Summary and Explanation:
The CCND1 break apart probe is designed to detect chromosomal rearrangements involving the CCND1 gene on chromosome 11. The CCND1 gene encodes a cyclin D1 protein and functions as a cell cycle regulator. Chromosomal rearrangements involving the CCND1 have been identified in a variety of cancers and hematological malignancies. Rearrangements of the CCND1 gene result in CCND1 overexpression and cell cycle deregulation. CCND1 gene rearrangement involving the immunoglobulin heavy chain (IGH) gene results in CCND1 overexpression and is considered one of the critical pathogenetic features in mantle cell lymphoma. CCND1 overexpression due to CCND1/IGH rearrangement has also been found in multiple myeloma, and is identified in 25-50% of MM cases. Conventional cytogenetic techniques such as fluorescent in situ hybridization (FISH) can be utilized to identify chromosomal rearrangements involving the CCND1 gene.

Principle of Procedure:
The CCND1 Break Apart probe is a dual color design optimized to detect rearrangements in the CCND1 gene. The ~513 kb probe labeled in green flanks the centromeric end of the CCND1 gene and the ~530kb probe labeled in orange flanks the telomeric end of the CCND1 gene. When the probe is hybridized to a normal cell it will show two orange/green (yellow) fusion signal patterns. A cell containing a rearrangement of the CCND1 gene will show one orange, one green (separated) and one orange/green (yellow) fusion signal.

Limitations:
This product is provided for Research Use Only (RUO) and is not for use in diagnostic procedures. Suitability for specific applications may vary and it is the responsibility of the end user to determine the appropriate application for its use.

Precautions:
1. This product contains formamide, which may be toxic. Formamide may cause serious eye damage or reproductive toxicity. It may also cause irritation by inhalation or skin contact. Avoid any direct contact exposure to reagent. Take appropriate protective measures (use disposable gloves, protective glasses, and lab garments). The SDS is available upon request and is located at http://biocare.net.
2. Specimens, before and after fixation, and all materials exposed to them should be handled as if capable of transmitting infection and disposed of with proper precautions. Never pipette reagents by mouth and avoid contacting the skin and mucous membranes with reagents and specimens. If reagents or specimens come in contact with sensitive areas, wash with copious amounts of water.

Species Reactivity: Human
Known Application: Fluorescence In-situ Hybridization (FISH) on formalin-fixed paraffin-embedded (FFPE) tissues.
Supplied As: Probe in hybridization buffer.

Storage and Stability:
Store probe at -20ºC and away from light. The product is stable to the expiration date printed on the label, when stored under these conditions. Do not use after expiration date.

Technical Note:
Biocare Medical Break Apart FISH probes are optimized to provide the best signal performance using optical filters that can accommodate the excitation/emission wavelengths specified below. Using filters outside these spectral specifications may produce sub-optimal results.

<table>
<thead>
<tr>
<th>Fluorophore</th>
<th>Excitation (nm)</th>
<th>Emission (nm)</th>
</tr>
</thead>
<tbody>
<tr>
<td>GREEN</td>
<td>498</td>
<td>522</td>
</tr>
<tr>
<td>ORANGE</td>
<td>537</td>
<td>556</td>
</tr>
</tbody>
</table>

Biocare Medical
4040 Pike Lane
Concord, CA 94520
USA
Tel: 800-799-9499 | www.biocare.net | Fax: 925-603-8080
**Technical Support:**
Contact Biocare’s Technical Support at 1-800-542-2002 for questions regarding this product.

**References:**