

LIST OF REFERENCES

- Alberts, B., Johnson, A., Lewis, J., Raff, M., Roberts, K., and Walter, P. (2002). Molecular biology of the cell (4 ed.). New York: Garland Science.
- Altundal, H. and Guvener, O. (2004) The effect of alendronate on resorption of the alveolar bone following tooth extraction. International Journal of Oral and Maxillofacial Surgery, 33(3), 286-293.
- Anselme, K. (2000) Osteoblast adhesion on biomaterials. Biomaterials, 21(7), 667-681.
- Arifin, D.Y., Lee, L.Y., and Wang, C.-H. (2006) Mathematical modeling and simulation of drug release from microspheres: Implications to drug delivery systems. Advanced Drug Delivery Reviews, 58(12-13), 1274-1325.
- Arshady, R. (1990) Albumin microspheres and microcapsules: methodology of manufacturing techniques. Journal of Controlled Release, 14(2), 111-131.
- Baldwin, S.P. and Saltzman, W.M. (1998) Materials for protein delivery in tissue engineering. Advanced Drug Delivery Reviews, 33(1), 71-86.
- Berkland, C., King, M., Cox, A., Kim, K., and Pack, D.W. (2002) Precise control of PLG microsphere size provides enhanced control of drug release rate. Journal of Controlled Release, 82(1), 137-147.
- Bodic, F., Hamel, L., Lerouxel, E., Basle, M.F., and Chappard, D. (2005) Bone loss and teeth. Joint Bone Spine, 72(3), 215-221.
- Bosch, E.v.d. and Gielens, C. (2003) Gelatin degradation at elevated temperature. International Journal of Biological Macromolecules, 32(3), 129-138.
- Boyan, B.D., Hummert, T.W., Dean, D.D., and Schwartz, Z. (1996) Role of material surfaces in regulating bone and cartilage cell response. Biomaterials, 17(2), 137-146.
- Brown, K.E., Leong, K., Huang, C.-H., Dalal, R., Dalal, R., Green, G.D., Haimes, H.B., Jimenez, P.A., and Bathon, J. (1998) Gelatin/chondroitin 6-sulfate microspheres for the delivery of therapeutic proteins to the joint. Arthritis & Rheumatism, 41(12), 2185-2195.

- Causa, F., Netti, P.A., and Ambrosio, L. (2007) A multi-functional scaffold for tissue regeneration: The need to engineer a tissue analogue. *Biomaterials*, 28(34), 5093-5099.
- Chang, C.H., Liu, H.C., Lin, C.C., Chou, C.H., and Lin, F.H. (2003) Gelatin-chondroitin-hyaluronan-tri-copolymer scaffold for cartilage tissue engineering. *Biomaterials*, 24(26), 4853-4858.
- Chaplin, M. "Gelatin." Water structure and science 25 June 2008. 24 September 2008 <<http://www.lsbu.ac.uk/water/hygel.html>>
- Cho, M.I., Matsuda, N., Lin, W.L., Moshier, A., and Ramakrishnan, P.R. (1992) In vitro formation of mineralized nodules by periodontal ligament cells from the rat. *Calcified Tissue International*, 50(55), 459-467.
- Civitelli, R. (1997) In Vitro and In Vivo Effects of Ipriflavone on Bone Formation and Bone Biomechanics. *Calcified Tissue International*, 61(Suppl 1), S12-S14.
- Cleland, R.L. (1968) Ionic polysaccharides. II: Comparison of polyelectrolyte behaviour of hyaluronate with that of carboxymethyl cellulose. *Biopolymers*, 6(11), 1519-1529.
- Coates, J. 2000. Interpretation of infrared spectra, A practical approach. In R. A. Meyers (Ed.), *Encyclopedia of Analytical Chemistry*: 10815-10837. Chichester: John Wiley & Sons Ltd.
- Currey, J. (2004) Incompatible mechanical properties in compact bone. *Journal of Theoretical Biology*, 231(4), 569-580.
- Drotleff, S., Lungwitz, U., Breunig, M., Dennis, A., Blunk, T., Tessmar, J., and Gopferich, A. (2004) Biomimetic polymers in pharmaceutical and biomedical sciences. *European Journal of Pharmaceutics and Biopharmaceutics*, 58(2), 385-407.
- Drury, J.L. and Mooney, D.J. (2003) Hydrogels for tissue engineering: scaffold design variables and applications. *Biomaterials*, 24(24), 4337-4351.
- Dumetz, A.C., Snellinger-O'Brien, A.M., Kaler, E.W., and Lenhoff, A.M. (2007) Patterns of protein-protein interactions in salt solutions and implications for protein crystallization. *Protein Science*, 16(9), 1867-1877.

