

DAFTAR PUSTAKA

1. Porat D, Dukhno O, Partook-Maccabi M, Vainer E, Cvijić S, Dahan A. Selective COX-2 Inhibitors After Bariatric Surgery: Celecoxib, Etoricoxib and Etodolac post-Bariatric Solubility/dissolution and Pharmacokinetics. *Int J Pharm.* 2023;645(April):123347.
2. Boonriong T, Tangtrakulwanich B, Glabglay P, Nimmaanrat S. Comparing Etoricoxib and Celecoxib for Preemptive Analgesia for Acute Postoperative Pain in Patients Undergoing Arthroscopic Anterior Cruciate Ligament Reconstruction: A Randomized Controlled Trial. *BMC Musculoskelet Disord [Internet].* 2010;11(1):246.
3. Huang WN, Tso TK. Etoricoxib Improves Osteoarthritis Pain Relief, Joint Function, and Quality of Life in the Extreme Elderly. *Bosn J Basic Med Sci.* 2018;18(1):87–94.
4. Akhil MB, Velayudhankutty S, Haribabu Y, Mathew S, Nihila K. Review on Analytical Techniques for the Estimation of Pregabalin and Etoricoxib in Combined Dosage Form. *J Pharm Sci Res.* 2021;13(8):457–68.
5. Mittapalli S, Bolla G, Perumalla S, Nangia A. Can We Exchange Water in A Hydrate Structure: A Case Study of Etoricoxib. *Cryst Eng Comm.* 2016;18(16):2825–9.
6. Nayak AK, Panigrahi PP. Solubility Enhancement of Etoricoxib by Cosolvency Approach. *ISRN Phys Chem.* 2012;2012:1–5.
7. Shi Y, Zhang H, Hong X, Wang X. Experimental Determination and Thermodynamic Correlation of 7-Amino-4-Methylcoumarin Solubility in Various Cosolvency Mixtures at (278.15–323.15) K. *J Chem Eng Data.* 2020;65(1):209–16.
8. Savjani KT, Gajjar AK, Savjani JK. Drug Solubility: Importance and Enhancement Techniques. *ISRN Pharm.* 2012;2012(100 mL):1–10.
9. MIMS. MIMS Indonesia. 2023 [cited 2023 Nov 16]. Etoricoxib. Available from: <https://www.mims.com/indonesia/drug/info/etoricoxib>
10. Vemula VR, Lagishetty V, Lingala S. Solubility Enhancement Techniques. *Int J Pharm Sci Rev Res.* 2010;5(1):41–51.
11. Das A, Nayak AK, Mohanty B, Panda S. Solubility and Dissolution Enhancement of Etoricoxib by Solid Dispersion Technique Using Sugar Carriers. *ISRN Pharm.* 2011;2011(Peg 4000):1–8.
12. Dani P, Puri V, Bansal AK. Solubility Advantage from Amorphous Etoricoxib solid Dispersions. *Drug Dev Ind Pharm.* 2014;9045(1):92–101.
13. Senthilkumar K, Vijaya C. Formulation Development of Mouth Dissolving Film of Etoricoxib for Pain Management. *Adv Pharm.* 2015;2015:1-11.

14. Rumondor ACF, Taylor LS. Effect of Polymer Hygroscopicity on the Phase Behavior of Amorphous Solid Dispersions in the Presence of Moisture. *Mol Pharm*. 2010;7(2):477–90.
15. Moyano JR, Arias-Blanco MJ, Gines JM, Rabasco AM, Pérez-Martínez JI, Mor M, et al. Nuclear Magnetic Resonance Investigations of the Inclusion Complexation of Gliclazide with β -Cyclodextrin. *J Pharm Sci*. 1997;86(1):72–5.
16. Zaini E, Afriyani A, Fitriani L, Ismed F, Horikawa A. Improved Solubility and Dissolution Rates in Novel Multicomponent Crystals of Piperine with Succinic Acid. *Sci Pharm*. 2020;1–13.
