

## References

- Ahn Y, Lee UJ, Lee YJ, Lipuma JJ, Hussong D, Marasa B, Cerniglia CE (2019). Oligotrophic Media Compared with a Tryptic Soy Agar or Broth for the Recovery of Burkholderia cepacia Complex from Different Storage Temperatures and Culture Conditions. *J. Microbiol. Biotechnol.* 2019;29:1495-1505. <https://doi.org/10.4014/jmb.1906.06024>
- Alatab et al. (2019). The global, regional, and national burden of inflammatory bowel disease in 195 countries and territories, 1990–2017: a systematic analysis for the Global Burden of Disease Study 2017. *The Lancet Gastroenterology & Hepatology*, (), S2468125319303334–. doi:10.1016/S2468-1253(19)30333-4
- Alp, D., & Kuleaşan, H. (2019). Adhesion mechanisms of lactic acid bacteria: conventional and novel approaches for testing. *World journal of microbiology & biotechnology*, 35(10), 156. <https://doi.org/10.1007/s11274-019-2730-x>
- Alp, D., & Kuleaşan, H. (2020). Determination of competition and adhesion abilities of lactic acid bacteria against gut pathogens in a whole-tissue model. *Bioscience of microbiota, food and health*, 39(4), 250–258. <https://doi.org/10.12938/bmfh.2020-033>
- An, Y. H., & Friedman, R. J. (1998). Concise review of mechanisms of bacterial adhesion to biomaterial surfaces. *Journal of biomedical materials research*, 43(3), 338–348. [https://doi.org/10.1002/\(sici\)1097-4636\(199823\)43:3<338::aid-jbm16>3.0.co;2-b](https://doi.org/10.1002/(sici)1097-4636(199823)43:3<338::aid-jbm16>3.0.co;2-b)
- Andreevskaya, M., Jääskeläinen, E., Johansson, P., Ylinen, A., Paulin, L., Björkroth, J., & Auvinen, P. (2018). Food Spoilage-Associated *Leuconostoc*, *Lactococcus*, and *Lactobacillus* Species Display Different Survival Strategies in Response to Competition. *Applied and environmental microbiology*, 84(13), e00554-18. <https://doi.org/10.1128/AEM.00554-18>
- Belguesmia, Y., Bendjeddou, K., Kempf, I., Boukherroub, R., & Drider, D. (2020). Heterologous Biosynthesis of Five New Class II Bacteriocins From *Lactobacillus paracasei* CNCM I-5369 With Antagonistic Activity Against Pathogenic *Escherichia coli* Strains. *Frontiers in microbiology*, 11, 1198. <https://doi.org/10.3389/fmicb.2020.01198>

- Bourgeois, A. L., Wierzba, T. F., & Walker, R. I. (2016). Status of Vaccine Research and development for enterotoxigenic escherichia coli. *Vaccine*, 34(26), 2880–2886. <https://doi.org/10.1016/j.vaccine.2016.02.076>
- Burgain, J., Scher, J., Francius, G., Borges, F., Corgneau, M., Revol-Junelles, A. M., Cailliez-Grimal, C., & Gaiani, C. (2014). Lactic acid bacteria in dairy food: surface characterization and interactions with food matrix components. *Advances in colloid and interface science*, 213, 21–35. <https://doi.org/10.1016/j.cis.2014.09.005>
- Butt, S., Saleh, M., & Gagnon, J. (2020). Impact of the Escherichia coli Heat-Stable Enterotoxin b (STb) on Gut Health and Function. *Toxins*, 12(12). <https://doi.org/10.3390/toxins12120760>
- Dowdell, P., Chankhamhaengdecha, S., Panbangred, W., Janvilisri, T., & Aroonual, A. (2020). Probiotic Activity of Enterococcus faecium and Lactococcus lactis Isolated from Thai Fermented Sausages and Their Protective Effect Against Clostridium difficile. *Probiotics and antimicrobial proteins*, 12(2), 641–648. <https://doi.org/10.1007/s12602-019-09536-7>
- Fakhoury, M., Negrulj, R., Mooranian, A., & Al-Salami, H. (2014). Inflammatory bowel disease: clinical aspects and treatments. *Journal of inflammation research*, 7, 113–120. <https://doi.org/10.2147/JIR.S65979>
- Fan, S., Xue, T., Bai, B., Bo, T., & Zhang, J. (2022). Probiotic Properties Including the Antioxidant and Hypoglycemic Ability of Lactic Acid Bacteria from Fermented Grains of Chinese Baijiu. *Foods (Basel, Switzerland)*, 11(21), 3476. <https://doi.org/10.3390/foods11213476>
- FAO/WHO. (2002). Guidelines for the Evaluation of Probiotics in Food. Food and Agriculture Organization of the United Nations/World Health Organization, London, Ontario. [www.who.int/foodsafety/fs\\_management/en/probiotic\\_guidelines.pdf](http://www.who.int/foodsafety/fs_management/en/probiotic_guidelines.pdf)
- Fleckenstein, J. M., & Kuhlmann, F. M. (2019). Enterotoxigenic Escherichia coli Infections. *Current infectious disease reports*, 21(3), 9. <https://doi.org/10.1007/s11908-019-0665-x>

