ZytoLight® SPEC RB1/13q12 Dual Color Probe

CE IVD

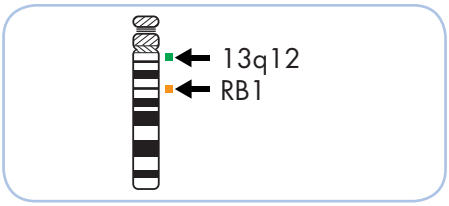
Background

The ZytoLight® SPEC RB1/13q12 Dual Color Probe is designed for the detection of deletions affecting the RB1 gene.
The RB1 (retinoblastoma 1, a.k.a. pRb) gene is located on 13q14.2 and encodes a protein which acts as a tumor suppressor playing a crucial role in cell cycle regulation and genome stability. Deletions of RB1 are frequently found in retinoblastoma.
However, either monoallelic or biallelic deletions of RB1 are also common in a wide variety of solid tumors and hematologic malignancies such as multiple myeloma (MM) and chronic lymphocytic leukemia (CLL).
While 13q14 deletions exclusive of RB1 confer a more favorable prognosis in CLL patients, 13q14 deletions that encompass the RB1 locus (present in approx. 20% of all CLL cases) are associated with shortened survival.
Hence, Fluorescence *in situ* Hybridization is a valuable tool for the detection of RB1 gene deletions and can be used in combination with further biological markers, morphology and clinical information for the prediction of disease progression and overall survival.

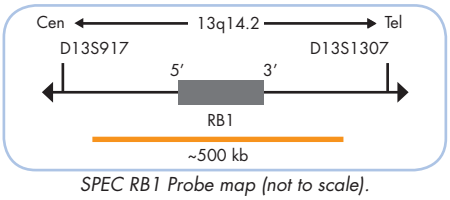
References
Dal Bo M, et al. (2011) Genes Chromosomes Cancer 50: 633-43.
Dao DD, et al. (1994) Leukemia 8: 1280-4.
Di Fiore R, et al. (2013) J Cell Physiol 228: 1676-87.
Juge-Morineau N, et al. (1997) Leuk Lymphoma 24: 229-37.
Orlandi EM, et al. (2012) Hematol Oncol [Epub ahead of print].
Ouillette P, et al. (2011) Clin Cancer Res 17: 6778-90.

Probe Description

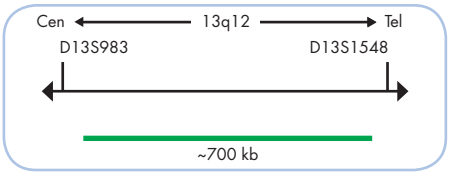
The SPEC RB1/13q12 Dual Color Probe is a mixture of an orange fluorochrome direct labeled SPEC RB1 probe specific for the RB1 gene in the chromosomal region 13q14.2 and a green fluorochrome direct labeled SPEC 13q12 probe specific for the chromosomal region 13q12. The SPEC 13q12 Probe is designed to hybridize in close proximity of centromere 13 at 13q12. Since chromosomes 13 and 21 share the same repetitive sequences, they cannot be differentiated by probes detecting centromere specific repeats.



Ideogram of chromosome 13 indicating the hybridization locations.



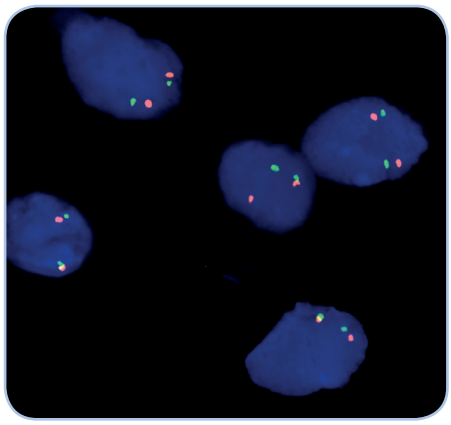
SPEC RB1 Probe map (not to scale).



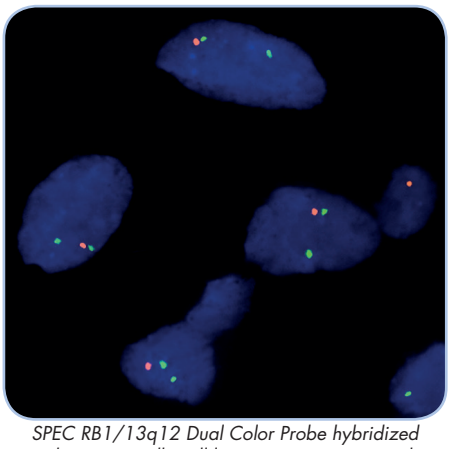
SPEC 13q12 Probe map (not to scale).

Results

In a normal interphase nucleus, two orange and two green signals are expected. In a cell with deletions affecting the RB1 gene locus, one or no copy of the orange signal will be observed.



SPEC RB1/13q12 Dual Color Probe hybridized to normal interphase cells as indicated by two orange and two green signals in each nucleus.



SPEC RB1/13q12 Dual Color Probe hybridized to benign spindle cell lipoma tissue section with deletion of the RB1 gene as indicated by one orange signal and two green signals in each nucleus.

Prod. No.	Product	Label	Tests* (Volume)
Z-2165-200	ZytoLight SPEC RB1/13q12 Dual Color Probe CE IVD	●/●	20 (200 µl)
Related Products			
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/Antifade-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.*

Certified Quality System mdc ISO 9001 Certified Quality System mdc ISO 13485
FE076-1-13

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