MEDICAL SCHOOL
METABOLOMICS CORE
UNIVERSITY OF MICHIGAN

Gly/TCA (Supplement to 13C Isotopomer Analysis - TCA)
Service Code:

Summary: Supplement to the profile of Central Metabolism, adding analytes detectable via GCMS from glycolysis and TCA cycle. GCMS detection includes a one step liquid-liquid extraction followed by MTBSTFA derivatization. All analytes are measured by EI on a GC-MS. Isotope enrichment of targeted metabolites are corrected for natural abundance and reported as ratios of M, M+1, M+2, M+3, etc.

Container: 1.5mL Micro Tube or equivalent
Normal Volume: Plasma (100 µL) Tissue (50-100 mg); Cell (1.5E7).
Minimal Volume: Plasma (50 µL) Tissue (30 mg); Cells (~2.5E6)
Sample Collection: Please see our detailed sample collection protocol on the Michigan Regional Comprehensive Metabolomics Resource Core (MRC^2) website before preparing samples for analysis or contact the core director at the number below for details.

Reference: Matthew A. Lorenz, Charles F. Burant, and Robert T. Kennedy (2011) "Reducing Time and Increasing Sensitivity in Sample Preparation for Adherent Mammalian Cell Metabolomics", *Anal. Chem.* 83(9): 3406–3414.

Table I: Analytes reported by GCMS:

Analyte	Abbr.	Mol Formula
Alpha Ketoglutarate	AKG	$C_5H_6O_5$
Fumurate	FUM	$C_4H_4O_4$
Lactate	LAC	$C_3H_6O_3$
Pyruvate	PYR	$C_3H_4O_3$

NOTE: Metabolites in this assay may be below the detection limit in some samples, especially plasma and samples with less than 3 million cells.