Zyto*Light*
SPEC NRG1/CD74 TriCheck Probe

REF Z-2194-200 Σ 20 (0.2 ml)

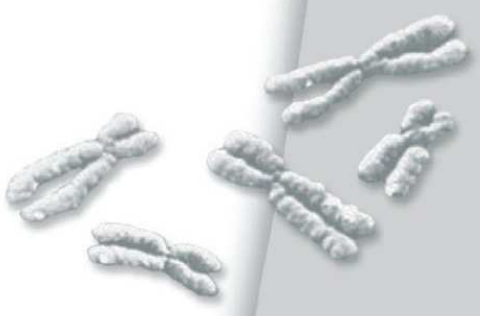
For the detection of NRG1-CD74 rearrangements
by fluorescence *in situ* hybridization (FISH)

CE

IVD

In vitro diagnostic medical device

according to EU directive 98/79/EC



Fluorescence-labeled polynucleotide probe for the detection of NRG1-CD74 rearrangements, ready to use

Product Description

Content: ZytoLight SPEC NRG1/CD74 TriCheck Probe **(PL152)** in hybridization buffer. The probe contains green-labeled polynucleotides (ZyGreen: excitation at 503 nm and emission at 528 nm, similar to FITC), which target sequences mapping in 8p12 distal to the NRG1 breakpoint region, orange-labeled polynucleotides (ZyOrange: excitation at 547 nm and emission at 572 nm, similar to rhodamine), which target sequences mapping in 8p12 proximal to the NRG1 breakpoint region, and blue-labeled polynucleotides (ZyBlue: excitation at 418 nm and emission at 467 nm, similar to DEAC), which target the CD74 gene in 5q32-q33.1

Product: Z-2194-200: 0.2 ml (20 reactions of 10 µl each)

Specificity: The ZytoLight SPEC NRG1/CD74 TriCheck Probe **(PL152)** is designed to be used for the detection of rearrangements involving the NRG1 gene at 8p12 and the CD74 gene at 5q32-q33.1 in formalin-fixed, paraffin-embedded tissue or cells by fluorescence *in situ* hybridization (FISH).

Storage/Stability: The ZytoLight SPEC NRG1/CD74 TriCheck Probe **(PL152)** must be stored at 2...8°C protected from light and is stable through the expiry date printed on the label.

Use: This product is designed for *in vitro* diagnostic use (according to EU directive 98/79/EC). Interpretation of results must be made within the context of the patient's clinical history with respect to

further clinical and pathologic data of the patient by a qualified pathologist!

Safety Precautions:

Read the operating instructions prior to use!

Do not use the reagents after the expiry date has been reached!

This product contains substances (in low concentrations and volumes) that are harmful to health. Avoid any direct contact with the reagents. Take appropriate protective measures (use disposable gloves, protective glasses, and lab garments)!

If reagents come into contact with skin, rinse skin immediately with copious quantities of water!

A material safety data sheet is available on request for the professional user!

Principle of the Method

The presence of certain nucleic acid sequences in cells or tissue can be detected by *in situ* hybridization using labeled DNA probes. The hybridization results in duplex formation of sequences present in the test object with the labeled DNA probe.

Duplex formation (with sequences of the chromosomal regions 8p12 and 5q32-q33.1 in the test material) is directly detected by using the tags of fluorescence-labeled polynucleotides.

Instructions

Pretreatment (dewaxing, proteolysis, post-fixation) should be carried out according to the needs of the user.

Denaturation and hybridization of probe:

1. Pipette 10 µl Zyto*Light* SPEC NRG1/CD74 TriCheck Probe **(PL152)** each onto individual samples

A gentle warming of the probe, as well as using a pipette tip which has been cut off to increase the size of the opening, can make the pipetting process easier. Avoid long exposure of the probe to light.

2. Avoiding trapped bubbles, cover the samples with a coverslip (22 mm x 22 mm). Seal the coverslip, e.g. with a layer of hot glue from an adhesive pistol or with rubber cement

3. Denature the slides at 75°C (±2°C) for 10 min, e.g. on a hot plate

Depending upon the age of the sample and variations in the fixation stage, it may be necessary to optimize the denaturing temperature (73°C-77°C).

4. Transfer the slide to a humidity chamber and hybridize overnight at 37°C (e.g. in a hybridization oven)

It is essential that the tissue/cell samples do not dry out during the hybridization step.

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 Zyto*Light* FISH system by ZytoVision. These systems were also used for the confirmation of appropriateness of the Zyto*Light* SPEC NRG1/CD74 TriCheck Probe **(PL152)**.