17. Konno H, Taylor LS. Ability of Different Polymers to Inhibit the Crystallization of Amorphous Felodipine in the Presence of Moisture. *Pharm Res*. 2008;25(4):969–78.
18. Fitriani L, Haqi A, Zaini E. Preparation and Characterization of Solid Dispersion Freeze-dried Efavirenz - Polyvinylpyrrolidone K-30. *J Adv Pharm Technol Res*. 2016;7(3):105–9.
19. Umar S, Putri N, Deni B, Erizal A. Multicomponent Crystal of Fenofibric Acid- Saccharin : Characterization and Antihyperlipidemic Effectiveness. *Adv Heal Sci Res*. 2021;40(ICCSCP):104–9.
20. Octavia MD, Rivai H, Andalas U. Review : Multi-Component Crystals : Cinnamic Acid As A Co-Former. *IJPMS*. 2021;6(January):92–8.
21. Wang Y, Wang L, Zhang F, Wang N, Gao Y, Xiao Y, et al. Structure Analysis and Insight into Hydrogen Bond and Van der waals Interactions of Etoricoxib Cocrystals and Cocrystal Solvate. *J Mol Struct* [Internet]. 2022;1258:132665.
22. Zaini E, Riska D, Oktavia MD, Ismed F, Fitriani L. Improving Dissolution Rate of Piperine by Multicomponent Crystal Formation with Saccharin. *RJPT*. 2020;13(April):1928–32.
23. Liu Y, Yang F, Zhao X, Wang S, Yang Q, Zhang X. Crystal Structure, Solubility, and Pharmacokinetic Study on a Hesperetin Cocrystal with Piperine as Coformer. *Pharmaceutics*. 2022;14(1):1–14.
24. Kumar S, Nanda A. Pharmaceutical Cocrystals: An Overview. *Indian J Pharm Sci*. 2017;79(6):858–71.
25. Wouters J, Quere L. *Pharmaceuticals Salts and Co-crystals*. British: RSC Publisher; 2012.
26. Prajapati M, Yamgar DB, Desale MN, Fegade B. A Review on Various Analytical Methodologies for Etoricoxib. *Adv J Grad Res*. 2021;11(1):61–70.
27. Rodrigues M, Baptista B, Lopes JA, Saraguça MC. Pharmaceutical Cocrystallization Techniques. Advances and Challenges. *Int J Pharm* [Internet]. 2018;547(1–2):404–20.

28. Rehder S, Klukkert M, Löbmann KAM, Strachan CJ, Sakmann A, Gordon K, et al. Investigation of the Formation Process of Two Piracetam Cocrystals During Grinding. *Pharmaceutics*. 2011;3(4):706–22.
29. Rong Y, Xue S, Li S, Pang S. Study on Preparation of Pillararene Cocrystals by Liquid-Assisted Grinding. *J Phys Conf Ser*. 2023;2539(1):012050.
30. Dias JL, Lanza M, Ferreira SRS. Cocrystallization: A Tool to Modulate Physicochemical and Biological Properties of Food-relevant Polyphenols. *Trends Food Sci Technol*. 2021;110(December 2020):13–27.
31. Katzung BG. *Basic & Clinical Pharmacology*. 14th ed. New York: McGraw Hill; 2018.
32. DiPiro JT, Yee GC, Posey LM, Haines ST, Nolin TD, Ellingord VL. *Pharmacotherapy A Pathophysiologic Approach*. 11th ed. New York: McGraw Hill; 2020.
33. Comission IP. *Indian Pharmacopoeia Vol. II*. 9th ed. India: The Indian Pharamcopoeia Comission; 2022. 2320 p.
34. Abdul-Rahman MM, Jawad FJ. Enhancement of Aqueous Solubility and Dissolution Rate of Etoricoxib by Solid Dispersion Technique. *Iraqi J Pharm Sci*. 2020;29(1):76–87.
