K : The 55th Annual Meeting of Japanese Association for Dental Research (Yokohama), 2007.
- 39: Influences of Food Consistency on Rat Masticatory Fibers : Sano R, Tanaka E, Korfage Joannes A M, Langenbach Geerling E J, Kawai N, Nakamura S, van Eijden T M G J, Tanne K : The 55th Annual Meeting of Japanese Association for Dental Research (Yokohama), 2007.
- 40: Effects of hyaluronan oligosaccharide on MMP expression in gingival fibroblasts : Ohkuma S, Tanimoto K, Tanaka N, Ueki M, Kitamura R, Yanagida T, Tanne Y, Lin Y Y, Kamiya T, Kunimatsu R, Huang Y C, Yoshioka M, Tanne K : The 55th Annual Meeting of Japanese Association for Dental Research (Yokohama), 2007.
- 41: Effects of Amelogenin on the Metabolism of Periodontal Tissue Cells : Kunimatsu R, Tanimoto K, Tanaka N, Ueki M, Kitamura R, Yanagida T, Tanne Y, Lin Y Y, Kamiya T, Ohkuma S, Huang Y C, Yoshioka M, Tanne K : The 55th Annual Meeting of Japanese Association for Dental Research (Yokohama), 2007.
- 42: Overeruption of unopposed molars in young and adult rats : Fujita T, Montet X, Tanne K, Kiliaridis S : The 83rd Congress of the European Orthodontic Society (Berlin, Germany), 2007.

F) Special lectures in academic meetings

- 1: Tanne K : Recent topics on orthodontic treatment covered with social health insurance: Orthodontic treatment with use of implant anchorage: Annual Meeting of Hiroshima Association of Orthodontists (Hiroshima), 2007.
- 2: Tanne K : Current status and future development of tooth transplantation in clinical orthodontics: Establishment and development of "Teeth Bank": Academic Meeting of Alumni Association of Osaka University Faculty of Dentistry, Hiroshima Branch (Hiroshima), 2007.
- 3: Tanne K : To study from patients transferred and/or introduced to university hospital: Hiroshima Study Club for Orthodontics (Hiroshima), 2007.
- 4: Tanne K : Current status and future development of tooth transplantation: Establishment and development of "Teeth Bank": Tokyo Evening Seminar sponsored by Hiroshima University (Tokyo), 2007.
- 5: Tanne K : Current status of tooth transplantation and the future development with a

cryopreservation technique for teeth banking: Symposium on Teeth Cryopreservation, Taipei Medical University (Taipei, Taiwan), 2007.

- 6: Tanne K : Prevalence of temporomandibular joint disorders (TMDs) and current status of the treatment in patients with malocclusion: Is orthodontic treatment available for the correction of TMDs: 21st Annual Meeting of Japanese Society for Temporomandibular Joint (Osaka), 2007.
- 7: Ueda H : Current topics in Orthodontics : The 151th clinical dental study club in Hiroshima University (Hiroshima), 2007.
- 8: Ueda H : The longitudinal orthodontic treatment of severe open bite cases : The 50th Annual Meeting of Chu-Shikoku Orthodontic Society (Okayama), 2007.
- 9: Ueda H : Evaluation of masticatory muscle activity by means of electromyogram : The Meeting of Hiroshima Orthodontic Society (Hiroshima), 2007.

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

- 1: Grant-in-Aid for Scientific Research : Tanne K : Establishment of therapeutic system to aim the inhibition of condylar cartilage resorption in TMJ-osteoarthritis, (No.18390554).
¥9,490,000
- 2: Grant-in-Aid for Scientific Research : Tanaka E : Identification of inducing mechanism of naturopathic pain in craniofacial region and its relationship to inflammatory cytokine. (No. 18592235). ¥1,690,000
- 3: Grant-in-Aid for Scientific Research : Fujita T : Effects of sex hormone on TMD. (No.19592353) ¥2,080,000
- 4: Grant-in-Aid for Scientific Research : Tanimoto K : Application of undifferentized MSC graft for the bone/cartilage regeneration and cleft care -Clinically trial. (No. 19659540). ¥1,300,000
- 5: Grant-in-Aid for Scientific Research : Kaku M : Analysis of VEGF receptor function for osteoblast differentiation. (No.19791580). ¥1,300,000
- 6: Grant-in-Aid for Scientific Research : Ohtani J : Effects of sex hormone and growth factors on the craniofacial skeletal development. (No.19890139). ¥1,320,000
- 7: Grant-in-Aid for Scientific Research : Kawai N : Effects of different occlusal stimulation dependent of food consistency on masseter development. (No. 19890138). ¥1,290,000
- 8: Research Grant (Ishikawa Co.) : Ohtani J : A examination of effectiveness on bone metabolism improvement food ¥727,000
- 9: Research Grant (Proseed Co.) : Ohtani J : Histomorphometric study of screw stability ¥440,000
- 10: Grant-in-Aid for Scientific Research of Hiroshima : Ohtani J : Production of food improved bone metabolism for approval of Food for qualified health uses. ¥3,590,000

(5) Academic Awards, etc.

- 1: Inubushi T : The young venture award in Hiroshima : The 8th Hiroshima grant for venture business (student), 2007.
- 2: Hasegawa T : Citation for students : Graduation Ceremony of Hiroshima University, Department of Research, 2007.
- 3: Marquez R A : Best poster award: Effects of sexhormone and TGF-beta1 on bone growth in newborn mice : 2nd hiroshimacference on education and science in dentistry (Hiroshima), 2007.
- 4: Ohtani J : Oral Presentation Award : Stability of Mini-Screw Examined by Animal Study and Clinical Study : The 6th Asian Implant Orthodontic Conference (Taichung, Taiwan), 2007.

(6) Patents

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

(1) Staffs and Students

Professor	: Katsuyuki Kozai
Associate Professor	: Junji Suzuki
Assistant	: Yasutaka Kaihara, Fumiko Hayashi, Chieko Mitsuhata, Ryujiro Mizuno Goh Yoshimura
Physician	: Hisami Nakae(~March), Noriko Kadomoto, Kozue Miura, Mihaya Arika Satoko Otani(April~), Nami Miyake(April~)
Intern	: Kozue Aoki(~March), Satoko Otani(~March), Mariko Okamoto(~March) Nami Miyake(~March)
Graduate Student	: Tomoko Minamizaki(~March), Meiko Kuramoto, Aya Tsuboi
Research Student	: Yoko Hayashi, Ryoko Hirata, Ayako Banshoudani, Mie Hirakawa
Registered Intern	: Hiroki Shintani, Yoko Hayashi, Mika Makihira, 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 : A Case Study of the Effectiveness of Occlusal Guidance using Crimpable Hook and Sectional Wire : Kaihara Y, Aoki K, Miyake N, Kozai K : Jpn J Ped Dent 45(1), 92-96, Ja

- panese, 2007.
- 2 : A case report of fraternal twin sisters who was diagnosed as cleidocranial dysplasia with delayed eruption of permanent teeth : Banshodani A, Kaihara Y, Nakae H, Suzuki J, Kozai K : Jpn J Ped Dent 45(1),109-117, Japanese, 2007.
 - 3 : Report of Two cases of Occlusal Guidance of the Inverted and Impacted Upper Central Incisor : Kadomoto N, Suzuki J, Taniguchi Y, Kuramoto M, Mitsuhashi C, Kozai K : Jpn J Ped Dent 45(1), 118-124, Japanese, 2007.
 - 4 : A report of three cases of partial anodontia that occurred in one family (mother, her son and daughter) : Kuramoto M, Suzuki J, Kadomoto N, Kozai K : Jpn J Ped Dent 45(1), 125-133, Japanese, 2007.
 - 5 : Mineralized tissue cells are a principal source of FGF23 : Yoshiko Y, Wang H, Minamizaki T, Ijuin C, Yamamoto R, Suemune S, Tanne K, Kozai K, Aubin J E, Maeda M : Bone,40 (6) , 1565-1573, 2007.
 - 6 : Long-term periodical isolation of Staphylococcus aureus and methicillin-resistant Staphylococcus aureus(MRSA) from Japanese children's oral cavities : Suzuki J, Yoshimura G, Kadomoto N, Kuramoto M, Kozai K : Pediatric Dental Journal 15(2), 127-130, 2007.
 - 7 : Chemotherapy and Radiation Against Neuroblastoma Inhibit Forming of Permanent Teeth. : A Tsuboi, A, Suzuki J, Yoshimura G, Kozai K : Proceedings of 2nd Hiroshima Conference on Education and Science in Dentistry, 136, 2007.
 - 8 : Automutanolysin (Aml) Exhibits Lytic Activity Towards Planktonic and Biofilm Cells of Clinical Oral Streptococci : Thanyastrisung P, Komatsuzawa H, Yoshimura G, Kozai K, Sugai M : Proceedings of 2nd Hiroshima Conference on Education and Science in Dentistry, 135, 2007.
 - 9 : Automutanolysin (Aml), a Novel Bacteriocide Targeting Cariogenic StreptococciP. Thanyastrisung : Komatsuzawa H, Yoshimura G, Hayashi I, Fujiwara T, Yamada S, Kozai K, Sugai M : Proceedings of 2nd Hiroshima Conference on Education and Science in Dentistry, 37-40, 2007.

B) Review

- 1 : Occlusal Guidance using Crimpable Hook and Sectional Wire : Kaihara Y, Kozai K : Dental Diamond an extra number "Let's start learning MTM", 144-146, Review. Japanese, 2007.

C) Publications

- 1 : Shoni-shikagaku (Pediatric Dentistry) 3rd. : Kozai K : Chapter10. Periodontal Diseases in Childhood, Editors:M. Akasaka, et al. : Ishiyaku Publisher, Inc., 127-137, Japanese, 2007..
- 2 : Shoni-shikagaku (Pediatric Dentistry) 3rd ed. : K Kozai : Chapter16. Prevention from Dental

Caries and Periodontal Diseases., Editors:M. Akasaka, et al. : Ishiyaku Publisher, Inc., 214-221, Japanese, 2007.

- 3 : Shoni-shikagaku (Pediatric Dentistry) 3rd ed. : Kozai K : Chapter 22.Traumatology of Tooth and Mouth and Treatment, Editors : Akasaka M, et al. : Ishiyaku Publisher, Inc., 326-346, Japanese,2007.
- 4 : Hiroshima Daigaku no saishinnchiryō ga wakaru hon : Hayashi F, Suzuki J : Caries treatment for children.: Nannasha, 707-714, Japanese,2007..
- 5 : Hiroshima Daigaku no saishinnchiryō ga wakaru hon : Suzuki J, Kaihara Y : Treatment of impacted teeth for children : Nannasha, 715-721, Japanese, 2007.

D) Other Publications

- 1 : Sense in that time : Kozai K : Column 'Delta' in Chugoku Evening Newspaper, Japanese; 2007.

