

## DAFTAR PUSTAKA

- Abdassah, M. (2017). Nanopartikel dengan gelasi ionik. *Farmaka*, 15(1), 45–52.
- Akbari, B., Tavandashti, M. P., & Zandrahimi, M. (2011). Particle size characterization of nanoparticles—a practical approach. *Iranian Journal of Materials Science and Engineering*, 8(2), 48–56.
- Ambarwati, R. (2019). PEMBUATAN NANOPARTIKEL ALBUMIN MENGGUNAKAN METODE DESOLVASI SEBAGAI ALTERNATIF SISTEM PEMBAWA. *FITOFARMAKA: Jurnal Ilmiah Farmasi*, 9(1), 35–39. <https://doi.org/10.33751/jf.v9i1.1258>
- Amighi, F., Emam-Djomeh, Z., & Labbafi-Mazraeh-Shahi, M. (2020). Effect of different cross-linking agents on the preparation of bovine serum albumin nanoparticles. *Journal of the Iranian Chemical Society*, 17(5), 1223–1235. <https://doi.org/10.1007/s13738-019-01850-9>
- Aminah, N. , D. K. , & S. S. (2016). Rancang Bangun Alat Pengukur Kadar Keasaman Minuman Kemasan dan Kematangan Buah. *Jurnal Teknologi Elektroika*, 13(1), 28–35.
- Arias, J. L., López-Viota, M., López-Viota, J., & Delgado, Á. v. (2009). Development of iron/ethylcellulose (core/shell) nanoparticles loaded with diclofenac sodium for arthritis treatment. *International Journal of Pharmaceutics*, 382(1–2), 270–276. <https://doi.org/10.1016/j.ijpharm.2009.08.019>
- Baumann, M., Dani, S. U., Dietrich, D., Hochstrasser, A., Klingbiel, D., Mark, M. T., Riesen, W. F., Ruhstaller, T., Templeton, A. J., & Thürlimann, B. (2018). Vitamin D levels in Swiss breast cancer survivors. *Swiss Medical Weekly*, 3.
- Benny Karyadi. (1995). *Kimia Fisik dan Teoritis*. . Balai Pustaka.
- Borzova, V. A., Markossian, K. A., Chebotareva, N. A., Kleymentov, S. Yu., Poliansky, N. B., Muranov, K. O., Stein-Margolina, V. A., Shubin, V. v., Markov, D. I., & Kurganov, B. I. (2016). Kinetics of Thermal Denaturation and Aggregation of Bovine Serum Albumin. *PLOS ONE*, 11(4), e0153495. <https://doi.org/10.1371/journal.pone.0153495>
- Bronze-Uhle, E., Costa, B. C., Ximenes, V. F., & Lisboa-Filho, P. N. (2016). Synthetic nanoparticles of bovine serum albumin with entrapped salicylic acid. *Nanotechnology, Science and Applications, Volume 10*, 11–21. <https://doi.org/10.2147/NSA.S117018>

- Deb, S., Reeves, A. A., & Lafortune, S. (2020). Simulation of physicochemical and pharmacokinetic properties of vitamin D3 and its natural derivatives. *Pharmaceuticals*, *13*(8), 160.
- Departemen Kesehatan RI. (2020). *Farmakope Indonesia Edisi VI*. . Kementerian Kesehatan Republik Indonesia.
- Elzoghby, A. O., Samy, W. M., & Elgindy, N. A. (2012). Albumin-based nanoparticles as potential controlled release drug delivery systems. *Journal of Controlled Release*, *157*(2), 168–182.
- Estey, T., Kang, J., Schwendeman, S. P., & Carpenter, J. F. (2006). BSA Degradation Under Acidic Conditions: A Model For Protein Instability During Release From PLGA Delivery Systems. *Journal of Pharmaceutical Sciences*, *95*(7), 1626–1639. <https://doi.org/10.1002/jps.20625>
- Galisteo-González, F., & Molina-Bolívar, J. A. (2014). Systematic study on the preparation of BSA nanoparticles. *Colloids and Surfaces B: Biointerfaces*, *123*, 286–292. <https://doi.org/10.1016/j.colsurfb.2014.09.028>
- Gil, Á., Plaza-Díaz, J., & Mesa, M. D. (2018). Vitamin D: classic and novel actions. *Annals of Nutrition and Metabolism*, *72*(2), 87–95.
