



## DAFTAR PUSTAKA

- Aaby, K., Hvattum, E., Skrede, G. 2004. Analysis of flavonoids and other phenolic compounds using high-performance liquid chromatography with coulometric array detection: Relationship to antioxidant activity. *Journal of the Agricultural and Food Chemistry*, 52: 4595–4603.
- Acharya, K.R., Sturrock, E.D., Riordan, J.F., Ehlers, M.R. 2003. Ace revisited: a new target for structure-based drug design. *Journal of Nature Reviews Drug Discovery*, 2:891–902.
- Actis-Goretta, L., Ottaviani, J.I., Keen, C.L. Fraga, C.G. 2003. Inhibition of angiotensin converting enzyme (ACE) activity by flavan-3-ols and procyanidins. *FEBS Lett*, 555 : 597–600
- Actis-Goretta, L., Ottaviani, J.I., Fraga, C.G. 2006. Inhibition of angiotensin converting enzyme activity by flavonol-rich foods. *Journal of Agricultural and Food Chemistry*, 54: 229–234.
- Ahmed, D., dan Tariq, S.A. 2012. In vitro studi of antimicrobial and antioxidant activities of methanolic extract of leaves , fruit and bark of *Ficus glomerata Roxb*. *Int .J.Med.Arom Plants*, Vol.2. No.1: 30-33.
- Ajibola, C.F. Fashakin, J.B., Fagbemi, T.N., Aluko, R.E. 2011. Effect of peptide size on antioxidant properties of African yambean seed (*Sphenostylis stenocarpa*) protein hydrolysatefractions. *International Journal of Molecular Sciences*, 12 : 6685–6702.
- Al Shukor, N., Camp, J.V., Gonzales , G.B., Staljanssens, D., Struijs, K., Zotti, M.J., Raes, K., Smagghe, G. 2013. Angiotensin-Converting Enzyme Inhibitory Effects by Plant Phenolic Compounds: A Study of Structure Activity Relationships. *Journal of Agricultural and Food Chemistry*. American Chemical Society.
- Aloglu, H.S., Oner, Z. 2011. Determination of antioxidant activity of bioactivepeptide fractions obtained from yogurt. *Journal of Dairy science*, 94: 5305-5314.
- Amić, D., Davidović-Amić, D., Bešlo, D., Trinajstić, N. 2003. Structure-Radical Scavenging Activity Relationships of Flavonoids. *Croatica Chemica Acta*. CCACAA ,76(1) : 55-61.
- Amirdivani, S. 2008 . Inclusion of *Mentha piperita*, *Anethum graveolence* and *Ocimum basilicum* in Yogurt and their effect on the Inhibition of Enzyme Relevant to hypertension and type-2 Diabetes. *Thesis*. Department of Biochemistry -Institute of Biological Science- University of Malaya.



Amirdivani, S., A.S, Baba. 2011. Changes in yogurt fermentation characteristics, and antioxidant potential and in vitro inhibition of angiotensin-1 converting enzyme upon the inclusion of peppermint, dill and basil. *Jounal of LWT - Food Science and Technology*, 44: 1458 -1464.

**Amirdavani, S.** 2015. Inclusion of *Allium sativum* in Yogurt and its Effects on Inhibition of Diabetes and Hypertension-associated by Enzymes *in vitro*. *Journal of Applied Food Biotechnology*, Vol 2 (3) : 29-37.

**Amirdivani, S., AS. Baba. 2015.** Green tea yogurt: major phenolic compounds and microbial Growth. *Journal of Food Science and Technology*, Vol 52 (7) : 4652-4660

Antranik.org. 2012. The Renin Angiotensin Aldosterone Reflex. <http://antranik.org/the-renin-angiotensin-aldosterone-reflex/>.

Apostolidis, E., Kwon, Y. I., Shetty, K. 2007. Inhibitory potential of herb, fruit, and fungal-enriched cheese against key enzymes linked to type 2 diabetes and hypertension. *Innovative Food Science and Emerging Technologies*, 8: 46-54.

Axelsson, L. 1998. Lactic acid bacteria: classification and physiology. In: Salminen, S., von Wright, A. (Eds.), *Lactic Acid Bacteria: Microbiology and Functional Aspects*, 2nd ed. Marcel Dekker, New York, pp. 1 –72.

Baba, A.S., Najarian, A., Shori 2013. Viability of Lactic Acid Bacteria, Antioxidant Activity and In Vitro Inhibition of Angiotensin-I-Converting Enzyme of *Lycium barbarum* Yogurt. *Arabian Journal for Science and Engineering*. Vol. 3 (7): 5355-5362.

Badan Standarisasi Nasional. 2009. SNI-2981: 2009. Yogurt. Jakarta

Bagheri, E. 2012. Inclusion Of *Lycium barbarum*,*Psidium guajava*,*Momordica grosvenorii* And *Garcinia mangostana* In Yogurt And Their Effects On Fermentation And Exopolysaccharide-Production. *Disertasi*. Institute of Biological Science, Faculty of Science, University of Malaya. Kuala Lumpur.

Balasuriya, B.W.N., dan Rupasinghe, H.P.V. 2011. Plant flavonoids as angiotensin converting enzyme inhibitors in regulation of hypertension. *Functional Foods in Health and Disease*, 5: 172-188.

Benzie, I.F.F., Strain, J.J. 1999. [2] Ferric reducing/antioxidant power assay: Direct measure of total antioxidant activity of biological fluids and modified version for simultaneous measurement of total antioxidant power and ascorbic acid concentration. *Methods in Enzymology*, 299: 15-27.



**POTENSI YOGURT YANG DIINKLUSI DENGAN EKSRTAK ARA (*Ficus glomerata Roxb*) SEBAGAI SUMBER ANTIOKSIDAN DAN ANGIOTENSIN-I CONVERTING ENZYME INHIBITOR**

BAIQ RANI DEWI WULANDANI, Prof.Dr. Endang Sutriswati Rahayu; Prof. Dr. Y. Marsono; Dr. Ir. Tyas Utami, MSc.

Universitas Gadjah Mada, 2017 | Diunduh dari <http://etd.repository.ugm.ac.id/>

Bhogaonkar, P.Y., Chavhan V.N.I., dan Kanerkar U.R. 2014. Nutritional potential of *Ficus racemosa* L. Fruits. *Bioscience Discovery*, 5(2):150-153.

Blum, U. 1998. Effects of microbial utilization of phenolic acids and their phenolic acid breakdown products on allelopathic interactions. *Journal of Chemical Ecology*, 24 : 685-708.

Brand-Williams, W., Cuvelier, M.E., Berset, C. 1995. Use of a free radical Method to evaluate antioxidant activity. *LebensWissTechnol*, 28: 25-30.

