

DAFTAR PUSTAKA

- Afolabi, A., Akinlabi, O., Bilgili, E., 2013. Impact of Process Parameters on The Breakage Kinetics of Poorly Water-Soluble Drugs During Wet Stirred Media Milling: A Microhydrodynamic View. *European Journal of Pharmaceutical Sciences*, Vol. 51, pp. 75-86.
- Ahuja, B. K., Jena, S. K., Paidi, S. K., Bagri, S., Suresh, S., 2015. Formulation, Optimization and In Vitro–In Vivo Evaluation of Febuxostat Nanosuspension. *International Journal of Pharmaceutics*, Vol. 478 No. 2, pp. 540–52.
- Aleandri, S., Schönenberger, M., Niederquell, A., Kuentz, M., 2018. Temperature-Induced Surface Effects on Drug Nanosuspensions. *Pharmaceutical Research*, Vol. 35 No. 3, pp. 1-11.
- Alshora, D. H., Ibrahim, M. A., Elzayat, E., Almeanazel, O. T., Alanazi. F., 2018. Rosuvastatin Calcium Nanoparticles: Improving Bioavailability by Formulation and Stabilization Codesign. *Public Library of Science*, Vol. 13 No. 7, pp. 1-17.
- Azad, M., Afolabi, A., Bhakay, A., Leonardi, J., Davé, R., Bilgili, E., 2015. Enhanced Physical Stabilization of Fenofibrate Nanosuspensions via Wet Co-Milling with a Superdisintegrant and an Adsorbing Polymer. *European Journal of Pharmaceutics and Biopharmaceutics*, Vol. 94, pp. 372–385.
- Azalia, R., 2016. Pengaruh Jumlah CaCl₂ terhadap Karakterisasi Fisik dari Nanokristal Andrografolid-Karboksimetil Kitosan Tersambung Silang. *Skripsi*. Universitas Airlangga, Surabaya, Indonesia.
- Baumgartner, R., Teubl, B. J., Tetyczka, C., Roblegg, E., 2016. Rational Design and Characterization of a Nanosuspension for Intraoral Administration Considering Physiological Conditions. *Journal of Pharmaceutical Sciences*, Vol. 105 No. 1, pp. 257–67.

- Bhakay, A., Rahman, M., Dave, R. N., Bilgili, E., 2018. Bioavailability Enhancement of Poorly Water-soluble Drugs via Nanocomposites: Formulation–Processing Aspects and Challenges. *Pharmaceutics*, Vol. 10 No. 3, pp 1-62.
- Bilgili, E., Afolabi, A., 2012. A Combined Microhydrodynamics–Polymer Adsorption Analysis for Elucidation of The Roles of Stabilizers in Wet Stirred Media Milling. *International Journal of Pharmaceutics*, Vol. 493, pp. 193–206.
- Bilgili, E., Li, M., Afolabi, A., 2016. Is The Combination of Cellulosic Polymers and Anionic Surfactants a Good Strategy for Ensuring Physical Stability of BCS Class II Drug Nanosuspensions?. *Pharmaceutical Development and Technology*, Vol. 21 No. 4, pp. 499–510.
- Bilgili, E., Rahman, M., Palacios, D., Arevalo, F., 2018. Impact of Polymers on The Aggregation of Wet-Milled Itraconazole Particles and Their Dissolution from Spray-Dried Nanocomposites. *Advanced Powder Technology*.
- Bose, S., Schenck, D., Ghosh, I., Hollywood, A., Maulit, E., Ruegger, C., 2012. Application of Spray Granulation for Conversion of a Nanosuspension Into a Dry Powder Form. *European Journal of Pharmaceutical Sciences*, Vol. 47 No. 1, pp. 35–43.
- Camiletti, B. X., Camacho, N. M., Paredes, A. J., Alleandi, D. A., Palma, S. D., Grosso, N. R., 2020. Self-dispersible Nanocrystals of Azoxystrobin and Cyproconazole with Increased Efficacy Against Soilborne Fungal Pathogens Isolated from Peanut Crops. *Powder Technology*.

