ZytoLight® SPEC EGR1/5p15 Dual Color Probe

CE IVD

Background

The ZytoLight® SPEC EGR1/5p15 Dual Color Probe is designed for the detection of EGR1 gene deletions.

The EGR1 (early growth response 1) gene is located in the chromosomal region 5q31.2. Deletions spanning the region 5q31.2 are among the most common reoccurring abnormalities detectable in myelodysplastic syndromes (MDS) and acute myeloid leukemia (AML).

The EGR1 protein belongs to the EGR family of C2H2-type zinc-finger proteins. It is a nuclear protein and functions as a transcriptional regulator.

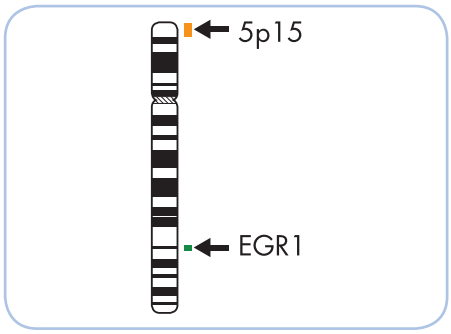
Deletion of EGR1 in estrogen receptor negative (ER-) breast carcinomas is correlated with a higher tumor grade, suggesting that loss of the EGR1 gene (and thereby loss of functioning EGR1 protein) may contribute to the pathogenesis of ER- breast carcinomas.

In patients with therapy-related MDS and AML, dicentric chromosomes have often been observed. In such conditions, many patients show a complex karyotype with several marker chromosomes unidentifiable by conventional cytogenetics. Fluorescence *in situ* Hybridization (FISH) has now made the characterization of these rearrangements much easier.

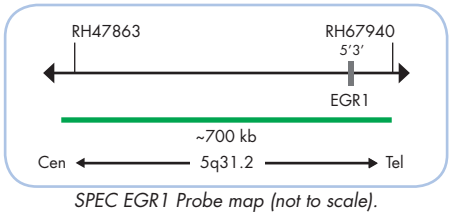
References
Graubert TA, et al. (2009) PLoS One 4: e4583.
Herry A, et al. (2007) Cancer Genet Cytogenet 175: 125-31.
Ronski K, et al. (2005) Cancer 104: 925-30.
Sun Y & Cook JR (2010) Leuk Res 34: 340-3.

Probe Description

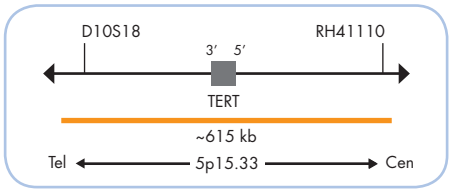
The SPEC EGR1/5p15 Dual Color Probe is a mixture of a green fluorochrome direct labeled SPEC EGR1 probe hybridizing to the EGR1 gene in the chromosomal region 5q31.2 and an orange fluorochrome direct labeled SPEC 5p15 probe specific for the chromosomal region 5p15.33.



Ideogram of chromosome 5 indicating the hybridization locations.



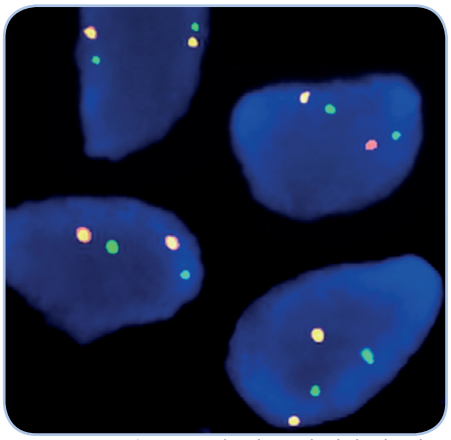
SPEC EGR1 Probe map (not to scale).



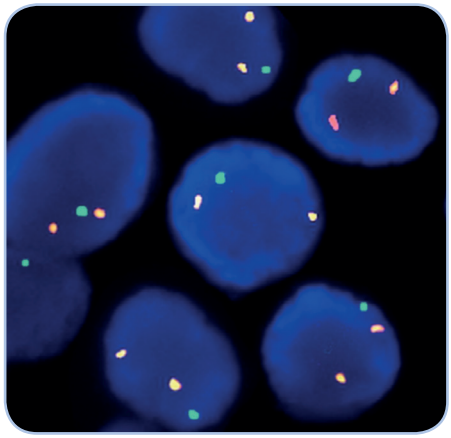
SPEC 5p15 Probe map (not to scale).

Results

In a normal interphase nucleus, two orange and two green signals are expected. In a cell with deletions affecting the EGR1 gene locus, one or no copy of the green signal will be observed.



SPEC EGR1/5p15 Dual Color Probe hybridized to normal interphase cells as indicated by two orange and two green signals in each nucleus.



SPEC EGR1/5p15 Dual Color Probe hybridized to bone marrow biopsy section with deletion of the EGR1 gene as indicated by one green signal and two orange signals in each nucleus.

Prod. No.	Product	Label	Tests* (Volume)
Z-2107-50	ZytoLight SPEC EGR1/5p15 Dual Color Probe CE IVD	●/●	5 (50 µl)
Z-2107-200	ZytoLight SPEC EGR1/5p15 Dual Color Probe CE IVD	●/●	20 (200 µl)
Related Products			
Z-2028-5	ZytoLight FISH-Tissue Implementation Kit CE IVD Incl. Heat Pretreatment Solution Citric, 150 ml; Pepsin Solution, 1 ml; Wash Buffer SSC, 150 ml; 25x Wash Buffer A, 50 ml; DAPI/DuraTect-Solution, 0.2 ml		5
Z-2028-20	ZytoLight 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
Z-2099-20	ZytoLight FISH-Cytology Implementation Kit CE IVD Incl. Cytology Pepsin Solution, 4 ml; 20x Wash Buffer TBS, 50 ml; 10x MgCl2, 50 ml; 10x PBS, 50 ml; Cytology Stringency Wash Buffer SSC, 500 ml; Cytology Wash Buffer SSC, 500 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.*

ZytoLight® FISH probes are direct labeled using the unique ZytoLight® *Direct Label System II* providing improved signal intensity. Advanced specificity of the single copy SPEC probes is obtained by the unique ZytoVision® *Repeat Subtraction Technique.*

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