

BAB 5

SIMPULAN

5.1. Simpulan

- Perbandingan konsentrasi kombinasi HPMC K4M – *carrageenan* dan macam pengisi serta interaksinya memiliki pengaruh terhadap jumlah ibuprofen yang larut dari tablet lepas lambat. Macam pengisi berpengaruh pada pelepasan tiga jam awal, sedangkan perbandingan konsentrasi kombinasi HPMC K4M-*carrageenan* lebih berperan pada pelepasan berikutnya. Interaksi antara perbandingan konsentrasi kombinasi HPMC K4M-*carrageenan* dan macam pengisi meningkatkan larutnya obat dari tablet.
- Formula optimum dari tablet lepas lambat ibuprofen didapatkan pada perbandingan konsentrasi kombinasi HPMC K4M-*carrageenan* 1:1 dengan pengisi Avicel PH101, yang akan memberikan persen obat terlarut dalam 3 jam sebesar 27,15% dan persen obat yang terlarut dalam 6 jam sebesar 53,44%.

5.2. Alur Penelitian Selanjutnya

Dilakukan penelitian pembuktian beberapa formula optimum terpilih, yang kemudian dibandingkan dengan hasil secara teoritis.

DAFTAR PUSTAKA

Aiache, J.Ph., J.Ph. Devissaguet, A. M. Guyot-Hermann, 1982, **Biofarmasi**. edisi 2, terjemahan W. Soeratri, Universitas Airlangga, Surabaya, 328-364.

Alodia, C., 2006, **Profil Pelepasan In Vitro Teofilin Dalam Bentuk Tablet Lepas Lambat dengan Menggunakan Matriks Kombinasi Carrageenan dan Kalsium Sulfat**, skripsi sarjana, Universitas Katolik Widya Mandala, Surabaya.

Anonim, 1979, **Farmakope Indonesia**, Ed. III. Departemen Kesehatan RI, Jakarta, 6-8, 510, 591.

Anonim, 1995, **Farmakope Indonesia**, Ed. IV. Departemen Kesehatan RI, Jakarta, 4, 167-168, 515-516, 999-1000.

Anonim, 2005, **US Pharmacopeia XXVIII**, US Pharmacopeial Convention, Inc., Rockville, 1896-1899, 2412-2415

Ansel, H.C., 1989. **Pengantar Bentuk Sediaan Farmasi**. (Ibrahim, F., penerjemah), 4th ed., UI Press. Jakarta, 118-120, 144, 148, 247-299.

Aulton, M.E., 2002, **Pharmaceutics The Science of Dosage Form Design**, 2th Edition, Churchill Livingstone, 299-302.

Author, 2007, **Farmakologi dan Terapi**, ed. 5, Fakultas Kedokteran Universitas Indonesia, Jakarta, 354-357.

Ashton, P., J. Hadgraft, K. R. Brain, T. A. Miller, and K. A. Walter, 1988, Surfactant Effect in Topical Drug Availability. **Int. J.Pharm.**, 41, 189-195.

Banakar, U.V., 1992, **Pharmaceutical Disolution Testing**, Marcel Dekker, Inc., New York, 322.

Banker, G.S. and Anderson, N.R., 1994. Tablet. In: Lachman, L., Lieberman. H.A., Kanig, J.L. (Eds.), **The Theory and Practice of Industrial Pharmacy**, 3rd ed., Lea and Febiger, Philadelphia, 293-317.

Bolton, S., 1990, **Pharmaceutical Statistics: Practical and clinical Applications**, 2nd Edition, Marcel Dekker, Inc., New York and Basel, A.

Clarke's Isolation and Identification of Drugs 2nd Edition, 1986, The Pharmaceutical Press, London, 567-568.

Collett, J. and Moreton, C., 2002. Modified-release peroral dosage form. In: Aulton, M.E. (Ed.), **Pharmaceutics: The Science of Dosage Form Design**, 2nd ed., Churchill Livingstone, Edinburgh, 289-302.

Colombo, P., Santi, P., Bettini, P., Brazel, C.S., Peppas, N.A., 2000. Drug release from swelling-controlled systems, In: Wise, D.L. (Ed.), **Handbook of Pharmaceutical Controlled Release Technology**, Marcel Dekker, Inc., New York, 185-190.

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

Foye, W.O., 1989, **Principles of Medicinal Chemistry**, 3rd Ed., Lea and Febiger, Philadelphia, 517.

