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DATA SHEET

eFISH PDGFRB Dual Color Break Apart Probe

Catalog No.

FP081-10X-100µl- 10 test
FP081-20X-200µl- 20 test

Doc No: 932-FP081 Rev: A
Date of Release: 28-Sep-2021

Material Provided: One vial of eFISH probe in hybridization buffer (RTU).

Recommended detection system (Not supplied):
Either of the following detection system is recommended depending on the automation/manual platform used:

eFISH Kit	Cat #	Description
eFISH Histo	DF-500-20XE	Automation/Manual
	DF520-20X	Automation
	DF521-50X	Automation
	DF-522-50X	Automation
eFISH Cyto	DF-510-20XE	Automation/Manual
	DF-530-20X	Automation
	DF-531-20X	Automation
	DF-531-20X	Automation

Intended Use:
The BioGenex eFISH PDGFRB dual color Break Apart probe is currently available for Research use only. eFISH PDGFRB dual color Break Apart probe is designed to be used for the detection of translocations involving the chromosomal region 5q32 harboring the PDGFRB gene in formalin-fixed, paraffin-embedded tissue or cells by fluorescence in situ hybridization (FISH).

BioGenex eFISH PDGFRB dual color Break Apart probe comes in hybridization buffer. The probe contains green-labeled polynucleotides (Green: excitation at 503 nm and emission at 528 nm, similar to FITC), which hybridizes distal to the PDGFRB gene and orange labeled polynucleotides (Orange: excitation at 547 nm and emission at 572 nm, similar to rhodamine), which hybridizes proximal to the PDGFRB locus.

Summary and Explanation
Fluorescence *in situ* hybridization (FISH) is a robust technique of cytogenetic used for the detection of chromosomal aberrations, presence or absence of specific DNA sequence in native context. In this technique florescent probes bind to the target sequence of DNA in chromosome. High specificity and sensitivity coupled rapid and an accurate result has proven role of FISH in both research and diagnosis of solid tumor and hematological malignancies. As technique of cancer cytogenetics, FISH, can be used to identify genetic aberrations viz., deletions, amplification and translocation in tissue sections or within individual cells. FISH is also used for use in genetic counseling, medicine, and species identification. FISH can also be used to detect and localize specific RNA targets in cells, circulating tumor cells, and tissue samples[1,2,3,4,5].

In FISH procedure, fixed tissue sections are pretreated to expose target DNA or mRNA sequences. An appropriately labeled probe is hybridized to the exposed target DNA or mRNA sequences in the cells. Subsequent stringent washing steps remove any probe that is non-specifically bound to the tissue section. Subsequently slides are mounted using DAPI/antifade and can be visualized under fluorescence microscope using appropriate filter set.

Principles of the Procedure
In Situ hybridization (ISH) allows the detection and localization of definitive nucleic acid sequences directly within a cell or tissue. High specificity is ensured through the action of annealing of fluorescence probe nucleic acid sequence to complementary target nucleic acid sequence. ISH techniques can be used to identify genetic aberrations like deletions, amplification, and translocation in tissue sections or within individual cells.

Storage and Handling
The BioGenex eFISH PDGFRB Dual Color Break Apart Probe must be stored at 2-8°C protected from light and is stable through the expiry date printed on the label.

Specimen Collection and Slide Preparation
Tissues fixed in 10% (v/v) formalin are suitable for use prior to paraffin embedding and sectioning.

FISH Staining procedure

(a) The BioGenex eFISH probes are supplied in hybridization buffer and used without further dilution.
(b) Protocol:

Please refer to the eFISH probe specific instruction/protocol for automated or semi-automated FISH processing platform (Xmatrx®-Infinity, Xmatrx®-Nano, NanoVIP and Xmatrx®-mini.

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Further processing, such as washing and counter-staining, can be completed according to the user's needs. For a particularly user-friendly performance, we recommend the use of a BioGenex eFISH kit.

These systems were also used for the confirmation of appropriateness of the BioGenex eFISH PDGFRB Dual Color Break Apart Probe.

Disclaimer: The above information is provided for reference only. Each end-user is responsible for developing and validating optimal testing conditions for use with this product.

Troubleshooting

Contact BioGenex Technical Service Department at **1-800-421-4149 or your local distributor** to report unusual staining.

Expected Results

The use of eFISH PDGFRB Dual Color Break Apart Probe in an interphase nucleus lacking a translocation involving the 5q32-q33.1 band, two orange/green fusion signals are expected representing two normal (non-rearranged) 5q32-q33.1 loci. A signal pattern consisting of one orange/green fusion signal, one orange signal, and a separate green signal indicates one normal 5q32-q33.1 locus and one 5q32-q33.1 locus affected by a translocation.

Limitations of the Procedure

Correct treatment of tissues prior to and during fixation, embedding, and sectioning is important for obtaining optimal results. Inconsistent results may be due to variations in tissue processing, as well as inherent variations in tissue. The results from *in situ* hybridization must be correlated with other laboratory findings.

Bibliography

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