35. Zarghi A, Arfaei S. Selective COX-2 Inhibitors: A Review of Their Structure-Activity Relationships. *Iran J Pharm Res*. 2011;10(4):655–83.
36. Ramakrishna NVS, Vishwottam KN, Wishu S, Koteshwara M. Validated Liquid Chromatographic Ultraviolet Method for the Quantitation of Etoricoxib in Human Plasma using Liquid-liquid Extraction. *J Chromatogr B Anal Technol Biomed Life Sci*. 2005;816(1–2):215–21.
37. Wecker L, Taylor DA, Theobald RJ. *Brody's Human Pharmacology*. 6th ed. Philadelphia: Elsevier; 2019. 761–762 p.
38. Tiwari A, Mahadik KR, Gabhe SY. Piperine : A Comprehensive Review of Methods of Isolation , Purification, and Biological Properties. *Med Drug Discov* [Internet]. 2020;7:100027.
39. Paarakh PM, Sreeram DC, D SS, Ganapathy SPS. In Vitro Cytotoxic and In Silico Activity of Piperine Isolated from *Piper Nigrum* Fruits Linn. *Silico Pharmacol* [Internet]. 2015;3(1):3–9.
40. Nayara I, Ramos DF, Feitosa M, Marcio J, Lopes S, Lima M, et al. Activity of Piperine in Its Isolated form and in Combination with Chemotherapeutics against Gastric Cancer. *Molecules*. 2023;1–18.
41. Christoforides E, Andreou A, Papaioannou A, Bethanis K. Structural Studies of Piperine Inclusion Complexes in Native and Derivative β -Cyclodextrins. Vol. 12, *Biomolecules*. 2022(12):1-23.
42. Shao B, Cui C, Ji H, Tang J, Wang Z, Liu H, et al. Enhanced Oral Bioavailability of Piperine by Self-emulsifying Drug Delivery Systems: In

- vitro, in vivo and in situ Intestinal Permeability Studies. *Drug Deliv.* 2015;22(6):740–7.
43. Fandaruff C, Vega-baudrit JR, Navarro-hoyos M, Lamas DG, Araya-sibaja AM. Saquinavir-Piperine Eutectic Mixture : Preparation, Characterization, and Dissolution Profile. *Pharmaceutics.* 2023;15:1-15.
 44. Chaudhri SK, Jain S. A Systematic Review of Piperine as a Bioavailability Enhancer. *J Drug Deliv Ther.* 2023;13(4):133–6.
 45. Kesarwani K, Gupta R. Bioavailability Enhancers of Herbal Origin: An Overview. *Asian Pac J Trop Biomed.* 2013;3(4):253–66.
 46. Wilhelm-Romero K, Quirós-Fallas MI, Vega-Baudrit JR, Guillén-Girón T, Vargas-Huertas F, Navarro-Hoyos M, et al. Evaluation of Piperine as Natural Coformer for Eutectics Preparation of Drugs Used in the Treatment of Cardiovascular Diseases. *AAPS PharmSciTech* [Internet]. 2022;23(5):1-24.
 47. Fitriani L, Firdaus WA, Sidadang W, Rosaini H, Putra OD. Improved Solubility and Dissolution Rate of Ketoprofen by the Formation of Multicomponent Crystals with Tromethamine. *Crystals.* 2022;12(275):1-14.
 48. Singh M, Barua H, Jyothi VGSS, Dhondale MR, Nambiar AG, Agrawal AK, et al. Cocrystals by Design : A Rational Coformer Selection Approach for Tackling the API Problems. *Pharmaceutics.* 2023;15(1161):1-43.
 49. Nascimento ALCS, Fernandes RP, Charpentier MD, Joop H, Caires FJ, Chorilli M. Co-crystals of Non-Steroidal Anti-Inflammatory Drugs (NSAIDs): Insight Toward Formation , Methods , and Drug Enhancement. *Particuology.* 2021;58:227–41.
