

ZytoLight® SPEC MEF2D/BCL9 TriCheck™ Probe



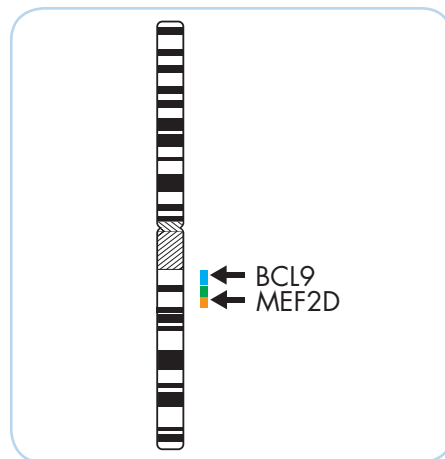
Background

The ZytoLight® SPEC MEF2D/BCL9 TriCheck™ Probe is designed to detect inversions involving the chromosomal region 1q21.2 harboring the BCL9 gene and the chromosomal region 1q22 harboring the MEF2D gene. Moreover, using this probe it is possible to discriminate between MEF2D-BCL9 inversions and MEF2D translocations not affecting BCL9. Rearrangements of the myocyte enhancer factor 2D (MEF2D) have been frequently found in acute lymphoblastic leukemia (ALL). Recurring rearrangements have been found in 3-4% of pediatric and up to 7% of adult ALL patients, respectively. In B-progenitor ALL cases the most common translocation partner of MEF2D is BCL9. Other known translocation partners are CSF1R (5q32), DAZAP1 (19p13.3), HNRNPUL1 (19q13.2), SS18 (18q11.2), and FOXJ2 (12p13.31). ALL cases harboring MEF2D rearrangements are often associated with copy number alterations of the aberrant locus and display an increased sensitivity to histone deacetylase inhibitor (HDAC) treatment. MEF2D gene translocation derived ALL cases show a markedly high expression of HDAC9 inducing resistance to conventional chemotherapy and in case of MEF2D-BCL9 gene fusion also a resistance to dexamethasone treatment. MEF2D-rearranged ALL represents a distinct form of high-risk leukemia; consequently MEF2D-BCL9 fusion detection by Fluorescence *in situ* Hybridization (FISH) might be of diagnostic and therapeutic relevance.

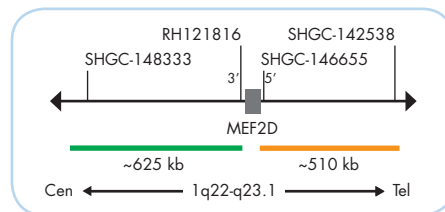
References
 Gu Z, et al. (2016) Nat Commun 7: 13331.
 Liu YF, et al. (2016) EBioMedicine 8: 173-83.
 Suzuki K, et al. (2016) J Clin Oncol 34: 3451-9.

Probe Description

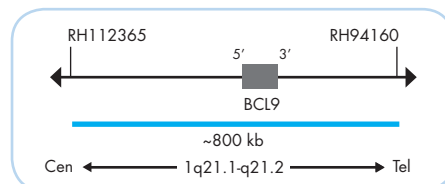
The SPEC MEF2D/BCL9 TriCheck™ Probe is a mixture of three direct labeled probes hybridizing to the long arm of chromosome 1. The green fluorochrome direct labeled probe hybridizes proximal to the MEF2D gene breakpoint region at 1q22, the orange fluorochrome direct labeled probe hybridizes distal to the MEF2D gene breakpoint region at 1q22-q23.1, and the blue fluorochrome direct labeled probe hybridizes to the BCL9 gene region at 1q21.1-q21.2.



Ideogram of chromosome 1 indicating the hybridization locations.



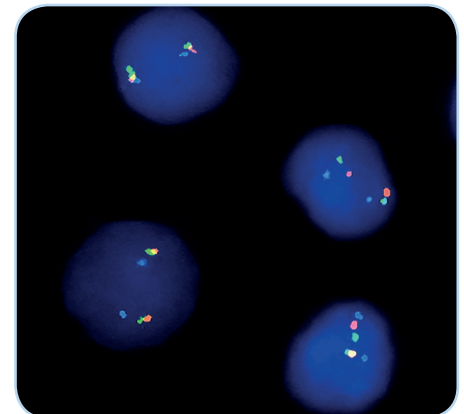
SPEC MEF2D Probe map (not to scale).



SPEC BCL9 Probe map (not to scale).

Results

In an interphase nucleus without re-arrangement of the MEF2D/BCL9 locus, two green/orange fusion signals and two blue signals are expected. A MEF2D-BCL9 inversion is indicated by one separate green signal, one separate orange signal, and an additional blue signal. A MEF2D translocation, without BCL9 involvement, is indicated by one separate green signal and one separate orange signal, without an additional blue signal. Gain of the aberrant region may be observed and is indicated by multiple copies of the respective signal pattern. Signal patterns other than those described above may indicate deviant rearrangements.



SPEC MEF2D/BCL9 TriCheck™ Probe on normal interphase cells with non-rearranged MEF2D loci (two green/orange fusion signals), and non-rearranged BCL9 loci (two blue signals).

Prod. No.	Product	Label	Tests* (Volume)
Z-2277-50	ZytoLight SPEC MEF2D/BCL9 TriCheck Probe		5 (50 µl)
Related Products			
Z-2028-5	ZytoLight FISH-Tissue Implementation Kit Incl. Heat Pretreatment Solution Citric, 150 ml; Pepsin Solution, 1 ml; Wash Buffer SSC, 210 ml; 25x Wash Buffer A, 50 ml; DAPI/DuraTect-Solution, 0.2 ml		5
Z-2099-20	ZytoLight FISH-Cytology Implementation Kit Incl. Cytology Pepsin Solution, 4 ml; 20x Wash Buffer TBS, 50 ml; 10x MgCl ₂ , 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. only available in certain countries. All other countries research use only! Please contact your local dealer for more information.