



HUMAN MILK OLIGOSACCHARIDES

NOURISHING THE INFANT'S
DEVELOPING IMMUNE SYSTEM

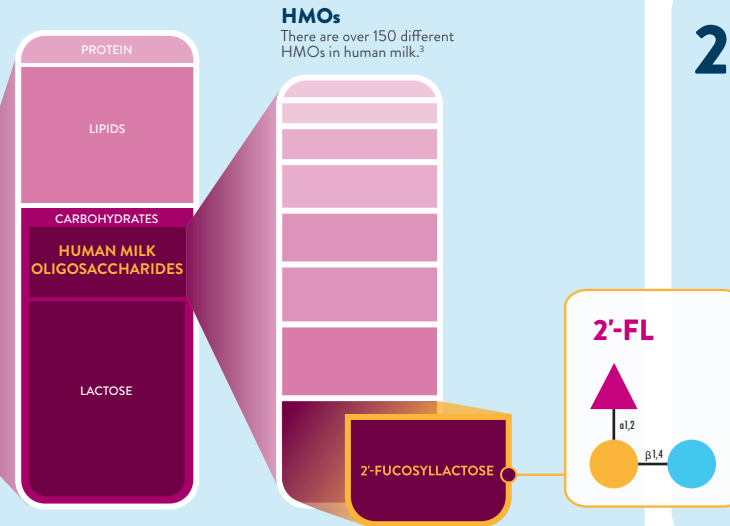
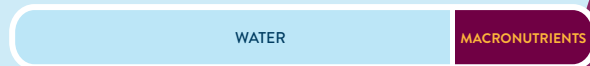
WHAT ARE HMOs?

Unique prebiotics found naturally in human milk | Food for beneficial bacteria in the infant's gut | 3rd most abundant solid component of human milk

COMPONENTS OF HUMAN MILK ¹

Major nutritional components of human milk are: protein, carbohydrates, and lipids.²

HUMAN MILK



2'-FL HMO

- ✓ Approximately 75-80% of mothers secrete 2'-FL HMO in their breast milk.^{4,5}
- ✓ 2'-FL added to formula has the identical structure as 2'-FL in human milk.⁶
- ✓ Prebiotics—food for beneficial bacteria.⁷
- ✓ First clinical study with 2'-FL added to infant formula narrows the gap between human milk & infant formula.⁸

EARLY IMMUNE DEVELOPMENT

70%

of the immune system is in the digestive tract,⁹ and prebiotics support colonisation of the gut which helps support immune system development.¹⁰

BENEFITS OF 2'-FL HMO EXPAND BEYOND THE GUT TO SUPPORT THE IMMUNE SYSTEM.

- A small portion of 2'-FL HMO ingested are absorbed in the infant's intestine and reach the systemic circulation.¹¹⁻¹³
- In a clinical study, 2'-FL HMO was shown to lower levels of multiple inflammatory cytokines to be more like levels in breastfed infants.⁸
- In a clinical study of infants fed formula with 2'-FL HMO,⁸ two markers of immune function associated with the severity of a respiratory infection (RSV) were more like breastfed infants than infants fed the same formula without 2'-FL HMO.*

*Using cells from infants' blood that were challenged with RSV ex vivo.

PREBIOTICS & MORE

Emerging research[†] indicates potential multifunctional benefits:

- COGNITION**¹⁴⁻¹⁶
 - Learning & memory
 - Long-term potentiation
 - Brain molecular markers
- IMMUNITY**^{6,8,17-21}
 - Pathogen receptor decoy
 - Reduced symptoms of food allergy
 - Immune modulation
- GI TOLERANCE**^{11,22-26}
 - Prebiotic
 - Gut motility
 - NEC

†Most studies were animal-based.

SUPPORTING EVIDENCE[‡]

30 STUDIES

provide preclinical and clinical evidence identifying the role of HMOs in health & development. (2000-2017)

‡Refer to references.



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