ZytoLight® SPEC FUS Dual Color Break Apart Probe

CE IVD

コスモ・バイオ株式会社

Background

The ZytoLight® SPEC FUS Dual Color Break Apart Probe is designed to detect translocations involving the chromosomal region 16p11.2 harboring the FUS (FUsed in Sarcoma) gene (a.k.a. TLS, FUS/TLS, hnRNP P2).

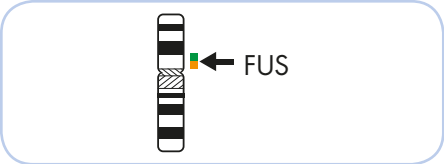
The FUS gene encodes for a RNA-binding gene, the C-terminal end of which is involved in protein and RNA binding and which appears to be involved in transcriptional activation with its N-terminal end. It shares distinct characteristics with EWSR1 and TAF15 which together with FUS are frequently referred to as the FET family of proteins.

FUS gene rearrangements have been shown to be involved in both solid tumors and leukemias fusing the N-terminal end of FUS to various fusion partners. The most frequent translocation involving the FUS gene region is t(12;16)(q13;p11). Occurring in over 90% of myxoid liposarcomas, the FUS-CHOP fusion protein is regarded to be consequential for the development of myxoid liposarcomas by acting as an abnormal transcription factor and thus deregulating FUS-CHOP target genes. Differential diagnosis of liposarcomas and accurate classification, the latter being especially important with regard to appropriate treatment and prognosis, are often problematic. Therefore, detection of FUS rearrangements via *in situ* Hybridization analysis is a valuable tool to confirm the histopathological diagnosis of myxoid liposarcoma.

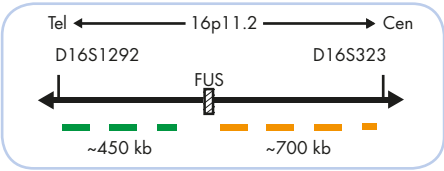
References
Andersson M, et al. (2010) BMC Cancer 10: 249-58.
Antonescu C, et al. (2000) J Mol Diagn 2: 132-8.
Germano G, et al. (2010) Cancer Res 70: 2235-44.
Kuroda M, et al. (1995) Am J Pathol 147: 1221-7.
Meis-Kindblom JM, et al. (2001) Virchows Arch 439: 141-51.
Panagopoulos I, et al. (1994) Cancer Res 54: 6500-3.
Panagopoulos I, et al. (1997) Oncogene 15: 1357-62.

Probe Description

The SPEC FUS Dual Color Break Apart Probe is a mixture of two direct labeled probes hybridizing to the 16p11.2 band. The orange fluorochrome direct labeled probe hybridizes proximal to the FUS gene, the green fluorochrome direct labeled probe hybridizes distal to that gene.



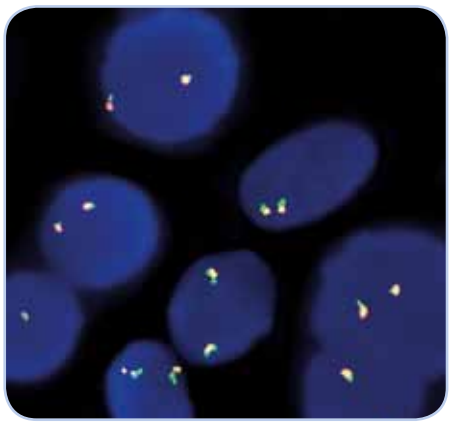
Ideogram of chromosome 16 indicating the hybridization locations.



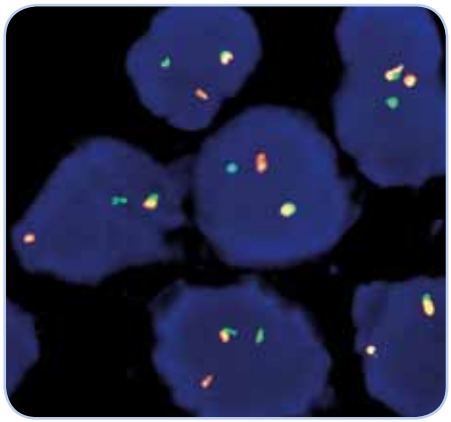
SPEC FUS Probe map (not to scale).

Results

In an interphase nucleus lacking a translocation involving the 16p11.2 band, two orange/green fusion signals are expected representing two normal (non-rearranged) 16p11.2 loci. A signal pattern consisting of one orange/green fusion signal, one orange signal, and a separate green signal indicates one normal 16p11.2 locus and one 16p11.2 locus affected by a 16p11.2 translocation.



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



Myxoid liposarcoma tissue section with translocation affecting the 16p11.2 locus as indicated by one non-rearranged orange/green fusion signal and one orange and one separate green signal indicating the translocation.

Prod. No.	Product	Label	Tests* (Volume)
Z-2130-50	ZytoLight SPEC FUS Dual Color Break Apart 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, 1ml; 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. 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.*

Certified Quality System mdc ISO 9001 Certified Quality System mdc ISO 13485
FE053-1-12

ZytoVision GmbH · Fischkai 1
27572 Bremerhaven · Germany
www.zytovision.com