

## DAFTAR PUSTAKA

- Afroz, A., Asaduzzaman, M., Rahman, M., and Islam, S., 2011, Development and Evaluation of Muco-Adhesive Ciprofloxacin Bi-Layer Tablet for Extended Drug Release, *Asian Journal of Pharmaceutical Research*, 1, 64–68.
- Ahmed, N., Abo-zeid, Y., and Sakran, W., 2023, Strategies Adopted to Improve Bioavailability of Glibenclamide: Insights on Novel Delivery Systems, *Journal of Advanced Pharmacy Research*, 7, 35–49.
- Ainurofiq, A., Hidayat, Y., Lestari, E.Y.P., Kumalasari, M.M.W., and Choiri, S., 2022, Resveratrol Nanocrystal Incorporated into Mesoporous Material: Rational Design and Screening through Quality-by-Design Approach, *Nanomaterials*, 12(2), 214.
- Al-Khattawi, A., Koner, J., Rue, P., Kirby, D., Perrie, Y., Rajabi-Siahboomi, A., and Mohammed, A.R., 2015, A pragmatic approach for engineering porous mannitol and mechanistic evaluation of particle performance, *European Journal of Pharmaceutics and Biopharmaceutics*, 94, 1–10.
- Almiahsari, A., Danimayostu, A.A., and Permatasari, D., 2019, Pengaruh Rasio Kitosan Dan Atenolol Terhadap Diameter the Effect of Chitosan and Atenolol Ratio on Diameter Size , Entrapment Efficiency Dan Release Profile of Atenolol, *Pharmaceutical Journal of Indonesia*, 4, 1–9.
- Alvarado, A.T., Muñoz, A.M., BendeZú, M., García, J.A., Palomino-Jhong, J.J., Ochoa-Pachas, G., Chonn-Chang, A., Sullon-Dextre, L., Loja-Herrera, B., and Pineda-Perez, M., 2021, In vitro biopharmaceutical equivalence of 5-mg glibenclamide tablets in simulated intestinal fluid without enzymes, *Dissolut Technol*, 28, 1–12.
- AOAC, 2016, Appendix F: Guidelines for Standard Method Performance Requirements. In *AOAC Official Methods of Analysis*. [https://www.aoac.org/wp-content/uploads/2019/08/app\\_f.pdf](https://www.aoac.org/wp-content/uploads/2019/08/app_f.pdf).
- Apriani, A., Masfria, M., and Sitorus, P., 2022, Antibacterial Activity Of Daemonorops Draco (Willd) Blume Fruit Ethanol Extract Against Some Bacterial Pathogens, *International Journal of Science, Technology & Management*, 3, 831–834.
- Apsari, K. and Chaerunisa, A.Y., 2020, Review Jurnal: Upaya Peningkatan Kelarutan Obat, *Farmaka*, 18, 56–68.
- Benetti, A.A., Bianchera, A., Buttini, F., Bertocchi, L., and Bettini, R., 2021, Mannitol polymorphs as carrier in dpis formulations: Isolation characterization and performance, *Pharmaceutics*, 13, 1–21.

