

## BIBLIOGRAPHY

- AOAC. 1999. *AOAC Official Method 962.12. Acidity (Titratable) of Wine*. Official Method of Analysis, 16<sup>th</sup> ed. Arlington: Virginia.
- Bali, A. and Gaur, P.. 2011. A novel method for spectrophotometric determination of pregabalin in pure form and in capsules. *Chem. Cent. J* 5:59.
- Bearson, S., Bearson, B., and Foster, J.W. 1997. Acid stress response in enterobacteria. *FEMS Mic. Letters* 147(2): 173-180.
- Bentzen, B. J. and Grunnet, M. 2011. Central and Peripheral GABAA Receptor Regulation of the Heart Rate Depends on the Conscious State of the Animal. *Advances in Pharmacological Sciences*: 1-10.
- Bhat, R., Axtell, R., Mitra, A., Miranda, M., Lock, C., Tsien, R.W., and Steinman, L. 2010. Inhibitory role for GABA in autoimmune inflammation. *Proc Natl Acad Sci USA* 107:2580–2585.
- Bloom, F.E. and Iversen, L.L. 1971. Localizing 3H-GABA in nerve terminals of rat cerebral cortex by electron microscopic autoradiography. *Nature* 229 (5287): 628–630. Cited in Nuss, P. 2015. Anxiety disorders and GABA neurotransmission: a disturbance of modulation. *Neuropsychiatric Disease and Treatment* 11: 165–175.
- Bovo, F., Franco, L. T., Rosim, R. E., & Oliveira, C. A. F. 2014. Ability of a *Lactobacillus rhamnosus* strain cultured in milk whey based medium to bind aflatoxin B1. *Food Science and Technology (Campinas)* 34(3): 566-570.
- Cetin-Karaca, H. 2011. Evaluation of natural antimicrobial phenolic compounds against foodborne pathogens. *Master Thesis*. College of Agriculture. Univ. of Kentucky. Lexington.
- Chaikaew, S., Baipong, S., Sone, T., Kanpiengjail, A., Chai, N.C., Asano, K., and Khanongnuch C. 2017. Diversity of Lactic Acid Bacteria from Miang, a Traditional Fermented Tea Leaf in Northern Thailand and their Tannin-tolerant Ability in Tea Extract. *Journal of Microbiology* 55: 720-729

- Cho, Y.R., Chang, J.Y. and Chang, H.C. 2007. Production of Gamma-Aminobutyric Acid (GABA) by *Lactobacillus Buchneri* Isolated from Kimchi and its Neuroprotective Effect on Neuronal Cells. *J. Microbiol. Biotechnol* 17: 104-109.
- Cotter, P.D. and Hill, C. 2003. Surviving the Acid Test: Responses of Gram-Positive Bacteria to Low pH. *Microbiol Mol Biol Rev* 67(3): 429–453.
- Cotter, P.D., Gahan, C.G., and Hill, C. 2001. A glutamate decarboxylase system protects *Listeria monocytogenes* in gastric fluid. *Mol. Microbiology* 40(2): 465-475.
- Dhakal, R., Bajpaj, V.K., and Baek, K.H. 2012. Production of gaba ( $\gamma$  - Aminobutyric acid) by microorganisms: a review. *Braz J Microbiol* 43(4): 1230-1241.
- Diana, M., Tres, A., Quilez, J., Llombart, M., and Rafecas, M. 2014. Spanish cheese screening and selection of lactic acid bacteria with high gamma-aminobutyric acid production. *LWT - Food Science and Technology* 56: 351-355.
- Felske, A., Engelen, B., Nubel, U. and Backhaus, H. 1996. Direct Ribosomal Isolation from Soil to Extract Bacterial rRNA for Community Analysis. *Appl. Environ. Microbiol* 62: 4162-4167.
- Gassem, M.A. 2017. Microbiological and chemical quality of a traditional salted-fermented fish (Hout-Kasef) product of Jazan Region, Saudi Arabia. *Saudi J of Bio Sci.* <http://dx.doi.org/10.1016/j.sjbs.2017.04.003>.
- Georgieva, R., Yocheva, L., Tserovska, L., Zhelezova, G., Stefanova, N., Atanasova, A., Danguleva, A., Ivanova, G., Karapetkov, N., Rumyan, N., and Karaivanova, E. 2015. Antimicrobial activity and antibiotic susceptibility of *Lactobacillus* and *Bifidobacterium* spp. intended for use as starter and probiotic cultures. *Biotechnol Biotechnol Equip* 29(1): 84–91.
- Giannuzzi, L. and Zaritzky, N.E. 1996. Effect of Ascorbic Acid in Comparison to Citric and Lactic Acid on *Listeria monocytogenes* Inhibition at Refrigeration Temperatures. *Lebensm.-Wiss. u.-Technol.* 29: 278–285.

