

7 References

1. Adams CS, Shapiro IM. Mechanisms by which extracellular matrix components induce osteoblast apoptosis. *Connect Tissue Res* 2003;44 Suppl 1:230-239. Review.
2. Alamo J. Chemistry and properties of solids with [N₂P] skeleton. *Solid State Ionics* 1993;63-65:547-561.
3. Altschul SF, Gish W, Miller W, Myers EW, Lipman DJ. Basic local alignment search tool. *J Mol Biol* 1990;215:403-410.
4. Anselme K, Sharrock P, Hardouin P, Dard M. In vitro growth of human adult-bone derived cells on hydroxyapatite plasma-sprayed coatings. *J Biomed Mat Res* 1997;34:247-259.
5. von Arx T, Cochran DL, Hermann JS, Schenk RK, Buser D. Lateral ridge augmentation using different bone fillers and barrier membrane application. A histologic and histomorphometric pilot study in the canine mandible. *Clin Oral Implants Res* 2001;12:260-269.
6. von Arx T, Cochran DL, Schenk RK, Buser D. Evaluation of a prototype trilayer membrane (PTLM) for lateral ridge augmentation: an experimental study in the canine mandible. *Int J Oral Maxillofac Surg* 2002;31:190-199.
7. Aubin JE. Advances in the osteoblast lineage. *Biochem Cell Biol* 1998a;76:899-910. Review.
8. Aubin JE. Bone stem cells. *J Cell Biochem Suppl* 1998b;30-31:73-82. Review.
9. Aubin JE. Osteogenic Cell Differentiation. In: Davies JE, editor. *Bone Engineering*. Toronto, Canada: em squared Inc; 2000. p 19-30.

10. Auf'mkolk B, Hauschka PV, Schwartz ER. Characterization of human bone cells in culture. *Calcif Tissue Int* 1985;37:228-235.
11. Aumailley M, Specks U, Timpl R. Cell adhesion to type-VI collagen. *Biochem Soc Trans* 1991;19:843-847.
12. Bahat O. Branemark system implants in the posterior maxilla: clinical study of 660 implants followed for 5 to 12 years. *Int J Oral Maxillofac Implants* 2000;15:646-653.
13. Barney VC, Levin MP, Adams DF. Bioceramic implants in surgical periodontal defects. A comparison study. *J Periodontol* 1986;57:764-770.
14. Barrere F, van der Valk CM, Meijer G, Dalmeijer RA, de Groot K, Layrolle P. Osteointegration of biomimetic apatite coating applied onto dense and porous metal implants in femurs of goats. *J Biomed Mater Res* 2003;67B:655-665.
15. Bates RC, Lincz LF, Burns GF. Involvement of integrins in cell survival. *Cancer Metastasis Rev* 1995;14:191-203. Review.
16. Bellows CG, Aubin JE, Heersche JN, Antosz ME. Mineralized bone nodules formed in vitro from enzymatically released rat calvaria cell populations. *Calcif Tissue Int* 1986;38:143-154.
17. Belser UC, Mericske-Stern R, Bernard JP, Taylor TD. Prosthetic management of the partially dentate patient with fixed implant restorations. *Clin Oral Implants Res* 2000;11 Suppl 1:126-145. Review.
18. Beresford JN, Graves SE, Smoothy CA. Formation of mineralized nodules by bone derived cells in vitro: a model of bone formation? *Am J Med Genet* 1993;45:163-178. Review.

19. Berger G, Gildenhaar R, Ploska U. Rapid resorbable materials based on a new phase: $\text{Ca}_2\text{KNa}(\text{PO}_4)_2$. In: Wilson J, Hench LL, Greenspan DC, editors. *Bioceramics 8*. Oxford, UK: Butterworth-Heinemann;1995a. p 453-456.
20. Berger G, Gildenhaar R, Ploska U. Rapid resorbable, glassy crystalline materials on the basis of calcium alkali orthophosphates. *Biomaterials* 1995b;16:1241-1248.
21. Berger G, Ploska U, Lugscheider E, Nyland A, Kraus W. Calcium phosphate-containing materials in the system $\text{CaTi}_4(\text{PO}_4)_6$ - $\text{CaZr}_4(\text{PO}_4)_6$ for use as coatings on titanium substrates. In: Kokubo T, Nakamura T, Miyaji F, editors. *Bioceramics 9*. Oxford, UK: Pergamon/Elsevier Ltd.;1996. p 353-356.
22. Berger G, Gildenhaar R, Ploska U, Willfahrt M. Syntheses of rapidly resorbable calcium phosphate ceramics with high macro or high microporosity. In: Sedel L, Rey C, editors. *Bioceramics 10*. Oxford, UK: Elsevier Science Ltd.;1997. p 367-370.
23. Berger G, Gildenhaar R, Ploska U. Solubility tests of commercial apatitic products. In: LeGeros RZ, LeGeros JP, editors. *Bioceramics 11*. Singapore, Malaysia: World Scientific Publishing Co. Pte.; 1998. p 121-124.
24. Berger G, Mücke U, Harbich KW. Determination of the internal surface of spongiosa-like ceramic scaffolds using light microscopy and X-ray refraction technique. In: Ben-Nissan B, Sher D, Walsh WR, editors. *Key Engineering Materials, Vols. 240-242*. Zurich, Switzerland: Trans Tech Publications; 2003. p. 469-472.
25. Bhatnagar RS, Qian JJ, Wedrychowska A, Sadeghi M, Wu YM, Smith N. Design of biomimetic habitats for tissue engineering with P-15, a synthetic peptide analogue of collagen. *Tissue Eng* 1999;5:53-65.

26. Bianco P, Silvestrini G, Termine JD, Bonucci E. Immunohistochemical localization of osteonectin in developing human and calf bone using monoclonal antibodies. *Calcif Tissue Int* 1988;43:155-161.
27. Bornstein MM, Lussi A, Schmid B, Belser UC, Buser D. Early loading of nonsubmerged titanium implants with a sandblasted and acid-etched (SLA) surface: 3-year results of a prospective study in partially edentulous patients. *Int J Oral Maxillofac Implants* 2003;18:659-666.
28. Boyan BD, Schwartz Z. Modulation of osteogenesis via implant surface design. In: Davies JE, editor. *Bone Engineering*. Toronto, Canada: em squared Inc.; 2000. p 232-239.
29. Brånemark, PI, Breine U, Adell R, Hansson BO, Lindström J, Ohlsson A. Intraosseous anchorage of dental prostheses. I. Experimental studies. *Scand J Plast Reconstr Surg* 1969;3:81-100.
30. de Bruijn JD, Bovell YP, van Blitterswijk CA. Structural arrangements at the interface between plasma sprayed calcium phosphates and bone. *Biomaterials* 1994;15:543-550.
31. Brunette DM. The effects of implant surface topography on the behavior of cells. *Int J Oral Maxillofac Implants* 1988;3:231-246. Review.
32. Burgess AV, Story BJ, Wagner WR, Trisi P, Pikos MA, Guttenberg SA. Highly crystalline MP-1 hydroxylapatite coating. Part II: In vivo performance on endosseous root implants in dogs. *Clin Oral Implants Res* 1999;10:257-266.
33. Burke EM, Lucas LC. Dissolution kinetics of calcium phosphate coatings. *Implant Dent* 1998;7:323-330. Review.
34. Buser D, Schenk RK, Steinemann S, Fiorellini JP, Fox CH, Stich H. Influence of surface characteristics on bone integration of titanium implants. A

- histomorphometric study in miniature pigs. *J Biomed Mater Res* 1991; 25:889-902.
35. Buser D, Dula K, Hirt HP, Berthold H. Localized ridge augmentation using guided bone regeneration. In: Buser D, Dahlin C, Schenk RK, editors. *Guided bone regeneration in implant dentistry*. Chicago, USA: Quintessenz; 1994. p. 189-233.
36. Buser D, Dula K, Hirt HP, Schenk R. Lateral ridge augmentation using autografts and barrier membranes: a clinical study with 40 partially edentulous patients. *J Oral Maxillofac Surg* 1996;54:420-432.
37. Buser D, Mericske-Stern R, Bernard JP, Behneke A, Behneke N, Hirt HP, Belser UC, Lang NP. Long-term evaluation of non-submerged ITI implants. Part 1: 8-year life table analysis of a prospective multi-center study with 2359 implants. *Clin Oral Implants Res* 1997;8:161-172.
38. Buser D, Hoffmann B, Bernard JP, Lussi A, Mettler D, Schenk RK. Evaluation of filling materials in membrane-protected bone defects. A comparative histomorphometric study in the mandible of miniature pigs. *Clin Oral Impl Res* 1998a;9:137-150.
39. Buser D, Nydegger T, Hirt HP, Cochran DL, Nolte LP. Removal torque values of titanium implants in the maxilla of miniature pigs. *Int J Oral Maxillofac Implants* 1998b;13:611-619.
40. Buser D, Dula K, Hess D, Hirt HP, Belser UC. Localized ridge augmentation with autografts and barrier membranes. *Periodontol 2000* 1999a;19:151-63. Review.
41. Buser D, Nydegger T, Oxland T, Cochran DL, Schenk RK, Hirt HP, Snetivy D, Nolte LP. Interface shear strength of titanium implants with a sandblasted

- and acid-etched surface: a biomechanical study in the maxilla of miniature pigs. *J Biomed Mater Res* 1999b;45:75-83.
42. Buser D, Ingimarsson S, Dula K, Lussi A, Hirt HP, Belser UC. Long-term stability of osseointegrated implants in augmented bone: a 5-year prospective study in partially edentulous patients. *Int J Periodontics Restorative Dent* 2002;22:109-117.
 43. Cardarelli PM, Yamagata S, Taguchi I, Gorcsan F, Chiang SL, Lobl T. The collagen receptor alpha 2 beta 1, from MG-63 and HT1080 cells, interacts with a cyclic RGD peptide. *J Biol Chem* 1992;267:23159-23164.
 44. Caulier H, van der Waerden JP, Wolke JG, Kalk W, Naert I, Jansen JA. A histological and histomorphometrical evaluation of the application of screw-designed calciumphosphate (Ca-P)-coated implants in the cancellous maxillary bone of the goat. *J Biomed Mater Res* 1997;35:19-30.
 45. Cavalcant-Adam EA, Shapiro IM, Composto RJ, Macarak EJ, Adams CS. RGD peptides immobilized on a mechanically deformable surface promote osteoblast differentiation. *J Bone Miner Res* 2002;17:2130-2140.
 46. Chang YL, Stanford CM, Keller JC. Calcium and phosphate supplementation promotes bone cell mineralization: implications for hydroxyapatite-enhanced bone formation. *J Biomed Mater Res* 2000;52:270-278.
 47. Chantratita W, Henchal EA, Yoosook C. Rapid detection of herpes simplex virus DNA by in situ hybridization with photobiotin-labelled double-stranded DNA probes. *Mol Cell Probes* 1989;3:363-373.
 48. Chen J, Shapiro HS, Sodek J. Development expression of bone sialoprotein mRNA in rat mineralized connective tissues. *J Bone Miner Res* 1992;7:987-997.