- Esposito, E., Cortesi, R., and Nastruzzi, C. (1996) Gelatin microspheres: influence of preparation parameters and thermal treatment on chemico-physical and biopharmaceutical properites. *Biomaterials*, 17(20), 2009-2020.
- Freiberg, S. and Zhu, X.X. (2004) Polymer microspheres for controlled drug release. *International Journal of Pharmaceutics*, 282(1-2), 1-18.
- Griffith, L.G. (2000) Polymeric Biomaterials. *Acta Materialia*, 48(1), 263-277.
- Han, Y.-K., Kim, S.-R., and Kim, J. (2002) Preparation and Characterization of High Molecular Weight Poly(butylene succinate). *Macromolecular Research*, 10(2), 108-114.
- Hanne, E., Sonis, S., Gallagher, G., and Adwood, D. (1998) Preservation of alveolar ridge with hydroxyapatite-collagen implants in rats. *The Journal of Prosthetic Dentistry*, 60(6), 729-734.
- Hariraksapitak, P., Suwantong, O., Pavasant, P., and Supaphol, P. (2008) Effectual drug-releasing porous scaffolds from 1,6-diisocyanatohexane-extended poly(1,4-butylene succinate) for bone tissue regeneration. *Polymer*, 49(11), 2678-2685.
- Hauschka, P.V., Mavrakos, A.E., Iafrati, M.D., and Doleman, S.E. (1986) Growth factors in bone matrix, isolation of multiple types by affinity chromatography on heparin-sepharose. *Journal of Biological Chemistry*, 261(27), 12665-12674.
- Hoffman, A.S. (2002) Hydrogels for biomedical applications. *Advanced Drug Delivery Reviews*, 54(1), 3-12.
- Holland, T.A., Tabata, Y., and Mikos, A.G. (2005) Dual growth factor delivery from degradable oligo(poly(ethylene glycol)fumurated) hydrogel scaffolds for cartilage tissue engineering. *Journal of Controlled Release*, 101(1-3), 111-125.
- Hollander, A.P. and Hatton, P.V. (2004). *Biopolymer Methods in Tissue Engineering*. Totowa, New Jersey: Humana Press.
- Hou, L.T., Liu, C.M., Wong, Y., and Chen, J.K. (2000) Biological effects of cementum and bone extracts on human periodontal fibroblasts. *Journal of Periodontology*, 71(7), 1100-1109.

- Hutmacher, D.W. (2000) Scaffolds in tissue engineering bone and cartilage. *Biomaterials*, 21(24), 2529-2543.
- Invitrogen "Minimum Essential Medium." Invitrogen 5 January 2009 <http://www.invitrogen.com/site/us/en/home/support/Product-Technical-Resources/media_formulation.99.html>
- Jahangiri, L., Devlin, H., Ting, K., and Nishimura, I. (1998) Current perspectives in residual ridge remodeling and its clinical implications: A review. *J Prosthet Dent.* 80(2), 244-237.
- Jin, Q.M., Takita, H., Kohgo, T., Atsumi, K., Itoh, H., and Kuboki, Y. (2000) Effects of geometry of hydroxyapatite as a cell substratum in BMP-induced ectopic bone formation. *Journal of Biomedical Materials Research*, 52(4), 491-499.
- Kang, H.-W., Tabata, Y., and Ikada, Y. (1999) Fabrication of porous gelatin scaffolds for tissue engineering. *Biomaterials*, 20(14), 1339-1344.
- Karageorgiou, V. and Kaplan, D. (2005) Porosity of 3D biomaterial scaffolds and osteogenesis. *Biomaterials*, 26(27), 5474-5491.
- Kasper, F.K., Kushibiki, T., Kimura, Y., Mikos, A.G., and Tabata, Y. (2005) In vivo release of plasmid DNA from composites of oligo(poly(ethylene glycol)fumurated) and cationized gelatin microspheres. *Journal of Controlled Release*, 107(3), 547-561.
- Kikuchi, T., Yamada, H., and Fujikawa, K. (2001) Effects of high molecular weight hyaluronan on the distribution and movement of proteoglycan around chondrocytes cultured in alginate beads. *Osteoarthritis and Cartilage*, 9(4), 351-356.
- Kimura, Y., Ozeki, M., Inamoto, T., and Tabata, Y. (2003) Adipose tissue engineering based on human preadipocytes combined with gelatin microspheres containing basic fibroblast growth factor. *Biomaterials*, 24(14), 2513-2521.
- Kuboki, Y., Jin, Q., Kikuchi, M., Mamood, J., and Takita, H. (2002) Geometry of artificial ECM: sizes of pores controlling phenotype expression in BMP-induced osteogenesis and chondrogenesis. *Connective Tissue Research*, 43(2), 529-534.

