

## BAB 5

### KESIMPULAN DAN SARAN

#### 5.1. Kesimpulan

- 5.1.1. Kondisi yang optimum pada iradiasi gelombang mikro untuk melakukan sintesis senyawa N-((2-hidroksinaftalen-1-il)4-hidroksibenzil)etanamida adalah dengan daya P<sub>10</sub> selama 20 menit.
- 5.1.2. Reaksi sintesis antara 2-naftol, asetamida, benzaldehida dan dengan katalis asam borat menghasilkan senyawa yang diduga N-((2-hidroksinaftalen-1-il)benzil)etanamida yang dapat berlangsung dengan kondisi optimum dari sintesis senyawa N-((2-hidroksinaftalen-1-il)4-hidroksibenzil)etanamida.
- 5.1.3. Gugus hidroksi pada senyawa 4-hidroksibenzaldehida mempersulit pembentukan senyawa N-((2-hidroksinaftalen-1-il)4-hidroksibenzil)etanamida bila dibandingkan dengan sintesis N-((2-hidroksinaftalen-1-il)benzil)etanamida dengan menggunakan benzaldehida yang dapat dilihat dari hasil rendemen reaksi.

#### 5.2. Saran

- 5.2.1. Perlu dilakukan uji farmakologi untuk mengetahui khasiat senyawa yang telah disintesis.
- 5.2.2. Perlu dikaji kembali teknik untuk mereaksikan senyawa agar tidak terjadi oksidasi sebelum reaksi berjalan sempurna.

**BAB 6**  
**DAFTAR PUSTAKA**

- Ahluwalia, V. K. and Dhingra, S. 2000. *Comprehensive Practical Organic Chemistry Quantitative Analysis*. India: Polykan Printers.
- Alger, M. S. M. 1997. *Polymer Science Dictionary* 2<sup>nd</sup> ed. Great Britain: T. J. International Ltd. Padstow Cornwall.
- Aschenbrenner, D.S. and Venable, S.J. 2009. *Drug Therapy in Nursing*, 3<sup>rd</sup> ed. Philadelphia: Lippincott Williams & Wilkins, pp. 14.
- Bhanja, C. and Chakroborty, S. 2012. Synthon Disconnection Strategy for the Synthesis Design of “Coelenterazine” - A Bioluminescent Marine Natural Product used in Bioassays. *Journal of Chemical and Pharmaceutical Research*, **4**(5): 2614-1625.
- Clayden, J., Greevs, N., Warren, S., and Wothers, P. 2000. *Organic Chemistry*, 1<sup>st</sup> ed. Oxford: Oxford University Press.
- Das, V. K., Borah, M., and Thakur, A. J. 2013. Piper-Betle-Shaped Nano-S-Catalyzed Synthesis of 1-Amidoalkyl-2naphthols under Solvent-Free Reaction Condition: A Greener “Nanoparticle-Catalyzed Organic Synthesis Enhancement” Approach. *The Journal of Organic Chemistry*. India.
- Departemen Kesehatan RI. 1979. *Farmakope Indonesia*, edisi 3. Jakarta: Departemen Kesehatan Republik Indonesia.
- Departemen Kesehatan RI. 1995. *Farmakope Indonesia*, edisi 4. Jakarta: Departemen Kesehatan Republik Indonesia.
- Dewick, P.M. 2006. *Essentials of Organic Chemistry*. West Sussex: John Wiley & Sons, Ltd. pp. 393-394.
- Duvedi, R., and Singh, R. K., 2012. Environment Friendly, Efficient Chloroacetic Acid Promoted Synthesis of 1-Amidoalkyl-2-naphthols Under Neat Condition. *Asian Journal of Chemistry*, **24**(12): 5665-5668.

