

BAB 5

KESIMPULAN DAN SARAN

5.1 Kesimpulan

1. Senyawa dibenzalaseton dapat disintesis melalui reaksi kondensasi *Claisen-Schmidt* dengan mereaksikan benzaldehida dan aseton dengan bantuan iradiasi gelombang mikro (Waktu reaksi 1 menit dan daya 160 watt dengan persentase hasil rendemen 90,45%).
2. Senyawa 4,4'-diklorodibenzalaseton dapat disintesis melalui reaksi kondensasi *Claisen-Schmidt* dengan mereaksikan 4-klorobenzaldehida dan aseton dengan bantuan iradiasi gelombang mikro (Waktu reaksi selama 1 menit dan daya 160 Watt dengan persentase hasil rendemen 85,25%).
3. Pengaruh gugus kloro posisi para pada 4-klorobenzaldehida mempersulit reaksi kondensasi *Claisen-Schmidt* dalam pembentukan senyawa 4,4'-diklorodibenzalaseton ditinjau dari hasil rendemen yang diperoleh.
4. Dengan penambahan waktu reaksi pada sintesis senyawa 4,4'-diklorodibenzalaseton menurunkan persentase hasil rendemen sebesar 4,69%.

5.2 Saran

1. Perlu digunakan pelarut rekristalisasi yang sesuai pada penelitian berikutnya untuk sintesis senyawa dibenzalaseton dan senyawa 4,4'-diklorodibenzalaseton.
2. Perlu dilakukan uji farmakologi untuk mengetahui khasiat senyawa yang telah disintesis.

DAFTAR PUSTAKA

- Ahluwalia, V.K. and Kidwai, M. 2004, *New Trends in Green Chemistry*, Anamaya Publishers, New Delhi.
- Ameta, C., Dashora, P. and Vyas, R. (eds). 2015, *Microwave-Assisted Organic Synthesis: A Green Chemical Approach*, Apple Academic Press, Toronto.
- Anonim, 1996, *The Merck Index an Encyclopedia of Chemical, Drugs and Biologicals*, 12th Ed., Merck Research Laboratories Division of Merck & Company Inc., New York.
- Badreldin, A., Blunden, G., Tanira, M. and Nemmar, A. 2008, *Some Phytochemical, Pharmacological and Toxicological Properties of Ginger (Zingiber officinale Roscoe): A Review of Recent Research. Food Chem. Toxicol.*, **46 (2)**: 409-420.
- Biswajit, Bhowmik, and Chaudhuri, 2012, Microwave System, *Journal of Pharmaceutical*, **6 (1)**: 2-17.
- Chattopadhyay, I., Biswas, K., Bandyopadhyay, U., and Banerjee, R. K. 2004, Turmeric and Curcumin: Biological Actions and Medicinal Applications, *Review Article*, **87(1)**: 44-53.
- Doyle, M.P. and Mungall, W.S., 1980, *Experimental of Organic Chemistry*, John Wiley and Sons, New York, pp 24-33, 86-92.
- Fessenden, R. J., dan J.S. Fessenden. 1986, *Kimia Organik Jilid 2*. Edisi ke 3, Erlangga, Jakarta.
- Gandjar, I.G., dan Rohman, A. 2015, *Kimia Farmasi Analisis*, Pustaka Pelajar, Yogyakarta.
- Handayani, S., and Arty, I.S. 2009, Synthesis and Activity Test of Some Compounds 1,5-diphenyl-1,4-pentadiene-3-one as Potential Sun Screen Material, *Journal of Physical Science*, **19(2)**: 61-68.
- Handayani, S. 2009, 'Mempelajari Sintesis Senyawa Tabir Surya Melalui Kondensasi Aldol Silang', Universitas Negeri Yogyakarta. *Peningkatan Kualitas Pendidikan dan Penelitian Kimia*

Menyongsong UNY sebagai World Class University, Yogyakarta, pp 31-34.

