

ZytoLight® SPEC VEGFA/CEN 6 Dual Color Probe



Background

The ZytoLight® SPEC VEGFA/CEN 6 Dual Color Probe is designed for the detection of amplifications involving the chromosomal region 6p21.1 harboring the VEGFA gene (vascular endothelial growth factor A, a.k.a. VEGF, VPF).

The VEGFA protein is involved in vascular permeability, angiogenesis, cell migration, and inhibition of apoptosis. In addition, binding of VEGFA to its receptors activates the RAS/MEK/MAPK pathway, thus, leading to mitotic activation.

Amplification of the VEGFA gene locus was found in several types of malignancy, such as osteosarcoma, hepatocellular carcinoma (HCC), and colorectal cancers.

In patients with osteosarcoma, VEGFA gene amplification results in elevated expression of VEGFA and is associated with adverse tumor-free survival.

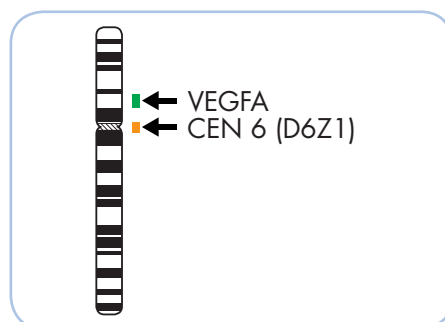
VEGFA amplifications occur in 3-6 % of colorectal cancers and result in a highly aggressive disease.

HCC patients with VEGFA gain responded better to sorafenib, a multi-kinase inhibitor that blocks, i.a., receptors of the VEGFA protein, resulting in improved survival of the patients. This suggests that VEGFA is a potential biomarker for response to sorafenib therapy in HCC.

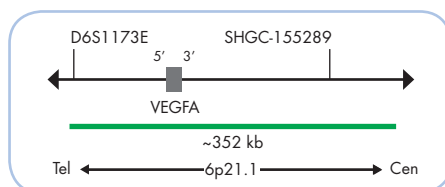
Hence, detection of VEGFA amplifications by Fluorescence *in situ* Hybridization may help in selecting patients eligible for an anti-VEGFA therapy.

Probe Description

The SPEC VEGFA/CEN 6 Dual Color Probe is a mixture of a green fluorochrome direct labeled SPEC VEGFA probe specific for the VEGFA gene at 6p21.1 and an orange fluorochrome direct labeled CEN 6 probe specific for the alpha satellite centromeric region of chromosome 6 (D6Z1).



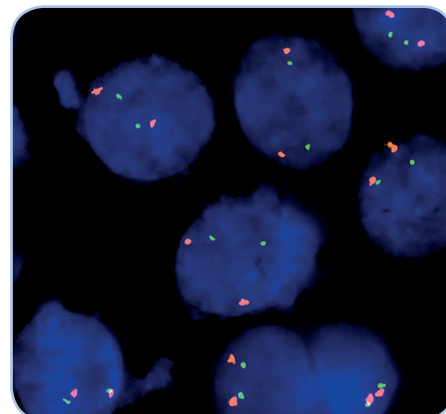
Ideogram of chromosome 6 indicating the hybridization locations.



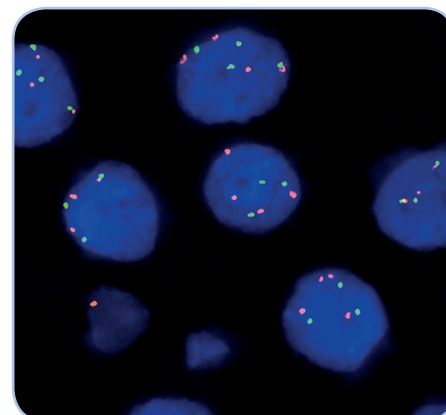
SPEC VEGFA Probe map (not to scale).

Results

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



SPEC VEGFA/CEN 6 Dual Color Probe hybridized to normal interphase calls as indicated by two orange and two green signals in each nucleus.



HCC tissue section with interphase cells showing a polysomy of chromosome 6 as indicated by multiple green (VEGFA) and orange (CEN 6) signals in each nucleus.

References

- Horwitz E, et al. (2014) Cancer Discov 4: 730-43.
Vlajnic T, et al. (2011) Mod Pathol 24: 1404-12.
Yang J, et al. (2011) Cancer 117: 4925-38.

Prod. No.	Product	Label	Tests* (Volume)
Z-2195-200	ZytoLight SPEC VEGFA/CEN 6 Dual 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/DuraText-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.