DAFTAR PUSTAKA

Amani, M., 2012. Oral Delivery of Insulin: Novel Approaches, dalam: *Recent Advances in Novel Drug Carrier Systems*. InTech, hal. 281–314.

AOAC, 1993. Association of Analytical Chemists. Peer Verified Methods Program: Manual on Policies and Procedures. AOAC International, Arlington.

Aranaz, I., Harris, R., dan Heras, A., 2010. Chitosan Amphiphilic Derivatives. Chemistry and Applications. *Current Organic Chemistry*, **14**: 308–330.

Aranaz, I., Mengibar, M., Harris, R., Panos, I., Miralles, B., Acosta, N., dkk., 2009. Functional Characterization of Chitin and Chitosan. *Current Chemical Biology*, **3**: 203–230.

Armstrong, N.A. dan James, K.C., 2002. *Pharmaceutical Experimental Design And Interpretation*. CRC Press.

Avadi, M.R., Sadeghi, A.M.M., Mohammadpour, N., Abedin, S., Atyabi, F., Dinarvand, R., dkk., 2010. Preparation and characterization of insulin nanoparticles using chitosan and Arabic gum with ionik gelation method. *Nanomedicine: Nanotechnology, Biology, and Medicine*, **6**: 58–63.

Bai, J.P.F., M.J.P. Hsu, dan W.T. Shier, 1995. Insulin-degrading enzyme in a human colon adenocarcinoma cell line (Caco-2), dalam: *Pharmaceutical Research*. hal. 513–517.

Bhatia, A., Shard, P., Dimple, C., Mishra, dan Tulika, 2011. Chitosan nanoparticles as Carrier of Immunorestoratory plant extract: synthesis, characterization and Immunorestoratory efficacy **3**: 381.

Bhumkar, D.R. dan Pokharkar, V.B., 2006. Studies on effect of pH on cross-linking of chitosan with sodium tripolyphosphate: a technical note. *AAPS PharmSciTech*, **7**: E50.

Bolton, S. dan Bon, C., 2003. *Pharmaceutical Statistics: Practical and Clinical Applications, Revised and Expanded*, 4 edition. ed. CRC Press, New York.

Bradford MM. 1976. A rapid and sensitive method for the quantitation of microorganisms quantities of protein in utilizing the principle of protein - dye binding. Anal. Biochem 72:248-254

Buzea, C., Pacheco, I.I., dan Robbie, K., 2007. Nanomaterials and nanoparticles: Sources and toxicity. *Biointerphases*, **2**: MR17–MR71.

Cheng, K. dan Lim, L.-Y., 2004. Insulin-loaded calcium pectinate nanoparticles: effects of pectin molecular weight and formulation pH. *Drug Development and Industrial Pharmacy*, **30**: 359–367.

Departemen Kesehatan RI, 2005. *Pharmaceutical Care Untuk Penyakit Diabetes Melitus*. Departemen Kesehatan Republik Indonesia, Jakarta.

Dipiro, J.T., Wells, T., dan Schwinghamer, T., 2005. *Pharmacotherapy Handbook*, 5th ed. New York.

Erizal, E., 2010. Synthesis And Characterization Of Crosslinked Polyacrylamide (Paam)-Carrageenan Hydrogels Superbasorbent Prepared By Gamma Radiation. *Indonesian Journal of Chemistry*, **10**: 12–19.

Fernández-Urrusuno, R., Calvo, P., Remuñán-López, C., Vila-Jato, J.L., dan Alonso, M.J., 1999. Enhancement of nasal absorption of insulin using chitosan nanoparticles. *Pharmaceutical Research*, **16**: 1576–1581.

Frokjaer, S. dan Otzen, D.E., 2005. Protein drug stability: a formulation challenge. *Nature Reviews. Drug Discovery*, **4**: 298–306.

Gazori, T., Khoshayand, M.R., Azizi, E., Yazdizade, P., Nomani, A., dan Haririan, I., 2009. Evaluation of Alginate/Chitosan nanoparticles as antisense delivery vector: Formulation, optimization and in vitro characterization. *Carbohydrate Polymers*, **77**: 599–606.

