

DAFTAR PUSTAKA

- Agudelo, D., Philippe, B., Gervais B., and Heidar, A.T., 2014, Intercalation of antitumor drug doxorubicin and its analogue by DNA duplex: Structural features and biological implications, *International Journal of Biological Macromolecules*, **66**: 144–150.
- Agustanti, L., 2008, Potensi Daun Sirih Merah (*Piper crocatum*) sebagai Aktivator Enzim Glukosa Oksidase, *Skripsi*, Institut Pertanian Bogor, Bogor.
- American Cancer Society, 2014, *Colorectal Cancer Facts and Figures 2014-2016*, American Cancer Society, NW, Atlanta.
- Anggrianti, P., 2008, Uji Sitotoksik Ekstrak Etanol 70% Buah Kemukus (*Piper cubeba* L.) terhadap Sel Hela, *Skripsi*, Fakultas Farmasi, Universitas Muhammadiyah Surakarta, Surakarta.
- Anonim, 1986, *Sediaan Galenik*, Departemen Kesehatan Republik Indonesia, Jakarta.
- Anwar, Chairil, and Hasmi, 1994, *Pengantar Praktikum Kimia Organik*, 32-33, Depdikbud, Jakarta.
- Arishandy, D.N.A.T., 2010, Isolation and Identification of Flavonoid on *Piper betel* Leaf Extracts, *Tesis*, Technology and Science Institute of Malang, Malang.
- ATCC, 2015, Cell Biology, WiDr (ATCC[®]CCL-218[™]), *ATCC Collection*, <http://www.atcc.org/products/all/CCL-218.aspx#characteristics>, 25 Mei 2015.
- Baskic, D., Popovic S., Ristic P., and Arsenijevic N.N., 2006, Analysis of Cycloheximide-induced Apoptosis in Human Leukocytes: Fluorescence Microscopy Using Annexin V/Propidium Iodide versus Acridin Orange/Ethidium Bromide, *Cell. Biol. Int.*, **30**(11): 924-932.
- Beck, W.T., Mo, Y.Y., and Bhat, U.G., 2001, Cytotoxic signalling by inhibitor of DNA topoisomerase II, *Biochemical Society*, **29**(6): 702–703.
- Bertheau, P., Plassa, F., Espie, M., Turpin, E., Roquancourt, A., Marty, M., et al., 2002, Effect of Mutated TP53 on Response of Advanced Breast Cancer to High Dose Chemotherapy, *Lancet*, **360**: 852-854.

- Bezerra, D.P., Pessoa, C., de Moraes, M.O., Silveira, E.R., Lima, M.A., Elmiro, F.J., *et al.*, 2005, Antiproliferative effects of two amides, piperine and pipartine from *Piper* species, *Z. Naturforsch.*, **60**: 539-543.
- Calvert, P.M., and Frucht, H., 2001, The Genetics of Colorectal Cancer, *Ann. Intern. Med.*, **137**(7): 603-612.
- Chamond, R.R., Anon, J.C., Aguilar, C.M., and Pasadas, F.G., 1999, Apoptosis and disease, *Alergol Immunology Clinic*, **14**(6): 367-74.
- Chen, T.R., Drabkowski, D., Hay, R.J., Macy, M., and Peterson, W. Jr., 1987, WiDr is a Derivative of Another Colon Adenocarcinoma Cell Line, HT-29, *Cancer Genet Cytogenet*, **27**(1): 125-34.
- Davey, H. and Douglas K., 1996, Flow Cytometry and Cell Sorting of Heterogeneous Microbial opulations: the Importance of Single-Cell Analyses, *Microbiological Reviews*, **60**(4): 641- 696.
- Doyle, A., and Griffiths, J.B., 2000, *Cell and Tissue Culture: Laboratory Procedures in Biotechnology*, Wiley, Chichester.
- Duryatmo, S., 2005, Dulu hiasan kini obat, *Trubus*, 427: 37.
- El-Sayyad, H.I., Ismail, M.F., Shalaby, F.M., Abou-El-Magd, R.F., Fernando, A., Raj, M.R.G., *et al.*, 2009, Histopat-hological Effects of Cisplatin, Doxorubicin and 5-Flurouracil (5-FU) on the Liver of Male Albino Rats. *International Journal of Biological Science*, **5**(5): 466-473.