49. Cochran DL, Schenk RK, Lussi A, Higginbottom FL, Buser D. Bone response to unloaded and loaded titanium implants with a sandblasted and acid-etched surface: a histometric study in the canine mandible. *J Biomed Mater Res* 1998;40:1-11.
50. Cochran DL. A comparison of endosseous dental implant surfaces. *J Periodontol* 1999;70:1523-1539.
51. Cochran DL, Buser D. Bone response to sandblasted and acid-attacked titanium: experimental and clinical studies. In: Davies JE, editor. *Bone Engineering*. Toronto, Canada: em squared Inc.; 2000. p 391-397.
52. Cordioli G, Majzoub Z, Piattelli A, Scarano A. Removal torque and histomorphometric investigation of 4 different titanium surfaces: an experimental study in the rabbit tibia. *Int J Oral Maxillofac Implants* 2000;15:668-674.
53. Cordioli G, Mazzocco C, Schepers E, Brugnolo E, Majzoub Z. Maxillary sinus floor augmentation using bioactive glass granules and autogenous bone with simultaneous implant placement. Clinical and histological findings. *Clin Oral Implants Res* 2001;12:270-278.
54. Cowles EA, Brailey LL, Gronowicz GA. Integrin-mediated signaling regulates AP-1 transcription factors and proliferation in osteoblasts. *J Biomed Mater Res* 2000;52:725-737.
55. Cune MS, de Putter C, Hoogstaten J. Treatment outcome with implant-retained overdentures: Part I - Clinical findings and predictability of clinical treatment outcome. *J Prosth Dent* 1996;72:144-151.
56. Daculsi G, LeGeros RZ, Mitre D. Crystal dissolution of biological and ceramic apatites. *Calcif Tiss Int* 1989;45:95-103.

57. Davarpanah M, Martinez H, Etienne D, Zabalegui I, Mattout P, Chiche F, Michel JF. A prospective multicenter evaluation of 1,583 3i implants: 1- to 5-year data. *Int J Oral Maxillofac Implants* 2002;17:820-828.
58. Davies JE, Chernecky R, Lowenberg B, Shiga A. Deposition and resorption of mineralized matrix in vitro by rat marrow cells. In: Davies JE, editor. *The bone-biomaterial interface*. Toronto: University of Toronto Press; 1991. p 308-320.
59. Davies JE. In vitro modelling of the bone/implant interface. *Anat Rec* 1996;245:426-445. Review
60. Davies JE. Mechanisms of endosseous integration. *Int J Prosthodont* 1998;11:391-401.
61. Davies JE. Understanding periimplant endosseous healing. *J Dent Educ* 2000;67:932-949.
62. Dechantsreiter MA, Planker E, Matha B, Lohof E, Holzemann G, Jonczyk A, Goodman SL, Kessler H. N-Methylated cyclic RGD peptides as highly active and selective $\alpha(V)\beta(3)$ integrin antagonists. *J Med Chem* 1999;42:3033-3040.
63. Dedhar S. Integrin-mediated signal transduction in oncogenesis: an overview. *Cancer Metastasis Review* 1995;14:165-172.
64. de Groot K, Wolke JG, Jansen JA. Calcium phosphate coatings for medical implants. *Proc Inst Mech Eng [H]* 1998;212:137-147.
65. Denissen HW, Kalk W, de Nieuport HM, Mangano C, Maltha JC. Preparation-induced stability of bioactive apatite coatings. *Int J Prosthodont* 1991;4:432-439.

66. Denissen HW, Klein CP, Visch LL, van den Hooff A. Behavior of calcium phosphate coatings with different chemistries in bone. *Int J Prosthodont* 1996;9:142-148.
67. DeSantis D, Guerriero C, Nocini PF, Ungersbock A, Richards G, Gotte P, Armato U. Adult human bone cells from jaw bones cultured on plasma-sprayed or polished surfaces of titanium or hydroxylapatite discs. *J Mater Sci: Mater Med* 1996;7:21-28.
68. Dhert WJ. Retrieval studies on calcium phosphate-coated implants. *Med Prog Technol* 1994;20:143-154. Review.
69. Dracopoli NC, O'Connell P, Elsner TI, Lalouel JM, White RL, Buetow KH, Nishimura DY, Murray JC, Helms C, Mishra SK. The CEPH consortium linkage map of human chromosome 1. *Genomics* 1991;9:686-700.
70. Ducheyne P, Hench LL, Kagan A, Martens M, Mulier JC, Burssens A. The effect of hydroxyapatite impregnation on bonding of porous coated implants. *J Biomed Mat Res* 1980;14:225-237.
71. Ducheyne P, Van Raemdonck W, Heughebaert JC, Heughebaert M. Structural analysis of hydroxyapatite coatings on titanium. *Biomaterials* 1986;7:97-103.
72. Ducheyne P. Bioceramics: material characteristics versus in vivo behavior. *J Biomed Mater Res* 1987;21(A2 Suppl):219-236.
73. Ducheyne P. Titanium and calcium phosphate ceramic dental implants; surfaces, coatings and interfaces. *Oral Implantology* 1988;14:325-340.
74. Ducheyne P, Beight J, Cuckler J, Evans B, Radin S. The effect of calcium phosphate coating characteristics on early postoperative bone tissue ingrowth. *Biomaterials* 1990;11:531-540.

75. Ducheyne P, de Groot K. In vivo surface activity of a hydroxyapatite alveolar bone substitute - a note. *J Biomed Mat Res* 1991;15:441-445.
76. Ducheyne P, Cuckler JM. Bioactive ceramic prosthetic coatings. *Clin Orthop* 1992;276:102-114. Review.
77. Ducheyne P, Bianco P, Radin S, Schepers E. Bioactive materials: mechanisms and bioengineering considerations. In: Ducheyne P, Kokubo T, van Blitterswijk CA, editors. *Bone-Bioactive Biomaterials*. Leiderdorp, Netherlands: Reed Healthcare Communications; 1993. p 1-12.
78. Ducheyne P, El-Ghannam A, Shapiro I. Effect of bioactive glass templates on osteoblast proliferation and in vitro synthesis of bone like tissue. *J Cell Biochem* 1994;56:162-167.
79. Ducheyne P. Bioactive calcium phosphate ceramics and glasses. In: Sedel L, Cabanela M, editors. *Hip surgery: New Materials and Developments*. London, UK: Martin Dunitz; 1998. p 75-82.
80. Ducheyne P, Qiu Q. Bioactive ceramics: the effect of surface reactivity on bone formation and bone cell function. *Biomaterials* 1999;20:2287-303. Review.
81. Driessens FCM. Chemistry of calcium phosphate cements. In: Wilson J, Hench LL, Greenspan DC, editors. *Bioceramics 8*. Oxford, UK: Butterworth-Heinemann; 1995. p 77-83.
82. Egli PS, Muller W, Schenk RK. Porous hydroxyapatite and tricalcium phosphate cylinders with two different pore size ranges implanted in the cancellous bone of rabbits. *Clin Orthop Rel Res* 1988;232:127-138.
83. Eid K, Chen E, Griffith L, Glowacki J. Effect of RGD coating on osteocompatibility of PLGA-polymer disks in a rat tibial wound. *J Biomed Mater Res* 2001;57:224-231.

84. Eisig SB, Ho V, Kraut R, Lalor P. Alveolar ridge augmentation using titanium micromesh: an experimental study in dogs. *J Oral Maxillofac Surg* 2003;61:347-353.
85. El-Ghannam AE, Ducheyne P, Shapiro I. Porous bioactive glass and hydroxyapatite stimulate bone cell function in vitro along different time lines. *J Biomed Mater Res* 1997a;36:167-180.
86. El-Ghannam A, Ducheyne P, Shapiro IM. Formation of surface reaction products on bioactive glass and their effects on the expression of the osteoblastic phenotype and the deposition of mineralized extracellular matrix. *Biomaterials* 1997b;18:295-303.
87. El-Ghannam A, Ducheyne P, Shapiro IM. Effect of serum proteins on osteoblast adhesion to surface-modified bioactive glass and hydroxyapatite. *J Orthop Res* 1999;17:340-345.
88. Erba HP, Gunning P, Kedes L. Nucleotide sequence of the human gamma cytoskeletal actin mRNA: anomalous evolution of vertebrate non-muscle actin genes. *Nucleic Acids Res* 1986;14:5275-5294.
89. Eyre DR. Collagen: molecular diversity in the body's protein scaffold. *Science* 1980;207:1315-1322.
90. Faull RJ, Ginsberg MH. Dynamic regulation of integrins. *Stem Cells* 1995;13:38-46.
91. Fernandez E, Planell JA, Best SM. Precipitation of carbonated apatite in the cement system $\alpha\text{-Ca}_3(\text{PO}_4)_2\text{-Ca}(\text{H}_2\text{PO}_4)_2\text{-CaCO}_3$. *J Biomed Mater Res* 1999;47:466-471.
92. Ferris DM, Moodie GD, Dimond PM, Gioranni CW, Ehrlich MG, Valentini RF. RGD-coated titanium implants stimulate increased bone formation in vivo. *Biomaterials* 1999;20:2323-2331.

