

CCND1 (11q13) Break Apart Orange/Green

FISH Probe
902-7009-031318

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Catalog Number: PFR7009A

Description: CCND1 (11q13) Break Apart Orange/Green
FISH Probe

Dilution: Ready-to-use

Volume: 100 µL

Intended Use:

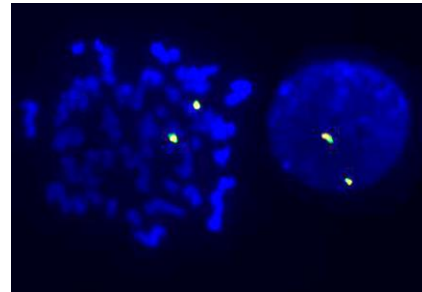
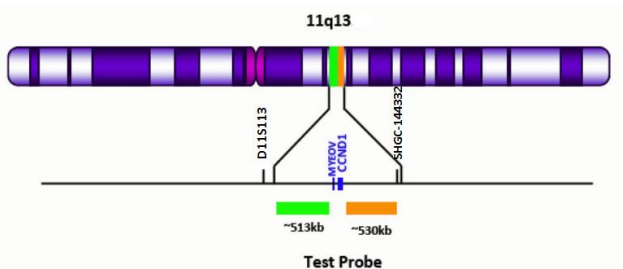
For Research Use Only. Not for use in diagnostic procedures.

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 regulator¹. 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 deregulation². 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 lymphoma¹. CCND1 overexpression due to CCND1/IGH rearrangement has been identified in 25-50% of multiple myeloma cases³. Conventional cytogenetic techniques such as fluorescent in situ hybridization (FISH) can be utilized to identify chromosomal rearrangements involving the CCND1 gene.

Principle of Procedure:

CCND1 Break Apart probe is a dual color probe designed to detect rearrangements in the CCND1 gene. The green probe is approximately 513 kb in size and flanks the centromeric end of the CCND1 gene. The orange probe is approximately 530 kb in size and 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 patterns.



CCND1 (11q13) Break Apart (Orange/Green) probe hybridized on normal blood sample. Interphase and metaphase cellular states are shown.

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 -20°C 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.

Fluorophore	Excitation (nm)	Emission (nm)
GREEN	498	521
ORANGE	546	575

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

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contact with sensitive areas, wash with copious amounts of water⁴.

Technical Support:

Contact Biocare's Technical Support at 1-800-542-2002 for questions regarding this product.

References:

1. Al-Kawaaz, M., S. Mathew, Y. Liu, M. L. Gomez, F. Chaviano, D. M. Knowles, A. Orazi, and W. Tam. "Cyclin D1-Positive Diffuse Large B-Cell Lymphoma With IGH-CCND1 Translocation and BCL6 Rearrangement: A Report of Two Cases." *American Journal of Clinical Pathology* (2015): 288-99. Print.
2. Fan, Hongxin, Margaret L. Gulley, Randy D. Gascoyne, Douglas E. Horsman, Sheryle A. Adomat, and Chong G. Cho. "Molecular Methods for Detecting T(11;14) Translocations in Mantle-Cell Lymphomas." *Diagnostic Molecular Pathology* (1998): 209-14. Print.
3. Guglielmelli, Tommasina, Emilia Giugliano, Susanna Cappia, Mauro Papotti, and Giuseppe Saglio. "Frequency and Distribution of Trisomy 11 in Multiple Myeloma Patients: Relation with Overexpression of CCND1 and T(11;14)." *Cancer Genetics and Cytogenetics* (2007): 51-56. Print.
4. Clinical and Laboratory Standards Institute (CLSI). Protection of Laboratory workers from occupationally Acquired Infections; Approved Guideline-Fourth Edition CLSI document M29-A4 Wayne, PA 2014.