E) Presentation at Scientific Meeting

- 1 : A.actinomycetemcomitance inhibits cell-cell communication in osteoblast. : Kuramoto M, Suzuki J, Kozai K : The 40th congress of The Hiroshima University Dental Society(Hiroshima), 2007.
- 2 : Research and issue of transmission of mutans streptococci in children. : Kozai K : Cariology Today in Japan. The 7th Workshop in Kyoto, 2007.
- 3 : Factors related to preventing relapse of deciduous anterior crossbite : Kaihara K, Hayashi F, Miura K, Kozai K : 21th IAPD International Congress (Hong Kong), 2007.
- 4 : A study of visual support in dental treatments for development disability children : Hayashi F, Miura K, Nakae H, Kadomoto N, Kuramoto M, Mitsuata C, Kaihara Y, Suzuki J, Kozai K : 2nd Session of society of health for children in Hiroshima (Hiroshima), 2007.
- 5 : Oral sanitary direction for the child patient under the treatment of anticancer drug : Nakaoka M, Nakae H, Ariki M, Yoshimura G, Suzuki J, Kozai K : The 45th congress of Japanese Society of Pediatric Dentistry (Tokyo), 2007.
- 6 : Traial of visual support for development disability children : Hayashi F, Miura K, Kuramoto M, Mitsuata C, Suzuki J, Kozai K : 14th General Session and Exhibition of Japanese society of Dental Welfare (Fukuoka), 2007.
- 7 : Effect of Lighting time on Knoop indention Hardness of fissur sealants : Kadomoto N, Mizuno R , Banshyoudani A, Suzuki J, Kozai K : The 45th congress of Japanese Society of Pediatric Dentistry (Tokyo), 2007.
- 8 : Oral condidion of infants aged one year old and consultation of their parents on oral health : Kaihar a Y, Kadomoto N, Banshodani A, Mitsuata C, Saiga K , Suzuki J, Kozai K : The 45th

- congress of Japanese Society of Pediatric Dentistry (Tokyo), 2007.
- 9 : The research of the dental plaque taking on orange color isolated from children. : Yoshimura G, Nakaoka M, Tsuboi A, Otani s, Suzuki J, Kozai K : The 45th congress of Japanese Society of Pediatric Dentistry (Tokyo), 2007.
 - 10 : A.actinomycetēmcomitance inhibits osteoblastic differentiation via cell-cell communication. : Kuramoto M, Suzuki J, Kozai K : The 45th congress of Japanese Society of Pediatric Dentistry (Tokyo), 2007.
 - 11 : Gene Expression Profiling of FGF23-Overexpressing, Mineralization-Defective Rat Calvaria Osteoblasts Uncovers Both Known and Novel Mineralization Mechanisms : Yoshiko Y, Wang H, Minamizaki T, Aubin J E, Maeda N : The 17th Scientific Meeting of International Bone and Mineral Society (Montreal), 2007.
 - 12 : 1, 25(OH)₂D₃ Inhibits Bone Nodule Mineralization Through the FGF23-Mediating ERK Pathway in Rat Calvaria Osteoblast Cultures : Minamizaki T, Yoshiko Y, Wang H, Suzuki S, Kozai K, Aubin J E, Maeda N : The 29th Annual Meeting of the American Society for Bone and Mineral Research (Honolulu), 2007.
 - 13 : High-dose chemotherapy against neuroblastoma inhibit forming of permanent teeth : Aya tsuboi, Suzuki J, Yoshimura G, Kozai K : The 17th Annual Meeting of Japanese Society of Pediatric Oral and Maxillofacial Surgery (Fukuoka) 2007.
 - 14 : An Investigation of oral condition of infants aged one year old and consultation of their parents on oral health care : Kaihara Y, Kadomoto N, Banshodani A, Mitsuhata C, Saiga K, Suzuki J, Kozai K : The 91st congress of The Hiroshima University Dental Society(Hiroshima), 2007.
 - 15 : A study of visual support for development disability children : Hayashi F, Miura K, Kadomoto N, Ootani S, Kuramoto M, Kaihara Y, Suzuki J, Kozai K : 24th General Session and Exhibition of Japanese society for disability and oral health (Nagasaki), 2007.
 - 16 : The research of anti-acidity performance of streptococcus mutans isolated from children's mouths. : Yoshimura G, Tsuboi A, Otani S, Suzuki J, Kozai K : The 26th congress of Japanese Society Of Pediatric Dentistry Chushikoku Branch (Okayama),2007.
 - 17 : Usefulness of BANA perio in a pediatric dental clinic : Mitsuhata C, Hayashi F, Miyake N, Suzuki J, Kozai K : The 26th congress of Japanese Society Of Pediatric Dentistry Chushikoku Branch (Okayama),2007.
 - 18 : 24 : A case of fenestration and traction of impacted lower first molar with root curving : Ariki M, Mizuno R, Suzuki J, Kouzai K : The 25th congress of Japanese Society Of Pediatric Dentistry Chushikoku Branch (Okayama), 2007.
 - 19 : Oral condition of participants in young type 1 diabetic camp for young patients in Hiroshima : Ariki M, Hayashi F, Nakaoka M, Miura K, Suzuki J, Kouzai K, Miyagawa S, Jinno K, Okada S : The 45th congress of Japanese Deabetes Society Chushikoku Branch (Matsuyama), 2007.
 - 20 : Oral care and maintenance system for children treated with high-dose chemotherapy and radiation in

- Hiroshima University Hospital : Aya tsuboi, Suzuki J, Yoshimura G, Kozai K : The 3rd scientific meeting of the Hiroshima Society of Child Health (Hiroshima) 2007.
- 21 : Chemotherapy and Radiation Against Neuroblastoma Inhibit Forming of Permanent Teeth. : Tsuboi A, Suzuki J, Yoshimura G, Kozai K : Proceedings of 2nd Hiroshima Conference on Education and Science in Dentistry (Hiroshima), 2007.
- 22 : Automutanolysin (Aml) Exhibits Lytic Activity Towards Planktonic and Biofilm Cells of Clinical Oral Streptococci : Thanyastrisung P, Komatsuzawa H, Yoshimura G, Kozai K and M. Sugai : Proceedings of 2nd Hiroshima Conference on Education and Science in Dentistry, (Hiroshima), 2007.
- 23 : Automutanolysin (Aml), a Novel Bacteriocide Targeting Cariogenic StreptococciP. Thanyastrisung : Komatsuzawa H, Yoshimura G, Hayashi I, Fujiwara T, Yamada S, Kozai K and Sugai M : Proceedings of 2nd Hiroshima Conference on Education and Science in Dentistry, (Hiroshima), 2007.

F) Special lectures in academic meetings

- 1 : Treatment and Prognosis of Intruded Primary Tooth : Kozai K : The 3rd Conference of Asian International Association of Dental Traumatology, Taipei Medical University (Taipei), 2007.
- 2 : Suggestion of food education from Pediatric Dentistry : Kozai K : The meeting of Asa School Health Association, Center for medicine in Asa(Hiroshima), 2007.
- 3 : Is the message of child care received from Pediatric Dentistry? – From clinical view - : Kozai K : The 31st meeting of Society of Child Health in Hiroshima, Hiroshima Citizen Hospital (Hiroshima), 2007.
- 4 : Treatment and Prognosis of Traumatized Tooth in Child : Kozai K : The Scientific Meeting of Society of Saeki Dental Association, Center for Hiroshima Dental Association (Hiroshima), 2007.
- 5 : New Trend of Clinical Pediatric Dental Treatment : Kozai K : The 2nd Conference of Indonesian Pediatric Dentistry, Sheraton Hotel at Surabaya (Surabaya), 2007.
- 6 : Clinical Pediatric Dentistry: From caries treatment to occlusal guidance : Suzuki J : Accademic Lecture in Yamaguchi Prefecture Dental Association (Yamaguchi), 2007.
- 7 : Consecutive symptoms in oral legion of cancer therapy for young patients : Suzuki J : Clinical conference in Department of Pediatrics in Hiroshima University (Hiroshima), 2007.
- 8 : Prevention and Treatment of Dental Caries for Children and Disabilities : Suzuki J: Chongqing University of Medical Sciences(Chongqing), 2007.
- 9 : Oral Condition in Children with Systemic Diseases : Suzuki J : Chongqing University of Medical Sciences(Chongqing), 2007.
- 10 : Periodontal Diseases in Children and Bone Destruction : Suzuki J : Chongqing University of Medical Sciences(Chongqing), 2007.

(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. (No.19390530), ¥8,840,000
- 2 : Grant-in-aid scientific research (C) : Suzuki J : Unknown virulence factors produced by periodontal pathogen. (No.18592236). ¥2,340,000
- 3 : Grant-in-Aid for Scientific Research(C) : Mitsuhata C : Effects of endocrine disorders on developing dopaminergic system in Brain. (No.19592354). ¥2,470,000
- 4 : Grant-in-Aid for Scientific Research from the Ministry of Education, Culture, Sports, Science and Technology of Japan (B) : Hayashi F : Real-time PCR assay for quantitative detection of periodontal pathogens in children. (No.18791552). ¥1,600,000
- 5 : 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). ¥1100,000
- 6 : 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
- 7 : Satake educational research fund : Yoshimura G : Preparation of oral care program for bone marrow transplant child patients-Application for Dental Drug Delivery System (3DS). ¥300,000

(5) Academic Awards, etc.

- 1 : Minamizaki T : American Society for Bone and Mineral Research Travel Award, 2007.
- 2 : Minamizaki T : American Society for Bone and Mineral Research Plenary Poster, 2007.

(6) Patents

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

(1) Staffs and Students

Professor : Masaru Sugiyama

Associate Professor : Hitomi Fujimoto

(2) Main Research Activities

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

(3) Research Achievements

A) Original Papers (including Case Reports)

- 1 : Human papillomavirus-16 in oral squamous cell carcinoma : Clinical correlates and 5-year survival : Sugiyama M, Bhawal U K, Kawamura M, Ishioka Y, Shigeishi H, Higashikawa K, Kamata N : Brit J Oral Maxillofac Surg 45, 116-122, 2007.
- 2 : Methylation and intratumoural heterogeneity of 14-3-3 sigma in oral cancer : Bhawal U K, Tsukinoki K, Sasahira T, Sato F, Mori Y, Muto N, Sugiyama M, Kuniyasu H : Oncol Rep. 18(4), 817-24, 2007.
- 3 : High-risk human papillomavirus type 16 E7 oncoprotein associates with Cdc25A over-expression in oral squamous cell carcinoma : Bhawal U K, Sugiyama M, Nomura Y, Sawajiri M, Tsukinoki K, Ikeda M, Kuniyasu H : Virchows Archiv 450, 65-71, 2007.
- 4 : Comparison of gene expressed in cell lines derived from a primary lesion and metastasized lymph nodes of tongue squamous cell carcinoma -A trial study of identifying metastasis-related genes- : Nobumori T, Taki M, Higashikawa K, Shingo Y, Ninomiya Y, Sugiyama M, Kamata N : Dentistry in Japan 43, 64-69, 2007.
- 5 : Selection of common markers for bone marrow stromal cells from various bones using real-time RT-PCR: Effects of passage number and donor age : Igarashi A, Segoshi K, Sakai Y, Pan H, Kanawa M, Higashi Y, Sugiyama M, Nakamura K, Kurihara H, Yamaguchi S, Tsuji K, Kawamoto T, Kato Y : Tissue Engineering 13, 2405-17, 2007.
- 6 : Concrescence of teeth: Cemental union between the crown of an impacted tooth and the roots of an erupted tooth : Sugiyama M, Ogawa I, Sueti Y, Tohmori H, Higashikawa K, Kamata N : J Oral

Pathol Med.36(1), 60-2, 2007.

- 7 : Application of new hydroxyapatite ceramics with connecting pores to bone defects in the jaws :
Miyachi M, Yoshioka Y, Higashikawa K, Koizumi K, Ohta K, Tani R, Hayashido Y, Toratani S,
Sugiyama M, Kamata N, Okamoto T, Akagawa Y : The Japanese J Oral Sciences 56, 400-404,
2007.
- 8 : Bone distraction in the maxillary deformity with Leipzig retention plate and RED system : Report
of 2 cases : Ohta K, Ninomiya Y, Higashikawa K, Shigeishi H, Mitani Y, Takechi M, Tohmori
H, Tanimoto K, Tanne Y, Touma Y, Nishi M, Harada M, Tanaka E, Sugiyama M, Tanne K,
Kamata N : The J Hiroshima University Dental Association 39, 2007. (in press)

A) Original Papers (including Case Reports)

B) Review

- 1 : Anesthetics. Manual for dentists to prescribe medications. (edited by Igarashi H, Ikeda M) :
Sugiyama M : Medical, Dental, Pharmaceutical Publishers, Tokyo, pp156-179, 2007.