- Lalani, Z., Wong, M., Brey, E.M., Mikos, A.G., and Duke, P.J. (2003) Spatial and temporal localization of transforming growth factor- β 1, bone morphogenetic protein-2, and platelet-derived growth factor-A in healing tooth extraction sockets in a rabbit model. *Journal of Oral and Maxillofacial Surgery*, 61(9), 1061-1072.
- Langer, R. and Vacanti, J.P. (1993) Tissue engineering. *Science*, 260(5110), 920-926.
- Lapcik, L.J., Lapcik, L., Smedt, S.D., Demeester, J., and Chabrecek, P. (1998) Hyaluronan: Preparation, structure properties and applications. *Chemical reviews*, 98(8), 2663-2684.
- Lee, J.-H., Frias, V., Lee, K.-W., and Wright, R.F. (2005a) Effect of implant size and shape on implant success rates: A literature review. *The Journal of Prosthetic Dentistry*, 94(4), 377-381.
- Lee, K.Y., Rowley, J.A., Eiselt, P., Moy, E.M., Bouhadir, K.H., and Mooney, D.J. (2000) Controlling mechanical and swelling properties of Alginic hydrogels independently by cross-linker type and cross-linking density. *Macromolecules*, 33(11), 4291-4294.
- Lee, M., Chen, T.T., Iruela-Arispe, M.L., Wu, B.M., and Dunn, J.C.Y. (2007) Modulation of protein delivery from modular polymer scaffolds. *Biomaterials*, 28(10), 1862-1870.
- Lee, S.B., Kim, Y.H., Chong, M.S., Hong, S.H., and Lee, Y.M. (2005b) Study of gelatin-containing artificial skin V: fabrication of gelatin scaffolds using a salt-leaching method. *Biomaterials*, 26(14), 1961-1968.
- Lee, S.H. and Shin, H. (2007) Matrices and scaffolds for delivery of bioactive molecules in bone and cartilage tissue engineering. *Advanced Drug Delivery Reviews*, 59(4-5), 339-359.
- Lewandrowski, K.U., Gresser, J.D., Bondre, S., Silva, A.E., Wise, D.L., and Trantolo, D.J. (2000) Developing porosity of poly(propylene glycol-co-fumaric acid) bone graft substitutes and the effect on osteointegration: a preliminary histology study in rats. *Journal of Biomaterials Science, Polymer Edition*, 11(8), 879-889.