 50. Shilpa C, Sarika N, Neetu K, Shubham W. Co-Crystals : A Review. *J Drug Deliv Ther.* 2018;8(6):350–8.
 51. Patole T, Deshpande A. Co-Crystallization a Technique for Solubility Enhancement. *Int J Pharm Sci Res.* 2014;5(9):3566–76.
 52. Thakuria R, Nangia A. Olanzapinium Salts, Isostructural Solvates, and Their Physicochemical Properties. *Cryst.* 2013;1-9.
 53. Aaltonen J, Allesø M, Mirza S, Koradia V, Gordon KC, Rantanen J. Solid form Screening - A Review. *Eur J Pharm Biopharm* [Internet]. 2009;71(1):23–37.
 54. Pawar N, Saha A, Nandan N, Parambil J V. Solution Cocrystallization: A Scalable Approach for Cocrystal Production. *Crystals.* 2021;11(3):1-18.
 55. Karimi-Jafari M, Padrela L, Walker GM, Croker DM. Creating Cocrystals: A Review of Pharmaceutical Cocrystal Preparation Routes and Applications. *Cryst Growth Des.* 2018;18(10):6370–87.
 56. Santi S. *Farmasi Fisika.* Jakarta: KEMENKES RI; 2016. 42 p.
 57. Depkes RI. *Farmakope VI.* Jakarta: KEMENKES RI; 2020. 35 p.

58. Guo M, Sun X, Chen J, Cai T. Pharmaceutical Cocrystals: A Review of Preparations, Physicochemical Properties and Applications. *Acta Pharm Sin B* [Internet]. 2021;11(8):2537–64.
59. Aquariushinta Sayuti N. Formulasi dan Uji Stabilitas Fisik Sediaan Gel Ekstrak Daun Ketepeng Cina (Cassia Alata L.). *J Kefarmasian Indones*. 2015;5(2):74–82.
60. Bhardwaj S, Lipert M, Bak A. Mitigating Cocrystal Physical Stability Liabilities in Preclinical Formulations. *J Pharm Sci* [Internet]. 2016;1–8.
61. Umar S, Selfia M, Rieke Azhar D. Studi Kestabilan Fisika Dan Kimia Dispersi Padat Ketoprofen-Urea. *J Farm Higea*. 2014;6(2):162–73.
62. ICH. International Conference on Harmonization (ICH). *Guidance for industry: Q1A(R2) Stability Testing of New drug Substances and Products*. ICH Harmon Tripart Guidel. 2003;4(February):24.
63. Susanti M, Dachriyanus D. *Kromatografi Cair Kinerja Tinggi*. Padang: Andalas University Press; 2014. 2–3 p.
64. Aulia SS, Sopyan I, Muchtaridi. Penetapan Kadar Simvastatin Menggunakan Kromatorafi Cair Kinerja Tinggi (KCKT). *Farmaka*. 2016;14(4):70–8.
65. Ambarati T, Wahyudi NY, Hamidah Asmara Indratno S, Nurfadila L, Utami MR. Review Artikel: Validasi Metode Analisis Penetapan Kadar Paracetamol Dalam Sampel Biologis Dengan Berbagai Metode. *J Pharm Sci*. 2023;6(2):838–47.
66. Ramadhan SA, Musfiroh I. Review Artikel: Verifikasi Metode Analisis Obat. *Farmaka*. 2021;19(3):87–92.
67. Friić T, Childs SL, Rizvi SAA, Jones W. The Role of Solvent in Mechanochemical and Sonochemical Cocrystal Formation: A Solubility-based Approach for Predicting Cocrystallisation Outcome. *Cryst Eng Comm*. 2009;11(3):418–26.
68. Zaini E, Wahyuni F, Salsabila H, Anggraini D, Yuliandra Y, Lucida H. Eutectic Mixture of Fenofibric Acid and Syringic Acid: Improvement of Dissolution Rate and Its Antihyperlipidemic Activity. *ChemistrySelect*. 2023;8(20):1–5.