- Furnis, B. S., Hannaford, A. J., Smith, P. W. G. and Tatchell, A. R. *Vogel* 5<sup>th</sup> ed. London: Longman Group Ltd.
- Gormer, B. 2007. Hypertension-pharmacological management. *Hospital Pharmacist* **14**: 119-125.
- Hahn-Deinstrop, E. 2007. *Applied Thin-Layer Chromatography*. Ed. 2 Translated from Germany by R. G. Leach. Weinheim: WILEY-VCH Verlag GmbH & Co. KGaA,
- Hayati, E. K., 2007. *Dasar-dasar Analitis Spektroskopi*. Malang: KJM.
- Hazeri, N., Maghsoodlou, M. T., Habibi-Khorassani, S. M., Aboonajmi, J., and Safarzaei, M. 2013. A Green Protocol for One-Pot Three-Component Synthesis of Amidoalkyl Naphthols Catalyzed by Succinic Acid. *Chemical Science Transactions*, **2**(S1), S330-S336.
- Hong L. and Lei. Z. 2011. *Microwave dielectric heating in modern organic synthesis and drug discovery*, Microwave Heating, Dr. Usha Chandra (Ed.), Available from: <http://www.intechopen.com/books/microwave-heating/microwave-dielectric-heating-in-modern-organicsynthesis-and-drug-discovery>
- Karimi-Jaberi, Z and Fakhraei, H. 2012. Synthesis of 1-amidoalkyl-2-naphthols based on a three-component reaction catalyzed by boric acid as a solid heterogeneous catalyst under solvent-free conditions. *Bulletin of Chemical Society of Ethiopia*, **26**(3): 473-478.
- Khopkar, S. M. 1990. *Konsep Dasar Kimia Analitik*. Diterjemahkan dari Bahasa Inggris oleh: A. Saptorahardjo. Jakarta: UI Press.
- Kusumastuti, A. 2011. Pengenalan Pola Gelombang Khas dengan Interpolasi. *Jurnal CAUCHY*, **2**(1): 7-12.
- Linthorst, J. A. 2010. An overview: origins and development of green chemistry. *Found Chem.* **12**(2010): 55-68.
- Mackie, R.K and Smith, D.M. 1985. *Guidebook to Organic Synthesis*. ed. ELBS. England.

- Manahan, S. E. 2006. *Green Chemistry and the Ten Commandments of Sustainability*. USA.
- Mancia, G., Fagard, R., Narkiewicz, K., Redon, J., Zanchetti, A., Bohm, M., Christiaens, T., Cifkova, R., Backer, G. D., Dominiczak, A., Galderisi, M., Grobbee, D. E., Jaarsma, T., Kirchhof, P., Kjeldsen, S. E., Laurent, S., Manolis, A. J., Nilsson, P.M., Ruilope, L. M., Schmieder, R. E., Simes, P. A., Sleight, P., Viigimaa, M., Waeber, B., and Zannad, T. 2013. 2013 ESH/ ESC Guidelines for the management of arterial hypertension. *Journal of Hypertension* 2013, **31**: 1281-1357.
- Maryon-Davis, A. Stewart, L. 2005. *Hypertension- the 'Silent Killer'*. United Kingdom: Faculty of Public Health.
- McMurry, J. 2008. *Organic Chemistry*, 7<sup>th</sup> ed. Belmont: Thomson Learning, Inc.
- Montazeri, N., Pourshamsian, K., Ghorchibeigi, M., and Fouladi, M. 2012. Highly Efficient, One-Pot, Solvent-Free Synthesis of Amidoalkyl Naphthols Using a Caro's Acid-Silica Gel as Solid Acid Catalyst. *Research Journal of Pharmaceutical, Biological and Chemical Sciences*, **3**(1):867-872.
- Moser, M. 2005. *High Blood Pressure and Diabetes*. US: Le Jacq, Ltd.
- O'Neil, M.J., Smith, A., Heckelman, P.E., Obenchain, J.R., Gallipeau, J.A.E., and Darecca, M.A. 2001. *The Merck Index*, 31<sup>st</sup> ed. New Jersey: Merck & Co., Inc.
- Otaibi, A.A. and McCluskey, A. 2013. 'Multicomponent Reactions in Ionic Liquids'. Kadokawa, J (Ed.). *Ionic Liquids – New Aspects for the Future*. Rijeka: InTech, pp. 457-498.
- Pusat Data Dan Informasi Kemenkes RI. 2012. Gambaran Penyakit Tidak Menular Di Rumah Sakit Di Indonesia Tahun 2009 Dan 2010. *Buletin Jendela Data & Informasi Kesehatan*, **2**(2): 1-14.