- Fogh, J., Wright, W. C., & Loveless, J. D. (1977). Absence of HeLa cell contamination in 169 cell lines derived from human tumors. *Journal of the National Cancer Institute*, 58(2), 209–214.  
<https://doi.org/10.1093/jnci/58.2.209>
- Galán, J. E. (2021). Salmonella Typhimurium and inflammation: A pathogen-centric affair. *Nature reviews. Microbiology*, 19(11), 716. <https://doi.org/10.1038/s41579-021-00561-4>
- Gareau, M. G., Sherman, P. M., & Walker, W. A. (2010). Probiotics and the gut microbiota in intestinal health and disease. *Nature reviews. Gastroenterology & hepatology*, 7(9), 503–514.  
<https://doi.org/10.1038/nrgastro.2010.117>
- George, F., Daniel, C., Thomas, M., Singer, E., Guilbaud, A., Tessier, F. J., Revol-Junelles, A. M., Borges, F., & Foligné, B. (2018). Occurrence and Dynamism of Lactic Acid Bacteria in Distinct Ecological Niches: A Multifaceted Functional Health Perspective. *Frontiers in microbiology*, 9, 2899.  
<https://doi.org/10.3389/fmicb.2018.02899>
- Gupta, V., & Garg, R. (2009). Probiotics. *Indian journal of medical microbiology*, 27(3), 202–209.  
<https://doi.org/10.4103/0255-0857.53201>
- Granato, D., Perotti, F., Masserey, I., Rouvet, M., Golliard, M., Servin, A., & Brassart, D. (1999). Cell surface-associated lipoteichoic acid acts as an adhesion factor for attachment of *Lactobacillus johnsonii* La1 to human enterocyte-like Caco-2 cells. *Applied and environmental microbiology*, 65(3), 1071–1077. <https://doi.org/10.1128/AEM.65.3.1071-1077.1999>
- Hymes, J. P., Johnson, B. R., Barrangou, R., & Klaenhammer, T. R. (2016). Functional Analysis of an S-Layer-Associated Fibronectin-Binding Protein in *Lactobacillus acidophilus* NCFM. *Applied and environmental microbiology*, 82(9), 2676–2685. <https://doi.org/10.1128/AEM.00024-16>
- Ikeda, Y., Morita, S., & Terada, T. (2017). Cholesterol attenuates cytoprotective effects of phosphatidylcholine against bile salts. *Scientific Reports*, 7(1), 1-13.  
<https://doi.org/10.1038/s41598-017-00476-2>
- Kaminski, K., Syrek, K., Grudzień, J., Obłozą, M., Adamczyk, M., & Sulka, G. D. (2021). Physicochemical Investigation of Biosynthesis of a Protein Coating on Glass That Promotes Mammalian Cell Growth

Using *Lactobacillus rhamnosus* GG Bacteria. *Coatings*, 11(11), 1410.  
<https://doi.org/10.3390/coatings11111410>

Katz J. (2006). The Role of Probiotics in IBD. *Gastroenterology & hepatology*, 2(1), 16–18.