Green, J.H., 1996. A Practical Guide to Analytical Method Validation. **Analytical Chemistry**, 23, 305 – 309.

Hadisoewignyo, L., 2005, **Studi Pelepasan In Vitro Ibuprofen dari Sistem Matriks Kombinasi Xanthan gum – Locust bean gum dan Xanthan gum – Kalium sulfat Dalam Bentuk Tablet**, Tesis , Universitas Gadjah Mada, Yogyakarta, 27-33

Higuchi, W.L., 1963, Mechanism of Sustained Action Medication. Theoretical Analysis of Release of Solid Drug Disperse in Solid Matrices, **Journal of Pharmaceutical Sciences**, vol. 52, 1145-1149.

Khan, K.A., 1975, The Concept of Dissolution Efficiency. **J. Pharmac**, 27, 48-49.

Kibbe, A.H., 2000. **Handbook of Pharmaceutical Excipients**, 3rd ed. The Pharmaceutical Press, London, 276-284, 305-307, 433-439, 555, 556.

Kimihiko, T., 1984, The Application of Avicel Microcrystalline Cellulose and Acdisol Internally Crosslinked CMC-Na to The Pharmaceutical Product, Asahi Chemical Industry Co, Ltd, Japan, on **Avicel and Ac – Di – Sol Seminar**, Jakarta, 1-7, 13

Langenbucher, F., 1972. Linearisation of dissolution rate curve by Weibull distribution, **J. Pharm. Pharmacol.**, 24, 979-981.

Lapidus, H. and Lordi, N.G., 1968. Drug release from compressed hydrophilic matrices, **J. Pharm. Sci.**, 57, 1292-1301

Lowman, A.M. and Peppas, N.A., 1999. Hydrogels. In: Mathiowitz, E. (Ed.), **Encyclopedia of Controlled Drug Delivery**, volume 1, John Wiley & Sons, Inc., New York, 405-406.

Martin, A., Swarbrick, J., Cammarata, A., 1993. **Farmasi Fisik: Dasar-Dasar Kimia Fisik dalam Ilmu Farmasetik**. (Yoshita, penerjemah). Universitas Indonesia Press, Jakarta, 845-847.

Park, K., W. S. W. Shalaby, and H. Park, 1993, **Biodegradable Hydrogels for Drug Delivery**, Technomic Publishing co., Inc., Lancaster, 99-114.

Parrott, E.L., 1971, **Pharmaceutical Technology: Fundamental Pharmaceutics**, Burgess Publishing Company, Minneapolis, 17-30, 80-86.

Reynolds, J.E.F., 1982, **Martindale: The Extra Pharmacopoeia**, 28th ed. The Pharmaceutical Press, London, 138.

Siswanto A , 2006, **Majalah Farmasi Indonesia**, 17(3), , Fakultas Farmasi Universitas Muhammadiyah, Purwokerto, 143 – 148

Shargel, L. and Yu, B.C., 1999. **Applied Biopharmaceutics and Pharmacokinetics**, 4th ed., McGraw-Hill, London, 169-201.

Siregar, C. J. P., 1992, **Proses Validasi Manufaktur Sediaan Tablet**, Institut Teknologi Bandung, Bandung, 29-31.

Therkelsen, G.H., 1993, Carrageenan. In: **Industrial Gums: Polysaccharides and Their Derivatives**, R. L. Whistler, and J. N. Bemiller (Eds.), 3rd ed., Academic Press, Inc., San Diego, 145-175.

Voigt, R., 1995. Buku **Pelajaran Teknologi Farmasi**. (Soewandhi, S.M., penerjemah), 5th ed., Gajah Mada University Press, Yogyakarta, 158, 165-173.

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

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

Wilmana, P. F., 1995, Analgesik – Antipiretik Analgesik Anti-Inflamasi Nonsteroid dan Obat Pirai, dalam: **Farmakologi dan Terapi**, Sulistia G. Ganiswarna (Ed.), edisi 4, Gaya Baru, Jakarta, 207-218.

Wise, D.L., 2000. *Handbook of Pharmaceutical Controlled Release Technology*, Marcell Dekker, Inc, Newyork, pp.83-209, 477.

Wong, S.H.Y. and White, S, 1998; Standart of Laboratory Practice : Analgesic Drug. Monitoring, Clin. Chem., 44, 1110-1123.