TEST ID: MELP
MELANOMA TARGETED GENE PANEL BY NEXT GENERATION SEQUENCING, TUMOR

USEFUL FOR

Diagnosis and management of patients with melanoma

CLINICAL INFORMATION

Targeted cancer therapies are defined as antibody or small molecule drugs that block the growth and spread of cancer by interfering with specific cell molecules involved in tumor growth and progression. Multiple targeted therapies have been approved by the United States Food and Drug Administration (FDA) for treatment of specific cancers. Molecular genetic profiling is often needed to identify targets amenable to targeted therapies and to minimize treatment costs and therapy-associated risks.

Next generation sequencing has recently emerged as an accurate, cost-effective method to identify mutations across numerous genes known to be associated with response or resistance to specific targeted therapies. MELP / Melanoma Targeted Gene Panel by Next Generation Sequencing, Tumor is a single assay that uses formalin-fixed paraffin-embedded tissue to assess for common mutations in the following genes known to be associated with melanoma: BRAF, GNA11, GNAQ, KIT, and NRAS. The results of this test can be useful for assessing prognosis and guiding treatment of individuals with melanoma.

A detailed list of the targeted gene regions interrogated by this test can be found in the Special Instructions and Forms section of the Mayo Medical laboratories online test catalog.

GENETICS INFORMATION

Targeted Exons and Codons Interrogated by Melanoma Targeted Gene Panel

<table>
<thead>
<tr>
<th>GENE</th>
<th>EXONS</th>
<th>CODONS</th>
</tr>
</thead>
<tbody>
<tr>
<td>BRAF</td>
<td>11, 15</td>
<td>594, 596, 600</td>
</tr>
<tr>
<td>GNAQ</td>
<td>5</td>
<td>209</td>
</tr>
<tr>
<td>GNA11</td>
<td>5</td>
<td>209</td>
</tr>
<tr>
<td>KIT</td>
<td>2, 9, 10, 11, 13-15, 17, 18</td>
<td>n/a</td>
</tr>
<tr>
<td>NRAS</td>
<td>2-4</td>
<td>12, 13, 61, 146</td>
</tr>
</tbody>
</table>

MOBILE APPS FROM MAYO MEDICAL LABORATORIES

- Lab Catalog for iPad and Lab Reference for iPhone and iPod Touch
- Requires iOS 5.1+

SPECIMEN TYPE

Detailed on backside of this sheet.

REFERENCE VALUES

An interpretive report will be provided.

ANALYTIC TIME

12 days

ADDITIONAL TESTS

Test ID: SLIRV
Reporting Name: Slide Review in MG
Available Separately: No
Always Performed: Yes
**SPECIMEN TYPE**

**Preferred**
Formalin-fixed, paraffin-embedded tissue block

**Acceptable**
- Slides – 1 slide stained with hematoxylin and eosin and 10 unstained, nonbaked slides with 5-micron thick sections of the tumor tissue
- Direct smears or ThinPrep cytology slides – 1 to 2 slides (stained and coverslipped) with a minimum of 5000 total nucleated cells

**Additional Information**
At least 20% tumor is required for this assay. The amount of tissue needed is dependent on a variety of preanalytical factors (eg, cellularity, ischemic time, fixation). In general, the minimum specimen adequacy for this test is approximately a 6mm area of tissue (can be over multiple slides) or 5000 total cells.

**MAYO CLINIC NGS EXPERIENCE WITH MELANOMAS**

The MELP panel detects 21% of patients with targetable **BRAF** and **KIT** mutations not targeted with an FDA approved assay. In addition, the panel can aid in the diagnosis and/or determine eligibility for clinical trials in another 37% of patients.