Results

With the use of appropriate filter sets, the hybridization signals of the labeled NRG1 gene (8p12) appear green and orange, the hybridization signals of the labeled CD74 gene (5q32-q33.1) appear blue.

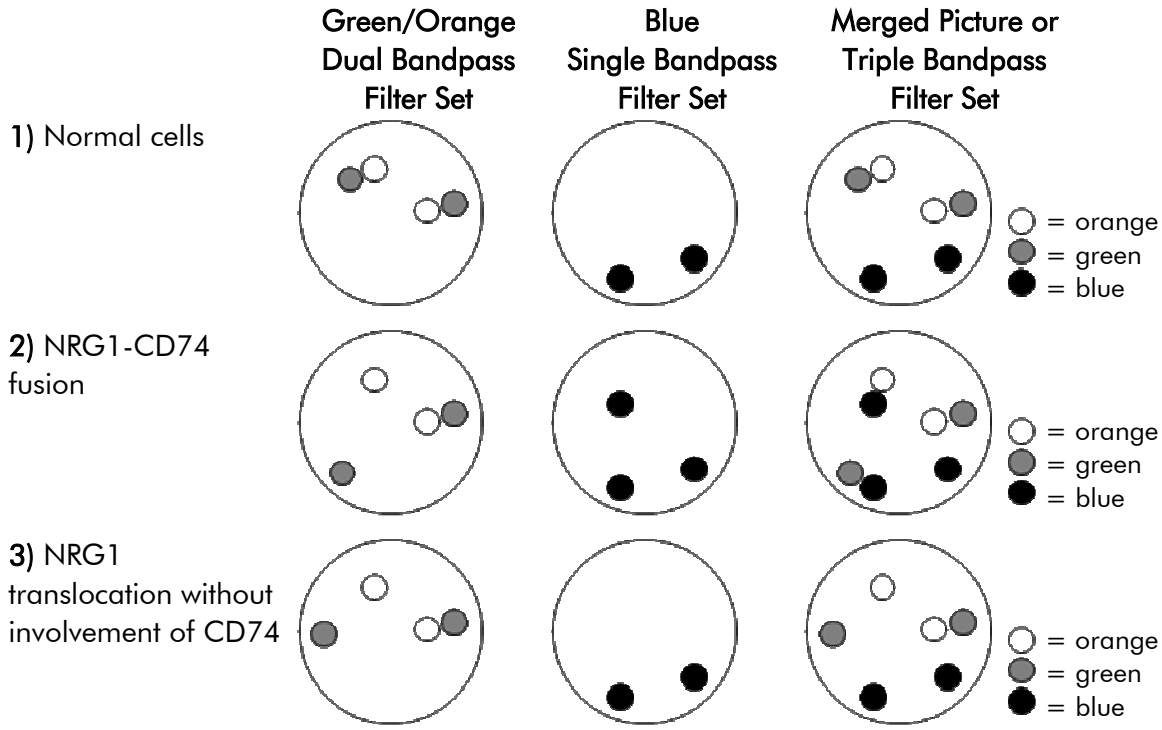
In interphases of normal cells or cells without NRG1-CD74 rearrangements, two green/orange fusion signals appear when using an appropriate dual bandpass filter set, and two blue signals appear when using an appropriate single bandpass filter set (see fig. 1).

One 8p12 locus affected by a translocation resulting in an NRG1-CD74 fusion is indicated by one separate green signal, one separate orange signal and an additional blue signal. The separate green and orange signals each co-localize with a blue signal (see fig. 2).

One separate green signal and one separate orange signal in combination with a normal number of blue signals (see fig. 3) indicates an NRG1 translocation without involvement of CD74.

In order to judge the specificity of the signals, every hybridization should be accompanied by controls. We recommend using at least one control sample in which the NRG1-CD74 status is known.

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.



Our experts are available to answer your questions.

Literature

Adélaïde J, et al. (2003) *Genes Chromosomes Cancer* **37**: 333-45.

Fernandez-Cuesta L, et al. (2014) *Cancer Discov* **4**: 415-22.

Han JY, et al. (2015) *Cancer Res* **75**: 614.

Huang HE, et al. (2004) *Cancer Res* **64**: 6840-4.

Jung Y, et al. (2015) *J Thorac Oncol* **10**: 1107-11.

Kievits T, et al. (1990) *Cytogenet Cell Genet* **53**: 134-6.

Pole JC, et al. (2006) *Oncogene* **25**: 5693-706.

Wilkinson DG: In Situ Hybridization, A Practical Approach, *Oxford University Press* (1992) ISBN 0 19 963327 4.

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