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DAFTAR PUSTAKA

Abd-Alla,H.I., Shaaban,M., Shaaban K.A, Abu-Gabal,N.S., Shalaby,N.M.and Laatsch,H.2009. Newbioactivecompounds from *Aloe hijazensis*. *Nat. Prod.Res*, 23:1035–1049.

Ahamed,B.K.M., Krishna,V., Gowdru, H.B., Rajanaika, H., Kumaraswamy, H.M., Rajshekarappa, S., Dandin, C.J.and Mahadevan, K.M. 2007. Isolation of bactericidal constituents from the stem bark extract of *Grewia tiliaefolia* Vahl, *Res. J. Med. Plant* : 72-82.

Ahmed, Y., Sohrab, M.H., Al-Reza, S.M., Tareq, F.S., Hasan, C.M.and Sattar, M.A. 2010. Antimicrobial andcytotoxic constituents fromleaves of *Sapium baccatum*. *Food Chem. Toxicol.*, 48:549–52.

Akiyama, H., Fujii, K., Yamasaki, O., Oono, T. and Iwatsuki, K. 2001. Antibacterialaction of several tannins against *Staphylococcus aureus*. *J. Antimicrobial Chemotherapy*, 48 : 487–491

Alam, M.A.,Haque, M.E., Shilpi, J.A.and Daulila, K.,A. 2006. Antinociceptive effect of the crude ethanolic extract of *Crataeva nurvala* Buch on Mice, *Bangl.J.Vet.Med*, 4(1) : 65-68.

Ali, M.S., Dey, A., Sayeed, M.A., Rahman A.A., Kuddus, M.R. and Rasyid, M.A., 2014. In Vivo sedative and cytotoxic activities of methanol extract of leaves of Carateva nurvala Buch-Ham. Pakistan *J. Biological Sci*., 17(3) : 439 – 442.

Ammor, S.C., Rachmanb, S., Chaillouc, H., Prevostb, X., Doussetb, M., Zagorecc, E., Dufoura, I. and Chevalliera. 2005. Phenotypic and genotypic identification of lactic acid bacteria isolated from a small-scale facility producing traditional dry sausages. *J Food Microbiol*., 22: 373–382

Anand, R., Patnaik,G.K., Kulshersta, D.K.and Dhawan, B.N. 1994. *Proceeding 24th Indian Pharmacol.Soc.Conference*, Ahmadabad Gujarat Indian. A.10.

Anandjiwala, S., Srinivasa, H.and Rajani, M. 2007. Isolation and TLC densitometric quantification of gallicin, gallic acid, Lupeol and β-sitosterol from *Bergia suffruticosa*, a hitherto unexplored plant. *Chromatographia*, 66 : 725 – 734

Andrikopoulos, N.K., Kaliora, A.C., Assimopoulou, A.N. and Papapeorgiou, V.P. 2003. Biological activity of some naturally accuring resin, gums, and pigments againts in vitro LDL oxidation. *Phytotherapy Res.*,17: 501-507.

UNIVERSITAS GADJAH MADA
PROFIL SENYAWA FENOLIK PADA JARUK TIGARUN (Crataeva nurvala Buch.Ham) DAN POTENSINYA SEBAGAI ANTIBAKTERI
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Universitas Gadjah Mada, 2016 | Diunduh dari http://etd.repository.ugm.ac.id/

Anonim, 2011. *Crataeva-nurvala*.*http://www.herbalcureindia.com/herbs/.htm*. akses Ahad, 6 November 2011. jam 18.13 Wib.

Anonim[a], 2012. Abiyuch (*Crataeva Religiosa*)/Caper (*Capparis Spinosa*).http://www.vegtalk.org/fruits/abiyuch-crataeva-religiosa-caper-capparis-spinosa-t1684.html. Akses senin, 7 November 2012, jam 09.00 Wib

Anonim[b], 2012. Gundruk. https://localnepalifood.wordpress.com/local-nepali-food/gundruk/. Akses 03 Januari 2012. Jam 11.33 Wib.

Asp, N.G., Johansson, C.G., Hallmer, H. and Siljestrom, M. 1983. Rapid enzymatic assay of insoluble and soluble dietary fiber. *J. Agric. and Food. Chem.* 31: 476-482.

Avila, M., Hidalgo, M., Moreno, C.S., Pelaez, C., Requena, T. and de-Pasquel Teresa, S. 2009. Bioconversion of Anthocyanin glycosides by Bifidobacteria and Lactobacillus, *Food Res. Int.*, 42:1453-1461.

Axelsson, L. T. 1998. *Lactic Acid Bacteria Classification and Physicly. Dalam: Lactic Acid Bacteria.* Seppo Salminen and Atte Vin Wright (Eds). Marcel Dekker Inc., New York

Barthelmebs, L., Divies, C.and Cavin, J.F., 2000. Knockout of the p-coumarate decarboxylasegene from Lactobacillus plantarum reveals the existence of two other inducible enzymatic activities involved in phenolic acid metabolism. *Appl. and Environ. Microbiol.*, 66: 3368–3375

Bashir, H. S., Mohammed, A. M., Magsoud, A. S., and Shaoub, A. M. 2014. Isolation and Identification of Two Flavonoids from *Acacia nilotica* (Leguminosae) Leaves. *J. Forest Prod. & Industries*. 3(5), 211-215

Baskar, R.and Varalakshmi, P.1996. Effect of lupeol, a pentacyclic triterpene, on urinary enzymes in hyperoxaluricrats. *J. Med. Sci. Biol.*, 48(5-6):211-20.

Bauer A.W., Kirby, W.M.M., Sherris, J.C.and Turck, M. 1966. Antibiotic susceptibility testing by a standardized single disc method. *Am. J. Clin. Pathol*, 45: 493-496.

Bhaskar, V. H., Profulla, Kumar M, Balakrishnan, andSangameswaran. 2009. Evaluation of the anti-fertility activity of stem bark of*Crataeva nurvala* buch-hum. *African J. Biotech.*, 8 (22): 6453-6456.

Bhat, T.K., Bhupinder, S.and Om, P.S. 1998. Microbial degradation of Tannin-A Current perspective. *Biodegradation*, 9 : 343-357.

PROFIL SENYAWA FENOLIK PADA JARUK TIGARUN (Crataeva nurvala Buch.Ham) DAN POTENSINYA SEBAGAI ANTIBAKTERI
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Universitas Gadjah Mada, 2016 | Diunduh dari http://etd.repository.ugm.ac.id/

Bhattacharjee, A.,Shashidhara, S.C. and Aswathanarayana. 2012. Phytochemical and ethno-pharmacological profile of *Crataeva nurvala* Buch-Hum (Varuna): A review. *Asian Pacific J. Tropical Biomed*., S1162-S1168.

