Lipid Analysis

Cholesterol Esters

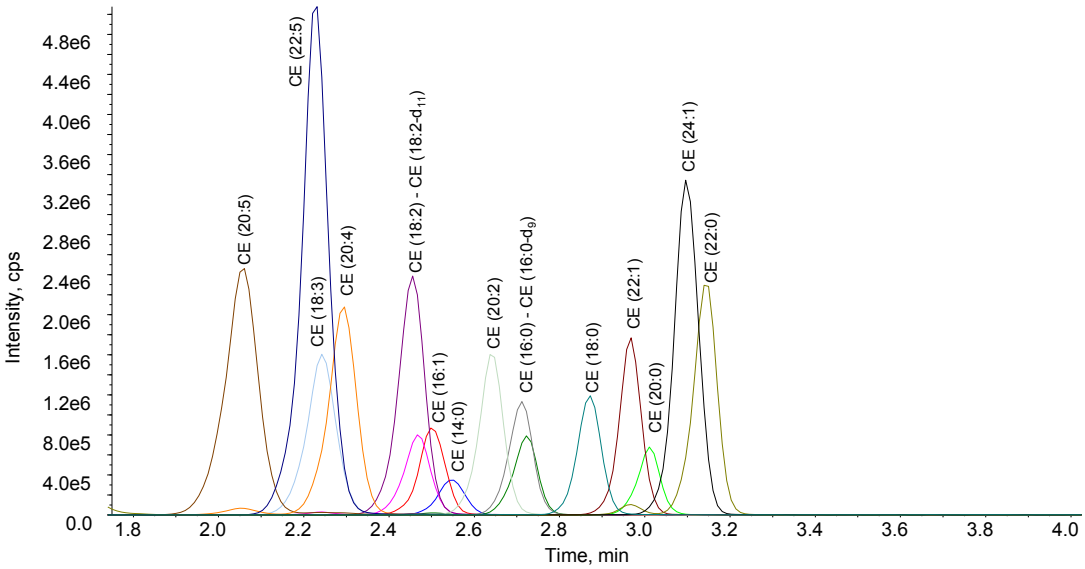
Cholesterol esters (CE) are major metabolic repositories of cholesterol and fatty acids, ubiquitously found in cells inside lipid droplets and in circulation as components of lipoproteins. Dysregulation of CE synthesis and metabolism results in greatly increased risk for cardiovascular disease. Lipid droplets are involved in important intracellular lipid traffic events and have been implicated in other pathologies such as metabolic disease or neurodegeneration, expanding interest in CEs beyond cardiovascular research. Mass spectrometry after electrospray ionization (ESI) is becoming increasingly used to profile and quantitate individual CE molecular species in biological samples.

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

This analytical service provides quantitation of 29 CE molecular species. Calibration curves with authentic or surrogate standards provide precise quantitation to evaluate the levels of these molecules in a variety of experimental samples. Other analytes can be added or substituted if necessary.

Cholesterol Esters		
CE(14:0)	CE(20:1)	CE(22:5)
CE(14:1)	CE(20:2)	CE(22:6)
CE(16:0)	CE(20:3)	CE(24:0)
CE(16:1)	CE(20:4)	CE(24:1)
CE(16:2)	CE(20:5)	CE(24:2)
CE(18:0)	CE(22:0)	CE(24:3)
CE(18:1)	CE(22:1)	CE(24:4)
CE(18:2)	CE(22:2)	CE(24:5)
CE(18:3)	CE(22:3)	CE(24:6)
CE(20:0)	CE(22:4)	



LC-MS/MS chromatogram traces of a mixture of 14 CE standards, supplemented with isotopically labeled internal standards.

Our Approach

Samples are extracted using an established liquid-liquid method, which has been validated with as little as 1 mg solid tissue or 10 µl plasma.

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

The use of authentic standards and stable isotope-labeled internal standards helps achieve accurate and precise absolute quantitation of CEs 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 reliable quantitation.
- Collaborative, flexible approach. The method can be customized to include, remove or substitute analytes, or to be used with samples other than plasma. Please inquire for specific details.

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

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