Microbiote et inflammation de bas grade
le cas du syndrome de l'Intestin Irritable

BIBLIOGRAPHIE

[1] Berg G, Rybakova D, Fischer D, Cernava T, Vergès MC, Charles T, Chen X, Cocolin L, Eversole K, Corral GH, Kazou M, Kinkel L, Lange L, Lima N, Loy A, Macklin JA, Maguin E, Mauchline T, McClure R, Mitter B, Ryan M, Sarand I, Smidt H, Schelkle B, Roume H, Kiran GS, Selvin J, Souza RSC, van Overbeek L, Singh BK, Wagner M, Walsh A, Sessitsch A, Schloter M. 2020. Microbiome definition re-visited: old concepts and new challenges. Microbiome 8:103.

[2] Chin SW, Low ZY, Tan WQ, Azman AS. 2025. Microbiota-Host Interactions: Exploring Their Dynamics and Contributions to Human Diseases. Microbiologyopen 14:e70043.

[3] Ahrodia T, Das S, Bakshi S, Das B. 2022. Structure, functions, and diversity of the healthy human microbiome. Prog Mol Biol Transl Sci 191:53-82.

[4] Van Hul M, Cani PD, Petitfils C, De Vos WM, Tilg H, El-Omar EM. 2024. What defines a healthy gut microbiome? Gut 73:1893-1908.

[5] Ximenez C, Torres J. 2017. Development of Microbiota in Infants and its Role in Maturation of Gut Mucosa and Immune System. Arch Med Res 48:666-680.

[6] Zhang X, Zhivaki D, Lo-Man R. 2017. Unique aspects of the perinatal immune system. Nat Rev Immunol 17:495-507.

[7] Lacy BE, Pimentel M, Brenner DM, Chey WD, Keefer LA, Long MD, Moshiree B. 2021. ACG Clinical Guideline: Management of Irritable Bowel Syndrome. Am J Gastroenterol 116:17-44.

[8] Sulaimi F, Ong TSK, Tang ASP, Quek J, Pillay RM, Low DT, Lee CKL, Siah KTH, Ng QX. 2025. Risk factors for developing irritable bowel syndrome: systematic umbrella review of reviews. BMC Med 23:103.

[9] Chong PP, Chin VK, Looi CY, Wong WF, Madhavan P, Yong VC. 2019. The Microbiome and Irritable Bowel Syndrome - A Review on the Pathophysiology, Current Research and Future Therapy. Front Microbiol 10:1136.

[10] Thevaranjan N, Puchta A, Schulz C, Naidoo A, Szamosi JC, Verschoor CP, Loukov D, Schenck LP, Jury J, Foley KP, Schertzer JD, Larché MJ, Davidson DJ, Verdú EF, Surette MG, Bowdish DME. 2017. Age-Associated Microbial Dysbiosis Promotes Intestinal Permeability, Systemic Inflammation, and Macrophage Dysfunction. Cell Host Microbe 21:455-466.e4.

[11] Bischoff SC, Barbara G, Buurman W, Ockhuizen T, Schulzke JD, Serino M, Tilg H, Watson A, Wells JM. 2014. Intestinal permeability--a new target for disease prevention and therapy. BMC Gastroenterol 14:189.

[12] Edogawa S, Edwinson AL, Peters SA, Chikkamenahalli LL, Sundt W, Graves S, Gurunathan SV, Breen-Lyles M, Johnson S, Dyer R, Graham R, Chen J, Kashyap P, Farrugia G, Grover M. 2020. Serine proteases as luminal mediators of intestinal barrier dysfunction and symptom severity in IBS. Gut 69:62-73.

[13] Burns G, Pryor J, Holtmann G, Walker MM, Talley NJ, Keely S. 2019. Immune Activation in Functional Gastrointestinal Disorders. Gastroenterol Hepatol (N Y) 15:539-548.

[14] Pittayanon R, Lau JT, Yuan Y, Leontiadis GI, Tse F, Surette M, Moayyedi P. 2019. Gut Microbiota in Patients With Irritable Bowel Syndrome-A Systematic Review. Gastroenterology 157:97-108.

[15] Liu HN, Wu H, Chen YZ, Chen YJ, Shen XZ, Liu TT. 2017. Altered molecular signature of intestinal microbiota in irritable bowel syndrome patients compared with healthy controls: A systematic review and meta-analysis. Dig Liver Dis 49:331-337.

[16] Wang L, Alammar N, Singh R, Nanavati J, Song Y, Chaudhary R, Mullin GE. 2020. Gut Microbial Dysbiosis in the Irritable Bowel Syndrome: A Systematic Review and Meta-Analysis of Case-Control Studies. J Acad Nutr Diet 120:565-586.

[17] Salem AE, Singh R, Ayoub YK, Khairy AM, Mullin GE. 2018. The gut microbiome and irritable bowel syndrome: State of art review. Arab J Gastroenterol 19:136-141.

