The following 50 genes were tested:

ABL1, AKT1, ALK, APC, ATM, BRAF, CDH1, CDKN2A, CSF1R, CTNNB1, EGFR, ERBB2, ERBB4, EZH2, FBXW7, FGFR1, FGFR2, FGFR3, FLT3, GNA11, GNAQ, GNAS, HNF1A, HRAS, IDH1, IDH2, JAK2, JAK3, KDR, KIT, KRAS, MET, MLH1, MPL, NOTCH1, NPM1, NRAS, PDGFRA, PIK3CA, PTEN, PTPN11, RB1, RET, SMAD4, SMARCB1, SMO, SRC, STK11, TP53, VHL

These mutations, relevant in Lung Cancer, were tested for and determined to be absent:
- EGFR exon 18, G719X mutation (Not Found)
- EGFR exon 20, T790M mutation (Not Found)
- EGFR exon 21, L861Q mutation (Not Found)
- EGFR exon 19 deletion/insertion (Not Found)
- EGFR exon 20 insertion (Not Found)

**ALTERATIONS DETECTED**

<table>
<thead>
<tr>
<th>GENE</th>
<th>ALTERATION</th>
<th>MUTANT FRACTION</th>
<th>FDA TARGETED THERAPIES (lung cancer)</th>
<th>FDA TARGETED THERAPIES (for other indications)</th>
<th>CLINICAL TRIALS (DETAILS BELOW)</th>
</tr>
</thead>
<tbody>
<tr>
<td>BRAF</td>
<td>No Reported Mutation</td>
<td></td>
<td>Dabrafenib not indicated</td>
<td>Melanoma (BRAF Wild Type): Nivolumab &amp; Pembrolizumab Indicated; Dabrafenib, Trametinib, Vemurafenib &amp; Cobimetinib NOT indicated</td>
<td></td>
</tr>
<tr>
<td>CTNNB1</td>
<td>p.T40A; c.118A&gt;G</td>
<td>3.9%</td>
<td>None</td>
<td></td>
<td></td>
</tr>
<tr>
<td>ERBB4</td>
<td>p.T265A; c.793A&gt;G</td>
<td>5.8%</td>
<td>None</td>
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<td></td>
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</tbody>
</table>

**CTNNB1 DESCRIPTION**

The protein encoded by this gene is part of a complex of proteins that constitute adherens junctions (AJs). AJs are necessary for the creation and maintenance of epithelial cell layers by regulating cell growth and adhesion between cells. The encoded protein also anchors the actin cytoskeleton and may be responsible for transmitting the contact inhibition signal that causes cells to stop dividing once the epithelial sheet is complete. Finally, this protein binds to the product of the APC gene, which is mutated in adenomatous polyposis of the colon. Mutations in this gene are a cause of colorectal cancer (CRC), pilomatrixoma (PTR), medulloblastoma (MDB), and ovarian cancer. Alternative splicing results in multiple transcript variants. [provided by RefSeq, Aug 2016]

**ERBB4 DESCRIPTION**

This gene is a member of the Tyr protein kinase family and the epidermal growth factor receptor subfamily. It encodes a single-pass type I membrane protein with multiple cysteine rich domains, a transmembrane domain, a tyrosine kinase domain, a phosphotyrosylinositol-3 kinase binding site and a PDZ domain binding motif. The protein binds to and is activated by neuregulins and other factors and induces a variety of cellular responses including mitogenesis and differentiation. Multiple proteolytic events allow for the release of a cytoplasmic fragment and an extracellular fragment. Mutations in this gene have been associated with cancer. Alternatively spliced variants which encode different protein isoforms have been described; however, not all variants have been fully characterized. [provided by RefSeq, Jul 2008]