Bravo, L. 1998. Polyphenols: Chemistry, Dietary Sources, Metabolism, and Nutritional Significance. *Nutr Rev*. 1998 Nov : 56(11): 317-333.

Byun, H.G., Kim.S.K. 2002. Structure and Activity of Angiotensin I Converting EnzymeInhibitory Peptides Derived from Alaskan Pollack Skin. *Journal of Biochemistry and Molecular Biology*. Vol. 35 (2): 239-243

Cao, G., Sofic, E., Prior, R.L. 1997. Antioxidant and Prooxidant Behavior of Flavonoid Structure-Activity Relationships. *Free Radical and medicine*, 22 (5): 749-760.

Cervato, G., Cazzola, R., Cestaro, B. 1999. Studie on the antioxidant activity of milk caseins. *International Journal of Food Sciences and Nutrition*, 50: 291-296.

Chandan, R.C. 1989. Yogurt: nutritional and health properties. James Fodr Bell Technical Center. General Mills Inc., 9000. Plymouth Avenue North, Minneapolis, MN 55427, USA.

Chang, S.K.C., Xu, B.J., Yuan, S.H. 2007. Comparative Analyses Of Phenolic Composition, Antioxidant Capacity, and Color of Cool Season Legumes and Other Selected Food Legumes. *Journal of Food Science*, 72(2): 167-177.

Channabasavaraj, K.P., Shrishailappa, B., Suresh, B., 2008. Hepatoprotective and antioxidant activity of methanol extract of *Ficus glomerata Roxb*. *J Nat Med*. 62:379–383 DOI 10.1007/s11418-008-0245-0.

Cheung, H. S., Wang, F. I., Ondetti, M. A., Sabo, E. F., Cushman, D. W. 1980. Binding of peptide substrates and inhibitors of angiotensin-converting enzyme. Importance of the COOH-terminal dipeptide sequence. *Journal of Biological Chemistry*, 225: 401-407.

Cheung, H.S., Chusman, D.W. 1971. Spectrophotometric assay and properties of the angiotensin-converting enzyme of rabbit lung. *Biochemical Pharmacology*, 20: 1637-1648.



**POTENSI YOGURT YANG DIINKLUSI DENGAN EKSRTAK ARA (*Ficus glomerata Roxb*) SEBAGAI SUMBER ANTIOKSIDAN DAN ANGIOTENSIN-I CONVERTING ENZYME INHIBITOR**

BAIQ RANI DEWI WULANDANI, Prof.Dr. Endang Sutriswati Rahayu; Prof. Dr. Y. Marsono; Dr. Ir. Tyas Utami, MSc.

Universitas Gadjah Mada, 2017 | Diunduh dari <http://etd.repository.ugm.ac.id/>

Church, F. C., Swaisgood, H. E., Porter, H. D., & Catignani, G. L. 1983. Spectrophotometric Assay Using *o*-Phthaldialdehyde for Determination of Proteolysis in Milk and Isolated Milk Proteins. *Journal of Dairy Science*, 66 (6): 1219-1227.

Church, F.C., Porter, D.H., Catignani, G.L., Swaisgood, H.E. 1984. An *o*-Phthalaldehyde Spectrophotometric Assay For Proteinases. *Analytical Biochemistry*, 146 : 343-348.

Codex Alimentarius. 2011. Milk and Milk Products. Second edition. World Health Organization. Food and Agriculture Organization of United Nations. Rome.

Cook, N.C., Sammam, S. 1996. Flavonoid-Chamistry, metabolism, cardioprotective effects, and dietary sources. *The journal of Nutritional Biochemistry*. Volume 7, issue 2. Pages 66-76.

Coskun, O., Kanter, M., Korkmaz, A., Oter, S. 2004. Quercetin, a flavonoid antioxidant, prevents and protects streptozotocin-induced oxidative stress and beta-cell damage in rat pancreas. *Pharmacological Research*. Vol (2): 117-123.

Curiel, J.A., Pinto, D., Marzani, B., Filannino, P., Farris, G.A., Gobetti, M., Rizzallo, C.G. 2015. Lactic acid fermentation as a tool to enhance theantioxidant properties of Myrtus communis berries. *Microbial Cell Factories*, 14: 1-10.

Cushman, D.W., Cheung, H.S. 1971. Spectrophotometric Assay and Properties of The Angiotensin Coverting Enzyme of Rabbit Lung. *Biochemical Pharmacology*, Vol. 20, pp. 1637-1648. Pergamon Press. Department of Pharmacology, The Squibb Institute for Medical Research, New Brunswick, N.J. 08903, U.S.A.

Chusman, D.W., Cheung, H.S., Sabo, E.F., Ondetty, M.A. 1977. Design of potent competitive inhibitors of angiotensin converting enzyme. Carboxyalkanoyl and mercaptoalkanoyl amino acids. *Biochemistry*, 16: 5484-5491.

Damanik, P.O. 2014. Kandungan Gizi Buah Tin (*Ficus carica* L) Produksi Indonesia. *Skripsi*. Departemen Gizi Masyarakat, Fakultas Ekologi Manusia. Institut Pertanian Bogor. Bogor.

Damin, M.R., Alca`ntara, M.R., Nunes, A.P., Oliveira , M.N. 2009. Effects of milk supplementation with skim milk powder, whey protein concentrate and sodium caseinate on acidification kinetics, rheological properties and structure of nonfat stirred yogurt. *LWT - Food Science and Technology* 42 (2009) : 1744–1750.

De Vuyst, L., Leroy, F. 2007. Bacteriocins from Lactic Acid Bacteria: Production, Purification, and Food Applications. *Journal of Molecular Microbiology and Biotechnology*. 13: 194-199.



Diebolt, M.; Bucher, B.; Andriantsitohaina, R. 2001. Wine polyphenols decrease blood pressure, improve NO vasodilatation, and induce gene expression. *Hypertension*, 38: 159-165.

Djeridane, A., Yousfi, M., Nadjemi, B., Boutassouna, D., Stocker, P., Vidal, N. 2006. Antioxidant activity of some Algerian medicinalplants extracts containing phenolic compounds. *Food Chemistry*, 97: 654–660.

Donkor, O.N., Henriksson, A., Singh, T.K., Vasiljevic, T., Shah, N.P. 2007. ACE- inhibitory activity of probiotic yogurt. *International Dairy Journal*.1321-1331.

Edwin. 2002. Khasiat Yoghurt untuk Pengobatan. <http://www.pikiranrakyat.com>.

Eissa, E. A., Mohamed Ahmed, I. A., Yagoub, A. E., Babiker, E. E. 2010. Physicochemical,microbiological and sensory characteristics of yoghurt produced fromgoat milk. *Livestock Research for Rural Development*, 22: 247- 253.