- Pratiwi, A. dan Ersam, T. Uji Kemurnian Dua Senyawa dari Ekstrak Metanol Kayu Batang *Garcinia cylindrocarpa*. *Jurnal Sains dan Seni Pomits* **2(2)**: 2337-3520.
- Rahajeng, E. dan Tuminah, S. 2009. Prevalensi Hipertensi dan Determinannya di Indonesia. *Majalah Kedokteran Indonesia*, **59(2)**: 580-587.
- Rowe, R.C., Sheskey, P.J., and Quinn, M.E. 2009. *Handbook of Pharmaceutical Excipients*, 6<sup>th</sup> ed. London: Pharmaceutical Press.
- Sacco, L.N. and Finklea, M. 2013. *Synthetic Drugs: Overview and Issues for Congress*. United States: Congressional Research Service.
- Shahriza, A., Esmati, S., and Nazari, M.G. 2012. Boric Acid as a Mild and Efficient Catalyst for One-Pot Synthesis of 1-amidoalkyl-2-naphthols under Solvent-Free Conditions. *Journal of Chemical Science*, **124(4)**: 927-931.
- Shaterian, H. R., Yarahmadi, H., and Ghashang, M.. 2008. One-pot synthesis of amidoalkyl naphthols using NaHSO<sub>4</sub>.SiO<sub>2</sub> as an efficient and recyclable heterogeneous catalyst. *Turkish Journal of Chemistry*, **33**: 449-457.
- Solomons, T.W.G. and Fryhle, C.B. 2011. *Organic Chemistry*, 10<sup>th</sup> ed. New Jersey: John Wiley & Sons, Inc.
- Solomons, T.W.G., Fryhle, C.B., and Snyder, S.A. 2014. *Organic Chemistry*, 11<sup>th</sup>ed. New Jersey: John Wiley & Sons, Inc.
- Striegel, M. F., and Hill, Jo., 1996. *Thin-Layer Chromatography for Binding Media Analysis*. Los Angeles: The Getty Conservation Institute.
- Stuart, B.H. 2004. *Infrared Spectroscopy: Fundamentals and Applications*. West Sussex: John Wiley & Sons, Ltd.
- Sudiarto, Wijayanti, R., dan Sumedi, T. 2007. Pengaruh Terapi Relaksasi Meditasi Terhadap Penurunan Tekanan Darah pada Lansia dengan Hipertensi di Wilayah Binaan Rumah Sakit Emanuel Klampok Banjarnegara. *Jurnal Keperawatan Soedirman (The Soedirman Journal of Nursing)*. **2(3)**. 118-126.

- Supale, A. R. and Gokavi, S. G. 2009. An environmentally benign three component one-pot synthesis of amidoalkyl naphthols using  $\text{H}_4\text{SiW}_{12}\text{O}_{40}$  as a recyclable catalyst. *Jurnal of Chemical Science*, **122**(2): 189-192.
- Sweetman, S.C. 2009. *Martindale The Complete Drug Reference* 36. London: Pharmaceutical Press.
- Tarigan, P. 1984. *Spektrometri Resonansi Magnet Proton*. Bandung: Alumni.
- Wardencki, W., Curylo, J., and Namiesnik, J. 2005. Green Chemistry – Current and Future Issues. *Polish Journal of Environment Studies*, **14**(4): 389-395.
- Watson, D.G. 2010. *Analisis Farmasi: Buku Ajar untuk Mahasiswa dan Praktisi Kimia Farmasi*, edisi 2. Diterjemahkan dari Bahasa Inggris oleh Winny R. Syarief. Jakarta: EGC.
- Willis, C.L. and Wills, M. 2004. *Sintesis Organik*. Diterjemahkan dari Bahasa Inggris oleh Marcellino R. Surabaya: Airlangga University Press.
- Zhen, K. L., Li, X., Xiao, Q. L., He, H., and Chen, J. L. 2013. Graphite-Supported Perchloric Acid ( $\text{HClO}_4\text{-C}$ ): An Efficient and Recyclable Heterogeneous Catalyst for the One-Pot Synthesis of Amidoalkyl Naphthols. *Molecules*, **18**: 1653-1659.