- Handayani, S. 2012, 'Sintesis Analog Benzalaseton Menggunakan Katalis NaOH/ZrO₂-montmorilonit dan Uji Aktivitasnya sebagai Antioksidan', *Disertasi*, Universitas Gadjah Mada, Yogyakarta.
- Harmita, 2015, *Analisis Fisikokimia Potensiometri & Spektroskopi*, Penerbit Buku Kedokteran, Jakarta.
- Hewlings, S.J., and Kalman, D.S. 2017, Curcumin: A Review of Its Effects on Human Health. *Foods*, **6(10)**: 92.
- Ibrahim, N.M., Al-Difar, H.A. 2013, Sythesis and Biological Activity Study of some Heterocycles Derived from Dibenzalacetone, *International Journal of Engineering, Science, and Mathematics*. **2**: 57-63.
- Jayaprakasha, G. K., Rao, L. J., Mohan, M., & Sakariah, K. S. 2002, Improved HPLC method for the determination of curcumin, demethoxycurcumin and bisdemethoxycurcumin. *Journal of Agri- cultural and Food Chemistry*, **50**:3668–3672.
- Kappe, Oliver C., dan Stadler, A. 2005, *Microwave in Organic and Medicinal Chemistry*, Wiley-VCH, Weinheim.
- Kirchhoff, 2013. *Green Chemistry: Principles and Practice*. Washington: American University.
- Kocaadam, B., and Sanlier, N. 2015, Curcumin, an Active Component of Turmeric (*Curcuma Longa*), and Its Effects on Health, *Crit. Rev. Food Sci. Nutr.*, **57(13)**: 2889–2895.
- McMurry, J. 2008. *Organic Chemistry*. 7th edition. Graphic World Inc, Canada.
- McMurry, J. 2016. *Organic Chemistry*. 9th edition. Graphic World Inc, Canada.

- Moffat, A.C., Osselton, M.D. and Widdop, B. (eds), 2011, *Clarke's Analysis of Drugs and Poisons in pharmaceuticals, body fluids and postmortem material*, Pharmaceutical Press, London.
- Mohrig, J.R., Hammond, C.N. and Schatz, P.F, 2010. *Techniques in Organic Chemistry*, W.H Freeman and Company, New York.
- Motterlini, R., Foresti, R., Bassi, R., Green, C.J., 2000. Curcumin, an Antioxiant and Anti-Inflammatory Agent, Induces Heme Oxygenase-1 and Protects Endothelial Cells Against Oxidative Stress, *Journal of Biology and Medicine*. **28(8)**: 1303-1312.
- Pavia, D.L., Lampman, G.M., Kriz, G.S., dan Vyvyan, J.R. 2015, *Introduction To Spectroscopy 4th Edition*, Nelson Education, Washington.
- Prabawati, Wijayanto, dan Wirahadi, 2014, Pengembangan Senyawa Turunan Benzalaseton sebagai Tabir Surya, *Journal of Pharmacy*, **4(1)**: 31-38.
- Raju, K., Vinod, J., and Mulukuri, S. 2017, Synthesis and Anti-Oxidant Activity of Dibenzalketones. *International Journal of Research in Pharmacy and Chemistry*, **7(4)**: 585-606.
- Ravelli, D., Protti, S., and Albini, A. 2008, Giacomo Ciamician and The Concept of Green Chemistry, *Journal of Chemsitry and Sustainabilit*, **1(1-2)**: 63-66.
- Rayar, A., Ferroud, C., and Veitia, M. 2015, An efficient and selective microwave-assisted Claisen-Schmidt reaction for the synthesis of functionalized benzalacetones. *SpringerPlus*, **4(1)**: 221.
- Saifudin, 2014, *Senyawa Alam Metabolit Sekunder Teori, Konsep, dan Teknik Pemurnian*, Universitas Muhammadiyah Surakarta.
- Selvakumar. B dan Venkataraman. R. 2002, Synthesis and Biological Evaluation of Some Curcumin Analogs and Their Derivatives. *Journal Chemical*, **3(2)** : 260-265

- Shishodia, S., Sethi, G., and Bharat, B. A. 2005, Curcumin: Getting Back to The Roots, *Annals of the New York Academy of Science*, **1056(1)**: 206-217.
- Silverstein, R.M., Webster, F.X., Kiemle, J.D. 2005, *Spectrometric Identification of Organic Compounds 7th Edition*, John Wiley and Son Inc., New Jersey.
- Siswandono dan Soekardjo, B., 2000, *Kimia Medisinal Edisi 2*, Airlangga University Press, Surabaya.
- Suryanto, B., Syarief, H. 2013, Uji in Vitro Aktivitas Tabir Surya Turunan Sinamat Hasil Isolasi dari Rimpang Kencur (*Kaemferia galanga* L.), *Journal of Chemistry*, **2(3)** Universitas Negeri Surabaya, Surabaya.
- O'Neil, M. J. 2001, *The Merck Index - An Encyclopedia of Chemicals, Drugs, and Biologicals. 13th Edition.*, Merck and Co. Inc., New Jersey.
- O'Neil, M.J. 2006, *The Merck Index - An Encyclopedia of Chemicals, Drugs, and Biologicals*, Merck Co.Inc, New Jersey.
- Wisnu, Sary, dan Pratoko. 2018, Sintesis dan Uji Aktivitas Antibakteri Senyawa N-fenil-4-klorobenzamida, *Jurnal Pustaka Kesehatan*, **6(2)**: 212-217.