- Cerdeira, A. M., Werner, I. A., Mazzotti, M., Gander, B., 2012. Simultaneous Quantification of Polymeric and Surface Active Stabilizers of Nanosuspensions by Using Near-infrared Spectroscopy. *Drug Development and Industrial Pharmacy*, Vol. 38 No. 11, pp. 1360–1370.
- Chavhan, S., Joshi, G., Petkar, K., Sawant, K., 2013. Enhanced Bioavailability and Hypolipidemic Activity of Simvastatin Formulations by Particle Size Engineering: Physicochemical Aspects and In Vivo Investigations. *Biochemical Engineering Journal*, Vol. 79, pp. 221–229.
- Chen, Y., Li, T., 2015. Cellular Uptake Mechanism of Paclitaxel Nanocrystals Determined by Confocal Imaging and Kinetic Measurement. *AAPS Journal*, Vol. 17 No. 5, pp. 1126–1134.
- Chin, W. W. L., Parmetier, J., Widzinski, M., Tan, E. H., Gokhale, R., 2014. A Brief Literature and Patent Review of Nanosuspensions to a Final Drug Product. *Journal of Pharmaceutical Sciences*, Vol. 103 No. 10, pp. 2980–2999.
- Colombo, M., Orthmann, S., Bellini, M., Staufenbiel, S., Bodmeiere, R., 2017. Influence of Drug Brittleness, Nanomilling Time, and Freeze-Drying on the Crystallinity of Poorly Water-Soluble Drugs and Its Implications for Solubility Enhancement. *AAPS PharmSciTech*, Vol. 18 No. 7, pp. 2437–2445.
- Colombo, M., Minussi, C., Orthmann, S., Staufenbiel, S., Bodmeier, R., 2018. Preparation of Amorphous Indomethacin Nanoparticles by Aqueous Wet Bead Milling and In Situ Measurement of Their Increased Saturation Solubility. *European Journal of Pharmaceutics and Biopharmaceutics*, Vol. 125, pp. 159–168.

- D'haese, L. 2014. Evaluation and Characterisation of Nanostructure Preservation After Ball Milling and Spray Drying. *Disertation*. Ghent University.
- Deng, J., Huang, L., Liu, F., 2010. Understanding The Structure and Stability of Paclitaxel Nanocrystals. *International Journal of Pharmaceutics*, Vol. 390, pp. 242–249.
- Derjaguin, B., Landau, L. 1993. Theory of The Stability of Strongly Charged Lyophobic Sols and of The Adhesion of Strongly Charged Particles in Solutions of Electrolytes. *Progress in Surface Science*, Vol. 43 No.1, pp. 30–59.
- Ding, Z., Wang, L., Xing, Y., Zhao, Y., Wang, Z., Han, J., 2019. Enhanced Oral Bioavailability of Celecoxib Nanocrystalline Solid Dispersion based on Wet Media Milling Technique: Formulation, Optimization and In Vitro/In Vivo Evaluation. *Pharmaceutics*, Vol. 11 No. 328, pp. 1-18.
- Eerdenbrugh, B. V., Vermant, J., Martens, J. A., Froyen, L., Humbeeck, J. V., Augustijns, P., Mooter, G. V. D., 2009. A Screening Study of Surface Stabilization During The Production of Drug Nanocrystals. *Journal of Pharmaceutical Sciences*, Vol. 96 No. 6, pp. 2091–2130.
- Eerdenbrugh, B. V., Mooter, G. V. D., Augustijns, P. 2008. Top-down Production of Drug Nanocrystals: Nanosuspension Stabilization, Miniaturization and Transformation Into Solid Products. *International Journal of Pharmaceutics*, Vol. 364 No. 1, pp. 64–75.
- El, S. S., Naggar, V. F., 2015. Bioavailability : A Pharmaceutical Review Bioavailability : A Pharmaceutical Review. *Novel Drug Deliv. Tech.*
- Evonik., 2015. Diakses dari <https://healthcare.evonik.com/product/healthcare/downloads/evonik-solubility-enhancementbrochure.pdf>, pada tanggal 10 Januari 2020.

