PTEN (10q23) Orange

FISH Probe
901-7321-120517

Catalog Number: PFI7321V
Description: PTEN (10q23) Orange FISH Probe
Dilution: Ready-to-use
Volume: 25 µL

Intended Use:
For In Vitro Diagnostic Use.

PTEN (10q23) Orange FISH Probe is intended to hybridize to the 10q23 region on chromosome 10. The clinical interpretation of any positive or negative hybridization events should be complemented by the use of appropriate controls and other diagnostic tests where appropriate. Evaluation should be carried out within the context of the patient's clinical history by a qualified pathologist.

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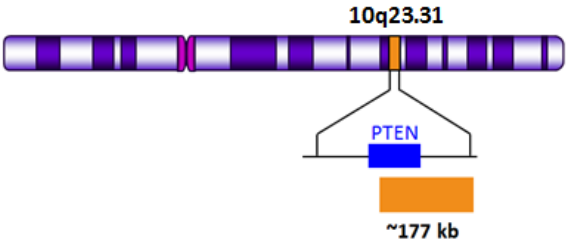
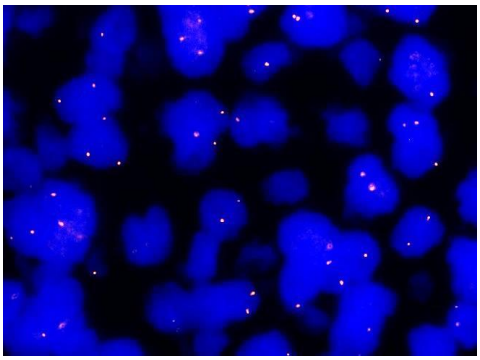
Summary and Explanation:
The PTEN (Phosphatase and Tensin) gene is involved in the regulation of DNA repair, genomic instability, stem cell self-renewal, cellular senescence, and cell migration. Research has shown that deletions of PTEN occur at a very high frequency in prostate cancer. The presence of PTEN genomic losses are frequent at diagnosis and are a significant prognostic marker for the subsequent development of clinically advanced disease[1]. Other studies have demonstrated an association between decreased PTEN protein expression and a higher Gleason grade and advanced tumor stage[2].

The PTEN (10q23) Probe is approximately 177 kb in size and is designed to provide coverage of the 10q23 region of chromosome 10.



*not to scale



PTEN (10q23.31) Orange FISH probe hybridized on FFPE tissue.

Principle of Procedure:

Fluorescent in situ hybridization (FISH) is used to detect specific sequences of chromosomal DNA by using probes, or short fragments, of complementary DNA that have been fluorescently labeled. The hybridization between the probe and its target DNA sequence can be detected under a fluorescent microscope.

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.

Protocol Recommendations:

1. Apply 10 µl of probe mix to the selected target area of the slide.
2. Cover with an 18 mm x 18 mm cover glass and seal with rubber cement.
3. Place sealed slide on thermal cycler designed to perform denaturation and hybridization steps in slide-based FISH procedures (please see manufacturer's operating instructions).
4. Denature probe at 83ºC for 5 minutes and hybridize at 37ºC between 12-18 hours.
5. Remove cover glass and wash slides using the following conditions:
   - 5.1. Wash 1: 2x SSC/0.3% Nonident-P40 at 72ºC±1ºC for 2 minutes
   - 5.2. Wash 2: 2x SSC/0.1% Nonident-P40 at room temperature for 2 minutes
6. Apply 10 µl of a DAPI nuclear counterstain directly to the target area of the slide; cover area using a 24 mm x 50 mm cover glass.
7. Slides are ready for visualization using a fluorescent microscope.

Technical Note:
Biocare Medical 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
RED	593	618

Limitations:
The optimum probe dilution and protocols for specific applications may vary. These include, but are not limited to; sample preparation, hybridization conditions and incubation times, post hybridization washes and microscope filter specifications and illumination conditions. The recommended hybridization times and wash conditions are for

Biocare Medical
60 Berry Drive
Pacheco, CA 94553
USA

IVD CE

Rev: 062117

EC REP EMERGO EUROPE
Prinsessegracht 20
2514 AP The Hague
The Netherlands

guidance only and it is the responsibility of the operator to determine optimal conditions. The clinical interpretation of any positive or negative hybridization events should be evaluated within the context of clinical presentation, morphological and/or cytogenetic criteria by a suitably qualified practitioner. These findings should be complemented by the use of appropriate controls and other diagnostic tests where appropriate.

Quality Control:
Fluorescence In-Situ Hybridization (FISH) Methods for Clinical Laboratories; Approved Guidelines – Second edition (MM07-A2). CLSI, Wayne, PA (www.clsi.org). 2013.

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).
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[3].
3. The SDS is available upon request and is located at http://biocare.net/.

Troubleshooting:
Follow the FISH probe specific protocol recommendations according to data sheet provided. If atypical results occur, contact Biocare Medical's Technical Support at 1-800-542-2002.

References:
1. Yoshimoto M, Cutz J-C, Nuin PAS, Joshua AM, Bayani J, Evans AJ, Zielenska M,Squire JA. Interphase FISH Analysis of PTEN in Histologic Sections Shows Genomic Deletions are Present in 68% of Primary Prostate Cancer and 23% of High-Grade Prostatic Intra-Epithelial Neoplasia. Cancer Genetics and Cytogenetics 169:128-37, 2006.
2. Loss of PTEN expression in paraffin-embedded primary prostate cancer correlates with high Gleason score and advanced stage. McMenamin ME, Soung P, Perera S, Kaplan I, Loda M, Sellers WR. Cancer Res 1999. 59: 4291–4296
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.