C) Publications

- 1: Thoughts of the last principal. Closing memorial book of School for Dental Hygienists, Hiroshima
University Faculty of Dentistry with a collection of achievements. 1976~2006 : Sugiyama M :
Hiroshima University Faculty of Dentistry, pp14, . 2007.
- 2 : Greeting. The program and abstracts of refresh seminar for dental practitioners : Sugiyama M :
The Japanese Association of Oral Surgeons, pp 2 , 2007.
- 3 : Is it violation for yogo teachers to give medications? : Fujimoto H : Monthly Journal "Kagi",
The Japanese school health studying company, pp10-12, 2007.
- 4 : Contribution to "Delta" in Chuugoku News Paper (Evening Edition) : Fujimoto H : January 6th,
2007.

D) Other Publications

- 1 : Application of new hydroxyapatite artificial bone with connecting pores, NEOBONE[®], to dental
implant treatment : Miyachi M, Sugiyama M, Shimasue H, Shigeishi H, Hiraoka M, Takechi M,
Kamata N : The 61st conference of the Japanese association of oral sciences (Kobe) , 2007.
- 2 : School nurse-teachers' use of the family support system in assisting school-refusal children and
students : Fujimoto H, Tsushima H, Kajiwara K : The 8th international family nursing
conference, 2007.
- 3 : Developing of teaching materials to educate dental health.-Methods of education in the course to
raise yogo teachers : Kawamura M, Fujimoto H, Kajiwara K : The 39th conference of
Chuugoku/Shikoku association for school health (Hiroshima), June 2007.

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

- 1 : Grant-in Aid for Scientific Research ((B) (2)) : Sugiyama M, Miyauchi M, Higashikawa K : The association of human papillomavirus with the development of oral squamous cell carcinoma. (No.16390590), ¥ 3,000,000.
- 2 : Joint Research of Faculty and Attached School (Research Project) : Satoda T, Shimoe S, Fujimoto H, Shiragami S, Inoue J, Yokoyama M : Introduction of functional anatomical models to education of biology in high schools (2). ¥ 25,000.

(5) Academic Awards, etc.

(6) Patents

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

(1) Staffs and Students

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

Assistant Professor : HARA Kumiko

(2) Main Research Activities

- 1 : Clinical research of the growth and development of dento-maxillofacial complex in children
- 2 : Study on the Dentistry for children and disabilities
- 3 : Study on the activation of the function of salivary glands
- 4 : Study on the methods for Oral health care
- 5 : Study on the education program for Oral health
- 6 : Study on education program for graduate dental hygienists

(3) Research Achievements

A) Original Papers (including Case Reports)

- 1: Analysis of undergraduate clinical training in dental hygienists school –evaluation of training program at university hospital by students- : Takemoto T, Hara K, Matsumoto A, Niitani Y, Fujimoto H, Amano H, Sugiyama M, Tamamoto M, Nikawa H. : J Jpn Dent Educ Assoc, 23 (2), 191 -198, 2007.
- 2: To deepen the understanding of patients with mental retardation -A study on effectiveness of making picture cards in PBL tutorial- : Hara K, Niitani Y, Fujimoto H, Matsumoto A, Takemoto T, Amano H, Sugiyama M : Report collection of scientific meeting of the teachers, 2007.
- 3 : Education of the School of Oral Health Science, Hiroshima University Faculty of Dentistry : H Amano, H Nikawa, T Murayama, T Takemoto, M Sugiyama, T Satoda : Proceeding of 2nd Hiroshima Conference on Education and Science in Dentistry, 2007

B) Review

C) Publications

- 1 : Educational research textbook for dental hygienist students : Niitani Y, Hara K, Matsumoto A. (Contributor) : Edited by Imaki M, Yoshida Y, Hatanaka Y. : Drugmagazine Co. Ltd. (Tokyo) 2007. (in Japanese)

D) Other Publications

E) Presentation at Scientific Meeting

- 1 : A practical program to improve oral function with newly nursing insurance system : Aimi R, Hara K, Okada G, Kawamura T, Yoshida M, Amano H : 18th Annual Meeting of Japanese Society of Gerodontology (Sapporo), 2007.
- 2 : Infection control in the education for dental hygienist students –Education of knowledge, skills, behavior and evaluation by small OSCE : Takemoto T, Niitani Y, Nikawa H, Matsumoto A, Hara K, Fujimoto H, Amano H, Sugiyama M, : 26th Scientific Meeting of Japanese Association for Dental Education (Gifu) , 2007.
- 3 : Infection control in the program “team dental care training” –Mini-OSCE for assessment of fundamental performance-][ja] : Takemoto T, Niitani Y, Matsumoto A, Hara K, Fujimoto H, Amano H, Sugiyama M, Nikawa H. : 40th annual Meeting of the Hiroshima University Dental Society (Hiroshima) , 2007.
- 4 : Introduction of two project centers at the School of Oral Health Science : Nikawa H, Makihira S, Murayama T, Tamamoto M, Satoda T, Shimoe A, Taguchi K, Amano H, Sugiyama M, Takemoto T. : 40th annual Meeting of the Hiroshima University Dental Society (Hiroshima) , 2007.
- 5 : Research about the quality of water within dental unit chair : Niitani Y, Matsumoto A, Hara K, Takemoto T, Amano H, Sugiyama M, Fujimoto H, Iwasaki Y, Hino T, Kurihara H. : The 3rd scientific meeting of Japan Society for Dental Hygiene (Fukuoka) , 2007.
- 6 : To deepen the understanding about patients with mental retardation –A study on effectiveness of making picture cards in PBL tutorial : Hara K, Niitani Y, Fujimoto H, Matsumoto A, Takemoto T, Amano H, Sugiyama M. : Reports of JADA autumn meeting 2006, 97-1 03, 2007.
- 7 : Education of the School of Oral Health Science, Hiroshima University Faculty of Dentistry : H Amano, H Nikawa, T Murayama, T Takemoto, M Sugiyama, T Satoda : 2nd Hiroshima Conference on Education and Science in Dentistry(Hiroshima), 2007
- 8 : Application of Rapid Prototyping in Dentistry, : T Murayama, H Nikawa, M Tamamoto, S Shimoe, S Makihira, T Satoda, H Amano, T Kihara, A Miyoshi . : 2nd Hiroshima Conference on Education and Science in Dentistry (Hiroshima), 2007.
- 9 : Changes in human salivary proteins with salivary gland massage and sour stimulation) : Hara K, Maruyama T, Iwasa K, Sugita M, Hirono T, Amano H, Shiba Y : 49th Scientific Meeting of Japanese Association for Oral Biology (Sapporo), 2007.
- 10 : A survey for consciousness in the authorized dental hygienists of The Japanese Society of Periodontology Past Committee related to Dental Hygienist) : Suzuki M, Nomura M, Kagiwada Y, Sato M, Takasaka T, Hara K, Ota N, Watanabe T, Taniguchi I : 50th Scientific Meeting of The Japanese Society of Periodontology (Tokyo), 2007.

F) Special lectures in academic meetings

- 1 : Actual conditions and some issues in our School of Oral Health Science, Hiroshima University Faculty of Dentistry -Try to improve health care for the People reside in All Life Stages: Amano H. : Symposium of the third anniversary of School of Oral Health Science, Tokyo Medical and Dental School(Tokyo), 2007.
- 2 : Can you get some messages for raising children from dentists? : Amano H. : 31th Scientific meeting of Hiroshima Society of Child Health(Hiroshima), 2007.
- 3 : Practical Oral Health Care : Hara K. : Workshop for the staff of nursing service department in Healthcare Corporation Kousei-kai Kusatsu Hospital (Hiroshima) : 2007.
- 4 : Some Techniques for Mouth Cleaning - Basic of the skills- : Hara K. : 7th Seminar for Practical Oral Care (Hiroshima) : 2007.
- 5 : : Some Techniques for Mouth Cleaning - Application of the skills- : Hara K. : 7th Seminar for Practical Oral Care (Hiroshima) : 2007.

G) Social Contributions

- 1 : Program for kids from elementary schools, Dental Kids, "Let's Be a Dentist!" : Hiroshima University Faculty of Dentistry, 2007.
- 2 : Program for kids from elementary schools, Dental Kids, "Let's Be a Dentist!" : Higashi-Hiroshima city Dental Association, 2007.
- 3 : Program for high school students, Dental Kids : Hiroshima University Faculty of Dentistry, 2007.

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

- 1 : 2007th grant-in-aid for scientific research : Hara K.: A study for effect of gland massage on salivary secretion.
- 2 : 2007th Grant of The Joint Organization of Hiroshima University and Attached Schools for Scientific Research : Shiba Y, Iwasa K, Hara K, Tarumoto K, Yasuda R : Analysis of the relationship between fun of feeding behavior and salivary property for better feeding instruction.
- 3 : 2007th grant-in-aid for scientific research : Amano H.: A noninvasive Method for Diagnosis of Periodontal Tissues with Infra Red Measurement.

(5) Academic Awards, etc.

(6) Patents

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

(1) Staffs and Students

Professor: Toshinobu TAKEMOTO
Assistant Professor: Atsue MATSUMOTO
Assistant: Yoshie NIITANI

(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 : [Analysis of undergraduate clinical training in dental hygienists school –evaluation of training program at university hospital by students-][ja]: Takemoto T, Hara K, Matsumoto A, Niitani Y, Fujimoto H, Amano H, Sugiyama M, Tamamoto M, Nikawa H. : J Jpn Dent Educ Assoc, 23 (2), 191-198, 2007.

B) Review

- 1 : [Make it perfect! Infection control and sterilization, disinfection and washing –the practical method for sterilization and disinfection of dental instruments] [ja]: Niitani Y. : Dental Hygiene, 27 (3), 264-269, 2007.

C) Publications

- 1 : [Educational research textbook for dental hygienist students][ja]: Niitani Y, Hara K, Matsumoto A. (Contributor) : Edited by Imaki M, Yoshida Y, Hatanaka Y. : Drugmagazine Co.

Ltd. (Tokyo) 2007.

- 2 : [Manual and textbook for infection control in dental clinics][ja]: Niitani Y. (JICHG, Contributor) : Ishiyaku publishers, Inc. (Tokyo) , 2007.

D) Other Publications

- 1 : [Dental co-staff education in Europe][ja]: Takemoto T. : Symposium “Medical and dental staff education for the acquirement of advanced skill” -Report for 2006 Support Program for the Internationalization of University, 81 -90, 2007.

E) Presentation at Scientific Meeting

- 1 : [Dental co-staff education in overseas -Advanced education for dental hygienists and technicians][ja]: Takemoto T. : Symposium “Medical and dental staff education for the acquirement of advanced skill” -Meeting for 2006 Support Program for the Internationalization of University (Hiroshima) , 2007.
- 2 : [Infection control in the education for dental hygienist students –Education of knowledge, skills, behavior and evaluation by small OSCE][ja]: Takemoto T, Niitani Y, Nikawa H, Matsumoto A, Hara K, Fujimoto H, Amano H, Sugiyama M, : 26th Scientific Meeting of Japanese Association for Dental Education (Gifu) , 2007.
- 3 : [Infection control in the program “team dental care training” –Mini-OSCE for assessment of fundamental performance-][ja]: Takemoto T, Niitani Y, Matsumoto A, Hara K, Fujimoto H, Amano H, Sugiyama M, Nikawa H. : 40th annual Meeting of the Hiroshima University Dental Society (Hiroshima) , 2007.
- 4 : [Introduction of two project centers at the School of Oral Health Science][ja]: Nikawa H, Makihiro S, Murayama T, Tamamoto M, Satoda T, Shimoe A, Taguchi K, Amano H, Sugiyama M, Takemoto T. . : 40th annual Meeting of the Hiroshima University Dental Society (Hiroshima) , 2007.
- 5 : [Research about the quality of water within dental unit chair][ja]: Niitani Y, Matsumoto A, Hara K, Takemoto T, Amano H, Sugiyama M, Fujimoto H, Iwasaki Y, Hino T, Kurihara H. : The 3rd scientific meeting of Japan Society for Dental Hygiene (Fukuoka) , 2007.
- 6 : [To deepen the understanding about patients with mental retardation –A study on effectiveness of making picture cards in PBL tutorial-][ja]: Hara K, Niitani Y, Fujimoto H, Matsumoto A, Takemoto T, Amano H, Sugiyama M. : Reports of JADA autumn meeting 2006, 97-1 03, 2007.

