Human milk – the only food solely designed for human consumption

Nutrition during infancy is a key factor to lay the foundation for optimal development of a child. Human milk is accepted as the “gold standard” for infant nutrition. When compared with infant formula, breast-feeding leads to favorable results with respect to growth patterns, nutritional status, immune protection and long-term developmental outcomes. Thus a lot of efforts are made to narrow the nutritional gap between human milk and infant milk formula, which are largely based on cow’s milk. Human milk oligosaccharides (HMO) have been identified as a key differentiating factor between human and bovine milk. They are complex carbohydrates which make up the third largest solid component of human milk. 2’-fucosyllactose is the most abundant oligosaccharide occurring in human milk, accounting for 30% of all HMOs present.

Macronutrients in cow’s milk and human breast milk (g/liter)

- **Oligosaccharides**: ~0.05–0.5, 5–15
- **Lactose**: 48, 70
- **Proteins**: 32, 8
- **Lipids**: 37, 41

**2’-FL** is the most abundant oligosaccharide in human milk and makes up to 20–30% of the total HMO content.
Benefits of 2’-fucosyllactose (2’-FL) – during early life and beyond

Results of clinical trials and preclinical models have shown that 2’-FL has the potential to support and maintain health in various ways.*

Support immune modulatory functions (allergies/asthma)
Help brain development & cognitive abilities
Strengthen gut maturation, intestinal barrier & digestive comfort
Nourish the beneficial microbiota (bifidogenic effect)

BASF – your trusted partner for 2’-fucosyllactose

High quality product from efficient large scale production

- Complete in-house development of 2’-FL from strain development to downstream processing
- HMO fermentation strain designed for efficient large-scale production
- Selection of a stable strain enables consistent quality, no need for using antibiotics during production
- Food safety certifications and cGMP-Food (USA), production under HACCP compliance with regulation (EC) 852/2004
- Compliance with legal requirements on hygienic practice for infant food, Kosher & Halal certification

Supply reliability

- In-house expertise in process development ensures reliable production set-up
- BASF upscaling capabilities provide flexibility to consistently meet customers needs
- Large scale German based production enables reliable global roll-out

Scientific foundation, market access & business development

- Extending and driving the evidence base for 2’-FL via collaboration with leading researchers in the field of HMOs
- Regulatory expertise in key markets
- Experienced supplier of health ingredients in infant applications, food & supplements (e.g. vitamins, carotenoids and omega-3 fatty acids)

* References: Akkerman R et al. (2018); Alliet P et al. (2016); Asbrit CA et al. (2016); Bienenstock J et al. (2013); Biode L (2012); Ellison E et al. (2016); Goehring KC et al. (2016); Jantscher-Krenner E et al. (2012); Laucinica DR et al. (2017); Marriage BJ et al. (2010); Oliveire E et al. (2016); Puccio G et al (2017); Vazquez E et al (2015, 2016).

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