Kerry, R. G., Patra, J. K., Gouda, S., Park, Y., Shin, H. S., & Das, G. (2018). Benefaction of probiotics for human health: A review. *Journal of food and drug analysis*, 26(3), 927–939.  
<https://doi.org/10.1016/j.jfda.2018.01.002>

Khan, A. U., Torelli, A., Wolf, I., & Gretz, N. (2018). AutoCellSeg: Robust automatic colony forming unit (CFU)/cell analysis using adaptive image segmentation and easy-to-use post-editing techniques. *Scientific Reports*, 8(1), 1-10. <https://doi.org/10.1038/s41598-018-24916-9>

Khan, I., Ullah, N., Zha, L., Bai, Y., Khan, A., Zhao, T., Che, T., & Zhang, C. (2019). Alteration of Gut Microbiota in Inflammatory Bowel Disease (IBD): Cause or Consequence? IBD Treatment Targeting the Gut Microbiome. *Pathogens (Basel, Switzerland)*, 8(3), 126.  
<https://doi.org/10.3390/pathogens8030126>

Klaenhammer, T., Altermann, E., Arigoni, F., Bolotin, A., Breidt, F., Broadbent, J., Cano, R., Chaillou, S., Deutscher, J., Gasson, M., van de Guchte, M., Guzzo, J., Hartke, A., Hawkins, T., Hols, P., Hutkins, R., Kleerebezem, M., Kok, J., Kuipers, O., Lubbers, M., ... Siezen, R. (2002). Discovering lactic acid bacteria by genomics. *Antonie van Leeuwenhoek*, 82(1-4), 29–58.  
[https://doi.org/10.1007/978-94-017-2029-8\\_3](https://doi.org/10.1007/978-94-017-2029-8_3)

Kumariya, R., Garsa, A. K., Rajput, Y. S., Sood, S. K., Akhtar, N., & Patel, S. (2019). Bacteriocins: Classification, synthesis, mechanism of action and resistance development in food spoilage causing bacteria. *Microbial pathogenesis*, 128, 171–177.  
<https://doi.org/10.1016/j.micpath.2019.01.002>

Kwun, S. Y., Bae, Y. W., Yoon, J. A., Park, E. H., & Kim, M. D. (2020). Isolation of acid tolerant lactic acid bacteria and evaluation of  $\alpha$ -glucosidase inhibitory activity. *Food science and biotechnology*, 29(8), 1125–1130. <https://doi.org/10.1007/s10068-020-00760-4>