[18] Aggeletopoulou I, Triantos C. 2024. Microbiome Shifts and Their Impact on Gut Physiology in Irritable Bowel Syndrome. Int J Mol Sci 25.

[19] Das A, O'Herlihy E, Shanahan F, O'Toole PW, Jeffery IB. 2021. The fecal mycobiome in patients with Irritable Bowel Syndrome. Sci Rep 11:124.

[20] Su Q, Tun HM, Liu Q, Yeoh YK, Mak JWY, Chan FK, Ng SC. 2023. Gut microbiome signatures reflect different subtypes of irritable bowel syndrome. Gut Microbes 15:2157697.

[21] Mohammad S, Thiemermann C. 2020. Role of Metabolic Endotoxemia in Systemic Inflammation and Potential Interventions. Front Immunol 11:594150.

[21] Liebregts T, Adam B, Bredack C, Röth A, Heinzel S, Lester S, Downie-Doyle S, Smith E, Drew P, Talley NJ, Holtmann G. 2007. Immune activation in patients with irritable bowel syndrome. Gastroenterology 132:913-20.

[23] Ohman L, Isaksson S, Lindmark AC, Posserud I, Stotzer PO, Strid H, Sjövall H, Simrén M. 2009. T-cell activation in patients with irritable bowel syndrome. Am J Gastroenterol 104:1205-12.

[24] Hasler WL, Grabauskas G, Singh P, Owyang C. 2022. Mast cell mediation of visceral sensation and permeability in irritable bowel syndrome. Neurogastroenterol Motil 34:e14339.

[25] Robles A, Perez Ingles D, Myneedu K, Deoker A, Sarosiek I, Zuckerman MJ, Schmulson MJ, Bashashati M. 2019. Mast cells are increased in the small intestinal mucosa of patients with irritable bowel syndrome: A systematic review and meta-analysis. Neurogastroenterol Motil 31:e13718.

[26] Deng X, Xiao L, Luo M, Xie P, Xiong L. 2023. Intestinal crosstalk between bile acids and microbiota in irritable bowel syndrome. J Gastroenterol Hepatol 38:1072-1082.

[27] Min YW, Rezaie A, Pimentel M. 2022. Bile Acid and Gut Microbiota in Irritable Bowel Syndrome. J Neurogastroenterol Motil 28:549-561.

[28] Lin X, Xia L, Zhou Y, Xie J, Tuo Q, Lin L, Liao D. 2025. Crosstalk Between Bile Acids and Intestinal Epithelium: Multidimensional Roles of Farnesoid X Receptor and Takeda G Protein Receptor 5. Int J Mol Sci 26.

[29] Gu Y, Li L, Yang M, Liu T, Song X, Qin X, Xu X, Liu J, Wang B, Cao H. 2023. Bile acid-gut microbiota crosstalk in irritable bowel syndrome. Crit Rev Microbiol 49:350-369.

[30] Miao H, Zhang SJ, Wu X, Li P, Zhao YY. 2025. Tryptophan metabolism as a target in gut microbiota, ageing and kidney disease. Int J Biol Sci 21:4374-4387.

[31] Agus A, Planchais J, Sokol H. 2018. Gut Microbiota Regulation of Tryptophan Metabolism in Health and Disease. Cell Host Microbe 23:716-724.

[32] Meynier M, Baudu E, Rolhion N, Defaye M, Straube M, Daugey V, Modoux M, Wawrzyniak I, Delbac F, Villéger R, Méleine M, Borras Nogues E, Godfraind C, Barnich N, Ardid D, Poirier P, Sokol H, Chatel JM, Langella P, Livrelli V, Bonnet M, Carvalho FA. 2022. AhR/IL-22 pathway as new target for the treatment of post-infectious irritable bowel syndrome symptoms. Gut Microbes 14:2022997.

[33] Xia B, Lin T, Li Z, Wang J, Sun Y, Wang D, Ye J, Zhang Y, Kou R, Zhao B, Yi J, Bai G, Liu X. 2024. Lactiplantibacillus plantarum Regulates Intestinal Physiology and Enteric Neurons in IBS through Microbial Tryptophan Metabolites. J Agric Food Chem 72:17989-18002.

[34] Mars RAT, Yang Y, Ward T, Houtti M, Priya S, Lekatz HR, Tang X, Sun Z, Kalari KR, Korem T, Bhattarai Y, Zheng T, Bar N, Frost G, Johnson AJ, van Treuren W, Han S, Ordog T, Grover M, Sonnenburg J, D'Amato M, Camilleri M, Elinav E, Segal E, Blekhman R, Farrugia G, Swann JR, Knights D, Kashyap PC. 2020. Longitudinal Multi-omics Reveals Subset-Specific Mechanisms Underlying Irritable Bowel Syndrome. Cell 183:1137-1140.

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[35] Zheng Z, Tang J, Hu Y, Zhang W. 2022. Role of gut microbiota-derived signals in the regulation of gastrointestinal motility. Front Med (Lausanne) 9:961703.

