Product information
Leaflet

# GLYCARE® 3FL

## Human Milk Oligosaccharides brought to you by dsm-firmenich, at the forefront of HMO innovation

**Early life nutrition innovation from dsm-firmenich**

Providing the best infant nutrition is vital for all families. That's why dsm-firmenich is proud to offer GLYCARE® HMOs. These compounds are developed with science-backed quality and safety at their core. As a fully integrated manufacturer with one of the broadest HMO offerings, dsm-firmenich can reliably provide ease-of-scale no matter the size of your business. Partner with us to get your products one step closer to what nature intended.

Partner with dsm-firmenich for access to our broad portfolio of products, customized solutions, and expert services aimed at supporting your entire product life cycle, from concept to consumption.

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# Human Milk Oligosaccharides (HMOs): delivering the benefits nature intended

### Uniquely human

- HMOs are complex carbohydrates found in human breastmilk
- No other mammal has near the concentration and complexity of structures in their milk[1-6]

### Abundance and diversity in human milk

- 3rd largest component of human milk[7]
- >200 different HMOs identified in human milk, a diversity not seen in other animal milks[4-6]
- Variation in concentration and diversity occurs over lactation period, by maternal genetics, geographic region, and ethnicity[8,9]

### Complex structures with potential functional benefits

- Help establish a balanced early-life microbiota[10,11]
- Growing evidence suggests a link between the gut microbiota and the immune system[12,13]
- Contribute to immune system support[14-18]

### 3-fucosyllactose (3-FL): A fucosylated HMO detected in the milk of most mothers[19]

- 3-FL has been identified in amniotic fluid and cord blood, suggesting a critical role in early development[20-21]
- Unlike many other HMOs, levels of 3-FL have been shown to increase during lactation[19,22-24]

**HMO functionality is structure-specific: not all HMOs serve the same purpose[25,26]**

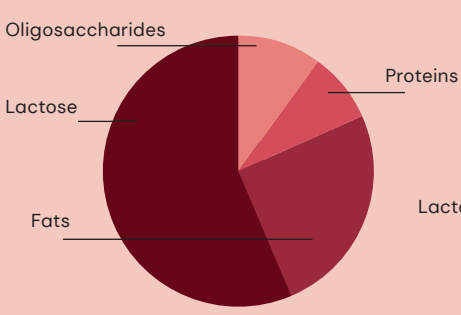
# Potential functional benefits of GLYCARE® 3FL, as demonstrated primarily in pre-clinical studies

- Stimulates the growth of beneficial bacteria, including bifidobacteria[27-29]
- A potential role in regulating normal gut motility is being explored[30,32]

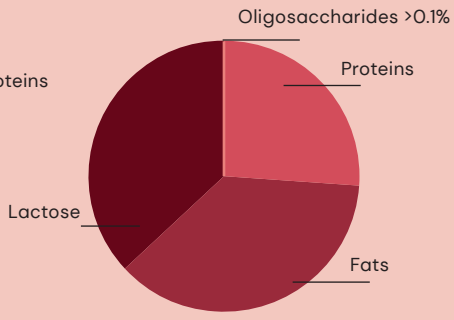
- Supports immune health. Emerging data suggest 3-FL may deflect undesirable microbes from adhering to cell walls[33]
- Reported to support the gut wall and gut barrier function[32,34]

# Breastmilk – the gold standard

Breastmilk provides nutrients that are vital for an infant's growth and development and sets the standard in infant feeding.[35,36] Human milk oligosaccharides (HMOs) are the third largest solid component of human milk after lipids and lactose and a key differentiating feature between human milk and cow's milk. The unique structure, concentration, and variety of oligosaccharides in human milk sets them apart from those found in cow's milk.[37,38] Differences in health outcomes between breastfed and formula-fed infants may partly be explained by these features.[8,37,39,40]




Composition of human milk[41,42]




Composition of cow milk[41,42]

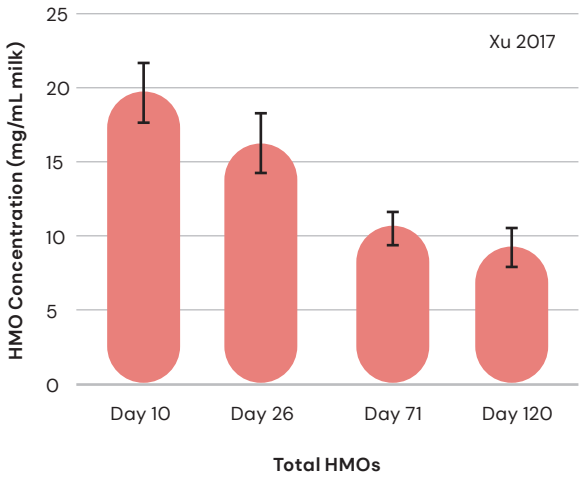
## HMOs stimulate the growth of beneficial bacteria

