

ZytoLight® SPEC CCND1/IGH Dual Color Dual Fusion Probe



Background

The ZytoLight® SPEC CCND1/IGH Dual Color Dual Fusion Probe is designed to detect translocation t(11;14)(q13.3;q32.3) frequently found in mantle cell lymphomas. The translocation juxtaposes the CCND1 gene (cyclin D1, a.k.a. PRAD1 and BCL1) next to the IGH (immunoglobulin heavy locus, a.k.a. IGH@) locus and results in constitutive overexpression of CCND1. The translocation t(11;14)(q13.3;q32.3) that involves the CCND1 and IGH gene regions is detected in up to 95% of patients with mantle cell lymphomas (MCL) and are considered to be the genetic hallmark of this subtype of low-grade peripheral B-cell neoplasms. However, the t(11;14) has also been identified in other lymphoproliferative disorders (LPDs), such as B-prolymphocytic leukemia (PLL), and, less frequently, in plasma cell myelomas, B-cell chronic lymphocytic leukemia, and in splenic lymphomas with villous lymphocytes (SLVL).

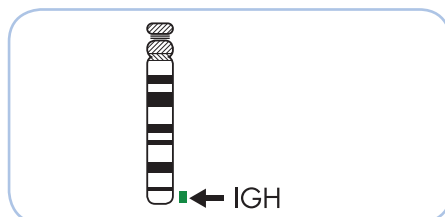
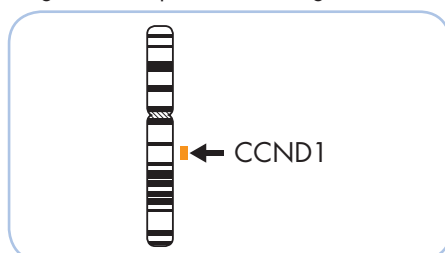
Since the course of MCL is aggressive, and its response to standard chemotherapy is poor, differential diagnosis from other chronic lymphoproliferative disorders via detection of the t(11;14) translocation might be of great clinical importance.

References

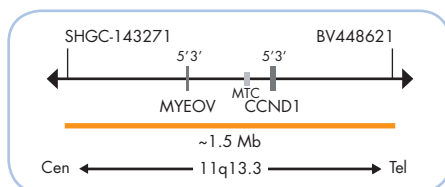
- Bentz JS, et al. (2004) Cancer 102: 124-31.
Li JY, et al. (1999) Am J Pathol 154: 1449-52.
Siebert R, et al. (1998) Ann of Oncol 9: 519-26.
Vaandrager JW, et al. (1996) Blood 88: 1177-82.

Probe Description

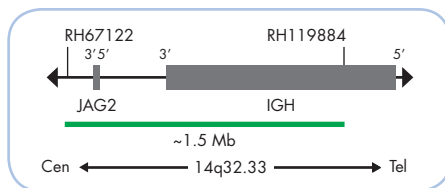
The SPEC CCND1/IGH Dual Color Dual Fusion Probe is a mixture of an orange fluorochrome direct labeled CCND1 probe spanning the major translocation cluster (MTC) region comprising about 120 kb upstream of CCND1 and a green fluorochrome direct labeled IGH probe spanning the breakpoint cluster region of IGH.



Ideograms of chromosomes 11 (above) and 14 (below) indicating the hybridization locations.



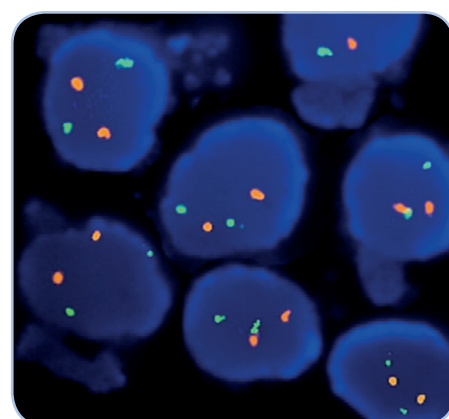
SPEC CCND1 Probe map (not to scale).



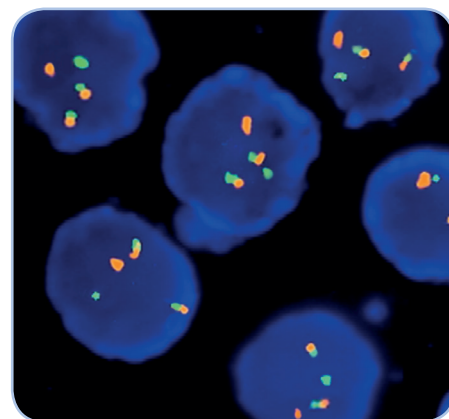
SPEC IGH Probe map (not to scale).

Results

In a normal interphase nucleus, two orange and two green signals are expected. A reciprocal CCND1/IGH translocation leads to two orange/green fusion signals indicating both rearranged chromosomes. Additionally, the non-rearranged chromosomes are indicated by one orange signal and a separate green signal, respectively.



SPEC CCND1/IGH Dual Color Dual Fusion Probe hybridized to normal interphase cells as indicated by two orange and two green signals in each nucleus.



Section of an iliac crest biopsy with translocation affecting the CCND1/IGH 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-2125-50	ZytoLight SPEC CCND1/IGH Dual Color Dual Fusion Probe CE IVD	●/●	5 (50 µl)
Z-2125-200	ZytoLight SPEC CCND1/IGH Dual Color Dual Fusion Probe CE IVD	●/●	20 (200 µl)
Related Products			
Z-2028-5	ZytoLight FISH-Tissue Implementation Kit CE IVD		5
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			
Z-2028-20	ZytoLight FISH-Tissue Implementation Kit CE IVD		20
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			

* 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.