Bianchi, G., 2003. Lipids and phenols in table olives. *Eur. J. Lipid Sci. Technol*. 105 : 229 - 242.

Blackman, S.A., Smith, T.J.and Foster, S.J.1998. The role of autolysins during vegetative growth of Bacillus subtilis 168. *Microbiology*.144:73-82.

Blandino, A.,Al-Aseeri,M.E.,Pandiella,S.S., Cantero,D. and Webb, C. 2003. Cereal-based fermented foods and beverages, *Food Res.Int.*, 36(6) : 527-543.

Bringel, F., Churk, M.C. and Hubert, J.C. 1996. Characterization of Lactobacilli by southern-type hybridization with a *Lactobacillus plantarumpyrDFE* probe. *Int. J. Syst. Bacteriol*., 46 : 588 – 594.

Buckle,K.A., Edwards, R.A., Fleet, H.H. and Wootton, M. 2010. *Ilmu Pangan*. Terjemahan Hari Purnomo & Adiono, UI Press, Jakarta.

Buckenhüskes, H.J. 1997. *Fermented vegetables*. In: Doyle, P.D., Beuchat, L.R. andMontville, T.J. (Eds.), Food Microbiology: Fundamentals and Frontiers, seconded. ASM Press, Washington, DC, 595-609.

Cavin, J.F., Barthelmebs, L., Guzzo, J., Van Beeumen, J., Samyn, B., Travers, J.F.and Diviès, C. 1997. Purification and characterization of an inducible p-coumaric acid decarboxylasefrom *Lactobacillus plantarum*. *FEMS Microbiol. Lett*., 147 : 291–295.

Chaaib, F., Queiroz, E.F., Ndjoko Kdiallo, D.and Hostettman, K. 2003. Antifungal and Antioxidant Compounds from the rootbark of *Fagara zanthoxyloides*, *Planta Medica*, 69 : 316-320.

Chein, H.L., Huang, H.Y.and Chou,C.C. 2006. Transformation of isoflavone phytestrogen during the fermentation of soymilk with lactic acid bacteria and bifidobacteria, *Food Microbiol.*, 23: 772-778.

Chelule, P.K., Mbongwa, H.P., Carries, S. and Qaleni N.G. 2010. Lactic Acid Fermentation improved the quality of amahewu, a traditional South african maize-based porridge, *Food Chem.*,122: 656-661.

Ciafardini, G., Marsilio, V., Lanza, B. and Pozzi, N. 1994., Hydrolysis of oleuropein by*Lactobacillus plantarum* strains associated with olive fermentation. *Appl. and Env. Microbiol.*, 60(11): 4142–4147.

UNIVERSITAS GADJAH MADA
PROFIL SENYAWA FENOLIK PADA JARUK TIGARUN (Crataeva nurvala Buch.Ham) DAN POTENSINYA SEBAGAI ANTIBAKTERI
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Universitas Gadjah Mada, 2016 | Diunduh dari http://etd.repository.ugm.ac.id/

CLSI (Clinical and Laboratory Standards Institute), 2012.*Methods for dilution antimicrobial susceptibility tests for bacteria that grow aerobically*. approved standard. 9th ed.,32 (2).USA

Cowan, M.M. 1999. Plant Product as Antimicrobial Agents. *Clinical Microbiol. Rev.*, Oct :564 – 582.

Crozier, A., Jaganat, I.B. and Clifford, M.N. 2006. Phenols, polyphenols and tannins: An overview. In: Crozier A, Clifford MN, Ashihara H, *Plant secondary metabolites: Occurence, Structure and Role in the human diet.* Blackwell Publ. Oxford : 1–24

Cushnie,T.P.T. and Lamb, A.J. 2005. Antimicrobial activity of Flavonoids. Review. *International Journal of Antimicrobial Agents*,26: 343-356.

Daisy, P., Suveena, S. and Sr lilly, V. 2011. Molecular Docking of Medicinal compound Lupeol with autolysin and Potential drug target of UTI. *J. Chem. and Pharmaceutical Res.*, 3(3) : 557-562.

Das, P.K., Rathor, R.K., Lal, R.,Tripathi, R.M., Ram, A.M.and Biswas,M. 1974. Antiinflammatory and anti-arthtritic activity of *Crataeva nurvala* Buch Ham (Varuna). *J.Res Indian Med.*, 9 : 9-16.

Daeschel, M.A. 1989. Antibacterial substances from lactic acid bacteria for use as food preservatives. *Food technol*., 43 : 164-167.

Deshpanda, P.J., Sahu, M.and Kumar, P. 1982. *Crataeva nurvala* Hook andforst (varuna)- the Ayurvedic drug of Choice in Urinary disorders.*Indian J. Med. Res*. Suppl: 46-53.

Dewick, P.M. 2002. *Medicinal Natural Products*. A Biosynthetic Approach. John Wiley and Son, Ltd. Chichester.

Di Cagno, R., Surico, R. F., Siragusa, S., De Angelis, M., Paradiso, A., Minervini, F., De Gara, L. and Gobbetti, M. 2008. Selection and use of autochthonous mixed starter for lactic acid fermentation of carrots, French beans or marrows. *Int. J. Food Microbiol.*, 127: 220-228.

Di Cagno, R., Coda, R., De Angelis, M. and Gobbetti, M. 2013. Review exploitation of vegetables and fruits through lactic acid fermentation. *Food Microbiol.*,33: 1-10

Dixon, R.A., Howles, P.A., Lamb, C., He, X.Z.and Reddy, J.T. 1998. Prospectsfor the metabolic engineering of bioactive flavonoids and relatedphenylpropanoid compounds. *Adv. Exp. Med. Biol.*, 439:55–66.

UNIVERSITAS
GADJAH MADA
PROFIL SENYAWA FENOLIK PADA JARUK TIGARUN (Crataeva nurvala Buch.Ham) DAN POTENSINYA SEBAGAI ANTIBAKTERI
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Universitas Gadjah Mada, 2016 | Diunduh dari http://etd.repository.ugm.ac.id/

Djafaar., T.F., Santoso U., Cahyanto, M.N., Takuya, S., Endang, S.R. and Kosuke, N. 2013. Effect of Indigenous lactic acid bacteria fermentation on enrichment of isoflavon and antioxidant properties of kerandang (*Canavalia virosa*) extract. *Int. Food Res. J*. 20(5) : 2945-2950.