93. Fisher LW, Termine JD. Noncollagenous proteins influencing the local mechanisms of calcification. *Clin Orthop* 1985;200:362-385.
94. Fisher LW, McBride OW, Termine JD, Young MF. Human bone sialoprotein. Deduced protein sequence and chromosomal localization. *J Biol Chem* 1990;265:2347-2351.
95. Fisher LW, Stubbs JT 3rd, Young MF. Antisera and cDNA probes to human and certain animal model bone matrix noncollagenous proteins. *Acta Orthop Scand Suppl* 1995;266:61-65.
96. Flores ME, Norgard M, Heinegard D, Reinholt FP, Andersson G. RGD-directed attachment of isolated rat osteoclasts to osteopontin, bone sialoprotein, and fibronectin. *Exp Cell Res* 1992;201:526-530.
97. Forster AC, McInnes JL, Skingle DC, Symons RH. Non-radioactive hybridization probes prepared by the chemical labelling of DNA and RNA with a novel reagent, photobiotin. *Nucleic Acids Res* 1985;13:745-761.
98. Franzen A, Heinegard D. Isolation and characterization of two sialoproteins present only in bone calcified matrix. *Biochem J* 1985;232:715-724.
99. Frayssinet P, Tourenne F, Rouquet N, Conte P, Delga C, Bonel G. Comparative biological properties of HA plasma-sprayed coatings having different crystallinities. *J Mater Sci: Mater Med* 1994;5:511-517.
100. Friberg B, Grondahl K, Lekholm U, Branemark PI. Long-term follow-up of severely atrophic edentulous mandibles reconstructed with short Branemark implants. *Clin Implant Dent Relat Res* 2000;2:184-189.
101. Friedmann A, Strietzel FP, Marezki B, Pitaru S, Bernimoulin JP. Histological assessment of augmented jaw bone utilizing a new collagen barrier membrane compared to a standard barrier membrane to protect a granular bone substitute material. *Clin Oral Implants Res* 2002;13:587-594.

102. Ganz SD, Valen M. Predictable synthetic bone grafting procedures for implant reconstruction: part two. *J Oral Implantol* 2002;28:178-183.
103. Garber DA. The esthetic dental implant: letting restoration be the guide. *J Am Dent Assoc* 1995;126:319-325.
104. Garber DA, Belser UC. Restoration-driven implant placement with restoration-generated site development. *Compend Contin Educ Dent* 1995;16:796, 798-802, 804.
105. Garcia F, Arias JL, Mayor B, Pou J, Rehman I, Knowles J, Best S, Leon B, Perez-Amor M, Bonfield W. Effect of heat treatment on pulsed laser deposited amorphous calcium phosphate coatings. *J Biomed Mater Res* 1998;43:69-76.
106. Geesink R. Effect of plasma-sprayed calcium-phosphate coatings on bone ingrowth. *Clin Orthop* 1994;303:292-295.
107. Geesink RG. Osteoconductive coatings for total joint arthroplasty. *Clin Orthop* 2002;395:53-65. Review.
108. Gehrke P, Neugebauer J. Implant surface design: using biotechnology to enhance osseointegration. *Dent Implantol Update* 2003;14:57-64.
109. Gerstenfeld LC, Gotoh Y, McKee MD, Nanci A, Landis WJ, Glimcher MJ. Expression and ultrastructural immunolocalization of a major 66 kDa phosphoprotein synthesized by chicken osteoblasts during mineralization in vitro. *Anat Rec* 1990;228:93-103.
110. Gerstenfeld LC. Osteopontin in skeletal tissue homeostasis: An emerging picture of the autocrine/paracrine functions of the extracellular matrix. *J Bone Miner Res* 1999;14:850-855. Review.

111. Geurs NC, Jeffcoat RL, McGlumphy EA, Reddy MS, Jeffcoat MK. Influence of implant geometry and surface characteristics on progressive osseointegration. *Int J Oral Maxillofac Implants* 2002;17:811-815.
112. Gineste L, Gineste M, Ranz X, Ellefterion A, Guilhem A, Rouquet N, Frayssinet P. Degradation of hydroxylapatite, fluorapatite, and fluorhydroxyapatite coatings of dental implants in dogs. *J Biomed Mater Res* 1999;48:224-234.
113. Glimcher MJ. Mechanism of calcification: role of collagen fibrils and collagen-phosphoprotein complexes in vitro and in vivo. *Anat Rec* 1989;224:139-153. Review.
114. Greziak JJ, Pierschbacher MD, Polarek JW, Amodeo MF, Malaney TI, Glass JR. Enhancement of interactions with collagen/glycosaminoglycan matrices by RGD derivatization. *Biomaterials* 1997;18:1625-1632.
115. Grzesik WJ, Robey PG. Bone matrix RGD glycoproteins: immunolocalization and interaction with human primary osteoblastic bone cells in vitro. *J Bone Miner Res* 1994;9:487-496.
116. Groeneveld EHJ, van den Bergh JPA, Holzmann P, ten Bruggenkate CM, Tuinzing DB, Burger EH. Histomorphometrical analysis of bone formed in human maxillary sinus floor elevations grafted with OP-1 device, demineralized bone matrix or autogenous bone. Comparison with non-grafted sites in a series of case reports. *Clin Oral Implants Res* 1999;10:499-509.
117. Groessner-Schreiber B, Tuan RS. Enhanced extracellular matrix production and mineralization by osteoblasts cultured on titanium surfaces in vitro. *J Cell Sci* 1992;101:209-217.

118. Gronowicz G, McCarthy MB. Response of human osteoblasts to implant materials: integrin-mediated adhesion. *J Orthop Res* 1996;14:878-887.
119. Gronthos S, Stewart K, Graves SE, Hay S, Simmons PJ. Integrin expression and function of human osteoblast-like cells. *J Bone Miner Res* 1997;12:1189-1197.
120. Gross KA, Berndt CC, Iacono VJ. Variability of hydroxyapatite-coated dental implants. *Int J Oral Maxillofac Implants* 1998;13:601-610.
121. Gross UM, Müller-Mai C, Voigt C. Comparative morphology of the bone interface with glass ceramics, hydroxyapatite, and natural coral. In: Davies JE, editor. *The bone-biomaterial interface*. Toronto: University of Toronto Press; 1991. p 308-320.
122. Gross UM, B. Kraska. Immunohistological staining of undecalcified sections of bone containing implant material. *Proceedings 17th European Conference on Biomaterials, Barcelona Spain, 2002*, p 23.
123. Hämmerle CHF, Chiantella GC, Karring T, Lang NP. The effect of a deproteinized bovine bone mineral on bone regeneration around titanium dental implants. *Clin Oral Implants Res* 1998;9:151-162.
124. Harmer SL, DeFranco AL. Shc contains two Grb2 binding sites needed for efficient formation of complexes with SOS in B lymphocytes. *Mol Cell Biol* 1997;17:4087-4095.
125. Hata R, Seno H. L-ascorbic acid-phosphatase stimulates collagen accumulation, cell proliferation, and formation of a three-dimensional tissue-like substance by skin fibroblasts. *J Cell Physiol* 1989;138:8-16.
126. Hauschka PV, Lian JB, Cole DE, Gundberg CM. Osteocalcin and matrix Gla protein: vitamin K-dependent proteins in bone. *Physiol Rev* 1989;69:990-1047. Review.

127. Healy KE, Harbers GM, Barber TM, Sumner DR. Osteoblast interactions with engineered surfaces. In: Davies JE, editor. Bone Engineering. Toronto, Canada: em squared Inc.; 2000. p 268-281.
128. Heinegard D, Oldberg A. Structure and biology of cartilage and bone matrix noncollagenous macromolecules. FASEB J 1989;3:2042-2051. Review.
129. Hench LL, Paschall HA. Direct chemical bond of bioactive glass-ceramic materials to bone and muscle. J Biomed Mater Res 1973;7:25-42.
130. Hench LL. Bioceramics. J Am Ceram Soc 1998;81:1705-28. Review.
131. Hildebrand HF. Kollagen-Aufbereitung und Eigenschaften als Biomaterial. Biomaterialien 2002;3:14-20.
132. Hildebrand JD, Schaller MD, Parsons JT. Paxillin, a tyrosine phosphorylated focal adhesion-associated protein binds to the carboxyl terminal domain of focal adhesion kinase. Mol Biol Cell 1995;6:637-647.
133. Hoffman AS. Biologically functional materials. In: Ratner BD, Hoffman AS, Schoen FJ, Lemons JE, editors. Biomaterials Science. An introduction to materials in medicine. San Diego, USA: Academic Press Ltd.; 1996. p 124-130.
134. Hollinger JO, Brekke J, Gruskin E, Lee D. Role of bone substitutes. Clin Orthop 1996;324:55-65. Review.
135. Holmes RE, Bucholz RW, Mooney V. Porous hydroxyapatite as a bone graft substitute in diaphyseal defects: a histometric study. J Orthop Res 1987;5:114-121.
136. Hott M, Noel B, Bernache-Assolant D, Rey C, Marie PJ. Proliferation and differentiation of human trabecular osteoblastic cells on hydroxyapatite. J Biomed Mat Res 1997;37:508-516.