F) Special lectures in academic meetings

- 1 : [Dental hygienist and technician education in Europe][ja]: Takemoto T. : Faculty Development at Hiroshima University Faculty of Dentistry (Hiroshima) , 2007.

- 2 : [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) : 2007.
- 3 : [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) : 2007.
- 4 : [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) , 2007.
- 5 : [Oral photograph taking method][ja]: Matsumoto A. : 2007 Hiroshima University recurrent seminar for Dental hygienists (Hiroshima) , 2007.
- 6 : [Communication method][ja]: Matsumoto A. : 2007 Hiroshima University recurrent seminar for Dental hygienists (Hiroshima) , 2007.

G) Social Contributions

- 1 : Program for kids from elementary schools, Dental Kids, “Let’s Be a Dentist!”: Hiroshima University Faculty of Dentistry, 2007.
- 2 : Program for kids from elementary schools, Dental Kids, “Let’s Be a Dentist!”: Higashi-Hiroshima city Dental Association, 2007.
- 3 : Program for high school students, Dental Kids: Hiroshima University Faculty of Dentistry, 2007.
- 4 : Collaboration for oral functional assessment: Hara K, Matsumoto A, Niitani Y. : Care center for visitors “Kouseien” (Hiroshima) , 2007.
- 5 : Project team committee for the new life-long training : Matsumoto A. Japan Dental Hygienists’ Association (Tokyo) 2007.
- 6 : Member of Dental Hygienists’ Examination committee: Matsumoto A. : Foundation of Promoting Dental Care and Training (Tokyo) , 2007.
- 7 : Secretary of the regional association of Kinki , Chugoku and Shikoku area for Japanese Society for Dental Health: Matsumoto A, 2007.

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

(5) Academic Awards, etc.

(6) Patents

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

(1) Staffs and Students

Professor : Takahiro Satoda

Assistant Professor : Saiji Shimoe

(2) Main Research Activities

- 1 : Development of 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 : International Telephone Code Used for Citizenship Identification in Denture : H Matsumura, S Shimoe, K Nagano, N Tanoue : Journal of Oral Science 49,(4), 337-340, 2007.

B) Review

C) Publications

- 1 : The New Series of Textbooks for Dental Technologist-Dental Technology of Restoration : K Suese, H Matsumura, Y Marushige, Y Kumono, S Shimoe. : Ishiyaku Publishers Inc. 2007

D) Other Publications

- 1 : The introduction of functional anatomical models to the teaching of biology for senior high school students. : Hiroshima University The annals of Educational Research 35,419-423,2007

E) Presentation at Scientific Meeting

- 1 : A model for functional instruction of tongue and soft palate : Satoda T, Shimoe S, Tajima H, Tamamoto M, Makihira S, Nikawa H, Murayama T, Ueda H, Toyoura T : The 112th

Annual Meeting of Japanese Association of Anatomists (Osaka), 2007.3.27-29

- 2 : A model for functional instruction of swallowing : Satoda T, Shimoe S, Tajima H, Tamamoto M, Makihira S, Murayama T, Nikawa H : 39th annual meeting of Hiroshima University Dental Society 2007.6.16
- 3 : A model for functional instruction of swallowing : Satoda T, Shimoe S, Tajima H, Tamamoto M, Makihira S, Murayama T, Nikawa H : 29th Nippon Academy of Dental Technology (Sendai)2007.9.22-23
- 4 : Effect of primers for precious metals on bonding between composite resin and silver-palladium-copper-gold alloy : Shimoe S, Satoda T, Tamamoto M, Makihira S, Murayama T, Nikawa H, Nagano K, Tanoue N, Matsumura H : 29th Nippon Academy of Dental Technology (Sendai)2007.9.22-23
- 5 : A model for functional instruction of swallowing : Satoda T, Shimoe S, Tajima H, Tamamoto M, Makihira S, Murayama T, Nikawa H : The 62nd Annual Meeting of Japanese Association of Anatomists Cyugoku Shikoku regional meeting (Kurashiki), 2007.10.27..

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

(5) Academic Awards, etc.

(6) Patents

Division of Oral Health Engineering (Department of Biomaterial Engineering)

(1) Staffs and Students

Professor : Takeshi Murayama
Associate Professor : Mitsuhiro Tamamoto

(2) Main Research Activities

- 1: Application of CAD/CAM and rapid prototyping to dentistry
- 2: 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

(3) Research Achievements

A) Original Papers (including Case Reports)

- 1 : Current States and Future Directions of the Cooperation between Dentistry and Engineering (Part3) -Dental CAD/CAM from the viewpoint of Research History of Industrial CAD/CAM- : Murayama T : Journal of Nippon Academy of Dental Technology, 28(1), 23-26, 2007.
- 2 : Application of Rapid Prototyping in Dentistry : Murayama T, Nikawa H, Tamamoto M, Shimoe S, Makihira S, Satoda T, Amano H, Kihara T, Miyoshi A. : Proceedings of 2nd Hiroshima Conference on Education and Science in Dentistry, 27-32, 2007.
- 3 : Contribution of Finite Element Modeling to Assessment of Mandibular Movements : Nikawa H, Tanaka E, Murayama T, Nagasaki T : Proceedings of 2nd Hiroshima Conference on Education and Science in Dentistry, 17-22, 2007.
- 4 : Education of the School of Oral Health Science, Hiroshima University Faculty of Dentistry : Amano H, Nikawa H, Murayama T, Takemoto T, Sugiyama M, Satoda T : Proceedings of 2nd Hiroshima Conference on Education and Science in Dentistry, 95-99, 2007.
- 5 : Job shop Scheduling with Capacity Adjustment : Eguchi T, Yoda M, Murayama T, Oba F : Proceedings of The 4th International Conference on Leading Edge Manufacturing in the 21st Century(LEM21), 651-654, 2007.
- 6 : Analysis of undergraduate clinical training in dental hygienists school - Evaluation of training program at university hospital students - : Takemoto T, Hara K, Matsumoto A, Niitani Y, Fujimoto H, Amano H, Sugiyama M, Tamamoto M, Nikawa H : Journal of Japanese Dental Education Association, 191-198, 2007.
- 7 : Practice for fabrication a finger prosthesis with application of denture procedures : Makihira S, Shimoe S, Nagami

M, Murayama T, Miyoshi A, Kihara T, Mine Y, Morishita Y, Tamamoto T, Satoda T, Amano H, Nikawa H :
Journal of Hiroshima University Dental Society, 39(2), 134-139, 2007.

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

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

(1) Staffs and Students

Professor	: Hiroki Nikawa
Associate Professor	: Seicho Makihira
Secretary	: Miki Onji
Research Student	: Eduard Shuichiro Kosaka(-April)
Research Assistant	: Kaori Taguchi (April-)
International Student	: Li Gaku (August-December)

(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 : Comprehensive analysis of chemotactic factors for bone marrow mesenchymal stem cells : Ozaki Y, Nishimura M, Sekiya K, Suehiro F, Kanawa M, Nikawa H, Hamada T, Kato Y : Stem Cells Dev. 16(1),119-29,2007.
- 2 : Titanium Surface Roughness Accelerates RANKL-dependent Differentiation in the Osteoclast Precursor Cell Line RAW264.7 : Makihira S, Mine Y, Kosaka E, Nikawa H : Dent Materials Journal, 26, 939-945, 2007.

B) Review

- 1 : Research Projects related to Complete Dentures Published in 2006 by Members of the Japan Prosthodontic Society : Nikawa H : A Review. Prosthodont Res Prac 6, 145-147, 2007.

C) Publications

D) Other Publications

E) Presentation at Scientific Meeting

F) Special lectures in academic meetings

1 : Application of probiotics in oral cavity : Nikawa H : The 15th International symposium on Lactic Acid Bacteria and Human Health (Seoul) , 2007

2 : Contribution of Finite Element Modeling to Assessment of Mandibular Movements. : Nikawa H, Tanaka E, Murayama T, Nagasaki T : 2nd Hiroshima Conference on Education and Science in Dentistry (Hiroshima) , 2007

(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)

Assistant : Yasuhumi Myouishi (Educational staff~March 31, ~ April 1) , Ikue Hayashi
(Educational staff~March 31)

(2) Main Research Activities

- 1 : マウス ES 細胞からの顎顔面組織誘導
- 2 : マウス骨髄幹細胞からの顎顔面組織誘導
- 3 : Proteomics analysis by mass spectrometry in mammalian and bacterial cells
- 4 : Development of analytical method for the determination of physiologically active substances

(3) Research Achievements

A) Original Papers (including Case Reports)

- 1 : High-throughput spectrophotometric assay of reactive oxygen species in serum: Hayashi I., Morishita Y., Imai K., Nakamura M., Nakachi K., Hayashi T. : Mutation Research, 631, 55-61 2007.

B) Review

C) Publications

D) Other Publications

E) Presentation at Scientific Meeting

- 1: High-throughput spectrophotometric and flow cytometric assay systems of reactive oxygen species in serum and blood cells : Hayashi T, Hayashi I, Morishita Y, Sora M, Imai K, Yoshida K, Nakamura M, Nakachi K : 8th Korea-Japan Cancer and Aging Symposium (Gifu, 2007)
- 2: Effects of inflammation-related gene polymorphisms and atomic-bomb radiation exposure on gastric cancer risk: Hayashi T, Morishita Y, Nagamura H, Maki M, Sora M, Imai K, Yoshida K, Kusunoki Y, Hayashi I, Tahara E, Nakachi K: The 12th World Congress on Advances in Oncology and the 10th International Symposium on Molecular Medicine and Cancer Chemoprevention Symposium (Crete, 2007)

(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
Assistant Professor : Norihiro Taguchi
Assistant : Yoshiharu Tanaka, Masaru Ohara (from April, 2007)
Intern Dentist : Ryouko Ohshita (until March 2007), Yoshiko Suzuki (until March 2007),
Akane Mineoka (until March 2007)
Secretary : Tomoe SASAKI

(2) Main Research Activities

- 1: Study for Patient-Oriented and Narrative-Based Medicine
- 2: Study for Advanced General Dentistry
- 3: Study for Postgraduate Dental Clinical Training Program
- 4: Study for Health communication
- 5: Study for Clinical Teaching
- 6: Study for Clinical Assessment
- 7: Study for Training and Standardizing Simulated Patients

(3) Research Achievements

A) Original Papers (including Case Reports)

- 1: Potential of Newly Developed Educational Environment Measure for Postgraduate Dental Training Program : Taguchi N, Ogawa T, Tanaka Y and Sasahara H : J Jap Dent Educ 23, 154-161, 2007.

B) Review

C) Publications

D) Other Publications

E) Presentation at Scientific Meeting

- 1: Taguchi N, Ogawa T, Tanaka Y, Sasahara H, Ohara M and Okada M : Outcome Survey on Postgraduate Clinical Training in Light of Career Design. 26th Scientific Meeting of Japanese Dental

Education Association. Gifu 2007.