Dord-evic´ , T. M., Šiler-Marinkovic´, S. S.and Dimitrijevic´ -Brankovic´ , S. I. 2010. Effectof fermentation on antioxidant properties of some cereals and pseudo cereals.*Food Chem.,* 119(3) : 957–963.

Drury, C.H. 1978. In : *The Useful plants of Indian*. International Book Dist.Dehradun. P.353.

Dwiyitno, 2010. Identifikasi bakteri patogen pada produk perikanan dengan teknik molekuler. *Squalen* 5 (2) :67-77

Edilu, A., Adane, L. and Woyessa, D. 2015. In vitro antibacterial activities of compoundsisolated from roots of *Caylusea abyssinica*. *Ann. Clin. Microbiol. and Antimicrobials*. 14 (15) : 1 – 8.

Eizanhamer, D.A. and Xu, Z.Q. 2004. Betulinic acid: a Promising anticancer candidates.I drug, 7: 359-373

Eloff, N. 1998. Which extractant should be used for the screening and isolation of antimicrobial components from plants?.*J. Ethnopharm*., 60 : 1–8

Erazo, S., Rocco, G., Zaldivar, M., Delporte,C., Backhouse, N. and Castro, C. 2008. Active metabolitesfrom Dunalia S*pinosa resinous* exudates. Z. für Nat. C., 63:492–6.

Flekhter, O.B., Karachurina, L.T., Poroikov, V.V., Nigmatullina, L.P., Baltina, L.A., Zarudii, F.S., Davydova, V.A., Spirikhin, L.V., Baikova, I.P., Galin, F.Z.and Toistikov, G.A. 2000. The synthesis and hepatoprotective activity of ester of the lupane group triterpenoids. *Russian J. Bioorganic Chem.*, 26:192 – 200.

Freire, M.F.I., Carvalho, Mario, G., Berbara, R.L.L.and Freire, R.B. 2002. Antimicrobial activity of Lupeol acetate from *Vernonia scorpoides* (Laam) Pers., Asteraceae, *Revista Brasileira de Farmacia*, 83: 83-87.

Gagandep, Meera, S.B. and Kalidhar. 2006. Chemical Constituents of *Crataeva nurvala* (Buch-ham) Leaves. *Indian J. Pharmaceutical Sci*,. 68(6) : 804-806

Gagandep, Meera, S,B.and Kalidhar. 2009. Chemical Investigationof *Crataeva nurvala* (Buch-ham) Fruits. *Indian J.Pharmaceutical Sci*., 71(2) : 129-130.

UNIVERSITAS GADJAH MADA
PROFIL SENYAWA FENOLIK PADA JARUK TIGARUN (Crataeva nurvala Buch.Ham) DAN POTENSINYA SEBAGAI ANTIBAKTERI
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Universitas Gadjah Mada, 2016 | Diunduh dari http://etd.repository.ugm.ac.id/

Gallo, Margaret, B.B.and Sarachine, M.J., 2009. Biological activities of Lupeol. Review. *Int. J. Biomedical and Pharmaceutical Sci*,. (Special Issue 1) : 46-66.

Ganiswara, G.S, 1995. (ed), *Farmakologi dan Terapi*.Fakultas Kedokteran Bagian Farmakologi Universitas Indonesia. Jakarta.

Geetha and Varalakshmi, P. 1999. Anticomplement activity of triterpenes from *Crataeva nurvala* stem bark in adjuvant arthritis in rats.*General Pharm.*, 32: 495-497.

Geetha, T., Varalakshmi, P. and Latha, R.M. 1998. Effect of triterpenes from*Crataeva nurvala*stem bark on lipid peroxidation in adjuvant induced arthritis in rats. *Pharm. Res.***,** 37(3) : 191–195.

Hajnos, M.W., Sherma, J. and Kowalska, T.2008. *Thin layer chromatography in phytochem.*,CRC Press. Boca Raton.

Hapip, A.D. 2008. *Kamus Banjar Indonesia*. Cetakan ke VI. CV.Rahmat Hafiz Al Mubaraq. Banjarmasin.

Haraguchi, H, Tanimoto, K., Tamura, Y., Mizutani, K.and Kinoshita T.1998.Mode of antibacterial action of retrochalcones from *Glycyrrhizainflata*. *Phytochemistry*, 48:125–9.

Harborne, J.B. 2006. *Metode Fitokimia*. Penuntun Cara Modern Menganalisis Tumbuhan. Cetakan ke-4. ITB. Bandung.

Hernández-Pérez, M., López-García, R.E., Rabanal, R.M., Darias, V.and Arias, A. 1994. Antimicrobialactivity of *Visnea mocanera* leaf extracts. *J. Ethnopharmacol.*, 41:115–119.

Heyne,K. 1987. *Tumbuhan Berguna Indonesia*. Terjemahan Badan Litbang Kehutanan. Yayasan Sarana Wana Jaya. Jakarta.

Hsu, B., Coupar, I.M.and Ng, K. 2006. Antioxidant activity of water extract from the fruit of the Doum palm, *Hyphanea thebaica*, *Food Chem.*, 98 : 317 – 328.

Hung, C. Y. and Yen, G. C. 2000. Effect of alkaline and heat treatment on antioxidative activity and total phenolic of extract from Hsian-tsao (*Mesona procumbens* Hemsl.) *Food Res. Int.*, 33: 487 – 492.

Hur, S. J., Lee, S. Y., Kim, Y. C., Choi, I. and Kim, G.B. 2014. Effect of fermentation on the antioxidant activity in plant-based foods. *Food Chemistry*, 160: 346–356

UNIVERSITAS
GADJAH MADA
PROFIL SENYAWA FENOLIK PADA JARUK TIGARUN (Crataeva nurvala Buch.Ham) DAN POTENSINYA SEBAGAI ANTIBAKTERI
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Universitas Gadjah Mada, 2016 | Diunduh dari http://etd.repository.ugm.ac.id/

Iskandar.2004. Pengembangan Pemanfaatan Daun Tigarun Sebagai Produk Makanan Khas Kalimantan Selatan. *Laporan Penelitian Rutin*. Baristand Indag Banjarbaru.

Inayathulla, Shariff, W.R., Asif A.K.and Mukesh, S.2010. Evaluation of antidiarrhoeal activity of *Crataeva nurvala* root bark inexperimental animals.*Int. J. Pharm. and Pharmaceutical Sci*., 2(1) : 158 – 161.