- Honma, T., SUDO, A., Miyagawa, M., Sato, M., and Hasegawa, H. 1983. Changes in free amino acid contents of rat brain induced by exposure to methyl bromide. *Toxicology Letters* 15: 317-321.
- Hansen, E.B. 2004. *Microorganisms*. Cited in Hui, Y. H., Meunier-Goddik, L., Josephsen, J., Nip, W.K., and Stanfield, P.S. 2004. *Handbook of Food and Beverage Fermentation Technology*. CRC Press.
- Hayakawa, K., Ueno, Y., Kawamura, S., Taniguchi, R., and Oda, K. 1997. Production of  $\gamma$ -Aminobutyric acid by lactic acid bacteria. *Seibutsu-kogaku Kaishi* 75: 239-244.
- Hellier, J.L. 2014. *The Brain, the Nervous System, and Their Diseases*. ABC-CLIO: California.
- Higuchi, T., Hayashi, H., and Abe, K. 1997. Exchange of glutamate and  $\gamma$ -aminobutyrate in a *Lactobacillus* strain. *J of Bacteriology* 179(10): 3362–3364.
- Hwanhlem, N., Watthanasakphuban, N., Riebroy, S., Benjakul, S., H-Kittikun, A. and Maneerat, S. 2010. Probiotic Lactic Acid Bacteria from Kung-Som: Isolation, Screening, Inhibition of Pathogenic Bacteria. *Int. J. Food Sci. Technol* 45: 594-601.
- Inoue, K., Shirai, T., Ochiai, H., Kasao, M., Hayakawa, K., Kimura, M., and Sansawa, H. 2003. Blood-pressure-lowering effect of a novel fermented milk containing  $\gamma$ -aminobutyric acid (GABA) in mild hypertensives. *Euro Clin Nutr* 57: 490–495.
- Kaufman, D. L., Houser, C. R., and Tobin, A.J. 1991. Two forms of the GABA synthetic enzyme glutamate decarboxylase have distinct intraneuronal distributions and cofactor interactions. *J. Neurochem* 56: 720–723. Cited in Siegel G.J., Agranoff B.W., Albers R.W., Fisher, S.K., and Uhler, M.D. 1999. *Basic Neurochemistry*. 6<sup>th</sup> ed. Lippincott-Raven: Philadelphia.
- Kim, S.S., Oh, S.H., Jeong, M.H., Cho, S.C., Kook, M.C., Lee, S.H., Pyun, Y.R., and Lee, H.Y. 2010. Sleep-Inductive Effect of GABA on the Fermentation of Mono Sodium Glutamate (MSG). *Korean J. of Food Sc. and Tech* 42: 142-146.

- Kinnersley, A.M. and Turano, F.J. 2000. Gamma aminobutyric acid (GABA) and plant responses to stress. *Crit. Rev. Plant Sci* 19: 479–509. Cited in Bouche, N. and Fromm., H. 2004. GABA in plants: just a metabolite. *Trends Plant Sci* 4(3): 110-115.
- Kook, M.C. and Cho, S.C. 2013. Production of GABA (gamma amino butyric acid) by Lactic Acid Bacteria. *Korean J. Food Sci. An* 33(3): 377-389.
- Kopermsub, P. and Yunchalard, S. 2010. Identification of Lactic Acid Bacteria Associated with the Production of plaasom, a Traditional Fermented Fish Product of Thailand. *Int J of Food Mic* 138: 200-204.
- Lhomme, E., Lattanzi A., Dousset, X., Minervini, F., Angelis, M.D., Lacaze, G., Onno, B., and Gobetti, M. 2015. Lactic acid bacterium and yeast microbiotas of sixteen French traditional sourdoughs. *Int. J. of F. Microbiology* 215: 161–170.
- Lim, E-S. 2016. Inhibitory effect of bacteriocin-producing lactic acid bacteria against histamine-forming bacteria isolated from *Myeolchi-jeot*. *Fish. and Aquatic Sci.* 19: 42. DOI 10.1186/s41240-016-0040-x.
- Malezkadeh, P., Nejad, F.K., Hatamia, A.A., and Mehr, R.S. 2017. Impact of Postharvest Exogenous  $\gamma$ -Aminobutyric Acid Treatment on Cucumber Fruit in Response to Chilling Tolerance. *Physiol Mol Biol Plants* 23: 827–836.
- Martinez, B., Rodriguez, A., and Suarez, E. 2016. *Antimicrobial Peptides Produced by Bacteria: The Bacteriocins*. Cited in Villa, T.G. and Vinas, M. 2016. *New Weapons to Control Bacterial Growth*. Springer: New York.
- Matsuyama, A., Yoshimura, K., Shimizu, C., Murano, Y., Takeuchi, H., and Ishimoto, M. 2009. Characterization of glutamate decarboxylase mediating  $\gamma$ -amino butyric acid increase in the early germination stage of soybean (*Glycine max* [L.] Merr.). *J. Biosci. and Bioeng* 107(5): 538-543.
- Mokoena, M.P. 2017. Lactic Acid Bacteria and Their Bacteriocins: Classification, Biosynthesis and Applications against Uropathogens: A Mini-Review. *Molecules*. 22: 1255-1266.

