

ZytoLight® SPEC BCR/ABL1 Dual Color Dual Fusion Probe

Previously: ZytoLight SPEC BCR/ABL Dual Color Dual Fusion Probe



Background

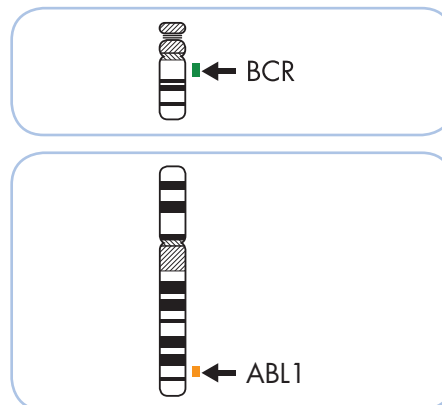
The ZytoLight® SPEC BCR/ABL1 Dual Color Dual Fusion Probe is designed for the detection of the specific translocations involving the chromosomal region 9q34.12 harboring the ABL1 (a.k.a. ABL) gene, and the chromosomal region 22q11.23, harboring the BCR (a.k.a. BCR1) gene. Rearrangements involving t(9;22) (q34.1;q11.2) are observed in approx. 90% of patients with chronic myeloid leukemia (CML) and in approx. 25% of adults with acute lymphoblastic leukemia (ALL). The rearrangements are cytogenetically characterized by the presence of the Philadelphia (Ph) chromosome. The translocation frequently results in the formation of a chimeric BCR/ABL1 fusion gene on the derivative chromosome 22. The gene product is a BCR/ABL1 protein with abnormal tyrosine kinase activity. In normal cells, ABL1 kinase activity is finely regulated in response to growth factors and other stimuli. The BCR/ABL1 fusion protein leads to constitutive activation of down-stream signaling pathways, including Ras, Jak/Stat and PI-3 kinase. In rare cases the BCR/ABL1 fusion gene is located on chromosomal sites other than the Ph chromosome. Fluorescence *in situ* Hybridization (FISH) allows for the identification of rearrangements that could otherwise not be detected by conventional karyotyping.

References

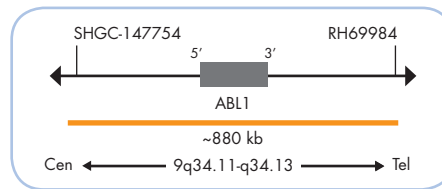
- Hehne S, et al. (2012) Pathol Res Pract 208: 510-7.
- Lim TH, et al. (2005) Ann Acad Med Singapore 34: 533-8.
- Primo D, et al. (2003) Leukemia 17: 1124-9.
- Rieder H, et al. (1998) Leukemia 12: 1473-81.
- Sessaroge M, et al. (2000) Haematologica 85: 35-9.
- Zheng X, et al. (2009) PLoS One 4: e7661.

Probe Description

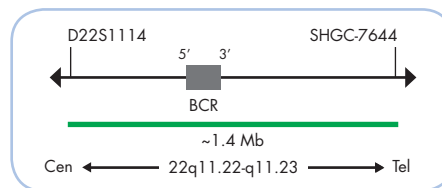
The SPEC BCR/ABL1 Dual Color Dual Fusion Probe is a mixture of a green fluorochrome direct labeled BCR probe spanning the minor and major breakpoint cluster of the BCR gene and an orange fluorochrome direct labeled ABL1 probe spanning the breakpoint region of the ABL1 gene.



Ideograms of chromosomes 22 (above) and 9 (below) indicating the hybridization locations.



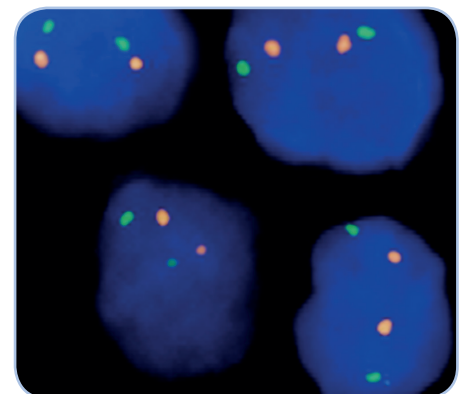
SPEC ABL1 Probe map (not to scale).



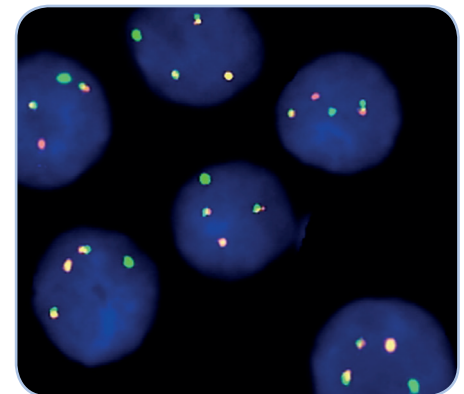
SPEC BCR Probe map (not to scale).

Results

In a normal interphase nucleus, two orange and two green signals are expected. A reciprocal translocation involving two breakpoints splits the two signals and generates a fusion signal on each of the chromosomes involved. The chromosomal regions which are not translocated are indicated by the single orange respectively green signal.



SPEC BCR/ABL1 Dual Color Dual Fusion Probe hybridized to normal interphase cells as indicated by two orange and two green signals in each nucleus.



Bone marrow biopsy tissue section with translocation affecting the BCR/ABL1 loci as indicated by one separate orange signal, one separate green signal and two orange/green fusion signals.

Prod. No.	Product	Label	Tests* (Volume)
Z-2111-50	ZytoLight SPEC BCR/ABL1 Dual Color Dual Fusion Probe CE IVD	●/●	5 (50 µl)
Z-2111-200	ZytoLight SPEC BCR/ABL1 Dual Color Dual Fusion 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.