- 2: Taguchi N, Sasahara H, Ogawa T, Tanaka Y, Ohara M and Okada M : Inspection for Mandatory Dental Clinical Training. PHEEM (Postgraduate Hospital Educational Environmental Measure). 26th Scientific Meeting of Japanese Dental Education Association. Gifu 2007.
- 3: Ogawa T, Taguchi N, Tanaka Y and Ohara M : Undergraduate Education of Comprehensive General Dentistry. 26th Scientific Meeting of Japanese Dental Education Association. Gifu 2007.
- 4: Ogawa T, Tanaka Y, Taguchi N, Ohara M and Okada M : Web Course Tool for Self-Directed Learning in Dental Clinical Training. 26th Scientific Meeting of Japanese Dental Education Association. Gifu 2007.

F) Special lectures in academic meetings

- 1: Education and Research Seminar in Health Communication 2007. Hiroshima, 2007.
- 2: Postgraduate Clinical Training Workshop for Postgraduate Trainee 2007. Hiroshima, 2007.
- 3: 10th Chugoku-Shikoku Area Scientific Meeting of the Communication Association in Japan and 2nd Education and Research Seminar in Health Communication. Hiroshima, 2007.

G) Special Lectures in Academic Meetings and Taskforce

- 1: Taskforce : Ogawa T, Taguchi N : Education and Research Seminar in Health Communication 2007. Hiroshima, 2007.
- 2: Taguchi N : Best Evidence Medical Education. Education and Research Seminar in Health Communication 2007. Hiroshima, 2007.
- 3: Taskforce : Ogawa T, Taguchi N : 8th Chugoku-Shikoku Area Postgraduate Clinical Training Workshop for Trainer. Tokushima, 2007.
- 4: Keynote Lecture : Taguchi N : Portfolio –Reflection and Self-Directed Learning. 8th Chugoku-Shikoku Area Postgraduate Clinical Training Workshop for Trainer. Tokushima, 2007.
- 5: Taskforce : Ogawa T : Kyushu University Hospital Postgraduate Clinical Training Workshop for Trainer. Fukuoka, 2007.
- 6: Taskforce : Ogawa T : 1st Health Communication Facilitator Training Seminar. Nagoya, 2007.
- 7: Ogawa T : Teaching and Research in Health Communication. 10th Chugoku-Shikoku Area Scientific Meeting of the Communication Association in Japan and 2nd Education and Research Seminar in Health Communication. Hiroshima, 2007.
- 8: Taguchi N : Communication Related to Dentures. 10th Chugoku-Shikoku Area Scientific Meeting of the Communication Association in Japan and 2nd Education and Research Seminar in Health Communication. Hiroshima, 2007.

H) Lectures, Seminar, Workshop

- 1: Tanaka Y : 1st Seminar for Postgraduate Dental Training Program Director. Tokyo 2007.

2: Taguchi N: 1st Health Communication Facilitator Training Seminar. Nagoya, 2007.

I) OSCE, CSA, etc.

1: Hiroshima University Hospital 2nd Advanced OSCE for Junior Residents in 2007

2: Hiroshima University Hospital 1st Advanced OSCE for Junior Residents in 2007

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

(5) Academic Awards, etc.

(6) Patents

Department of Oral Health and Development (Preventive Dentistry)

(1) Staffs and Students

Assistant Professor: Makoto Kawamura (Manager)

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. Human papillomavirus-16 in oral squamous cell carcinoma : Clinical correlates and 5-year survival. Sugiyama M, Bhawal U K, Kawamura M, Ishioka Y, Shigeishi H, Higashikawa K, Kamata N : British Journal of Oral & Maxillofacial Surgery 45, 116-122, 2007.
2. An assessment of oral self-care among Romanian dental students using the Hiroshima University - Dental Behavioural Inventory. : Dumitrescu A L, Kawamura M, Sasahara H : Oral Health and Preventive Dentistry 5(2), 95-100, 2007.
3. Social desirability, social intelligence and self-rated oral health status and behaviours. : Dumitrescu A L, Kawamura M, Toma C, Lascu V : Romanian Journal of Internal Medicine 4, (in press), 2007.
4. The evaluation of clinical trainings in the preventive dentistry: Dental hygiene students' self-evaluation of clinical skills. (In Japanese, abstract in English). : Sasahara H, Shimoda T, Sasahara H, Kawamura M : The Journal of Dental Health 57(3), 201-207, 2007.
5. The influence of mothers' age and the birth order of their children on their dental health behavior at the 18-month-old health check-up. (In Japanese, abstract in English). : Sasahara H, Otani H, Sato M, Kawamura M : The Journal of Dental Health 57(5), 671-678, 2007.
6. Changes in dental health behavior of mothers participated in the "Dental Health Check-up for Mothers and Children". (In Japanese). : Sasahara H, Kawamura M : The Journal of Hiroshima University Dental Society 39(2), 140-143, 2007.

B) Review

1. "Picar" as an useful educational soft to assess adolescents' oral self-care. (In Japanese). : Kawamura M, Okada M : School Health Education 58(7) , June, Higashiyama Syobo (Kyoto), 63-65, 2007.

C) Publications

1. Maternal and Child Health. (In Japanese). : Kawamura M (Health Ecology, Eds, Kani T, Matsui K, Maki Y) : Ishiyaku Co., Tokyo, 241-251, 2007.

D) Other Publications

1. Demonstration of 'Dr. Picar' as a computer-aided program for periodontal health, developed in Japan. : Kawamura M, Okada M, Uchiyama Y, Sasahara H : International Journal of Health Promotion & Education 45(1), 33-5 (Selected ABSTRACTS #6), 2007.
2. Studies on nursing students' ability to evaluate periodontal health status using a computer training soft named 'Dr. Picar'. : Okada M, Kawamura M, Kajiwara K, Uchiyama Y, Sasahara H, Amano H : International Journal of Health Promotion & Education 45(1), 33-5 (Selected ABSTRACTS #7), 2007.
3. Relation between the oral health behavior of children and their gingival health conditions. (In Japanese). : Yasuda R, Kunikiyo A, Kawamura M, Okada M : The Annals of Educational Research, Hiroshima University 35, 355-358, 2007.
4. Differences between the MIDORI model of dental health on the base of the PRECEDE-PROCEED model and the reality in a community, (In Japanese). (2004-2006 Grant-in-aid for Scientific Research(C), No. 16592090 Report of the scientific research) : Sasahara H, Kawamura M, Taguchi N, Ogawa T : 1-54, 2007.
5. A descriptive study of the feasibility of video production practices as a common compulsory subject-case in point: proposed implementation into an undergraduate Media Business Departmental curricula [Hiroshima University of Economics].(In Japanese) : Oiwa M, Sasahara H : HUE Journal of Humanities, Social and Natural Sciences 30(1 · 2), 17-27, 2007.
6. Potential of newly-developed educational environment measure for postgraduate dental training program.(In Japanese) : Taguchi N, Ogawa T, Tanaka R, Sasahara H : The Journal of Japanese Dental Education Association 23(2),154-161, 2007.

E) Presentation at Scientific Meeting

1. Investigating the relationship between self-reported oral health status, oral health-related behaviors and self-consciousness. : Dumitrescu A L, Kawamura M, Dogaru B, Dogaru C :

SFPIO (France), 2007.

2. Clinical training program to evaluate periodontal health status using PICAR. : Okada M, Kawamura M, Sasahara H, Amano H : The 2nd International Working Group Meeting on Tropical Oral Health (Okayama), 2007.
3. Development of an educational tool for dental health- Educational dental system for school nurse students—. (In Japanese). : Kawamura M, Kajiwara K, Fujimoto H : The 39th Workshop II of Cyugoku-Shikoku School Health (Hiroshima), 2007.
4. Outcome survey on postgraduate clinical training in light of career design. (In Japanese) : Taguchi N, Ogawa T, Tanaka R, Sasahara H, Ohara M, Okada M : The 26th Meeting of the Japanese Dental Education Association, (Gifu), 2007.
5. Inspection for Mandatory Dental Clinical Training PHEEM (Postgraduate Hospital Educational Environmental Measure).(In Japanese) : Sasahara H, Taguchi N, Ogawa T, Tanaka, Ohara M, Okada M : The 26th Meeting of the Japanese Dental Education Association, (Gifu), 2007.
6. Examination of oral care support for elderly with dementia in a group home. (In Japanese) : Furuebisu M, Sadamori S, Hayashi S, Inoue S, Hamada T, Sasahara H : The 18th Meeting of the Japanese Society of Gerodontology, (Sapporo), 2007.

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

1. Grant-in-aid for Scientific Research(C) Continued : Kawamura M (representative), Sasahara H, Ogawa T : Reasons for dental visits and needs for oral health/disease after 50 years in the poisoning patients caused by dried milk. (No.18592279) ¥800,000
2. Grant-in-aid for Scientific Research(C), New : 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?-. (No.19592240) ¥1,300,000

(5) Academic Awards, etc.

(6) Patents

Department of Oral Health and Development (Special Care Dentistry)

(1) Staffs and Students

Associate Professor : Mitsugi Okada Head

Research Associate : Koichi Hayashida (April to present)

Resident : Eri Taguchi (January to March), 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: Relation between the oral health behavior of children and their gingival health condition :
Yasuda R, Kunihiro A, Kawamura M, Okada M : Proceeding of Hiroshima University
Faculty and attached school collaborations 35, 355-358, 2007.

B) Review

C) Publications

D) Other Publications

E) Presentation at Scientific Meeting

1: Irsogladine maleate abolishes OMP29-induced increase in IL-8 through p44/42 signaling
pathway in human gingival epithelial cells : Kishimoto A, Shiba H, Fujita T, Kajiya M,

- Takeda K, Hayashida K, Kawaguchi H, Kurihara H : 50th the spring meeting of the Japanese Society of Periodontology (Yokosuka), 2007.
- 2: The effects of irsogladine maleate on intercellular communication in human gingival epithelial cells stimulated by IL-1 β : Fujita T, Ashikaga A, Shiba H, Kajiya M, Kishimoto A, Takeda K, Hayashida K, Kawaguchi H, Kurihara H : 50th the anniversary meeting of the Japanese Society of Periodontology (Tokyo), 2007.
 - 3: Treatment of aggressive periodontitis for a patient with mental retardation –A case report- : Hatakeyama T, Okada M, Hayashida K, Aoki M, Tokikazu T, Hayashida T, Hino T, Kawaguchi H, Tamura Y, Kurihara H : 50th the anniversary meeting of the Japanese Society of Periodontology (Tokyo), 2007.
 - 4: Clinical training program to evaluate periodontal health status using ‘Picar’ : Okada M, Kawamura M, Sasahara H, Amano H : 2nd International Working Group Meeting on Tropical Oral Health (Okayama), 2007.
 - 5: Taguchi N, Ogawa T, Tanaka Y, Sasahara H, Ohara M and Okada M : Outcome Survey on Postgraduate Clinical Training in Light of Career Design. 26th Scientific Meeting of Japanese Dental Education Association. (Gifu), 2007.
 - 6: Taguchi N, Sasahara H, Ogawa T, Tanaka Y, Ohara M and Okada M : Inspection for Mandatory Dental Clinical Training. PHEEM (Postgraduate Hospital Educational Environmental Measure). 26th Scientific Meeting of Japanese Dental Education Association. (Gifu), 2007.
 - 7: Ogawa T, Taguchi N, Tanaka Y and Ohara M : Undergraduate Education of Comprehensive General Dentistry. 26th Scientific Meeting of Japanese Dental Education Association. (Gifu), 2007.
 - 8: Ogawa T, Tanaka Y, Taguchi N, Ohara M and Okada M : Web Course Tool for Self-Directed Learning in Dental Clinical Training. 26th Scientific Meeting of Japanese Dental Education Association. (Gifu), 2007.

