ZytoLight® SPEC IGH Dual Color Break Apart Probe

CE IVD

Background

The ZytoLight® SPEC IGH Dual Color Break Apart Probe is designed to detect translocations involving the chromosomal region 14q32.33 harboring the IGH gene.

Rearrangements involving the IGH (immunoglobulin heavy locus, a.k.a. IGH@) gene are considered to be cytogenetic hallmarks for non-Hodgkin lymphoma (NHL). NHLs represent 50% of all hematological malignancies.

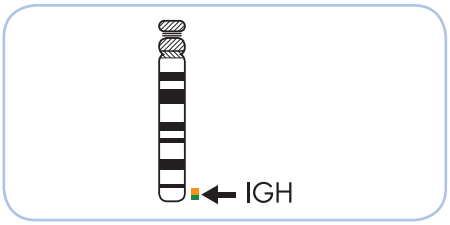
IGH gene rearrangements have been identified in about 50% of NHLs and are associated with specific subtypes of NHLs. Translocation t(11;14)(q13.3;q32.3) can be found in about in 95% of mantle cell lymphoma (MCL), t(14;18)(q32.3;q21.3) in 80% of follicular lymphoma (FL), t(3;14)(q27;q32.3) in diffuse large B-cell lymphoma (DLBCL), and t(8;14)(q24.21;q32.3) in Burkitt's lymphoma. In all of these translocations an oncogene located near the breakpoint of the translocation partner is activated by juxtaposing to IGH regulatory sequences.

Rearrangements involving 14q32.33 have unique biological characteristics and correlate with clinical, morphological, and immunophenotypic features. Fluorescence *in situ* Hybridization is a helpful tool for the diagnosis, selecting treatment, and giving prognostic information.

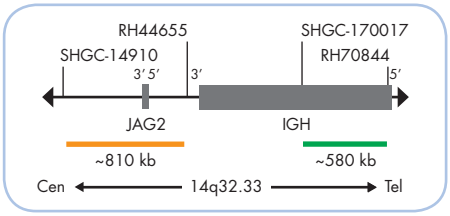
References
Bernicot I, et al. (2007) Cytogenet Genome Res 118: 345-52.
Hehne S, et al. (2012) Pathol Res Pract 208: 510-7.
Kazuhiro N, et al. (1997) Blood 90: 526-34.
Lu S, et al. (2004) Cancer Genet and Cytogenet 152: 141-5.
Quintero-Rivera F, et al. (2009) Cancer Genet and Cytogenet 190: 33-9.

Probe Description

The SPEC IGH Dual Color Break Apart Probe is a mixture of two direct labeled probes hybridizing to the 14q32.33 band. The orange fluorochrome direct labeled probe hybridizes proximal, and the green fluorochrome direct labeled probe hybridizes distal to the constant regions of the IGH locus.



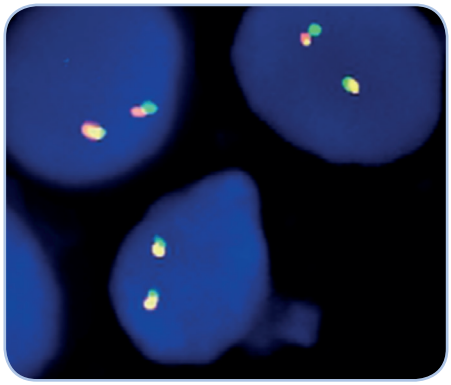
Ideogram of chromosome 14 indicating the hybridization locations.



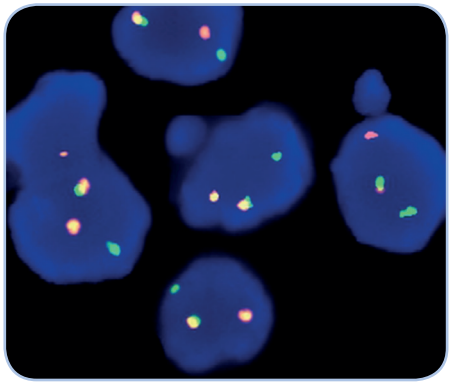
SPEC IGH Probe map (not to scale).

Results

In an interphase nucleus lacking a translocation involving the 14q32.33 band two orange/green fusion signals are expected representing two normal (non-rearranged) 14q32.33 loci. A signal pattern consisting of one orange/green fusion signal, one orange signal, and a separate green signal indicates one normal 14q32.33 locus and one 14q32.33 locus affected by a translocation.



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



Burkitt-Lymphoma tissue section with translocation affecting the 14q32.33 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-2110-50	ZytoLight SPEC IGH Dual Color Break Apart Probe CE IVD	●/●	5 (50 µl)
Z-2110-200	ZytoLight SPEC IGH Dual Color Break Apart Probe CE IVD	●/●	20 (200 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
Z-2028-20	ZytoLight FISH-Tissue Implementation Kit CE IVD Incl. Heat Pretreatment Solution Citric, 500 ml; Pepsin Solution, 4 ml; Wash Buffer SSC, 500 ml; 25x Wash Buffer A, 100 ml; DAPI/DuraTect-Solution, 0.8 ml		20
Z-2099-20	ZytoLight FISH-Cytology Implementation Kit CE IVD Incl. Cytology Pepsin Solution, 4 ml; 20x Wash Buffer TBS, 50 ml; 10x MgCl2, 50 ml; 10x PBS, 50 ml; Cytology Stringency Wash Buffer SSC, 500 ml; Cytology Wash Buffer SSC, 500 ml; DAPI/DuraTect-Solution, 0.8 ml		20

** 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.*

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