- Lea, T. (2015). Caco-2 Cell Line. In K. Verhoeckx (Eds.) et. al., *The Impact of Food Bioactives on Health: in vitro and ex vivo models*. (pp. 103–111). Springer.
- Lebeer, S., Vanderleyden, J., & De Keersmaecker, S. C. (2010). Host interactions of probiotic bacterial surface molecules: comparison with commensals and pathogens. *Nature reviews. Microbiology*, 8(3), 171–184. <https://doi.org/10.1038/nrmicro2297>
- Li, W., Ren, M., Duo, L., Li, J., Wang, S., Sun, Y., Li, M., Ren, W., Hou, Q., Yu, J., Sun, Z., & Sun, T. (2020). Fermentation Characteristics of *Lactococcus lactis* subsp. *lactis* Isolated From Naturally Fermented Dairy Products and Screening of Potential Starter Isolates. *Frontiers in Microbiology*, 11. <https://doi.org/10.3389/fmicb.2020.01794>
- Lu, X., Li, C., Li, C., Li, P., Fu, E., Xie, Y., & Jin, F. (2017). Heat-Labile Enterotoxin-Induced PERK-CHOP Pathway Activation Causes Intestinal Epithelial Cell Apoptosis. *Frontiers in Cellular and Infection Microbiology*, 7. <https://doi.org/10.3389/fcimb.2017.00244>
- Meng, J., Zhang, QX. & Lu, RR. Identification and analysis of the function of surface layer proteins from three *Lactobacillus* strains. *Ann Microbiol* 68, 207–216 (2018). <https://doi.org/10.1007/s13213-018-1335-1>
- Mercier-Bonin, M., & Chapot-Chartier, P. (2017). Surface Proteins of *Lactococcus lactis*: Bacterial Resources for Muco-adhesion in the Gastrointestinal Tract. *Frontiers in Microbiology*, 8. <https://doi.org/10.3389/fmicb.2017.02247>
- Monteagudo-Mera, A., Rastall, R. A., Gibson, G. R., Charalampopoulos, D., & Chatzifragkou, A. (2019). Adhesion mechanisms mediated by probiotics and prebiotics and their potential impact on human health. *Applied microbiology and biotechnology*, 103(16), 6463–6472. <https://doi.org/10.1007/s00253-019-09978-7>
- Mulaw, G., Tessema, T. S., Muleta, D., & Tesfaye, A. (2019). In Vitro Evaluation of Probiotic Properties of Lactic Acid Bacteria Isolated from Some Traditionally Fermented Ethiopian Food Products. *International Journal of Microbiology*, 2019. <https://doi.org/10.1155/2019/7179514>

- Pérez-Ramos, A., Madi-Moussa, D., Coucheney, F., & Drider, D. (2021). Current Knowledge of the Mode of Action and Immunity Mechanisms of LAB-Bacteriocins. *Microorganisms*, 9(10). <https://doi.org/10.3390/microorganisms9102107>
- Popowska, M., Krawczyk-Balska, A., Ostrowski, R., & Desvaux, M. (2017). Inl from *Listeria monocytogenes* Is Involved in Biofilm Formation and Adhesion to Mucin. *Frontiers in microbiology*, 8, 660. <https://doi.org/10.3389/fmicb.2017.00660>
- Radziwill-Bienkowska, J. M., Robert, V., Drabot, K., Chain, F., Cherbuy, C., Langella, P., Thomas, M., Bardowski, J. K., Mercier-Bonin, M., & Kowalczyk, M. (2017). Contribution of plasmid-encoded peptidase S8 (PrpP) to adhesion and transit in the gut of *Lactococcus lactis* IBB477 strain. *Applied microbiology and biotechnology*, 101(14), 5709–5721. <https://doi.org/10.1007/s00253-017-8334-1>
- Ranjha, M. M. A. N., Shafique, B., Batool, M., Kowalczewski, P. Ł., Shehzad, Q., Usman, M., Manzoor, M. F., et al. (2021). Nutritional and Health Potential of Probiotics: A Review. *Applied Sciences*, 11(23), 11204. MDPI AG. Retrieved from <http://dx.doi.org/10.3390/app112311204>
- Rea, M. C., Clayton, E., O'Connor, P. M., Shanahan, F., Kiely, B., Ross, R. P., & Hill, C. (2007). Antimicrobial activity of lacticin 3,147 against clinical *Clostridium difficile* strains. *Journal of medical microbiology*, 56(Pt 7), 940–946. <https://doi.org/10.1099/jmm.0.47085-0>
- Renschler, M. A., Wyatt, A., Anene, N., Robinson-Hill, R., Pickerill, E. S., Fox, N. E., Griffith, J. A., & McKillip, J. L. (2020). Using nitrous acid-modified de Man, Rogosa, and Sharpe medium to selectively isolate and culture lactic acid bacteria from dairy foods. *Journal of Dairy Science*, 103(2), 1215–1222. <https://doi.org/10.3168/jds.2019-17041>
- Riss, T., Niles, A., Moravec, R., Karassina, N., & Vidugiriene, J. (2019). Cytotoxicity Assays: In Vitro Methods to Measure Dead Cells. In S. Markossian (Eds.) et. al., *Assay Guidance Manual*. Eli Lilly & Company and the National Center for Advancing Translational Sciences.