Jang, S,M., Yee, S.T., Choi, J., Choi, M.S., Do, G.M.and Jeon, S.M. 2009. Ursolic acid enhances thecellularimmune system and pancreatic beta-cell function in streptozotocin-induced diabeticmice fed a high-fat diet. *Int. Immunopharmacol*., 9:113–119.

Jayapal, M.R. and Sreedhar, N.Y. 2010. Anhydrous K_2CO_3 as Catalyst for the synthesisof Chalcones under Microwave Irradiation. *J.Pharmaceutical Sci.and Res.*,2 (10): 644-647.

Jenie, B. S. L. dan S. Fardiaz. 1989. *Uji Sanitasi dalam Industri Pangan.* PAU Pangan dan Gizi. Institut Pertanian Bogor, Bogor.

Jeon, K.S., Ji, G.E. and Hwang, I.K. 2002. Assay of β-glucosidase activity of Bifidobacteria and hydrolysis of isoflavone glycoside Bifidobacterium sp int-57 in soymilk fermentation. *J. Microbiol. and Biotech.*, 12:8-13.

Johnston, M.D., Hanlon, G.W., Denyer, S.P.and Lambert, R.J.W. 2003. Membrane damage to bacteria caused by single and combined biocides. *J. Appl. Microbiol.*, 94: 1015–1023.

Joyeux, M., Lobstein,M.,Anton,R. and Mortier,F. 1995.Comparative antilipoperoxidant, antinecrotic and scavenging properties of terpenes and biflavones from ginko and some flavonoid.*Planta Medica*,. 61: 126 – 129.

Kamath, R.,Shetty, D.,Bhat, P., Shabaraya, A.R.and Hegde, K. 2011. Evaluation ofantibacterial and anthelmintic activity of root Extract of *Crataeva nurvala.Pharmacologyonline* 1: 617-622.

Kapil, A. and Moza, A. 1992. Anticomplementary activity of boswellic acids : an inhibition of C3-convertase of the classical complement pathway. *Int. J. Immunopharmac.*, 14: 1139 – 1143.

Kabouche, A., Boutaghane, N., Kabouche, Z., Seguin, E., Tillequin, F.and Benlabed, K. 2005. Components and antibacterial activity of the rootsof *Salvia jaminiana*. *Fitoterapia*, 76 : 450–452

UNIVERSITAS
GADJAH MADA
PROFIL SENYAWA FENOLIK PADA JARUK TIGARUN (Crataeva nurvala Buch.Ham) DAN POTENSINYA SEBAGAI ANTIBAKTERI
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Universitas Gadjah Mada, 2016 | Diunduh dari http://etd.repository.ugm.ac.id/

Katina, K., Laitila, A., Juvonen, R., Liukkonen, K. H., Kariluoto, S. and Piironen, V. 2007. Bran fermentation as a means to enhance technological properties andbioactivity of rye. *Food Microbiol.,* 24(2) : 175–186.

Khatun, F., Alam, M.M.E., Tithi, N.S., Nasrin, N. and Asaduzzaman, M. 2015. Evaluation of phytochemical, antioxidant, anthelmintic and antimicrobial properties of *Crataeva nurvala* Buch. Ham. leaves. *Int. J. Pharmaceutical Sci. and Res., 6(4): 1422-1429.*

Khattar, V. and Wal, A. 2012. Utilities of *Crataeva nurvala*. *Int.J. Pharmacy and Pharmaceutical Sci.,* 4 (4) :21-26.

Kim, T. J., Silva, J. L., Kim, M. K. and Jung, Y. S. 2010. Enhanced antioxidant capacityand antimicrobial activity of tannic acid by thermal processing. *Food Chem.,*118: 740–746

Kiruba,S.,Mahesh,M.,Paul,Z.M. and Jeeva,S. 2011. Preliminary phytochemical screening of the pericarp of *Crataeva magna* (Lour.)DC.-a medicinal tree. *Asian Pacific J. Tropical Biomed.,* S129-S130.

Kumari, A.and Kakkar, P. 2008. Screening of Antioxidant Potential of Selected Bark of Indian Medicinal Plants bt Multiple in Vitro Assay. *Biomed. and environm. Sci.,* 21: 24-29.

Li, W.H. and Graur, D.1991.*Fundamentals of Molecular Evolution*. Sinauer Associates, Sunderland, Massachusetts.

Liby, K.T., Yore, M.M.and Sporn, M.B. 2007. Triterpenoids and rexinoids as multifunctional agents forthe prevention and treatment of cancer. *Nat. Rev. Cancer*, 7:357–69.

Lorian,V. 1980. *Antibiotics in Laboratory Medicine*. The Williams and Wilkins company. Baltimore.

Lutta, K.P., Bii, C., Akenga, A.T.and Cornelius, W.W. 2008. Antimicrobial marine natural product from the sponge *Axinella infundibulliformis*. *Rec.Nat.Prod.*, 2: 116-127.

Maisuthisakul, P., Suttajit, M. and Pongsawatmanit, R. 2007. Assesment of Phenolic content and free radical scavenging capacity of some Thai indigenous plants. *Food Chem.,* 100 : 1409-1418.

Marazza, J. A., Garro, M. S. and Savoy de Giori, G. 2009. Aglycone production by*Lactobacillus rhamnosus* CRL981 during soymilk fermentation. *Food Microbiol.*, 26(3),333–339.

UNIVERSITAS
GADJAH MADA
PROFIL SENYAWA FENOLIK PADA JARUK TIGARUN (Crataeva nurvala Buch.Ham) DAN POTENSINYA SEBAGAI ANTIBAKTERI
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Universitas Gadjah Mada, 2016 | Diunduh dari http://etd.repository.ugm.ac.id/

Martelanc, M., Vovk, I.and Simonovska, B. 2009. Separation and Identification of some common isomeric plant triterpenoids by thin layer chromatography and high performance liquid cromatography. *J. Chromatography* A, 1216: 6662-6670.

Marxen,K. Vanselow,K.H., Lippemeier,S.and Hansen, U.P. 2007. Determination of DPPH Radical Oxidation Caused by Metanolic Extract of Some Microalgal Species by Linear Regression Analysis of Spectrophotometric Measurement. *Sensors*, 7 : 2080-2095.