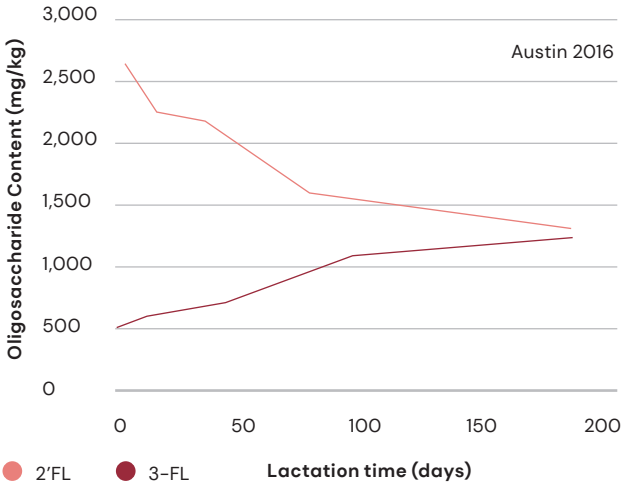
- While the concentration of most HMOs declines over the course of lactation, levels of 3-FL have been shown to increase.[19,22,23,43-46]
- In a study that tested the concentrations of 24 HMOs during lactation, only 3-FL levels increased from birth through approximately 5 months of lactation.[22] Another study showed a 10-fold increase in 3-FL between 1 and 24 months of lactation.[23]
- The unique pattern of 3-FL levels in human milk may correlate to a specific function, yet further study is needed.

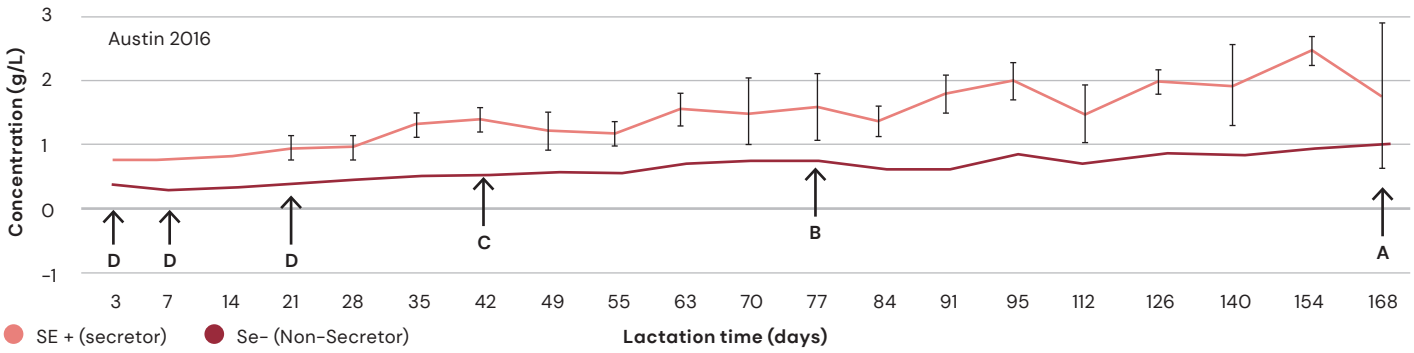
## GLYCARE® 3FL product information

- 5 years of shelf life from production date
- Purity levels from 87%
- White to off-white, homogenous, amorphous powder with a neutral to slightly sweet taste
- Contains up to 5% lactose§
- Manufactured without contact to latex, bisphenol A, or phthalates
- This product is free from: Animal derived ingredients (ADI), Allergens (except milk),§ Genetically modified organisms (GMO)¥

§ according to EC regulation 1169/2011 annex II
¥ according to EC regulation 1829/2003 and 1830/2003

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Highest safety and quality standards

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* We are continuously expanding our global approval footprint across application areas. For more details, please ask for our Regulatory Overview.

For more information, get in touch with your dsm-firmenich representative, or visit www.dsm-firmenich.com/health-nutrition-care

dsm-firmenich GlyCare™ HMOs are produced to the highest quality of certifications, approvals, and procedures

ISO 9001:2015

FSSC 22000

SMETA

Halal

Kosher

## The full GLYCARE® HMO portfolio

- GLYCARE® 2FL
- GLYCARE® LNnT
- GLYCARE® 2FL/DFL
- GLYCARE® 6SL
- GLYCARE® 3SL
- GLYCARE® LNT
- GLYCARE® 3FL
- GLYCARE® LNFP I

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