- Nguyen, D.T.L., Cnockaert, M., Van Hoorde, K., De Brandt, E., Snauwaert, I., Snauwaert, C., De Vuyst, L., Le, B.T., and Vandamme P. 2013. *Lactobacillus porciniae* sp. nov., isolated from traditional Vietnamese *nem chua*. *Int J Syst Evol Microbiol* 63(5): 1754-1759.
- Nishimura, M., Yoshida, S., Haramoto, M., Mizuno, H., Fukuda, T., Kagami-Katsuyama, H., Tanaka, A., Ohkawara, T., Sato, Y., and Nishihira, J. 2016. Effects of white rice containing enriched gamma-aminobutyric acid on blood pressure. *J of Trad and Compl Med* 6: 66-71.
- Nuss, P. 2015. Anxiety disorders and GABA neurotransmission: a disturbance of modulation. *Neuropsychiatric Disease and Treatment* 11: 165–175.
- Odman, P., Wellborn, W.B., and Bommarius, A.S. 2004. An enzymatic process to  $\alpha$ -ketoglutarate from L-glutamate: the coupled system L-glutamate dehydrogenase/NADH oxidase. *Tetrahedron: Asymmetry* 15: 2933–2937.
- Oh, S.H., Moon, Y.H., and Oh, C.H. 2003.  $\gamma$ -Aminobutyric Acid (GABA) Content of Selected Uncooked Foods. *Preventive Nutrition and Food Science* 8(1): 75-78.
- Okada, T., Sugishita, T., Murakami, T., Murai, H., Saikusa, T., Horino, T., Onoda, A., Kajimoto, O., Takahashi, R. and Takahashi, T. 2000. Effect of the defatted rice germ enriched with GABA for sleeplessness, depression, autonomic disorder by oral administration. *J. Jap. Soc. Food Sci* 47: 596-603.
- Olsen, R. W. and DeLorey, T.M. 1999. *GABA Synthesis, Uptake and Release*. Cited in Siegel G.J., Agranoff B.W., Albers R.W., Fisher, S.K., and Uhler, M.D. 1999. *Basic Neurochemistry*. 6<sup>th</sup> ed. Lippincott-Raven: Philadelphia.
- Presser, K.A., Ross, T., and Ratkowsky, D.A. 1998. Modelling the Growth Limits (Growth/No Growth Interface) of *Escherichia coli* as a Function of Temperature, pH, Lactic Acid Concentration, and Water Activity. *Appl. and Environ. Microbio* 64 (5): 1773–1779.
- Ratanaburee, A., Kantachote, D., Charernjiratrakul, W. and Sukhoom, A. 2013. Enhancement of  $\gamma$ -Aminobutyric Acid (GABA) in Nham (Thai Fermented Pork Sausage) using