- Rohde M. (2019). The Gram-Positive Bacterial Cell Wall. *Microbiology spectrum*, 7(3), 10.1128/microbiolspec.GPP3-0044-2018.  
<https://doi.org/10.1128/microbiolspec.GPP3-0044-2018>
- Rooks, M. G., & Garrett, W. S. (2016). Gut microbiota, metabolites and host immunity. *Nature reviews. Immunology*, 16(6), 341–352. <https://doi.org/10.1038/nri.2016.42>
- Ruiz, L., Margolles, A., & Sánchez, B. (2013). Bile resistance mechanisms in *Lactobacillus* and *Bifidobacterium*. *Frontiers in microbiology*, 4, 396. <https://doi.org/10.3389/fmicb.2013.00396>
- Ryan, M. P., O'Dwyer, J., & Adley, C. C. (2017). Evaluation of the Complex Nomenclature of the Clinically and Veterinary Significant Pathogen *Salmonella*. *BioMed research international*, 2017, 3782182. <https://doi.org/10.1155/2017/3782182>
- Santibañez, A., Paine, D., Parra, M., Muñoz, C., Valdes, N., Zapata, C., Vargas, R., Gonzalez, A., & Tello, M. (2021). Oral Administration of *Lactococcus lactis* Producing Interferon Type II, Enhances the Immune Response Against Bacterial Pathogens in Rainbow Trout. *Frontiers in Immunology*, 12. <https://doi.org/10.3389/fimmu.2021.696803>
- Schug, A. R., Bartel, A., Meurer, M., Scholtzek, A. D., Brombach, J., Hensel, V., Fanning, S., Schwarz, S., & Feßler, A. T. (2020). Comparison of two methods for cell count determination in the course of biocide susceptibility testing. *Veterinary Microbiology*, 251, 108831. <https://doi.org/10.1016/j.vetmic.2020.108831>
- Shimizu M. (2010). Interaction between food substances and the intestinal epithelium. *Bioscience, biotechnology, and biochemistry*, 74(2), 232–241. <https://doi.org/10.1271/bbb.90730>
- Shi, L. H., Balakrishnan, K., Thiagarajah, K., Mohd Ismail, N. I., & Yin, O. S. (2016). Beneficial Properties of Probiotics. *Tropical life sciences research*, 27(2), 73–90. <https://doi.org/10.21315/tlsr2016.27.2.6>
- Sicard, J., Le Bihan, G., Vogeleeer, P., Jacques, M., & Harel, J. (2017). Interactions of Intestinal Bacteria with Components of the Intestinal Mucus. *Frontiers in Cellular and Infection Microbiology*, 7. <https://doi.org/10.3389/fcimb.2017.00387>

