Lab Dept: Chemistry

Test Name: PIPECOLIC ACID, SERUM

General Information
Lab Order Codes: PIPE
Synonyms: N/A
CPT Codes: 82542 – Column chromatography, includes mass spectrometry, if performed, non-drug analytes, not elsewhere specified, qualitative or quantitative, each specimen

Test Includes: Pipecolic Acid reported in nmol/mL.

Logistics
Test Indications: Differential diagnosis between disorders of peroxisomal biogenesis and disorders with loss of a single peroxisomal function.
Lab Testing Sections: Chemistry – Sendouts
Referred to: Mayo Medical Laboratories (MML Test: PIPA)
Phone Numbers: MIN Lab: 612-813-6280
STP Lab: 651-220-6550
Test Availability: Daily, 24 hours
Turnaround Time: 2 - 31 days
Special Instructions: Fasting is recommended. See Patient Preparation

Specimen
Specimen Type: Blood
Container: SST (Marble, gold or red top tube)
Draw Volume: 4.5 mL (Minimum: 3 mL) blood
Processed Volume: 1.5 mL (Minimum: 1 mL) serum
Collection: Routine venipuncture
Special Processing: Lab Staff: Centrifuge specimen within 45 minutes of draw, remove serum aliquot into a screw-capped round bottom plastic vial. Store and ship at frozen temperatures. Forward promptly.

Patient Preparation: Patient should fast 12 hours or more, infants and small children just before next feeding.

Sample Rejection: Warm; cold refreeze; mislabeled or unlabeled specimens

**Interpretive**

<table>
<thead>
<tr>
<th>Reference Range:</th>
<th>Age</th>
<th>Range (nmol/mL)</th>
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</thead>
<tbody>
<tr>
<td>&lt;6 months:</td>
<td>&lt; or = 6.0 nmol/mL</td>
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<tr>
<td>6 months to &lt;1 year:</td>
<td>&lt; or = 5.9 nmol/mL</td>
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<tr>
<td>1 – 17 years:</td>
<td>&lt; or = 4.3 nmol/mL</td>
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<tr>
<td>&gt;or=18 years:</td>
<td>&lt; or = 7.4 nmol/mL</td>
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Interpretation: Elevated pipecolic acid levels are seen in disorders of peroxisomal biogenesis; normal levels are seen in disorders with loss of a single peroxisomal function.

Abnormal levels of pipecolic acid should be interpreted together with the results of other biochemical markers of peroxisomal disorders, such as plasma C(22)-C(26) very long chain fatty acids, phytanic acid, pristanic acid, RBC plamalogens, and bile acid intermediates.

**Critical Values:** N/A

**Limitations:** Newborn with disorders of peroxisomal biogenesis often have normal levels of pipecolic acid which increase with age.

Abnormal results may reflect either prematurity or nongenetic liver and/or renal disease.

**Methodology:** Gas Chromatography-Mass Spectrometry (GC-MS).

**References:** Mayo Medical Laboratories (September 2016)

**Updates:** 5/8/2012: Reference range updates.
1/26/2016: CPT update