

# Healthy Start with scGOS and lcFOS (9:1) Combination



Breastmilk contains over 1000 distinct HMOs, out of which 162 specific structures are identified, all contributing beneficial effects to infants.<sup>1</sup>

Molecular size distribution of short-chain and long-chain HMOs in breastmilk is in ratio of 9:1.<sup>1</sup>

Breastmilk contains a blend of low- and high-molecular-weight oligosaccharides with a degree of polymerization reaching up to 20.<sup>2</sup>

Prebiotic scGOS/lcFOS (9:1) combination comprises both low- and high-molecular-weight oligosaccharide structures, with a DP extending up to 35.<sup>2</sup>

After 50 years of breastmilk research, a prebiotic mixture of scGOS/lcFOS (9:1) was introduced in 2002 to mimic the quantity, diversity, and functionality of HMOs in breastmilk.

scGOS/lcFOS (9:1) mixture mimics more than 100 different short- and long-chain HMO structures, bringing it closer to breastmilk.<sup>2</sup>



## Mechanism of action of scGOS/lcFOS<sup>3</sup>

Prebiotic oligosaccharide mixture (scGOS/lcFOS) passes through stomach and large intestine undigested

Bifidobacteria and lactobacilli in large intestine metabolizes the prebiotic oligosaccharide mixture into short-chain fatty acids

SCFA production  
lowers pH

SCFA promotes thicker  
mucus layer

↑ Growth of good bacteria  
↓ Growth of pathogenic bacteria  
↑ Water content of stools  
Stimulates healthy bowel movement

Prevents pathogen attachment to intestinal lining  
Reduces the risk of respiratory and gastrointestinal infection



## Clinical benefits of using scGOS/lcFOS (9:1) combination

1

Variability in the structure of oligosaccharides is necessary to stimulate microbiota similar to breastfed infants.<sup>2</sup>

2

Combination of scGOS/lcFOS in the ratio of 9:1 increases the count of Bifidobacterium and Lactobacillus in the gut, **maintains gut barrier integrity, modulates immunity, and inhibits adherence of pathogens to the gut.**

3

In healthy term infants, scGOS/lcFOS in 9:1 ratio –



Increased counts of bifidobacteria, bringing it closer to breastfed infants.<sup>4</sup>



Reduced the incidence of upper respiratory tract infections by 48.6% and gastrointestinal infections by 36%.<sup>5</sup>



Stimulated the growth of Bifidobacteria and Lactobacilli and resulted in softer stools in 28 days.<sup>6</sup>



## Key takeaways



A prebiotic mixture of scGOS/lcFOS (9:1) mimics the structural diversity of >100 HMOs, bringing it closer to breastmilk.



scGOS/lcFOS combination promotes beneficial gut microbiota growth, softens stools within 28 days, and reduces upper respiratory and gastrointestinal infections by 48.6% and 36%, respectively.

### Abbreviations

DP: Degree of polymerization, lcFOS: Long-chain fructooligosaccharides, SCFAs: Short-chain fatty acids, scGOS: Short-chain galactooligosaccharides

### References

1. Salminen S et al, Nutrients. 2020;12(7):1952.
2. Boehm G et al, J Nutr. 2008;138(9):1818S-1828S.
3. Del Fabbro S et al, Proceedings of the Nutrition Society. 2020;79(4):468-478.

4. Rinne MM et al, FEMS Immunol Med Microbiol. 2005;43:59-65.
5. Ivakhnenko O S et al, Pediatria Polska. 2013;88(2013), 398-404.
6. Moro GE et al, Acta Paediatr 2003;91(441):77-9.