- Guo, Z., & Ning, H. (2022). *Investigating Size, Zeta Potential, and Molecular Weight and Evaluating Stability of BSA Solution*. 1–6.
- Hasanvand, E., Fathi, M., Bassiri, A., Javanmard, M., & Abbaszadeh, R. (2015). Novel starch based nanocarrier for vitamin D fortification of milk: Production and characterization. *Food and Bioproducts Processing*, *96*, 264–277.
- Herrmann, M., Farrell, C.-J. L., Pusceddu, I., Fabregat-Cabello, N., & Cavalier, E. (2017). Assessment of vitamin D status – a changing landscape. *Clinical Chemistry and Laboratory Medicine (CCLM)*, *55*(1), 3–26. <https://doi.org/10.1515/cclm-2016-0264>
- Hiremath, S., Antony Raj, M. A. L., Chandra Prabha, M. N., & Vidya, C. (2018). Tamarindus indica mediated biosynthesis of nano TiO<sub>2</sub> and its application in photocatalytic degradation of Titan yellow. *Journal of Environmental Chemical Engineering*, *6*(6), 1-30.
- Huang, B. X., Kim, H.-Y., & Dass, C. (2004). Probing three-dimensional structure of bovine serum albumin by chemical cross-linking and mass spectrometry. *Journal of the American Society for Mass Spectrometry*, *15*(8), 1237–1247. <https://doi.org/10.1016/j.jasms.2004.05.004>

- Jafar, G., Agustin, E., & Puryani, D. (2019). Pengembangan Formula Solid Lipid Nanoparticles (SLN) Hidrokortison Asetat. *Jurnal Pharmascience*, 6(1), 83. <https://doi.org/10.20527/jps.v6i1.6080>
- Jahanban-Esfahlan, A., Ostadrahimi, A., Jahanban-Esfahlan, R., Roufegarinejad, L., Tabibiazar, M., & Amarowicz, R. (2019). Recent developments in the detection of bovine serum albumin. *International Journal of Biological Macromolecules*, 138, 602–617.
- Jahanban-Esfahlan, A., & Panahi-Azar, V. (2016). Interaction of glutathione with bovine serum albumin: Spectroscopy and molecular docking. *Food Chemistry*, 202, 426–431.
- Jäpelt, R. B., & Jakobsen, J. (2013). Vitamin D in plants: a review of occurrence, analysis, and biosynthesis. *Frontiers in Plant Science*, 4, 136.
- Jarai, B. M., Kolewe, E. L., Stillman, Z. S., Raman, N., & Fromen, C. A. (2020). Polymeric Nanoparticles. In *Nanoparticles for Biomedical Applications* (pp. 303–324). Elsevier. <https://doi.org/10.1016/B978-0-12-816662-8.00018-7>
- Joye, I. J., & McClements, D. J. (2014). Biopolymer-based nanoparticles and microparticles: Fabrication, characterization, and application. *Current Opinion in Colloid & Interface Science*, 19(5), 417–427. <https://doi.org/10.1016/j.cocis.2014.07.002>
- Jun, J. Y. , Nguyen, H. H. , Paik, S. Y. R. , Chun, H. S. , Kang, B. C. , & Ko, S. (2011). Preparation of size-controlled bovine serum albumin (BSA) nanoparticles by a modified desolvation method . *Food Chemistry*, 127, 1892–1898.
- Karimi, M., Avci, P., Mobasser, R., Hamblin, M. R., & Naderi-Manesh, H. (2013). The novel albumin–chitosan core–shell nanoparticles for gene delivery: preparation, optimization and cell uptake investigation. *Journal of Nanoparticle Research*, 15(5), 1–14.