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

(5) Academic Awards, etc.

(6) Patents

Central Clinical Sections (Special Dental Clinic Section)

(1) Staffs and Students

Chief Professor : Katsuyuki Kozai

Assistant : Yuri Fujiwara

(2) Main Research Activities

1 : Perceptual Evaluation of Cleft Palate Speech

2 : Clinical Application of Electropalatography

(3) Research Achievements

A) Original Papers (including Case Reports)

1 : A doctoral thesis (Hiroshima University) : Preparation of EPG target patterns for Japanese sounds and its clinical use : Yuri Fujiwara, 2006.

2 : Electropalatography home training using a portable training unit for Japanese children with cleft palate : Yuri Fujiwara Advances in Speech-Language Pathology 9, 65-72, 2007.

3 : Internet-based remote training to the clients with articulation disorders, using EPG portable training unit and Yahoo! Messenger : Y Fujiwara, I Yamamoto, N Takagi, M Ishimaru : Proceedings of 27th World Congress of the International Association of Logopedics and Phoniatrics (Copenhagen), <http://www.ialp.info/joomla/>, 2007.

B) Review

C) Publications

D) Other Publications

E) Presentation at Scientific Meeting

1 : Remote articulation training using EPG portable training unit and Yahoo! Messenger-a post operative cleft palate client without previous speech therapy- : Y fujiwara, N Takagi, M Ishimaru, I Yamamoto : The 8th annual meeting of Japanese Association of Speech, Language, and Hearing Therapist (Hamatsu) , 2007.

2 : EPG home training for a client with glottal stop compensatory articulations who has little

- access for speech therapy : M Ishimaru, Y Fujiwara, N Takagi, I Yamamoto : The 8th annual meeting of Japanese Association of Speech, Language, and Hearing Therapist (Hamamatsu) , 2007.
- 3 : EPG home training for a client with residual palatalized misarticulations : N Takagi, Y Fujiwara, M Ishimaru, I Yamamoto : The 8th annual meeting of Japanese Association of Speech, Language, and Hearing Therapist (Hamamatsu) , 2007.
- 4 : Internet-based remote training to the clients with articulation disorders, using EPG portable training unit and Yahoo! Messenger : Y Fujiwara, I Yamamoto, N Takagi, M Ishimaru : 27th World Congress of the International Association of Logopedics and Phoniatrics (Copenhagen), 2007.
- 5 : Clinical features of the clients who received EPG training –with the focus on EPG error patterns- : Y Fujiwara, I Yamamoto, M Ishimaru : The 52th annual meeting of Japan Society of Logopedics and Phoniatrics (Tokorozawa), 2007.
- 6 : Clinical features of the clients who received EPG training- the characteristics of their dentition and occlusion in relation to EPG error patterns : I Yamamoto, Y Fujiwara, M Ishimaru : 52th annual meeting of Japan Society of Logopedics and Phoniatrics (Tokorozawa), 2007.

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

(5) Academic Awards, etc.

(6) Patents

Center of Oral Clinical Examination

(1) Staffs and Students

Director : Hiroki Nikawa
Associate Professor : Ikuko Ogawa (Clinic)
Assistant : Tomoaki Shintani, Masae Kitagawa
Intern : Maki Yoshida
Research Assistant : Keiko Banno

(2) Main Research Activities

- 1 : Cationic antimicrobial peptides
- 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 of salivary gland tumors
- 5 : Study of molecular target therapy to oral cancer targeted with VEGFR and EGFR
- 6 : Developmental study of treatment to dysgeusia
- 7 : Studies on test and treatment in metal allergy and dry mouth.
- 8 : Study on mechanism of cementoblast specific genes in human cementoblast.

(3) Research Achievements

A) Original Papers (including Case Reports)

- 1 : Comprehensive analysis of chemotactic factors for bone marrow mesenchymal stem cells. : Ozaki Y, Nishimura M, Sekiya K, Suehiro F, Kanawa M, Nikawa H, Hamada T, Kato Y : *Stem Cells Dev* 16(1), 119-29, 2007.
- 2 : Titanium Surface Roughness Accelerates RANKL-dependent Differentiation in the Osteoclast Precursor Cell Line RAW264.7 : Makihiro S, Mine Y, Kosaka S, Nikawa H : *Dent Mater J* 26(5), 739-45, 2007.
- 3 : Constitutive phosphorylation of Aurora-A on Ser51 induces its protein overexpression through the inhibition of APC/CCdh1 mediated degradation in cancer : Kitajima S, Kudo Y, Ogawa I, Tatsuka M, Kawai H, Pagano M, Takata T : *PLoS ONE* 2(9), e944, 2007.
- 4 : Immortalization and characterization of pleomorphic adenoma cells by transfection with the hTERT gene : Kitagawa M, Ogawa I, Shima K, Hashimoto S, Kudo Y, Miyauchi M, Tahara H, Shimono M, Takata T : *Int J Oncol* 31, 339-344, 2007.
- 5 : Immortalization and characterization of human pulp cells with odontoblastic differentiation :

- Kitagawa M, Ueda H, Iizuka S, Sakamoto K, Oka H, Kudo Y, Ogawa I, Miyauchi M, Tahara H, Takata T : *Arch Oral Biol* 52, 727-31, 2007.
- 6 : Analysis of histopathological and immunohistochemical differences of oral squamous cell carcinoma in the young and the old patients in Sri Lanka : Siriwardena B S M S, Tilakanatne A, Amaratunga E A P D, Udagama M N G P K, Ogawa I, Kudo Y, Takata T, Tilakaratne W M : *J Oral Pathol Med* 36, 357-62, 2007.
- 7 : Skp2 expression is associated with down-regulation of p27 protein and cell proliferation in Salivary Adenoid Cystic Carcinoma : Keikhaee M R, Kudo Y, Siriwardena B S M S, Wu L, Ogawa I, Takata T : *Virchows Arch* 450, 567-74, 2007.
- 8 : Aurora-B expression and its correlation with cell proliferation and metastasis in oral cancer : Qi G, Ogawa I, Kudo Y, Miyauchi M, Siriwardena B S M S, Shimamoto F, Tatsuka M, Takata T : *Virchows Arch* 450, 297-302, 2007.
- 9 : An updated clinical and epidemiological profile of the adenomatoid odontogenic tumour : a collaborative retrospective study : Philipsen H P, Reichart P A, Siar C H, Ng K H, Lau S H, Zhang X, Dhanuthai K, Swadison S, Jainkittivong A, Meer S, Jivan V, Altini M, Hazarey V, Ogawa I, Takata T, Taylor A A, Godoy H, Delgado W A, Carlos-Bregni R, Macias J F, Matsuzaka K, Sato D, Vargas P A, Adebayo E T : *J Oral Pathol Med* 36, 383-93, 2007.
- 10 : Targeted therapy against VEGFR and EGFR with ZD6474 enhances the therapeutic efficacy of irradiation in an orthotopic model of human non-small-cell lung cancer. : Shibuya K, Komaki R, Shintani T, Itasaka S, Ryan A, Jurgensmeier J M, Milas L, Ang K, Herbst R S, O'reilly M S. : *Int J Radiat Oncol Biol Phys*. 1534-43, 2007.
- 11 : Spongolactams, Farnesyl Transferase Inhibitors from a Marine Sponge: Isolation through an LC/MS-Guided Assay, Structures, and Semisyntheses. : Mori D, Kimura Y, Kitamura S, Sakagami Y, Yoshioka Y, Shintani T, Okamoto T, Ojika M. : *J Org Chem* 72(19), 7190-8, 2007.
- 12 : Zooxanthellamide D, a Polyhydroxy Polyene Amide from a Marine Dinoflagellate, and Chemotaxonomic Perspective of the Symbiodinium Polyols. : Fukatsu T, Onodera K I, Ohta Y, Oba Y, Nakamura H, Shintani T, Yoshioka Y, Okamoto T, Lohuis M T, Miller D J, Kawachi M, Ojika M. : *J Nat Prod* 70(3), 407-11, 2007.
- 13 : Endostatin improves radicle response and blocks tumor revascularization after radiation therapy for A431 xenografts in mice. : Itasaka S, Komaki R, Herbst RS, Shibuya K, Shintani T, Hunter N R, Onn A, Bucana C D, Milas L, Ang K K, O'Reilly M S. : *Int J Radiat Oncol Biol Phys* 67(3), 870-8, 2007.
- 14 : Targeted therapy of orthotopic human lung cancer by combined vascular endothelial growth factor and epidermal growth factor receptor signaling blockade. : Wu W, Onn A, Isobe T, Itasaka S, Langley RR, Shintani T, Shibuya K, Komaki R, Ryan AJ, Fidler IJ, Herbst RS, O'Reilly MS. : *Mol Cancer Ther*, 6(2), 471-83, 2007.
- 15 : Immunohistochemical expression of heparin-binding protein 17/fibroblast growth factor-binding protein-1 (HBp17/FGFBP-1) as an angiogenic factor in head and neck tumorigenesis. : Begum S, Zhang Y, Shintani T, Toratani S, Sato J D, Okamoto T. : *Oncol*

Rep. 17(3), 591-6, 2007.

- 1 6 : Induction of alpha2-antiplasmin inhibits E-cadherin processing mediated by the plasminogen activator/plasmin system, leading to suppression of progression of oral squamous cell carcinoma via upregulation of cell-cell adhesion. : Hayashido Y, Hamana T, Ishida Y, Shintani T, Koizumi K, Okamoto T. : Oncol Rep 17(2), 417-23, 2007.

B) Review

- 1 : Research Projects related to Complete Dentures Published in 2006 by Members of the Japan Prosthodontic Society: A Review.: Nikawa H : Prosthodont Res Prac 6, 145-147, 2007.
- 2 : Periostin: Novel diagnostic and therapeutic target for cancer : Kudo Y, Siriwardena B S M S, Hatano H, Ogawa I, Takata T : Histology and Histopathology 22, 1167-1174, 2007.

C) Publications

- 1 : New WHO Classification of Odontogenic Tumours.; Highlights of the Revision and Their Background. : Oral Surgery Year Book. Manual of Oral Surgery 2007. (Editors: Seto K, Hukuda H, Huruta I, Kurita K, Noma H, Asanami S) Takata T, Ogawa I, Takeda Y, Yamamoto H : Quintessence, Tokyo,180-8, Japanese, 2007.
- 2 : Digestive Organs 1. Oral and related regions: Color Atlas of Histopathology and Differential Diagnosis, 5th Edition (Editors: Akagi T, Matsubara O, Manabe T, Yoshino T) : Takata T, Ogawa I : Ishiyaku Publishers Inc., Tokyo,127-49, Japanese, 2007.

D) Other Publications

- 1 : Close up of Gingiva, Multiple bone enlargement of lingual area of mandible : Takagi N, Takahashi M, Ogawa I, Takata T : DHstyle 1(3), 12-3, Japanese, 2007.
- 2 : Close up of Gingiva, Lichen planus of palatal gingival : Takagi N, Takahashi N, Ogawa I, Takata T : DHstyle 1(5), 12-4, Japanese, 2007.
- 3 : Close up of Gingiva, Grayish-white spots of palatal gingival : Ono N, Nishio T, Ogawa I, Takata T : DHstyle 1(7), 12-4, Japanese, 2007.
- 4 : Contribution of Finite Element Modeling to Assessment of Mandibular Movements. Proceedings of 2nd Hiroshima Conference on Education and Science in Dentistry : Nikawa H, Tanaka E, Murayama T, Nagasaki T : 17-22, 2007.