[36] Zhai L, Huang C, Ning Z, Zhang Y, Zhuang M, Yang W, Wang X, Wang J, Zhang L, Xiao H, Zhao L, Asthana P, Lam YY, Chow CFW, Huang JD, Yuan S, Chan KM, Yuan CS, Lau JY, Wong HLX, Bian ZX. 2023. Ruminococcus gnavus plays a pathogenic role in diarrhea-predominant irritable bowel syndrome by increasing serotonin biosynthesis. Cell Host Microbe 31:33-44. e5.

[37] Roager HM, Licht TR. 2018. Microbial tryptophan catabolites in health and disease. Nature Communications 9:3294.

[38] Heitkemper MM, Han CJ, Jarrett ME, Gu H, Djukovic D, Shulman RJ, Raftery D, Henderson WA, Cain KC. 2016. Serum Tryptophan Metabolite Levels During Sleep in Patients With and Without Irritable Bowel Syndrome (IBS). Biol Res Nurs 18:193-8.

[39] Clarke G, Fitzgerald P, Cryan JF, Cassidy EM, Quigley EM, Dinan TG. 2009. Tryptophan degradation in irritable bowel syndrome: evidence of indoleamine 2,3-dioxygenase activation in a male cohort. BMC Gastroenterol 9:6.

[40] Luo M, Zhuang X, Tian Z, Xiong L. 2021. Alterations in short-chain fatty acids and serotonin in irritable bowel syndrome: a systematic review and meta-analysis. BMC Gastroenterol 21:14.

[41] Ju X, Jiang Z, Ma J, Yang D. 2024. Changes in Fecal Short-Chain Fatty Acids in IBS Patients and Effects of Different Interventions: A Systematic Review and Meta-Analysis. Nutrients 16.

[42] Pozuelo M, Panda S, Santiago A, Mendez S, Accarino A, Santos J, Guarner F, Azpiroz F, Manichanh C. 2015. Reduction of butyrate- and methane-producing microorganisms in patients with Irritable Bowel Syndrome. Sci Rep 5:12693.

[43] Teige ES, Hillestad EMR, Steinsvik EK, Brønstad I, Lundervold A, Lundervold AJ, Valeur J, Hausken T, Berentsen B, Lied GA. 2024. Fecal bacteria and short-chain fatty acids in irritable bowel syndrome: Relations to subtype. Neurogastroenterol Motil 36:e14854.

[44] Pouladi A, Arabpour E, Bahrami O, Sadeghi A, Mozafari Komesh Tape P, Abdehagh M, Zali MR. 2025. Impacts of the Long-Term Low-FODMAP Diet in Patients With Irritable Bowel Syndrome: A Systematic Review and Meta-Analysis. J Hum Nutr Diet 38:e70105.

[45] Guarner F, Sanders ME, Szajewska H, Cohen H, Eliakim R, Herrera-deGuise C, Karakan T, Merenstein D, Piscoya A, Ramakrishna B, Salminen S, Melberg J. 2024. World Gastroenterology Organisation Global Guidelines: Probiotics and Prebiotics. J Clin Gastroenterol 58:533-553.

[46] Torres-Maravilla E, Holowacz S, Delannoy J, Lenoir L, Jacouton E, Gervason S, Meynier M, Boucard AS, Carvalho FA, Barbut F, Bermúdez-Humarán LG, Langella P, Waligora-Dupriet AJ. 2022. Serpin-positive Bifidobacterium breve CNCM I-5644 improves intestinal permeability in two models of irritable bowel syndrome. Sci Rep 12:19776.

[47] Zhao Q, Yang WR, Wang XH, Li GQ, Xu LQ, Cui X, Liu Y, Zuo XL. 2019. Clostridium butyricum alleviates intestinal low-grade inflammation in TNBS-induced irritable bowel syndrome in mice by regulating functional status of lamina propria dendritic cells. World J Gastroenterol 25:5469-5482.

[48] El-Salhy M, Hatlebakk JG, Gilja OH, Bråthen Kristoffersen A, Hausken T. 2020. Efficacy of faecal microbiota transplantation for patients with irritable bowel syndrome in a randomised, double-blind, placebo-controlled study. Gut 69:859-867.

[49] Halkjær SI, Lo B, Cold F, Højer Christensen A, Holster S, König J, Brummer RJ, Aroniadis OC, Lahtinen P, Holvoet T, Gluud LL, Petersen AM. 2023. Fecal microbiota transplantation for the treatment of irritable bowel syndrome: A systematic review and meta-analysis. World J Gastroenterol 29:3185-3202.

[50] Samuthpongtorn C, Kantagowit P, Pittayanon R, Patcharatrakul T, Gonlachanvit S. 2022. Fecal microbiota transplantation in irritable bowel syndrome: A meta-analysis of randomized controlled trials. Front Med (Lausanne) 9:1039284.