- Bruni, G., Berbenni, V., Milanese, C., Girella, A., Cofrancesco, P., Bellazzi, G., and Marini, A., 2009, Physico-chemical characterization of anhydrous d-mannitol, *J Therm Anal Calorim*, 95, 871–876.
- Budiman, A., Nurlatifah, E., and Amin, S., 2016, Enhancement of Solubility and Dissolution Rate of Glibenclamide by Cocrystal Approach with Solvent Drop Grinding Method, *International Journal of Current Pharmaceutical Review and Research*, 7, 248–250.
- Budiman, A., Sopyan, I., and Riyandi, D.S., 2019, Enhancement of glibenclamide dissolution rate by solid dispersion method using HPMC and PVP, *International Journal of Applied Pharmaceutics*, 11, 19–24.
- Depkes RI, 2020, *Farmakope Indonesia edisi VI*, Departemen Kesehatan RI, Jakarta.
- Ebrahimi, A., Saffari, M., and Langrish, T., 2017, Improving the dissolution rate of hydrophobic drugs through encapsulation in porous lactose as a new biocompatible porous carrier, *Int J Pharm*, 521, 204–213.
- Elbahwy, I.A., Ibrahim, H.M., Ismael, H.R., and Kasem, A.A., 2017, Enhancing bioavailability and controlling the release of glibenclamide from optimized solid lipid nanoparticles, *J Drug Deliv Sci Technol*, 38, 78–89.
- Gohil, T., 2014, Solubility Enhancement of Poorly Water Soluble Drugs, *Indonesian Journal of Pharmacy*, 25, 1–8.
- Gonçalves, L.M.D., Maestrelli, F., Mannelli, L.C., Ghelardini, C., Almeida, A.J., and Mura, P., 2016, Development of solid lipid nanoparticles as carriers for improving oral bioavailability of glibenclamide, *European Journal of Pharmaceutics and Biopharmaceutics*, 102, 41–50.
- Grigorov, P.I., Glasser, B.J., and Muzzio, F.J., 2013, Formulation and Manufacture of Pharmaceuticals by Fluidized-Bed Impregnation of Active Pharmaceutical Ingredients onto Porous Carriers, *AIChE Journal*, 59, 4538–4552.
- He, S., Pan, H., and Zhang, J., 2023, Advances of typical mesoporous materials and the application in drug delivery, *Mater Res Express*, 10(4), 042001.
- ICH, 2005, Validation of Analytical Procedures: Text and Methodology Q2(R1), Chicago.
- Inoue, N., Takashima, Y., Suga, M., Suzuki, T., Nemoto, Y., and Takai, O., 2018, Observation of wet specimens sensitive to evaporation using scanning electron microscopy, *Microscopy*, 67, 356–366.

- Jiang, N., Wang, S., Cheng, Z., and Liu, W., 2020, In vitro and in vivo evaluation of porous lactose/mannitol carriers for solubility enhancement of poorly water-soluble drugs, *Drying Technology*, 38, 889–902.
- Khadka, P., Ro, J., Kim, Hyeongmin, Kim, I., Kim, J.T., Kim, Hyunil, Cho, J.M., Yun, G., and Lee, J., 2014, Pharmaceutical particle technologies: An approach to improve drug solubility, dissolution and bioavailability, *Asian J Pharm Sci*, 9, 304–316.
- Khan, M.A.B., Hashim, M.J., King, K.K., Govender, R.D., Mustafa, H., and Al Kaabi, J., 2020, Epidemiology of Type 2 Diabetes, *Type 2 Diabetes: Principles and Practice, Second Edition*, 10, 107–111.
- Khan, S., Madni, A., Rahim, M.A., Shah, H., Jabar, A., Khan, M.M., Khan, A., Jan, N., and Mahmood, M.A., 2021, Enhanced in vitro release and permeability of glibenclamide by proliposomes: Development, characterization and histopathological evaluation, *J Drug Deliv Sci Technol*, 63, 102450.
- Kotwas, A., Karakiewicz, B., Zabielska, P., Wieder-Huszla, S., and Jurczak, A., 2021, Epidemiological factors for type 2 diabetes mellitus: evidence from the Global Burden of Disease, *Archives of Public Health*, 79, 1–7.
- Kumar, B.S., Saraswathi, R., Kumar, K. V., Jha, S.K., Venkates, D.P., and Dhanaraj, S.A., 2014, Development and characterization of lecithin stabilized glibenclamide nanocrystals for enhanced solubility and drug delivery, *Drug Deliv*, 21, 173–184.
- Kuncahyo, I., Indrayati, A., and Choiri, S., 2023, Rational Design and Development of a Soluble Mesoporous Carrier for the Solidification of a Preconcentrated Self-Nanoemulsion Formulation, *ACS omega*, 8(41), 38676–38689.
- Leyva-Porras, C., Cruz-Alcantar, P., Espinosa-Sol, V., and Saavedra-Leos, M.Z., 2019, Application of Differential Scanning Calorimetry (DSC) and Modulated Differential Scanning, *Polymers (Basel)*, 12, 1–21.
- Littringer, E.M., Mescher, A., Schroettner, H., Achelis, L., Walzel, P., and Urbanetz, N.A., 2012, European Journal of Pharmaceutics and Biopharmaceutics Spray dried mannitol carrier particles with tailored surface properties – The influence of carrier surface roughness and shape, *European Journal of Pharmaceutics and Biopharmaceutics*, 82, 194–204.
- Liu, H., Shang, K., Liu, W., Leng, D., Li, R., Kong, Y., and Zhang, T., 2014, Improved oral bioavailability of glyburide by a self-nanoemulsifying drug delivery system, *J Microencapsul*, 31, 277–283.