Mathabe, M.C., Hussein, A.A., Nikolova, R.V., Basson, A.E., Meyer, J.J.M.and Lali, N. 2008. Antibacterial Activities and Cytotoxicity of Terpenoid Isolated from *Sphirotachys africana*. *J. Ethnopharm.*, 116: 194-197

Matsuda, S., Norimoto, F., Matsumoto, Y., Ohba, R., Teramoto, Y. and Ohta, N. 1994. Solubilization of novel isoflavon glycoside-hydrolyzing β-glucosidase from *Lactobacillus casei* subsp rhamnosus.*J.Ferm. and Bioeng.*, 77(4): 439-441.

Matsuo, Y., Tanaka, T. and Kouno, I.2006. A new mechanism for oxidation ofepigallocatechin and production of benzotropolone pigments. *Tetrahedron*, 62 : 4774–4783.

Mazid, M.,Khan, TA.and Mohammad, F. 2011. Role of Secondary Metabolites in Defense Mechanisms of Plants. Review. *Biology and Medicines*, 3(2) special issue : 232-249.

Messens, W. and Vuyst, L. D. 2002. Inhibitory substances produced by *Lactobacilli* isolated from sourdoughs—a review. *Int. J. Food Microbiol.*, 72(1-2): 32-43.

Ministry of Health and Family Welfare Goverment of India. 2012. Manual of Methods of Analysis of Food. *Microbiological Testing*. Food Safety Standards and Authority of India. New Delhi.

Ming, L.S., Yao, K., Jia, D.Y.and Qiang,H.E. 2006. Microbial Degradation of Hydrolysable Tannin. *Chem. and Industry of Forest Prod.*, 26(2):105-111.

Mirzoeva, O.K., Grishanin, R.N.and Calder, P.C. 1997. Antimicrobial action of Propolis and some of its components – the effect on growth,membrane potential and motility of bacteria. *Microbiol. Res.*, 152:239-246.

Miyashita, M., Yukphan, P., Chaipitakchonlatarn, W., Malimas, T., Sugimoto, M., Yoshino, M., Potacharoen, W., Tanasupawat, S., Nakagawa, Y., Kirtikara, K., Tanticharoen, M. and Suzuki, K. 2012. 16S rRNA gene sequence analysis of lactic acid bacteria isolated from fermented food in Thailand. *Microbiol. Cult. Coll*., 28(1) : 1 – 9.

UNIVERSITAS
GADJAH MADA
PROFIL SENYAWA FENOLIK PADA JARUK TIGARUN (Crataeva nurvala Buch.Ham) DAN POTENSINYA SEBAGAI ANTIBAKTERI
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Universitas Gadjah Mada, 2016 | Diunduh dari http://etd.repository.ugm.ac.id/

Miyazaki, K., Arai, S., Iwamoto, T., Takasaki, M. and Tomoda, A. 2004. Metabolism ofpyrogallol to purpurogallin by human erythrocytic hemoglobin. *The Tohoku J. Exp. Med.*, 203 : 319–330.

Moniruzzaman, M. and Imam, M.Z. 2014. Evaluation of antinociceptive effect of methanolicextract of leaves of *Crataeva nurvala* Buch.-Ham.*BMC Compl. and Alternative Med.,* 14:354

Mutschler, E. 1991. *Dinamika Obat*. Edisi 4. Terjemahan Widiyanto, MB dan Setiadi, A.R. Penerbit ITB. Bandung.

Nazarni,R. 2006. Teknologi Proses Fermentasi Dan Pengemasan Pada Pengolahan Bunga Tigarun. *Laporan RisetDIPA*. Departemen Perindustrian. Baristand Banjarbaru.

Nishitani, Y. and Osawa, R. 2003. A novel colorimetric method to quantify tannase activity of viable bacteria. *J.Microbiol. Methods*, 54 : 281–284.

Nyanga, L.K., Nout, M.J.R., Gadaga, T.H., Theelen, B., Boekhout, T.and Zwietering, M.H.2007. Yeasts and lactic acid bacteria microbiota from masau (*Ziziphus mauritiana*)fruits and their fermented fruit pulp in Zimbabwe.*Int.J. Food Microbiol.,* 120: 159-166.

Ohemeng, K.A., Schwender, C.F., Fu, K.P.and Barret, J.F. 1993. DNA gyrase inhibbitory and antibacterial activity of some flavones (1) *Bioorg. Med. Chem. Lett.,* 3:225-30.

Ordonez, A. A. L., Gomez, J. D., Vattuone, M.A. and Isla, M. I. 2006. Antioxidant activities of *Sechium edule* (Jacq.) Swartz extracts. *Food Chem.,* 97: 452-458.

Osawa, R. and T. P. Walsh. 1993. Visual reading method for detection of bacterial tannase.*Appl. Environ. Microbiol*. 59:1251–1252.

Osawa, R. and T. P. Walsh. 1995. Detection of bacterial gallate decarboxylation by visualcolor discrimination. *J. Gen. Appl. Microbiol*. 41:165–170.

Osawa, R.O., Kuroiso, K., Goto, S. and Shimizu. 2000. Isolation of Tannin Degrading Lactobacilli from Humans and Fermented Foods. *Appl. and Env. Microbiol.*, 3093-3097.

Otieno, D.O.,Ashton, J.F. and Shah, N.P. 2005. Stability of β-glucosidase activity produced by *Bifidobacterium* and *Lactobacillus* spp in fermented soy milk during processing and storage. *J. Food sci.,* 70(4):236-241.

UNIVERSITAS GADJAH MADA
PROFIL SENYAWA FENOLIK PADA JARUK TIGARUN (Crataeva nurvala Buch.Ham) DAN POTENSINYA SEBAGAI ANTIBAKTERI
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Universitas Gadjah Mada, 2016 | Diunduh dari http://etd.repository.ugm.ac.id/

Ovesná, Z., Vachálková, A., Horváthová, K.and Tóthová, D. 2004. Pentacyclic triterpenoic acids: newchemoprotective compounds. *Neoplasma*, 51:327–330.

Paadashetty, S.A.and Mishra, S.H. 2007. An HPLTC methods for the Evaluation of two medicinal plants commercially available in the Indian Market under the common trade name Brahmadandi. *Cromatographia*, 66: 447-449.

Paarakh, P. M., Chanda, S., Deepak, M. and Agarwal, A. 2011. Phytochemical studies on stem bark of *Crataeva nurvala* Ham. *J. Pharm. Res.*,4(2): 401-402.

Parves, S., Malik, K.A., Kang Sah. and Hy Kim. 2006. Probiotic and their fermented food products are beneficial for health. *J. Appl. Microbiol.*, 100: 1171-1185.