137. Howlett CR, Evans MD, Walsh WR, Johnson G, Steele JG. Mechanism of initial attachment of cells derived from human bone to commonly used prosthetic materials during cell culture. *Biomaterials* 1994;15:213-222.
138. Howlett CR, Chen N, Zhang X, Akin FA, Haynes D, Hanley L, Revell P, Evans P, Zhou H, Zreiqat H. The effect of biomaterial chemistries on the osteoblastic molecular phenotype and osteogenesis: in vitro and in vivo studies. In: Davies JE, editor. *Bone Engineering*. Toronto, Canada: em squared Inc.; 2000. p 240-255.
139. Huang H, Zhao Y, Liu Z, Zhang Y, Zhang H, Fu T, Ma X. Enhanced osteoblast functions on RGD immobilized surface. *J Oral Implantol* 2003;29:73-79.
140. Hürzeler MB, Kirsch A, Ackermann KL, Quinones CR. Reconstruction of the severely resorbed maxilla with dental implants in the augmented maxillary sinus: a 5-year clinical investigation. *Int J Oral Maxillofac Implants* 1996;11:466-475.
141. Hughes DE, Salter DM, Dedhar S, Simpson R. Integrin expression in human bone. *J Bone Miner Res* 1993;8:527-533.
142. Hulshoff JEG, van Dijk K, van der Waerden JPCM, Wolke JGC, Ginsel LA, Jansen JA. Biological evaluation of the effect of magnetron sputtered Ca/P coatings on osteoblast-like cells in vitro. *J Biomed Mat Res* 1995;29:967-975.
143. Hutton J, Heath R, Chai J, Harnett J, Jemt T, Johns R, McKenna S, McNamara D, van Steenberghe D, Taylor R, Watson R, Herrmann I. Factors related to success and failure rates at 3-year follow-up in a multicenter study of overdentures supported by Brånemark implants. *Int J Oral Maxillofac Implants* 1995;10:33-42.

144. Hynes RO. Integrins: a family of cell surface receptors. *Cell* 1987;48:549-554.
145. Hynes RO. Integrins: versatility, modulation, and signaling in cell adhesion. *Cell* 1992;69:11-25. Review.
146. Ignatius AA, Schmid C, Kaspar D, Claes LE. In vitro biocompatibility of resorbable experimental glass ceramics for bone substitutes. *J Biomed Mater Res* 2001;55:285-294.
147. Ingram RT, Clarke BL, Fisher LW, Fitzpatrick LA. Distribution of noncollagenous proteins in the matrix of adult human bone: evidence of anatomic and functional heterogeneity. *J Bone Miner Res* 1993;8:1019-1029.
148. Ivaska J, Reunanen H, Westermarck J, Koivisto L, Kahari VM, Heino J. Integrin alpha2beta1 mediates isoform-specific activation of p38 and upregulation of collagen gene transcription by a mechanism involving the alpha2cytoplasmic tail. *J Cell Biol* 1999;147:401-416.
149. Jaffin RA, Berman CL. The excessive loss of Brånemark fixture in type IV Bone: A 5-year analysis. *J Periodontol* 1991;62:2-4.
150. Jansen JA, Wolke JG, Swann S, Van der Waerden JP, de Groot K. Application of magnetron sputtering for producing ceramic coatings on implant materials. *Clin Oral Implants Res* 1993;4:28-34.
151. Jansen JA, Vercaigne S, Hulshoff AG, Corten FGA, ter Brugge PJ, Naert I. The effect of surface roughness and calcium phosphate coating on bone-regenerative implant surfaces. In: Davies JE, editor. *Bone Engineering*. Toronto, Canada: em squared Inc.; 2000. p 345-357.
152. Jarcho M. Calcium phosphate ceramics as hard tissue prosthetics. *Clin Orthop* 1981;157:259-278.

153. Jeffcoat MK, McGlumphy EA, Reddy MS, Geurs NC, Proskin HM. A comparison of hydroxyapatite (HA)-coated threaded, HA-coated cylindrical, and titanium threaded endosseous dental implants. *Int J Oral Maxillofac Implants* 2003;18:406-410.
154. Johansson CB, Roser K, Bolind P, Donath K, Albrektsson T. Bone-tissue formation and integration of titanium implants: an evaluation with newly developed enzyme and immunohistochemical techniques. *Clin Implant Dent Relat Res* 1999;1:33-40.
155. Juliano RL, Haskill S. Signal transduction from the extracellular matrix. *J Cell Biol* 1993;120:577-585.
156. Kähari VM, Vuorio EI: Increased half-lives of procollagen mRNAs may contribute to the elevated procollagen mRNA levels in cultured scleroderma fibroblasts. *Med Sci Res* 1987;15:417-418.
157. Kalk WW, Raghoobar GM, Jansma J, Boering G. Morbidity from iliac crest bone harvesting. *J Oral Maxillofac Surg* 1996;54:1424-1429.
158. Kantlehner M, Schaffner P, Finsinger D, Meyer J, Jonczyk A, Diefenbach B, Nies B, Holzemann G, Goodman SL, Kessler H. Surface coating with cyclic RGD peptides stimulates osteoblast adhesion and proliferation as well as bone formation. *Chembiochem* 2000;1:107-114.
159. Kaptein ML, Hoogstraten J, de Putter C, de Lange GL, Blijdorp PA. Dental implants in the atrophic maxilla: measurements of patients' satisfaction and treatment experience. *Clin Oral Implants Res* 1998;9:321-326.
160. Kaufmann EA, Ducheyne P, Shapiro IM. Effect of varying physical properties of porous, surface modified bioactive glass 45S5 on osteoblast proliferation and maturation. *J Biomed Mater Res* 2000a;52:783-796.

161. Kaufmann EA, Ducheyne P, Radin S, Bonnell DA, Composto R. Initial events at the bioactive glass surface in contact with protein-containing solutions. *J Biomed Mater Res* 2000b;52:825-830.
162. Kay JF. Calcium phosphate coatings for dental implants. Current status and future potential. *Dent Clin North Am* 1992;36:1-18. Review.
163. Keller JC. Tissue compatibility to different surfaces of dental implants: in vitro studies. *Implant Dent* 1998;7:331-337.
164. Keller JC, Schneider GB, Stanford CM, Kellogg B. Effects of implant microtopography on osteoblast cell attachment. *Implant Dent* 2003;12:175-181.
165. Keller L, Dollase WA. X-ray determination of crystalline hydroxyapatite to amorphous calcium-phosphate ratio in plasma sprayed coatings. *J Biomed Mater Res* 2000;44:244-249.
166. Khairoun I, Boltong MG, Driessens FCM, Planell JA. Effect of calcium carbonate on the compliance of an apatitic bone cement. *Biomaterials* 1997;18:1535-1539.
167. Khairoun I, Driessens FCM, Boltong MG, Planell JA, Wenz R. Addition of cohesion promoters to calcium phosphate cements. *Biomaterials* 1999;20:393-398.
168. Khairoun I, Magne D, Gauthier O, Bouler JM, Aguado E, Daculsi G, Weiss P. In vitro characterization and in vivo properties of a carbonated apatite bone cement. *J Biomed Mater Res* 2002;6:633-642.
169. Kiefer MC, Bauer DM, Barr PJ. The cDNA and derived amino acid sequence for human osteopontin. *Nucleic Acids Res* 1989;17:3306.
170. Kieswetter K, Schwartz Z, Hummert TW, Cochran DL, Simpson J, Dean DD, Boyan BD. Surface roughness modulates the local production of growth

- factors and cytokines by osteoblast-like MG-63 cells. *J Biomed Mater Res* 1996;32:55-63.
171. Klawitter JJ, Hulbert SF. Application of porous ceramics for the attachment of load bearing orthopedic applications. *J Biomed Mater Res* 1971;5:161.
172. Klein CP, Driessen AA, de Groot K, van den Hooff A. Biodegradation behavior of various calcium phosphate materials in bone tissue. *J Biomed Mater Res* 1983;17:769-784.
173. Klokkevold PR, Johnson P, Dadgostari S, Caputo A, Davies JE, Nishimura RD. Early endosseous integration enhanced by dual acid etching of titanium: a torque removal study in the rabbit. *Clin Oral Implants Res* 2001;12:350-357.
174. Knabe C, Gildenhaar R, Berger G, Ostapowicz W, Fitzner R, Radlanski RJ, Gross U. Morphological evaluation of osteoblasts cultured on different calcium phosphate ceramics. *Biomaterials* 1997;18:1339-1347.
175. Knabe C, Gildenhaar R, Berger G, Ostapowicz W, Fitzner R, Radlanski RJ, Gross U. In vitro investigation of novel calcium phosphates using osteogenic cultures. *J Mater Sci: Mater Med* 1998;9:337-345.
176. Knabe C, Gildenhaar R, Berger G, Fitzner R, Radlanski RJ, Gross U. Evaluation of novel calcium titanium phosphates using osteogenic cultures. *Transactions of the 25th Annual Meeting of the Society for Biomaterials USA, Providence, 1999. p 234.*
177. Knabe C, Driessens FCM, Planell JA, Gildenhaar R, Berger G, Fitzner R, Radlanski R, Gross U. Evaluation of calcium phosphates and experimental bone cements using osteogenic cultures. *J Biomed Mater Res* 2000;52:498-508.

