

# ZytoLight® SPEC MYC Dual Color Break Apart Probe

Previously: ZytoLight SPEC CMYC Dual Color Break Apart Probe

## Background

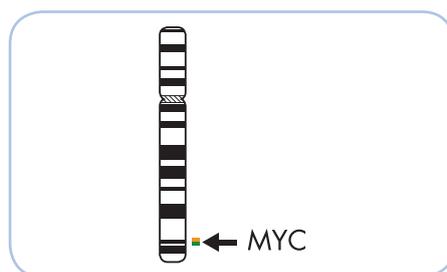
The ZytoLight® SPEC MYC Dual Color Break Apart Probe is designed to detect translocations involving the chromosomal region 8q24.21 harboring the MYC gene. The MYC proto-oncogene (v-myc avian myelocytomatosis viral oncogene homolog, a.k.a. CMYC) encodes a transcription factor essential for cell growth and proliferation and is broadly implicated in tumorigenesis. Translocations involving the MYC gene are considered to be cytogenetic hallmarks for Burkitt Lymphoma but are also found in other types of lymphomas. The most frequent translocation involving the MYC gene region is t(8;14)(q24.21;q32.3) juxtaposing the MYC gene in 8q24.21 next to the IgH (immunoglobulin heavy chain) locus in 14q32.33. Further translocations affecting the MYC gene are t(8;22)(q24.21;q11.2) and t(2;8)(p11.2;q24.21), both of which involve one of the two immunoglobulin light chain loci. All three translocations bring the MYC gene under the control of a regulatory element from one of the immunoglobulin loci resulting in constitutive overexpression of MYC.

## References

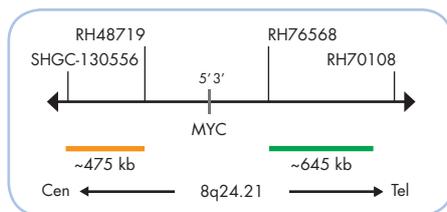
Boerma EG, et al. (2009) *Leukemia* 23: 225-34.  
Dalla-Favera R, et al. (1982) *PNAS* 79: 6497-501.  
Haralambieva E, et al. (2004) *Genes Chromosomes Cancer* 40: 10-8.  
Veronese ML, et al. (1995) *Blood* 85: 2132-8.

## Probe Description

The SPEC MYC Dual Color Break Apart Probe is a mixture of two direct labeled probes hybridizing to the 8q24.21 band. The orange fluorochrome direct labeled probe hybridizes proximal to the MYC gene, the green fluorochrome direct labeled probe hybridizes distal to that gene.



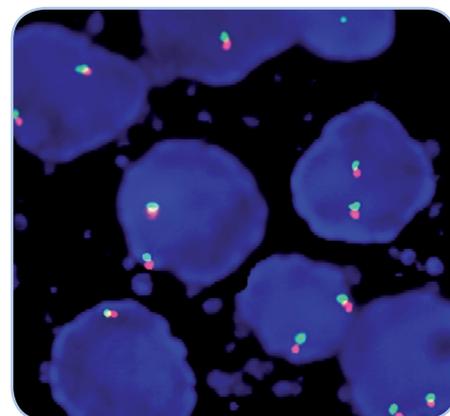
Ideogram of chromosome 8 indicating the hybridization locations.



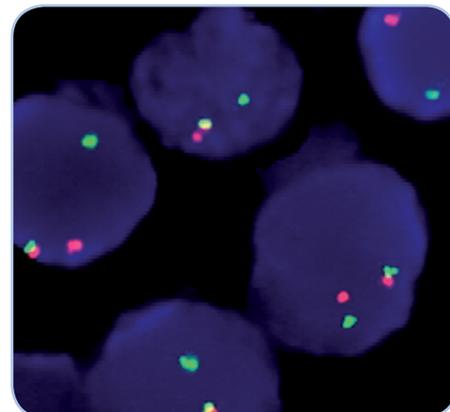
SPEC MYC Probe map (not to scale).

## Results

In an interphase nucleus lacking a translocation involving the 8q24.21 band two orange/green fusion signals are expected representing two normal (non-rearranged) 8q24.21 loci. A signal pattern consisting of one orange/green fusion signal, one orange signal, and a separate green signal indicates one normal 8q24.21 locus and one 8q24.21 locus affected by an 8q24.21 translocation. Alternative break points particularly observed in variant MYC translocations t(8;22) and t(2;8) might result in different signal patterns.



SPEC MYC 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 8q24.21 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-2090-200	ZytoLight SPEC MYC Dual Color Break Apart Probe CE IVD	●/●	20 (200 µl)
<b>Related Products</b>			
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

\* 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.