Parvin,S., Kadeer,M.A., Rahman,M.A., Wahed, M.I.and Haque. 2012.Antibacterial Activities and Brine Shrimp Lethality Bioassay Of The Chloroform Extract Of Stem Bark Of *Crataeva Nurvala* Buch Ham.*Int. J. Pharm. Sci. and Res.*, 3(3): 830-834.

Parvin, S., Kader, M.A., Muhit, M.A., Haque, M.E., Mosaddik, M.A. and Wahed, M.I.I. 2011. Triterpenoids and phytosteroids from stem bark of *Crataeva nurvala* buch ham.J. *Appl. Pharmaceutical Sci*., 01 (09) :2011: 47-50

Patil, C.B., Mahajan, S.K. and Katti, S.A. 2009. Chalcone: A Versatile Molecule.*J. Pharm. Sci. and Res.*, 1(3): 11-12.

Pearson, W.R. 2013. An Introduction to Sequence Similarity ("Homology") Searching. *Curr. Protoc. Bioinformatics*. 3: 1-9

Pelczar, M. and Chan, E.C.S.2007. *Dasar – Dasar Mikrobiologi*, Jakarta : UI Press.

Perez, C., Pauli, M. and Bazerque, P. 1990. An antibiotic assay by the agar well diffusion method. *Act. Biol. Med. Exp.*, 15: 113 – 115.

Phillips, D.R., Rasbery, J.M., Bartel, B.and Matsuda, S.P. 2006. Biosynthetic diversity in plant triterpenecyclization.*Curr. Opin. Plant.Biol*.,9:305–14.

Plaper, A., Golob, M., Hafner, I., Oblak, M., Solmajer, T. and Jerala, R.2003. Characterization of quercetin binding site on DNA gyrase. *Biochem.Biophys. Res. Commun*.;306:530–6

Prasad, Y.R., Kumar, P.R.,Deepti, C.A. and Ramana, M.V. 2006. Synthesis andAntimicrobial Activity of Some Novel Chalcones of 2-Hydroxy-1 Acetonapthoneand 3-Acetyl Coumarin. *E-Journal of Chem*, 3(13): 236-241.

UNIVERSITAS
GADJAH MADA
PROFIL SENYAWA FENOLIK PADA JARUK TIGARUN (Crataeva nurvala Buch.Ham) DAN POTENSINYA SEBAGAI ANTIBAKTERI
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Universitas Gadjah Mada, 2016 | Diunduh dari http://etd.repository.ugm.ac.id/

Priyanto, 2010. *Farmakologi Dasar Untuk Mahasiswa Farmasi dan Keperawatan*. Leskonfi. Depok.

Pyo, Y.H.and Lee, Y.C. 2005. Enrichment of Bioactives Isoflavones in Soymilk Fermentation with β-glukosidase-producing-lactic acid bacteria. *Food Res. Int.*, 38:551-559.

Rahayu, E.S., Yogeswara, A. Mariyatun, Hartono, P., Utami I.S., Utami, T.,Nurfiani, S. dan Cahyanto, M.N. 2013. Bakteri asam laktat indigenous berpotensi probiotik dan aplikasinya untuk produksi susu fermentasi. *Laporan Ristek.*

Rangana. 1977. *Manual of analysis of fruit and vegetable products*.Tata Mc Graw-Hill Publishing Company, Ltd. New Delhi

Rodriguez, H., Curiel, J. A., Landete, J. M., de las Rivas, B., de Felipe, F. L.and Gomez-Cordoves, C. 2009. Food phenolics and lactic acid bacteria. *Int. J. Food Microbiol.*, 132(2–3), 79–90.

Rohman, A., Riyanto, F., Yuniarti, N., Saputra, W.R., Utami, R. and Mutasih, W. 2010. Antioxidant activity, total phenolic, and total flavonoid of extract and fraction of red fruit (Pandanus conoideus Lam). *Int. Food Res. J.*, 17 : 97-106.

Rosini, G., Federici, F.and Martini, A. 1982. Yeast flora of grape berries duringripening.*Microbial. Ecology*, 8: 83-89.

Roy, J. J. and Abraham, T. E. 2006. Continuous biotransformation of pyrogallol topurpurogallin of pyrogallol to purpurogallin using cross-linked enzyme crystals of laccase as catalyst in a packed-bed reactor. *J. Chem. Tech. and Biotech.*, 81: 1836–1839.

Ruíz-Barba, J.L., Cathcart, D.P., Warner, P.J.and Jiménez-Díaz. 1994. Use of *Lactobacillus plantarum* LPCO10, a bacteriocin producer, as a starter culture in Spanish-style greenolive fermentations. *Appl. and Env. Microbiol.*, 60: 2059–2064.

Sakagami, Y., Mimura, M.and Kajimura, K. 1998. Anti-MRSA activity ofsophoraflavanone G and synergism with other antibacterial agents.*Lett. Appl. Microbiol.*,27:98–100

Saleem, M. 2009. Lupeol, a novel anti-inflammatory and anti cancer dietary triterpene. *Cancer Letter*, 285: 109-115.

PROFIL SENYAWA FENOLIK PADA JARUK TIGARUN (Crataeva nurvala Buch.Ham) DAN POTENSINYA SEBAGAI ANTIBAKTERI
NAZARNI RAHMI, Prof.Dr.Ir. Eni Harmayani, M.Sc; Prof.Dr.Ir. Umar Santoso, M.Sc; Prof. Dr.Ir. Purnama Darmadji, M
Universitas Gadjah Mada, 2016 | Diunduh dari http://etd.repository.ugm.ac.id/

Sambrook, J., Fritsch, E.F.and Maniatis, T. 1989. *Molecular cloning : a laboratory manual*. 2nd ed. Cold Spring Harbor Laboratory press. New York.

Sanchez, P.C. 2009. *Philippine Fermented Food: Principles and Technology*. University of Hawaii Press. Hawai. 219-220

Sato, M., Tsuchiya, H., Takase, I., Kureshiro, H., Tanigaki, S.and Iinuma, M. 1995. Antibacterial activity of flavanone isolated from *Sophora exigua*against methicillin-resistant *Staphylococcus aureus* and its combinationwith antibiotics. *Phytother. Res.*, 9:509–12.

Sell, S. 1980. Arthus (toxic complex) reaction. In: Sell,S.(Ed), *Immunology, Immunopathology and Immunity*, 3rd ed. Harper & Row, Hagerstown : 242-283.