- Epstein, W.W., Netz, D.F., and Seidel, J.L., 1993. Isolation of Piperine from Black Pepper, *Journal Chemistry*, **70**: 598-599.
- Evan, W.C., 1997, *Trease and Evan's Pharmacognosy*, Edition 14, 363-364, W.B. Saunders, London.
- Farida, R., Dewa, M. Titis, N and Endrawati, T., 2010, Manfaat Sirih Merah (*Piper crocatum*) sebagai Agen Anti Bakterial terhadap Bakteri Gram Positif dan Gram Negatif, *Jurnal Kedokteran dan Kesehatan Indonesia*, **1**(7): 10-25.
- Ferreira, A.L.A., Matsubara L.S., and Matsubara B.B., 2008, Anthracycline-Induced Cardiotoxicity, *Cardiovasc. Hematol, Agents Med. Chem.*, **6**: 278-281.
- Fitri, A., 2013, Analisis fitokimia dan aktivitas antibakteri semanggi air *Marsilea crenata* Presl, *Skripsi*, Fakultas perikanan dan ilmu kelautan, Institut Pertanian Bogor, Bogor.

- Fitriyani, A., Winarti, L., Muslichah, S., and Nuri., 2011, Uji anti inflamasi ekstrak metanol daun sirih merah (*Piper crocatum* Ruiz & Pav) pada tikus putih, *Majalah Obat Tradisional*, **16**(1): 34-42.
- Gangadharan, C., Thoh, M., and Manna, S.K., 2009, Inhibition of Constitutive Activity of Nuclear Transcription Factor Kappa B Sensitizes Doxorubicin-resistant Cells to Apoptosis, *J. Cell. Biochem.*, **107**: 203-213.
- Gerl, R., and Vaux, D.L., 2005, Apoptosis in development and treatment of cancer, *Carcinogenesis*, **26**(2): 263-270.
- Gewirtz, D.A., 1999, A Critical Evaluation of The Mechanisms of Action Proposed for The Antitumor Effects of The Anthracycline Antibiotics Adriamycin and Daunorubicin, *Biochem. Pharmacol.*, **57**: 727-741.
- Gimenez-Bonafe P., Tortosa A., and Perez-Tomas R., 2009, Overcoming Drug Resistance by Enhancing Apoptosis, *Curr. Cancer Drug Target*, **9**: 320-340.
- Globocan, 2012, Colorectal Cancer factsheet and statistics, Lyon: *International Agency for Research on Cancer*, <http://globocan.iarc.fr/>, 1 Mei 2015.
- Hakem, R., and Harrington, L., 2005, *The Basic Science of Oncology, Cell Death*, 4 Edition, 194-204, McGraw-Hill Medical Companies, New York.
- Hanahan, D., and Weinberg, R.A., 2000, The Hallmarks of Cancer, *Cell Press*, **100**: 57-70.
- Hanahan, D., and Weinberg, R.A., 2011, Hallmarks of Cancer: The Next Generation, *Cell*, **144**: 646-674.
- Harborne, J.B., 1996, *Metode Fitokimia Penuntun Cara Modern Menganalisis Tumbuhan*, diterjemahkan oleh Iwang Soediro dan Kosasih Padmawinata, Edisi Kedua, 47-126, Penerbit ITB, Bandung.
- Harborne, J.B., 2006, *Metode Fitokimia Penuntun Cara Modern Menganalisis Tumbuhan*, diterjemahkan oleh Iwang Soediro dan Kosasih Padmawinata, Edisi Keempat, 354, Penerbit ITB, Bandung.
- Hayon, T., Dvilansky, a., Shpilberg, O., and Nathan, I., 2003, Appraisal of the MTT-based Assay as a Useful Tool for Predicting Drug Chemosensitivity in Leukemia, *Leuk. Lymphoma*, **44**(11): 1957-1962.
- Hingorani, R., Jun, D., Jeanne, E., Catherine, Mc., and Dev Mittar, 2011, *Detection of Apoptosis Using the BD Annexin V FITC Assay on the BD FACS Verse™ System*, Application Note BD Biosciences, San Jose.

- Hwang, Y.P., Yun H.J., Kim H.G., Han E.H., Chung Y.C., Jeong H.G., 2011, Suppression of phorbol-12-myristate-13-acetate-induced tumor cell invasion by piperine via the inhibition of PKC/ERK1/2-dependent matrix metalloproteinase-9 expression, *Toxicol. Lett.*, **203**: 9-19.