E) Presentation at Scientific Meeting

- 1 : Abnormal degradation and overexpression of Aurora-A in oral cancer. : Kitajima S, Kudo Y, Ogawa I, Miyauchi M, Tatsuka M, Takata T : 96th Annual Meeting of the Japanese Society of Pathology (Osaka), 2007.

- 2 : VEGF-C is associated with lymph vessel density, lymphatic invasion and nodal metastasis in oral squamous cell carcinoma. : Siriwardena B S M S, Kudo Y, Ogawa I, Udagama M N G P K, Tilakaratne W.M, Miyauchi M, Takata T : 96th Annual Meeting of the Japanese Society of Pathology (Osaka) , 2007.
- 3 : Four cases of pleomorphic adenoma showing atypical histological features suggestive for malignancy (low-grade malignant pleomorphic adenoma) : Ogawa I, Kudo Y, Miyauchi M, Shimamoto F, Takata T : 96th Meeting of The Japanese Society of Pathology (Osaka) , 2007.
- 4 : High expression of SAKI in oral squamous cell carcinoma and dysplasia : Sato S, Ogawa I, Kitajima S, Kudo Y, Miyauchi M, Shimamoto F, Toyosawa S, Kanda A, Tatsuka M, Takata T : 96th Annual Meeting of the Japanese Society of Pathology (Osaka) , 2007.
- 5 : Identification and its roles of novel factors of oral cancer invasion. (student poster presentation) : Hatano H, Kudo Y, Siriwardena S, Kitajima S, Kitagawa M, Ogawa I, Miyauchi M, Takata T : 96th Annual Meeting of the Japanese Society of Pathology (Osaka) , 2007.
- 6 : A case of peripheral ameloblastoma with histological features suggestive for low-grade malignancy arising in buccal mucosa : Gohda K, Nakashiro K, Ogawa I, Takata T, Hamakawa H : 61st Annual Meeting of the Japanese Stomatological Society (Kobe) , 2007.
- 7 : Clinical and histopathological study on boundary area between Lugol- stained and unstained of oral dysplastic lesions : Ohta K, Ono S, Mizuta K, Taki M, Miyauchi M, Ogawa I, Takata T, Kamata N : 61st Annual Meeting of the Japanese Stomatological Society (Kobe), 2007.
- 8 : Study on the development of regeneration therapy of bone tissues by synthetic peptide of ameloblastin. : Iizuka S, Yoshida M, Kitagawa M, Sakamoto K, Kawazoe Y, Miyauchi M, Takata T : 50th Annual Meeting in Spring of the Japanese Society of Periodontology (Yokosuka), 2007.
- 9 : Expression and roles of Toll-like receptors in periodontal tissue cells. : Sakamoto K, Miyauchi M, Oka H, Kitagawa M, Iizuka S, Kawazoe Y, Takata T : 50th Annual Meeting in Spring of the Japanese Society of Periodontology (Yokosuka), 2007.
- 10 : Development of bone regeneration therapy with synthetic ameloblastin peptide : Iizuka S, Yoshida M, Kitagawa M, Sakamoto K, Kawazoe Y, Miyauchi M, Takata T : 50th Annual Meeting of the Japanese Society of Periodontology (Yokosuka), 2007.
- 11 : Toll-like receptors expression and its correlation in periodontal constituent cells. : Sakamoto K, Miyauchi M, Oka H, Kitagawa M, Iizuka S, Kawazoe Y, Takata T : 50th Annual Meeting of the Japanese Society of Periodontology (Yokosuka), 2007.
- 12 : A case of mucocutaneous angiolipoma in the cheek . : Shintani T, Toratani S, Miyauchi M, Hayashido Y, Ochi Y, Okamoto T : 36th Chugoku-Shikoku Sectional Meeting of Japanese Society of Oral and Maxillofacial Surgery (Hiroshima) , 2007.
- 13 : Different expressions of cytokeratin13 and Ki-67 in the boundary area between Lugol' iodine-stained and -unstained of oral dysplastic lesions. : Ohta K, Ono S, Mizuta K, Taki M, Miyauchi M, Ogawa I, Takata T, Kamata N : 17th Annual Meeting of the Japanese Society

- for Oral Mucous Membrane (Tokyo) , 2007.
- 1 4 : The mechanism of Aurora-A overexpression through abnormal regulation of phosphorylation in oral cancer. : Kitajima S, Kudo Y, Ogawa I, Miyauchi M, Takata T : 49th Japanese association for Oral Biology (Sapporo), 2007.
 - 1 5 : Influence of elevation of g-glutamyl transpeptitase (GGT) by cholestatic liver disease on bone. : Kawazoe Y, Miyauchi M, Kanno K, Hyougo H, Niida S, Tazuma S, Takata T : 15th The Japanese Study Group for the Pathophysiology of Liver (Tokyo) , 2007.
 - 1 6 : A case of condylar hyperplasia resulting in marked displacement of mandible and malocclusion. : Fujii Y, Koizumi K, Toratani S, Takesue N, Matsumoto S, Hayashidoh Y, Ueki M, Takata T, Ogawa I, Okamoto T : 55th Annual Meeting, The Japanese Stomatological Society, Chugoku-Shikoku Division (Tokushima), 2007.
 - 1 7 : A case of ossifying fibromyxoid tumor of the tongue. : Taki M, Ohta K, Ono S, Ogawa I, Takata T, Kamata N : 55th Annual Meeting, The Japanese Stomatological Society, Chugoku-Shikoku Division (Tokushima) , 2007.
 - 1 8 : Knockdown of Skp2 inhibits cell growth through the accumulation of p27 protein in salivary adenoid cystic carcinoma : Keikhae M R, Kudo Y, Siriwardena S, Wu L, Ogawa I, Takata T : 52nd Annual Meeting of the Japanese Salivary Gland Society (Tokyo) , 2007.
 - 1 9 : A case of epithelial-myoeplithelial carcinoma showing diverse histological features with squamous cell carcinoma component caused by dedifferentiation. : Ogawa I, Utsumi Y, Kano M, Takata T : 52nd Annual Meeting of the Japanese Salivary Gland Society (Tokyo) , 2007.
 - 2 0 : Stabilization and overexpression of Aurora-A protein by abnormal regulation of phosphorylation. : Kitajima S, Kudo Y, Ogawa I, Tatsuka M, Takata T : 30th Annual Meeting of the Molecular Biology Society of Japan & 80th Annual meeting of the Japanese Biochemical Society(BMB2007) (Yokohama) , 2007.
 - 2 1 : Abnormal expression of Emil in cancer. : Kudo Y, Tsunematsu T, Obayashi M, Ogawa I, Kitajima S, Takata T : 30th Annual Meeting of the Molecular Biology Society of Japan & 80th Annual meeting of the Japanese Biochemical Society (BMB2007) (Yokohama) , 2007.
 - 2 2 : A case of mucocutaneous angiomylipoma in the cheek : Shintani T, Toratani S, Miyauchi M, Hayashido Y, Ochi Y, Okamoto T : 36th Chugoku-Shikoku Sectional Meeting of Japanese Society of Oral and Maxillofacial Surgery (Hiroshima), 2007.
 - 2 3 : Parotid tumor (salivary duct carcinoma, sarcomatoid variant) . : Kudo Y, Ogawa I, Sakaida Y, Uemura Y, Miyamoto M, Takata T : 92nd Chugoku-Shikoku Sectional Meeting of the Japanese Stomatological Society (Tokushima) , 2007.
 - 2 4 : Palatal tumor (mucoepidermoid carcinoma, clear cell variant) .: Ogawa I, Takata T, Igarashi T, Tanaka H : 93rd Slide Conference, Academic Meeting of Chugoku-Shikoku Branch of the Japanese Society of Pathology (Kurashiki) , 2007.
 - 2 5 : Tumor of buccal mucosa (Peripheral ameloblastoma, border line malignancy) : Kitajima S, Ogawa I, Gouda H, Nakashiro K, Takata T : 18th Annual Meeting of the Japanese Society for Oral Pathology (Gifu) , 2007.

- 2 6 : Parotid gland tumor (acinic cell carcinoma) . : Ogawa I, Yoshida M, Takata T, Yoneda G, Wada N, Tomita H : 50th Meeting of Hiroshima Pathological Conference (Hiroshima) , 2007.
- 2 7 : Parotid gland lesion (nodular oncocytic hyperplasia) .: Ogawa I, Kushitani K, Takashia Y, Miyauchi M, Inai Y, Takata T : 9th Meeting of Society of Salivary Grand Tumor Pathology (Tokyo) , 2007.

F) Special lectures in academic meetings

- 1 : Histological diagnosis of salivary gland tumors □process of diagnosis and important points of differential diagnosis□ (Special lecture) .: Ogawa I, Takata T : 36th Academic Meeting of Kinki Branch of the Japanese Society of Pathology (Osaka) , 2007.
- 2 : Symposium-1 “Recent knowledge of structure,function and pathology of salivary glands”: Classification of salivary gland tumors, WH02005 : Ogawa I, Takata T : 18th Annual Meeting of The Japanese Society for Oral Pathology (Gifu), 2007.
- 3 : Symposium-2 “The mechanism of proliferation and progression of oral cancer” : Abnormality of Aurora-A degradation and protein overexpression in oral cancer. : Kudo Y, Kitajima S, Ogawa I, Takata T : 18th Annual Meeting of the Japanese Society for Oral Pathology (Gifu), 2007.
- 4 : Symposium-3 “Destruction and regeneration of oral tissue”: Exploratory study on the development of novel therapies based on the understanding of periodontal tissue destruction mechanism : Miyauchi M, Kitagawa M, Sakamoto K, Iizuka S, Takata T : 18th Annual Meeting for Japanese Society for Oral Pathology (Gifu), 2007.
- 5 : Identification and characterization of new invasion relating molecules of oral squamous cell carcinoma. : Takata T, Kudo Y, Hatano H, Ogawa I, Siriwardena S, Kitajima S, Kitagawa M, Miyauchi M : Korean Academy of Oral and Maxillofacial Pathology (Seoul) , 2007.
- 6 : ‘Application of probiotics in oral cavity’ : Nikawa H : 15th International symposium on Lactic Acid Bacteria and Human Health (Seoul) , 2007.
- 7 : Contribution of Finite Element Modeling to Assessment of Mandibular Movements. : Nikawa H, Tanaka E, Murayama T, Nagasaki T : 2nd Hiroshima Conference. (Hiroshima) , 2007.

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

(5) Academic Awards, etc.

(6) Patents

Central Clinical Sections (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
Trainee of Dental Technician : Midori Ono

(2) Main Research Activities

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

(3) Research Achievements

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

(5) Academic Awards, etc.

(6) Patents

Central Clinical Sections (Oral Hygien Section)

(1) Staffs and Students

Director of Dental Hygien Section : 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 Shimoda, Kumi Miyakawa, Tomoko Tokikazu, Kanako Matsui, Kanako Yano, Kana Dainobu, Naomi Hara, Yamashita Satomi, Miho Okada, Rie Kanna, Kouti Ayumi, Megumi Takamoto

Dental Assistant : Aki Takahashi, Yuri Outa, Yuka Tamamoto, Yukiko Miyata

(2) Main Research Activities

1 : A study about the dentistry health guidance that dental hygienist performs.

2 : A study about improvement of local dentistry health.

3 : About a role of dental hygienist in dentistry medical examination and treatment.

(3) Research Achievements

A) Original Papers (including Case Reports)

B) Review

C) Publications

D) Other Publications

1 : The action example in Hiroshima university hospital / dentistry and medical cooperation :
Tamura H, Kawashima A, Yoneda M, Kajitani K : DHstyle 1, 60-63, 2007.