178. Knabe C, Klar F, Fitzner R, Radlanski RJ, Gross U. In vitro investigation of titanium and hydroxyapatite dental implant surfaces using a rat bone marrow stromal cell culture system. *Biomaterials* 2002;23:3235-3245.
179. Knabe C, Berger G, Gildenhaar R, Howlett CR, Markovic B, Zreiqat H. The functional expression of human bone-derived cells grown on rapidly resorbable calcium phosphate ceramics. *Biomaterials* 2004;25:335-344.
180. Kohal RJ, Mellas P, Hürzeler MB, Trejo PM, Morrison E, Caffesse RG. The effects of guided bone regeneration and grafting on implants placed into immediate extraction sockets. An experimental study in dogs. *J Periodontol* 1998;69:927-937.
181. Koivunen E, Wang B, Ruoslahti E. Phage libraries displaying cyclic peptides with different ring sizes: ligand specificities of the RGD-directed integrins. *Biotechnology (N Y)* 1995;13:265-270.
182. Kokubo T, Kushitani H, Ohtsuki C, Sakka S, Yamamuro T. Chemical-reaction of bioactive glass and glass-ceramics with a simulated body-fluid. *J Mater Sci: Mater Med* 1992;3:79-83.
183. Kokubo T. Bioactivity of glasses and glass ceramics. In: Ducheyne P, Kokubo T, van Blitterswijk CA, editors. *Bone-Bioactive Biomaterials*. Leiden, Netherlands: Reed Healthcare Communications; 1993. p 31-46.
184. Kotani S, Fujita Y, Kitsugi T, Nakamura T, Yamamuro T, Ohtsuki C, Kokubo T. Bone bonding mechanism of beta-tricalcium phosphate. *J Biomed Mater Res* 1991;25:1303-1315.
185. Krause A, Cowles EA, Gronowicz G. Integrin-mediated signaling in osteoblasts on titanium implant materials. *J Biomed Mater Res* 2000;52:738-747.

186. Kumagai H, Tajima M, Ueno Y, Giga-Hama Y, Ohba M. Effect of cyclic RGD peptide on cell adhesion and tumor metastasis. *Biochem Biophys Res Commun* 1991;177:74-82.
187. Lacefield WR. Current status of ceramic coatings for dental implants. *Implant Dent* 1998;7:315-322.
188. Lacefield WR. Materials characteristics of uncoated/ceramic-coated implant materials. *Adv Dent Res*. 1999;13:21-26.
189. Lacey E, Grant WN. Regulation of synthesis and turnover of an interferon-inducible mRNA. *Molec Cell Biol* 1986;6:2062-2067.
190. Lane TF, Sage EH. Functional mapping of SPARC: peptides from two distinct Ca⁺(+)-binding sites modulate cell shape. *J Cell Biol* 1990;111:3065-3076.
191. Lazzara RJ, Porter SS, Testori T, Galante J, Zetterqvist L. A prospective multicenter study evaluating loading of Osseotite implants two months after placement: one-year results. *J Esthet Dent* 1998;10:280-289.
192. Lazzara RJ. Bone response to dual acid-etched and machined titanium implant surfaces. In: Davies JE, editor. *Bone Engineering*. Toronto, Canada: em squared Inc.; 2000. p 381-390.
193. LeGeros RZ, Daculsi G. In vivo transformation of biphasic calcium phosphate ceramics: Ultrastructural and physicochemical characterizations. In: Yamamuro, Wilson J, Hench LL, editors. *CRC handbook of bioactive ceramics, Volume II*. Boca Raton, FL, USA: CRC Press; 1990. p 179-185.
194. LeGeros RZ. In: Brown PW, Constantz B, editors. *Hydroxyapatite and Related Materials*. Boca Raton, FL, USA: CRC Press; 1994: p 3-28.
195. Leibowitz D, Young KS. The molecular biology of CML: a review. *Cancer Invest* 1989;7:195-203. Review.
196. Lemons JE. Hydroxyapatite coatings. *Clin Orthop* 1988;235:220-223.

197. Lewis FA, Griffiths S, Dunnicliff R, Wells M, Dudding N, Bird CC. Sensitive in situ hybridisation technique using biotin-streptavidin-polyalkaline phosphatase complex. *J Clin Pathol* 1987;40:163-166.
198. Lillie RD, Fullmer HM. Technique and practical histochemistry. *Histopathology* 1976;31:205-208.
199. Lin S, LeGeros RZ, LeGeros JP. Adherent octacalciumphosphate coating on titanium alloy using modulated electrochemical deposition method. *J Biomed Mater Res* 2003;66A:819-828.
200. Lorenzetti M, Mozzati M, Campanino PP, Valente G. Bone augmentation of the inferior floor of the maxillary sinus with autogenous bone or composite bone grafts: a histologic-histomorphometric preliminary report. *Int J Oral Maxillofac Implants* 1998;13:69-76.
201. Lugscheider E, Berger G, Knepper M, Sicking R, Nyland A. Plasma sprayed coatings of calcium titanium phosphate: A new generation of bioactive coatings. In: Wilson J, Hench LL, Greenspan DC, editors. *Bioceramics 8*. Oxford, UK: Butterworth-Heinemann; 1995. p 317-322.
202. Lundgren S, Moy P, Johansson C, Nilsson H. Augmentation of the maxillary sinus floor with particulated mandible: a histologic and histomorphometric study. *Int J Oral Maxillofac Implants* 1996;11:760-766.
203. Mansfield K, Teixeira CC, Adams CS, Shapiro IM. Phosphate ions mediate chondrocyte apoptosis through a plasma membrane transporter mechanism. *Bone* 2001;28:1-8.
204. Malaval L, Liu F, Roche P, Aubin JE. Kinetics of osteoprogenitor proliferation and osteoblast differentiation in vitro. *J Cell Biochem* 1999;74:16-27.

205. Markovic B, Wu ZH, Chesterman CN, Chong BH. Quantitation of Fc gamma RII mRNA in platelets and megakaryoblastic cell lines by a new method of in situ hybridization. *J Immunol Methods* 1994;172:105-114.
206. Marshall CJ. MAP kinase kinase kinase, MAP kinase kinase and MAP kinase. *Curr Opin Genet Dev* 1994;4:82-89.
207. Martin JY, Schwartz Z, Hummert TW, Schraub DM, Simpson J, Lankford J Jr, Dean DD, Cochran DL, Boyan BD. Effect of titanium surface roughness on proliferation, differentiation, and protein synthesis of human osteoblast-like cells (MG63). *J Biomed Mater Res* 1995;29:389-401.
208. Mayr-Wohlfart U, Fiedler J, Gunther KP, Puhl W, Kessler S. Proliferation and differentiation rates of a human osteoblast-like cell line (SaOS-2) in contact with different bone substitute materials. *J Biomed Mater Res* 2001;57:132-139.
209. MacDonald DE, Betts F, Stranick M, Doty S, Boskey AL. Physicochemical study of plasma-sprayed hydroxyapatite-coated implants in humans. *J Biomed Mater Res* 2001;54:480-490.
210. McInnes C, Knox P, Winterbourne DJ. Cell spreading on serum is not identical to spreading on fibronectin. *J Cell Sci* 1987;88:623-629.
211. McInnes JL, Habili N, Symons RH. Nonradioactive, photobiotin-labelled DNA probes for routine diagnosis of viroids in plant extracts. *J Virol Methods* 1989;23:299-312.
212. Merten HA, Wiltfang J, Grohmann U, Hoenig JF. Intraindividual comparative animal study of alpha- and beta-tricalcium phosphate degradation in conjunction with simultaneous insertion of dental implants. *J Craniofac Surg* 2001;12:59-68.

213. Metsger DS, Driskell TD, Paulsrud JR. Tricalcium phosphate ceramic - a resorbable bone implant: review and current status. *J Am Dent Assoc* 1982;105:1035-1038. Review.
214. Mintz KP, Grzesik WJ, Midura RJ, Robey PG, Termine JD, Fisher LW. Purification and fragmentation of nondenatured bone sialoprotein: evidence for a cryptic, RGD-resistant cell attachment domain. *J Bone Miner Res* 1993;8:985-895.
215. Moy PK, Lundgren S, Holmes RE. Maxillary sinus augmentation: histomorphometric analysis of graft materials for maxillary sinus floor augmentation. *J Oral Maxillofac Surg* 1993;51:857-862.
216. Müller-Mai C, Berger G, Voigt C, Bakki B, Gross U. The bony reaction to rapidly degradable glass-ceramics based on the new phase $\text{Ca}_2\text{KNa}(\text{PO}_4)_2$. In: Sedel L, Rey C, editors. *Bioceramics 10*. Oxford, UK: Butterworth-Heinemann; 1997. p 53-56.
217. Müller-Mai CM, Berger G, Voigt C, Bakki B, Gross UM. Guided bone regeneration after implantation of new degradable glass ceramics. *Transactions 24th Annual Meeting of the Society for Biomaterials, April 22-26 1998, San Diego, USA, p 458*.
218. Müller-Mai CM. Bioactive particulate implant materials made from glass ceramics and calcium alkali orthophosphates for bone regeneration. *Habilitation Thesis, Free University of Berlin, 2000*.
219. Müller-Mai CM. Bioaktive Granulate in der Unfallchirurgie. Müller-Mai CM, Voigt C, editors. Munich, Germany: VNM Science Publishing; 2003.
220. Mustafa K, Wennerberg A, Wroblewski J, Hultenby K, Lopez BS, Arvidson K. Determining optimal surface roughness of TiO_2 blasted titanium implant

- material for attachment, proliferation and differentiation of cells derived from human mandibular alveolar bone. *Clin Oral Implants Res* 2001;12:515-525.
221. Myers JC, Chu ML, Faro SH, Clark WJ, Prockop DJ, Ramirez F. Cloning a cDNA for the pro-alpha 2 chain of human type I collagen. *Proc Natl Acad Sci U S A* 1981;78:3516-3520.
222. Naert I, Koutsikakis G, Duyck J, Quirynen M, Jacobs R, van Steenberghe D. Biologic outcome of implant-supported restorations in the treatment of partial edentulism. part I: a longitudinal clinical evaluation. *Clin Oral Implants Res* 2002;13:381-389.
223. Neo M, Kotani S, Fujita Y, Nakamura T, Yamamuro T, Bando Y, Ohtsuki C, Kokubo T. Differences in ceramic-bone interface between surface-active ceramics and resorbable ceramics: a study by scanning and transmission electron microscopy. *J Biomed Mater Res* 1992;26:255-67.
224. Neo M, Voigt CF, Herbst H, Gross UM. Analysis of osteoblast activity at biomaterial-bone interfaces by in situ hybridization. *J Biomed Mater Res* 1996;30:485-492.
225. Neo M, Voigt CF, Herbst H, Gross UM. Osteoblast reaction at the interface between surface-active materials and bone in vivo: a study using in situ hybridization. *J Biomed Mater Res* 1998a;39:1-8.
226. Neo M, Herbst H, Voigt CF, Gross UM. Temporal and spatial patterns of osteoblast activation following implantation of beta-TCP particles into bone. *J Biomed Mater Res* 1998b;39:71-76.
227. Nguyen HQ, Deporter DA, Pilliar RM, Valiquette N, Yakubovich R. The effect of sol-gel-formed calcium phosphate coatings on bone ingrowth and osteoconductivity of porous-surfaced Ti alloy implants. *Biomaterials* 2004;25:865-876.

