Cambridge Isotope Laboratories, Inc.
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RESEARCH PRODUCTS

Metabolomics QC Kits

For Untargeted/Targeted Mass Spectrometry

Materials for testing assay effectiveness and platform performance are paramount to obtaining quality data. Under routine implementation, such materials can provide a reliable measure of the efficiency of a specific method, while flagging deficiencies or errors in an analytical platform (e.g., LC- or GC-MS/MS). To help aid these performance assessments in MS metabolomics and additionally provide the potential of metabolite quantification, Cambridge Isotope Laboratories, Inc. (CIL) is pleased to offer two metabolomics QC kits (**MSK-QC-KIT**, **MSK-QReSS™-KIT**) for untargeted/targeted MS-based applications.

Example Features and Benefits

- Mixes (in neat form) with user manual
- Predominantly ^{13}C and/or ^{15}N metabolites
- Offers flexibility in use and application
- Reduces development time and cost
- Provides enhanced reproducibility

MSK-QC-KIT ← *Click for additional information*

This kit contains the following materials and tools:

- 2 vials of stable isotope-labeled metabolites (dried down)
- Detailed user manual

Table. Mix composition. Reconstitution in 1 mL of solvent (e.g., 50% methanol) yields the concentrations specified.

Description	Conc. (µg/mL)	Vial
L-Alanine ($^{13}C_3$, 99%)	4	1
L-Leucine ($^{13}C_6$, 99%)	4	1
L-Phenylalanine ($^{13}C_6$, 99%)	4	1
L-Tryptophan ($^{13}C_{11}$, 99%)	40	1
L-Tyrosine ($^{13}C_6$, 99%)	4	1
Caffeine ($^{13}C_3$, 99%)	4	2
D-Glucose ($^{13}C_6$, 99%)	4	2
Sodium benzoate ($^{13}C_6$, 99%)	4	2
Sodium citrate ($^{13}C_3$, 99%)	4	2
Sodium octanoate ($^{13}C_8$, 99%)	4	2
Sodium propionate ($^{13}C_3$, 99%)	4	2
Stearic acid, sodium salt ($^{13}C_{18}$, 98%)	0.4	2
Succinic acid, disodium salt ($^{13}C_4$, 99%)	4	2
D-Sucrose ($^{13}C_6$, 98%)	4	2

Individual vials and companion unlabeled mixtures may also be available. Please inquire.

Example Reference

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.

Chemical purity (CP) is 98% or greater, unless otherwise indicated.
For research use only. Not for use in diagnostic procedures.

MSK-QReSS-KIT ← *Click for additional information*

This kit contains the following materials and tools:

- 2 vials of stable isotope-labeled metabolites (dried down)
- Detailed user manual

Table. Mix composition. Reconstitution in 1 mL of solvent (e.g., 50% methanol) yields the concentrations specified.

Description	Conc. (µg/mL)	Vial
L-Alanine ($^{13}C_3$, 99%; ^{15}N, 99%)	100	1
1,4-Butanediamine·2HCl ($^{13}C_4$, 99%)	10	1
Creatinine (*N*-methyl-D_3, 98%)	100	1
Ethanolamine·HCl (1,1,2,2-D_4, 98%)	10	1
Guanosine·$2H_2O$ ($^{15}N_5$, 96%)	2	1
Hypoxanthine ($^{13}C_5$, 99%)	10	1
L-Leucine ($^{13}C_6$, 99%)	5	1
L-Phenylalanine (ring-$^{13}C_6$, 99%)	100	1
Thymine (1,3-$^{15}N_2$, 98%)	20	1
L-Tryptophan ($^{13}C_{11}$, 99%)	100	1
L-Tyrosine (ring-$^{13}C_6$, 99%)	100	1
Vitamin B_3 ($^{13}C_6$, 99%)	5	1
Citric acid (1,5,6-carboxyl-$^{13}C_3$, 99%)	10	2
Fumaric acid ($^{13}C_4$, 99%)	100	2
Indole-3-acetic acid (phenyl-$^{13}C_6$, 99%)	5	2
α-Ketoglutaric acid, disodium salt (1,2,3,4-$^{13}C_4$, 99%)	100	2
Sodium palmitate (U-$^{13}C_{16}$, 98%)	10	2
Sodium pyruvate ($^{13}C_3$, 99%)	100	2

Example Reference: Lippa, K.A.; Aristizabal-Henao, J.J.; Beger, R.D.; et al. **2022**. Reference materials for MS-based untargeted metabolomics and lipidomics: a review by the metabolomics quality assurance and quality control consortium (mQACC). *Metabolomics, 18(4),* 24-52.

Example Application Note: Percy, A.J.; Souza, A.; Ntai, I.; et al. **2022**. From QC to quantitation: Utility of QReSS™ metabolites in FBS measurements. (CIL application note #51)

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MET_RSCH_QCKITS (2/5/25) Supersedes all previously published literature