

Product information  
Leaflet

# GlyCare® LNFP I

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<sup>1-6</sup>

### Abundance and diversity in human milk

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

### Complex structures with potential functional benefits

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

### Lacto-N-fucopentaose I (LNFP I) may offer early protection to newborns<sup>18</sup>

- In certain women, LNFP I appears in colostrum in higher concentrations than other HMOs.<sup>20,21</sup> Colostrum, produced in the first few days after birth, plays a role in supporting early immune development.<sup>22,23</sup>
- LNFP I contributes significantly to HMO composition in the milk of most women.<sup>24-27</sup>

HMO functionality is structure-specific: not all HMOs serve the same purpose<sup>28,29</sup>

## Potential functional benefits of GlyCare® LNnT, as demonstrated primarily in pre-clinical studies



- May offer gut health benefits by contributing to a diverse microbiome<sup>30</sup>



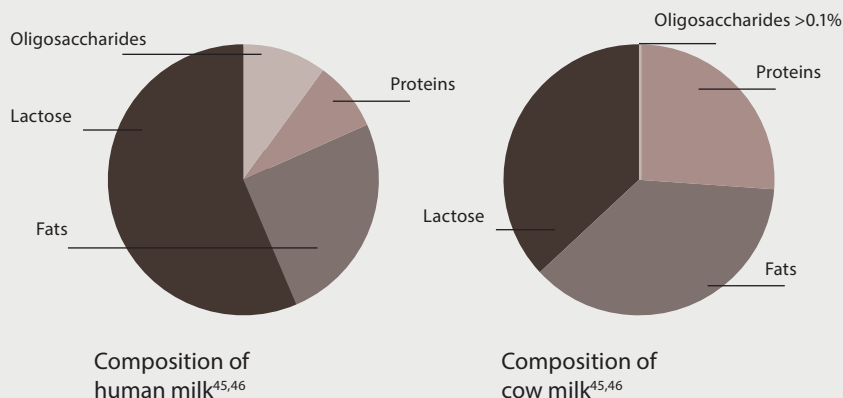
- Stimulates the growth of beneficial bacteria, including bifidobacteria<sup>31,32</sup>
- May support a normal immune response<sup>33-35</sup>



- Potentially deflects undesirable micro-organisms from attaching to the intestinal cell wall<sup>33,37,38</sup>
- In vitro evidence suggests LNFP I may hinder the growth of the undesirable micro-organism group B Streptococcus<sup>36</sup>

## Breastmilk – the gold standard

Breastmilk provides nutrients that are vital for an infant's growth and development and sets the standard in infant feeding.<sup>39,40</sup> 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.<sup>41,42</sup> Differences in health outcomes between breastfed and formula-fed infants may partly be explained by these features.<sup>8,41,43,44</sup>



## HMOs may deflect adhesion of undesirable organisms to cell walls

- The adhesion of undesirable microbes to cell walls may be the first step in colonization of these organisms in the body. This may lead to an unfavorable abundance of non-commensal microbes, which could disrupt certain elements of human health<sup>13,47</sup>
- Preclinical evidence and human observational studies suggest HMOs may help deflect adhesion of undesirable microbes to the cell wall by acting as decoy receptors, mimicking cell surface receptors<sup>36,48-51</sup>

## GlyCare® DFL product information

- 5 years of shelf life from production date
- Purity levels for combined 2'FL and LNFP I from 75%
- White, homogenous, amorphous powder with a neutral to slightly sweet taste
- Contains up to 10% lactose<sup>§</sup>
- Manufactured without contact to latex, bisphenol A, or phthalates
- This product is free from: Animal derived ingredients (ADI), Allergens (except milk),<sup>§</sup> Genetically modified organisms (GMO)<sup>¥</sup>

§ according to EC regulation 1169/2011 annex II

¥ according to EC regulation 1829/2003 and 1830/2003



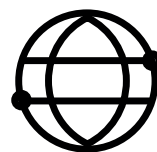
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dsm-firmenich GlyCare® HMOs are produced to the highest quality of certifications, approvals, and procedures



## The full GlyCare® HMO portfolio

- GlyCare® 2FL
- GlyCare® LNNt
- GlyCare® e 2FL/DFL
- GlyCare® 6SL
- GlyCare® 3SL
- GlyCare® LNT
- GlyCare® 3FL
- GlyCare® LNFP-I

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