

BAB V

KESIMPULAN DAN SARAN

5.1. Kesimpulan

Berdasarkan hasil analisis data dan interpretasi penemuan, maka dapat disimpulkan bahwa:

1. Metode kromatografi lapis tipis ini dapat digunakan untuk mengidentifikasi sildenafil sitrat dalam campuran *Eurycomae Radix*, *Alii Sativi Bulbus*, *Retrofracti Fructus*, Ekstrak Ginseng, dan Ekstrak Yohimbe.
2. Metode kromatografi lapis tipis ini dapat digunakan untuk menetapkan kadar sildenafil sitrat dalam campuran *Eurycomae Radix*, *Alii Sativi Bulbus*, *Retrofracti Fructus*, Ekstrak Ginseng, dan Ekstrak Yohimbe.

5.2. Saran-saran

Berdasarkan hasil penelitian ini, disarankan untuk menerapkan metode kromatografi lapis tipis ini untuk identifikasi dan menetapkan kadar sildenafil sitrat dalam berbagai formula jamu kuat yang beredar di pasaran.

DAFTAR PUSTAKA

- Adnan, M., 1997. *Teknik Kromatografi untuk Analisis Bahan Makanan*. Andi, Yogyakarta, pp. 10-13.
- Ang, HH., Lee, KL., Kiyoshi, M., 2004. Sexual arousal in sexually sluggish old male rats after oral administration of *Eurycoma longifolia* Jack. *Journal of Basic and Clinical Physiology and Pharmacology*, **15**, pp. 303-309.
- Balai POM. [2006, December 4]. Public Warning / Peringatan tentang Obat Tradisional Mengandung Bahan Kimia Obat. [Online]. http://www.pom.go.id/public/peringatan_publik/pdf/OT4Des06.pdf. [2007, August 8].
- Balai POM. 2005. *Peraturan Kepala Badan Pengawas Obat dan Makanan Republik Indonesia Nomor: HK.00.05.4.1380 tentang Pedoman Cara Pembuatan Obat Tradisional yang Baik*, Jakarta, hal. 15.
- Bladt, S. & Wagner, H., 2001. *Plant Drug Analysis: a Thin Layer Chromatography Atlas*. 2nd edition. Springer-Verlag Berlin Heidelberg, New York, pp. 7-14, 295-296, 307, 312, 318.
- Blumenthal, M., 2000. *Herbal Medicine: Expanded Commission E. Monographs*. Integrative Medicine Communications, Newton, pp. 170-174.
- Capon, A., 1988. *Elementary Statistics for The Social Sciences*. Wadsworth, Inc., Belmont, p. 423.
- Czygan, F.C., Frohne, D., Holtzel, C., Nagell, A., Pfander, H.J., Willuhn, G., Buff, W., 1994. *Herbal Drugs and Phytopharmaceutical a Handbook for Practice on a Scientific Basis*. (Bisset, N.G., translator). Medpharm GmbH Scientific Publishers, Stuttgart, pp. 236-238.
- Eckschlager, K.A., 1984. *Kesalahan Pengukuran dan Hasil dalam Analisis Kimia*. (Mursyidi, A., penerjemah). Ghalia Indonesia, Jakarta, hal. 14.
- Ermer, J. & Burgess, C., 2005. Detection and quantitation limit. In: Ermer, J. & Miller, J. H. (Eds.), *Method Validation in Pharmaceutical Analysis*, Wiley-VCH Verlag GmbH & Co. KGaA, Weinheim, pp. 80, 101.