- Li, H., Chang, J., Cao, A., and Wang, J. (2005) In vitro evaluation of biodegradable Poly(butylene succinate) as a novel biomaterial. Macromolecular Bioscience, 5(5), 433-440.
- Li, J., Revol, J.-F., Naranjo, E., and Marchessault, R.H. (1996) Effect of electrostatic interaction on phase separation behaviour of chitin crystallite suspensions. International Journal of Biological Macromolecules, 18(3), 177-187.
- Liu, H., Yin, Y., Yao, K., Ma, D., Cui, L., and Cao, Y. (2004) Influence of the concentrations of hyaluronic acid on the properties and biocompatibility of Cs-Gel-HA membranes. Biomaterials, 25(17), 3523-3530.
- Liu, L.S., Thompson, A.Y., Heidaran, M.A., Poser, J.W., and Spiro, R.C. (1999) An osteoconductive collagen/hyaluronate matrix for bone regeneration. Biomaterials, 20(12), 1097-1108.
- Liu, Y., Shu, X.Z., and Prestwich, G.D. (2005) Biocompatibility and stability of disulfide-crosslinked hyaluronan films. Biomaterials, 26(23), 4737-4746.
- Lu, Y., Weng, L., and Zhang, L. (2004) Morphology and properties of soy protein isolate thermoplastics reinforced with chitin whisker. Biomacromolecules, 5(3), 1046-1051.
- Lubomir Lapčík, J., Lapčík, L., Smedt, S.D., Demeester, J., and Chabrecek, P. (1998) Hyaluronan: Preparation, Structure, Properties, and Applications. Chemical reviews, 98(8), 2663-2684.
- Luginbuehl, V., Meinel, L., Merkle, H.P., and Gander, B. (2004) Localized delivery of growth factors for bone repair. European journal of Biopharmaceutics and Biopharmaceutics, 58(2), 197-208.
- Maeda, S., Sawai, T., Uzuki, M., Takahashi, Y., Omoto, H., Seki, M., and Sakurai, M. (1995) Determination of interstitial collagenase (MMP-1) in patients with rheumatoid arthritis. Annals of the Rheumatic Diseases, 54(12), 970-975.
- Magoshi, J., Mizuide, M., and Magoshi, Y. (1979) Physical properties and struture of silk. VI. Conformational changes in silk fibroin induced by immersion in water at 2 to 130°C. Journal of Polymer Science: Polymer Physics Edition, 17(3), 515-520.

- Mathew, H.W.T. 2002. Polymer for tissue engineering scaffold. In S. Dumitriu (Ed.), Polymeric Biomaterials: 168. New York: Marcel Dekker Inc.
- Menon, M.K. and Zydny, A.L. (1998) Measurement of protein charge and ion binding using capillary electrophoresis. Analytical Chemistry, 70(8), 1581-1584.
- Mercier, N.R., Costantino, H.R., Tracyc, M.A., and Bonassar, L.J. (2005) Poly(lactide-co-glycolide) microspheres as a moldable scaffold next term for cartilage tissue engineering. Biomaterials, 26(14), 1945-1952.
- Michnik, A. (2003) Thermal stability of bovine serum albumin DSC study. Journal of Thermal Analysis and Calorimetry, 71(2), 509-519.
- Michnik, A., Michalik, K., and Drzazga, Z. (2005) Stability of bovine serum albumin at different pH. Journal of Thermal Analysis and Calorimetry, 80(2), 399-406.
- Mikos, A.G., Lu, L., Temenoff, J.S., and Tessmar, J.K. 2004. Synthetic bioresorbable polymer scaffolds. In F. J. Schoen and J. E. Lemons (Eds.), Biomaterials science: An introduction to materials in medicine, 2 ed., Vol. 1: 735-749. California: Elsevier Inc.
- Mladenovska, K., Klisarova, L., Janevik, E.I., and Goracinova, K. (2002) BSA-loaded gelatin microspheres: Preparation and drug release rate in the presence of collagenase. Acta Pharmaceutica, 52(2), 91-100.
- Molin, S.-O., Nygren, H., and Dolonius, L. (1978) A new method for the study of glutaraldehyde-induced crosslinking properties in proteins with special reference to the reaction with amino groups. Journal of Histochemistry and Cytochemistry, 26(5), 412-414.
- Morin, A. and Dufresne, A. (2002) Nanocomposites of chitin whiskers from Riftia tubes and poly(caprolactone). Macromolecules, 35(6), 2190-2199.
- Nair, K.G. and Dufresne, A. (2003) Crab shell chitin whiskers reinforced natural rubber nanocomposites. 1. Processing and swelling behavior. Biomacromolecules, 4(3), 657-665.
- Nikolic, M.S. and Djordjevic, J. (2001) Synthesis and characterization of biodegradable poly(butylsuccinate-co-butylene adipate)s. Polymer Degradation and Stability, 74(2), 263-270.