- Istiqomah, N., 2015, Sitotoksitas Fraksi Potensial Daun Steril dan Fertil, Serta Rimpang Sisik Naga (*Pyrrosia piloselloides* [L.] M.G. Price.) terhadap Sel Kanker Payudara T47D dan Kolon Widr, *Tesis*, Universitas Gadjah Mada, Yogyakarta.
- Karim, A., K., 2014, Studi Aktivitas dan Mekanisme Antikanker In Vitro Ekstrak Metanolik Daun *Dianella nemorosa* Lam. (Liliaceae), *Disertasi*, Universitas Gadjah Mada, Yogyakarta.
- Kee, J.L., and Hayes, E.R., 1996, *Farmakologi Pendekatan Proses Keperawatan*, 140-145, 435-443, Penerbit Buku Kedokteran, Jakarta.
- Kementerian Kesehatan RI, 2015, *Stop Kanker*, Infodatin, Pusat Data dan Informasi, <http://www.depkes.go.id/download.php?file...kanker.pdf>, 25 Mei 2015.
- Kim, E.J., Park, H., Shin, M., Shin, H.K., and Park, J.H.Y., 2009, Induction of Apoptosis in HT-29 Human Colon Cancer Cells by the Pepper Component Piperine, *J. Korean Soc. Food Sci. Nutr.*, **38**(4): 442-450.
- King, R. J. B., 2000, *Cancer Biology*, 2th Edition, 149 – 168, School of Biological Sciences, University of Surrey, Pearson Education Harlow-England-London-New York.
- Koopman, G., Reutelingsperger, Kuijten, G.A.M., Keehnen, R.M.J., Pals, S.T., and Van Oers, M.H.J., 1994, Annexin V for Flow Cytometric Detection of Phosphatidylserine Expression on B Cells Undergoing Apoptosis, *Blood*, **84**: 1415-1420.
- Kumoro, A.C., and Hasan, M., 2004, *Experimental and Modeling Studies of Andrographolide Extraction from Andrographis paniculata in a Soxhlet Extractor*, Department of Chemical Engineering, Faculty of Engineering University of Malaya, Kuala Lumpur.
- Lee, S., Baek., M., Kim, H., Ha, J., and Jeoung, D., 2002, Mechanism of Doxorubicin-induced Cell Death and Expression Profile Analysis, *Biotechnology Letters*, **24**: 1147-1151.
- Levrero, M., Laurenzi, V. D., Constanzo, A., Sabatini, S., Gong, J., Wang, J.Y.J., et al., 2000, The p53/p63/p73 Family of Transcription Factors: Overlapping and Distinct Functions, *Journal of Cell Science*, **113**: 1661-1670.

- Lilig, C.H., Lonn, M.E., Enokson, M., Fernandes, A.P., and Holmgren, A., 2004, Short Interfering RNA-mediated silencing of Glutaredoxin 2 Increases The Sensitivity of HeLa Cells Toward Doxorubicin and Phenylarsine Oxide, *PNAS*, **10**(36): 13227-13232.
- Liu, L., Cash, T.P., Jones, R.G., Keith, B., Thompson, C.B., and Simon, M.C., 2006, Hypoxia-induced energy stress regulates mRNA translation and cell growth, *Mol. Cell*, **21**: 521–531.
- Liu, W., and Zhang, R., 1998, Upregulation of p21WAF1/CIP1 in human breast cancer cell lines MCF-7 and MDA-MB-468 undergoing apoptosis induced by natural product anticancer drugs 10-hydroxycamptothecin and camptothecin through p53-dependent and independent pathways, *Int. J. Onco.*, **12**: 793-1597.
- Lopez, R.N., Perez, G.P., Galan, M.P., Yuste, V.J., Anel, A., Susin, S.A., et al., 2010, Different Contribution of BH3-only Proteins and Caspases to Doxorubicin-induced Apoptosis in p53-deficient Leukemia Cells, *Biochem. Pharmacol.*, **79**(12): 1746-1758.
- Luque, de Castro, M.D., and Garcia-Ayuso, L.E., 1998, Soxhlet extraction of solid materials: an outdated technique with a promising innovative future, *Analitica Chimica Acta*, **369**: 1-10.