- Kaur, S. P., Rao, R., Hussain, A., & Khatkar, S. (2011). Preparation and characterization of rivastigmine loaded chitosan nanoparticles. *Journal of Pharmaceutical Sciences and Research*, 3(5), 1227.
- Kouchakzadeh, H., Safavi, M. S., & Shojaosadati, S. A. (2015). Efficient delivery of therapeutic agents by using targeted albumin nanoparticles. *Advances in Protein Chemistry and Structural Biology*, 98, 121–143.
- Kumar A, & Kumar RG. (2011). To Develop a simple (UV-VIS) spectrometric method for the estimation of multivitamin with special reference to capsules. . *Int J Pharmagenes*, 8, 243.

- Kurniasari, D., & Atun, S. (2017). Pembuatan dan karakterisasi nanopartikel ekstrak etanol temu kunci (*boesenbergia pandurata*) pada berbagai variasi komposisi kitosan. *Jurnal Sains Dasar*, 6(1), 31–35.
- Lal, S., Jana, U., Manna, P. K., Mohanta, G. P., Manavalan, R., & Pal, S. L. (2011). Nanoparticle: An overview of preparation and characterization. *Journal of Applied Pharmaceutical Science*, 06, 228–234.
- Langer, K., Balthasar, S., Vogel, V., Dinauer, N., von Briesen, H., & Schubert, D. (2003). Optimization of the preparation process for human serum albumin (HSA) nanoparticles. *International Journal of Pharmaceutics*, 257(1–2), 169–180.
- Lee, E. S., & Youn, Y. S. (2016). Albumin-based potential drugs: focus on half-life extension and nanoparticle preparation. *Journal of Pharmaceutical Investigation*, 46(4), 305–315. <https://doi.org/10.1007/s40005-016-0250-3>
- Lee, H. J., Park, H. H., Kim, J. A., Park, J. H., Ryu, J., Choi, J., Lee, J., Rhee, W. J., & Park, T. H. (2014). Enzyme delivery using the 30Kc19 protein and human serum albumin nanoparticles. *Biomaterials*, 35(5), 1696–1704.
- Lohcharoenkal, W., Wang, L., Chen, Y. C., & Rojanasakul, Y. (2014). Protein nanoparticles as drug delivery carriers for cancer therapy. *BioMed Research International*, 180549.
- Luo, Y., Teng, Z., & Wang, Q. (2012). Development of zein nanoparticles coated with carboxymethyl chitosan for encapsulation and controlled release of vitamin D3. *Journal of Agricultural and Food Chemistry*, 60, 836–843.
- MacPhee, C. E., & Woolfson, D. N. (2004). Engineered and designed peptide-based fibrous biomaterials. *Current Opinion in Solid State and Materials Science*, 8(2), 141–149.
- Marhamah, M., Nizar, N., Bunga, O., Kusumaningrum, S., & Risma, E. (2014). Pengujian Aktivitas Antiacne Nanopartikel Kitosan Ekstrak Kulit Buah Manggis (*Garcinia Mangostana*). *Media Penelitian Dan Pengembangan Kesehatan*, 24(1), 20691.
- Martien, R., Adhyatmika, A., Irianto, I. D. K., Farida, V., & Sari, D. P. (2012). Perkembangan teknologi nanopartikel sebagai sistem penghantaran obat. *Majalah Farmaseutik*, 8(1), 133–144.
- Mohanraj, V. J., & Chen, Y. (2006). Nanoparticles-a review. *Tropical Journal of Pharmaceutical Research*, 5(1), 561–573.

- Mujamilah, M., & Sulungbud, G. Tj. (2013). Karakteristik Dinamik Sistem Koloid Magnetik Berbasis Nanopartikel Oksida Fe-Chitosan. *Jurnal Kimia Dan Kemasan*, 35(1), 65. <https://doi.org/10.24817/jkk.v35i1.1875>
- Naik, J. B., Lokhande, A. B., Mishra, S., & Kulkarni, R. D. (2012). Development of sustained release micro/nanoparticles using different solvent emulsification technique: A review. *Int J Pharm Bio Sci*, 3(4), 573–590.
