

ZytoLight® SPEC JAZF1 Dual Color Break Apart Probe



Background

The ZytoLight® SPEC JAZF1 Dual Color Break Apart Probe is designed to detect translocations involving the chromosomal region 7p15.1-p15.2 harboring the JAZF1 (Juxtaposed with Another Zinc Finger) gene.

Translocations involving the region 7p15.1-p15.2 are frequently found in endometrial stromal sarcoma (ESS). The most common cytogenetic abnormality detected in 33-80% of ESS is t(7;17) (p15.1-p15.2;q11.2) which results in the fusion of the JAZF1 gene at 7p15.1-p15.2 to the JJAZ1 (Joined to JAZF1; a.k.a. SUZ12) gene at 17q11.2. Both genes involved contain zinc finger domains characteristic for DNA binding proteins. It was shown that the fusion protein JAZF1-JJAZ1 can promote cell proliferation when the wild-type JJAZ1 is silenced as it is in ESS harboring the t(7;17).

In 25-30% of ESS the JAZF1 gene is disrupted by another translocation t(6;7) where the first zinc finger domain of JAZF1 is fused to both zinc finger domains of the PHF1 (PHD finger protein 1) gene at 6p21.32. As a result the entire coding region of PHF1 is regulated by the JAZF1 promoter.

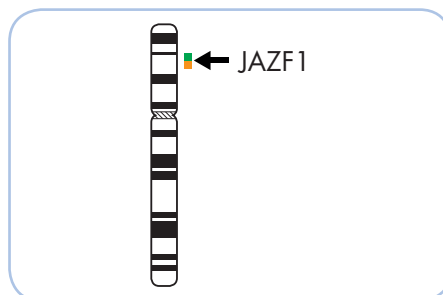
Since the diagnosis of ESS is often difficult in cases showing diverse histological differentiation or in undifferentiated endometrial sarcoma (UES), the detection of the JAZF1 translocations can serve as a diagnostic tool to confirm the diagnosis of ESS.

References

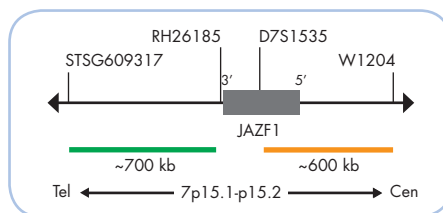
- Hrzenjak A, et al. (2005) J Mol Diagn 7: 388-95.
Koonitz JL, et al. (2001) PNAS 98: 6348-53.
Li H, et al. (2007) PNAS 104: 20001-6.
Micci F, et al. (2003) Cancer Genet Cytogenet 144: 119-24.

Probe Description

The SPEC JAZF1 Dual Color Break Apart Probe is a mixture of two direct labeled probes hybridizing to the 7p15.1-p15.2 band. The orange fluorochrome direct labeled probe hybridizes proximal, the green fluorochrome direct labeled probe hybridizes distal to the JAZF1 breakpoint region.



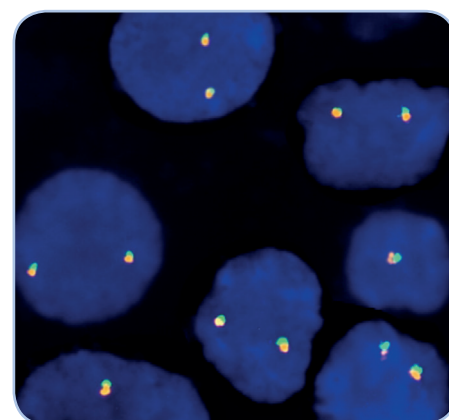
Ideogram of chromosome 7 indicating the hybridization locations.



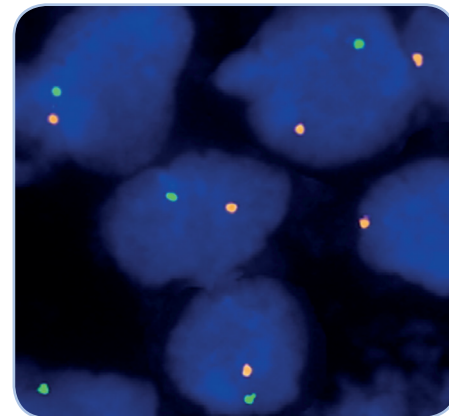
SPEC JAZF1 Probe map (not to scale).

Results

In an interphase nucleus lacking a translocation involving the 7p15.1-p15.2 band, two orange/green fusion signals are expected representing two normal (non-rearranged) 7p15.1-p15.2 loci. A signal pattern consisting of one orange/green fusion signal, one orange signal, and a separate green signal indicates one normal 7p15.1-p15.2 locus and one 7p15.1-p15.2 locus affected by a translocation.



SPEC JAZF1 Dual Color Break Apart Probe hybridized to normal interphase cells as indicated by two orange/green fusion signals per nucleus.



Endometrial stromal sarcoma with translocation affecting JAZF1 at 7p15.1-p15.2 as well as monosomy of chromosome 7 as indicated by one orange and one separate green signal.

Prod. No.	Product	Label	Tests* (Volume)
Z-2132-50	ZytoLight SPEC JAZF1 Dual Color Break Apart Probe CE IVD	●/●	5 (50 µl)
Related Products			
Z-2028-5	ZytoLight FISH-Tissue Implementation Kit CE IVD		5
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			

* 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.