- Loh, Z.H., Samanta, A.K., and Sia Heng, P.W., 2014, Overview of milling techniques for improving the solubility of poorly water-soluble drugs, *Asian J Pharm Sci*, 10, 255–274.
- Maharjan, R., Jeong, J., Bhujel, R., Kim, M.S., Han, H.K., Kim, N.A., and Jeong, S.H., 2022, Correlation of Solubility Thermodynamics of Glibenclamide with Recrystallization and In Vitro Release Profile, *Molecules*, 27, 1–22.
- Mathrusri Annapurna, M., Prathyusha, P., and Durga Saranya, S., 2019, Development and Validation of Spectrophotometric Methods for the Determination of Glibenclamide, *Acta Scientific Pharmaceutical Sciences*, 3, 110–115.
- Mokale, V.J., Rajput, R., Patil, J., Yadava, S., and Naik, J., 2016, Formulation of metformin hydrochloride nanoparticles by using spray drying technique and in-vitro evaluation of sustained release with 32- level factorial design approach, *Drying Technology*, 34(12), 1455-1461.
- Molavi, F., Hamishehkar, H., and Nokhodchi, A., 2020, Impact of tablet shape on drug dissolution rate through immediate released tablets, *Adv Pharm Bull*, 10, 656–661.
- Mura, P., Valleri, M., Cirri, M., and Mennini, N., 2012, New solid self-microemulsifying systems to enhance dissolution rate of poorly water soluble drugs, *Pharm Dev Technol*, 17, 277–284.
- Ohrem, H.L., Schornick, E., Kalivoda, A., and Ognibene, R., 2014, Why is mannitol becoming more and more popular as a pharmaceutical excipient in solid dosage forms?, *Pharm Dev Technol*, 19, 257–262.
- Patil, S.M., Chilkawar, R.N., and Panchal, V., 2013, Validated Simple and Sensitive Uv Spectrophotometric Method for Estimation of Glibenclamide in Bulk and Pharmaceutical Formulations, *World J Pharm Pharm Sci*, 2, 2627–2634.
- Peng, T., Zhang, X., Huang, Y., Zhao, Z., Liao, Q., Xu, J., Huang, Z., Zhang, J., Wu, C.Y., Pan, X., and Wu, C., 2017, Nanoporous mannitol carrier prepared by non-organic solvent spray drying technique to enhance the aerosolization performance for dry powder inhalation, *Sci Rep*, 7, 46517.
- Prasad, N., Issarani, R., Prakash Nagori, B., Deep Singh N Modi, A.K., and Deep Singh, A., 2016, Development and Validation of UV Spectrophotometric Method for Detection of Glibenclamide during Dissolution in Alkaline Borate Buffer pH 9.5, *Current Research in Pharmaceutical Sciences*, 06, 68–73.