- Ratanaburee, A., Kantachote, D., Charernjiratrakul, W. and Sukhoom, A. 2013. Selection of  $\gamma$ -aminobutyric acid-producing lactic acid bacteria and their potential as probiotics for use as starter cultures in Thai fermented sausages (Nham). *Int J of Food Sci and Tech* 48(7): 1371-1382.
- Reetz, A., Solimena, M., Matteoli, M., Folli, F., Takei, K., and De Camilli, P. 1991. GABA and pancreatic beta-cells: colocalization of glutamic acid decarboxylase (GAD) and GABA with synaptic-like microvesicles suggests their role in GABA storage and secretion. *EMBO J* 10:1275–1284. Cited in Fiorina, P. 2013. GABAergic system in  $\beta$ -cells: from autoimmunity target to regeneration tool. *Diabetes* 62(11): 3674-3676.
- Roberts, E. 1980.  *$\gamma$ -Aminobutyric acid (GABA): a major inhibitory transmitter in the vertebrate nervous system*. Cited in Levi-Montalcini, R. 1980. *Nerve Cells, Transmitters and Behaviour*. Pontifical Academy of Sciences: Rome.
- Rode, T.M., Møretrø, T., Langsrud, S., Langsrud, Ø., Vogt, G., and Holck, A. 2010. Responses of *Staphylococcus aureus* exposed to HCl and organic acid stress. *Can. J. Microbiol.* 56: 777–792.
- Sari, M., Suryanto, D., and Yurnaliza. 2018. Antimicrobial activity of lactic acid bacteria isolated from bekasam against *Staphylococcus aureus* ATCC 25923, *Escherichia coli* ATCC 25922, and *Salmonella sp.* *IOP Conf. Ser.: Earth Environ. Sci.* 130 012011.
- Siragusa, S., Angelis, M.D., Cagno, R.D., Rizello, C.G., Coda R., and Gobbetti, M. 2007. Synthesis of  $\gamma$ -Aminobutyric Acid by Lactic Acid Bacteria Isolated from a Variety of Italian Cheeses. *App. Env. Micr* 73(22): 7283–7290.
- Sissons, C. H., Perinpanayagam, H. E., Hancock, E. M., and Cutress, T. W. 1990. pH regulation of urease levels in *Streptococcus salivarius*. *J. Dent. Res* 69:1131–1137. Cited in Cotter, P.D. and Hill, C. 2003. Surviving the Acid Test: Responses of Gram-Positive Bacteria to Low pH. *Microbiol Mol Biol Rev* 67(3): 429–453.

- Soltani, N., Qiu, H., Aleksic, M., Glinka, Y., Zhao, F., Liu, R., Li, Y., Zhang, N., Chakrabarti, R., Ng, T., Jin, T., Zhang, H., Lu, W.Y., Feng, Z.P., Prud'homme, G.J., and Wang Q. 2011. GABA exerts protective and regenerative effects on islet beta cells and reverses diabetes. *PNAS* 108(28): 11692–11697.
- Sanchart, C., Rattanaporn, O., Haltrich, D. Phukpattaranont, P., and Maneerat, S. 2017. *Lactobacillus futsaii* CS3, a new GABA-Producing Strain Isolated from Thai Fermented Shrimp (Kung-Som). *Indian J Microbiol* 57(2): 211–217.
- Sanchart, C., Rattanaporn, O., Haltrich, D. Phukpattaranont, P., and Maneerat, S. 2016. Technological and safety properties of newly isolated GABA-producing *Lactobacillus futsaii* strains. *App Microbiol* 121: 734-745.
- Sanlier, N., Gökçen, B.B., and Sezgin, A.C. 2017. Health benefits of fermented foods. *Crit Rev Food Sci Nutr* 25: 1-22.
- Smid, E.J. and Kleerebezem, M. 2014. Production of Aroma Compounds in Lactic Fermentations. *Annu. Rev. Food Sci. Technol* 5: 313–326.
- Shelp, B.J., Bown, A.W., and McLean, M.D. 1999. Metabolism and functions of gamma aminobutyric acid. *Trends Plant Sci* 4: 446–452. Cited in Bouche, N. and Fromm., H. 2004. GABA in plants: just a metabolite. *Trends Plant Sci* 4(3): 110-115.
- Snedden, W.A. and Fromm, H. (1999) Regulation of the g-aminobutyrate-synthesizing enzyme, glutamate decarboxylase, by calcium–calmodulin: a mechanism for rapid activation in response to stress. In *Plant Responses to Environmental Stresses: From Phytohormones to Genome Reorganization* (Lerner, H.R., ed.), pp. 549–574, Marcel Dekker. Cited in Bouche, N. and Fromm., H. 2004. GABA in plants: just a metabolite. *Trends Plant Sci* 4(3): 110-115.
- Song, H.Y. and Yu, R.C. 2017. Optimization of culture conditions for gamma-aminobutyric acid production in fermented adzuki bean milk. *Journal of Food and Drug Analysis*. <http://dx.doi.org/10.1016/j.jfda.2016.11.024>
- Tamang, J.P., Shin, D.H., Jung, S.J., and Chae, S.W. 2016. Functional Properties of Microorganisms in Fermented Foods. *Front Microbiol* 7: 578.