- Mabry, T.J., Markham, K.R., and Thomas, M.B., 1970, *The Systematic Identification of Flavonoid*, 50, 52, Springer-Verlag, Berlin.
- MacFarlane, M., 2009, Cell Death Pathways-Potential Therapeutic Targets, *Xenobiotica*, **39**(8): 616-624.
- Markham, K.R., 1998, *Techniques of Flavonoid Identification*, Academic. Pr., London.
- Maslarova, N.V., and Yanishlieva, 2001, *Inhibiting oxidation* dalam Jan Pokorny, Nedyalka Yanishlieva dan Michael Gordon: *Antioxidants in food, Practical applications*, 22-70, Woodhead Publishing Limited, Cambridge.
- Massart, C., Barbet, R., Genetet, N., and Gibassier, J., 2004, Doxorubicin Induces Fas-Mediated Apoptosis in Human Thyroid Carcinoma Cells, *Thyroid*, **14**(4): 263-270.
- McGahon, A.J., Martin, S.J., Bissonnette, R.P., Mahboubi, M., Shi, Y., Mogil, R. et al., 1995, *The End of the (Cell) Line: Methods for the Study of Apoptosis in Vitro in Cell Death*, Academic Press, San Diego.

- Miles, D., Von Minckwitz, G., and Seidman, A.D., 2002, Combination Versus Sequential Single-Agent Therapy in Metastatic Breast Cancer, *Oncologist*, **7**: 13-19.
- Miller, A.L., 1996, Antioxidant flavonoids: structure, function and clinical usage, *Alt. Med. Rev.*, **1**: 103-111.
- Mizutani, H., Oikawa, S.T., Hiraku, Y., Kojima, M., and Kawanishi, S., 2005, Mechanism of Apoptosis Induced by Doxorubicin through The Generation of Hydrogen Peroxide, *Life Sci.*, **76**(13): 1439-1453.
- Mosmann, T., 1983, Rapid Colorimetric Assay for Cellular Growth & Survival: Application to Proliferation & Cytotoxicity Assays, *Journal of Immunological Method*, **65**: 65-59.
- Mursito, B., 2002, *Ramuan Tradisional untuk Penyakit Malaria*, Penebar Swadaya, Jakarta.
- Neldawati, Ratnawulan, and Gusnedi, 2013, Analisis Nilai Absorbansi dalam Penentuan Kadar Flavonoid untuk Berbagai Jenis Daun Tanaman Obat, *Pilar Of Physics*, **2**: 76-83.
- Noguchi, P., Wallace, R., Johnson, J., Early, E.M., O'Brien, S., and Ferrone, S., 1979, Characterization of the WiDr: a Human Colon Carcinoma Cell Line, *In Vitro*, **15**(6): 401-408.
- Nurani, L.H., Zainab, and Kintoko, 2012, *Petunjuk Praktikum Analisis Obat Tradisional*, 4-5, Fakultas Farmasi, Universitas Ahmad Dahlan, Yogyakarta.
- Padanilam, B.J., 2003, Cell Death Induced by Acute Renal Injury: A Perspective on the Contributions of Apoptosis and Necrosis, *Am. J. Physiol Renal Physiol*, **284**: F608–F627.
- Palozza, P., Serini, S., Maggiano, N., Giuseppe, T., Navarra, P., and Ranelletti, F.O., 2005, β -Carotene Downregulates the Steady-State and Heregulin-a-Induced COX-2 Pathways in Colon Cancer Cells, *J. Nutr.*, **135**: 129-136.
- Patel, A., Smith, H.J., and Sturzebecher, J., 1998, *Design of Enzyme Inhibitors as Drugs, Introduction to the Principles of Drug Design and Action*, edited by H. John Smith, Harwood academic publishers, Australia.
- Pommier, Y., 2006, Topoisomerase I inhibitors: camptothecins and beyond, *Nat. Rev. Cancer*, **6**: 789-802.

- Rajalakshmi, D., and Narasimhan, S., 1985, *Food Antioxidants: Sources and Methods of Evaluation* dalam D.L. Madhavi: *Food Antioxidant, Technological, Toxicological and Health Perspectives*, 76-77, Marcel Dekker Inc., Hongkong.