- Pubchem, 2023a, Ammonium Bicarbonate, <https://pubchem.ncbi.nlm.nih.gov/compound/14013>.
- Pubchem, 2023b, Glyburide, <https://pubchem.ncbi.nlm.nih.gov/compound/3488>.
- Pubchem, 2023c, Mannitol, <https://pubchem.ncbi.nlm.nih.gov/compound/6251>.
- Rambiritch, V., Maharaj, B., and Naidoo, P., 2014, Glibenclamide in patients with poorly controlled type 2 diabetes: A 12-week, prospective, single-center, open-label, dose-escalation study, *Clin Pharmacol*, 6, 63–69.
- Rehder, S., Sakmann, A., Rades, T., and Leopold, C.S., 2012, Thermal degradation of amorphous glibenclamide, *European Journal of Pharmaceutics and Biopharmaceutics*, 80, 203–208.
- Rowe, R.C., Sheskey, P.J., and Quinn, M.E., 2009, *Handbook of Pharmaceutical Excipients*, 6th edition, London.
- Saffari, M., Ebrahimi, A., and Langrish, T., 2016, A novel formulation for solubility and content uniformity enhancement of poorly water-soluble drugs using highly-porous mannitol, *European Journal of Pharmaceutical Sciences*, 83, 52–61.
- Saffari, M., Ebrahimi, A., and Langrish, T., 2015, Highly-porous mannitol particle production using a new templating approach, *Food Research International*, 67, 44–51.
- Salsabila, E. and Priyambodo, E., 2023, Indonesian Journal of Chemical Science Analysis of Calcium Levels in Yoghurt Drinks Using UV-Visible Spectrophotometry Method, *Indo. J. Chem. Sci*, 12, 271.
- Singh, M., Barua, H., Jyothi, V.G.S.S., Dhondale, M.R., Nambiar, A.G., Agrawal, A.K., Kumar, P., Shastri, N.R., and Kumar, D., 2023, Cocrystals by Design: A Rational Coformer Selection Approach for Tackling the API Problems, *Pharmaceutics*, 15(4), 1161.
- Sola, D., Rossi, L., Schianca, G.P.C., Maffioli, P., Bigliocca, M., Mella, R., Corlianò, F., Paolo Fra, G., Bartoli, E., and Derosa, G., 2015, Sulfonylureas and their use in clinical practice, *Archives of Medical Science*, 11, 840–848.
- Song, H., Moon, C., Lee, B.J., and Oh, E., 2018, Mesoporous Pravastatin Solid Dispersion Granules Incorporable Into Orally Disintegrating Tablets, *J Pharm Sci*, 107, 1886–1895.
- Sormunen, H., Ruponen, M., and Laitinen, R., 2019, The effect of co-amorphization of glibenclamide on its dissolution properties and permeability through an MDCKII-MDR1 cell layer, *Int J Pharm*, 570, 118653.

- Syukri, Y., Ulfa, F., Lestari, A., Saputri, L.A., Istikharah, R., and Kusuma, A.P., 2018, Characterization, formulation and evaluation of glibenclamide with  $\beta$ -cyclodextrin inclusion complexes tablets, *Jurnal Kedokteran dan Kesehatan Indonesia*, 9, 139–148.
- Tabbakhian, M., Hasanzadeh, F., Tavakoli, N., and Jamshidian, Z., 2014, Dissolution enhancement of glibenclamide by solid dispersion: Solvent evaporation versus a supercritical fluid-based solvent -antisolvent technique, *Res Pharm Sci*, 9, 337–350.
- Tahrani, A.A., Barnett, A.H., and Bailey, C.J., 2016, Pharmacology and therapeutic implications of current drugs for type 2 diabetes mellitus, *Nat Rev Endocrinol*, 12, 566–592.
- Taniya, D., Praveen, K., and Meenu, C., 2023, Method Development And Validation Of Glibenclamide By UV-Spectroscopy, *European Chemical Bulletin*, 12, 7444–7451.
- Thananukul, K., Kaewsaneha, C., Opaprakasit, P., Lebaz, N., Errachid, A., and Elaissari, A., 2021, Smart gating porous particles as new carriers for drug delivery, *Adv Drug Deliv Rev*, 174, 425–446.
- Wojnarowska, Z., Grzybowska, K., Adrjanowicz, K., Kaminski, K., Paluch, M., Hawelek, L., Wrzalik, R., Dulski, M., Sawicki, W., Mazgalski, J., Tukalska, A., and Bieg, T., 2010, Study of the amorphous glibenclamide drug: Analysis of the molecular dynamics of quenched and cryomilled material, *Mol Pharm*, 7, 1692–1707.
- Yan, Y., Wu, T., Zhang, M., Li, C., Liu, Q., and Li, F., 2022, Prevalence, awareness and control of type 2 diabetes mellitus and risk factors in Chinese elderly population, *BMC Public Health*, 22, 1–6.
- Yang, Y., Liu J., Hu A., Nie T., Cheng Z., L.W., 2022, A Critical Review on Engineering of D-Mannitol Crystals: Properties, Applications, and Polymorphic Control, *Crystals (Basel)*, 12, 1–21.
- Zheng, Y., Ley, S.H., and Hu, F.B., 2018, Global aetiology and epidemiology of type 2 diabetes mellitus and its complications, *Nat Rev Endocrinol*, 14, 88–98.