- Ermer, J., 2005. Linearity. In: Ermer, J. & Miller, J. H. (Eds.), *Method Validation in Pharmaceutical Analysis*, Willey-VCH Verlag GmbH & Co. KGaA, Weinheim, p. 80.
- Esau, K., 1965. *Plant Anatomy*. 2nd Edition. John Wiley & Sons, Inc., New York, pp. 481-531.
- Evans, W.C., 2004. *Pharmacognosy*. 15th Edition. Saunders, Philadelphia, pp. 295-296, 382.
- Farmakope Indonesia IV*. 1995. Depkes RI, Jakarta, hal. 1002-1004, 1017.
- Farnsworth, N.R. & Bunyapraphatsara, N., 1992. *Thai Medicinal Plants: Recommended for Primary Health Care System*, Prachachon Co., Ltd, Thailand, hal. 10.
- Fried, B. & Sherma, J., 1994. *Thin Layer Chromatography*. 3rd Edition. Marcel Dekker, Inc., New York, pp. 3-9, 11-15, 177-178.
- Gasparic, J. & Churacek, J., 1978. *Laboratory Handbook of Paper and Thin Layer Chromatography*. John Wiley and Sons, New York, pp. 65, 212.
- Gocan, S., 1990. Stationary phases in thin layer chromatography. In: Grinberg (Ed.), *Modern Thin Layer Chromatography*, Marcel Dekker, Inc., New York, p. 5.
- Green, J. M., 1996. Practical guide to analytical method validation. *Analytical Chemistry*. **II**, 305-309.
- Grinberg, N., 1990. Introduction. In: Grinberg (Ed.), *Modern Thin Layer Chromatography*, Marcel Dekker, Inc., New York, p. 1-3.
- Gruenwald, J., 2000. *PDR for Herbal Medicine*. 2nd Edition. Medicinal Economics Company, New Jersey, pp. 843-845.
- General Ingredient, Inc., [No Date]. Yohimbe Bark Extract 8%. [Online]. <http://www.generalingredient.com/images/Y0305110396-8%25.pdf>. [2008, March 4].
- Hahn, E., 2000. *Applied Thin-Layer Chromatography*. Willey-VCH, New York, pp. 1, 67, 150.

- Hamzah, S., Yusof, A., 2003. The ergogenic effects of tongkat ali (*Eurycoma longifolia*). *British Journal of Sport Medicine*, **37**, pp. 464-470.
- Horton, H.R., Moran, L.A., Scrimgeour, K.G., Perry, M.D., Rawn, J.D., 2006. *Principles of Biochemistry*. 4th edition. Pearson Education, Inc., New Jersey, pp. 536-538.
- Indrayanto, G., 1994. Validasi metode pada analisis dengan kromatografi. *Buletin ISFI Jatim*, **22**, 21-25.
- Kirchner, J.G., 1978. *Thin Layer Chromatography*. 2nd edition. A Wiley-Interscience Publication, John Wiley & Sons, New York, pp. 219-312.
- Mahmoudian, M., 2005. Sildenafil determination in various matrices: a review. *Iranian Journal of Pharmacology & Therapeutics*, **4**, 72-75.
- Martindale The Complete Drug Reference. 34th edition. 2005. The Pharmaceutical Press, London, pp. 1744-1745.
- Materia Medika Indonesia jilid I*, 1977. Depkes RI, Jakarta, hal. 80-84.
- Materia Medika Indonesia jilid V*, 1989. Depkes RI, Jakarta, hal. 212-216.
- Materia Medika Indonesia jilid VI*, 1995. Depkes RI, Jakarta, hal. 20-23.
- Mattisek, R. & Wittkowski, R., 1993. *High Performance Liquid Chromatography in Food Control and Research*. Technomic Publishing Company, Inc., Pennsylvania, pp. 52-53.
- McKenna, D., Jones, K., Hughes, K., 2002. *Botanical Medicines The Desk Reference for Major Herbal Supplements*. 2nd Edition. The Haworth Press, Inc., New York, pp. 384, 521-522.
- Mikami, E., Ohno, T., Matsumoto, H., 2002. Simultaneous identification / determination system for phentolamine and sildenafil as adulterants in soft drinks advertising roborant nutrition. *Forensic Science International*, **130** (2-3), pp. 140-146.
- Miller, J.C. & Miller, J.N., 1994. *Statistical for Analytical Chemistry*. 3rd Edition. Hordwood PTR Prentice Hall, New York.

