HUMAN MILK OLIGOSACCHARIDE PANEL



About Human Milk Oligosaccarides (HMOs)

Human milk oligosaccharides (HMOs) are complex sugars with unique structural diversity which are found in breast milk at significant concentrations.

HMOs are important prebiotics and display many unique health effects for infants. These sugars act by promoting growth of beneficial bacteria in the large intestine, thereby generating short-chain fatty acids which are critical for gut health.

As antiadhesive antimicrobials, HMOs selectively reduce binding of pathogenic bacteria and viruses to the gut epithelium, preventing the emergence of a disease.

Certain HMOs can help establish immunocompetence, both locally and systemically. HMOs may also participate in a gutbrain connection, thereby modulating brain and cognitive development.

Applications

- · Studies in infant nutrition and therapeutic uses of HMOs
- Pharmacokinetic studies of HMOs, providing insights on dose-response relationships of HMOs in clinical or experimental studies
- Applications that require measuring low levels of HMOs in biological samples

Key Advantages - Reproducible Results

- Fully guantitative LC-MS/MS method with a minimum of 6 to 8 calibrators per analyte
- Wide range of sample matrices
- Proprietary technology facilitates low level quantitation in biological matrices with excellent accuracy and precision
- Matching ¹³C labelled internal standards for all analytes

Key Advantages Continued

- HMO isomers are separated (2'-FL/3-FL; LNT/LNnT; 3'-SL/6'-SL)
- Calibrator and quality control sample precision (% CV) typically <10%

Analytical Method and Instrumentation

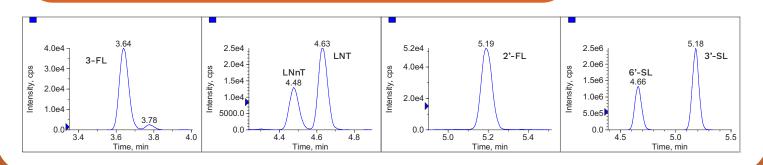
- Analysis performed by LC-MS/MS
- Sciex Exion UHPLC, coupled to a Sciex 5500+ Triple Quadrupole Mass Spectrometer

Panel Analytes		
Measured Metabolites		
2'-Fucosyllactose (2'-FL)		
3-Fucosyllactose (3-FL)		
Lacto-N-tetraose (LNT)		
Lacto-N-neotetraose (LNnT)		
3'-Sialyllactose (3'-SL)		
Customization with other HMOs upon request		

Sample Requirements

Sample Matrix	Sample Amount	
Plasma/Serum	100 - 200 μL	
Feces/Intestinal Content	200 - 500 mg	
Bacterial Cultures	200 - 500 μL	
Urine	200 - 500 μL	
Others upon request		

Representative Chromatograms at Low Levels of HMOs in Feces Samples



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