- Figueroa, C. E., Bose, S. 2013. Spray granulation: Importance of Process Parameters on In Vitro and In Vivo Behavior of Dried Nanosuspensions. *European Journal of Pharmaceutics and Biopharmaceutics*, Vol. 85, pp. 1046–1055.
- Fox Industries., 2019. Diakses dari <http://foxindustries.com/products/grindingmedia/yttria-stabilized-zirconium-oxide-milling-media/>, diakses pada 20 Desember 2019.
- Fu, T., Gu, X., Liu, Q., Peng, X., Yang, J., 2020. Study on The Stabilization Mechanisms of Wet-Milled Cepharanthine Nanosuspensions Using Systematical Characterization. *Drug Development and Industrial Pharmacy*, pp. 1520–5762.
- Gahoi, S., Jain, G.K., Tripathi, R., Pandey, S. K., Anwar, M., Warsi, M. H., Singhal, M., Khar, R. K., Ahmad, F. J., 2012. Enhanced Antimalarial Activity of Lumefantrine Nanopowder Prepared by Wet-milling DYNO MILL Technique. *Colloids and Surfaces B: Biointerfaces*, Vol. 95, pp. 16–22.
- Ghosh, I., Bose, S., Vippagunta, R., Harmon, F., 2011. Nanosuspension for Improving The Bioavailability of A Poorly Soluble Drug and Screening of Stabilizing Agents to Inhibit Crystal Growth. *International Journal of Pharmaceutics*, Vol. 409 No. 1, pp. 260–268.
- Gubbala, L. P., Arutla, S., Venkateshwarlu, V., 2014. Preparation and Solid State Characterization of Nanocrystals for Solubility Enhancement of Quetiapine Fumarate. *International Journal of Pharmacy and Pharmaceutical Sciences*, Vol. 6 No. 7, pp. 358–364.
- Guo, J., Gu, X., Mai, Y., Zhao, Y., Gou, G., Yang, J., 2020. Preparation and Characterization of Tetrandrine Nanosuspensions and In Vitro Estimate Antitumor Activity on A549 Lung Cancer Cell Line. *Journal of Microencapsulation*.

- Guo, Y., Wang, Y., Xu, L., 2015. Enhanced Bioavailability of Rebamipide Nanocrystal Tablets: Formulation and In Vitro/In Vivo Evaluation. *Asian Journal of Pharmaceutical Sciences*, pp. 1–7.
- Hagedorn, M., Liebich, L., Bögerhausen, A., Massing, U., Hoffmann, S., Mende, S., Rischer, M., 2019. Rapid Development of API Nanoformulations from Screening to Production Combining Dual Centrifugation and Wet Agitator Bead Milling. *International Journal of Pharmaceutics*, Vol. 565, pp. 187–198.
- Han, T., Yong, J., Liu, Q., Gu, X., Zhang, W., Yang, J., 2020. Preparation and Characterization of Wet-Milled Cyclovirobuxine D Nanosuspensions. *Journal of Thermal Analysis and Calorimetry*, Vol. 139 No. 3, pp. 1959–1970.
- Hasegawa, Y., Higashi, K., Yamamoto, K., Moribe, K., 2015. Direct Evaluation of Molecular States of Piroxicam/Poloxamer Nanosuspension by Suspended-State NMR and Raman Spectroscopies. *Molecular Pharmaceutics*, Vol. 12 No. 5, pp. 1564–1572.
- Huang, Y., Luo, X., You, X., Xia, Y., Song, X., Yu, L., 2013. The Preparation and Evaluation of Water-soluble SKLB610 Nanosuspensions with Improved Bioavailability. *AAPS PharmSciTech*, Vol. 14 No. 3, pp. 1236–1243.
- Ito, A., Konnerth, C., Schmidt, J., Puekert, W., 2016. Effect of Polymer Species and Concentration on The Production of Mefenamic Acid Nanoparticles by Media Milling. *European Journal of Pharmaceutics and Biopharmaceutics*, Vol. 98, pp. 98–107.
- Junghanns, J. U. A. H., Müller, R. H. 2008. Nanocrystal Technology, Drug Delivery and Clinical Applications. *International Journal of Nanomedicine*, Vol. 3 No. 3, pp. 295–309.

