ZytoLight® SPEC EWSR1 Dual Color Break Apart Probe

CE IVD

Background

The ZytoLight® SPEC EWSR1 Dual Color Break Apart Probe is designed to detect translocations involving the chromosomal region 22q12 harboring the EWSR1 (Ewing sarcoma breakpoint region 1) gene (a.k.a. EWS).

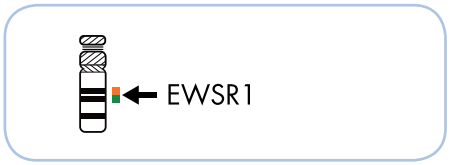
Translocations involving the chromosomal region 22q12 are found in 90-95% of patients with Ewing sarcoma or peripheral primitive neuroectodermal tumors (PNET). Ewing sarcoma is the second most common, highly malignant bone tumor in children and young adults. The most frequent translocation involving the EWSR1 gene region is t(11;22)(q24; q12) juxtaposing the EWSR1 gene in 22q12 next to the FLI-1 (Friend leukemia virus integration 1) locus in 11q24. FLI-1 is a member of the ETS family of transcription factors. Less frequently, EWSR1 can also be fused to ERG, a transcription factor closely related to FLI-1 but located in 21q22.

For prognosis and appropriate treatment it is important to differentiate Ewing sarcoma/PNET from classic neuroblastoma, Wilms tumor, and rhabdomyosarcoma. In combination with the histopathological diagnosis, detection of the EWSR1 rearrangements can be used to confirm the diagnosis of Ewing sarcoma/PNET.

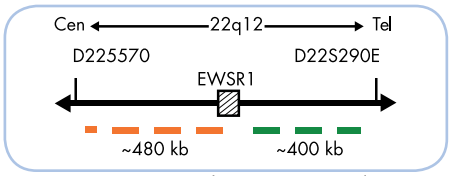
References
Bridge RS et al. (2006), Mod Pathol 19: 1-8.
Delattre O, et al. (1992) Nature 359: 162-5.
Lee J, et al. (2005) Cancer Genet Cytogenet 159: 177-80.
Sandberg AA & Bridge JA (2000) Cancer Genet Cytogenet 123: 1-26.
Romeo S & Dei Tos AP (2010) Virchows Arch 456: 219-34.
Zucman J, et al. (1993) EMBO J 12: 4481-7.

Probe Description

The ZytoLight® SPEC EWSR1 Dual Color Break Apart Probe is a mixture of two clone contigs hybridizing to the 22q12 band. The orange fluorochrome direct labeled probe hybridizes proximal and extends inward into intron 4 of the EWSR1 gene, the green fluorochrome direct labeled probe hybridizes distal to that gene.



Ideogram of chromosome 22 indicating the hybridization locations.

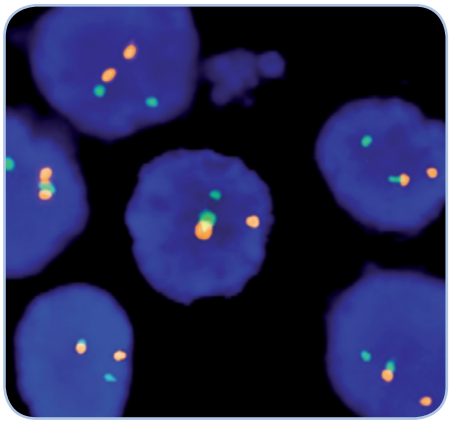


SPEC EWSR1 Probe map (not to scale).

Results

In an interphase nucleus lacking a translocation involving the 22q12 band two orange/green fusion signals are expected representing two normal (non-rearranged) 22q12 loci. A signal pattern consisting of one orange/green fusion signal, one orange signal, and a separate green signal indicates one normal 22q12 locus and one 22q12 locus affected by a 22q12 translocation.

SPEC EWSR1 Dual Color Break Apart Probe hybridized to normal interphase cells as indicated by two orange/green fusion signals per nucleus.



Ewing sarcoma tissue section with translocation affecting the 22q12 locus as indicated by one non-rearranged orange/green fusion signal and one orange and one separate green signal indicating the translocation.

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Prod. No.	Product	Label	Tests*
Z-2096-50	ZytoLight SPEC EWSR1 Dual Color Break Apart Probe$^{\Delta}$ CE	●/●	5
Related Products			
Z-2028-5	ZytoLight FISH-Tissue Implementation Kit$^{\Delta}$ CE Incl. Heat Pretreatment Solution Citric, 150 ml; Pepsin Solution, 1 ml; Wash Buffer SSC, 150 ml; 25x Wash Buffer A, 50 ml; DAPI/Antifade-Solution, 0.2 ml		5

** Using 10 µl probe solution per test. $^{\Delta}$ Only available as IVD 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.*

Certified Quality System mdc ISO 9001 Certified Quality System mdc ISO 13485
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