- Singh, K. S., Kumar, S., Mohanty, A. K., Grover, S., & Kaushik, J. K. (2018). Mechanistic insights into the host-microbe interaction and pathogen exclusion mediated by the Mucus-binding protein of *Lactobacillus plantarum*. *Scientific Reports*, 8(1), 1-10. <https://doi.org/10.1038/s41598-018-32417-y>
- Siroli, L., Camprini, L., Pisano, M. B., Patrignani, F., & Lanciotti, R. (2019). Volatile Molecule Profiles and Anti-*Listeria monocytogenes* Activity of Nisin Producers *Lactococcus lactis* Strains in Vegetable Drinks. *Frontiers in microbiology*, 10, 563. <https://doi.org/10.3389/fmicb.2019.00563>
- Sleytr, U. B., Schuster, B., Egelseer, E. M., & Pum, D. (2014). S-layers: principles and applications. *FEMS microbiology reviews*, 38(5), 823–864. <https://doi.org/10.1111/1574-6976.12063>
- Tang, A. S., Chikhale, P. J., Shah, P. K., & Borchardt, R. T. (1993). Utilization of a human intestinal epithelial cell culture system (Caco-2) for evaluating cytoprotective agents. *Pharmaceutical research*, 10(11), 1620–1626. <https://doi.org/10.1023/a:1018976804403>
- Tridip K. Das, Shrabani Pradhan, Sudipta Chakrabarti, Keshab Chandra Mondal, & Kuntal Ghosh. (2022). Current status of probiotic and related health benefits. *Applied food research*, 2, 100185. doi: 10.1016/j.afres.2022.100185
- Tytgat, H. L., Douillard, F. P., Reunanen, J., Rasinkangas, P., Hendrickx, A. P., Laine, P. K., Paulin, L., Satokari, R., & de Vos, W. M. (2016). *Lactobacillus rhamnosus* GG Outcompetes *Enterococcus faecium* via Mucus-Binding Pili: Evidence for a Novel and Heterospecific Probiotic Mechanism. *Applied and environmental microbiology*, 82(19), 5756–5762. <https://doi.org/10.1128/AEM.01243-16>
- van de Guchte, M., Serror, P., Chervaux, C., Smokvina, T., Ehrlich, S. D., & Maguin, E. (2002). Stress responses in lactic acid bacteria. *Antonie van Leeuwenhoek*, 82(1-4), 187–216.
- Vasiljevic, T. and Shah, N.P. (2008). Probiotics—From Metchnikoff to Bioactives. *International Dairy Journal*, 18, 714-728. <http://dx.doi.org/10.1016/j.idairyj.2008.03.004>
- Wang, Y., Wu, J., Lv, M., Shao, Z., Hungwe, M., Wang, J., Bai, X., Xie, J., Wang, Y., & Geng, W. (2021). Metabolism Characteristics of Lactic Acid Bacteria and the Expanding Applications in Food



- Industry. *Frontiers in bioengineering and biotechnology*, 9, 612285.  
<https://doi.org/10.3389/fbioe.2021.612285>
- Weitz-Schmidt, G., & Chreng, S. (2012). Cell adhesion assays. *Methods in molecular biology* (Clifton, N.J.), 757, 15–30. [https://doi.org/10.1007/978-1-61779-166-6\\_2](https://doi.org/10.1007/978-1-61779-166-6_2)
- Yang, S. C., Lin, C. H., Sung, C. T., & Fang, J. Y. (2014). Antibacterial activities of bacteriocins: application in foods and pharmaceuticals. *Frontiers in microbiology*, 5, 241.  
<https://doi.org/10.3389/fmicb.2014.00241>
- Yerlikaya, O. (2019). Probiotic potential and biochemical and technological properties of *Lactococcus lactis* ssp. *lactis* strains isolated from raw milk and kefir grains. *Journal of Dairy Science*, 102(1), 124–134. <https://doi.org/10.3168/jds.2018-14983>
- Zhang, Y., Shan, B., Gong, J., & Hu, Y. (2022). Mechanism of biogenic amine synthesis of *Enterococcus faecium* isolated from Sanchun ham. *Food Science & Nutrition*, 10(6), 2036-2049.  
<https://doi.org/10.1002/fsn3.2820>
- Zommiti, M., Cambronel, M., Maillot, O., Barreau, M., Sebei, K., Feuilloley, M., Ferchichi, M., & Connil, N. (2018). Evaluation of Probiotic Properties and Safety of *Enterococcus faecium* Isolated From Artisanal Tunisian Meat "Dried Ossban". *Frontiers in microbiology*, 9, 1685.  
<https://doi.org/10.3389/fmicb.2018.01685>
- Żukiewicz-Sobczak, W., Wróblewska, P., Adamczuk, P., & Silny, W. (2014). Probiotic lactic acid bacteria and their potential in the prevention and treatment of allergic diseases. *Central-European journal of immunology*, 39(1), 104–108. <https://doi.org/10.5114/ceji.2014.42134>