

# ZytoLight® SPEC ETV6 Dual Color Break Apart Probe

## Background

The ZytoLight® SPEC ETV6 Dual Color Break Apart Probe is designed for the detection of translocations involving the chromosomal region 12p13.2 harboring the ETV6 (ETS variant gene 6, a.k.a. TEL) gene.

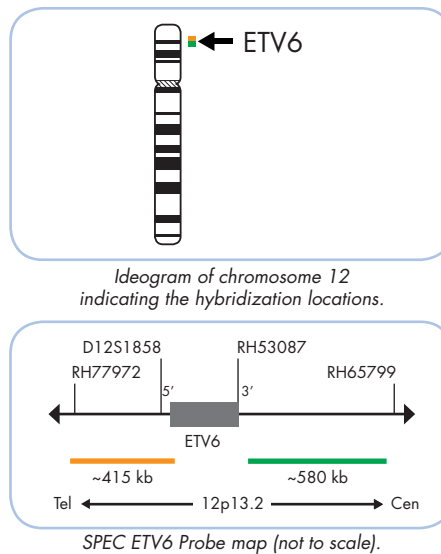
ETV6 is a member of the ETS family of transcription factors. More than 40 translocations with ETV6 involvement have been reported in diverse types of hematological and non-hematological malignancies. The balanced chromosomal translocation t(12;21)(p13.2;q22.1), which leads to ETV6-RUNX1 fusion, represents the most frequent genetic rearrangement (19-27%) in initial childhood B-cell precursor (BCP) acute lymphoblastic leukemia (ALL) and has been associated with good prognosis. The ETV6-NTRK3 gene fusion resulting from the t(12;15)(p13.2;q25) translocation was found to be characteristic for mammary analogue secretory carcinoma (MASC) of the salivary glands. Since MASC morphologically mimics other neoplasms, the detection of ETV6 rearrangements may be helpful for the differential diagnosis of MASC.

In a subgroup of myeloproliferative disorders, the t(5;12)(q32;p13.2) translocation is a recurrent chromosome abnormality resulting in the fusion of ETV6 to the receptor tyrosine kinase PDGFRB. Patients carrying the t(5;12) translocation can be successfully treated with tyrosine kinase inhibitors.

Hence, the detection of ETV6 rearrangements by Fluorescence *in situ* Hybridization may facilitate therapeutic decision making in regards to a variety of hematologic malignancies and some solid tumors.

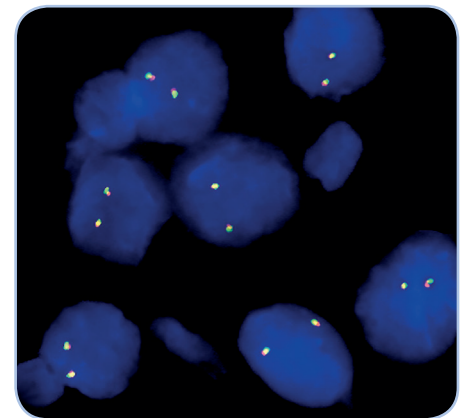
## Probe Description

The SPEC ETV6 Dual Color Break Apart Probe is a mixture of two direct labeled probes hybridizing to the 12p13.2 band. The green fluorochrome direct labeled probe hybridizes proximal and the orange fluorochrome direct labeled probe hybridizes distal to the ETV6 gene.

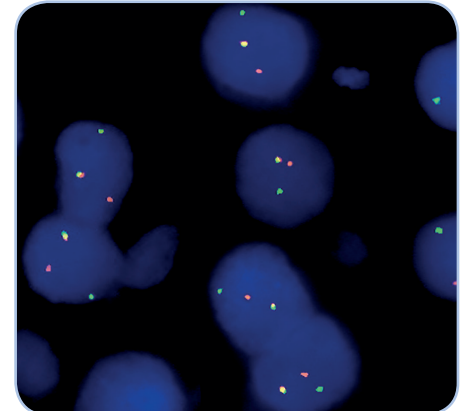


## Results

In an interphase nucleus lacking a translocation involving the 12p13.2 band, two orange/green fusion signals are expected representing two normal (non-rearranged) 12p13.2 loci. A signal pattern consisting of one orange/green fusion signal, one orange signal, and a separate green signal indicates one normal 12p13.2 locus and one 12p13.2 locus affected by a translocation.



SPEC ETV6 Dual Color Break Apart Probe hybridized to normal interphase cells as indicated by two orange/green fusion signals per nucleus.



MASC tissue section of the salivary glands with translocation of the ETV6 gene as indicated by one non-rearranged orange/green fusion signal, one orange and one separate green signal indicating the translocation.

## References

- Bohlander SK (2005) *Semin Cancer Biol* 15: 162-74.  
De Braekeleer E, et al. (2012) *Leuk Res* 36: 945-61.  
Peter A, et al. (2009) *Eur J Haematol* 83: 420-32.  
Pinto A, et al. (2014) *Mod Pathol* 27: 30-7.

Prod. No.	Product	Label	Tests* (Volume)
Z-2176-200	ZytoLight SPEC ETV6 Dual Color Break Apart Probe CE IVD	●/●	20 (200 µl)
<b>Related Products</b>			
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.