Ejtahed, H.S., Mohtadi-Nia, J., Homayouni-Rad, A., Niafar, M., Asghari-Jafarabadi, M.A., Mofid, V. 2012. Probiotic yogurt improves antioxidant status in type 2 diabetic patients. *Journal of Nutrition*, 28: 530-543.

Elbl, G., Wagner, H. 1991: A new method for the in vitro screening of inhibitors of angiotensin-converting enzyme (ACE),using the chromophore- and fluophore-labelled substrate, dansyltriglycine. *Planta Med*, 57: 137–141..

Elias, R.J., Kellerby, S.S., Decker, E.A. 2008. Antioxidant activity of proteins and peptides. *Critical Reviews in Food Science and Nutrition*. Vol 48 (5): 430-441.

Erlund, I. 2004. Review of the flavonoids quercetin, hesperetin, and naringin. Dietary sources, bioactives, bioavailability, and epidemiology. *Nutrition Research*, 24, 851– 874.

Eshwarappa, R.S.B., Lyer, S., Subaramaihha, S.R., Richard, S.A., Dhananjaya, B.L. 2014. Antioxidant activities of *Ficus glomerata Roxb*(moraceae)leaf gall extracts. *Journal of Pharmacognosy Research*, 7 : 114-120.

Eskin, N.A.M. 1985. Biochemical changes in raw foods: milk in Biochemistry of Foods, 2<sup>nd</sup> edn. Pp. 205-235. New York. Academic Press.

Fandino, R.L., Otte, J., J, van Camp, J.V. 2006. Physiological, Chemical, and Technological Aspect of Milk Protein-Derived Peptide with Antihypertensive and ACE-Inhibitory Activity. *International Dairy Journal*, 16 (11) : 1277-1293.



Farkas, O., Jakus, J., Heberger, K. 2004. Quantitative Structure-Antioxidant Activity Relationship of Flavonoid Compounds. *Molecules*, 9 : 1079 - 1088.

FDA. 1996. Yogurt. 21 CFR 131.200, Code of Federal Regulations. U.S. Dept. of Health and Human Services, Washington, DC.

Fernandes, C. F., Shahani, K. M. 1989. Lactose intolerance and its modulation with lactobacilli and other microbial supplements. *Journal of Applied Nutrition*, 42: 50- 64

Filannino, P., Gobbetti,M., De Angelis, M., Cagno, R.D. 2014. Hydroxycinnamic Acids Used as External Acceptors of Electrons: an Energetic Advantage for Strictly Heterofermentative Lactic Acid Bacteria. *Applied and Environmental Microbiology*, 80: 7574-7582.

Fitzgerald, R. J., B.A, Murray., D.J, Walsh., 2004. Hypotensive peptides from milk proteins. *Journal of Nutrition*, 134: 980-988.

FitzGerald, R.J., Meisel,H. 2000. Milk protein-derived peptide inhibitors of angiotensin-I-convertingenzyme. *British Journal of Nutrition*, 84 (1): 833-837.

Fraga, C.G., Oteiza, P.I. 2011. Dietary flavonoids: Role of (-)-epicatechin and related procyanidins in cell signaling. *Review article. Free Radical Biology and Medicine*. Volume 51, Issue 4 : 813–823.

Fridovich, I. 1997. Superoxide anion radical ( $O_2^-$ ), superoxide dismutases and related matters. *Journal of Biological Chemistry*, 272:18515-18517.

Frazier, W.C., Westhoff, D. 1988. Food Microbiology. McGraw-Hill Companies. U.S.A.

Fulsang, A., Nilson, D., Nyborg, N.C.B., 2003. Characterization of New Milk-derived Inhibitors of Angiotensin Converting Enzyme In Vitro and In Vivo. *Journal of Enzyme Inhibition and Medicinal Chemistry*. Vol. 18 (5): 407–4112.

Gjorgievski, N., Tomovska, J., Dimitrovska, G., Makarijojoski, B., Shariati, M.A., 2014. Determination of The Antioxidant Activity in Yogurt. *Journal of Hygienic Engineering and Design*.

Gobbetti, M., Ferranti, P., Smacchi, E., Goffredi, F., Addeo, F., 2000. Production of Angiotensin-I-Converting-Enzyme-Inhibitory Peptides in Fermented Milk Started by *Lactobacillus delbrueckii* subs. *Bulgaricus* SS1 and *Lactococcus lactis* subsp. *cremoris* FT4. *Applied and Environmental Microbiology*. Vol 66(9) 3898-3904.



**POTENSI YOGURT YANG DIINKLUSI DENGAN EKSRTAK ARA (*Ficus glomerata Roxb*) SEBAGAI SUMBER ANTIOKSIDAN DAN ANGiotensin-I CONVERTING ENZYME INHIBITOR**

BAIQ RANI DEWI WULANDANI, Prof.Dr. Endang Sutriswati Rahayu; Prof. Dr. Y. Marsono; Dr. Ir. Tyas Utami, MSc.

Universitas Gadjah Mada, 2017 | Diunduh dari <http://etd.repository.ugm.ac.id/>

Gülçin, I., Berashvili, D., Gepdiremen, A. 2005. Antiradical and antioxidant activity of total anthocyanins from *Perilla pankinensis* decne. *Journal of Ethnopharmacology*, 101 (1-3): 287-293.

Halliwell, B. 1995. Free radicals and antioxidants:a personal view. *Nutrition. Reviews*, 2: 253-265.

Halliwell, B. and J. M. C. Gutteridge. 1999. Free radicals in Biology and Medicine. Clarendon Press.

Hannu K. (2009). Milkderived bioactive peptides: From science to applications. *Journal of Functional Foods*, 1: 177-187.

Haque, E., Chand, R. 2006. Milk Protein Derived Bioactive Peptides. <http://www.dairyscience.info/bio-peptides.htm>.

Harborne, J.B. 1988. The Flavonoid : Advances in Research since 1980. Chapman and Hall, London.

Harun-ur-Rashid., Togo, K., Ueda, M., Miyamoto, T., 2007. Identification and characterization of dominant lactic acidbacteria isolated from traditional fermented milkDahiin Bangladesh. *World J Microbiol Biotechnol.* 23:125–133.

Helferich W., Dennis C. dan Westhoff. (1980). All about Yoghurt. New Jersey: Prentice-Hall. Hal: 76-81.

Hernandez-Ledesma, B., Recio, I., Ramos, M., Amigo L. 2002. Preparation of ovine and caprine-lactoglobulin hydrolysates with ACE-inhibitory activity. Identification of active peptides from caprine-lactoglobulin hydrolyzed with thermolysin. *International Dairy Journal* 12(10): 805–812

Hikmayani. 2012. Komposisi Kimia Yogurt Dibuat Dengan Penambahan Buah Ara (*Ficus glomerata Roxb*). Skripsi. Fakultas Peternakan, Universitas mataram.