- Nikolic, M.S., Poleti, D., and Djonlagic, J. (2003) Synthesis and characterization of biodegradable poly(butylenes succinate-co-butylene fumarate)s. *European Polymer Journal*, 39(11), 2183-2192.
- Oerther, S., Gall, H.L., Payan, E., Franc, o.L., Presle, N., Hubert, P., Dexheimer, J., I, P.N., and Franc, o.L. (1998) Hyaluronate-alginate gel as a novel biomaterial: Mechanical properties and formation mechanism. *Biotechnology and Bioengineering*, 63(2), 206-215.
- Oerther, S., Payana, E., Franc, o.L., Nathalie Preslea, Hubert, P., Muller, S., Netter, P., and Franc, o.L. (1999) Hyaluronatenext term-alginate combination for the preparation of new biomaterials: investigation of the behaviour in aqueous solutions. *Biochimica et Biophysica Acta*, 1426(1), 185-194.
- Ohtsuki, C. "How to prepare the simulated body fluid (SBF)." mswebs.naist 5 Janurary 2009
[<http://mswebs.naist.jp/LABs/tanihara/ohtsuki/SBF/index.html>](http://mswebs.naist.jp/LABs/tanihara/ohtsuki/SBF/index.html)
- Oyane, A., Kim, H.-M., Furuya, T., Kokubo, T., Miyazaki, T., and Nakamura, T. (2003) Preparation and assessment of revised simulated body fluids. *Journal of Biomedical Materials Research*, 65A(2), 188-195.
- Paillet, M. and Dufresne, A. (2001) Chitin whisker reinforced thermoplastic nanocomposites. *Macromolecules*, 34(19), 6527-6530.
- Park, H. and Park, K. (1994). Hydrogels in Bioapplications. Paper presented at the Hydrogels and biodegradable polymers for bioapplications, Washington DC America.
- Park, S.-N., Park, J.-C., Kim, H.O., Song, M.J., and Suh, H. (2002) Characterization of porous collagen/hyaluronic acid scaffold modified by 1-ethyl-3-(3-dimethylaminopropyl)carbodiimide cross-linking. *Biomaterials*, 23(4), 1205-1212.
- Perugini, P., Genta, I., Conti, B., Modena, T., Cocchi, D., Zaffe, D., and Pavanello, F. (2003) PLGA microspheres for oral osteopenia treatment: preliminary "invitro"/ "in vivo" evaluation. *International Journal of Pharmaceutics*, 256(1), 153-160.
- Prestwich, G.D., Marecak, D.M., Marecek, J.F., Vercruyse, K.P., and Ziebell, M.R. (1998) Controlled chemical modification of hyaluronic acid: Synthesis,

- applications, and biodegradation of hydrazide derivatives. Journal of Controlled Release, 53(1-3), 93-103.
- Prestwich, G.D. "Biomaterials form chemically-modified hyaluronan." GlycoForum/GlycoScience/Science of Hyaluronan 26 February 2001. 15 May 2008 <<http://www.glycoforum.gr.jp/science/hyaluronan/HA18/HA18E.html>>
- Prosthodontics, T.A.o. (2005) The Glossary of Prosthodontic terms. The Journal of Prosthetic Dentistry, 94(1), 30.
- Revol, J.F. and Marchessault, R.H. (1993) In vitro chiral nematic ordering chitin crystallites. International Journal of Biological Macromolecules, 15(6), 329-335.
- Rezwan, K., Chen, Q.Z., Blanker, J.J., and Boccaccini, A.R. (2006) Biodegradable and bioactive porous polymer/inorganic composite scaffolds for bone tissue engineering. Biomaterials, 27(18), 3413-3431.
- Rinaudo, M. (2006) Chitin and chitosan: Properties and applications. Progress in Polymer Science, 31(7), 603-632.
- Ritger, P.L. and Peppas, N.A. (1987a) A simple equation for description of solute release I. Fickian and Non-Fickian release from non-swellable devices in the form of slabs, spheres, cylinders or discs. Journal of Controlled Release, 5(1), 23-36.
- Ritger, P.L. and Peppas, N.A. (1987b) A simple equation for description of solute release II. Fickian and anomalous release from swellable devices. Journal of Controlled Release, 5(1), 37-42.
- Roy, T.D., Simon, J.L., Ricci, J.L., Rekow, E.D., Thompson, V.P., and Parsons, J.R. (2003) Performance of degradable composite bone repair products made via three-dimensional fabrication techniques. Journal of Biomedical Materials Research Part A, 66A(2), 281-291.
- Samir, M.A.S.A., Alloin, F., and Dufresne, A. (2008) Review of recent research into cellulosic whiskers, their properties and their application in nanocomposite field. Biomacromolecules, 6(2), 612-626.