Shai, L.J.,McGaw, L.J., Aderogba, M.A., Mdee, L.K.and Eloff, J.N. 2008. Four pentacyclic triterpenoids with antifungal and antibacterial activity from *Curtisia dentate* (Burm.f) C.A. Sm.leaves.*J. Ethnopharm.*, 119: 238-244.

Shailadjan, S.and Menon, S.N. 2009. Simultaneous quantification of Lupeol and β-sitosterol from the whole plant powder of *Aserachanta longifolia* Nees. *Analyt. Chem.*, 8: 77-81.

Shirwaikar, A., Setty, M.and Bommu, P. 2004. Effect of Lupeol isolated from *Crataeva nurvala* Buch Ham stem Bark extract against free radical induced nephrotoxicity in Rats. *Indian J. Exp. Biol*., 42 : 686-690.

Siahaan, R.O.I. 2010. Isolasi *Salmonella* spp. pada sayuran segar di wilayah Bogor dan evaluasi pengaruh perlakuan pencucian dengan sanitaiser komersial.*Skripsi*. Fakultas Teknologi Pertanian. IPB. Bogor.

Silva, L.L.D., Nascimento, M.S., Cavalheiro, A.J., Silva, D.H.S., Castro Gamboa, I., Furlan, M. and Bolzani, V.S. 2008. Antibacterial Activity of Labdane Diterpenoids from *Stemodia foliosa*.*J. Nat. Prod.*, 71: 1291-1293.

Singh, A.P.K.and Singh. 2009. An Ethnobotanical study of Medicinal plants in Chandauli District of Uttar Pradesh, India. *J. Ethnopharm.*,121:324-329.

Sirait, M. 2007. *Penuntun Fitokimia Dalam Farmasi*. Penerbit ITB. Bandung.

Sikarwar, M.S. and Patil, M.B. 2015. Anti-hyperlipidemic activity of *Crataeva nurvala*Buch-Hum ethanolic extract fractions. *Int.Med. J.Sifa Univ*.2 (2) : 31 - 36

Spurr, H.W. 1994. The microbial ecology of fruit and vegetable surfaces, itsrelationshipto postharvest biocontrol. In: Wilson, C., Wisniewski, M.

UNIVERSITAS GADJAH MADA
PROFIL SENYAWA FENOLIK PADA JARUK TIGARUN (Crataeva nurvala Buch.Ham) DAN POTENSINYA SEBAGAI ANTIBAKTERI
NAZARNI RAHMI, Prof.Dr.Ir. Eni Harmayani, M.Sc; Prof.Dr.Ir. Umar Santoso, M.Sc; Prof. Dr.Ir. Purnama Darmadji, M
Universitas Gadjah Mada, 2016 | Diunduh dari http://etd.repository.ugm.ac.id/

(Eds.),*Biological Control of Postharvest Diseases: Theory and Practice*. CRC Press, Boca Raton FL : 11-23.

Sreeramulu, D. and Raghunath, M. 2010. Antioxidant activity and phenolic content of roots, tubers and vegetables commonly consumed in India. *Food Res. Int.*, 43 : 1017 – 1020.

Stamer, J.R. 1979. The lactic acid bacteria : microbes of diversity. *Food Tech.*, 1:60-65

Steinkraus-Keith, H. 1996.*Handbook of Indigenous Fermented Foods*.CRC PressMarcel Dekker Inc.

Stiles, M.E. and Holzapfel, W.H. 1997. Lactic acid bacteria of food and their current taxonomy. *Int. J. Food Microbiol.*,36(1): 1-29.

Sudalayandi, K and Manja, K.S. 2012. Repressive efficacy of lactic acid bacteria against the human pathogenic and fish-borne spoilage microbiota of fresh Indian mackerel fish chunks. *African J. Biotech*., 11(90), 15695-15701.

Sultana,B., Anwar, F. and Ashraf, M. 2009. Effect of Extraction Solvent/ Technique on the Antioxidant Activity of Selected Medicinal Plant Extracts. *Molecules*. 14 : 2167-2180.

Suksamrarn, S., Panseeta, P., Kunchanawatta, S., Distaporn, T., Ruktasing, S.and Suksamrarn, A. 2006. Ceanothan-and Lupane-Type Triterpenes with Antiplasmodial and Antimycobacterial Activities from *Ziziphys cambodiana*. *Chem. and pharmaceutic. Bull.*, 54: 535-537.

Swofford,D., Olsen, G., Waddell, P. and Hillis, D.M. 1996. Phylogenetic interference. In Hillis Moritz and Mable (eds). *Molecular sytematic*. 2nd ed. Sinauer, Sunderland, MA. 407-511

Tamang, J.P., Sarkar, P.K.and Hesseltine, C.W. 1988. Traditional Fermented Foods And Beveragesof Darjeeling and Sikkim—a review. *J. Sci. Food and Agricult.*, 44: 375–385.

Tamang, J.P., Tamang B., Schillinger, U., Guigas,C.and Holzapfel, W.H. 2009. Functionalproperties of lactic acid bacteria isolated from ethnic fermented vegetables of the Himalayas. *Int. J. Food Microbiol.*, 135 :28–33

Tamang, J.P., Tamang, B., Schillinger, U., Franz, C.M.A.P., Gores, M.and Holzapfel, W.H.2005. Identification of predominant lactic acid bacteria isolated from traditionalfermented vegetable products of the Eastern Himalayas. *Int. J. Food Microbiol.*, 105: 347–356

UNIVERSITAS GADJAH MADA
PROFIL SENYAWA FENOLIK PADA JARUK TIGARUN (Crataeva nurvala Buch.Ham) DAN POTENSINYA SEBAGAI ANTIBAKTERI
NAZARNI RAHMI, Prof.Dr.Ir. Eni Harmayani, M.Sc; Prof.Dr.Ir. Umar Santoso, M.Sc; Prof. Dr.Ir. Purnama Darmadji, M
Universitas Gadjah Mada, 2016 | Diunduh dari http://etd.repository.ugm.ac.id/

Tanaka, T., Ikeda, T., Kaku, M., Zhu, X.H., Okawa, M., and Yokomizo, K. 2004. A new lignan glycosideand phenylethanoid glycosides from *Strobilanthes cusia* BREMEK. *Chem. Pharm. Bull. Tokyo*, 52:1242–5.

