BAB 5
SIMPULAN

5.1. Simpulan

Dari data penelitian yang telah diinterpretasikan, dapat ditarik kesimpulan :

- Tablet likuisolid piroksikam dengan menggunakan PEG 400 sebagai pelarut *non volatile* dapat meningkatkan disolusi piroksikam dibandingkan dengan tablet piroksikam biasa. Hal ini dapat terlihat dari profil pelepasan piroksikam yang menunjukkan hubungan antara % obat terlarut *versus* waktu, juga dari penentuan $\%ED_{60}$. Formula A yang tidak mengandung PEG 400 paling rendah nilainya dibandingkan dengan formula B, C, dan D yang mengandung PEG 400.
- Tablet likuisolid yang memiliki nilai $\%ED_{60}$ dan profil pelepasan piroksikam paling tinggi adalah formula D karena meskipun formula D menggunakan jumlah PEG 400 paling sedikit, tetapi jumlah Avicel PH 102 yang digunakan paling banyak dibandingkan dengan formula yang lain, sehingga piroksikam terlarut lebih cepat dalam medium disolusi. Hal ini disebabkan karena Avicel PH 102 bersifat hidrofilik dan memiliki kemampuan menarik air lebih besar

5.2. Alur Penelitian Selanjutnya

Dapat dilakukan penelitian tablet likuisolid dengan mencari formula optimum berdasarkan berbagai faktor seperti konsentrasi obat dalam pelarut, konsentrasi *carrier*, dan perbandingan antara *carrier* dan *coating.*

DAFTAR PUSTAKA

Anonim, 1979, **Farmakope Indonesia**, ed. III, Departemen Kesehatan RI, Jakarta, 6-8.

Anonim, 1995, **Farmakope Indonesia**, ed. IV, Departemen Kesehatan RI, Jakarta, 4, 166, 449-450, 488-489, 515, 683, 783-784, 999-1000.

Anonim, 1990, **US Pharmacopeia XXII**, US Pharmacopeial Convention Inc., Rockville, 1778, 1788-1789.

Anonim, 2007, **US Pharmacopeia XXX**, US Pharmacopeial Convention Inc., Rockville,

Ansel, H. C., 1989, **Introduction to Pharmaceutical Dosage Form**, 4th ed., Lea & Febiger, Philadelpia, 117-126.

Banakar, U.V., 1992, **Pharmaceutical Disolution Testing**, Marcel Dekker Inc., New York, 19-25.

Bolton, S., 1990, **Pharmaceutical Statistic: Practical and Clinical Applications**, 2nd ed., Marcel Dekker Inc., New York, 324-427.

Banker, G.S. and N.R. Anderson, 1986, Tablet, in: **The Theory and Practice of Industrial Pharmacy: Tablet**, L. Lachman, H.A. Lieberman, and J.L. Kanig (Eds.), 3rd ed., Lea and Febiger, Philadelphia, 259, 299, 316 – 329.

Cartensen, J.T. and C.C. Ping, 1977, Flow Rate and Repose Angles of Wet Processed Granulation, **Journal of Pharmaceutical Sciences**, 66, 1235 – 1238.

Connors, K.A., G.L. Amidon, and V.J. Stella, 1986, **Chemical Stability of Pharmaceutical: A Handbook for Pharmacists**, John Wiley and Sons Inc., New York, 9-41, 61-75, 581.

Davies, P., 2001, Oral Solid Dosage Forms, in: **Pharmaceutical Preformulation and Formulation: A Practical Guide from Candidate Drug Selection to Commercial Dosage Form**, M. Gibson (Ed.), vol. 199, 2nd ed., Informa Healthcare USA, Inc., New York, 373.

Dibbern, H.W., R.M. Muller, E. Wirbitzki, 2002, **UV and IR Spectra: Pharmaceutical Subtances (UV and IR) and Pharmaceutical and Cosmetic Excipients (IR),** Editio Cantor Verlag, Germany.

Duchene, D., 1983, Tablet Disintegration, In: **Topic in Pharmaceutical Science**, P.D. Breimer, and P. Spesier (Eds.), Proceeding of The 43rd International Congreess of Pharmaceutical, Amsterdam – New York – Oxford, 387 – 399.

Fassihi, A.R and S. Kanfer, 1986, Effect of Compressibility and Powder Flow Propertieson Tablet Weight Variation, **DDIP**, 11 – 13, 1947 – 1966.

Fierse, E. F. and A. T. Hagen, 1986, Pre formulation, In: **The Theory and Practice of Industrial Pharmacy**, L. Lachman, H. A. Lieberman, and J. L. Kanig (Eds.), 3rd ed., Lea and Febiger, Philadelphia, 183-184.

Florey, K., 1986**, Analitical Profiles of Drugs Substance**, vol. 15, Academic Press Inc, New York, 511-530.

Banker, G.S., N.R. Anderson, D.E. Fonner, T.W. Rosanske, and R.E. Gordon, 1990 , Granulation and Tablet Characteristic, In: **Pharmaceutical Dosage Form**, L. Lachman, H.A. Lieberman, and J.B. Schwartz (Eds.), vol. 2, 2nd ed., Marcel Dekker Inc., New York, 248-338.

Fudholi, A., 1983, Metodologi Formulasi dalam Kompresi Direk, **Medika**, 7(9), 583 – 593.

Davies, P., 2001, Oral Solid Dosage Forms, in: **Pharmaceutical Preformulation and Formulation: A Practical Guide from Candidate Drug Selection to Commercial Dosage Form**, M. Gibson, vol. 199, 2nd ed., Informa Healthcare USA, Inc., New York, 373.