Ho ,C.T. 1992. Phenolic compounds in food: an overview. *American Chemical Society*, Washington, 2-7 (ACS Symposium Series, 507).

Hong Li, G., Wei Le, G., Hu Shi, Y., Shrestha, S. dkk. 2004. Angiotensin I- converting enzyme inhibitory peptidesderived from food proteins and their physiological and pharmacological effects. *Nutrition Research*, 24: 469-486

Holt, J.G., Krieg, R., Sneath, P.H.A., Staley, J.T., Williams, S.T. 1994. Bergeys Manual of Determinative Bacteriology , 9th ed Williams and Williams, Baltimore, p.566..



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

Jamhari. 2014. Studi Peptida Bioaktif dari Protein Daging Ternak Lokal Indonesia sebagai Agensi Antihipertensi. *Disertasi*. Program pascasarjana, Fakultas Peternakan, Universitas Gajah Mada. Yogyakarta.

Jang, A., Lee, M. 2004. Purification and identification of angiotensin converting enzyme inhibitory peptides from beef hydrolysates. *Journal of Meat Science*, 4: 653-661

Jay, J.M. 1978. Modern Food Microbiology, 2<sup>nd</sup> Ed. New York.

Jaziri, I., Slama, M.B., Mhadhbi, H., Urdaci, M.C., Hamdi,M. 2009. Effect of green and black teas (*Camellia sinensis L.*) on the characteristic microflora of yogurt during fermentation and refrigerated storage. *Food Chemistry*, 112: 614-620.

Johnnston, C. I., Franz, V. 1992. Renin-angiotensin system: a dual tissue and hormonal system for cardiovascular control. *Journal of Hypertension*, 10:13-26.

Joseph, B., Raj, J. S. 2011. Pharmacognostic and phytochemical properties of *Ficus carica Linn* –An overview. *International Journal of PharmTech Research*. ISSN : 0974-4304. Vol. 3, No.1: pp 08-12.

Joung, J.Y., Lee, J.Y., Ha, Y.S., Shin, Y.K., Kim, Y., Kim, S.H., Oh, N.S. 2016, Enhanced Microbial, Functional and Sensory Properties of Herbal Yogurt Fermented with Korean Traditional Plant Extracts. *Korean Journal for Food Science of Animal Resources*, 36 (1): 90-99.

Kahkonen, M. P., Hopia, A. I., Vuorela, H. J., Rauha, J.-P., Pihlaja, K., Kujala, T. S.1999. Antioxidant activity of plant extractscontaining phenolic compounds. *Journal of the Agricultural and FoodChemistry*, 47: 3954–3962.

Kalogeropoulos, N., Konteles, S., Troullidou, E., Mourtzinos, I., Karathanos, V.T. 2009. Chemical composition, antioxidant activity and antimicrobial properties of propolis extracts from Greece and Cyprus. *J. Food Chemistry*. 116 : 452-461.

Kamau, S.M., Lu, R.R., Chen, W., Liu, X.M., Tian F.W., Shen, Y., Gao, T. 2010. Functional Significance of Bioactive Peptides Derived from Milk Proteins. *Food Reviews International*. 26: 386-401.



**POTENSI YOGURT YANG DIINKLUSI DENGAN EKSRTAK ARA (*Ficus glomerata Roxb*) SEBAGAI SUMBER ANTIOKSIDAN DAN ANGIOTENSIN-I CONVERTING ENZYME INHIBITOR**

BAIQ RANI DEWI WULANDANI, Prof.Dr. Endang Sutriswati Rahayu; Prof. Dr. Y. Marsono; Dr. Ir. Tyas Utami, MSc.

Universitas Gadjah Mada, 2017 | Diunduh dari <http://etd.repository.ugm.ac.id/>

Karaaslan, M., Ozden, M., Vardin, H., Turkoglu, H. 2011. Phenolic fortification of yogurt using grape and callus extracts. *Journal of Food Science and Technology*, 44: 1065-1072.

Karadag, A., Ozcelik, B., Saner, S. 2009. Review of Methods to Determine Antioxidant Capacities. *Food Analytical Methods*. Vol 2 (1): 41-60.

Karadeniz, F., Burdurlu, H.S., Koca, N., Soyer, Y. 2005. Antioxidant Activity of Selected Fruits and Vegetables Grown in Turkey. *Turkish Journal of Agriculture and Forestry*, 29: 297-303.

Khan, M.S.Y., Javed, K. 1998. Chemistry and Biological Activities of Genus *Ficus*. *J. Indian Drugs*. Vol. 35. No. 12: 726-739.

Kim, E. R. Lee, K.W. Park, Y.H. Kwah, H. S., 1993. The survival of lactic acid bacteria in yogurt during delivery and storage. *Korean Journal of Dairy Science*, 14 : 260.

Kim, H.S., Chae, H.S., Jeong, S.G., Ham, J.S., Im, S.K., Ahn, C.N., Lee, J.M. 2005. Antioxidant Activity of Some Yogurt Starter Cultures. *Asian-Australasian Journal of Animal Science*, 2: 255-258.

Kirtikar, K.R., Basu, B.D. 1999. Indian medicinal plants, vol 3. *International Book Distributors*, Dehradun, pp 2327–2329.

Konings, W.N., Jan, K., Oscar, P., Bert, P. 2000. Lactic acid bacteria: the bugs of the new millennium. *Current Opinion in Microbiology* 3: 276–282.

Korhonen, H. 2009. Milk-derived bioactive peptides: From science to applications. *Journal of Functional Foods*, 1: 177-187.

Koshonen, H., Pihlanto, A. 2003. Food-derived bioactive peptides – Opportunities for designing future foods. *Current Pharmaceutical Design*, 9: 1297–1308

Kudoh, Y., Matsuda, S., Igoshi, K., Oki, T. 2001. Antioxidative peptide from milk fermented with *Lactobacillus delbrueckii* ssp. *bulgaricus* IFO13953. *Nippon Shokuhin Kagaku Kaishi* 48:44–55.

Kumaran, A., Karunakaran, J. 2006. In vitro antioxidant activities of methanol extracts of five *Phyllanthus* species from India. *LWT*, 40, 344–352.

Kunji, E.R., L, Mierou., A, Hagting., B, Poolman., W.N, Konig., 1996. The Proteolitic System of Lactic Acid Bacteria. *Antonie van leewenhoek*. 70 (2-4) : 187-221.



Kuster, D.j., Marshall, G.R., 2005. Validated ligand mapping of ACE active site. *Journal of Computer-Aided Molecular Design*. 19: 609–615.

