Human Milk Oligosaccharide Panel

PRECION™

About Human Milk Oligosaccharides (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 gut–brain 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 quantitative 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 ^{13}C 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

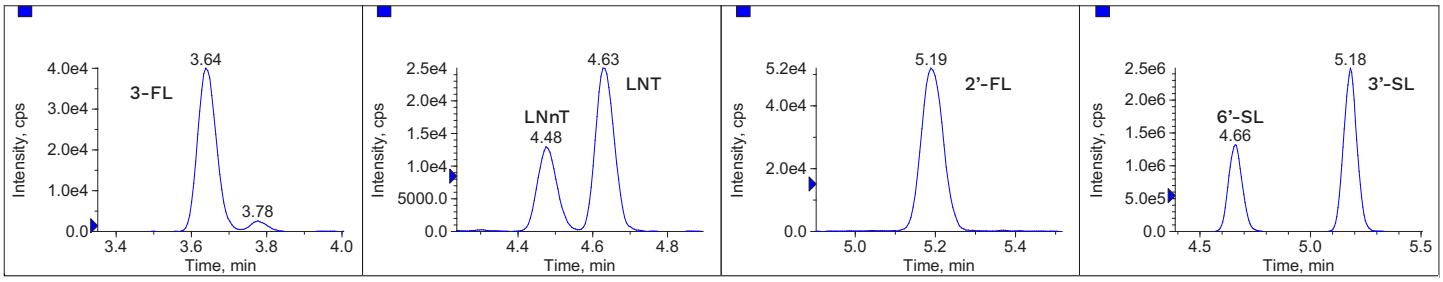
Panel Analytes

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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