Grenha A, M.E.G., 2009. Development of New Chitosan/Carrageenan Nanoparticles For Drug Delivery Applications. *Journal of biomedical materials research. Part A*, **92**: 1265–72.

Gupta, R.B. dan Kompella, U.., 2006. *Nanoparticle Technology For Drug Delivery (Drug And The Pharmaceutical Sciences)*. Taylor and Francis.

Jansson, D., 2010, Development and Characterisation of Chitosan-Plasmid DNA Nanoparticles, *Tesis*, Faculty of Automation, Mechanical and Materials Engineering, University of Technology, Tampere

Jones, O.., Lesmes, U., Dubin, P., dan McClements, D.., 2010. Effect of Polysaccharide Charge on Formation and Properties of Biopolymer Nanoparticles Created by Heat Treatment of Beta-Lactoglobulin–Pectin Complexes. Food Hydrocolloid, 24: 374–383.

Joshi, S.R., Parikh, R.M., dan Das, A.K., 2007. Insulin--history, biochemistry, physiology and pharmacology. *The Journal of the Association of Physicians of India*, **55 Suppl**: 19–25.

Kafshgari, M.H., 2011. Reinforcementof Chitosan Nanoparticles Obtained by Ionik Cross-linking Process, dalam: *Iranian Polymer Journal*. hal. 445–456.

Kawashima, Y., Yamamoto, H., Takeuchi, H., dan Kuno, Y., 2000. Mucoadhesive DL-lactide/glycolide copolymer nanospheres coated with chitosan to improve oral delivery of elcatonin. *Pharmaceutical Development and Technology*, **5**: 77–85.

Kompella, U.., Bandi, N., dan Ayalasomayajula, S.P, 2001. Poly (Lactic Acid) Nanoparticles for Sustained Release of Budesonide **1**: 1–7.

Kumar, S., Jana, A.K., Dhamija, I., dan Maiti, M., 2014. Chitosan-assisted immobilization of serratiopeptidase on magnetic nanoparticles, characterization and its target delivery. *Journal of drug targeting*, **22**: 123–137.

Kwon, H.-Y., Lee, J.-Y., Choi, S.-W., Jang, Y., dan Kim, J.-H., 2001. Preparation of PLGA nanoparticles containing estrogen by emulsification–diffusion method. *Colloids and Surfaces A: Physicochemical and Engineering Aspects*, **182**: 123–130.

Lin, Y.-H., Mi, F.-L., Chen, C.-T., Chang, W.-C., Peng, S.-F., Liang, H.-F., dkk., 2007. Preparation and characterization of nanoparticles shelled with chitosan for oral insulin delivery. *Biomacromolecules*, **8**: 146–152.

Li, X., Kong, X., Shi, S., Zheng, X., Guo, G., Wei, Y., dkk., 2008. Preparation of alginate coated chitosan microparticles for vaccine delivery. *BMC Biotechnology*, **8**: 89.

Ma, Z. dan Lim, L.-Y., 2003. Uptake of chitosan and associated insulin in Caco-2 cell monolayers: a comparison between chitosan molecules and chitosan nanoparticles. *Pharmaceutical Research*, **20**: 1812–1819.

Magenheim, B., Levy, M.., dan Benita, S., 1993. A New In Vitro Technique for The Evaluation of Drug Release Profile from Colloidal Carriers - Ultrafiltration Technique at Low Pressure. Int. J. Pharm., 94: 115–123.

Mohanraj, V.J. dan Chen, Y., 2006. Nanoparticles – A Review. 1 **5**: 561 –573.

Muth, J.E.D., 2014. *Basic Statistics and Pharmaceutical Statistical Applications, Third Edition*. CRC Press.

Nam, J.-P., Choi, C., Jang, M.-K., Jeong, Y.-I., Nah, J.-W., Kim, S.-H., dkk., 2010. Insulin-incorporated chitosan nanoparticles based on polyelectrolyte complex formation. *Macromolecular Research*, **18**: 630–635.

Neal, M.., 2006. *At a Glance Farmakologi Medis*, 5th ed. Erlangga, Jakarta.

Nidhin, M., Indumathy, R., Sreeram, K.., dan Nair, B.., 2008. Syntesis of Iron Oxide Nanoparticles of Narrow Size Distribuion on Polysaccharide- Templates. Bulletin of Material Science, 31(1): 93–96.

