

# ZytoLight® SPEC FGFR3/4p11 Dual Color Probe

Previously: *ZytoLight* SPEC FGFR3/CEN 4 Dual Color Probe

## Background

The *ZytoLight*® SPEC FGFR3/4p11 Dual Color Probe is designed for the detection of FGFR3 gene amplifications.

The FGFR3 (fibroblast growth factor receptor 3) gene is located in the chromosomal region 4p16.3 and encodes a receptor tyrosine kinase.

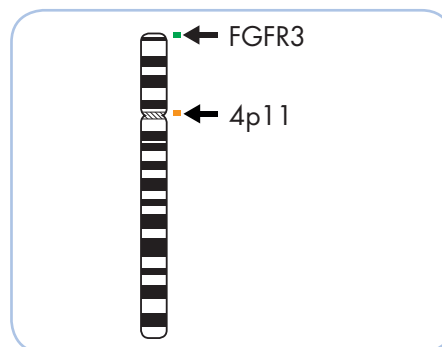
FGFR family members differ from one another in their ligand affinities and tissue distribution. The extracellular portion of the protein interacts with fibroblast growth factors, setting in motion a cascade of downstream signals, ultimately influencing mitogenesis and differentiation. The FGFR3 protein binds acidic and basic fibroblast growth hormone and plays a role in bone development and maintenance. Activating mutations are associated with multiple myeloma, cervical carcinoma, and carcinoma of the bladder. Additionally, it was found that copy number gains at 4p16.3 occurred significantly more frequently in recurrent/metastasized salivary gland adenoid cystic carcinoma (ACC) compared with indolent ACC.

### References

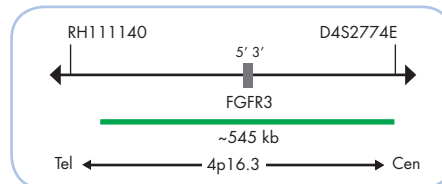
Keegan K, et al. (1991) PNAS 88: 1095-9.  
L'Hôte CG & Knowles MA (2005) Exp Cell Res 304: 417-31.  
Thompson LM, et al. (1991) Genomics 11: 1133-42.  
Vékony H, et al. (2007) Clin Cancer Res 13: 3133-9.

## Probe Description

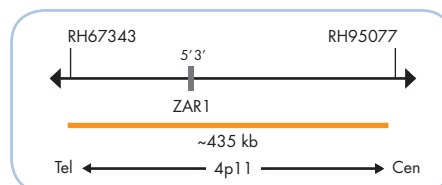
The SPEC FGFR3/4p11 Dual Color Probe is a mixture of a green fluorochrome direct labeled SPEC FGFR3 probe hybridizing to the FGFR3 gene in the chromosomal region 4p16.3 and an orange fluorochrome direct labeled SPEC 4p11 probe specific for the ZAR1 (zygote arrest 1) gene region in 4p11. For an unambiguous enumeration of chromosome 4 the SPEC 4p11 is found to be more suitable.



Ideogram of chromosome 4 indicating the hybridization locations.



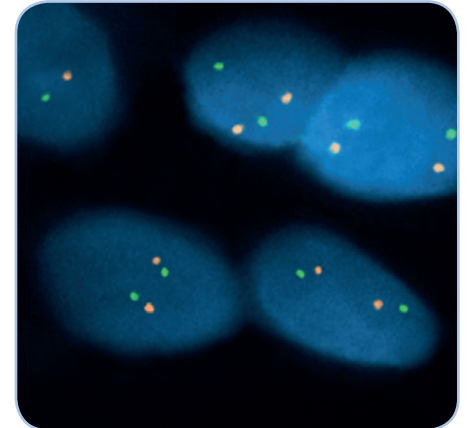
SPEC FGFR3 Probe map (not to scale).



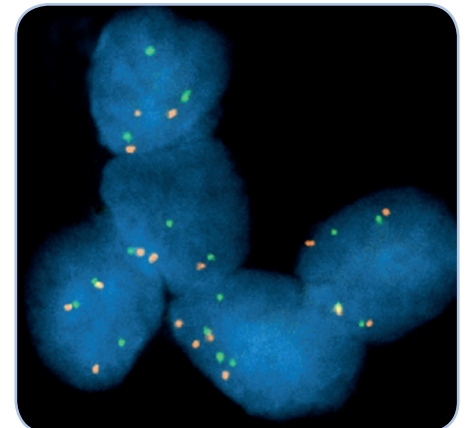
SPEC 4p11 Probe map (not to scale).

## Results

In a normal interphase nucleus, two orange and two green signals are expected. In a cell with amplification of the FGFR3 gene locus, multiple copies of the green signal or large green signal clusters will be observed.



SPEC FGFR3/4p11 Dual Color Probe hybridized to normal interphase cells as indicated by two orange and two green signals in each nucleus.



Bladder cancer tissue section with interphase cells showing polysomy of chromosome 4 as indicated by multiple green and orange signals in the nuclei.

Prod. No.	Product	Label	Tests* (Volume)
Z-2082-200	<i>ZytoLight</i> SPEC FGFR3/4p11 Dual Color Probe CE IVD	●/●	20 (200 µl)
<b>Related Products</b>			
Z-2028-20	<i>ZytoLight</i> FISH-Tissue Implementation Kit CE IVD 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		20

\* 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.