Kwok, J., De Vos, W. M. 1994. The Proteolytic System of Lactic Acid Bacteria. in : Genetic and Biotechnology of Lactic Acid Bacteria. Ed Gasson and De Vos. 1994. Blackie Academic and Professional. Glasgow.

Kwon Y.I., Vattem, D. A., Shetty, K. 2005. Evaluation of clonal herbs of Lamiaceae species for management of diabetes and hypertension. *Asia Pacific Journal Clinical Nutrition*, 15 :107-118

Lamson, D.W., Brignall, M.S., 2000. Antioxidants and cancer III: quercetin. *Alternative Medicine Reviews* 5 (3), 196–208.

Lapsongphon, N., Yongsawatdigul, J., 2013. Production and purification of antioxidant peptides from a mungbean meal hydrolysate by *Virgibacillus* sp. SK37 proteinase. *Food Chemistry*. Vol 141 (2): 992-999.

Lee, C. H., Jenner, A. M., Low, S. C., Lee, Y. K. 2006. Effect of tea phenolics and their aromatic fecal bacterial metabolites on intestinal microbiota. *Research in Microbiology*, 157: 876-884.

Lee, D.L., Webb, R.C., Jin, L. 2004. Hypertension and RhoA/Rho-Kinase Signaling in the Vasculature : Highlights From the Recent Literature. *Hypertension*. 44: 796-799.

Leong, L.P., Shui, G. 2002. An investigation of antioxidant capacity offruits in Singapore markets. *Journal of Food Chemistry* 76, 69–75.

Lieberman, J. 1975. Elevation of serum angiotensin I-converting enzyme (ACE) level in sarcoidosis. *American Journal of Medicine*. 59 :365-372.

Lin, M. Y., Young, C. M.. 2000. Folate levels in cultures of lactic acid bacteria. *Int. Dairy J.* 10: 409–413.

Lin, M., Yen, C. 1999. Antioxidative Ability of Lactic Acid Bacteria. *Journal of Agricultural and Food Chemistry*, 47: 1460-1466.

Lim, H.J., Kim, S.Y., Lee, W.K. 2004. Isolation of cholesterol-lowering lactic acid bacteria from human intestine for probiotic use. *Journal of Veterinary Science*, 4: 391-395.

Liu, C.F., Tung, Y.T., Wu, C.L., Hong-Lee, B., Hsuan-Hsu, W., Pan, T.M. 2011. Antihypertensive Effect of Lactobacillus-Fermented Milk Orally administrated to SHR. *Journal Agricultural Food Chemistry*. 59 (9) : 4537-4543.



- Liu, D.Z., Lin, Y.S., Hou, W.C., 2005. Monohydroxamates of aspartic acid and glutamic acid exhibit antioxidant and angiotensin converting enzyme inhibitory activities. *J. Agric. Food. Chem.*, 52: 2386–2390.
- Madsen, H. L., Bertelsen, G. 1995. Spices as antioxidants. Trends in Food Science and Technology, 6: 271–277.
- Maeno, M., Yamamoto, N., Takeno, T. 1996. Identification of an Antihypertensive Peptides from casein Hydrolyzate Produced by a Proteinase from *Lactobacillus helveticus* CP790. *Journal Dairy Science*. 79 : 1316-1321.
- Masuda, O., Nakamura, Y., Takano, T. 1996. Antihypertensive Peptides are Present in Aorta After oral Administration of sour Milk Containing These Peptides to Spontaneously Hypertensive Rat. *Journal of Nutrition*. 126 (12) : 3063-3069.
- Matsumura, N., Fujii, M., Sugita, K., Shimizu, T. 1993. Angiotensin I-converting enzyme inhibitory peptides derived from bonito bowels autolysate. *Journal of Bioscience, Biotechnology and Biochemistry*, Vol. 57 (5): 695-697.
- Mayo, B., Aleksandrak-Piekarczyk, T., Fernandez, M., Kowalczyk, M., Alvarez-Martin, P., Bardowski, J. 2010. Update in Metabolism of lactic Acid bacteria in Biotechnology of Lactic Acid Bacteria Novel Application edited by Fernanda, M., M.V, Graciella. M. Willey-Blackwell, USA.
- McKinley., 2005. The nutrition and health benefits of yogurt. *International Journal of Dairy Technology*. 58: 1–12.
- Meisel,H., 1997. Biochemical properties of Regulatory Peptides Derived from Milk Proteins.Hans Meisel Federal Dairy Research Centre, Institute for Chemistry and Physics. D-24121 Kiel. P.O.Box. 6069, Germani.
- Miller, N.J., Rice- Evans, C.A. 1997. Factors influencing the antioxidant activity Determined by the ABTS radical cation assay. *Free Radical Biology and Medicine*, 26 : 195-1999.
- Minervini, F., Algaron, F., Rizzello, C.G., Fox, P.F., Monnet, V., Gobbetti, M.. 2003. Angiotensin I-Converting-Enzyme-Inhibitory and Antibacterial Peptides from *Lactobacillus helveticus* PR4 Proteinase-Hydrolyzed Caseins of Milk from Six Species. *Applied Environmental Microbiology*. Vol 69 (9): 5297-5305.
- Manach,C., Scalbert, A., Morand, C., Remesy, C., Jimenez, L. 2004. Polyphenols: Food sources and bioavailability. *The American Journal of Clinical Nutrition*, 79 : 727-747.



**POTENSI YOGURT YANG DIINKLUSI DENGAN EKSRTAK ARA (*Ficus glomerata Roxb*) SEBAGAI SUMBER ANTIOKSIDAN DAN ANGIOTENSIN-I CONVERTING ENZYME INHIBITOR**

BAIQ RANI DEWI WULANDANI, Prof.Dr. Endang Sutriswati Rahayu; Prof. Dr. Y. Marsono; Dr. Ir. Tyas Utami, MSc.

Universitas Gadjah Mada, 2017 | Diunduh dari <http://etd.repository.ugm.ac.id/>

Mozzi, F., Raya,R.R., Vignolo, G.M. 2010. Biotechnology of lactic Acid Bacteria. Novel Applications. Wiley-Blackwell. A John Wiley and Sons, Inc. Publication.

Muguerza, B., Ramos, M., Sanches, E., Manso, E., Miguel, M.A., Aleixandre, A., Delgado, M.A., Recio, I. 2006. Antihypertensive Activity of Milk Fermented by *Enterococcus faecalis* strains Isolated from Raw Milk. *International dairy Journal*.16 : 64-69.

Muray, B.A., FitzGerald, R. J. 2007. Angiotensin Converting Enzyme Inhibitory Peptides Derived from Food Proteins: Biochemistry, Bioactivity and Production. *Current Pharmaceutical Design*, 13: 773-791.