228. Niedhart C, Maus U, Redmann E, Siebert CH. In vivo testing of a new in situ setting beta-tricalcium phosphate cement for osseous reconstruction. *J Biomed Mater Res* 2001;55:530-537.
229. Nilsson M, Fernandez E, Sarda S, Lidgren L, Planell JA. Characterization of a novel calcium phosphate/sulphate bone cement. *J Biomed Mater Res* 2002;61:600-607.
230. Nohe A, Keating E, Knaus P, Petersen NO. Signal transduction of bone morphogenetic protein receptors. *Cell Signal* 2004;16:291-299.
231. Noiri E, Gailit J, Sheth D, Magazine H, Gurrath M, Muller G, Kessler H, Goligorsky MS. Cyclic RGD peptides ameliorate ischemic acute renal failure in rats. *Kidney Int* 1994;46:1050-1058.
232. Noth U, Tuli R, Seghatoleslami R, Howard M, Shah A, Hall DJ, Hickok NJ, Tuan RS. Activation of p38 and Smads mediates BMP-2 effects on human trabecular bone-derived osteoblasts. *Exp Cell Res* 2003;291:201-211.
233. Ohgushi H, Okumura M, Tamai S, Shors EC, Caplan AI. Marrow cell induced osteogenesis in porous hydroxyapatite and tricalcium phosphate: a comparative histomorphometric study of ectopic bone formation. *J Biomed Mater Res* 1990;24:1563-1570.
234. Ohsawa K, Neo M, Matsuoka H, Akiyama H, Ito H, Kohno H, Nakamura T. The expression of bone matrix protein mRNAs around beta-TCP particles implanted into bone. *J Biomed Mater Res* 2000;52:460-466.
235. Oldberg A, Franzen A, Heinegard D. The primary structure of a cell-binding bone sialoprotein. *J Biol Chem* 1988;263:1930-1932.
236. Ong JL, Chan DC. Hydroxyapatite and their use as coatings in dental implants: a review. *Crit Rev Biomed Eng* 2000;28:667-707.

237. Ong JL, Bessho K, Carnes DL. Bone response to plasma-sprayed hydroxyapatite and radiofrequency-sputtered calcium phosphate implants in vivo. *Int J Oral Maxillofac Implants* 2002;17:581-586.
238. Ooms EM, Wolke JG, van der Waerden JP, Jansen JA. Trabecular bone response to injectable calcium phosphate (Ca-P) cement. *J Biomed Mater Res* 2002;61:9-18.
239. Ooms EM, Wolke JG, van de Heuvel MT, Jeschke B, Jansen JA. Histological evaluation of the bone response to calcium phosphate cement implanted in cortical bone. *Biomaterials* 2003;24:989-1000.
240. Oonishi H, Hench LL, Wilson J, Sugihara F, Tsuji E, Kushitani S, Iwaki H. Comparative bone growth behavior in granules of bioceramic materials of various sizes. *J Biomed Mater Res* 1999;44:31-43.
241. Oreffo ROC, Driessens FCM, Planell JA, Triffit JT. Effects of novel calcium phosphate cements. *Tissue Eng* 1998a;4:293-303.
242. Oreffo ROC, Driessens FCM, Planell JA, Triffit JT. Growth and differentiation of human bone marrow osteoprogenitors on novel calcium phosphate cements. *Biomaterials* 1998b;19:1845-1854.
243. Orsini G, Ricci J, Scarano A, Pecora G, Petrone G, Lezzi G, Piattelli A. Bone-defect healing with calcium-sulfate particles and cement: an experimental study in rabbit. *J Biomed Mater Res* 2004;68B:199-208.
244. Ouhayoun JP. Risques de transmission à l'homme de pathologies virale par de substituts oseux d'origine humaine ou animale. In: Rapport sur l' état des recherches concernant les risques associés à l'utilisation à des fins thérapeutiques de produits d'origine humaine ou de produits et procédés de substitution. Paris, France: Edition INSERM; 1995. p 224-230.

245. Owen TA, Aronow M, Shalhoub V, Barone LM, Wilming L, Tassinari MS, Kennedy MB, Pockwinse S, Lian JB, Stein GS. Progressive development of the rat osteoblast phenotype in vitro: reciprocal relationships in expression of genes associated with osteoblast proliferation and differentiation during formation of the bone extracellular matrix. *J Cell Physiol* 1990;143:420-430.
246. Park JY, Davies JE. Red blood cell and platelet interactions with titanium implant surfaces. *Clin Oral Implants Res* 2000;11:530-539.
247. Pasqualini R, Koivunen E, Ruoslahti E. Alpha v integrins as receptors for tumor targeting by circulating ligands. *Nat Biotechnol* 1997;15:542-546.
248. Peltonen J, Jaakkola S, Lask G, Virtanen I, Uitto J. Fibronectin gene expression by epithelial tumor cells in basal cell carcinoma: an immunocytochemical and in situ hybridization study. *J Invest Dermatol* 1988;91:289-293.
249. Perizzolo D, Lacefield WR, Brunette DM. Interaction between topography and coating in the formation of bone nodules in culture for hydroxyapatite- and titanium-coated micromachined surfaces. *J Biomed Mater Res* 2001;56:494-503.
250. Pierschbacher MD, Polarek JW, Craig WS, Tschopp JF, Sipes NJ, Harper JR. Manipulation of cellular interactions with biomaterials toward a therapeutic outcome: a perspective. *J Cell Biochem* 1994;56:150-154.
251. Ploska U, Berger G. Solubility of compositions in the system $\text{CaTi}_{(x)}\text{Zr}_{4-(x)}(\text{PO}_4)_6$ with $x = 0$. *Biomaterials* 1997;18:1671-1675.
252. Pockwinse SM, Wilming LG, Conlon DM, Stein GS, Lian JB. Expression of cell growth and bone specific genes at single cell resolution during development of bone tissue-like organization in primary osteoblast cultures. *J Cell Biochem* 1992;49:310-323.

253. Price PA, Lothringer JW, Baukol SA, Reddi AH. Developmental appearance of the vitamin K-dependent protein of bone during calcification. Analysis of mineralizing tissues in human, calf, and rat. *J Biol Chem* 1981;256:3781-3784.
254. Pringle JH, Homer CE, Warford A, Kendall CH, Lauder I. In situ hybridization: alkaline phosphatase visualization of biotinylated probes in cryostat and paraffin sections. *Histochem J* 1987;19:488-496.
255. Puleo DA, Nanci A. Understanding and controlling the bone-implant interface. *Biomaterials* 1999;20:2311-2321. Review.
256. Puleo DA, Kissling RA, Sheu MS. A technique to immobilize bioactive proteins, including bone morphogenetic protein-4 (BMP-4), on titanium alloy. *Biomaterials* 2002;23:2079-2087.
257. Van Raemdonck W, Ducheyne P, De Meester P. Surface active materials: fundamentals and applications. In: Ducheyne P, Hastings GW, editors. *Structure-Property Relationship in Biomaterials*. Boca Raton, Florida, USA: CRC Press Inc.; 1984. p 143-166.
258. Radin S, Ducheyne P. The effect of plasma sprayed induced changes in characteristics on the in vitro stability of calcium phosphate ceramic. *J Mater Sci: Mater Med* 1992;3:33-42.
259. Radin SR, Ducheyne P. The effect of calcium phosphate ceramic composition and structure on in vitro behavior. II. Precipitation. *J Biomed Mater Res* 1993;27:35-45.
260. Radin S, Ducheyne P. Effect of serum proteins on solution-induced surface transformations of bioactive ceramics. *J Biomed Mater Res* 1996;30:273-279.

261. Radin S, Ducheyne P, Rothman B, Conti A. The effect of in vitro modeling conditions on the surface reactions of bioactive glass. *J Biomed Mater Res* 1997;37:363-375.
262. Razzouk S, Shapiro IM. Detection of apoptotic gene expression in human osteoblast-like cells by cDNA microarrays. *J Bone Miner Metab* 2003;21:261-267.
263. Reif D, Leuner B, Hotz G. Temporäre Knochenersatzmaterialien auf Basis von Calciumphosphat. In: Claes L, Ignatius A, editors. *Hefte zu der Unfallchirurg. Biodegradierbare Implantate und Materialien*, 1st edition. Berlin, Germany: Springer; 1998. p 270-277.
264. Reis SA, Voigt C, Müller-Mai C, Herbst H, Bisson S, Gross U. Procollagen alpha 1(I) transcripts in cells near the interface of coralline implants in rats, detected by in situ hybridization. *Clin Oral Implants Res* 1996;7:253-260.
265. Rezania A, Thomas C, Branger A, Wazers C, Healy K. The detachment strength and morphology of bone cells contacting materials modified with a peptide sequence found within bone sialoprotein. *J Biomed Mater Res* 1997;17:9-19.
266. Rezania A, Healy KE. Integrin subunits responsible for adhesion of human osteoblast-like cells to biomimetic peptide surfaces. *J Orthop Res* 1999a;17:615-623.
267. Rezania A, Healy KE. Biomimetic peptide surfaces that regulate adhesion, spreading, cytoskeletal organization, and mineralization of the matrix deposited by osteoblast-like cells. *Biotechnol Prog* 1999b;15:19-32.
268. Rezania A, Healy KE. The effect of peptide surface density on mineralization of a matrix deposited by osteogenic cells. *J Biomed Mater Res* 2000;52:595-600.