- Sannino, A., Papada, S., Madaghiele, M., Maffezzoli, A., Ambrosio, L., and Nicolais, L. (2005) Crosslinking of cellulose derivatives and hyaluronic acid with water-soluble carbodiimide. *Polymer*, 46(25), 11206-11212.
- Schliephake, H. (2002) Bone growth factors in maxillofacial skeletal reconstruction. *International Journal of Oral and Maxillofacial Surgery*, 31(5), 469-484.
- Segura, T., Anderson, B.C., Chung, P.H., Webber, R.E., Shull, K.R., and Shea, L.D. (2005) Crosslinked hyaluronic acid hydrogels: A strategy to functionalize and pattern. *Biomaterials*, 26(4), 359-371.
- Sennerby, L., Carlsson, G.E., Bergman, B., and Warfvinge, J. (1988) Mandibular bone resorption in patients treated with tissue-integrated prostheses and in complete-denture wearers. *Acta Odontologica Scandinavica*, 46(3), 135-140.
- Seyrek, E., Dubin, P.L., Tribet, C., and Gamble, E.A. (2003) Ionic strength dependence of protein-polyelectrolyte interactions. *Biomacromolecules*, 4(2), 273-282.
- Shapiro, L. and Cohen, S. (1997) Novel alginate sponges for cell culture and transplantation. *Biomaterials*, 18(8), 583-590.
- Shishatskaya, E.I., Volvova, T.G., Gordeev, S.A., and Puzyr, A.P. (2005) Degradation of P(3HB) and P(3HB-co-3HV) in biological media. *Journal of Biomaterials Science, Polymer Edition*, 16(5), 643-657.
- Shu, X.Z., Liu, Y., Palumbo, F., and Prestwich, G.D. (2003) Disulfide-crosslinked hyaluronan-gelatin hydrogel films: A covalent mimic of the extracellular matrix for in vitro cell growth. *Biomaterials*, 24(21), 3825-3834.
- Shu, X.Z., Liu, Y., Palumbo, F.S., Luo, Y., and D, P.G. (2004) In situ crosslinkable hyaluronan hydrogels for tissue engineering. *Biomaterials*, 25(7-8), 1339-1348.
- Sigma-Aldrich "Poly(1,4-butylene succinate), extended with 1,6-diisocyanatohexane." Sigmaaldrich 7 July 2008. 2 February 2009 <http://www.sigmaaldrich.com/catalog/ProductDetail.do?N4=448028|ALDRICH&N5=Product%20No.|BRAND_KEY&F=SPEC>
- Sittinger, M., Hutmacher, D.W., and Risbud, M.V. (2004) Current strategies for cell delivery in cartilage and bone regeneration. Current opinion in biotechnology. *Current Opinion in Biotechnology*, 15(5), 411-418.

- Somerman, M., Hewitt, A.T., Varner, H.H., Schiffmann, E., Termine, J., and Reddi, A.H. (1983) Identification of a bone matrix-derived chemotactic factor. *Calcified Tissue International*, 35(1), 481-485.
- Sriupayo, J., Supaphol, P., Blackwell, J., and Rujiravanit, R. (2005) Preparation and characterization of α -chitin whisker-reinforced chitosan nanocomposite films with or without heat treatment. *Carbohydrate Polymers*, 62(2), 130-136.
- Stern, R., Asari, A.A., and Sugahara, K.N. (2006) Hyaluronan fragments: An information-rich system. *European Journal of Cell Biology*, 85(8), 699-715.
- Syftestad, T.G. and Caplan, A.I. (1984) A fraction from extracts of demineralized adult bone stimulated the conversion of mesenchymal cells into chondrocytes. *Developmental Biology*, 104(2), 348-356.
- Tabata, Y. and Ikada, Y. (1998) Protein release from gelatin matrices. *Advanced Drug Delivery Reviews*, 31(3), 287-301.
- Taylor, T.D. and Agar, J.R. (2002) Twenty years of progress in implant prosthodontics. *The Journal of Prosthetic Dentistry*, 88(1), 89-95.
- Tessmar, J.K. and Gopferich, A.M. (2007) Matrices and scaffolds for protein delivery in tissue engineering. *Advanced Drug Delivery Reviews*, 59(4-5), 274-291.
- Tomihata, K. and Ikada, Y. (1997) Cross-linking of hyaluronic acid with water-soluble carbodiimide. *Journal of Biomedical Materials Research*, 37(2), 243-251.
- Ugwoke, M.I., Verbeke, N., and Kinget, R. (1997) Microencapsulation of apomorphine HCl with gelatin. *International Journal of Pharmaceutics*, 148(1), 23-32.
- Ungaro, F., Biondi, M., d'Angelo, I., Indolfi, L., Quaglia, F., Netti, P.A., and Rotonda, M.I.L. (2006) Microsphere-integrated collagen scaffolds for tissue engineering: Effect of microsphere formulation and scaffold properties on protein release kinetics. *Journal of Controlled Release*, 113(2), 128-136.
- Urist, M.R. (1965) Bone: formation by autoinduction. *Science*, 150(3698), 893-899.
- Vadnelli, M.A., Rivasi, F., Guerra, P., Forni, F., and Arletti, R. (2001) Gelatin microspheres crosslinked with D,L-glyceraldehyde as a potential drug