- Nasir, A., Kausar, A., & Younus, A. (2015). A Review on Preparation, Properties and Applications of Polymeric Nanoparticle-Based Materials. *Polymer-Plastics Technology and Engineering*, 54(4), 325–341. <https://doi.org/10.1080/03602559.2014.958780>
- Nosrati, H., Rakhshbahar, A., Salehiabar, M., Afroogh, S., Manjili, H. K., Danafar, H., & Davaran, S. (2018). Bovine serum albumin: an efficient biomacromolecule nanocarrier for improving the therapeutic efficacy of chrysin. *Journal of Molecular Liquids*, 271, 639–646.
- Nuraeni, W., Daruwati, I., Widyasari, E. M., & Sriyani, M. E. (2013). Verifikasi kinerja alat particle size analyzer (PSA) Horiba LB-550 untuk penentuan distribusi ukuran nanopartikel.
- Otarola, J., Lista, A. G., Fernández Band, B., & Garrido, M. (2015). Capillary electrophoresis to determine entrapment efficiency of a nanostructured lipid carrier loaded with piroxicam. *Journal of Pharmaceutical Analysis*, 5(1), 70–73. <https://doi.org/10.1016/j.jpha.2014.05.003>
- Paik, S.-Y.-R., Nguyen, H. H., Ryu, J., Che, J.-H., Kang, T. S., Lee, J. K., Song, C. W., & Ko, S. (2013). Robust size control of bovine serum albumin (BSA) nanoparticles by intermittent addition of a desolvating agent and the particle formation mechanism. *Food Chemistry*, 141(2), 695–701. <https://doi.org/10.1016/j.foodchem.2013.04.059>
- Pakki, E., Sumarheni, S., Aisyah, F., Ismail, I., & Safirahidzni, S. (2016). Formulasi Nanopartikel Ekstrak Bawang Dayak (*Eleutherine americana* (Aubl) Merr) dengan Variasi Konsentrasi Kitosan-Tripolifosfat (TPP). *Journal of Tropical Pharmacy and Chemistry*, 3(4), 251–263.
- Prasetiowati, A. L., Prasetya, A. T., & Wardani, S. (2018). Sintesis nanopartikel perak dengan bioreduktor ekstrak daun belimbing wuluh (*Averrhoa bilimbi* L.) uji aktivitasnya sebagai antibakteri. *Indonesian Journal of Chemical Science*, 7(2), 160–166.
- Pubchem. (2022). *Cholecalciferol (Compound)*. <https://pubchem.ncbi.nlm.nih.gov/compound/Cholecalciferol#section=Structures> [Diakses Pada Tanggal 22 Februari 2022].

- Rahmawanty, D., Anwar, E., & Bahtiar, A. (2014). FORMULASI GEL MENGGUNAKAN SERBUK DAGING IKAN HARUAN (*Channa striatus*) SEBAGAI PENYEMBUH LUKA. *Media Farmasi: Jurnal Ilmu Farmasi*, *11*(1). <https://doi.org/10.12928/mf.v11i1.1395>
- Raj, L. F. A. A., Jonisha, R., Revathi, B., & Jayalakshmy, E. (2015). Preparation and characterization of BSA and chitosan nanoparticles for sustainable delivery system for quercetin. *Journal of Applied Pharmaceutical Science*, *5*(7), 1–5.
- Ren, K., Dusad, A., Dong, R., & Quan, L. (2013). Albumin as a delivery carrier for rheumatoid arthritis. *J Nanomed Nanotechol*, *4*(4), 176.
- Savitry, P. E., & Wathoni, N. (2018). Karakterisasi Efisiensi Penjerapan pada Nanopartikel Natrium Diklofenak dalam Sediaan Topikal. *Farmaka*, *16*(2).
- Shao, T. , Klein, P. , & Grossbard, M. L. (2012). Vitamin D and Breast Cancer. *The Oncologist*, *17*(1), 36–45.
