



Cambridge Isotope Laboratories, Inc.
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RESEARCH PRODUCTS

Metabolomics QC Kit

For Untargeted/Targeted Mass Spectrometry

Quality control (QC) of methods and processes is an essential factor toward the generation of reliable mass spectrometry (MS) data. In order to obtain accurate and precise metabolomic data that can be reproduced by independent laboratories around the world using different MS technologies, standardized protocols and reagents are necessary.

Cambridge Isotope Laboratories, Inc. (CIL) is pleased to offer a QC kit (MSK-QC-KIT) for untargeted and targeted MS-based metabolomic applications.

The kit contains the following materials and tools:

- 2 vials of ^{13}C -labeled analytes (lyophilized). Refer to the table below for specifics.
- User manual (with product details and applications for example LC-MS methods)

Table: Specific analytes contained in the two mixes and their individual concentrations upon rehydration. Rehydrating the lyophilized mixes in 1 mL of solvent yields the concentrations noted.

Description	Conc. ($\mu\text{g/mL}$)	Vial
L-Alanine ($^{13}\text{C}_3$, 99%)	4	1
L-Leucine ($^{13}\text{C}_6$, 99%)	4	1
L-Phenylalanine ($^{13}\text{C}_6$, 99%)	4	1
L-Tryptophan ($^{13}\text{C}_{11}$, 99%)	40	1
L-Tyrosine ($^{13}\text{C}_6$, 99%)	4	1
Caffeine ($^{13}\text{C}_3$, 99%)	4	2
D-Glucose ($^{13}\text{C}_6$, 99%)	4	2
Sodium benzoate ($^{13}\text{C}_6$, 99%)	4	2
Sodium citrate ($^{13}\text{C}_3$, 99%)	4	2
Sodium octanoate ($^{13}\text{C}_8$, 99%)	4	2
Sodium propionate ($^{13}\text{C}_3$, 99%)	4	2
Stearic acid, sodium salt ($^{13}\text{C}_{18}$, 98%)	0.4	2
Succinic acid, disodium salt ($^{13}\text{C}_4$, 99%)	4	2
D-Sucrose ($^{13}\text{C}_6$, 98%)	4	2



Kit Features and Benefits

- Enables analytical precision to be determined
- Allows metabolite quantitation
- Identifies performance deficits
- Pinpoints method-specific issues
- Diminishes interlaboratory variability
- Improves method transferability

Looking to assess the performance of your metabolomic workflow? Use CIL's QC kit.

This QC kit is designed to evaluate the efficiency of a user's metabolomics method and LC-/GC-MS platform such that the analytical variation can be determined and corrected. Testing and validation of the kit has been performed in an array of matrices (e.g., urine, blood, and tissues), using different forms of chromatography (e.g., RP-LC and HILIC), ionization polarity (i.e., positive and negative), and modes of MS (e.g., DDA). By simply rehydrating and pooling aliquots of the supplied mixes, the isotopically labeled metabolites are ready for use either as spike-in standards to your biosample of interest (for quantitation) or for independent analysis at defined points of an analytical batch (for QC). In system suitability assessment, such metrics as retention time, peak shape, and signal intensity should be monitored over time for performance accreditation.

Catalog No.	Description
MSK-QC-KIT	Metabolomics QC Kit
MSK-QC1-1	Metabolomics QC Standard Mix 1
MSK-QC2-1	Metabolomics QC Standard Mix 2

Please inquire
for pricing.

Example References

Barco, S.; Lavarello, C.; Cangelosi, D.; et al. **2022.** Untargeted LC-HRMS based-plasma metabolomics reveals 3-O-methyldopa as a new biomarker of poor prognosis in high-risk neuroblastoma. *Front Oncol*, 12, 845936-845946.

Strelez, C.; Chilakala, S.; Ghaffarian, K.; et al. **2021.** Human colorectal cancer-on-chip model to study the microenvironmental influence on early metastatic spread. *iScience*, 24(5), 102509-102524.

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