- delivery system: preparation, characterization, in vitro and in vivo studies. International Journal of Pharmaceutics, 215(1-2), 175-184.
- Vandervoort, J. and Ludwig, A. (2004) Preparation and evaluation of drug-loaded gelatin nanoparticles for topical ophthalmic use. European Journal of Pharmaceutics and Biopharmaceutics, 57(2), 251-261.
- Vizarova, K., Bakos, D., Rehakova, M., Perikova, M., Panakova, E., and Koller, J. (1995) Modification of layered atelocollagen: enzymatic degradation and cytotoxicity evaluation. Biomaterials, 16(16), 1217-1221.
- Vunjak-Novakovic, G. 2006. Tissue Engineering: Basic Considerations. In G. Vunjak-Novakovic and R. I. Freshney (Eds.), Culture of Cells for Tissue Engineering: 132-155. Hoboken, New Jersey: A John Wiley & Sons, Inc.
- Wang, E.A., Rosen, V., D'Alessandro, J.S., Bauduy, M., Cordes, P., Harada, T., Israel, D.L., Hewick, R.M., Kerns, K.M., LaPan, P., Luxenberg, D.P., McQuaid, D., Moutsatsos, I.K., Nove, J., and Wozney, J.M. (1990) Recombinant human bone morphogenetic protein induces bone formation. Proceedings of the National Academy of Sciences of the United States of America, 87(6), 2220-2224.
- Whang, K., Goldstick, T.K., and Healy, K.E. (2000) A biodegradable polymer scaffold for delivery of osteotropic factors. Biomaterials, 21(24), 2545-2551.
- Wiesen, M. and Krzis, R. (1998) Preservation of the alveolar ridge at implant sites. Periodontal Clinical Investigations, 20(2), 17-20.
- Wiesmann, H.P., Joos, U., and Meyer, U. (2004) Biological and biophysical principles in extracorporeal bone tissue engineering Part II. International Journal of Oral and Maxillofacial Surgery, 33(6), 523-530.
- Wong, M., Siegrist, M., Wang, X., and Hunziker, E. (2001) Development of mechanically stable alginate/chondrocyte constructs: Effects of guluronic acid content and matrix synthesis. Journal of Orthopaedic Research, 19(3), 493-499.
- Wu, C.-S. and Liao, H.-T. (2005) A new biodegradable blends prepared from polylactide and hyaluronic acid. Polymer, 46(23), 10017-10026.

- Wu, L. and Ding, J. (2004) In vitro degradation of three-dimensional porous poly(D,L-lactide-co-glycolide) scaffold for tissue engineering. Biomaterials, 25(27), 5821-5830.
- Wutticharoenmongkol, P., Pavasant, P., and Supaphol, P. (2007) Osteoblastic Phenotype Expression of MC3T3-E1 Cultured on Electrospun Polycaprolactone Fiber Mats Filled with Hydroxyapatite Nanoparticles. Biomacromolecules, 8(8), 2602-2610.
- Yaffe, A., Binderman, I., Breuer, E., Pinto, T., and Golomb, G. (1999) Disposition of alendronate following local delivery in a rat jaw. Journal of Periodontology, 70(8), 893-895.
- Young, S., Wong, M., Tabata, Y., and Mikos, A.G. (2005) Gelatin as a delivery vehicle for the controlled release of bioactive molecules. Journal of Controlled Release, 109(1-3), 256-274.
- Zhang, F., Skoda, M.W.A., Jacobs, R.M.J., Martin, R.A., Martin, C.M., and Schreiber, F. (2007) Protein interactions studied by SAXS: Effect of ionic strength and protein concentration for BSA in aqueous solutions. Journal of Physical Chemistry B, 111(1), 251-259.