269. Richardson A, Parsons JT. Signal transduction through integrins: a central role for focal adhesion kinase? *Bioessays* 1995;17:229-236.
270. Rodan GA, Rodan SB. Expression of the osteoblastic phenotype. In: Peck WA, editor. *Bone and Mineral Research*, Vol. 2. Amsterdam, The Netherlands: Elsevier Science; 1984. p 244-285.
271. Roeser K, Johansson CB, Donath K, Albrektsson T. A new approach to demonstrate cellular activity in bone formation adjacent to implants. *J Biomed Mater Res* 2000;51:280-291.
272. Roessler S, Sewing A, Stolzel M, Born R, Scharnweber D, Dard M, Worch H. Electrochemically assisted deposition of thin calcium phosphate coatings at near-physiological pH and temperature. *J Biomed Mater Res* 2003;64A:655-663.
273. Rosales C, O'Brien V, Kronberg L, Julinao RL. Signal transduction by cell adhesion receptors. *Biochem Biophys Acta* 1995;1242:77-98.
274. Saffar JF, Colombier ML, Detienville R. Bone formation in tricalcium phosphate-filled periodontal infrabony lesions. Histological observations in humans. *J Periodontol* 1990;61:209-216.
275. Saito T, Albelda SM, Brighton CT. Identification of integrin receptors on cultured human bone cells. *J Othop Res* 1994;12:384-394.
276. Schenk RK, Buser D, Hardwick WR, Dahlin C. Healing pattern of bone regeneration in membrane-protected defects: a histologic study in the canine mandible. *Int J Oral Maxillofac Implants* 1994;9:13-29.
277. Schenk RK, Buser D. Osseointegration: a reality. *Periodontol* 2000 1998;17:22-35.

278. Schepers E, de Clercq M, Ducheyne P, Kempeneers R. Bioactive glass particulate material as a filler for bone lesions. *J Oral Rehabil* 1991;18:439-452.
279. Schepers EJ, Ducheyne P, Barbier L, Schepers S. Bioactive glass particles of narrow size range: a new material for the repair of bone defects. *Implant Dent* 1993;2:151-156.
280. Schepers EJ, Ducheyne P. Bioactive glass particles of narrow size range for the treatment of oral bone defects: a 1-24 months experiment with several materials and particle sizes and size ranges. *J Oral Rehabil* 1997;24:171-181.
281. Schepers E, Barbier L, Ducheyne P. Implant placement enhanced by bioactive glass particles of narrow size range. *Int J Oral Maxillofac Implants* 1998;13:655-665.
282. Schliephake H, Kage T. Enhancement of bone regeneration using resorbable ceramics and a polymer-ceramic composite material. *J Biomed Mater Res* 2001;56:128-136.
283. Schmitz JP, Hollinger JO, Milam SB. Reconstruction of bone using calcium phosphate bone cements: A critical review. *J Oral Maxillofac Surg* 1999;57:1122-1126.
284. Schneider M, Gildenhaar R, Berger G. Investigations of phase relations in the system $\text{CaO-Na}_2\text{O-K}_2\text{O-P}_2\text{O}_5$ Part I: Characterization of the compound $\text{Ca}_2\text{KNa(PO}_4)_2$. *Cryst Res Technol* 1994;29:671-675.
285. Schroeder A, Pohler O, Sutter F. Gewebereaktion auf ein Titan-Hohlzylinderimplantat mit Titan-Spritzschichtoberfläche. *Schweiz Mschr Zahnheilk* 1976;86:713-727.

286. Schwartz Z, Boyan BD. Underlying mechanisms at the bone-biomaterial interface. *J Cell Biochem* 1994;56:340-347. Review.
287. Shakibaei M, John T, de Souza P, Rahmanzadeh R, Merker H-J. Signal transduction by $\beta 1$ integrin receptors in human chondrocytes in vitro: collaboration with IGF-I. *Biochem J* 1999;342:615-623.
288. Shenker BJ, Datar S, Mansfield K, Shapiro IM. Induction of apoptosis in human T-cells by organomercuric compounds: a flow cytometric analysis. *Toxicol Appl Pharmacol* 1997;143:397-406.
289. Shenker BJ, Guo TL, Shapiro IM. Induction of apoptosis in human T-cells by methyl mercury: temporal relationship between mitochondrial dysfunction and loss of reductive reserve. *Toxicol Appl Pharmacol* 1999;157:23-35.
290. Smukler-Moncler S, Dalcusi G, Delecrin J, Passuti N, Deudon C. Calcium-metallic-phosphates: A new coating biomaterial. *Biomater-Tissue Interfaces, Adv Biomat* 1992;10:377-383.
291. Sodek J, Cheifitz S. Molecular Regulation of Osteogenesis. In: Davies JE, editor. *Bone Engineering*. Toronto, Canada: em squared Inc.; 2000. p 31-43.
292. Sodek J, Zhang Q, Goldberg HA, Domenicucci C, Kasugai S, Wrana JL, Shapiro H, Chen J. Non-collagenous bone proteins and their role in substrate-induced bioactivity. In: Davies JE, editor. *The bone-biomaterial Interface*. Toronto, Canada: University of Toronto Press; 1991. p 97-110.
293. Spiekermann HE. Spezielle implantologische Diagnostik. In: Rateischak KH, Wolf HF, editors. *Farbatlant der Zahnmedizin 10 - Implantologie*, 1st edition. Stuttgart, Germany: Thieme; 1994. p 91-122.
294. Stach RM, Kohles SS. A meta-analysis examining the clinical survivability of machined-surfaced and Osseotite implants in poor-quality bone. *Implant Dent* 2003;12:87-96.

295. Strauss PG, Closs EI, Schmidt J, Erfle V. Gene expression during osteogenic differentiation in mandibular condyles in vitro. *J Cell Biol* 1990;110:1369-1378.
296. Stricker A, Voss PJ, Gutwald R, Schramm A, Schmelzeisen R. Maxillary sinus floor augmentation with autogenous bone grafts to enable placement of SLA-surfaced implants: preliminary results after 15-40 months. *Clin Oral Implants Res* 2003;14:207-212.
297. Su CC, Cui Q, Wang GJ, Supernatant HP, Collier JP, Balian G. Bone marrow osteoprogenitor cells adhere to titanium implants. *Orthop Res Trans* 1996;21:91.
298. Sullivan DY, Sherwood RL, Porter SS. Long-term performance of Osseotite implants: a 6-year clinical follow-up. *Compend Contin Educ Dent* 2001;22:326-334.
299. Sun L, Berndt CC, Gross KA, Kucuk A. Material fundamentals and clinical performance of plasma-sprayed hydroxyapatite coatings: a review. *J Biomed Mater Res* 2001;58:570-592. Review.
300. Sun L, Berndt CC, Khor KA, Cheang HN, Gross KA. Surface characteristics and dissolution behavior of plasma-sprayed hydroxyapatite coating. *J Biomed Mater Res* 2002;62:228-236.
301. Tadjedin ES, de Lange GL, Holzmann PJ, Kulper L, Burger EH. Histological observations on biopsies harvested following sinus floor elevation using a bioactive glass material of narrow size range. *Clin Oral Implants Res* 2000;11:334-344.
302. Tadjedin ES, de Lange GL, Lyaruu DM, Kuiper L, Burger EH. High concentrations of bioactive glass material (BioGran) vs. autogenous bone for sinus floor elevation. *Clin Oral Implants Res* 2002;13:428-436.

303. Taylor TD, Belser U, Mericske-Stern R. Prosthodontic considerations. Clin Oral Implants Res 2000;11 Suppl 1:101-107. Review.
304. ter Brugge PJ, Jansen JA. Initial interaction of rat bone marrow cells with non-coated and calcium phosphate coated titanium substrates. Biomaterials 2002;23:3269-3277.
305. ter Brugge PJ, Wolke JG, Jansen JA. Effect of calcium phosphate coating crystallinity and implant surface roughness on differentiation of rat bone marrow cells. J Biomed Mater Res 2002a;60:70-78.
306. ter Brugge PJ, Torensma R, De Ruijter JE, Figdor CG, Jansen JA. Modulation of integrin expression on rat bone marrow cells by substrates with different surface characteristics. Tissue Eng 2002b;8:615-626.
307. ter Brugge PJ, Wolke JG, Jansen JA. Effect of calcium phosphate coating composition and crystallinity on the response of osteogenic cells in vitro. Clin Oral Implants Res 2003;14:472-480.
308. Termine JD, Kleinman HK, Whitson SW, Conn KM, McGarvey ML, Martin GR. Osteonectin, a bone-specific protein linking mineral to collagen. Cell 1981;26:99-105.
309. Testori T, Del Fabbro M, Feldman S, Vincenzi G, Sullivan D, Rossi R Jr, Anitua E, Bianchi F, Francetti L, Weinstein RL. A multicenter prospective evaluation of 2-months loaded Osseotite implants placed in the posterior jaws: 3-year follow-up results. Clin Oral Implants Res 2002;13:154-161.
310. Timmenga NM, Raghoobar GM, van Weissenbruch R, Vissink A. Maxillary sinus floor elevation surgery. A clinical, radiographic and endoscopic evaluation. Clin Oral Implants Res 2003;14:322-328.
311. Todescan R, Lowenberg BF, Hosseini HM, Davis JE. Tetracycline Fluorescence: A new method to quantitate bone produced in vitro.