Goodman, L.S. and A.G. Gilman, 2006, **The Pharmaceutical Basic of Therapeutics**, 11th ed., McGraw Hill, New York, 701.

Green, J.M., 1996, A Practical Guide to Analytical Method Validition, **Analytical Chemistry**, 68, 305-309.

Javadzadeh, Y., M.R. Siahi-Shadbad, M. Barzegar-Jalali, and A. Nokhodchi, 2005, Enhancement of Dissolution Rate of Piroxicam using Liquisolid Compacts, **Il Farmaco**, 60, 361-365.

Javadzadeh, Y., M.R. Siahi-Shadbad, S. Asnaashari, and A. Nolhodchi, 2007, Liquisolid Technique as a Tool for Enhancement of Poorly Water-Soluble Drugs and Evaluation of Their Physicochemical Properties, **Acta Pharm**, 57, 99-109.

Karmarkar, A.B., I.D.Gonjari, A.H. Hosmani, P.N. Dhabale, and S.B. Bhise, 2009, Dissolution Rate Enhancement of Fenofibrat using Liquisolid Tablet technique, **Latin American Journal of Pharmacy**, 28(2), 219.

Karmarkar, A.B., I.D.Gonjari, A.H. Hosmani, P.N. Dhabale, and S.B. Bhise, 2009, Liquisolid Tablets: A Novel Approach for Drug Delivery, **International Journal of Health Research,** 2(1), 45-50.

Khaled, K.A., 1998, Formulation and Evaluation of Hydrochlorothiazide Liquisolid Tablets, **Saudi Pharm. J.,** 6, 39–46.

Khan, K.A., 1975, The Concept of Dissolution Efficiency. **J. Pharm**, 27(1), 48-49.

Kibbe, A.H. , 2000, **Handbook of Pharmaceutical Excipients**, 3rd ed., The Pharmaceutical Press, London, 102, 143, 305, 501, 555.

Langenbucher, F., 1988, Linearization of Dissolution Rate Curve by Weibull Distribution, **Journal of Pharmaceutical Sciences**, 24, 979-981.

Liao, C.C. and C.I. Jarowski, Dissolution rates of corticoid solutions dispersed on silicas, **Journal of Pharmaceutical Sciences**, 2006, 73(3), 401-403.

Martin, A., J. Swarbrick, and A. Cammarata, 1983, **Physical Pharmacy**, 3rd ed., Lea & Febiger, Philadelpia,845-850.

Martin, A., J. Swarbrick, dan A. Cammarata, 1993, **Farmasi Fisik: Dasar-dasar Kimia Fisika dalam Ilmu Farmasetik**, vol. 2, ed. 3, terjemahan Yoshita, Universitas Indonesia, Jakarta, 1135.

Ohwoavworhua, F.O., T.A.Adelakun, A.O. Okhamafe, 2009, Processing Pharmaceutical Grade Microcrystalline Cellulose from Groundnut Husk: Extraction Methods and Characterization, **International Journal of Green Pharmacy**, 3(2), 97-104.

Parrot, E.L., 1971, **Pharmaceutical Technology Fundamental Pharmaceutics**, 3rd ed., Burgess Publishing Company, Minneapolis, 17-19, 82, 160-162.

Peck, G.E., G.J. Baley., V.E.McCurdy, and G.S.Banker, 1989, Tablet Formulation and Design, in: **Pharmaceutical Dosage Forms: Tablets**, L. Lachman, H.A. Lieberman, and J.B. Schwartz (Eds.), vol. 1, 2nd ed., Marcell Deker Inc., New York,88-127.

Shangraw, R.F., 1989, Compressed Tablet by Direct Compression, in: **Pharmaceutical Dosage Forms: Tablets**, L. Lachman, H.A. Lieberman, and J.B. Schwartz (Eds.), vol. 1, 2nd ed., Marcell Deker Inc., New York,198-203.

Shargel, L. and A.B.C. Yu, 1988, **Biofarmasetika dan Farmakokinetika terapan**, terjemahan Fasich dan S. Syamsial, Universitas Airlangga, Surabaya, 6 – 18, 101, 167 – 199.

Shervington, L.A. and A. Shervington, 1998, Guaifenesin, In: **Analytical Profiles of Drug Substances and Exipients**, H.G. Brittain (Ed.), vol. 25, Academic Press, London, 152.

Siregar, Ch. J. P., 1992, **Proses validasi dan Manufaktur Sediaan tablet**, In : Asyarie S., U. Mar'u, S. Badruzzaman (Eds), Prosiding Seminar Validasi di Industri Farmasi, Jurusan Farmasi FMIPA ITB, Bandung, 26 – 41.

Spireas, S., 2002, Liquisolid System and Methods of Preparation Same, **Pharmaceutical Research**, vol 9, 1-6.

Voigt, R., 1995, **Buku Pelajaran Teknologi Farmasi**, Terjemahan S. Noerono dan M. S. Reksohardiprojo, Gadjah Mada University Press, Yogyakarta, 163-210.

Wade, A. and P.S. Weller, 1994, **Handbook of Pharmaceutical Exipients**, 2nd ed., The Pharmaceutical Press, London, 84 – 86.

Wagner, J.G., 1971, **Biopharmaceutics and Relevant Pharmacokinetics**, 1st ed., Drug Intelligence Publications, Illinois, 64-110.

Wells, J.T., 1988, **Pharmaceutical Formulation: The Physicochemical Properties of Drug Substance**, Ellis Howard, Ltd., Chester, 209-211.

Yadav, V.B. and A.V. Yadav, 2009, Liquisolid Granulation Technique for Tablet Manufacturing: an Overview, **Journal of Pharmacy Research 2009**, 2(4),670-674.