CURRICULUM VITAE

Name: Mr. Parintorn Hariraksapitak

Date of Birth: April 24, 1969

Nationality: Thai

University Education:

1987-1993 Doctor of Dental Surgery, Faculty of Dentistry, Prince of Songkla University, Hatyai, Songkhla, Thailand

1994-1995 Certificate of Clinical Science in Prosthodontics, Faculty of Dentistry, Chulalongkron University, Bangkok, Thailand

1995-1997 Master of Science in Prosthodontics, Faculty of Dentistry, Chulalongkron University, Bangkok, Thailand

2002-2003 Research fellowship, Faculty of Dentistry, Tokyo Medical and Dental University, Tokyo, Japan

Working Experience:

1993-2002 Position: Lecturer

Institute: Department of Conservative Dentistry, Faculty of Dentistry, Prince of Songkla University, Hatyai, Songkhla, Thailand

2000-2002 Position: Head Department

Institute: Department of Conservative Dentistry, Faculty of Dentistry, Prince of Songkla University, Hatyai, Songkhla, Thailand

2002-now Position: Assistant Professor

Institute: Department of Conservative Dentistry, Faculty of Dentistry, Prince of Songkla University, Hatyai, Songkhla, Thailand

Publications:

1. Hariraksapitak, P., Suwantong, O., Pavasant, P., and Supaphol, P. (2008) Effectual drug-releasing porous scaffolds from 1,6-diisocyanatohexane-extended poly(1,4-butylene succinate) for bone tissue regeneration. *Polymer* 49(11), 2678-2685.



2. Hariraksapitak, P., Supaphol, P. Preparation and Properties of a-Chitin Whisker-Reinforced Hyaluronan-Gelatin Nanocomposite Scaffolds. Journal of Applied Polymer Science, accepted.
3. Kukiatrakoon, B., Hariraksapitak, P. (2007) Occlusal convergence angle and height/width ratio of abutments which prepared by dental students. Journal of the Dental Association of Thailand 57(6), 309-317.
4. Kukiatrakoon, B., Hariraksapitak, P. (2006) Clinical crown dimension of permanent teeth in a group of southern Thai people and estimated retention of abutment teeth. Journal of the Dental Association of Thailand 56(6), 415-424.
5. Kukiatrakoon, B., Hariraksapitak, P. (2003) Effect of elastic recovery time on dimensional stability of polysulfide impression material. Journal of the Dental Association of Thailand 53(5-6), 313-322.
6. Hariraksapitak, P. (2002) Convergence angle of abutment for crown and bridge work prepared by the forth year dental students, Prince of Songkla University. Journal of the Dental Association of Thailand 52(4), 265-270.
7. Hariraksapitak, P., Vanichanon, P., Arksornnukit. M. (2000) Treatment of the temporomandibular disorders patient with occlusal splint and overlay removable partial denture. Journal of the Dental Association of Thailand 50(2), 114-123.
8. Hariraksapitak, P. (1999) Failure of the Cobalt-Chromium removable partial denture framework. Journal of the Dental Association of Thailand 49(4), 253-256.

Presentations:

1. Hariraksapitak, P. (2001, April 22) Mechanical properties of the recycled Cobalt-Chromium alloys. Oral presented at The International Association for Dental Research 79th, Chiba, Japan.
2. Hariraksapitak, P., Suwantong, O., Pavasant, P., and Supaphol, P. (2008, May 7) Effectual Drug-Releasing Porous Scaffolds from 1,6-Diisocyanatohexane-extended Poly(1,4-Butylene Succinate) for Bone Tissue Regeneration. Poster presented at The 1st Thailand International Conference on Oral Biology "Biology of Mineralized Tissue" Bangkok, Thailand.