Niwa, T., 1993. Preparations of biodegradable nanospheres of water-soluble and insoluble drugs with d,l-lactide/glycolyde copolymer by a novel spontaneus emulsification solvent diffusion method, and the drug release behavior. 1993 **25**: 89–98.

Paños, I., Acosta, N., dan Heras, A., 2008. New drug delivery systems based on chitosan. *Current Drug Discovery Technologies*, **5**: 333–341.

Pan, Y., Li, Y., Zhao, H., Zheng, J., Xu, H., Wei, G., dkk., 2002. Bioadhesive polysaccharide in protein delivery system: chitosan nanoparticles improve the intestinal absorption of insulin in vivo. *International Journal of Pharmaceutics*, **249**: 139–147.

Pessin, J.E. dan Saltiel, A.R., 2000. Signaling pathways in insulin action: molecular targets of insulin resistance. *The Journal of Clinical Investigation*, **106**: 165–169.

Qun, G. dan Ajun, W., 2006. Effects of Molecular Weight, Degree of Acetylation and Ionic Strength on Surface Tension of Chitosan in Dilute Solution. Carbohydrate Research, 64: 29–36.

Sakuma, S., Hayashi, M., dan Akashi, M., 2001. Design of nanoparticles composed of graft copolymers for oral peptide delivery. *Advanced Drug Delivery Reviews*, **47**: 21–37.

Santoso Mardi, 2008. *Senam Diabetes Indonesia*, 4. Persatuan Diabetes Indonesia, Jakarta.

Sarmento, B., Ribeiro, A., Veiga, F., Sampaio, P., Neufeld, R., dan Ferreira, D., 2007. Alginate/chitosan nanoparticles are effective for oral insulin delivery. *Pharmaceutical Research*, **24**: 2198–2206.

Singh, P., 2013. 'A New Interfacial Cross Linking Technique : Preparation, Characterization And Evaluation Of Calcium Alginate Nanoparticles As A Protein Delivery System', thesis, . University of Toledo, Toledo.

Soetrisno, S., 1991. *Prosiding Temu Karya IlmiahTeknologi Pasca Panen Rumput Laut*.

Sona, P.S., 2010. Nanoparticulate Drug Delivery Systems for The Treatment of Diabetes. *Digest Journal of Nanomaterials and Biostructures*, **5(2)**: 411-418.

Su, F.-Y., Lin, K.-J., Sonaje, K., Wey, S.-P., Yen, T.-C., Ho, Y.-C., dkk., 2012. Protease inhibition and absorption enhancement by functional nanoparticles for effective oral insulin delivery. *Biomaterials*, **33**: 2801–2811.

Surveillance, W.H.O.D. of N.D., 1999. Definition, diagnosis and classification of diabetes mellitus and its complications : report of a WHO consultation. Part 1, Diagnosis and classification of diabetes mellitus.

Tiyaboonchai, W., Woiszwillo, J., Sims, R.C., dan Middaugh, C.R., 2003. Insulin containing polyethylenimine-dextran sulfate nanoparticles. *International Journal of Pharmaceutics*, **255**: 139–151.

Wang, X. dan Uchiyam, S., 2013. Polymers for Biosensors Construction, dalam: Rinken, T. (Ed.), *State of the Art in Biosensors - General Aspects*. InTech.

Wilcox, G., 2005. Insulin and insulin resistance. *The Clinical Biochemist. Reviews / Australian Association of Clinical Biochemists*, **26**: 19–39.

Wong, T.W. dan Sumiran, N., 2014. Oral calcium pectinate-insulin nanoparticles: influences of alginate, sodium chloride and Tween 80 on their blood glucose lowering performance. *The Journal of Pharmacy and Pharmacology*, **66**: 646–657.

Yang, X., Yuan, X., Cai, D., Wang, S., dan Zong, L., 2009. Low molecular weight chitosan in DNA vaccine delivery via mucosa. *International Journal of Pharmaceutics*, **375**: 123–132.

Zhang, G., Niu, A., Peng, S., Jiang, M., Tu, Y., Li, M., dkk., 2001. Formation of novel polymeric nanoparticles. *Accounts of Chemical Research*, **34**: 249–256.