- Solanki, R., Patel, K., & Patel, S. (2021). Bovine Serum Albumin Nanoparticles for the Efficient Delivery of Berberine: Preparation, Characterization and In vitro biological studies. *Colloids and Surfaces A: Physicochemical and Engineering Aspects*, *608*, 125501. <https://doi.org/10.1016/j.colsurfa.2020.125501>
- Suryani, M. R., & Ismail, H. (2015). Preparation of curcumin nanoparticles and cellular uptake study on HeLa cells. *International Conference on Latest Trends in Food, Biological & Ecological Science Proceeding*, 13–17.
- Tarhini, M., Benlyamani, I., Hamdani, S., Agusti, G., Fessi, H., Greige-Gerges, H., Bentaher, A., & Elaissari, A. (2018). Protein-based nanoparticle preparation via nanoprecipitation method. *Materials*, *11*(3). <https://doi.org/10.3390/ma11030394>
- Tiyaboonchai, W. (2013). Chitosan nanoparticles: a promising system for drug delivery. *Naresuan University Journal: Science and Technology (NUJST)*, *11*(3), 51–66.
- Vaughn, J. M., William R. O., & Swarbick, James. (2007). Nanoparticle Engineering. . In *Encyclopedia of Pharmaceutical Technology: Vol. I* (Third, pp. 2384–2398). Informa Healthcare USA, . .
- Verma, D., Gulati, N., Kaul, S., Mukherjee, S., & Nagaich, U. (2018). Protein based nanostructures for drug delivery. *Journal of Pharmaceutics*, *2018*.
- Wahyono D. (2010). *Ciri nanopartikel kitosan dan pengaruhnya pada ukuran partikel dan efisiensi penyaluran ketoprofen*. Institut Pertanian Bogor.

- Wahyudi, T., Sugiyana, D., & Helmy, Q. (2011). Sintesis nanopartikel perak dan uji aktivitasnya terhadap bakteri *E. coli* dan *S. aureus*. *Arena Tekstil*, 26(1).
- Wang, D., Liang, N., Kawashima, Y., Cui, F., Yan, P., & Sun, S. (2019). Biotin-modified bovine serum albumin nanoparticles as a potential drug delivery system for paclitaxel. *Journal of Materials Science*, 54(11), 8613–8626.
- Wei, Y., Li, L., Xi, Y., Qian, S., Gao, Y., & Zhang, J. (2014). Sustained release and enhanced bioavailability of injectable scutellarin-loaded bovine serum albumin nanoparticles. *International Journal of Pharmaceutics*, 476(1–2), 142–148. <https://doi.org/10.1016/j.ijpharm.2014.09.038>
- Wu, S., Huang, X., & Du, X. (2013). Glucose-and pH-responsive controlled release of cargo from protein-gated carbohydrate-functionalized mesoporous silica nanocontainers. *Angewandte Chemie International Edition*, 52(21), 5580–5584.
- Xin, Y., Huang, Q., Tang, J.-Q., Hou, X.-Y., Zhang, P., Zhang, L. Z., & Jiang, G. (2016). Nanoscale drug delivery for targeted chemotherapy. *Cancer Letters*, 379(1), 24–31. <https://doi.org/10.1016/j.canlet.2016.05.023>
- Yuan, A., Wu, J., Song, C., Tang, X., Qiao, Q., Zhao, L., Gong, G., & Hu, Y. (2013). A novel self-assembly albumin nanocarrier for reducing doxorubicin-mediated cardiotoxicity. *Journal of Pharmaceutical Sciences*, 102(5), 1626–1635.
- Zand, L., & Kumar, R. (2017). The use of vitamin D metabolites and analogues in the treatment of chronic kidney disease. *Endocrinology and Metabolism Clinics*, 46(4), 983–1007.
- Zhao, L., Zhou, Y., Gao, Y., Ma, S., Zhang, C., Li, J., Wang, D., Li, X., Li, C., & Liu, Y. (2015). Bovine serum albumin nanoparticles for delivery of tacrolimus to reduce its kidney uptake and functional nephrotoxicity. *International Journal of Pharmaceutics*, 483(1–2), 180–187.