

ZytoLight® SPEC FGFR3 Break Apart/FGFR2/FGFR1 Quadruple Color Probe

CE IVD

Background

The ZytoLight® SPEC FGFR3 Break Apart/FGFR2/FGFR1 Quadruple Color Probe is designed for the simultaneous detection of FGFR3 gene rearrangements, and of the FGFR2 and FGFR1 gene copy number status.

Fibroblast growth-factor receptors (FGFRs) are involved in the regulation of organ development, cell proliferation and migration, and other processes. FGFR-activating genetic changes, including amplifications and translocations, were shown to be associated with the development and progression of tumors.

Rearrangements affecting the FGFR3 gene are frequently found in carcinomas of various types, including multiple myeloma (MM), bladder cancer, glioblastoma, and lung squamous cell carcinoma.

FGFR2 amplifications were found to occur in some gastric and breast tumors. FGFR1 is amplified in 21% of lung adenocarcinomas but also in other solid tumors, including oral squamous cell carcinoma, breast, ovarian, and bladder cancer.

Various types of FGFR inhibitors are available, some of which have entered anti-tumor clinical trials and have shown promising clinical effects and application prospects.

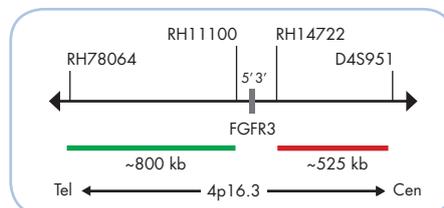
Thus, detection of FGFR aberrations may help in selecting patients eligible for an FGFR-targeted therapy.

References

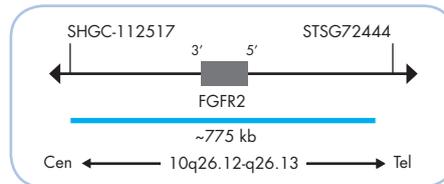
- Adnane J, et al. (1991) Oncogene 6: 659-63.
- Chesi M, et al. (1997) Nat Genet 16: 260-4.
- Liang G, et al. (2013) Cytokine Growth Factor Rev 24: 467-75.
- Parker BC, et al. (2014) J Pathol 232: 4-15.

Probe Description

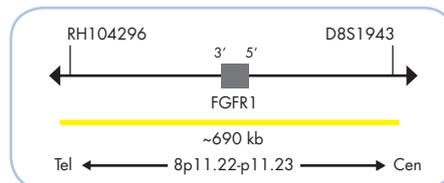
The SPEC FGFR3 Break Apart/FGFR2/FGFR1 Quadruple Color Probe is a mixture of a green and a red fluorochrome direct labeled probe hybridizing distal and proximal to the FGFR3 gene at 4p16.3, respectively, a blue fluorochrome direct labeled probe specific for the FGFR2 gene at 10q26.12-q26.13, and a gold fluorochrome direct labeled probe specific for the chromosomal region 8p11.22-p11.23 harboring the FGFR1 gene.



SPEC FGFR3 Probe map (not to scale).



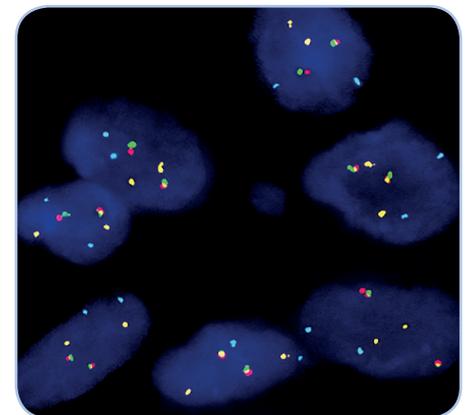
SPEC FGFR2 Probe map (not to scale).



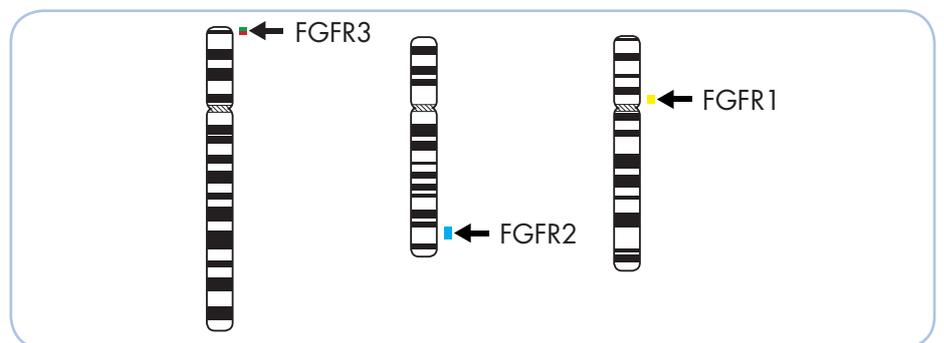
SPEC FGFR1 Probe map (not to scale).

Results

In a normal interphase nucleus, two red/green fusion signals, representing two normal (non-rearranged) 4p16.3 loci, two blue (FGFR2), and two gold (FGFR1) signals are expected. One separate red signal and a separate green signal indicate a 4p16.3 locus affected by a translocation. In cells with amplification of the FGFR2, or FGFR1 gene locus, multiple signals of the respective color will be visible.



SPEC FGFR3 Break Apart/FGFR2/FGFR1 Quadruple Color Probe hybridized to normal interphase cells as indicated by two red/green fusion signals (FGFR3), two blue (FGFR2), and two gold (FGFR1) signals.



Ideogram of chromosome 4, 10, and 8 indicating the hybridization locations.

Prod. No.	Product	Label	Tests* (Volume)
Z-2186-200	ZytoLight SPEC FGFR3 Break Apart/FGFR2/FGFR1 Quadruple Color Probe CE IVD	●/●/●/●	20 (200 µl)
Related Products			
Z-2028-20	ZytoLight FISH-Tissue Implementation Kit CE IVD		20
Incl. Heat Pretreatment Solution Citric, 500 ml; Pepsin Solution, 4 ml; Wash Buffer SSC, 500 ml; 25x Wash Buffer A, 100 ml; DAPI/DuraTect-Solution, 0.8 ml			

* Using 10 µl probe solution per test. CE IVD only available in certain countries. All other countries research use only! Please contact your local dealer for more information.