- Junyaprasert, V. B., Morakul, B. 2015. Nanocrystals for Enhancement of Oral Bioavailability of Poorly Water-soluble Drugs. *Asian Journal of Pharmaceutical Sciences*, Vol. 10 No. 1, pp. 13–23.
- Kayaert, P., Anné, M., Mooter, G. V. D., 2011. Bead Layering as a Process To Stabilize Nanosuspensions: Influence of Drug Hydrophobicity on Nanocrystal Reagglomeration Following In-Vitro Release From Sugar Beads. *Journal of Pharmacy and Pharmacology*, Vol. 63 No. 11, pp. 1446–1453.
- Khadka, P., Ro, J., Kim, H., Kim, I., Kim, J. T., Kim. H., Cho, J. M., Yun, G., Lee, J., 2014. Pharmaceutical Particle Technologies: An Approach to Improve Drug Solubility, Dissolution and Bioavailability. *Asian Journal of Pharmaceutical Sciences*, Vol. 9 No. 6, pp. 304–316.
- Khan, S., Ali, H. S. M., York, P., Shah, S. M., Khan, J., Hussain, Z., Khan, B. A., 2017. A Stable Hydrocortisone Nanosuspension for Improved Dissolution: Preparation, Characterization and In Vitro Evaluation Fabrication of Smart Nanocrystals with Advanced Technology View Project. *Pakistan Journal of Pharmaceutical Sciences*, Vol. 30 No. 5, pp. 1635–1643.
- Kim, H. I., Park, S. Y., Park, S. J., Lee, J., Cho, K. H., Jee, J. P., Kim, H. C., Maeng, H. J., Jang, D. J., 2018. Development and Evaluation of a Reconstitutable Dry Suspension to Improve the Dissolution and Oral Absorption of Poorly Water-Soluble Celecoxib. *Pharmaceutics*, Vol. 10 No. 140, pp. 1–14.
- Kim, H. I., Jee, J. P., Kim, S. T., Kang, D., Kim, Y. C., Kim, H. C., Park, S. Y., Lee, H. M., Cho, K. H., Kim, D. Y., Choi, S. U., Jang, D. J., 2019. Preparation and Characterization of Celecoxib Nanosuspension Using Bead Milling. *Journal of Nanoscience and Nanotechnology*, Vol. 19 No. 2, pp. 1184–1187.

- Kipp, J. E. 2004. The Role of Solid Nanoparticle Technology in The Parenteral Delivery of Poorly Water-soluble Drugs. *International Journal of Pharmaceutics*, Vol. 284 No. 1, pp. 109–122.
- Komasaka, T., Fujimura, H., Tagawa, T., Sugiyama, A., Kitano, Y., 2014. Practical Method for Preparing Nanosuspension Formulations for Toxicology Studies in The Discovery Stage: Formulation Optimization and In Vitro/In Vivo Evaluation of Nanosized Poorly Water-Soluble Compounds. *Chemical & Pharmaceutical Bulletin*, Vol. 62 No. 11, pp. 1073–1082.
- Koradia, K., Sheth, N. R., Koradia, H. D., Dabhi, M. R., 2018. Ziprasidone Nanocrystals by Wet Media Milling Followed by Spray Drying and Lyophilization: Formulation and Process Parameter Optimization. *Journal of Drug Delivery Science and Technology*, Vol. 43, pp. 73–84.
- Krull, S., Susarla, R., Afolabi, A., Li, M., Ying, Y., Iqbal, Z., Bilgili, E., Davé, R. N., 2015. Polymer Strip Films As A Robust, Surfactant-free Platform for Delivery of BCS Class II Drug Nanoparticles. *International Journal of Pharmaceutics*, Vol. 489 No. 1, pp. 45–57.
- Krull, S. M., Ma, Z., Li, M., Davé, R. N., Bilgili, E., 2016. Preparation and Characterization of Fast Dissolving Pullulan Films Containing BCS Class II Drug Nanoparticles for Bioavailability Enhancement. *Drug Development and Industrial Pharmacy*, Vol. 42 No. 7, pp. 1073–1085.
- Kumar, S., Burgess, D. J. 2014. Wet Milling Induced Physical and Chemical Instabilities of Naproxen Nano-crystalline Suspensions. *International journal of Pharmaceutics*, Vol. 466, pp. 223–232.

- Kuroiwa, Y., Higashi, K., Ueda, K., Yamamoto, K., Moribe, K., 2018. Nano-Scale and Molecular-Level Understanding of Wet-milled Indomethacin/Poloxamer 407 Nanosuspension with TEM, Suspended-state NMR, and Raman. *International Journal of Pharmaceutics*, Vol. 537 No. 1, pp. 30–39.
- Lestari, M. L. A. D., 2014. Nanocrystals of Poorly Soluble Plant Compounds for Oral Administration. *Thesis*. Freie Universitat, Berlin, Germany.
- Lestari, M. L. A. D., Müller, R. H., Möschwitzer, J. P., 2015. Systematic Screening of Different Surface Modifiers for The Production of Physically Stable Nanosuspensions. *Journal of Pharmaceutical Sciences*, Vol. 104 No. 3, pp. 1128–1140.
- Lestari, M. L. A. D., Müller, R. H., Möschwitzer, J. P. 2019. The Scalability of Wet Ball Milling for The Production of Nanosuspensions. *Pharmaceutical Nanotechnology*, Vol. 7 No. 2, pp. 147–161.
- Li, F., Li, L., Wang, S., Yang, Y., Li, J., Liu, D., Zhang, S., Wang, S., Xu, H., 2019. Improved Dissolution and Oral Absorption by Co-grinding Active Drug Probucol and Ternary Stabilizers Mixtures with Planetary Beads-milling Method. *Asian Journal of Pharmaceutical Sciences*, Vol. 14 No. 6, pp. 649–657.
- Li, M., Alvarez, P., Bilgili, E., 2017. A Microhydrodynamic Rationale for Selection of Bead Size in Preparation of Drug Nanosuspensions Via Wet Stirred Media Milling. *International Journal of Pharmaceutics*, Vol. 524 No. 1, pp. 178–192.
- Li, M., Yaragudi, N., Afolabi, A., Dave, R., Bilgili, E., 2015. Sub-100 nm Drug Particle Suspensions Prepared Via Wet Milling with Low Bead Contamination Through Novel Process Intensification. *Chemical Engineering Science*.

