ZytoLight® SPEC CBFB Dual Color Break Apart Probe

CE IVD

Background

The ZytoLight® SPEC CBFB Dual Color Break Apart Probe is designed to detect rearrangements involving the chromosomal region 16q22.1 harboring the CBFB (core-binding factor beta, a.k.a. PEBP2B) gene.

CBFB encodes the beta subunit of the CBFA/CBFB transcription factor complex involved in myeloid differentiation.

The chromosomal aberrations inv(16)(p13.1q22.1) and the related translocation t(16;16)(p13.1;q22.1), which have been detected in about 10% of patients with AML (acute myeloblastic leukemia), lead to the fusion of the CBFB gene with the MYH11 (smooth muscle myosin heavy chain) gene on 16p13.1. The resulting CBFB-MYH11 fusion gene is involved in leukemic transformation. AML patients with these genetic rearrangements have a favorable prognosis. Inv(16) may sometimes be difficult to identify using conventional cytogenetic analysis.

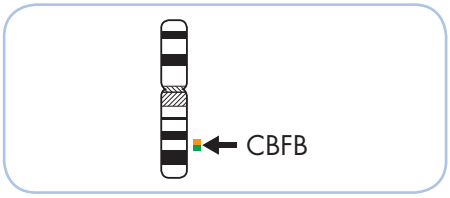
Accordingly, Fluorescence *in situ* hybridization proved to be a reliable method overcoming this problem and might consequently be a helpful tool to predict the prognosis of AML patients.

References

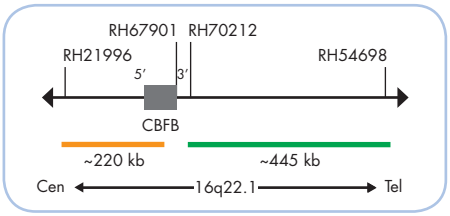
Aventín A, et al. (2002) Cancer Genet Cytogenet 134: 142-4.
Dierlamm J, et al. (1998) Genes Chromosomes and Cancer 22: 87-94.
Krauter J, et al. (2001) Genes Chromosomes and Cancer 30: 342-8.
Le Beau MM, et al. (1983) N Engl J Med 309: 630-6.
Li MM, et al. (2013) Curr Genet Med Rep 1: 99-112.

Probe Description

The SPEC CBFB Dual Color Break Apart Probe is a mixture of two direct labeled probes hybridizing to the 16q22.1 band. The orange fluorochrome direct labeled probe hybridizes proximal, the green fluorochrome direct labeled probe hybridizes distal to the CBFB gene breakpoint region at 16q22.1.



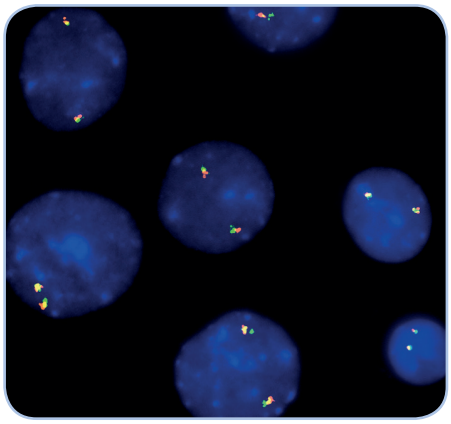
Ideogram of chromosome 16 indicating the hybridization locations.



SPEC CBFB Probe map (not to scale).

Results

In an interphase nucleus of a normal cell lacking a translocation involving the 16q22.1 band, two orange/green fusion signals are expected representing two normal (non-rearranged) 16q22.1 loci. A signal pattern consisting of one orange/green fusion signal, one orange signal, and a separate green signal indicates one normal 16q22.1 locus and one 16q22.1 locus affected by a translocation.



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

Prod. No.	Product	Label	Tests* (Volume)
Z-2207-50	ZytoLight SPEC CBFB 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/DuraTect-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.*

FE123-1-16

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.*

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

229