- Ren, W., Qiao, Z., Wang, H., Zhu, L., and Zhang, L., 2003, Flavonoids: Promising Anticancer Agents, *Medicinal Research Reviews*, **23**(4): 519–534.
- Reynolds, C.P., and Maurer, B.J., 2005, Evaluating Response to Antineoplastic Drug Combinations in Tissue Culture Models, *Methods Mol. Med.*, **110**: 173-183.
- Rutala, W.A., and Weber, D.J., 2006, *Desinfection, Sterilization, and Antisepsis: Principles, Practice, Current Issues, and New Research*, Association for Professionals in Infection Control and Epidemiology, Inc. (APIC), Tampa, Florida.
- Sharma, G., Tyagi, A.K., Singh, R.P., Chan, D.C.F., and Agarwal, R., 2004, Synergistic Anti-Cancer Effect of Grape Seed Extract and Conventional Cytotoxic Agent Doxorubicin Against Human Breast Carcinoma Cells, *Breast Cancer Research and Treatment*, **85**: 1-12.
- Siegel, R., DeSantis, C., and Jemal, A., 2014, Colon Cancer Statistics 2014, *A Cancer Journal for Clinicians*, **64**(2): 104-117.
- Simstein, R., Burow, M., Parker, A., Weldon, C., and Beckman, B., 2003, Apoptosis, Chemoresistance, and Breast Cancer: Insights from The MCF-7 Cell Model System, *Exp. Biol. Med.*, **228**: 995–1003.
- Singal, P.K., and Iliskovic, N., 1998, Doxorubicin-Induced Cardiomyopathy, *N. Engl. J. Med.*, **339**: 900-905.
- Sismindari, 2002, *Handout Kuliah Biologi Molekuler*, Fakultas Farmasi Universitas Gadjah Mada, Yogyakarta.
- Stahl, E., 1985, *Analisis Obat Secara kromatografi dan Mikroskopi*, diterjemahkan oleh Kosasih Padmawinata dan Iwang Soediro, 3-17, ITB, Bandung.
- Suci, D., Anugerah, P., Kartika, Y., Kaswati, N.M.N., Septiani, and A., Filya, H., 2013, Aktivitas antikanker metabolit sirih merah (*Piper crocatum*) terhadap sel kanker serviks, <http://repository.ipb.ac.id/handle/123456789/74040>, 25 Mei 2015.
- Sudewo, B., 2005, *Basmi Penyakit dengan Sirih Merah*, Agromedia Pustaka, Jakarta.

- Sukardja, I.D.G., 2000, *Onkologi Klinik*, Airlangga University Press, Surabaya.
- Sun, S.Y., Hail, N., and Lotan, R., 2004, Apoptosis as a Novel Target for Cancer Chemoprevention, *J. Natl. Cancer Inst.*, **96**: 662–72.
- Suradikusumah, E., 1989, *Bahan pengajaran kimia tumbuhan*, Departemen Pendidikan dan Kebudayaan Dirjen Dikti Pusat Antar Universitas Ilmu Hayati, Institut Pertanian Bogor, Bogor.
- Tamm, I., Van, W., Ed, S., Dominic A., Scudiere, Nicole V., *et al.*, 1998, IAP-Family Protein Survivin Inhibits Caspase Activity and Apoptosis Induced by Fas (CD95), Bax, Caspases, and Anticancer Drugs, *Cancer research*, **58**: 5315-5320.
- Tsang, W.P., Chau, S.P.Y., Kong, S.K., Fung, K.P., and Kwok, T.T., 2003, Reactive Oxygen Species Mediate Doxorubicin Induced p53-Independent Apoptosis, *Life Sci.*, **73**(16): 2047-2058.
- Tyagi, A.K., Agarwal, C., Chan, D.C.F., and Agarwal, R., 2004, Synergistic Anti-Cancer Effects of Silibinin with Conventional Cytotoxic Agents Doxorubicin, Cisplatin and Carboplatin against Human Breast Carcinoma MCF-7 and MDA-MB468 Cells, *Oncology Reports*, **11**: 493-499.
- Vayssade, M., Haddada, H., Laurens, L.F., Tourpin, S., Valent, A., Benard, J., *et al.*, J.C., 2005, p73 Functionally Replaces p53 in Adriamycin-treated, p53-deficient Breast Cancer Cells, *Int. J. Cancer*, **116**: 860–869.
