## General Information

**Lab Order Codes:** NEOP

**Synonyms:** Neopterin, CSF

**CPT Codes:** 82542 – Column chromatography, includes mass spectrophotometry, if performed, non-drug analytes not elsewhere specified, qualitative or quantitative, each specimen

**Test Includes:** CSF Neopterin level reported in nmol/L.

## Logistics

**Test Indications:** Neopterin is a catabolic product of guanosine triphosphate (GTP) and the synthesis of tetrahydrobiopterin (BH4). It is predominantly produced by macrophages and measurement in cerebrospinal fluid provides information about activation of the cellular immune system. Increased neopterin production is found in, but not limited to: viral infections including HIV, bacterial infections, autoimmune disease and malignant tumor diseases. Changes in CSF neopterin may also occur in deficiency of the BH4 synthesis pathway.

**Lab Testing Sections:** Sendouts - Chemistry

**Referred to:** Medical Neurogenetics, 5424 Glenridge Drive NE, Atlanta, GA 30342

**Phone Numbers:**
- MIN Lab: 612-813-6280
- STP Lab: 651-220-6550

**Test Availability:** Restricted collection, Monday-Friday ONLY

**Turnaround Time:** Results within 2 weeks

**Special Instructions:** Note: If other Neurochemistry tests are to be collected along with the Neopterin Level, contact the laboratory for a special collection kit. Otherwise, a conical CSF tube can be collected for this test alone. See [Neurochemistry for Neurotransmitter Diseases, CSF](http://www.medicalneurogenetics.com/assets/dr/Neurochem TestReq.pdf) for more information.

See Collection below. Do not collect on weekends or holidays. Send completed Medical Neurogenetics (MNG) Request form [here](http://www.medicalneurogenetics.com/assets/dr/Neurochem TestReq.pdf) with the sample to the lab.
**Specimen**

**Specimen Type:** CSF

**Container:** Spinal fluid conical tube

**Draw Volume:** 1 mL (Minimum: 0.5 mL) spinal fluid

**Processed Volume:** Same as Draw Volume

**Collection:** Routine spinal fluid collection. Collect specimen on ice and send to the laboratory immediately.

**Special Processing:**
- If the sample is blood contaminated, the tube should be immediately centrifuged (prior to freezing) and the clear CSF transferred to new similarly labeled tube. Continue with step 1 below.
- If the sample is NOT blood contaminated, continue with step 1 below.

1. Make sure you have a completed MNG request form.
2. Label the patient specimen tube with appropriate patient identifiers.
3. Place the specimen inside a specimen transport bag and the MNG request form inside the pouch of the transport bag.
4. Store sample at -80 degrees C until it can be shipped.
5. Ship sample frozen on dry ice.
6. Send by overnight courier to arrive Monday – Saturday.

**Patient Preparation:** None

**Sample Rejection:** Hemolysis; lipemia, icteric; mislabeled or unlabeled specimens; improper collection and handling

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### Interpretive

**Reference Range:**

<table>
<thead>
<tr>
<th>Age (years)</th>
<th>Neopterin Level (nmol/L)</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.0 – 0.2</td>
<td>7 – 65 nmol/L</td>
</tr>
<tr>
<td>0.2 – 0.5</td>
<td>7 – 65 nmol/L</td>
</tr>
<tr>
<td>0.5 – 2.0</td>
<td>7 – 65 nmol/L</td>
</tr>
<tr>
<td>2.0 – 5.0</td>
<td>7 – 65 nmol/L</td>
</tr>
<tr>
<td>5.0 – 10.0</td>
<td>7 – 40 nmol/L</td>
</tr>
<tr>
<td>10.0 – 15.0</td>
<td>8 – 33 nmol/L</td>
</tr>
<tr>
<td>Adults</td>
<td>8 – 28 nmol/L</td>
</tr>
</tbody>
</table>
Critical Values:  N/A

Methodology:  HPLC, electrochemistry and fluorescence

References:  Medical Neurogenetics December 2017
Phone: 676-225-0222  Fax: 678-597-5665

Updates:  11/5/14: Move from MML forward to Baylor to direct send to MNG. Note updated reference ranges and method.
12/14/2017: CPT update.