dsm-firmenich

Synbiotics: Unlocking the synergies of HMOs and Probiotics

HMOs

Human milk oligosaccharides (HMOs) are the third largest component of human milk.[1]

HMOs help to establish the gut microbiota in infants, through a selective prebiotic effect.[1]

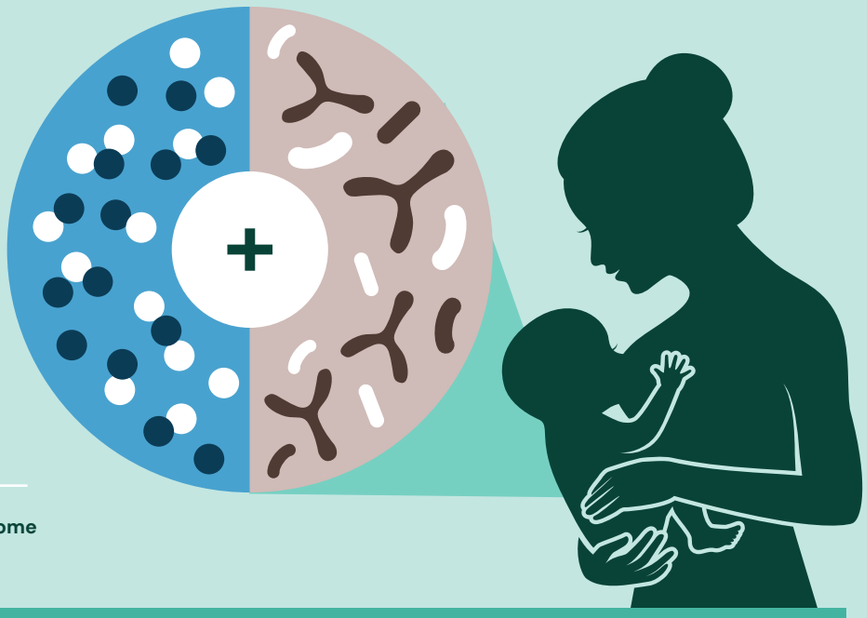
Probiotics

Probiotics are live bacteria that are widely consumed and researched for their benefits.[2]

Probiotics contribute to the infant microbiome and help build the foundation for healthy growth and development.[3]

Synbiotics

Data show the combination of selected HMOs and specific probiotics have a synergistic synbiotic relationship that improves the activity of beneficial gut microorganisms[4]



Establishing the early infant microbiome is of critical importance in healthy growth and development.[5]

Health Benefit research on:

- **Infant microbiome closer to that of breast-fed infants**[6]
- **Development of the infant immune system**[7]
- **Development of gut microbiome and gut-brain axis**[8]
- **Microbiome establishment for optimal developmental trajectories**[9]

dsm-firmenich | LALLEMAND HEALTH SOLUTIONS

Join us on this exciting journey!

Partner with us on our synbiotics journey to unlock a range of benefits linked to immune support, gut health, brain development, and metabolic well-being. Together, let's bring babies microbiome closer to the natural goodness of breast-fed infants.

To read more about the relationship between HMOs, probiotics, and their synergistic relationship please refer to the following publications: **1.** Bode L. Human milk oligosaccharides: every baby needs a sugar mama. Glycobiology. 2012;22(9):1147–1162. doi:10.1093/glycob/cws074 **2.** Swanson KS, Gibson GR, Hutkins R, et al. The International Scientific Association for Probiotics and Prebiotics (ISAPP) consensus statement on the definition and scope of synbiotics. Nat Rev Gastroenterol Hepatol. 2020;17(11):687–701. doi:10.1038/s41575-020-0344-2 **3.** Myung Wook Song, Kee-Tae Kim & Hyun-Dong Paik (2023) Probiotics as a Functional Health Supplement in Infant Formulas for the Improvement of Intestinal Microflora and Immunity, Food Reviews International, 39:2, 858-874, DOI: 10.1080/87559129.2021.1928178 **4.** Ghislain Schyns, Leigh Matano, Matthew Hayward, Fan Fei and Sylvie Binda. Metabolomics-driven assessment of symbiotic association with HMOs. Probiota 2024. [ABSTRACT] **5.** Turroni F, Milani C, Duranti S, et al. The infant gut microbiome as a microbial organ influencing host well-being. Ital J Pediatr. 2020;46(1):16. Published 2020 Feb 5. doi:10.1186/s13052-020-0781-0 **6.** Alliet P, Vandenplas Y, Roggero P, Jespers SNJ, Peeters S, Stalens JP, Kortman GAM, Amico M, Berger B, Sprenger N, Cercamondi CI, Corsello G. Safety and efficacy of a probiotic-containing infant formula supplemented with 2'-fucosyllacotse: a double-blind randomized controlled trial. Nutrition Journal. 2022;21:11. **7.** Salminen S, Stahl B, Vinderola G, Szajewska H. Infant Formula Supplemented with Biotics: Current Knowledge and Future Perspectives. Nutrients. 2020;12(7):1952. Published 2020 Jun 30. doi:10.3390/nu12071952 **8.** Cho S, Samuel TM, Li T, et al. Interactions between Bifidobacterium and Bacteroides and human milk oligosaccharides and their associations with infant cognition. Front Nutr. 2023;10:1216327. Published 2023 Jun 29. doi:10.3389/fnut.2023.1216327 **9.** Robertson RC, Manges AR, Finlay BB, Prendergast AJ. The Human Microbiome and Child Growth – First 1000 Days and Beyond. Trends Microbiol. 2019;27(2):131–147. doi:10.1016/j.tim.2018.09.008