- Verpoorte, R., and Alfermann, A.W., 2000, *Metabolic engineering of plant secondary metabolism*, 286, Kluwer Academic Publishers, London.
- Waji, Resi A., and Sugrani, A., 2009, Flavonoid (Quersetin), *Makalah Kimia Organik Bahan Alam*, FMIPA, Universitas Hasanudin, Makassar.
- Wang, S., Konorev, E.A., Kotamraju, S., Joseph J., Kalivendi, S., and Kalyanaranam, B., 2004, Doxorubicin Induces Apoptosis in Normal and Tumor Cells via Distinctly Different Mechanism, *J. Biol. Chem.*, **279**(24): 25535-25543.
- Wei, H., Hu, B., Han, X., Zheng, Z., Wei, B., and Huang J., 2008, Effect of all-trans retinoic acid on drug sensitivity and expression of survivin in LoVo cells, *Chinese Medical Journal*, **121**(4): 331-335.
- Werdhany, W.I., Marton, A., and Setyorini, R., 2008, *Sirih Merah*, 1-3, Balai Pengkajian Teknologi Pertanian, Yogyakarta.

- White, S.J., Kasman, L.M., Kelly, M.M., Spruill, L., McDermott, P.J., and Voelkel-Johnson, C., 2007, Doxorubicin generates a pro-apoptotic phenotype by phosphorylation of EF-2, *Free Radic. Biol. Med.*, **43**(9): 1313-1321.
- Wicaksono, B.D., Ayupriyanti, Y., Handoko, Arung, E.T., Kusuma, I.W., Yulia, et al., 2009, Antiproliferative effect of methanol extract of *Piper crocatum* Ruiz & Pav leaves on human breast (T47D) cells in-vitro, *Trop. J. Pharm. Res.*, **8**(4): 345-352.
- Wicaksono, F.M., Desie, S.P.S., Beta H.S., Yitania S., Ellen, N., Diana L., et al., 2013, PIPERANTHA: Inovasi Terapi Kombinasi Ekstrak Daun Salam (*Eugenia polyantha*) dan Sirih Merah (*Piper crocatum*) terhadap Peningkatan Aktivitas Fas/Fas-L pada Regresi Pertumbuhan Kanker Serviks secara *In Vitro*, Prodising Elektronik PIMNAS DITJEN DIKTI KEMDIKBUD RI, <http://artikel.dikti.go.id/index.php/PKM-P/article/view/34/34>, 9 Januari 2015.
- Wirdani, P.N.M., 2008, Konsentrasi Flavonoid dan Lethal Concentration 50 (LC₅₀) Ekstrak Daun Sirih Merah (*Piper crocatum*), *Skripsi*, Fakultas Matematika dan Ilmu Pengetahuan-IPB, Bogor.
- Wyllie, A., Donahue, V., Fisher, B., Hill, D., Keeseey, J., and Manzow, S., 2000, Cell Death Apoptosis and Necrosis, *Rosche diagnosis Cooperation*, **2**: 58-64.
- Yeh, E.T.H., 2006, Cardiotoxicity Induced by Chemotherapy and Antibody Therapy, *annurev. med.*, **57**: 485-498.
- Yustina, S.R., Subagus, W., Sitarina, W., and Agustinus, Y., 2013, Aktivitas Fagositosis Makrofag Fraksi dari Ekstrak Metanol Daun Sirih Merah (*Piper crocatum* Ruiz & Pav.) secara *In Vitro*, *Jurnal Ilmu Kefarmasian Indonesia*, **11**: 2.
- Yustina, S.R., Subagus, W., Sitarina, W., and Agustinus, Y., 2014, *In vivo* Immunomodulatory Effect and Histopathological Features of Mouse Liver and Kidney Treated with Neolignans Isolated from Red Betel (*Piper crocatum* Ruiz & Pav) Leaf, *Tropical Journal of Pharmaceutical Research*, **13**(10): 1609-1614.
- Zulharini, M.S., 2015, Penelusuran Potensi Antikanker Ekstrak Metanolik Daun Sirih Merah (*Piper crocatum* Ruiz & Pav) terhadap Sel Kanker Payudara Metastasis melalui Pengamatan Efek Sitotoksik dan Migrasi Sel, *Skripsi*, Fakultas Farmasi, Universitas Gadjah Mada, Yogyakarta.