

ZytoLight® SPEC EWSR1/FLI1 TriCheck™ Probe

Background

The ZytoLight® SPEC EWSR1/FLI1 TriCheck™ Probe is designed to detect translocations involving the chromosomal region 22q12.2 harboring the EWSR1 (Ewing sarcoma breakpoint region 1, a.k.a. EWS) gene and the chromosomal region 11q24.3 harboring the FLI1 (Fli-1 proto-oncogene, ETS transcription factor, a.k.a. EWSR2) gene.

Translocations involving the chromosomal region 22q12.2 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)(q24.3;q12.2) juxtaposing the EWSR1 gene in 22q12.2 next to the FLI1 locus. FLI1 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 FLI1 but located in 21q22.2.

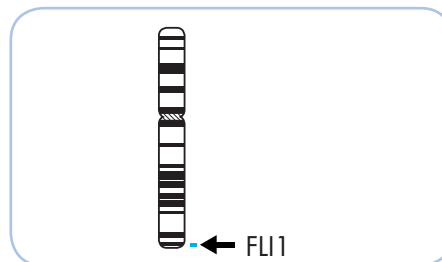
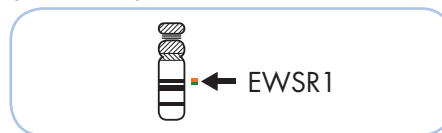
For prognosis and appropriate treatment it is important to differentiate Ewing sarcoma/PNET from classic neuroblastoma, Wilms tumor, and rhabdomyosarcoma. In combination with the histopathological diagnosis, detection of the EWSR1 rearrangements by FISH can be used to confirm the diagnosis of Ewing sarcoma/PNET.

References

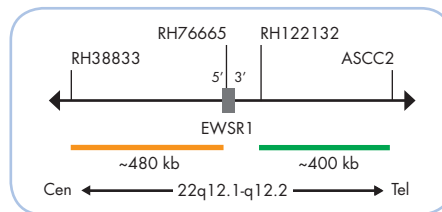
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Probe Description

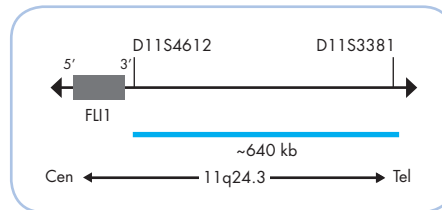
The SPEC EWSR1/FLI1 TriCheck™ Probe is a mixture of three direct labeled probes hybridizing to the 22q12.1-q12.2 and 11q24.3 bands. The orange fluorochrome direct labeled probe hybridizes proximal to the EWSR1 breakpoint region at 22q12.1-q12.2 and the green fluorochrome direct labeled probe hybridizes distal to the EWSR1 breakpoint region at 22q12.2. The blue fluorochrome direct labeled probe hybridizes distal to the FLI1 gene at 11q24.3.



Ideograms of chromosomes 22 (above) and 11 (below) indicating the hybridization locations.



SPEC EWSR1 Probe map (not to scale).



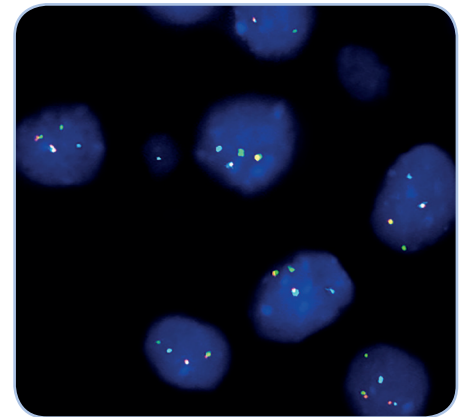
SPEC FLI1 Probe map (not to scale).

Results

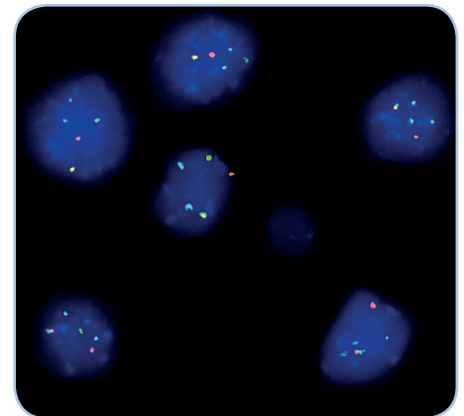
In an interphase nucleus without FLI1-EWSR1 rearrangement, two green/orange fusion signals and two blue signals are expected.

A FLI1-EWSR1 fusion is indicated by one separate orange signal co-localizing with one blue signal and one separate green signal.

An EWSR1 translocation without involvement of FLI1 is indicated by the split of one green/orange fusion signal without co-localization of the separated orange signal with one blue signal.



Ewing sarcoma tissue section with FLI1-EWSR1 fusion as indicated by orange/blue fusion signals.



Ewing sarcoma tissue section with a non-FLI1 EWSR1 rearrangement as indicated by the lack of co-localization of the separated orange signal with one blue signal.

| Prod. No. | Product | Label | Tests* (Volume) |
|-------------------------|--|-------|-----------------|
| Z-2183-50 | ZytoLight SPEC EWSR1/FLI1 TriCheck Probe CE IVD | ●/●/● | 5 (50 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/DuraText-Solution, 0.2 ml | | 5 |

* 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.