**cKIT - Melanoma**

**Test Code:** 4210  
**Department:** Molecular Oncology

**Test Synonyms:**  
KIT for Malignant Melanoma (exons 11, 13, & 17)

**CPT Code(s):**  
83890  
83892  
83898 x 3  
83903 x 3  
83907

**Background:**  
Activating mutations of the KIT tyrosine kinase are present in some cases of malignant melanoma. The frequency varies with primary site, as indicated below.

<table>
<thead>
<tr>
<th>Sites</th>
<th>All cutaneous</th>
<th>Sun-damaged skin</th>
<th>Anorectal &amp; vaginal</th>
<th>Nasal sinus &amp; oral cavity</th>
<th>Acral</th>
</tr>
</thead>
<tbody>
<tr>
<td>KIT mutations</td>
<td>1-2%</td>
<td>~7%</td>
<td>15-23%</td>
<td>~5%</td>
<td>10-15%</td>
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</table>

In two phase II trials of imatinib mesylate for the treatment of patients with KIT-mutant melanomas, the disease control rate (stable disease, partial or complete response) ranged from 53% to 71%,\(^1,2\) and the median progression free survival was 9.0 months.\(^2\) Responses to sunitinib,\(^3\) dasatinib,\(^4\) and sorafenib\(^5,6\) have also been reported in individual cases of KIT-mutant melanoma.

**Methodology:**  
The testing protocol involves the following steps.  
1. Microscopic examination of the specimen and macrodissection of tumor-rich areas.  
2. DNA extraction and purification.  
3. PCR amplification of KIT exons 11, 13 & 17.  
4. Screening for mutations by one of two methods: direct, bidirectional sequencing, or real-time PCR with high resolution melting curve analysis. DNA sequencing is used to confirm any potential mutations identified by melting curve analysis.  
5. The estimated sensitivity of these methods is 20% mutant allele.

**Specimen Requirements:**  
- A paraffin block or  
- 10 unstained sections of tumor (4-5 microns)(15 sections for small biopsies)

**A REQUISITION FORM MUST ACCOMPANY ALL SAMPLES. Please include detailed clinical information.**

**Test Performed (Days):**  
Mon – Fri

**Turn Around Time:**  
7-10 days
cKIT - Melanoma

Shipment Sensitivity Requirements:
Package and ship specimen to remain cold, but not frozen. Ship via overnight express, using the FedEx priority overnight label provided. Contact Client Services at (855) 535-1522 for kits and instructions.

References