- Liu, D. 2013. Engineering Nano-curcumin with Enhanced Solubility and In-Vitro Anti-Cancer Bioactivity. *Thesis*. The State of University of New Jersey, New Jersey, USA.
- Liu, P. 2013. Nanocrystal Formulation For Poorly Soluble Drugs. *Dissertation*. University of Helsinki, Helsinki, Finland.
- Liu, P., Viitala, T., Hodzic, A. K., Liang, H., Laaksonen, T., Hirvonen, J., Peltonen, L., 2015. Interaction Studies Between Indomethacin Nanocrystals and PEO/PPO Copolymer Stabilizers. *Pharmaceutical Research*, Vol. 32 No. 2, pp. 628–39.
- Liu, Q., Mai, Y., Gu, X., Zhao, Y., Di, X., Ma, X., Yang, J., 2020. A Wet-milling Method for The Preparation of Cilnidipine Nanosuspension with Enhanced Dissolution and Oral Bioavailability. *Journal of Drug Delivery Science and Technology*, Vol. 55, pp. 1–7.
- Liu, T., Yao, G., Liu, X., Yiu, H., 2017. Preparation Nanocrystals of Poorly Soluble Plant Compounds Using an Ultra-Small-Scale Approach. *AAPS PharmSciTech*, Vol. 18 No. 7, pp. 2610–2617.
- Lu, M., Ho, C. T., Huang, Q., 2017. Improving Quercetin Dissolution and Bioaccessibility with Reduced Crystallite Sizes Through Media Milling Technique. *Journal of Functional Foods*, Vol. 37, pp. 138–146.
- Lucida, H., Febriyenti, R. P., Rahmatika, L., 2016. Preparation of Quercetin Nanocrystals by Planetary Ball Mill to Increase the Solubility and the Dissolution Profile. *Der Pharmacia Lettre*, Vol. 18, pp. 53–58.
- Malamatari, M., Somavarapu, S., Bloxham, M., Buckton, G., 2015. Nanoparticle Agglomerates of Indomethacin: The Role of Poloxamers and Matrix Former on Their Dissolution and Aerosolisation Efficiency. *International Journal of Pharmaceutics*, Vol. 495 No. 1, pp. 516–526.

- Medarević, D., Ibrić, S., Vardaka, E., Mitrić, M., Nikolakakis, I., Kachrimanis, K., 2020. Insight into The Formation of Glimepiride Nanocrystals by Wet Media Milling. *Pharmaceutics*, Vol. 12 No. 53, pp. 1-17.
- Merisko-Liversidge, E., Liversidge, G. G. 2011. Nanosizing for Oral and Parenteral Drug Delivery: A Perspective on Formulating Poorly-water Soluble Compounds Using Wet Media Milling Technology. *Advanced Drug Delivery Reviews*, Vol. 63 No. 6, pp. 427–440.
- Merisko-Liversidge, E., Liversidge, G. G., Cooper, E. R., 2003. Nanosizing: A Formulation Approach for Poorly-Water-Soluble Compounds. *European Journal of Pharmaceutical Sciences*, Vol. 18 No. 2, pp. 113–120.
- Meruva, S., Thool, P., Gong, Y., Karki, S., Bowen, W., Kumar, S., 2020. Role of Wetting Agents and Disintegrants in Development of Danazol Nanocrystalline Tablets. *International Journal of Pharmaceutics*.
- Mishra, P. R., Shaal, L. A., Müller, R. H., Keck, C. M., 2009. Production and Characterization of Hesperetin Nanosuspensions for Dermal Delivery. *International Journal of Pharmaceutics*, Vol. 371 No. 1, pp. 182–189.
- Monteiro, A., Afolabi, A., Bilgili, E., 2013. Continuous Production of Drug Nanoparticle Suspensions via Eet Stirred Media milling: A Fresh Look at The Reh binder Effect. *Drug Development and Industrial Pharmacy*, Vol. 39 No. 2, pp. 266–83.
- Moreno, M. A., Frutos, P., Ballesteros, M. P., 2001. Lyophilized Lecithin Based Oil-Water Microemulsions As A New and Low Toxic Delivery System for Amphotericin B. *Pharmaceutical Research*, Vol. 18 No. 3, pp. 344–351.

