

ZytoLight® SPEC DDIT3 Dual Color Break Apart Probe

Previously: ZytoLight SPEC CHOP Dual Color Break Apart Probe

Background

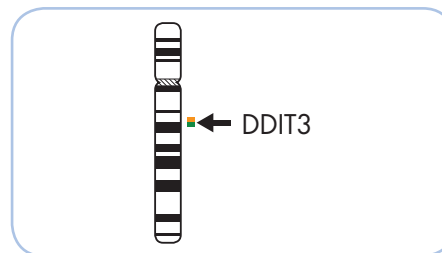
The ZytoLight® SPEC DDIT3 Dual Color Break Apart Probe is designed to detect translocations involving the chromosomal region 12q13.3 harboring the DDIT3 (C/EBP-homologous protein) gene (a.k.a. CHOP, GADD153). The DDIT3 gene encodes for a stress-induced dominant-negative inhibitor of the transcription factors C/EBP and LAP. DDIT3 is consistently rearranged in myxoid liposarcomas (MLS). The most frequent translocation involving the DDIT3 gene region is t(12;16)(q13.3;p11.2) and occurs in about 90% of patients with MLS. The rearrangement results in a fusion gene comprising the 5' part of the FUS (fused in sarcoma) gene, located in 16p11.2, and the complete coding region of the DDIT3 gene. The FUS-DDIT3 fusion protein acts as an abnormal transcription factor and development of myxoid liposarcomas is thus regarded as a consequence of deregulated FUS-DDIT3 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 DDIT3 rearrangements via FISH analysis is a valuable tool to confirm the histopathological diagnosis of myxoid liposarcoma.

References

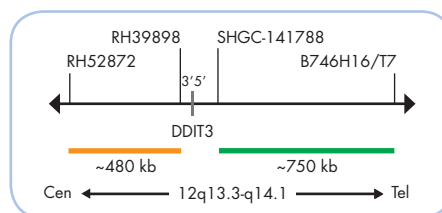
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- Germano G, et al. (2010) Cancer Res 70: 2235-44.
- Meis-Kindblom JM, et al. (2001) Virchows Arch 439: 141-51.
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Probe Description

The SPEC DDIT3 Dual Color Break Apart Probe is a mixture of two direct labeled probes hybridizing to the 12q13.3-q14.1 band. The orange fluorochrome direct labeled probe hybridizes proximal to the DDIT3 gene and the green fluorochrome direct labeled probe hybridizes distal to that gene.



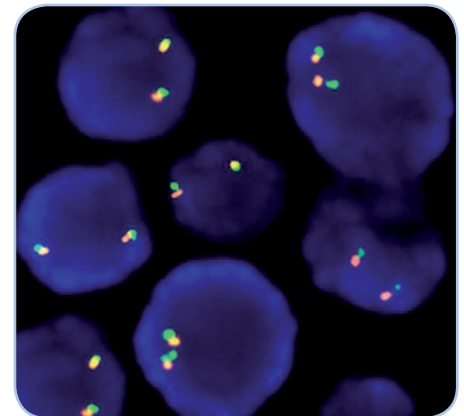
Ideogram of chromosome 12 indicating the hybridization locations.



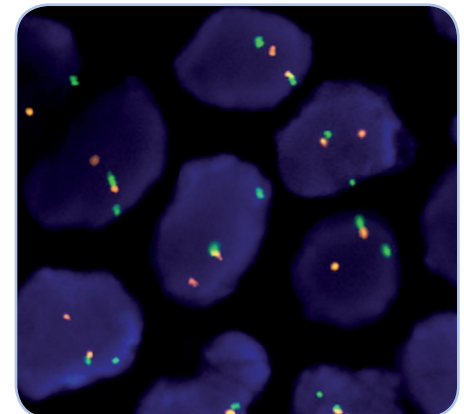
SPEC DDIT3 Probe map (not to scale).

Results

In an interphase nucleus lacking a translocation involving the 12q13.3-q14.1 band, two orange/green fusion signals are expected representing two normal (non-rearranged) 12q13.3-q14.1 loci. A signal pattern consisting of one orange/green fusion signal, one orange signal, and a separate green signal indicates one normal 12q13.3-q14.1 locus and one 12q13.3-q14.1 locus affected by a 12q13.3-q14.1 translocation.



SPEC DDIT3 Dual Color Break Apart Probe hybridized to normal interphase cells as indicated by two orange/green fusion signals per nucleus.



Myxoid liposarcoma tissue section with translocation affecting the 12q13.3-q14.1 locus as indicated by one non-rearranged orange/green fusion signal, one orange signal, and one separate green signal indicating the translocation.

Prod. No.	Product	Label	Tests* (Volume)
Z-2100-50	ZytoLight SPEC DDIT3 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, 1 ml; Wash Buffer SSC, 150 ml; 25x Wash Buffer A, 50 ml; DAPI/DuraTest-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.