Nakamura, Y., Yamamoto, N., Sakai, K., Takano, T. 1995. Antihipertensive Effect of Sour Milk and Peptide Isolated from It that are Inhibit Angiotensin-I-Converting-Enzyme. *Journal Dairy Science*. 78: 1253-1257.

Nakayama,K. 1992. Nucleotide sequence of *Streptococcus mutans* superoxide dismutase gene and isolation of insertion mutants. *Journal of Bacteriology*, 174: 4928-4934.

Namiki, M. 1990. Antioxidants/antimutagens in food *Critical Review of Food Science and Nutrition*. 29: 273-300.

Natesh R., Schwager, S.L.U., Evans, H.R., Sturrock, E.D., Acharya, K.R. 2004. Structural Details on the Binding of Antihypertensive Drugs Captopril andEnalaprilat to Human Testicular Angiotensin I-Converting Enzyme. *Biochemistry* 43:8718-8724.

Nederfors, T., Dahlöf, C., Ericsson, T., Twetman, S. 1995. Effects of the antihypertensive drug captopril on human salivary secretion rate and composition. *Eur J Oral Sci* 1995;103 (6):351-4.

Nyman, U., Joshi, P., Madsen, L.B., Pedersen, T.B., Pinstrup, M., Rajasekharan, S., George, V., Pushpangadan, P. 1998. Ethnomedical information and in vitro screening for angiotensin-converting enzyme inhibition of plants utilized as traditional medicines in Gujarat, Rajasthan and Kerala (India). *Journal of Ethnopharmacology*, 60: 247-263.

O'Connell, J. E., Fox, P.F. 2001. Significance and applications of phenolic compounds in the production and quality of milk and dairy products: a review. *International Dairy Journal*, 11: 103-112.

Oeno, K., Mizano, S., Yamamoto, N. 2004. Purification and characterization of an Endopeptidase That Has An Important Role in Carboxyl Terminal Proccesing of Antihypertensive Peptide in *L.helveticus* CN 4. *Letters in Applied Microbiology*, 39 (4) :313-318.



Oliveira, A.P., Valentão, P., Pereira, J.A., Silva, B.M., Tavares, F., Andrade, P.B. 2009.*Ficus carica* L.: Metabolic and biological screening. *Food and Chemical Toxicology* 47 (2009) 2841–2846.

Othman, N. B., Roblain, D., Chammen, N., Thonart, P., Hamdi, M. (2009).Antioxidant phenolic compounds loss during the fermentation of Chétoui olives. *Food Chemistry*, 116(3), 662–669.

Palmer,T. 1991. Understanding enzyme (3<sup>rd</sup> edition). Ellis Horwood Limited, Chichester.

Papadimitriou, C.G., A, Vafopoulou-Mastrogiannaki., S.V, Silva., G, Ana-Maria., F.X, Malcata., E, Alichanidis. 2007. Identification of peptides in traditional and probiotic sheep milk yogurt with angiotensin I-converting enzyme (ACE)-inhibitory activity. *Journal of Food Chemistry*. 105 : 647–656.

Parrotta, J.A. 2001. Healing Plants of Peninsular India. CABI Publishing, New York, pp. 523–524.

Pena-Ramos, E.A., Xiong, Y.L. 2001 Antioxidative Activity of Whey Protein Hydrolysates in a Liposomal System. *Journal of Dairy Science*. Vol 18 (12) : 2577-2583.

Pickering, T.G., Hall, J.E., Appel, L.J., Falkner, B.E., Graves,J., Hill, M.N., Jones, Kurtz,T., Sheps, S.G., Roccella, E.J. 2005. Recommendations for Blood Pressure Measurement in Humans and Experimental Animals. Part 1: Blood Pressure Measurement in HumansA Statement for Professionals From the Subcommittee of Professional and Public Education of the American Heart Association Council onHigh Blood Pressure Research. *Hypertension*; 45: 142-161. American Heart Association, 7272, Greenville Avenue, Dallas, TX 75231.

Pihlanto, A. 2006. Antioxidative peptides derived from milk proteins. *International Dairy Journal*, 16: 1306-1314.

Plantamor. 2012. Informasi spesies *Ficus glomerata Roxb Roxb*. <http://www.www.plantamor.com/index.php?plant=1406>. (11 januari 2013).

Pratt, D.E., Hudson, B.J.F. 1990. Natural Antioxidant Not Exploited Commercially dalam Food antioxidant. Hudson, B.J.F (ed) Elsevier Applied science, London.



Pripp, A.H., Sorensen, R., Stepaniak, L., Sorhaug, T., 2005. Relationship between proteolysis and angiotensin-I-converting enzyme inhibition in different cheeses. *LWT-Food Sci. Technol.* (39), 677–683.

Quiros, A., Ramos, M., Muguerza, B., Delgado, M.A., Miguel,B., Aleixandre, A., Recio, I. 2007. Identification of Novel Antihypertensive Peptides in Milk Fermented with *Enterococcus Faecalis*. *International Dairy Journal*, 17: 33-41.

Rahayu,E.S., and Margiono,.S. 1997. Bakteri Asam Lactat: Isolasi dan Identifikasi. Materi Workshop. PAU Pangan dan Gizi, Universitas Gadjah Mada. Yogyakarta, 13-14 Juni 1997.

Rajalakshmi, D., Narasimhan, S. 1996. Food Antioxidants: Sources and Methods of Evaluation dalam D.L. Madhavi: Food Antioxidant, Technological, Toxilogical and Health Perspectives. Marcel Dekker Inc., Hongkong: 76-77.

Rajapakse, N., Mendis, E., Kyo Jung, W., Young Je-J., Kwon Kim, S. 2005. Purification of a radical scavenging peptide from fermented mussel sauce and its antioxidant properties. *Food Researcr International*.Vol 38 (2): 175-182.

Ramchandran, L., Shah, N.P. 2008. Proteolytic Profiles and Angiotensin-I Converting Enzyme and  $\alpha$ -Glucosidase Inhibitory Activities of Selected Lactic Acid Bacteria. *Journal of Food Science*. Vol. 73 92): 75-81.

Rao, Ch.V., Verma, A.R., Vijayakumar, M., Rastogi, S. 2008. Gastroprotective effect of standardized extract of *Ficus glomerata Roxb* fruit on experimental gastric ulcers in rats. *Journal of Ethnopharmacology*. 115 :323–326.

Rhaman, N.N., Khan, M., Hasan, R. 1994. Bioactive components from *Ficus glomerata Roxb*.*Pure Appl Chem* 68:2287–2290.

Rodriguez, L.R., Bleckwedel, J., Ortiz, M. E., Pescuma, P., Mozzi, F. 2009. *Lactic Acid bacteria* dalam Wittmann, C., Liao, J.C. 2016. Industrial Biotechnology: Microorganisms. John Wiley and Sons, Inc.

