

BAB 5

SIMPULAN DAN SARAN

5.1 Simpulan

1. Fraksi n-heksana daun ceguk memiliki aktivitas antibakteri lebih aktif daripada ekstrak etanol daun Ceguk terhadap *Staphylococcus aureus* tetapi tidak ada aktivitas antibakteri terhadap *Escherichia coli*.
2. Golongan senyawa yang mempunyai aktivitas antibakteri adalah golongan triterpenoid.

5.2 Saran

Berdasarkan hasil penelitian yang telah dilakukan, dapat disarankan beberapa hal sebagai berikut :

1. Perlu dilakukan isolasi senyawa antibakteri pada fraksi n-heksana ekstrak etanol daun Ceguk untuk mengetahui jenis senyawa yang memiliki aktivitas sebagai antibakteri.
2. Perlu dilakukan penelitian lebih lanjut tentang mekanisme antibakteri dari golongan senyawa triterpenoid pada fraksi n-heksana daun Ceguk.

Daftar Pustaka

- Agoes, G., 2007, *Teknologi Bahan Alam*, Penerbit ITB, Bandung, 32-34.
- Andrews, J. M., 2001, Determination of minimum inhibition concentration, *Journal of Antimicrobial Chemotherapy*, 48, 5-16.
- Bairagi V. A., Shinde P. R., Senthikumar K. L., and Shandu N., 2012, Pharmacognostic and phytochemical investigation of leaves and flowers of *Quisqualis indica* Linn., *Int J Pharm Biomed Sci*, 3(1), 13-9.
- Basri, F. D., Tan, L. S., Shafiei, Z. And Zin, N. M., 2012, In vitro antibacterial activity of galls of *Quercus infectoria* olivier against oral pathogens, *Evidence-Based Complementary and Alternative Medicine*, 1-7.
- Berridge, M. V., Herst, P. M., and Tan, An S., 2005, Tetrazolium dyes as tools in cell biology: new insights into their cellular reduction, *Biotechnology Annual Review*, (2), 127-152.
- Boone, *et al.*, 2005, *Bergey's Manual of Systematic Bacteriology*, vol. III, 2nd ed., Springer, New York, 392.
- Choma, I. M., and Grzelak E. M., 2010, Bioautografi detection in Thin-Layer Chromatography, *Journal of Chromatography A*, 12(069), 1- 8.
- Cowan M. M., 1999, Plant products as antimicrobial agents, *Clinical Microbiology Reviews*, 12(4), 564-82.
- Depkes RI, 1977, *Materia Medika Indonesia*, jil. I, Departemen Kesehatan Republik Indonesia, Jakarta, 135.
- Depkes RI, 1979, *Farmakope Indonesia*, ed. III, Departemen Kesehatan Republik Indonesia, Jakarta, 9.
- Depkes RI, 1989, *Materia Medika Indonesia*, jil. V, Departemen Kesehatan Republik Indonesia, Jakarta, 485.
- Depkes RI, 1995, *Farmakope Indonesia*, ed. IV, Departemen Kesehatan Republik Indonesia, Jakarta, 7.
- Ditjen POM, 2000, *Parameter Standar Umum Tumbuhan Obat*, Cetakan I, Departemen Kesehatan Republik Indonesia, Jakarta, 3.

Goldman, E., and Green L. H., 2009, *Practical Handbook of Microbiology*, 2nd ed., in : *Antibiotic Susceptibility Testing*, Audrey Wanger (ed.), CRC press, Boca raton, 149.

Hogg S., 2005, *Essential Microbiology*, John Wiley & Sons, Ltd, The Atrium, 56.

Hostettmann, K., and Marston A., 1995, *Saponins*, Cambridge University Press, New York, 124.

Huang H., Flynn N. M., King J. H., Monchaud C., Morita M., and Cohen S. H., 2006, Comparisons of community-associated methicillin-resistant *Staphylococcus aureus* (MRSA) and hospital-associated MRSA Infections in Sacramento, California, *Journal of Clinical Microbiology*, 44(7), 2423–427.

Isnawati, A., Raini, M., dan Alegantina, S., 2006, Standarisasi simplisia dan ekstrak etanol daun Sembung (*Bluema balsamifera* L.) dari tiga tempat tumbuh, *Media Litbang Kesehatan XVI*, (2), 1-6.

Joklik, W. K., Willet H. P., and Amos D. B., 1980, *Zinsser Microbiology*, 7th ed., Appleton-Century Crofts, New York, 534, 539-40.

Junglekey, 2013, *Quisqualis indica* L. pictures, [Online], available from :<http://jpkc2.cdutcm.edu.cn/zyx/zyxkc/zyx/zyxkc/qc/sjindex.htm> , [accesses : 1 may 2013].

Julianelle, L. A., and Wieghard C. W., 1934, Immunological specificity of carbohydrates derived from *Staphylococci*, *Proc. Soc. Exptl. Biol. Med.*, 31, 947-949.

Kaisar, Islam M. R., Rahman M. S., Hossain Md. K., and Rashid M. A., 2009, Total phenolic content, free radical scavenging activity and reducing power of *Quisqualis indica* Linn., *Dhaka Univ. J. Pharm. Sci.*, 8(2), 173-175.