- Möschwitzer, J. P., 2013. Drug Nanocrystals in The Commercial Pharmaceutical Development Process. *International Journal of Pharmaceutics*.
- Mu, S., Li, M., Guo, M., Yang, W., Wang, Y., Li, J., Fu, Q., He, Z., 2016. Spironolactone Nanocrystals for Oral Administration: Different Pharmacokinetic Performances Induced by Stabilizers. *Colloids and Surfaces B: Biointerfaces*, Vol. 147, pp. 73–80.
- Nagai, N., Ogata, F., Otake, H., Kawasaki, N., 2020. Oral Administration System Based on Meloxicam Nanocrystals: Decreased Dose Due to High Bioavailability Attenuates Risk of Gastrointestinal Side Effects. *Pharmaceutics*.
- Ningsih, F. H. 2019. Pengaruh Metode Penambahan Pengikat terhadap Mutu Fisik Granul dan Tablet Nanosuspensi Kering Hesperetin-Poloksamer 188. *Skripsi*. Universitas Airlangga, Surabaya, Indonesia.
- Palo, M., Kolakovic, R., Laaksonen, T., Määttänen, A., Genina, N., Salonen, J., Peltonen, J., Sandler, N., 2015. Fabrication of Drug-Loaded Edible Carrier Substrates from Nanosuspensions by Flexographic Printing. *International Journal of Pharmaceutics*, Vol. 494 No. 2, pp. 603–610.
- Parmentier, J., Tan, E. H., Low, A., Möschwitzer, J. P., 2017. Down-Stream Drug Product Processing of Itraconazole Nanosuspension: Factors Influencing Drug Particle Size and Dissolution from Nanosuspension-Layered Beads. *International Journal of Pharmaceutics*, Vol. 524 No. 1, pp. 443–453.
- Patel, H. M., Patel, B. B., Shah, C. N., 2016. Nanosuspension: A Novel Approach to Enhance Solubility of Poorly Water Soluble Drugs - A Review. *International Journal of Advances in Pharmaceutics*, Vol. 5 No. 2, pp. 21-29.

- Patel, Y., Poddar, A., Sawant, K. K., 2014. Improved Oral Bioavailability of Cefuroxime Axetil Utilizing Nanosuspensions Developed by Media Milling Technique. *Pharmaceutical Nanotechnology*, Vol. 2, pp. 75–86.
- Peltonen, L., Hirvonen, J., 2010. Pharmaceutical Nanocrystals by Nanomilling: Critical Process Parameters, Particle Fracturing and Stabilization Methods. *Journal of Pharmacy and Pharmacology*, Vol. 62 No. 11, pp. 1569–1579.
- Peltonen, L., Hirvonen, J., 2018. Drug Nanocrystals – Versatile Option for Formulation of Poorly Soluble Materials. *International Journal of Pharmaceutics*, Vol. 537 No. 1, pp. 73–83.
- Peltonen, L., Strachan, C., 2015. Understanding Critical Quality Attributes for Nanocrystals from Preparation to Delivery. *Molecules*, Vol. 20 No. 12, pp. 22286–22300.
- Phadtare, D., Phadtare, G., Asawat, M., 2014. Hypromellose : A Choice of Polymer in Extended Release Tablet Formulation. *World Journal of Pharmacy and Pharmaceutical Sciences*, Vol. 3 No. 9, pp. 551–566.
- Prakoso, A. K., 2016. Pengaruh Konsentrasi Poloksamer 407 dan Waktu Penggilingan terhadap Karakteristik Fisik dan Stabilitas Ukuran Nanokristal Artesunat. *Skripsi*. Universitas Airlangga, Surabaya, Indonesia.
- Primadani, G., 2019. Pengaruh Konsentrasi Metilselulosa 4 Mpa.S terhadap Karakteristik Fisik dan Laju Disolusi Beads Tersalut Nanosuspensi Kering Hesperetin-Poloksamer 188. *Skripsi*. Universitas Airlangga, Surabaya, Indonesia.
- Pu, X., Sun, J., Li, M., He, Z., 2009. Formulation of Nanosuspensions as a New Approach for the Delivery of Poorly Soluble Drugs. *Current Nanoscience*, Vol. 5 No. 4, pp. 417–427.