E) Presentation at Scientific Meeting

1 : A study on dental treatment cooperation level in developmental disability person

- A successive variation : Yano K, Hayashida K, Tokikazu T, Hayashida T, Aoki M, Nakamori T, Tamura H, Okada M : A meeting for presenting research papers of the Japanese Society for Disability and oral health (Nagasaki), 2007.
- 2 : 障害者歯科における歯内療法—精神遅滞患者へのラバーダム防湿の応用— : Hayashida K, Aoki M, Tokikazu T, Hayashida T, Yano K, Nakamori T, Okada M : 第24回日本障害者歯科学会学術大会(Nagasaki), 2007.
- 3 : A clinical survey of outpatients with disabled in Special Care Dentistry Hiroshima University Hospital -a survey from 2005-2006 : Tokikazu T, Hayashida K, Aoki M, Hayasida T, Yano K, Nakamori T, Tamura Y, Okada M : Japanese Society For disability and OralHealth (Nagasaki), 2007.
- 4 : Treatment of Aggressive Periodontitis for a Patient with Mental Retardation-A Case Report : Hatakeyama T, Okada M, Tokikazu T, Hayashida K, Aoki M, Tokikazu T, Hayashida T, Hino T, Kawaguchi H, Tamura H, Kurihara H : 50th the autumn meeting of the Japanese society of periodontology (Tokyo), 2007.
- 5 : The Report of the Case that Used Nitrous Oxide Inhalation Sedation for a Periodontitis Treatment Induction of the Mentally-Disabled Person : Hatakeyama T, Hayashida K, Aoki M, Tokikazu T, Hayashida T, Hino T, Kawaguchi H, Tamura H, Okada M : 91th The Hiroshima University Dental Society, 2007.
- 6 : 精神遅滞患者に対する歯内治療 : Hayashida K, Aoki M, Hatakeyama T, Tokikazu T, Hayashida T, Kurihara H, Okada M : 第91回広島大学歯学会(Hiroshima), 2007.
- 7 : Oral sanitary direction for the child patient under the treatment of anticancer drug : Nakaoka M, Nakae H, Arika M, Yoshimura G, Suzuki J, Kozai K : The 45th Japan Pediatric Dentistry Conference and general Meeting (Tokyo), 2007.
- 8 : The research of the dental plaque isolated from child oral cavity taking on orange color : Yoshimura G, Nakaoka M, Tsuboi A, Otani S, Suzuki J, Kozai K : The 45th Japan Pediatric Dentistry Conference and general Meeting (Tokyo) , 2007.
- 9 : Activity in the hospital ;two- year activity of the dental hygienist outpatient center in the hospital : K Kajitani : The 2nd Japan dental hygiene society(A free meeting)(Fukuoka), 2007.

F) Special lectures in academic meetings

- 1 : Importance of health of a mouth : Tamura H : Lecture of Long-term care(Hiroshima), 2007.

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

(5) Academic Awards, etc.

(6) Patents

Dental clinic

(1) Staffs and Students

Assistant Professor : Hiroshi Yoshino

Assistant : Masaru Ohara

(2) Main Research Activities

1 : Multi drug-resistant *Pseudomonas aeruginosa*

2 : Stress and periodontitis

(3) Research Achievements

A) Original Papers (including Case Reports)

1 : Kouda S, Kuwahara R, Ohara M, Shigeta M, Fujiwara T, Komatsuzawa H, Usui T, and Sugai M : First isolation of bla_{IMP-7} in a *Pseudomonas aeruginosa* in Japan., *J. Infect Chemother.* 13, 276-277, 2007.

2 : Ohara M, Kouda S, Onodera M, Fujiue Y, Sasaki M, Kohara T, Kashiyama S, Hayashida S, Kadono M, Komatsuzawa H, Gotoh N, Usui T, Itaha H, Kuwabara M, Yokoyama T, and Sugai M : Molecular characterization of imipenem-resistant *Pseudomonas aeruginosa* in Hiroshima, Japan. *Microbiol Immunol* 51, 271-277, 2007

B) Review

C) Publications

1 : Yoshino H, Kurihara H : Stress.; periodontitis and 7 diseases (Yoshie H. , Tkashiba S., Editor) Nagasuesyoten, Tokyo, 164-168, 2007

2 : Yoshino H. : Infection control manual and training text in dental treatment. (ICHG studygroup editor), Ishiyaku publisher, Tokyo, 2007

D) Other Publications

1 : Yokoyama T, Sugai M, Ohara M, Imai Y : Infectious disease of multi drug-resistant *Pseudomonas aeruginosa* *Nipponrinsyo* 65 Suppl 3, 418-422, 2007

E) Presentation at Scientific Meeting

- 1 : A study to elucidate the appearance of aggressive periodontitis. : Mizuno Y, Niitani M, Hino T, Yanagihara T, Yoshino H, Tsunekuni N, Hujita T, Shiba H, Kawaguchi H, Kurihara H : Japanese society of periodontology 50th annual meeting (Tokyo), 2007
- 2 : The present state of education of Infection control to dental students in national and public universities. : Takagi R, Yoshino H, Sugiura T, Tamazawa S, Sunakawa M, Morimoto Y, Tanimoto I, Satomura K, Abe K, Ikeda H, Sugihara K, Tomoyose T : Japanese dental education association annual meeting (Gifu) 2007
- 3 : The present state of education of Infection control and significance of education about dental treatment to HIV patients to dental students in national and public universities. : Takagi R, Yoshino H : Japanese society for aids research annual meeting (Hiroshima), 2007

(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.)
Research Associate : 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 : Requirements of linkage with triage-tag information and electronic health records available in a huge disaster : T Tanaka, K Ishikawa, H Tsukuma, N Iwata, M Ikeuchi, Y Iwasaki, N Konishi : Proceedings of Joint Conference on Medical Informatics 27, 525-528, 2007.
- 2 : Evaluation of the Injection Business support System from the viewpoint of Patient Safety Management : H Tsukuma, T Tanaka, K Sakata, N Konishi, N Iwata, M Ikeuchi, K Ishikawa : Proceedings of Joint Conference on Medical Informatics 27, 645-648, 2007.
- 3 : The system requirements about secondary data for EHR in an ubiquitous network : N Iwata, T Tanaka, K Ikeuchi, H Tsukuma, K Ishikawa : Proceedings of Joint Conference on Medical Informatics 27, 425-428, 2007.
- 4 : An audit result of an electronic nursing record and a future problem : K Sakata, A Kawamura, M Sugimura, T Sainohara, H Tsukuma, T Tanaka, K Ishikawa : Proceedings of Joint Conference on Medical Informatics 27, 1344-1345, 2007.
- 5 : The Next Generation Information System to Support and to Evaluate Wide Area Emergency Relief on Demand : K Ishikawa, M Matsuura, Y Takada, T Ushio, Y Iwasaki, M Ishiguro, Y Houshaku, H Tsukuma, T Tanaka, M Ikeuchi, N Iwata : Proceedings of Joint Conference on Medical Informatics 27, 897-900, 2007.
- 6 : An effect of IT link nurse system introduction and a future problem : M Sugimura, K Sakata, T.Sainohara, H Tsukuma, T Tanaka, K Ishikawa : Proceedings of Joint Conference on Medical Informatics 27, 1342-1343, 2007.
- 7 : The present situation of the instruction record at the small-to-medium-sized hospital which was attended by the patient safety-The hospital business process and the entry process-(Case

- reviewing) : M Ikeuchi, K Ishikawa, N Iwata, H Tsukuma, T Tanaka : Proceedings of Joint Conference on Medical Informatics 27, 1039-1040, 2007.
- 8 : Requirements of Linkage with Triage-Tag Information and Electronic Health Records Available in a Huge Disaster : T Tanaka, K Ishikawa, H Tsukuma, N Iwata, M Ikeuchi, Y Iwasaki, N Konishi : Medinfo2007 Poster Papers and ePosters (HISA), P197, 2007.
- 9 : How Could Consistent Management of Information according to Clinical Care Process on Injection Contribute to Patients' Safety? : H Tsukuma, T Tanaka, N Konishi, K Sakata, A Kawamura, N Iwata, M Ikeuchi, K Ishikawa : Medinfo2007 Poster Papers and ePosters (HISA), P206, 2007.
- 10 : Does Integrated EHR System Assure Safety Patient Management? : K Ishikawa, H Tsukuma, N Iwata, T Tanaka, H Ohmichi, Y Umesato, H Terasaki, N Konishi, A Kawamura, K Sakata, T Sainohara, M Sugimura, R Umemoto, M Tooya : Medinfo2007 Poster Papers and ePosters (HISA), P190, 2007.

B) Review

C) Publications

D) Other Publications

E) Presentation at Scientific Meeting

- 1 : Requirements of linkage with triage-tag information and electronic health records available in a huge disaster : T Tanaka, K Ishikawa, H Tsukuma, N Iwata, M Ikeuchi, Y Iwasaki, N Konishi : The 27th Joint Conference on Medical Informatics (Kobe), 2007.
- 2 : Evaluation of the Injection Business support System from the viewpoint of Patient Safety Management : H Tsukuma, T Tanaka, K Sakata, N Konishi, N Iwata, M Ikeuchi, K Ishikawa : The 27th Joint Conference on Medical Informatics (Kobe), 2007.
- 3 : The system requirements about secondary data for EHR in an ubiquitous network : N Iwata, T Tanaka, K Ikeuchi, H Tsukuma, K Ishikawa : The 27th Joint Conference on Medical Informatics (Kobe), 2007.
- 4 : An audit result of an electronic nursing record and a future problem : K Sakata, A Kawamura, M Sugimura, T Sainohara, H Tsukuma, T Tanaka, K Ishikawa : The 27th Joint Conference on Medical Informatics (Kobe), 2007.
- 5 : The Next Generation Information System to Support and to Evaluate Wide Area Emergency Relief on Demand : K Ishikawa, M Matsuura, Y Takada, T Ushio, Y Iwasaki, M Ishiguro, Y Houshaku, H Tsukuma, T Tanaka, M Ikeuchi, N Iwata : The 27th Joint Conference on Medical Informatics (Kobe), 2007.
- 6 : An effect of IT link nurse system introduction and a future problem : M Sugimura, K Sakata, T Sainohara, H Tsukuma, T Tanaka, K Ishikawa : The 27th Joint Conference on Medical Informatics (Kobe), 2007.

- 7 : The present situation of the instruction record at the small-to-medium-sized hospital which was attended by the patient safety-The hospital business process and the entry process-(Case reviewing) : M Ikeuchi, K Ishikawa, N Iwata, H Tsukuma, T Tanaka : The 27th Joint Conference on Medical Informatics (Kobe), 2007.
- 8 : Requirements of Linkage with Triage-Tag Information and Electronic Health Records Available in a Huge Disaster : T Tanaka, K Ishikawa, H Tsukuma, N Iwata, M Ikeuchi, Y Iwasaki, N Konishi : Medinfo2007 (Brisbane), 2007.
- 9 : How Could Consistent Management of Information according to Clinical Care Process on Injection Contribute to Patients' Safety? : H Tsukuma, T Tanaka, N Konishi, K Sakata, A Kawamura, N Iwata, M Ikeuchi, K Ishikawa : Medinfo2007 (Brisbane), 2007.
- 10 : Does Integrated EHR System Assure Safety Patient Management? : K Ishikawa, H Tsukuma, N Iwata, T Tanaka, H Ohmichi, Y Umesato, H Terasaki, N Konishi, A Kawamura, K Sakata, T Sainohara, M Sugimura, R Umemoto, M Tooya : Medinfo2007 (Brisbane), 2007.
- 11 : A View on ICT Application for Ubiquitous Healthcare : K Ishikawa, T Tanaka, N Iwata, M Ikeuchi, H Tsukuma : SI2007 (Hiroshima), 2007.

(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

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