Rotar, A, M., Vodnar, D. C., Bunghez, F., Catunescu, G. M., Pop, C. R., Jimborean, M., Semeniuc, C.A. 2015. Effect of Goji Berries and Honey on Lactic Acid Bacteria Viability and Shelf Life Stability of Yoghurt. Not Bot Horti Agrobo, Vol 43 (1) 196-203.

Ross, G.R., Gusils, C., Gonzalez, S.N. 2008. Microencapsulation of probiotic strainsfor swine feeding. *Biological and Pharmaceutical Bulletin*, Vol 31 (11), 2121–212



**POTENSI YOGURT YANG DIINKLUSI DENGAN EKSRTAK ARA (*Ficus glomerata Roxb*) SEBAGAI SUMBER ANTIOKSIDAN DAN ANGIOTENSIN-I CONVERTING ENZYME INHIBITOR**

BAIQ RANI DEWI WULANDANI, Prof.Dr. Endang Sutriswati Rahayu; Prof. Dr. Y. Marsono; Dr. Ir. Tyas Utami, MSc.

Universitas Gadjah Mada, 2017 | Diunduh dari <http://etd.repository.ugm.ac.id/>

Salminen, S., A.V, Wright., A, Auwehand., 2004. Lactic Acid Bacteria : Microbiology and Functional Aspect 3<sup>th</sup> Edition, Revised and Expanded . Marcel Dekker, Inc., New York.

Saripah, H. 1983. Dasar-Dasar Pengawetan. Departemen P dan K , Jakarta.

Savijoki, K., Hanne, I., Pekka, V. 2006. Proteolitic System of lactic Acid Bacteria. *Applied Microbiology Biotechnology*. 71 : 394-406.

Shah, N. P. 2007. Functional cultures and health benefits. *International Dairy Journal*. 17:1262-1277, Elsevier Inc, USA

Shah, N.P. 2000. Effect of milk-derived bioactives: an overview. *British Journal of Nutrition*, 84(Suppl. 1), 3-10.

Shahani, K.M., Chandan, R.C. 1979. Nutritional and Healthful Aspect of Cultured and Cultur-Containing Dairy Foods.. *J. Dairy Sci* 62: 1685-1694.

Shahidi, F. 2005. Natural Antioxidants, Chemistry, Health Effect and Applications. AOCS Press, Champaign, Illinois: 25-63.

Shalaby, S.M., Zakora, M., Otte, J. 2006. Performance of two commonly used angiotensin-converting enzyme inhibition assays using FA-PGG and HHL as substrates. *J Dairy Res* 73:178-186.

Shimamura, S., Abe, F., Ishibashi, N., Miyakawa, H., Yaeshima, T., Araya, T., Tomita, M. 1992. Relationship between oxygen sensitivity and oxygen metabolism of *Bifidobacterium* species. *Journal of Dairy Science*, 75: 3296-3306.

Shinmoto, H., Dasako, S., Nakajima, I. 1992. Antioxidant activity of bovine lactoferrine on iron/ascorbate induced lipid peroxidation. *Journal of Bioscience, Biotechnology, and Biochemistry*. 56: 2079-2080.

Shivasharanappa, K., Umeash, M. K., Londonkar, R. 2013. Phytochemical Screening and Antimicrobial Activities of *Ficus glomerata Roxb Roxb* Fruit Extracts. *International Journal of Pharmacy and Pharmaceutical Sciences*. Vol 5, Suppl 4 : 372-375.

Shori, A.B., Baba, A.S. 2013. Antioxidant Activity and Inhibition of Key Enzymes Linked to Type-2 Diabetes and Hypertension by Azadirachta Indica-Yogurt. *Journal of Saudi Chemical Society* .,17: 295–301.

Singh, D., Singh, B., Goel, R.K. 2011. Traditional uses, phytochemistry and pharmacology of *Ficus religiosa*: A review. *Journal of Ethnopharmacology* 134 (2011) 565–583.



Skeggs, L.T., Khan, J.R., Shumway, N.P. 1956. The preparation and function of the hypertension-converting enzyme. *Journal of Experimental Medicine*, 103 : 295-299,

Slattery L., J, O'Callaghan ., G.F, Fitzgerald., T, Beresford T., R.P, Ross., 2010. Invited review: *Lactobacillus helveticus* a thermophilic dairy starter related to gut bacteria. *J. Dairy Sci.* 93: 4435–4454. [PubMed].

Suetsuna, K., Maekawa, K., Jiun-Rong, C. 2004. Antihypertensive effects of Undaria pinnatifida(wakame) peptide on blood pressure in spontaneously hypertensive rats. *Journal of Nutritional Biochemistry*. 15: 267–272.

Sumi, S.A., Siraj, Md.A., Hossain, A., Mia,Md.S., Afrin, S., Rahman,Md. M. 2016.Investigation of the Key PharmacologicalActivities of Ficus racemosa and Analysis of Its Major BioactivePolyphenols by HPLC-DAD. Hindawi Publishing CorporationEvidence-Based Complementary and Alternative MedicineVolume 2016, Article ID 3874516, 9 pages<http://dx.doi.org/10.1155/2016/3874516>

Sun-Waterhouse, D., Zhou, J., Wadhwa, S.S. 2013. Drinking yoghurts with berry polyphenols added before and after fermentation. *Food Control*32 (2013): 450-460.

Sutherland, J.B., Crawford, D.L., Pometto, A.L. 1983. Applied and Environmental Microbiology. *Canadian Journal of Microbiology*, 29: 1253-1257.

Symonowicz M, Kolanek M. 2012. Flavonoids and their properties to form chelate complexes. *Biotechnol Food Sci* ;76 : 35-41.

Tamine A.Y. and Robinson R.K. 2000. Yogurt: science and technology. (pp 1-9)2nd Ed. Combridgde : Woodhead Publishing Ltd.

Taskeen, A., Naeem, I., Mubeen, H., Mehmood, T. 2009.Reverse Phase High Performance Liquid Chromatographic analysis of flavonoids in two *Ficus* species.*New York Science Journal*, 2009, 2(5), ISSN 1554-0200.

Thomas, T.D., Pritchard, G.G. 1987. Proteolytic enzymes from dairy starter cultures. Fed. Eur. Microbiol. Soc.Microbiol. Rev. 46: 245.

Toit, R.D., Volsteedt, Y., Apostolides, Z. 2001. Comparison of the antioxidant content of fruits, vegetables and teas measured as vitamin C equivalents. *Toxicology*, Vol 166 (1-2): 63-69

Tsakalidou, E., Anastasiou, R., Vandenberghe,I., Van Beeumen, J., Kalantzopoulos, G. 1999. Cell wall bound proteinase of *Lactobacillus delbrueckii* subsp. *lactis* ACA-DC 178: Characterization and specificity for  $\beta$ -casein. *Applied and environmental microbiology*. Vol. 65. No.5: 2035-2040.