69. Stoler E, Warner JC. Non-Covalent derivatives: Cocrystals and Eutectics. *Molecules*. 2015;20(8):14833–48.
70. Fitriani L, Fadina H, Usman H, Zaini E. Formation and Characterization of Multicomponent Crystal of Trimethoprim and Mandelic Acid By Solvent Drop Grinding Method. *Int J Appl Pharm*. 2023;15(Special Issue 1):75–9.
71. Yadav A V., Shete AS, Dabke AP, Kulkarni P V., Sakhare SS. Co-Crystals: A Novel Approach to Modify Physicochemical Properties of Active Pharmaceutical Ingredients. *Indian J Pharm Sci*. 2009;71(4):359–70.
72. Zalte AG, Darekar AB, Gondkar SB. Cocrystals : An Alternative Approach

- to Modify Physicochemical Properties of Drugs. *Am J PharmTech Res.* 2014;4(January): 427-436.
73. Silverstain RM, Webster FX, Kiemle DJ, Bryce DL. *Spectrometric Identification of Organic Compounds*. 8th ed. USA: John Wiley & Sons, Inc.; 2015.
 74. Rosydiati. Karakterisasi Puncak Kromatogram dalam HPLC terhadap Perbedaan Fase Gerak, Laju Alir dan Penambahan Asam dalam Analisis Indole Acetic Acid (IAA). *Kandaga*. 2019;1(2):65–73.
 75. Qiao N, Li M, Schindwein W, Malek N, Davies A, Trappitt G. Pharmaceutical Cocrystals: An Overview. *Int J Pharm* [Internet]. 2011;419(1–2):1–11.
 76. Dirfedli F. *Optimasi Pembentukan Multikomponen Kristal Celecoxib-Piperin*. Universitas Andalas; 2019.
 77. Zhao F, Malayev V, Rao V, Hussain M. Effect of Sodium Lauryl Sulfate in Dissolution Media on Dissolution of Hard Gelatin Capsule Shells. *Pharm Res*. 2004;21(1):144–8.
 78. Martin AN, Sinko PJ, Singh Y. *Martin's Physical Pharmacy and Pharmaceutical Sciences*. 6th editio. Baltimore: Lippincott William & Wilkins; 2011.
 79. Liu R. *Water-Insoluble Drug Formulation*. Third Edit. USA: Taylor & Francis Group; 2018.
 80. Rahman SMH, Telny TC, Ravi TK, Kuppusamy S. Role of Surfactant and pH in Dissolution of Curcumin. *Indian J Pharm Sci*. 2009;71(2):139–42.
 81. Dressman JB, Reppas C. In vitro-in vivo correlations for lipophilic, poorly water-soluble drugs. *Eur J Pharm Sci*. 2000;11(SUPPL. 2):73–80.
 82. Yuan Z, Xu XR. Surface Characteristics and Biotoxicity of Airborne Microplastics. In: Wang J, editor. *Comprehensive Analytical Chemistry*. Elsevier; 2023. p. 117–64.
 83. Goud NR, Suresh K, Nangia A. Solubility and Stability Advantage of Aceclofenac Salts. *Cryst Growth Des*. 2013;13(4):1590–601.
 84. Woolfson MM. *An Introduction to X-Ray Crystallography*. Second Edi. UK: Cambridge University Press; 1997.
 85. Ruhle M, Wikens M. Transmission Electron Microscopy. In: Chan RW, Haasen P, editors. *Physical Metallurgy*. Fourth Edi. North Holland: Elsevier; 1996. p. 1033–113.
 86. Thakral NK, Zanon RL, Kelly RC, Thakral S. Applications of Powder X-Ray Diffraction in Small Molecule Pharmaceuticals: Achievements and Aspirations. *J Pharm Sci* [Internet]. 2018;107(12):2969–82.