USEFUL FOR IDENTIFYING

- Mutations that may support a diagnosis for patients with tumors of the central nervous system
- Mutations that may help determine prognosis for patients with tumors of the central nervous system
- Central nervous system tumors that may respond to targeted therapies by assessing multiple gene targets simultaneously
- Specific mutations within genes known to be associated with response or resistance to specific cancer therapies

CLINICAL INFORMATION

Molecular analysis of biomarkers is increasingly being used in oncology practice to support and guide diagnosis, prognosis, and therapeutic management. Within the context of central nervous system (CNS) tumors, molecular profiling allows for robust delineation of diagnostic groups characterized by distinct molecular profiles with superior prognostic significance than histologic classification alone. 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 US FDA for treatment of specific cancers. Integrated molecular profiling allows for effective identification of mutations associated with response or resistance to specific targeted therapies, which can guide therapeutic management while minimizing treatment costs and therapy-associated risks. The Neuro-Oncology Panel interrogates targeted regions across 50 genes to assess for the presence of somatic mutations. The results of this test can be useful for diagnosis, prognostication, and therapeutic management for patients with CNS tumors.

GENES INTERROGATED BY THE NEURO-ONCOLOGY PANEL

<table>
<thead>
<tr>
<th>AKT1</th>
<th>CIC</th>
<th>FGFR2</th>
<th>GNAS</th>
<th>MYBL1</th>
<th>NOTCH1</th>
<th>PIK3R2</th>
<th>SDHB</th>
<th>SMO</th>
<th>TET2</th>
</tr>
</thead>
<tbody>
<tr>
<td>ATRX</td>
<td>CTNNB1</td>
<td>FGFR3</td>
<td>H3F3A</td>
<td>MYC</td>
<td>NOTCH2</td>
<td>PTCH1</td>
<td>SDHC</td>
<td>STAT3</td>
<td>TP53</td>
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<tr>
<td>BRAF</td>
<td>DAXX</td>
<td>FUBP1</td>
<td>IDH1</td>
<td>MYCN</td>
<td>PDGFRA</td>
<td>PTEN</td>
<td>SDHD</td>
<td>SUFU</td>
<td>TSC1</td>
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<tr>
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<td>EGFR</td>
<td>GNA11</td>
<td>IDH2</td>
<td>NF1</td>
<td>PIK3CA</td>
<td>RB1</td>
<td>SMARCA4</td>
<td>TERT*</td>
<td>TSC2</td>
</tr>
<tr>
<td>CDKN2B</td>
<td>FGFR1</td>
<td>GNAQ</td>
<td>JAK2</td>
<td>NF2</td>
<td>PIK3R1</td>
<td>SDHA</td>
<td>SMARCB1</td>
<td>TET1</td>
<td>WT1</td>
</tr>
</tbody>
</table>

*Including promoter region

MOBILE APPS FROM MAYO MEDICAL LABORATORIES

- Lab Catalog for iPad and Lab Reference for iPhone and iPod Touch

Requires iOS 5.1+

SPECIMEN REQUIRED

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

ANALYTIC TIME

12 days

CONTENT AND VALUES SUBJECT TO CHANGE. SEE THE MAYO MEDICAL LABORATORIES TEST CATALOG FOR CURRENT INFORMATION.
INTERPRETATION

An interpretive report will be provided.

CLINICAL REFERENCE