Tsutsumi, Y., Shimada, A., Miyano, A., Nishida, T., Mitsunaga, T. 1997. *In vitro* screening of angiotensin I-converting enzyme inhibitors from Japanese cedar (*Crptomera japonica*). *J Wood Sci.* 44(6) : 463-468.

Tzin, V., Galili, G. 2010. The Biosynthetic Pathways for Shikimate and Aromatic Amino Acids in *Arabidopsis thaliana*. *Not Bot Horti Agrobo*, Vol 43(1):196-203.

Unal., Akalin, A. 2012. Antioxidant and angiotensin-converting enzyme inhibitory activity of yoghurt fortified with sodiumcalcium caseinate or whey protein concentrate. *Journal of Dairy Science and Technology*. 92: 627-639.

Vasiljevic, T., Shah, N. P. 2007. Fermented milk—health benefits beyond probiotic effect. In: Hui, Y.H., (Ed.) Nutraceutical and functional foods. Wiley, New York (In press).

Vedamuthu, E. R. 1982. Fermented milks. In A. H. Rose (Ed.), Economic microbiology: Fermented foods (pp. 199-225). London: Academic Press.

Verma, A.R., Vijayakumar, M., Rao, C.V., Mathela, C.S. 2010. In vitro and in vivo antioxidant properties and DNA damage protective activity of green fruit of *Ficus glomerata Roxb*. *Food and Chemical Toxicology* .48 :704–709.

Vermerris, W., Nicholson, R. 2006. Phenolic Compound. Netherland. Springer. p 88-90.

Virtanen, T., A. Pihlanto, S. Akkanen, and H. Korhonen. 2006. Development of antioxidant activity in milk whey during fermentation with lactic acid bacteria. *Journal of Applied Microbiology*, 102:106–115.

Vuyst, L.D., Vandamme, E.J. 1994. Bacteriocins of Lactic Acid Bacteria. *Food Research International*, 27 : 09-410.

Wagner H, Elbl G, Lotter H, Guinea M 1991. Evaluation of natural products as inhibitors of angiotensin I- converting enzyme (ACE). *Pharm Pharmacol Lett* 1 : 15-18.

Walker,L. 2007. Antihypertensive drugs. Antihypertensive drugs  
[http://www.drexelmed.edu/documents/pharmacology\\_physiology/lectures/nov-20-07.pdf](http://www.drexelmed.edu/documents/pharmacology_physiology/lectures/nov-20-07.pdf).

Wang W., Mejia D., Gonzalez E., 2005. A New Frontier in Soy Bioactive Peptides that May Prevent Age-related Chronic Diseases. *Comprehensive Reviews in Food Science and Food Safety*, 4: 63–78.



Weerathilake, W.A.D.V. , Rasika, D.M.D., Ruwanmali, J.K.U., Munasinghe, M.A.D.D. 2014

The evolution, processing, varieties and health benefits of yogurt. *International Journal of Scientific and research Publication*. Vol 4(4): 1-10.

Wikandari , P.R., Suparmo, Marsono, Y., Rahayu, E.S. 2012. Potensi bakteri asam laktat yang diisolasi dari Bekasam sebagai penghasil *Angiotensin Coverting Enzyme Inhibitor* pada fermentasi “bekasam –like” product. *Agritech*, 32: 3.

Wikandari, P. R. 2011. Potensi bakteri asam laktat *indigenous* sebagai penghasil *angiotensin I coverting enzyme* inhibitor pada fermentasi bekasam. *Disertasi*. Fakultas Teknologi Pertanian, Universitas Gadjah Mada.

Wikandari, P.R., Suparmo., Marsono, Y., Rahayu, E.S. 2012. Karakterisasi Bakteri Asam Laktat Proteolitik pada Bekasam. *Jurnal Natur Indonesia*. Vol 14 (2): 120-125

Whittier, E.O., Webb, B.H. 1970. By Product Milk. Connecticut: The AVI Publishing Company

Wojdylo, A., Oszmiannski, J., Czemerys. 2007. Antioxidant activity and phenolic compounds in 32 selected herbs. *Jornal of Food Chemistry*, 105: 940-949.

Wootton-Beard, P. C., Ryan, L. 2011. Improving public health?: The role of antioxidant-rich fruit and vegetable beverages. *Journal of Food Research International* 44 (10): 3135-3148.

Yamamoto, N., 1998. Antihypertensive Peptides Derived from Food Proteins. *Biopolimers*. 43: 129-134.

Yamamoto, N., Akino, A., Takano, T. 1994. Antihypertensive Effect of The peptides Derived From casein by extracellular Proteinase of *L.helveticus* CP 790. *Journal of Dairy Science*. 77 :917-922.

Yamamoto, N., Takano, T, 1999. Antihypertensive peptides derived from milk proteins. *Nahrung*, 43: 159-164.

Yamamoto, N., Masahiro, E., Seiichi, M. 2003. Biogenic Peptides and Their Potential Use. *Current Pharmaceutical design*. 9 :1345-1355.

Yilmaz, Y., Toledo, R.T. 2004. Major flavonoids in grape seeds and skins: Antioxidant capacity of catechin, epicatechin, and gallic acid. *Journal of Agricultural and Food Chemistry*, 52: 255-260.

Zainoldin, K.H., Baba, A.S. 2009. The Effect of *Hylocereus polyrhizus* and *Hylocereus undatus* on Physicochemical,Proteolysis, and Antioxidant Activity in Yogurt.



UNIVERSITAS  
GADJAH MADA

**POTENSI YOGURT YANG DIINKLUSI DENGAN EKSRTAK ARA (*Ficus glomerata Roxb*) SEBAGAI  
SUMBER ANTIOKSIDAN**

**DAN ANGIOTENSIN-I CONVERTING ENZYME INHIBITOR**

BAIQ RANI DEWI WULANDANI, Prof.Dr. Endang Sutriswati Rahayu; Prof. Dr. Y. Marsono; Dr. Ir. Tyas Utami, MSc.

Universitas Gadjah Mada, 2017 | Diunduh dari <http://etd.repository.ugm.ac.id/>

*International Journal of Biological, Biomolecular, Agricultural, Food and Biotechnological Engineering*, 3(12): 585-590.

Zhu, L.J., Chen, J., Tang. X.Y., Xiong, Y.L. 2008. Reducing, radical scavenging, and chelation properties of invitro digests of alcalase-treated zein hydrolysates. *Journal of Agricultural and Food Chemistry*, 56 :3884–3884.