BioGenex

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DATA SHEET

eFISHRB1/13q12 Dual Color Break Apart Probe

Catalog No.
FP079-10XE-100µl- 10 test
FP079-20XE -200µl- 20 test

Doc No: 932-FP079E Rev: D
Date of Release: 10-Aug-2020

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

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

eFISH Kit	Cat #	Description
eFISH Histo	DF-500-20XE	Automation
eFISH Cyto	DF-510-20XE	Automation

Intended Use:
The eFISH BioGenex RB1/13q12 Dual Color Probe is designed to be used for the detection of the human RB1 gene as well as chromosome 13 specific sequences in formalin-fixed, paraffin-embedded tissue or cells by fluorescence in situhybridization (FISH).

eFISH BioGenex RB1/13q12 Dual Color Probe in hybridization buffer. The probe contains orange-labeled polynucleotides (Orange: excitation at 547 nm and emission at 572 nm, similar to rhodamine), which target the RB1 gene in 13q14.2, and green-labeled polynucleotides (Green: excitation at 503 nm and emission at 528 nm, similar to FITC), which target sequences of chromosome 13 in the chromosomal region 13q12.11.

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 translocationin tissue sections or within individual cells.

Storage and Handling
The BioGenex eFISH BioGenex RB1/13q12 Dual Color Probemust 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 and Xmatrx®-mini.

Further processing, such as washing and counter-staining, can becompleted according to the user's needs. For a particularly user-friendlyperformance, we recommend the use of a BioGenexeFISH kit.

Disclaimer: The above information is provided for reference only. Each end-user is

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responsible for developingand 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 BioGenex eFISH RB1/13q12 Dual Color Probeis a mixture of an orange fluorochromedirect labeled SPEC RB1 probe specific forthe RB1 gene in the chromosomal region13q14.2 and a green fluorochrome direct labeled 13q12 probe specific forthe chromosomal region 13q12. The BioGenex eFISH13q12 Probe is designed to hybridizein close proximity of centromere 13 at13q12. Since chromosomes 13 and 21share the same repetitive sequences, theycannot be differentiated by probes detectingcentromere specific repeats.

In a normal interphase nucleus, two orangeand two green signals are expected.In a cell with deletions affecting the RB1gene locus, one or no copy of the orangesignal will be observed.

Care should be taken not to evaluate overlapping cells, in order to avoidfalse results, e.g. an amplification of genes. Due to decondensedchromatin, single FISH signals can appear as small signal clusters. Thus,two or three signals of the same size, separated by a distance equal to orless than the diameter of one signal, should be counted as one signal.

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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	Temperature Limitation	IVD	In Vitro Diagnostic Medical Device
	Use By Date	LOT	Batch Code
	Non-Sterile		Consult Instructions for Use
EC REP	Representative in the European Community		BioGenex