WHEN TO ORDER THIS TEST

- To assist in drug selection for patients with solid tumors by identifying specific mutations within genes known to be associated with response or resistance to specific cancer therapies.
- To simultaneously assess multiple genes of the EGFR pathway.
- To determine prognosis for patients with solid tumors.

CLINICAL INFORMATION

- This test uses targeted next generation sequencing to evaluate for somatic mutations within the BRAF, HRAS, NRAS, and KRAS genes associated with cancer.
- Next generation sequencing is an accurate, cost-effective method to identify gene mutations known to be associated with response or resistance to specific targeted therapies.
- Targeted cancer therapies are 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.

GENETICS INFORMATION

Targeted Exons and Codons Interrogated by RAS/RAF 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>HRAS</td>
<td>2, 3</td>
<td>12, 13, 59, 61</td>
</tr>
<tr>
<td>NRAS</td>
<td>2, 3, 4</td>
<td>12, 13, 59, 61, 146</td>
</tr>
<tr>
<td>KRAS</td>
<td>2, 3, 4</td>
<td>12, 13, 59, 61, 117, 146</td>
</tr>
</tbody>
</table>

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

CONTENT AND VALUES SUBJECT TO CHANGE. SEE THE MAYO MEDICAL LABORATORIES TEST CATALOG FOR CURRENT INFORMATION.
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 (e.g., cellularity, ischemic time, fixation). In general, the minimum specimen adequacy for this test is approximately a 6 mm² area of tissue (can be over multiple slides) or 5000 total cells.

MAYO CLINIC NGS EXPERIENCE WITH COLORECTAL TUMORS (N=500)

Extended RAS/RAF testing identifies an additional ~25% of patients that will likely not benefit from EGFR targeted therapy.

Unpublished Mayo Clinic data. Dr. Benjamin Kipp. 2015.