- Qi, S., Roser, S., Edler, K. J., Pigliacelli, C., Rogerson, M., Weuts, I., Dycke, F. V., Stokbroekx, S., 2013. Insights into The Role of Polymer-Surfactant Complexes in Drug Solubilisation/Stabilisation During Drug Release from Solid Dispersions. *Pharmaceutical Research*, Vol. 30 No. 1, pp. 290–302.
- Qiao, F., Zhao, Y., Mai, Y., Guo, J., Dong, L., Zhang, W., Yang, J., 2020. Isoliquiritigenin Nanosuspension Enhances Cytostatic Effects in A549 Lung Cancer Cells. *Planta Medica*, Vol. 86 No. 8, pp. 538–547.
- Qu, C., Zhang, L., Du, X., Zhang, X., Zheng, J., Zhao, Y., Tu, P., 2018. Preparation and Evaluation of Wet-Milled Usnic Acid Nanocrystal Suspension for Better Bioaffinity. *Drug Development and Industrial Pharmacy*, Vol. 44 No. 5, pp. 707–712.
- Rabinow, B. E., 2004. Nanosuspensions in Drug Delivery. *Nature Reviews Drug Discovery*, Vol. 3 No. 9, pp. 785–796.
- Ravichandran, R., 2009. Nanoparticles in Drug Delivery: Potential Green Nanobiomedicine Applications. *International Journal of Green Nanotechnology: Biomedicine*, Vol. 1 No. 2, pp. 37–41.
- Romero, G. B., Keck, C. M., Müller, R. H., 2016. Simple Low-cost Miniaturization Approach for Pharmaceutical Nanocrystals Production. *International Journal of Pharmaceutics*, Vol. 501 No. 1, pp. 236–244.
- Sahoo, S. S., Rao, C. B., Mehta, A. K., 2015. Formulation Development and Optimization of Nanosuspension of Simvastatin for Improved Solubility by Nanomilling. *Journal of PharmaSciTech*, Vol. 5 No. 2, pp 78-86.

- Sarnes, A., Kovalainen, M., Häkkinen, M. R., Laaksonen, T., Laru, J., Kiesvaara, J., Ilkka, J., Oksala, O., Rönkkö, S., Järvinen, K., Hirvonen, J., Peltonen, L., 2015. Nanocrystal-Based Per-Oral Itraconazole Delivery: Superior In Vitro Dissolution Enhancement Versus Sporanox® Is Not realized in In Vivo Drug Absorption. *Journal of Controlled Release*, Vol. 180, pp. 109–116.
- Smet, L. D., Saerens, L., Beer, T. D., Carleer, R., Adriaensens, P., Bocxlaer, J. V., Vervaet, C., Remon, J. P., 2014. Formulation of Itraconazole Nanococrystals and Evaluation of Their Bioavailability in Dogs. *European Journal of Pharmaceutics and Biopharmaceutics*, Vol. 87 No. 1, pp. 107–113.
- Smith, B. T., 2016. Remington Education: Physical Pharmacy. *Physical Pharmacy*, pp. 31–50.
- Soisuwan, S., Teeranachaideekul, V., Wongrakpanich, A., Langguth, P., Junyaprasert, V. B., 2018. In Vitro Performances and Cellular Uptake of Clarithromycin Nanocrystals Produced by Media Milling Technique. *Powder Technology*, Vol. 338, pp. 471–480.
- Sovilj, V., Petrović, L. 2007. Interaction and Phase Separation in The System HPMC/NaCMC/SDS. *Colloids and Surfaces A: Physicochemical and Engineering Aspects*, Vol. 298 No. 1, pp. 94–98.
- Suksiriworapong, J., Rungvimolsin, T., A-gomol, A., Junyaprasert, V. B., Chantasart, D., 2014. Development and Characterization of Lyophilized Diazepam-Loaded Polymeric Micelles. *AAPS PharmSciTech*, Vol. 15 No. 1, pp. 52–64.

