IGH Green/CCND1 Orange/FGFR3 Aqua

FISH Probe
902-7018-113017

Catalog Number: PFR7018A
Description: IGH Green/CCND1 Orange/FGFR3 Aqua FISH Probe

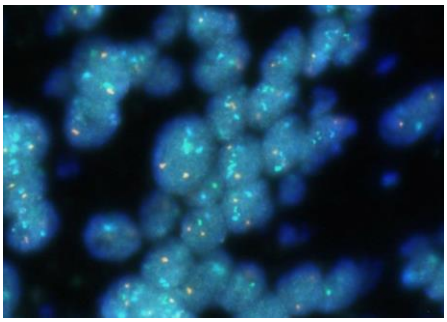
Dilution: Ready-to-use

Volume: 100 µL

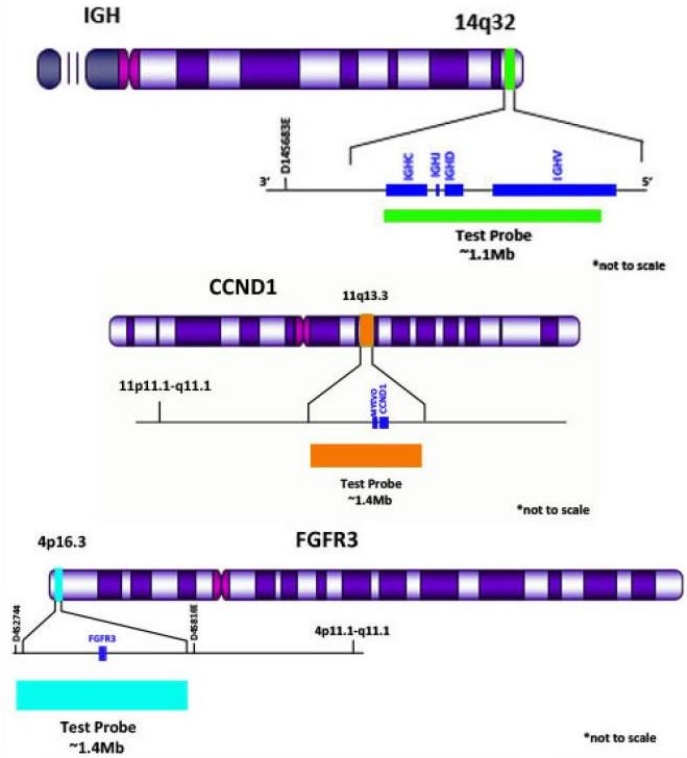
Intended Use:
For Research Use Only. Not for use in diagnostic procedures.

Summary and Explanation:
The IGH Green/CCND1 Orange/FGFR3 Aqua FISH probe is designed to detect chromosomal rearrangements involving the immunoglobulin heavy chain gene (IGH) binding partners CCND1 and FGFR3. IGH gene rearrangements are considered to be one of the classical cytogenetic gene aberrations associated with numerous cancers such as: Chronic lymphocytic leukemia (CLL), Multiple Myeloma (MM), and Non-Hodgkin lymphoma[1, 2, 3]. Chromosomal rearrangements involving the IGH gene have been identified in 70% of MM patients, 50% of non-Hodgkins lymphoma patients, and 16% of CLL patients[2,4,5]. Cytogenetic abnormalities involving the IGH gene give rise to unique gene rearrangement patterns that are used to characterize the molecular pathogenesis of multiple myeloma. IGH gene rearrangement partners such as CCND1 and FGFR3 have been identified as recurrent chromosomal rearrangements and are used to stratify patients with different disease phenotypes [6,7]. A conventional cytogenetic technique such as fluorescent in situ hybridization (FISH) is considered one of the gold standards for detecting IGH gene rearrangements [8].

Principle of Procedure:
The IGH probe is ~1.1Mb, located on chromosome 14q32 covering the constant and variable IGH regions and is labeled in green. The CCND1 probe is ~1.4Mb covering the CCND1 (11q13) gene and is labeled in orange. The FGFR3 probe is ~1.4Mb, located on chromosome 4p16.3, spans the FGFR3 gene and is labeled in aqua. A normal cell would show 2 orange, 2 green and 2 aqua signals.



The IGH Green/CCND1 Orange/FGFR3 Aqua FISH probe hybridized on FFPE tissue.



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 Tri-color 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)
AQUA	432	472
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.

Biocare Medical
60 Berry Drive
Pacheco, CA 94553
USA

Tel: 800-799-9499 | www.biocare.net | Fax: 925-603-8080

IGH Green/CCND1 Orange/FGFR3 Aqua

FISH Probe
902-7018-113017

BIOCARE MEDICAL

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[9].

Technical Support:

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

References:

1. Cavazzini, Francesco, Lara Rizzotto, Olga Sofritti, Giulia Daghia, Francesca Cibien, Sara Martinelli, Maria Ciccone, Elena Saccenti, Melissa Dabusti, Abbas Awad Elkareem, Antonella Bardi, Elisa Tammiso, Antonio Cuneo, and Gian Matteo Rigolin. "Clonal Evolution including 14q32/translocations in Chronic Lymphocytic Leukemia: Analysis of Clinicobiologic Correlations in 105 Patients." *Leukemia & Lymphoma* (2011): 83-88. Print.
2. Moreau, P. "Recurrent 14q32 Translocations Determine the Prognosis of Multiple Myeloma, Especially in Patients Receiving Intensive Chemotherapy." *Blood* (2002): 1579-583. Print.
3. Aamot, Hege Vangstein, Merete Bjornslett, Jan Delabie, and Sverre Heim. "T(14;22)(q32;q11) in Non-Hodgkin Lymphoma and Myeloid Leukaemia: Molecular Cytogenetic Investigations." *British Journal of Haematology* (2005): 845-51. Print.
4. Bernicot, I., N. Douet-Guilbert, M.-J. Le Bris, A. Herry, F. Morel, and M. De Braekeleer. "Molecular Cytogenetics of IGH Rearrangements in Non-Hodgkin B-cell Lymphoma." Cytogenetic and Genome Research (2006): 345-52. Print.
5. Lu, Gary, Yue Kong, and Changjun Yue. "Genetic and Immunophenotypic Profile of IGH@ Rearrangement Detected by Fluorescence in Situ Hybridization in 149 Cases of B-cell Chronic Lymphocytic Leukemia." *Cancer Genetics and Cytogenetics* (2009): 56-63. Print.
6. Richelda, Raffaella, Domenica Ronchetti, Luca Baldini, Lilla Cro, Luigi Viggiano, Rosalia Marzella, Mariano Rocchi, Takemi Otsuk, Luigia Lombardi, Anna Teresa Maiolo, and Antonino Neri. "A Novel Chromosomal Translocation T(4; 14)(p16.3; Q32) in Multiple Myeloma Involves the Fibroblast Growth-Factor Receptor 3 Gene." *Blood* (1997): 4062-070. Print.
7. Keats, Jonathan J, Tony Reiman, Christopher A Maxwell, Brain J Taylor, Loree M Larratt, Michael J Mant, Andrew R Belch, and Linda M Pilarski. "In Multiple Myeloma, T(4;14)(p16;q32) Is an Adverse Prognostic Factor Irrespective of FGFR3 Expression." *Blood* (2002): 1520-529. Print.
8. Segges, Priscilla, and Esteban Braggio. "Genetic Markers Used for Risk Stratification in Multiple Myeloma." *Genetics Research International* (2011): 1-4. Print.
9. 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.

Biocare Medical
60 Berry Drive
Pacheco, CA 94553
USA