

ZytoLight® SPEC TERC/CEN 3 Dual Color Probe

Background

The ZytoLight® SPEC TERC/CEN 3 Dual Color Probe is designed to detect amplifications affecting the chromosomal region 3q26.2 harboring the TERC (human telomerase RNA component, a.k.a. hTERC, TRC3) gene.

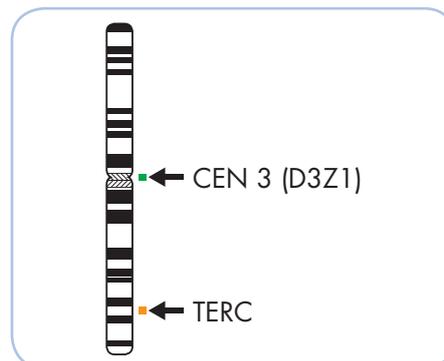
3q copy number gains including the TERC gene locus, have been found in several epithelial carcinomas such as cervix carcinoma, prostate cancer, non-small cell lung cancer, and lung squamous cell carcinoma. TERC amplifications are not only found in cancers but also in pre-cancerous lesions such as atypical squamous cell of undetermined significance (ASCUS). For cervical carcinoma, which is the second most common malignancy among women worldwide, TERC amplifications have become a molecular marker to distinguish between low-grade dysplasia and high-grade cervical neoplasia and invasive carcinoma. Only a minority of cases which are cytologically diagnosed as low-grade squamous intraepithelial lesion (LSIL) show a development to high-grade squamous intraepithelial lesions (HSIL). Since an increase in TERC gene copy number has been shown to be strongly associated with the progression of cervical intraepithelial neoplasia (CIN) to invasive carcinoma, TERC amplification has been proposed as prognostic marker to identify low-grade lesions with high risk to progress to high-grade disease and cancer. Fluorescence *in situ* Hybridization (FISH) may be a reliable diagnostic tool to complement Pap-testings and may be of prognostic relevance.

References

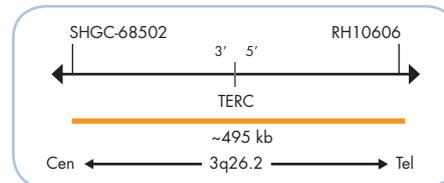
- Andersson S, et al. (2009) Am J Pathol 175: 1831-47.
Heselmeyer-Haddad K, et al. (2005) Am J Pathol 166: 1229-38.
Heselmeyer K, et al. (1996) Proc Natl Acad Sci USA 93: 479-84.
Pelosi G, et al. (2007) Clin Cancer Res 13: 1995-2004.
Yokoi S, et al. (2003) Clin Cancer Res 9: 4705-13.

Probe Description

The SPEC TERC/CEN 3 Dual Color Probe is a mixture of an orange fluorochrome direct labeled probe spanning the TERC gene region at 3q26.2 and a green fluorochrome direct labeled probe hybridizing to the alpha satellite centromeric region of chromosome 3 (D3Z1).



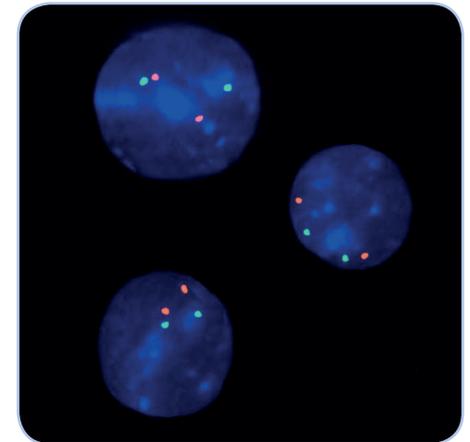
Ideogram of chromosome 3 indicating the hybridization locations.



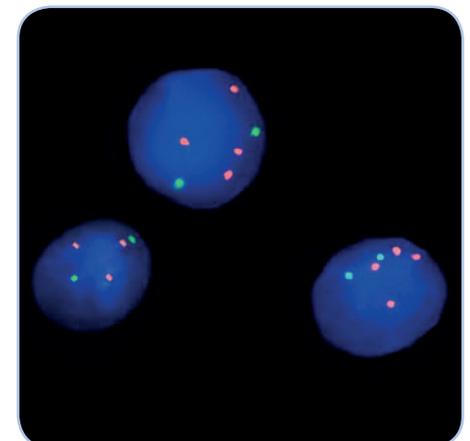
SPEC TERC Probe map (not to scale).

Results

Using the SPEC TERC/CEN 3 Dual Color Probe in a normal interphase nucleus, two orange and two green signals are expected. In a cell with gain of the TERC gene locus, multiple copies of the orange signal or orange signal clusters will be observed.



SPEC TERC/CEN 3 Dual Color Probe hybridized to normal interphase cells as indicated by two orange and two green signals per nucleus.



SPEC TERC/CEN 3 Dual Color Probe hybridized to CaSki cells with TERC amplification as indicated by three or four orange signals in each nucleus.

Prod. No.	Product	Label	Tests* (Volume)
Z-2284-200	ZytoLight SPEC TERC/CEN 3 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.