- Urbán-Morlán, Z., Castro-Ríos, R., Cháves-Montes, A., Melgoza-Contreras, L. M., Piñón-Segundo, E., Ganem-Quintanar, A., Quintanar-Guerrero, D., 2008. Determination of Poloxamer 188 and Poloxamer 407 Using High-Performance Thin-Layer Chromatography in Pharmaceutical Formulations. *Journal of Pharmaceutical and Biomedical Analysis*, Vol. 46 No. 4, pp. 799–803.
- Wang, P., Cao, X., Chu, Y., Wang, P., 2019. Ginkgolides-loaded Soybean Phospholipid-stabilized Nanosuspension with Improved Storage Stability and In Vivo Bioavailability. *Colloids and Surfaces. B, Biointerfaces*, Vol. 181, pp. 910–917.
- Wei, Q., Keck, C. M., Müller, R. H., 2018. Solidification of Hesperidin Nanosuspension by Spray Drying Optimized by Design of Experiment (DoE). *Drug Development and Industrial Pharmacy*, Vol. 44 No. 1, pp. 1–12.
- Wewers, M., Czyz, S., Finke, J. H., John, E., Eerdenbrugh, B. V., Juhnke, M., Bunjes, H., Kwade, A., 2020. Influence of Formulation Parameters on Redispersibility of Naproxen Nanoparticles from Granules Produced in a Fluidized Bed Process. *Pharmaceutics*, Vol. 12 No. 4, pp. 1-18.
- Wu, L., Zhang, J., Watanabe, W., 2011. Physical and Chemical Stability of Drug Nanoparticles. *Advanced Drug Delivery Reviews*, Vol. 63 No. 6, pp. 456–469.
- Yakushiji, K., Ogino, M., Suzuki, H., Seto, Y., Sato, H., Onoue, S., 2018. Physicochemical and Biopharmaceutical Characterization of Celecoxib Nanoparticle: Avoidance of Delayed Oral Absorption Caused by Impaired Gastric Motility. *International Journal of Pharmaceutics*.

- Yang, H., Teng, F., Wang, P., Tian, B., Lin, X., Hu, X., Zhang, L., Zhang, K., Zhang, Y., Tang, X., 2014. Investigation of a Nanosuspension Stabilized by Soluplus® to Improve Bioavailability. *International Journal of Pharmaceutics*, Vol. 477 No. 1, pp. 88–95.
- Yao, Q., Tao, X., Tian, B., Tang, Y., Shao, Y., Kou, L., Gou, J., Li, X., Yin, T., Tang, X., 2014. Improved Oral Bioavailability of Core-shell Structured Beads by Redispersion of The Shell-forming Nanoparticles: Preparation, Characterization and In Vivo Studies. *Colloids and Surfaces B: Biointerfaces*, Vol. 113, pp. 92–100.
- Yuminoki, K., Seko, F., Horii, S., Takeuchi, H., Teramoto, K., Nakada, Y., Hashimoto, N., 2014. Preparation and Evaluation of High Dispersion Stable Nanocrystal Formulation of Poorly Water-Soluble Compounds by Using Povacoat. *Journal of Pharmaceutics Sciences*, Vol. 103, pp. 3772–3781.
- Zhang, X., Servos, M. R., Liu, J., 2012. Ultrahigh Nanoparticle Stability Against Salt, pH, and Solvent with Retained Surface Accessibility via Depletion Stabilization. *Journal of the American Chemical Society*, Vol. 134 No. 24, pp. 9910–9913.
- Zhang, X., Zhang, T., Lan, Y., Wu, R., Shi, Z., 2016. Nanosuspensions Containing Oridonin/HP- β -Cyclodextrin Inclusion Complexes for Oral Bioavailability Enhancement via Improved Dissolution and Permeability. *AAPS PharmSciTech*, Vol. 17 No. 2, pp. 400–408.
- Zhou, Y., Du, J., Wang, L., Wang, Y., 2016. State of The Art of Nanocrystals Technology for Delivery of Poorly Soluble Drugs. *Journal of Nanoparticle Research*, Vol. 18 No. 9, pp. 1-22.

Zuo, J., Araujo, G. L. B., Stephano, M. A., Zuo, Z., Bou-Chacra, N. A., Löbenberg, R., 2019. Design Space Approach in The Development of Esculetin Nanocrystals by A Small-Scale Wet-Bead Milling Process. *Journal of Drug Delivery Science and Technology*.