

ZytoLight® SPEC TP53/CEN 17 Dual Color Probe

Background

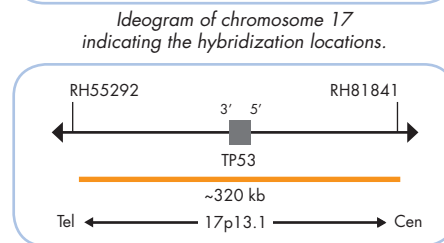
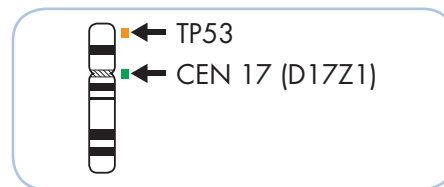
The ZytoLight® SPEC TP53/CEN 17 Dual Color Probe is designed for the detection of TP53 gene deletions observed e.g. in chronic lymphocytic leukemia (CLL).

The TP53 gene (tumor protein 53, a.k.a. p53, BCC7, LFS1, TRP53) is located in the chromosomal region 17p13.1 and encodes a 53 kDa transcription factor which regulates cell proliferation, differentiation, and apoptosis and which functions as a tumor suppressor by activating the expression of genes that inhibit cell growth. Deletions affecting the short arm of chromosome 17 (17p), the site of the TP53 gene, are often accompanied by mutations in the remaining allele, and thus result in the loss of TP53 tumor suppressor activity.

TP53 gene deletions have been detected in patients with chronic lymphocytic leukemia (CLL), multiple myeloma (MM), acute myeloid leukemia (AML), and are also very frequent in primary solid tumors of different histological origin. The presence of TP53 deletion has been shown to correlate with more aggressive disease, shortened survival, and poor response to standard treatment. CLL patients with deletion of 17p are more likely to respond to treatment with the monoclonal anti-CD52 antibody alemtuzumab than to conventional chemotherapy. FISH is an effective method to screen for deletions affecting the TP53 gene locus in order to identify patients who are candidates for alternative treatment and to avoid administration of otherwise ineffective therapy.

Probe Description

The SPEC TP53/CEN 17 Dual Color Probe is a mixture of a green fluorochrome direct labeled CEN 17 probe specific for the alpha satellite centromeric region of chromosome 17 (D17Z1) and an orange fluorochrome direct labeled SPEC TP53 probe specific for the TP53 gene at 17p13.1.

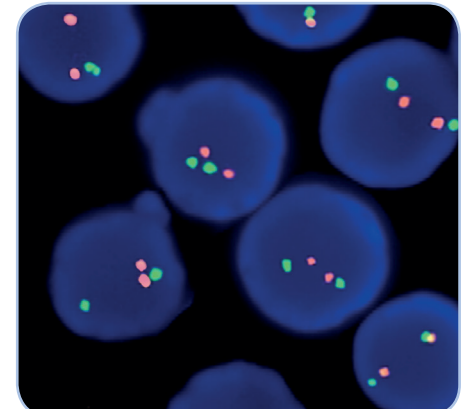


SPEC TP53 Probe map (not to scale).

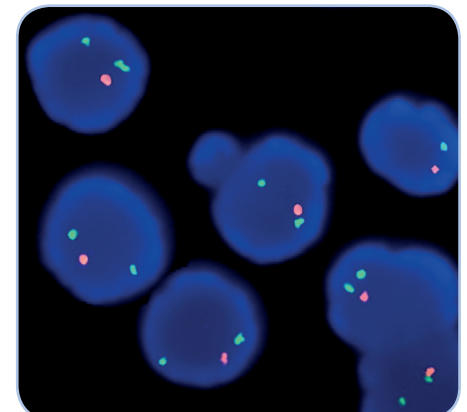
References
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Chang H, et al. (2005) Blood 105: 358-60.
Chang H, et al. (2010) Am J Clin Pathol 133: 70-4.
Herrera JC, et al. (2010) Biomedica 30: 390-400.
Lozanski G, et al. (2004) Blood 103: 3278-81.
Tavor S, et al. (2011) Leuk Lymphoma 52: 642-7.

Results

In a normal interphase nucleus, two orange and two green signals are expected. In a cell with deletions affecting the TP53 gene locus, one or no copy of the orange signal will be observed.



SPEC TP53/CEN 17 Dual Color Probe hybridized to normal interphase cells as indicated by two orange and two green signals in each nucleus.



SPEC TP53/CEN 17 Dual Color Probe hybridized to bone marrow tissue section with deletion of the TP53 gene as indicated by one orange signal and two green signals in each nucleus.

Prod. No.	Product	Label	Tests* (Volume)
Z-2153-50	ZytoLight SPEC TP53/CEN 17 Dual Color Probe CE IVD	●/●	5 (50 µl)
Z-2153-200	ZytoLight SPEC TP53/CEN 17 Dual Color 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.