

TERC (3q26.2) / 5p15.2 / CDKN2A (9p21.3) / CC7 Four Color

FISH Probe
902-7041-102517

BIOCARE
M E D I C A L

Catalog Number: PFR7041A

Description: TERC (3q26.2) / 5p15.2 / CDKN2A (9p21.3) / CC7 Four Color FISH Probe

Probe

Dilution: Ready-to-use

Volume: 100 µL

Intended Use:

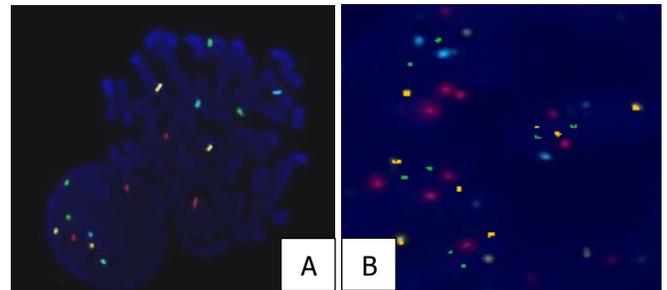
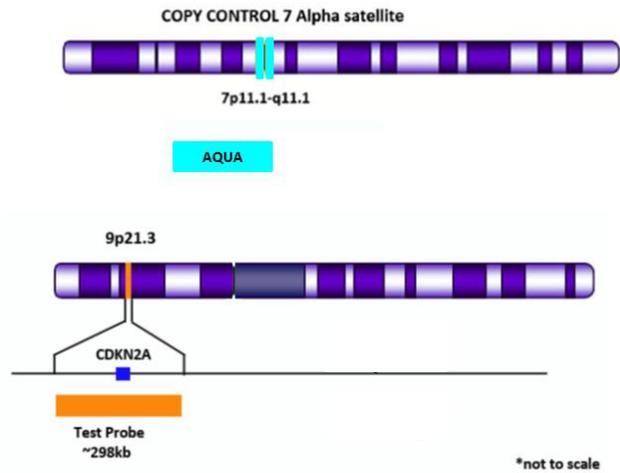
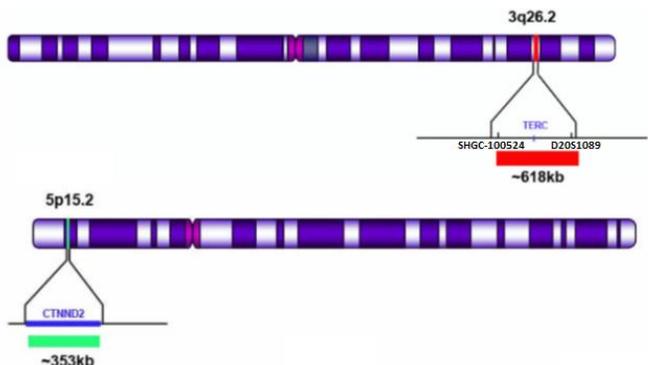
For Research Use Only. Not for use in diagnostic procedures.

Summary and Explanation:

Cervical cancer is one of the most common cancers affecting women worldwide. The implementation of cytogenetic based screening techniques has greatly reduced the incidence and mortality of cervical cancer in the United States¹. Moreover, traditional screening methods such as Pap smears and human papillomavirus (HPV) based testing are utilized to stratify and identify patients with high grade cervical cancer¹. Specifically, fluorescence in-situ hybridization based HPV – associated cancer tests are able to identify hallmark cytogenetic abnormalities that are associated with cervical cancer carcinogenesis². Chromosomal gains at TERC (3q26.2), 5p15.2 and copy control 7^{1,2} are associated with cervical cancer pathogenesis. In addition, the detection of CDKN2A(p16) gene overexpression has proven to be a valuable biomarker in HPV associated diseases². FISH can be used as a diagnostic tool to detect these specific genetic abnormalities.

Principle of Procedure:

The TERC (3q26.2) / 5p15.2 / CDKN2A (9p21.3) / CC7 Four Color FISH probe is designed to detect copy number variations of the TERC (3q26.2), 5p15.2 and CDKN2A (p16) regions as well as enumeration of chromosome 7. The TERC (3q26.2) probe is ~618kb, located on chromosome 3q26.2 covering the TERC gene and is labeled in red. The 5p15 probe is ~353kb, located on chromosome 5p15.2 spanning the CTNND2 gene and is labeled in green. The copy 7 enumeration probe consists of highly repeated human α-satellite DNA sequences located at the centromere region of chromosome 7 and is labeled in aqua. The CDKN2A (p16) probe is ~298kb, located on chromosome 9p21.3 covering the CDKN2A (p16) gene and is labeled in orange. A normal cell would show two red, two green, two aqua and two orange signals.



(A) TERC (3q26.2) / 5p15.2 / CDKN2A (9p21.3) / CC7 Four Color FISH probe hybridized on normal blood sample. Interphase and metaphase cellular states are shown. (B) TERC (3q26.2) / 5p15.2 / CDKN2A (9p21.3) CC7 Four Color FISH probe hybridized on cervical 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 -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 Four 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)
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Rev. 062117

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AQUA	434	481
GREEN	498	522
ORANGE	537	556
RED	592	628

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 and fluorescent dyes that may be hazardous to your health. 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 water³.

Technical Support:

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

References:

1. Luhn, Patricia, Jane Houldsworth, Lynnette Cahill, Mark Schiffman, Philip E. Castle, Rosemary E. Zuna, S. Terence Dunn, Michael A. Gold, Joan Walker, and Nicolas Wentzensen. "Chromosomal Gains Measured in Cytology Samples from Women with Abnormal Cervical Screening Results." *Gynecologic Oncology* (2013): 1-16.
2. Houldsworth, Jane. "FHACTION: The FISH-based HPV-associated Cancer Test That Detects Nonrandom Gain at Four Genomic Loci as Biomarkers of Disease Progression." *Diagnostic Profile* (2014).
3. 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.



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