

YOUR GUIDE TO Synbiotics

Synbiotics are defined by the International Scientific Association for Probiotics and Prebiotics (ISAPP) as “a mixture comprising live microorganisms and substrate(s) selectively utilised by host microorganisms that confers a health benefit on the host”.¹



CATEGORISATION

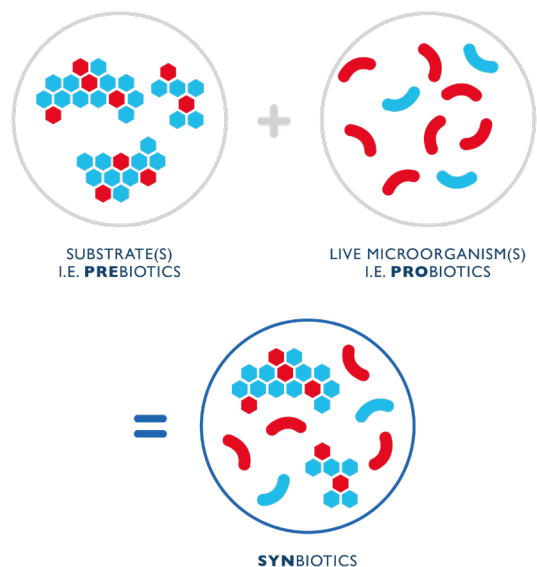
Synbiotics can be classified into two categories; a complementary synbiotic or a synergistic synbiotic.

Complementary synbiotic - A product containing an established probiotic and an established prebiotic, each working independently to confer a health benefit on the host. In this case, both components must meet the criteria for a probiotic³ or prebiotic⁴ independently.

Synergistic synbiotic - A product containing a substrate that is designed to be selectively utilised by the co-administered live microorganism(s), and together they provide a health benefit on the host. The substrate does not need to meet the requirements for a prebiotic and likewise, the live microorganism(s) does not need to meet the requirements for a probiotic. However, there must be evidence from well-controlled studies demonstrating the substrate selectively promotes the growth of the co-administered live microorganism, and together they provide a health benefit on the host, with both factors demonstrated within the same study.¹

IMPACT ON THE GUT MICROBIOTA

Since synbiotic formulations contain substrates that promote the survival of microorganisms within the product itself as well as resident microorganisms within the gut, multiple studies have explored the effects of these formulations on the gut microbiota. A general trend has shown that synbiotics promote the growth of commensal bacteria, particularly lactobacilli and bifidobacteria species.⁵⁻⁸



FIND OUT MORE AT YAKULT.CO.UK/HCP

Yakult is a science based company, dedicated to scientific research and education.

Contact us at science@yakult.co.uk or on 020 8842 7600 for more information.

A HEALTH BENEFIT

To be considered a synbiotic, there should be scientific evidence from controlled studies demonstrating a health benefit on the host. If the synbiotic is for human use, there must be human studies confirming these health benefits.¹

REGULATORY LANDSCAPE

Across the European Union (EU) and within the UK, foods can only carry a nutrition or health claim in accordance with EU* and UK** regulations.

Currently the term 'synbiotic' is not regulated in the EU or UK. However, because the terms 'probiotic' and 'prebiotic' are interpreted to be implied health claims due to a guidance document issued by the European Commission in 2007, despite controversy around this, the EU and UK authorities may adopt a similar position for synbiotic formulations as these products also require evidence of a health benefit on the host according to the ISAPP definition.¹

*Regulation (EC) No 1924/2006

**Nutrition (Amendment etc.) (EU Exit) Regulations 2020



IMPACT ON HEALTH

Many randomised and placebo-controlled trials conducted in adults have explored the use of synbiotic formulations in, but are not limited to, overweight and obesity,⁹ type 2 diabetes mellitus,^{10,11} atopic dermatitis,¹² kidney disease,¹³ liver disease,¹⁴ irritable bowel syndrome,¹⁵ and *Helicobacter pylori* eradication.¹⁶ Although some of the evidence demonstrates favourable outcomes, the appropriate dose, duration and composition of a synbiotic formulation needed to confer a health benefit on the host are most probably specific to a particular context.¹

REFERENCES

1. Swanson et al. (2020) *Nat Rev Gastroenterol Hepatol* 17: 687-701
2. Gibson & Roberfroid (1995) *J Nutr* 125: 1401-1412
3. Hill et al. (2014) *Nat Rev Gastroenterol Hepatol* 11: 506-514
4. Gibson et al. (2017) *Nat Rev Gastroenterol Hepatol* 14: 491-502
5. Vanhoutte et al. (2006) *Appl Environ Microb* 72(9): 5990-5997
6. Casiraghi et al. (2007) *J Appl Microbiol* 103(2): 499-506
7. MacFarlane et al. (2013) *Aliment Pharm Ther* 38(7): 804-816
8. Sergeev et al. (2020) *Nutrients* 12(1): 222
9. Hadi et al. (2020) *Crit Rev Food Sci Nutr* 60: 584-596
10. Mahboobi et al. (2018) *Adv Pharm Bull* 8: 565-574
11. Nikbakht et al. (2018) *Eur J Nutr* 57: 95-106
12. Chang et al. (2016) *JAMA Pediatr* 170: 236-242
13. MacFarlane et al. (2019) *J Renal Nutr* 29: 209-220
14. Hadi et al. *Crit Rev Food Sci Nutr* 59: 2494-2505
15. Ford et al. (2018) *Aliment Pharm Ther* 48: 1044-1060
16. Shafaghi et al. (2016) *Middle East J Dig Dis* 8: 179-188

July 2021

FIND OUT MORE AT [YAKULT.CO.UK/HCP](https://www.yakult.co.uk/hcp)

Yakult is a science based company, dedicated to scientific research and education.

Contact us at science@yakult.co.uk or on **020 8842 7600** for more information.

This resource is intended for healthcare professionals and is not to be distributed to patients