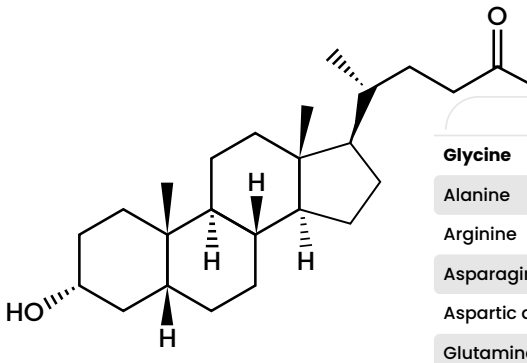
LITHOCHOLIC ACID
Conjugated Pooled Standards

Redefine host-microbiome relationships with 21 unique microbially-derived bile acid compounds

Gut microbes convert liver-produced bile acids into secondary bile acids with diverse chemistry and biological impact on humans and animals. Hundreds of these compounds were recently discovered in mammals with yet-to-be-discovered biological functions and health impacts[1,2].

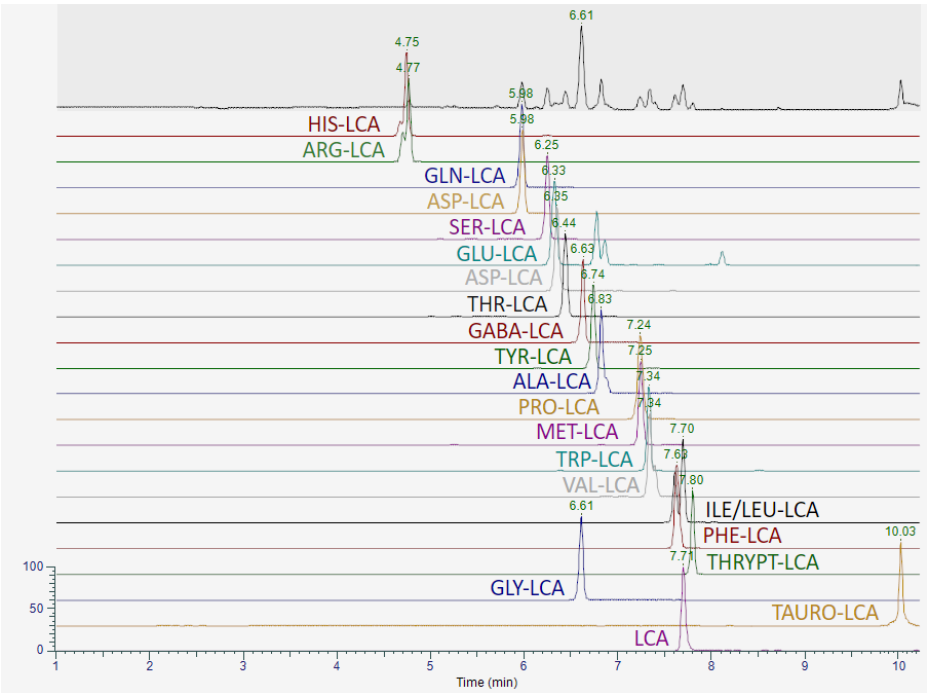
Amide conjugations to lithocholic acid and other bile acids represent a novel class of next-generation biomarkers with the potential to revolutionize the treatment and diagnostics of gut microbiome-related diseases, including inflammatory bowel disease and cystic fibrosis[3]. You can now participate in this exciting research and development field using these pooled standards of lithocholic acid amidates (amine conjugates to the carboxylic acid of lithocholic acid) and your expertise in liquid chromatography (LC) and mass spectrometry (MS).



Lithocholic Acid

Amino Acid Conjugate

Glycine	Taurine	Serine
Alanine	Histidine	Threonine
Arginine	Isoleucine	Trytophan
Asparagine	Leucine	Tyrosine
Aspartic acid	Methionine	Valine
Glutamine	Phenylalanine	Tryptamine
Glutamic acid	Proline	GABA



Reverse phase chromatogram of lithocholic acid amidates mixture

[1]Quinn, Melnik, et al. (2020) *Nature*. Global chemical effects of the microbiome include new bile-acid conjugations

[2]Dorrestein, Melnik, Aksenov, Quinn. US Patent Application (#20220202881) for Bile Acids and Use in Disease Treatment

[3]Gentry, Collins, et al. (2023) *Nature*. Reverse metabolomics for the discovery of chemical structures from humans.

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Product Characteristics:

Compounds	▪ 21 microbial cholic amidates plus unconjugated lithocholic acid
Applications	▪ Biomarker discovery ▪ Host-microbe interactions ▪ Microbiome analysis & profiling ▪ Bile acid metabolism ▪ Bile salt hydrolase/N-Acyl transferase activity assessments
Contents	▪ 5 mg dry powder (lyophilized) ▪ Aliquoted into glass vials
Analytical Examples	▪ Compound identification ▪ MS2 transitions ▪ Retention time acquisition ▪ In-house digital library ▪ Method development ▪ Biomarker quantification
Suitable for	▪ HPLC ▪ UHPLC
MS compatibility	▪ QTOF ▪ Orbitrap ▪ Single quadrupole ▪ Triple quadrupole
Concentration*	▪ 200 µg/mL

Internal standard	▪ Lithocholic acid (unconjugated)
	▪ Quantity provided:
	  ▪ Glycolithocholic acid (GLY-LCA)
	  ▪ Taurolithocholic acid (TAURO-LCA)

Certificate of Analysis^	▪ Reference retention times ▪ Mass spectra

*Estimated from glycine and taurine conjugates ^ acquired under standard HPLC-MS conditions

Common Analytical Applications:

- Build an in-house library of retention times and mass spectra for compound identification
- Acquire and optimize MS/MS transitions for quantitative analysis
- Calibrate retention times of conjugated bile acids after changing LC method or column

Laboratory Chemical Safety Summary Datasheet Links #:

Taurolithocholic Acid >

Glycolithocholic Acid >

#No chemical safety information is currently available for all other novel amidates