

ZytoLight® SPEC TERT/5q31 Dual Color Probe

Background

The ZytoLight® SPEC TERT/5q31 Dual Color Probe is designed for the detection of TERT gene amplifications and chromosomal gains found in a variety of human tumors.

The TERT (telomerase reverse transcriptase) gene is located in the chromosomal region 5p15.33 and encodes the reverse transcriptase component of the human telomerase. Telomerase, the ribonucleoprotein enzyme complex necessary to maintain the ends of chromosomes, is absent from the majority of somatic cells but is present and active in the majority of immortal cell lines and human cancers.

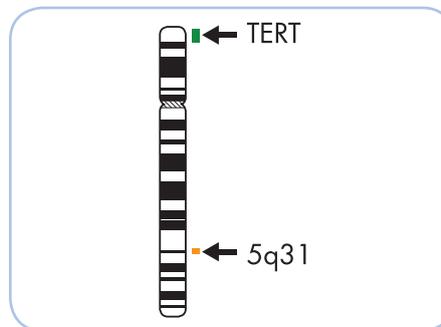
Chromosomal gain or amplification of the TERT gene was found in various human tumors such as lung, cervical, bladder, breast, hepatocellular and colorectal carcinomas as well as in neuroblastoma and melanoma. It was shown that TERT amplification is a poor prognostic factor in non-small cell lung cancer (NSCLC) and is associated with poorly differentiated histopathology of hepatocellular carcinomas. Thus, detection of TERT amplification may have useful applications in cancer diagnosis and prognosis.

References

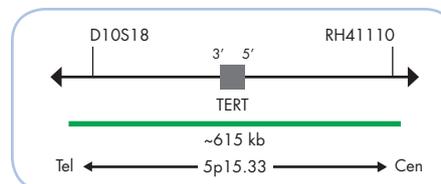
- Bryce LA, et al. (2000) Neoplasia 2: 197-201.
 Cao Y, et al. (2008) Cancer Sci 99: 1092-9.
 Morin GB (1989) Nature 353: 454-6.
 Takuma Y, et al. (2004) J Gastroenterol Hepatol 19: 1300-4.
 Zhu C-Q, et al. (2006) Br J Cancer 94: 1452-9.

Probe Description

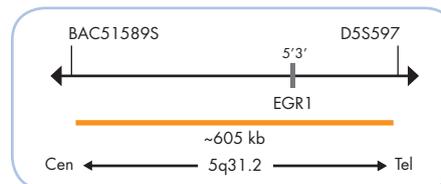
The SPEC TERT/5q31 Dual Color Probe is a mixture of a green fluorochrome direct labeled SPEC TERT probe hybridizing to the TERT gene in the chromosomal region 5p15.33 and an orange fluorochrome direct labeled SPEC 5q31 probe specific for the chromosomal region 5q31.2 harboring the EGR1 gene. Since chromosomes 1, 5, and 19 share the same repetitive sequences, probes specific for 5q31.2 are commonly used for chromosome 5 copy number detection.



Ideogram of chromosome 5 indicating the hybridization locations.



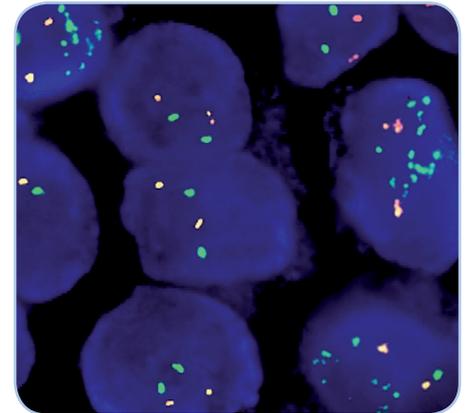
SPEC 5p15 Probe map (not to scale).



SPEC 5q31 Probe map (not to scale).

Results

In a normal interphase nucleus two orange and two green signals are expected. In a cell with amplification of the TERT gene locus or aneuploidy of chromosome 5, multiple copies of the green signal or green signal clusters will be observed.



SPEC TERT/5q31 Dual Color Probe hybridized to melanoma tissue section showing normal cell as indicated by two green and two orange signals in each nucleus and cells with TERT gene amplification as indicated by multiple green signals per nucleus.

Prod. No.	Product	Label	Tests* (Volume)
Z-2091-200	ZytoLight SPEC TERT/5q31 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/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 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. CE IVD only available in certain countries. All other countries research use only! Please contact your local dealer for more information.