- Tanusupawat, S. and Komagata, K. 2001. Lactic Acid Bacteria in Fermented Foods in Southeast Asia. Cited in Nga, B.H., Tan, H-M., and Suzuki, K-i. 2001. Microbial Diversity in Asia: Technology and Prospects. World Scientific: Singapore
- Thongsanit, J., Tanikawa, M., Yano, S., Tachiki, T., and Wakayama, M. 2009. Identification of Glutaminase-producing Lactic Acid Bacteria Isolated from Nham, a Traditional Thai Fermented Food and Characterisation of Glutaminase activity of Isolated *Weissella cibaria*. *Annals of Microbiology* 59:715-720.
- Tian, J., Lu, Y., Zhang, H., Chau, C.H., Dang, H.N., and Kaufman, D.L. 2004. Gamma-aminobutyric acid inhibits T cell autoimmunity and the development of inflammatory responses in a mouse type 1 diabetes model. *J Immunol* 173:5298–5304.
- Tsuda, H., Kubota, K., Matsumoto, T., and Ishimi, Y. 2012. Isolation and Identification of Lactic Acid Bacteria in Traditional Fermented Sushi, Funazushi, from Japan. *Food Sci. Technol. Res.* 18 (1): 77 – 82.
- Tyl, C. and Sadler, G. D. 2017. *pH and titrable acidity*. Cited in Nielsein, S.S. 2017. *Food Analysis*. Springer: Berlin.
- Ueno, H. 2000. Enzymatic and Structural Aspects on Glutamate Decarboxylase. *J. Mol. Catal* 10:67–79.
- Wessels, S., Axelssons, L., Hansen, E.B., Vuyst, L.D., Laulund, S., Lahteenmaki, L., Lindgren, S., Mollet, B., Salminen, S., and Wright, A.v. 2004. The Lactic acid bacteria, the food chain and the regulation. *Tre. in Food Sci. and Tech.* 15: 498 - 500.
- Winkelman, J.W., Buxton, O.M., Jensen, J.E., Benson, K.L., O'Connor, S.P., Wang, W., and Renshaw, P.F. 2008. Reduced Brain GABA in Primary Insomnia: Preliminary Data from 4T Proton Magnetic Resonance Spectroscopy (1H-MRS). *Sleep* 31(11): 1499–1506.
- Woraharn, S., Lailerd, N., Sivamaruthi, B.S., Wangcharoen, W., Sirisattha, S., and Chaiyasut, C. 2017. Screening and Kinetics of Glutaminase and Glutamate Decarboxylase Producing Lactic Acid Bacteria from Fermented Thai Foods. *Food Sci. Technol* 34: 793-799.



Yongsmith, B. and Malaphan W. 2016. *Traditional Fermented Foods in Thailand*. Cited in Kristbergsson, K. and Oliveira, J. 2016. *Traditional Foods General and Consumer Aspects*. Springer: New York.

FDA. 2015. GRAS Notice for gamma-Aminobutyric Acid (GABA).  
<https://www.fda.gov/downloads/Food/GRAS/ucm495917.pdf>. Accessed 11 July 2018

JIRCAS. 2015. The Traditional Fermented Foods of Thailand.  
<https://www.jircas.affrc.go.jp/DB/DB11/>. Accessed 26 June 2018.

JNHNS (Japan National Health and Nutrition Examination Survey). 2005.  
[www0.nih.go.jp/eiken/english/research/project\\_nhns.html](http://www0.nih.go.jp/eiken/english/research/project_nhns.html). Cited in FDA. 2015. GRAS  
Notice for gamma-Aminobutyric Acid (GABA).  
<https://www.fda.gov/downloads/Food/GRAS/ucm495917.pdf>. Accessed 11 July 2018

Olsen R. W. 2017. GABA. [https://acnp.org/wp-content/uploads/2017/11/CH12\\_159-168.pdf](https://acnp.org/wp-content/uploads/2017/11/CH12_159-168.pdf).  
Accessed on 12 June 2018.