

FlexISH® MYC/IGH TriCheck™ Probe



Background

The FlexISH® MYC/IGH TriCheck™ Probe is designed to detect the translocation t(8;14) (q24.21;q32.3) affecting the MYC gene in the chromosomal region 8q24.21 and the IGH locus in 14q32.33. Moreover, using this probe it is possible to discriminate between MYC-IGH translocations and MYC translocations involving fusion partners other than IGH.

The MYC proto-oncogene (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 (BL) but are also found in other types of lymphomas.

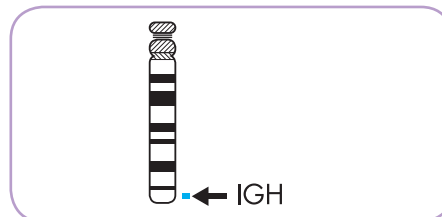
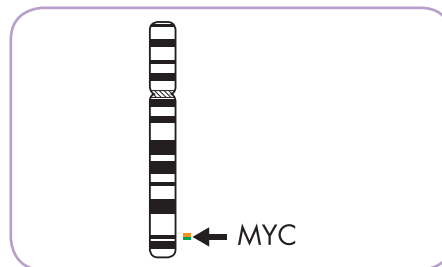
The most frequent translocation involving the MYC gene region t(8;14) (q24.21;q32.3) can be found in approx. 80% of the BL cases and juxtaposes the MYC gene next to IGH (immunoglobulin heavy locus). Further translocations affecting the MYC gene are t(8;22) (q24.21;q11.2) and t(2;8)(p11.2;q24.21), both 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. Large B-cell lymphoma patients with MYC-IG have shorter overall survival compared with both MYC translocation with non-IG translocation partner gene as well as absence of MYC translocation. Thus, the detection of MYC translocation partner by FISH may prove a valuable diagnostic and prognostic tool.

References

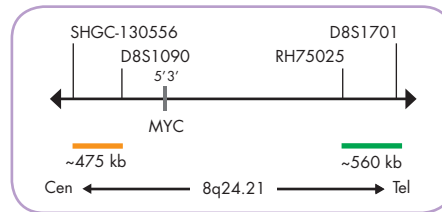
May P, et al. (2010) Cancer Genet Cytogenet 198: 71-5.
Pedersen MØ, et al. (2014) Eur J Haematol 92: 42-8.
Perkins AS & Friedberg JW (2008) Hematology Am Soc Hematol Educ Program: 341-8.
Veronese ML, et al. (1995) Blood 85: 2132-8.

Probe Description

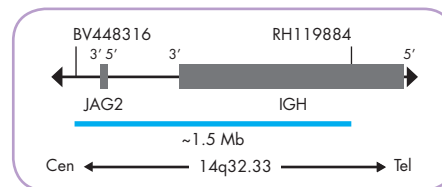
The FlexISH® MYC/IGH TriCheck™ Probe is a mixture of three direct labeled probes hybridizing to the 8q24.21 and 14q32.33 bands. The orange fluorochrome direct labeled probe hybridizes proximal to the MYC gene region, and the green fluorochrome direct labeled probe hybridizes distal to the MYC gene region. The blue fluorochrome direct labeled probe spans the known breakpoints of IGH.



Ideograms of chromosomes 8 (above) and 14 (below) indicating the hybridization locations.



MYC Probe map (not to scale).

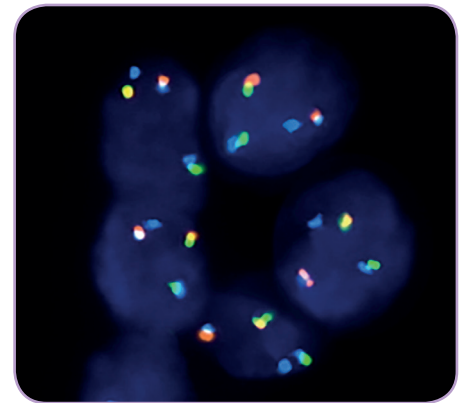


IGH Probe map (not to scale).

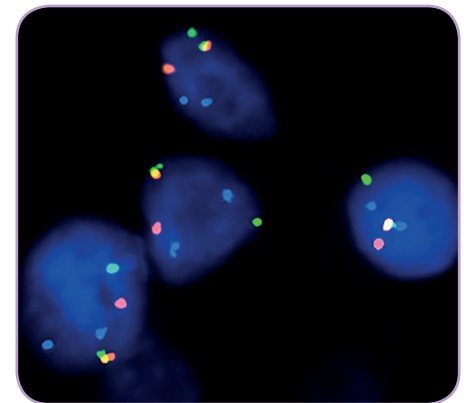
Results

In an interphase nucleus without rearrangements of the MYC/IGH loci, two green/orange fusion signals and two blue signals are expected.

A MYC-IGH fusion is indicated by one separate green signal and one separate orange signal, both co-localizing with blue signals. A MYC translocation without involvement of IGH is indicated by separated orange and green signals without co-localization of the separated signals with blue signals.



Non-Hodgkin lymphoma tissue section with t(8;14) as indicated by one separate green and one separate orange signal, and one additional blue signal.



Non-Hodgkin lymphoma tissue section with translocation of the MYC gene without IGH involvement as indicated by one separate green and one separate orange signal, without an additional blue signal.

Prod. No.	Product	Label	Tests* (Volume)
Z-2293-50	FlexISH MYC/IGH TriCheck Probe CE IVD	●/●/●	5 (50 µl)
Related Products			
Z-2182-5	FlexISH-Tissue Implementation Kit CE IVD		5
Incl. Heat Pretreatment Solution Citric, 150 ml; Pepsin Solution, 1 ml; 5x FlexISH Wash Buffer, 150 ml; DAPI/DuraTect-Solution, 0.2 ml			

* 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.