Kiruthika, K. A., Jaisheeba A. A., and Sornaraj R., 2011, Evaluation of antibacterial activity of some selected angiosperm flower extract, *International Journal of ChemTech Research*, 3(4), 1945-951.

Klemm, P., and Schembri M. A., 2000, Bacterial adhesin: function and structure, *International journal of medical microbiology : IJMM*, 290(1), 27-35.

Liu G. Y., 2009, Molecular pathogenesis of *Staphylococcus aureus* infection, *Pediatr Res.* , 65(5 Pt 2), 71–77.

Loesche W. J., 1986, Role of *Streptococcus mutans* in human dental decay, *Microbiological Reviews*, 50(4), 353-80.

Mc Kane, L., and Kandel, J., 1985, *MICROBIOLOGY : Essential and Applications*, McGraw-Hill Book Company, 324-332.

Medication daily, 2013, *Pylera*, [Online], available from : <http://www.medicationdaily.com/pylera>, [accessed : 18 september 2013].

Nakamura, C. S., *et al.*, 1999, Antibacterial activity of *Ocimum gratissimum* L. essential oil, *Mem Inst Oswaldo Cruz, Rio de Janeiro*, 94(5), 675-78.

N' guessan, J.D., Coulibaly, A., Ramanaou, A. A., Okou, O. C., Djaman, A. J., and Guede-Guina, F., 2007, Antibacterial activity of *Thonningia sanguinea* against some multidrug resistant strains of *Salmonella enterica*, *African Health Science*, 7(3), 155-58.

Parija S. C., 2009, *Textbook of Microbiology and Immunology*, Elseiver Churchill-Livingstone, ,48, 262.

Powers, E. M., and Latt T. G., 1977, Simplified 48-Hour IMVic test: an agar plate method, *Applied and Environmental Microbiology*, 34(3), 274-79.

Sahu, J., 2012, Effect of *Quiqualis indica* (Linn) on cholesterol diet induced hyperlipidemia in wistar albino rats, *International Journal of Pharmaceutical Research and Development*, 4(6), 86-94.

Sahu, J., Patel P. K., and Dubey B., 2012, *Quisqualis indica* Linn : a review of its medicinal Properties, *Int.J.Pharm.Phytopharmacol.Res.*, 1(5), 313-21.

Sandasi, M., 2008, The effect of plant extract on microbial biofilm formation and development, *Dissertation*, Magister Technology, Tshwane University of Technology, Pretoria.

Sarker, S.D., Latif Z., and Gray A.I., 2006, *Natural Products Isolation*, 2nd ed., Humana Press Inc., Totowa, 29, 31-35, 88-89.

Schmidt, B., Ribnicky, D. M., Poulev, A., Logendra, S., Cefalu, W. T., and Raskin, I., 2008, A Natural history of botanical Therapeutics, *Metabolism Clinical and Experimental*, 3-9.

Singh, N., Khatri, P., Samantha, K. C., and Damor, R., 2010, Antipyretic activity of methanolic extracts of leaves *Quisqualis indica* Linn., *International Journal of Pharma Research and Development*, 9(11), 122-26.

Siswandono, dan Soekarjo B., 2008, *Kimia medisinal dalam: hubungan struktur- aktivitas obat antibiotika*, jil. 2, Airlangga University Press, Surabaya, 143-148.

Sussman, M., 1997, *Escherichia coli* : mechanism of virulence, *Journal of Royal Society of Medicine*, 90(8), 466.

Senoz, H., 2012, The chemistry of formazan and tetrazolium salts, *J. Biol. & Chem.*, 40(3), 293-301.

Talaro, K.P., and B. Chess, 2012, *Foundation in Microbiology*, 8th ed., The McGraw-Hill, New York, 540, 547.

The American Philosophical Society, 1935, *Transactions of american philosophical society*, Philadelphia, 282. (vol. 24, Part 2, 1935-June)

Tortora G. J., Funke B. R., and Case C. L., 2010, *Microbiology an Introduction*, 10th ed., Pearson Education, Inc., New York, 585-86, 717

Van, Steenis , 2003, *Flora*, terjemahan : S. Moeso, PT Pradnya Paramita, Jakarta, 313.

Varsha, S., Agrawal, R. C and Sonam P., 2013, Phytochemical screening and determination of antibacterial and antioxidant potential of *Glycyrrhiza glabra* root extract, *Journal of Environmental Research and Development*, 7(4a), 1552-1558.

Waksmundzka-Hajnos, M., Sherma, J., and Kowalska, T. (eds.), 2008, *Thin Layer Chromatography in Phytochemistry*, CRC press, Boca raton, 528.

Yadav, Y., Mohanty P. K., and Kasture S. B., 2011, Anti-inflammatory activity of hydroalcoholic extract of *Quisqualis indica* Linn. flower in rats, *International Journal of Pharmacy and Life Sciences*, 2(8), 977-81.

Yadav, Y., Mohanty P. K., and Kasture S. B., 2011, Evaluation of immunomodulatory activity of hidroalcoholic extract of *Quiqualis indica* Linn. flower in wistar rats, *International Journal of Pharmacy and Life Sciences*, 2(4), 686-89.