Lab Dept:	**Chemistry**
Test Name:	**FATTY ACID PROFILE, MITOCHONDRIAL**

General Information

Lab Order Codes:	FAPM
Synonyms:	Fatty Acid Profile, Mitochondrial (C8-C18), Serum
CPT Codes:	82542 – Column chromatography, includes mass spectrometry, if performed, non-drug analytes, not elsewhere specified, qualitative or quantitative, each specimen
Test Includes:	See Reference Range

Logistics

Test Indications:	Useful for biochemical diagnoses inborn errors of mitochondrial fatty acid oxidation, including deficiencies of medium-chain acyl-Co-A dehydrogenase, long-chain acyl-Co A dehydrogenase, and glutaricacidemia type 2.
Lab Testing Sections:	Chemistry - Sendouts
Referred to:	Mayo Medical Laboratories (MML Test: 81939/FAPM)
Phone Numbers:	MIN Lab: 612-813-6280 STP Lab: 651-220-6550
Test Availability:	Daily, 24 hours
Turnaround Time:	1 - 3 days, test set up Monday – Friday; not reported Saturday or Sunday
Special Instructions:	See Patient Preparation

Specimen

Specimen Type:	Blood
Container:	Red top tube
Draw Volume:	2 mL (Minimum: 0.5 mL) blood
Processed Volume:	0.5 mL (Minimum: 0.15 mL) serum

Collection: Routine venipuncture

Special Processing: Lab Staff: Centrifuge specimen within 45 minutes of collection and aliquot serum into a plastic screw- capped round bottom vial. Store and ship at frozen temperatures. Forward promptly.

Patient Preparation: Overnight (12-14 hour) fast recommended. Patient must not consume any alcohol for 24 hours before the specimen is drawn.

Sample Rejection: Specimens other than serum or plasma; anticoagulants other than EDTA or heparin; warm specimens; gross lipemia

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Interpretive

Reference Range:

Fatty Acid nmol/mL	1 - 31 days	32 days - 1 year	2 - 17 years	≥18 years
Octanoic Acid, C8:0	7 - 63	7 - 63	9 - 41	8 - 47
Decenoic Acid, C10:1	0.8 - 4.8	0.8 - 4.8	1.6 - 6.6	1.8 - 5.0
Decanoic Acid, C10:0	2 - 62	2 - 62	3 - 25	2 - 18
Lauroleic Acid, C12:1	0.6 - 4.8	0.6 - 4.8	1.3 - 5.8	1.4 - 6.6
Lauric Acid, C12:0	6 - 190	6 - 190	5 - 80	6 - 90
Tetradecadienoic Acid, C14:2	0.3 - 6.5	0.3 - 6.5	0.2 - 5.8	0.8 - 5.0
Myristoleic Acid, C14:1	1 - 46	1 - 46	1 – 31	3 - 64
Myristic Acid, C14:0	30 - 320	30 - 320	40 - 290	30 - 450
Hexadecadienoic Acid, C16:2	4 - 27	4 - 27	3 - 29	10 - 48
Palmitoleic Acid, C16:1w7	20 - 1020	20 - 1020	100 - 670	110 - 1130

Palmitic Acid, C16:0	720 - 3120	720 - 3120	960 - 3460	1480 - 3730
Linoleic Acid, C18:2w6	350 - 2660	1000 - 3300	1600 - 3500	2270 - 3850
Oleic Acid, C18:1w9	250 - 3500	250 - 3500	350 - 3500	650 - 3500
Stearic Acid, C18:0	270 - 1140	270 - 1140	280 - 1170	590 - 1170
Interpretation: Fatty acid oxidation disorders are recognized on the basis of disease-specific metabolite patterns that are correlated to the results of other investigations in plasma (carnitine, acylcarnitines) and urine (organic acids, acylglycines).				

Critical Values: N/A

Limitations: For nutritional assessment, a 12-14 hour fast is required.

Methodology: Capillary gas chromatography/Mass spectrometry, Stable isotope dilution.

References: Mayo Medical Laboratories Web Page July 2013

Updates: 12/23/2010: Updated units, no change in reference ranges.
1/26/2016: CPT update.