- Transactions of the Fifth World Biomaterials Congress, Toronto, Canada; 1996. p 721.
312. Tweden KS, Haraski H, Jones M, Blevitt JM, Craig WS, Pierschbacher M, Helmus MN. Accelerated healing of cardiovascular textiles promoted by an RGD peptide. *J Heart Valve Dis* 1995;4:S90-97.
313. Valentini P, Abensur D. Maxillary sinus floor elevation for implant placement with demineralized freeze-dried bone and bovine bone (Bio-Oss): a clinical study of 20 patients. *Int J Periodontics Restorative Dent* 1997;17:233-241.
314. Vercaigne S, Wolke JGC, Naert I, Jansen JA. Bone healing capacity of titanium plasma-sprayed and hydroxyapatite-coated oral implants. *Clin Oral Impl Res* 1998;9:261-271.
315. Vercaigne S, Wolke JG, Naert I, Jansen JA. A mechanical evaluation of TiO₂-gritblasted and Ca-P magnetron sputter coated implants placed into the trabecular bone of the goat: Part 1. *Clin Oral Implants Res* 2000a;11:305-313.
316. Vercaigne S, Wolke JG, Naert I, Jansen JA. A histological evaluation of TiO₂-gritblasted and Ca-P magnetron sputter coated implants placed into the trabecular bone of the goat: Part 2. *Clin Oral Implants Res* 2000b;11:314-324.
317. Vernino AR, Kohles SS, Holt RA Jr, Lee HM, Caudill RF, Kenealy JN. Dual-etched implants loaded after 1- and 2-month healing periods: a histologic comparison in baboons. *Int J Periodontics Restorative Dent* 2002;22:399-407.
318. Villarreal XC, Mann KG, Long GL. Structure of human osteonectin based upon analysis of cDNA and genomic sequences. *Biochemistry* 1989;28:6483-6491.

319. Vogel J, Ruessel C, Guenther G, Hartmann P, Vizethum F, Bergner N. Characterization of plasma-sprayed hydroxyapatite by ³¹P-MAS-NMR and the effect of subsequent annealing. *J Mater Sci: Mater Med* 1996;7:495-499.
320. Vogel M, Voigt C, Gross UM, Muller-Mai CM. In vivo comparison of bioactive glass particles in rabbits. *Biomaterials* 2001;22:357-362.
321. Vrouwenvelder WC, Groot CG, de Groot K. Histological and biochemical evaluation of osteoblasts cultured on bioactive glass, hydroxylapatite, titanium alloy, and stainless steel. *J Biomed Mater Res* 1993;27:465-475.
322. Wallace SS, Froum SJ, Tarnow DP. Histologic evaluation of sinus elevation procedure: a clinical report. *Int J Periodontics Restorative Dent* 1996;16:47-51.
323. Wary KK, Mainiero F, Isakoff SJ, Marcantonio EE, Giancotti FG. The adaptor protein Shc couples a class of integrins to the control of cellcycle progression. *Cell* 1996;87:733-743. Review.
324. Weiss RE, Reddi AH. Synthesis and localization of fibronectin during collagenous matrix-mesenchymal cell interaction and differentiation of cartilage and bone in vivo. *Proc Natl Acad Sci U S A* 1980;77:2074-2078.
325. Weiss RE, Reddi AH. Appearance of fibronectin during the differentiation of cartilage, bone, and bone marrow. *J Cell Biol* 1981;88:630-636.
326. Wen HB, de Wijn JR, Cui FZ, de Groot K. Preparation of calcium phosphate coatings on titanium implant materials by simple chemistry. *J Biomed Mater Res* 1998;41:227-236.
327. Werkmeister JA, Peters DE, Ramshaw JA. Development of monoclonal antibodies to collagens for assessing host-implant interactions. *J Biomed Mater Res* 1989;23(A3 Suppl):273-283.

328. Wetzel AC, Stich H, Caffesse RG. Bone apposition onto oral implants in the sinus area filled with different grafting materials. A histological study in beagle dogs. *Clin Oral Implants Res* 1995;6:155-163.
329. Wheeler SL. Sinus augmentation for dental implants: the use of alloplastic materials. *J Oral Maxillofac Surg* 1997;55:1287-1293. Review.
330. Wilchek M, Bayer EA. The avidin-biotin complex in bioanalytical applications. *Anal Biochem* 1988;17:1-32. Review.
331. Wiltfang J, Merten HA, Schlegel KA, Schultze-Mosgau S, Kloss FR, Rupprecht S, Kessler P. Degradation characteristics of alpha and beta tri-calcium-phosphate (TCP) in minipigs. *J Biomed Mater Res* 2002;63:115-121.
332. Winkler S. Implant site development and alveolar bone resorption patterns. *J Oral Implantol* 2002;28:226-229.
333. Wood GS, Warnke R. Suppression of endogenous avidin-binding activity in tissues and its relevance to biotin-avidin detection systems. *J Histochem Cytochem* 1981;29:1196-1204.
334. Wong M, Eulenberger J, Schenk R, Hunziker E. Effect of surface topology on the osseointegration of implant materials in trabecular bone. *J Biomed Mater Res* 1995;29:1567-1575.
335. Xiao G, Wang D, Cui Y, Ducy P, Karsenty G, Franceschi RT. Ascorbic acid-dependent activation of the osteocalcin promoter in MC3T3-E1 preosteoblasts: Requirement of collagen matrix synthesis and the presence of an intact OSE2 sequence. *Mol Endocrinol* 1997;11:1103-1113.
336. Xiao G, Wang D, Benson D, Karsenty G, Franceschi RT. Role of the alpha 2 integrin in osteoblast-specific gene expression and activation of the *Osf2* transcription factor. *J Biol Chem* 1998;273:32488-32494.

337. Xynos ID, Edgar AJ, BATTERY LD, HENCH LL, POLAK JM. Gene-expression profiling of human osteoblasts following treatment with the ionic products of Bioglass 45S5 dissolution. *J Biomed Mater Res* 2001;55:151-157.
338. Xynos ID, Edgar AJ, BATTERY LD, HENCH LL, POLAK JM. Ionic products of bioactive glass dissolution increase proliferation of human osteoblasts and induce insulin-like growth factor II mRNA expression and protein synthesis. *Biochem Biophys Res Commun* 2000a;276:461-465.
339. Xynos ID, HUKKANEN MV, BATTEN JJ, BATTERY LD, HENCH LL, POLAK JM. Bioglass 45S5 stimulates osteoblast turnover and enhances bone formation in vitro: implications and applications for bone tissue engineering. *Calcif Tissue Int* 2000b;67:321-329.
340. Yamada KM, Miyamoto S. Integrin transmembrane signaling and cytoskeletal control. *Curr Opin Cell Biol* 1995;7:681-689. Review.
341. Yan L, Leng Y, Weng LT. Characterization of chemical inhomogeneity in plasma-sprayed hydroxyapatite coatings. *Biomaterials* 2003;24:2585-2592.
342. Yaszemski MJ, Payne RG, Hayes WC, Langer R, Mikos AC. Evolution of bone transplantation: molecular, cellular and tissue strategies to engineer human bone. *Biomaterials* 1996;17:175-185.
343. Young MF, Kerr JM, Termine JD, Wewer UM, Wang MG, McBride OW, Fisher LW. cDNA cloning, mRNA distribution and heterogeneity, chromosomal location, and RFLP analysis of human osteopontin (OPN). *Genomics* 1990;7:491-502.
344. Yukna RA, Callan DP, Krauser JT, Evans GH, Aichelmann-Reidy ME, Moore K, Cruz R, Scott JB. Multi-center clinical evaluation of combination anorganic bovine-derived hydroxyapatite matrix (ABM)/cell binding peptide (P-15) as a

- bone replacement graft material in human periodontal osseous defects. 6-month results. *J Periodontol* 1998;69:655-663.
345. Zeng H, Chittur KK, Lacefield WR. Dissolution/precipitation of calcium phosphate thin films produced by ion beam sputter deposition technique. *Biomaterials* 1999;20:443-451.
346. Zerbo IR, Bronckers AL, de Lange GL, van Beek GJ, Burger EH. Histology of human alveolar bone regeneration with a porous tricalcium phosphate. A report of two cases. *Clin Oral Implants Res* 2001;12:379-384.
347. Zreiqat H, Markovic B, Walsh WR, Howlett CR. A novel technique for quantitative detection of mRNA expression in human bone derived cells cultured on biomaterials. *J Biomed Mater Res (Applied Biomaterials)* 1996;3:217-223.
348. Zreiqat H. The molecular investigation of the bone-biomaterial interface. PhD thesis, University of New South Wales, Sydney, Australia, 1997.
349. Zreiqat H, Sungaran R, Howlett CR, Markovic B. Quantitative aspects of an in situ hybridization procedure for detecting mRNAs in cells using 96-well microplates. *Mol Biotechnol* 1998;10:107-113.
350. Zreiqat H, Howlett CR. Titanium substrata composition influences osteoblastic phenotype: In vitro study. *J Biomed Mater Res* 1999;47:360-366.
351. Zreiqat H, Evans P, Howlett CR. Effect of surface chemical modification of bioceramic on phenotype of human bone-derived cells. *J Biomed Mater Res* 1999a;44:389-396.
352. Zreiqat H, McFarland C, Howlett CR. The effect of polymeric chemistry on the expression of bone-related mRNAs and proteins by human bone-derived cells in vitro. *J Biomater Sci Polym Ed* 1999b;10:199-216.

353. Zreiqat H, Howlett CR, Zannettino A, Evans P, Schulze-Tanzil G, Knabe C, Shakibaei M. Mechanisms of magnesium-stimulated adhesion of osteoblastic cells to commonly used orthopaedic implants. *J Biomed Mater Res* 2002;62:175-184.
354. Zreiqat H, Akin FA, Howlett CR, Markovic B, Haynes D, Lateef S, Hanley L. Differentiation of human bone-derived cells grown on GRGDSP-peptide bound titanium surfaces. *J Biomed Mater Res* 2003;64:105-113.