- Mitchell, W.A., 2003. *Plant Medicine in Practice*. Elsevier Science, Philadelphia, pp. 296-297.
- Moriyasu, T., Shigeoka, S., Kishimoto, K., Ishikawa, F., Nakajima, J., Kamimura, H., Yasuda, I., 2001. Identification system for sildenafil in health foods. *Yakugaku Zasshi*, **121** (10), pp. 765-769.
- Mulya, M., 1983. Pemakaian “Thin Layer Chromatography Scanner” untuk analisa kuantitatif. *Buletin ISFI Jatim.*, **15**, 1-20.
- New Directions Aromatics, Inc. [2007, May 24]. Material Safety Data Sheet. [Online]. <http://www.newdirectionsaromatics.ca/msds/ginsengpanaxBE.htm>. [2008, February 28].
- Peraturan Pemerintah No. 246 Tahun 1990 tentang Izin Usaha Indonesia Obat Tradisional dan Pendaftaran Obat Tradisional. Depkes RI, Jakarta, hal. 1, 3, 7, 13, 17.
- Ritschel, W.A., 1976. *Handbook of Basic Pharmacokinetics*, 1st edition. Hamilton Press, Inc., Hamilton, Illinois, pp. 310-316.
- Rxlist, Inc. [2006, August 10]. Viagra® (Sildenafil Citrate) Tablets. [Online]. <http://www.rxlist.com/cgi/generic/viagra.htm>. [2007, August 8].
- Sastrohamidjojo, H., 1985. *Kromatografi*. Liberty, Yogyakarta, hal. 1-2, 27-37.
- Skoog, D.A. & Donald, M.W., 1980. *Principles of Instrumental Analysis*. 3rd Edition. Saunders College Publishing, New York, pp. 837-847.
- Skoog, D.A., West, D.M., Holler, F.J., 1990. *Analytical Chemistry: an Introduction*. 5th Edition. Saunders College Publishing, Orlando, pp. 401-403.
- Stahl, E., 1969. *Thin Layer Chromatography: A Laboratory Handbook*. 2nd Edition. Springer-Verlag, Berlin, pp. 1-16, 29, 301-303.
- Sudjadi., 1998. *Metode Pemisahan*. Kanisius, Yogyakarta, hal. 73-77.
- Sutrisno, B., 1998. *Taksonomi Spermatophyta untuk Farmasi*. Fakultas Farmasi Universitas Pancasila, Jakarta, hal. 42-45, 173, 184, 221-223.
- Syamsuhidayat, S.S. & Hutapea, J.R., 1991. *Inventaris Tanaman Obat Indonesia*. Jilid I. Depkes RI Badan Penelitian dan Pengembangan Kesehatan, Jakarta.

- Talbott, S.M. & Kerry, H., 2006. *The Health Professional's Guide to Dietary Supplements*. Lippincott Williams & Wilkins, Hagerstown, p. 366
- Thomas, G., 2000. *Medicinal Chemistry: an Introduction*. John Wiley & Sons, Ltd., England, pp. 456-457.
- Tjitrosoepomo, G., 2005. *Morfologi Tumbuhan*. Gadjah Mada University Press, Yogyakarta, pp. 106-110.
- Tjitrosoepomo, G., 1994. *Taksonomi Tumbuhan Obat-Obatan*. Gadjah Mada University Press, Yogyakarta, hal. 140-143, 295, 364.
- Touchstone, J. & Sherma., 1979. *Densitometry in Thin Layer Chromatography*. John Wiley and Sons, New York, pp. 11-19.
- Touchstone, J.C. & Dobbins, M.F., 1983. *Practice of Thin Layer Chromatography*. 2nd Edition. John Wiley & Sons, New York, pp. 255-256.
- United States of Pharmacopeia* 29th Edition. 2006. United States Pharmacopeial Convention, Inc., Rockville, pp. 3050-3053.
- Wiar, C., 2002. *Medicinal Plants of Southeast Asia*. 2nd Edition. Prentice Hall, Selangor, pp. 190, 191.
- Yakubu, M.T., Akanji, M.A., Oladiji, A.T., 2007. Male sexual dysfunction and methods used in assessing medicinal plants with aphrodisiac potentials. *Pharmacognosy Reviews*, **1**, 49-56.
- Zar, J.H., 1984. *Biostatistical Analysis*. 2nd Edition. Prentice-Hall, Inc., New Jersey, pp. 484-486.