Lipid Analysis Services

Sphingolipids III: Glucosylceramides, Galactosylceramides, and Glucosphingosine

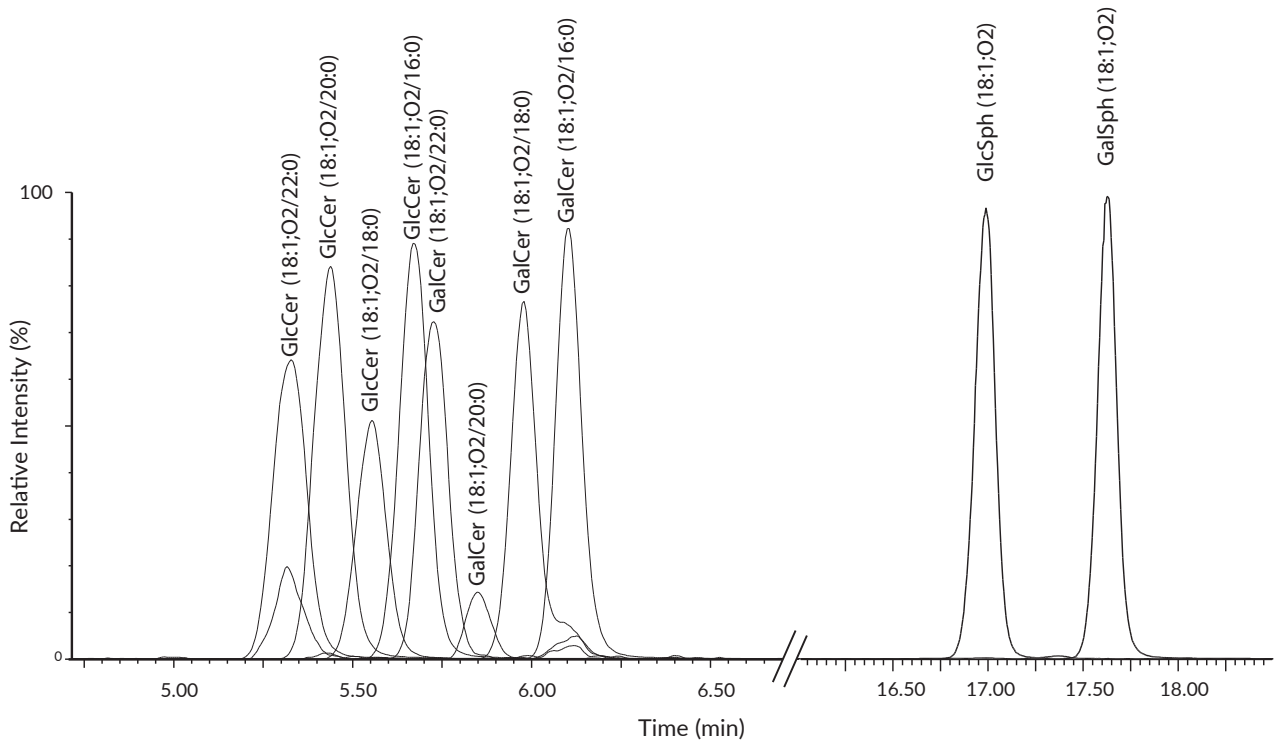
The sphingolipid (SP) category of lipids is very structurally diverse due to the multitude of combinations of sphingoid bases, N-acyl chains, and polar heads, so comprehensive analysis of all relevant sphingolipids in a biological system is not achievable with a single analytical approach. Glucosylceramides and galactosylceramides are important structural lipids in a variety of organs, and errors in their metabolism are key factors of several lysosomal storage diseases such as Gaucher or Krabbe diseases. Their levels and those of their deacylated metabolites glucosylsphingosine and galactosylsphingosine are widely used as markers of disease.

This service can be of interest to a wide variety of scientists, including researchers exploring the fundamental mechanisms of biology, clinicians looking for biomarkers or following up on a treatment, or companies testing potential therapeutic tools.

Analyte Coverage

We offer a targeted analytical service for the quantitation of hexosylceramides and hexosylsphingosines, with chromatographic resolution that allows separate quantitation of glucosyl and galactosyl isomers.

Glucosylsphingosine	GlcSPB(18:1;O2)	GlcSPB(18:1;O2)	GalSPB(18:1;O2)
GlcCer(18:1;O2/16:0)	GlcCer(18:0;O2/16:0)	GalCer(18:1;O2/16:0)	GalCer(18:0;O2/16:0)
GlcCer(18:1;O2/16:1)	GlcCer(18:0;O2/16:1)	GalCer(18:1;O2/16:1)	GalCer(18:0;O2/16:1)
GlcCer(18:1;O2/18:0)	GlcCer(18:0;O2/18:0)	GalCer(18:1;O2/18:0)	GalCer(18:0;O2/18:0)
GlcCer(18:1;O2/18:1)	GlcCer(18:0;O2/18:1)	GalCer(18:1;O2/18:1)	GalCer(18:0;O2/18:1)
GlcCer(18:1;O2/20:0)	GlcCer(18:0;O2/20:0)	GalCer(18:1;O2/20:0)	GalCer(18:0;O2/20:0)
GlcCer(18:1;O2/22:0)	GlcCer(18:0;O2/22:0)	GalCer(18:1;O2/22:0)	GalCer(18:0;O2/22:0)
GlcCer(18:1;O2/23:0)	GlcCer(18:0;O2/23:0)	GalCer(18:1;O2/23:0)	GalCer(18:0;O2/23:0)
GlcCer(18:1;O2/24:0)	GlcCer(18:0;O2/24:0)	GalCer(18:1;O2/24:0)	GalCer(18:0;O2/24:0)
GlcCer(18:1;O2/24:1)	GlcCer(18:0;O2/24:1)	GalCer(18:1;O2/24:1)	GalCer(18:0;O2/24:1)
GlcCer(18:1;O2/26:0)	GlcCer(18:0;O2/26:0)	GalCer(18:1;O2/26:0)	GalCer(18:0;O2/26:0)
GlcCer(18:1;O2/26:1)	GlcCer(18:0;O2/26:1)	GalCer(18:1;O2/26:1)	GalCer(18:0;O2/26:1)



LC-MS chromatogram traces of a mixture of glycosphingolipids supplemented with standards.

Our Approach

Samples are extracted using an established liquid-liquid method. Our lab is equipped to handle large sample sets, validated with as little as 50 µl plasma, one million cells, or a few milligrams of liver, lung, spleen, or brain tissue.

Reversed-phase HPLC and tandem mass spectrometry resolve all analytes and enable independent integration and quantitation.

The use of isotopically labeled internal standards helps achieve accurate and precise quantitation of the glucosylceramides present in biological samples.

Our Advantages

- Our scientists are expertly trained and have decades of collective experience in the analysis, synthesis, and evaluation of biological roles of lipids.
- State-of-the-art instrumentation, reagents, and methods for all aspects of sample preparation, lipid extraction, LC-MS analysis, and data review ensure consistent, high-quality data.
- Method is scalable, from pilot studies with a few samples to high-throughput studies with hundreds of samples.
- High-quality standards produced in-house enable accurate calibration curve preparation and absolute quantitation.

Contact us for more information at **www.caymanchem.com/lipidomics**

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