

Cambridge Isotope Laboratories, Inc. isotope.com

Metabolite Yeast Extract Kit

For Quality Control and Internal Standardization in Metabolomics

Cambridge Isotope Laboratories, Inc. (CIL) is pleased to offer a dilute-and-shoot ¹³C-labeled and unlabeled metabolite veast extract for use as an internal standard in MS-based quantitative or profiling studies of various sample types.¹⁻¹² These extracts have been rigorously characterized by a number of methodologies and are amenable to a variety of research uses after simple reconstitution. The components in the extracts span broad metabolic classes (e.g., amino and organic acids, sugar phosphates, coenzymes), biochemical pathways (e.g., citrate and glyoxylate cycle, amino acid and nucleotide metabolism), and cellular/molecular processes (e.g., immune system, blood coagulation, DNA metabolism).

Description

	Catalog No.	Description
	ISO1	Metabolite Yeast Extract (U-13C, 98%)
	ISO1-UNL	Metabolite Yeast Extract (unlabeled)
/!	ISO1-KIT	Metabolite Yeast Extract Kit

Dry extract of $>2 \times 10^9$ Pichia pastoris cells (~15 mg). Produced by ISOtopic Solutions (isotopic-solutions.com).



Please inquire for pricing.

References

NFV

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- 3. Demarest, T.G.; Truong, G.T.D.; Lovett, J.; et al. 2019. Assessment of NAD+ metabolism in human cell cultures, erythrocytes, cerebrospinal fluid and primate skeletal muscle. Anal Biochem, 572, 1-8.
- 4. Hermann, G.; Schwaiger, M.; Volejnik, P.; et al. 2018. ¹³C-labelled yeast as internal standard for LC-MS/MS and LC high resolution MS-based amino acid quantification in human plasma. J Pharm Biomed Anal, 155, 329-334.
- 5. Guijas, C.; Montenegro-Burke, J.R.; Domingo-Almenara, X.; et al. 2018. METLIN: A technology platform for identifying knowns and unknowns. Anal Chem, 90(5), 3156-3164.
- 6. Si-Hung, L.; Causon, T.J.; Hann, S. 2017. Comparison of fully wettable RPLC stationary phases for LC-MS-based cellular metabolomics. Electrophoresis, 38(18), 2287-2295.



Overview

Uses

- Targeted or untargeted, MS-based analysis
- Method and instrument QC
- Metabolite quantitation
- Biomarker discovery and verification

Benefits

- Reduces measurement uncertainty
- Improves precision and accuracy
- Enhances identification confidence
- Decreases development time and cost

Specifications

Criteria	Note
Kit contents	 1 vial U-¹³C-labeled metabolite yeast extract 1 vial of unlabeled metabolite yeast extract
	 detailed user manual
Shipping	Dried extract in 15 mL Falcon [™] tube on dry ice
Storage	-80°C, protected from light
Isotopic enrichment	98% (via LC-MS for characteristic metabolites)
Chemical purity	99% (via HPLC for characteristic metabolites)

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- 8. Ortmayr, K.; Hann, S.; Koellensperger, G. 2015. Complementing reversed-phase selectivity with porous graphitized carbon to increase the metabolome coverage in an on-line two-dimensional LC-MS setup for metabolomics. Analyst, 140(10), 3465-3473.
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- 10. Klavins, K.; Drexler, H.; Hann, S.; et al. 2014. Quantitative metabolite profiling utilizing parallel column analysis for simultaneous reversed-phase and hydrophilic interaction liquid chromatography separations combined with tandem mass spectrometry. Anal Chem, 86(9), 4145-4150.
- 11. Klavins, K.; Chu, D.B.; Hann, S.; et al. 2014. Fully automated on-line two-dimensional liquid chromatography in combination with ESI MS/MS detection for quantification of sugar phosphates in yeast cell extracts. Analyst, 139(6), 1512-1520.
- 12. Neubauer, S.; Haberhauer-Troyer, C.; Klavins, K.; et al. 2012. U-¹³C cell extract of Pichia pastoris a powerful tool for evaluation of sample preparation in metabolomics. J Sep Sci, 35(22), 3091-3105.

Cambridge Isotope Laboratories, Inc.

North America: 1.800.322.1174 cilsales@isotope.com | International: +1.978.749.8000 intlsales@isotope.com | fax: 1.978.749.2768 | isotope.com MET RSCH YEAST (10/18/21)

