

## DATA SHEET

### eFISH CEN 7 Probe

**Catalog No.****FP089-10X - 100µl-10 test****FP089-20X - 200µl-20 test**

Doc No: 932-FP089 Rev: A

Date of Release: 04-May-2023

**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 #	No of Tests	Description
eFISH Histo	DF500-20XE	20	Xmatrx Automation
eFISH Cyto	DF510-20XE	20	Xmatrx Automation
eFISH Histo	DF520-20X	20	NanoVIP Automation
eFISH Cyto	DF530-20X	20	NanoVIP Automation
eFISH Histo	DF521-50X	50	NanoVIP Automation (Open system)
eFISH Cyto	DF531-50X	50	NanoVIP Automation (Open system)
eFISH Histo	DF522-50X	50	NanoVIP Automation (Closed system)
eFISH Cyto	DF532-50X	50	NanoVIP Automation (Closed system)

**Intended Use:**

The BioGenex eFISH CEN 7 Probe is currently available for **Research use only**. eFISH CEN 7 Probe is designed to be used for the detection of the human chromosome 7 alpha-satellites in formalin-fixed, paraffin-embedded tissue or cells by fluorescence in situ hybridization (FISH).

**Summary and Explanation**

BioGenex eFISH CEN 7 Probe comes in formamide based hybridization buffer. The probe contains orange-labeled polynucleotides (Orange: excitation at 547 nm and emission at 572 nm), which target sequences mapping in 7p11.1-q11.1 specific for the alpha satellite centromeric region D7Z1 of chromosome 7.

**Principles of the Procedure**

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 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.

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.

**Storage and Handling**

The BioGenex eFISH CEN 7 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 and Xmatrx®-mini).

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 CEN 7 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.

# BioGenex

48810 Kato Road, Suite 100E & 200E,  
Fremont, CA 94538  
Tel : +1 (800) 421-4149, Fax: +1 (510) 824-1490,  
[support@biogenex.com](mailto:support@biogenex.com)

## Troubleshooting

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

## Expected Results

The BioGenex eFISH CEN 7 Probe is an orange fluorochrome direct labeled CEN 7 probe specific for the alpha satellite centromeric region of chromosome 7 (D7Z1).

In a normal metaphase nucleus, orange signal is expected. In all tested specimens the probe hybridized solely to the expected loci.

However, we recommend the use of a control sample which exhibit normal signal pattern to judge the specificity of the signals with each hybridization reaction.






Care should be taken not to evaluate overlapping cells, in order to avoid false results, e.g. an amplification of genes. Due to decondensed chromatin, single FISH signals can appear as small signal clusters. Thus, two or three signals of the same size, separated by a distance equal to or less 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

1. Kievits T, et al. (1990) Cytogenet Cell Genet 53: 134-6.
2. Waye JS, Willard HF (1987) Nucleic Acids Res 15: 7549-69.
3. Wilkinson DG: In Situ Hybridization, A Practical Approach, Oxford University Press (1992) ISBN 0 19 963327 4.

	Temperature Limitation		<b>BioGenex</b>
	Use By Date	<b>LOT</b>	Batch Code
	Non-Sterile		Consult Instructions for Use