Tang, A.L., Shah, N.P., Wilcox, G., Walker, K.Z. and Stojanovska, L. 2007. Fermentation of calcium-fortified soymilk with Lactobacillus: effects on calcium solubility, isoflavone conversion, and production of organic acids.*J Food Sci*., 72(9):M431-6.

Tanwar, A., Bafna, P.A., and Bafna, A.R., 2014. Anti-amnesic effect of aqueous extract of *Crataeva nurvala* stem bark in scopolamine induced amnesia. *J. Appl. Pharmaceutical Sci*., 4 (09) : 066-072.

Tauber, H. 1953. Oxidation of pyrogallol to purpurogallin by crystalline catalase.*The J. Biologic. Chem.*, 205: 395–400.

Teffo, L.S., Aderogba, M.A., and Eloff, L.,S. 2009. Antibacterial and antioxidant activities of four kaempferol methyl ethersisolated from *Dodonaea viscosa* Jacq. var. angustifolia leaf extracts. *South African J. Botany* xx, xxx–xxx

Tereschuk, M. L., Quarenghi de Riera, M, Castro, G. R. and Abdala, L. R. .1997. Antimicrobial Activity of Flavonoids From Leaves of *Tagetes minuta*. *J. Ethnopharmacol*.,56: 227–232.

Thompson, J.D., Gibson, T.J., Plewniak, F., Jeanmougin, F. and Higgins, D.G. 1997. The clustal X window interface strategies for multiple sequence alignmentaided by quality analysis tools. *Nucleic acids. Res*.. 25 : 4876 – 4882.

Tsuchiya H., Sato, M.and Iinuma, M. 1994. Inhibition of The Growth of Cariogenic Bacteria In Vitro By Plant Flavanones. *Experientia*,50:846–9.

Tsuchiya, H. and Iinuma, M. 2000. Reduction of Membrane Fluidity ByAntibacterial Sophoraflavanone GIsolated From *Sophora exigua*.*Phytomedicine*,7:161–5.

Tyrakowska, B., Leman´ ska, K., Szymusiak, H., Borkowski, T. and Rietjens, I. M. C. M.2003. Modified TEAC test for determination of the antioxidantproperties ofdietary polyphenolic compounds over a wide pH range. *Polish J. Foodand Nutrition Sci*.., 12(Suppl. 2): 141–148.

Ulyatu Fitrotin. 2016. Aktivitas Antioksidan dan Perubahan Lignan Sesaminol Triglukosida susu Wijen (*Sesamun indicum*) yang di fermentasi menggunakan *Lactobacillus plantarum* Dad 13. Disertasi. FTP UGM. Yogyakarta.

UNIVERSITAS GADJAH MADA
PROFIL SENYAWA FENOLIK PADA JARUK TIGARUN (Crataeva nurvala Buch.Ham) DAN POTENSINYA SEBAGAI ANTIBAKTERI
NAZARNI RAHMI, Prof.Dr.Ir. Eni Harmayani, M.Sc; Prof.Dr.Ir. Umar Santoso, M.Sc; Prof. Dr.Ir. Purnama Darmadji, M
Universitas Gadjah Mada, 2016 | Diunduh dari http://etd.repository.ugm.ac.id/

Van de-Lagemaat, J. and Pyle, D.L. 2005. Modelling the uptake and growth kinetics of *Penicillium glabrum* in a tannic acid-containing solid-state fermentation for tannase production. *Process Biochem.*,40(5) :1773-1782.

Vattem, D. A. and Shetty, K. 2003. Ellagic acid production and phenolic antioxidantactivity in cranberry pomace (*Vaccinium macrocarpon*) mediated by Lentinusedodes using a solid-state system. *Process Biochem.*, 39(3): 367–379.

Vega Leal-Sánchez, M., Ruiz-Barba, J.L., Sánchez, A.H., Rejano, L., Jimenez-Diaz, R. and Garrido, A. 2003. Fermentation profile and optimization of green olivefermentation using *Lactobacillus plantarum* LPCO10 as a starter culture. *Food Microbiol.*, 20 : 421-430.

Venugopalan, V.,Dinesh, M.S. and Geetha, K.S., 2010. Enhancement of Antimicrobial Potential of *Phyllanthus niruri* by Fermentation. *J. Herbal med. and Toxicol.*, 4(2) : 167-175.

Voigt, R. 1995. *Buku Pelajaran Teknologi Farmasi*. Gajah Mada University Press, Yogyakarta

Wagner, H. dan Bladt, S., 2009. *Plant drug analysis*. A thin layer chromatography atlas. 2nd ed. Springer. Heidelberg.

Ward, N.L., Rainey, F.A., Hedlund, B.P., Staley, J.T., Ludwig, W. and Stackebrandt. 2000. Comparative phylogenetic analyses of members of the order *Planctomycetes* and the division *Verrucomicrobia* : 23S rRNA gene sequence analysis support the 16S rRNA gene sequence-derived phylogeny. *Int. J. Systematic and Evolution Microbiol*., 50 : 1965 – 1972.

Widyatamma. 2011. *Kamus Saku Kedokteran*. Cetakan kedua.Widyatamma. Jakarta

Wei, Q., Chen, T. and Chen, J. 2007. Using of Lactobacillus and Bifidobacterium to product the isoflavone aglycones in fermented soymilk. *Intl. J. Food Microbiol*. 117:120–124.

Wood, B.J,B., 1998. *Microbiology of fermented food*. Vol.2. Springer. New York.

Woldeyes, S., Adane, L., Tariku, Y., Muleta, D.and Begashaw, T.2012. Evaluation ofantibacterial activities of compounds isolated from *Sida rhombifolia* Linn. (*Malvaceae*). *Nat. Prod. Chem. Res*., 1 (1) : 1-8.

Yuenyongsawad, S., Bunluepuech, K., Wattanapiromsakul, C. and Tewtrakul, S. 2013. Anti-cancer activity of compounds from *Bauhinia strychnifolia* stem. *J. Ethnopharmacology*. 150 : 765–769

UNIVERSITAS
GADJAH MADA
PROFIL SENYAWA FENOLIK PADA JARUK TIGARUN (Crataeva nurvala Buch.Ham) DAN POTENSINYA SEBAGAI ANTIBAKTERI
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Universitas Gadjah Mada, 2016 | Diunduh dari http://etd.repository.ugm.ac.id/

Ziegler, H.L., Staals, T.and Jaroszewski, J.W. 2006. Loading of Erythrocyte membrane with pentacyclic triterpene inhibits *Plasmodium falcifarum* invasion. *Planta Medica*, 72 : 640-642.