

# ZytoLight® SPEC TFE3 Dual Color Break Apart Probe



## Background

The ZytoLight® SPEC TFE3 Dual Color Break Apart Probe is designed to detect translocations involving the chromosomal region Xp11.23 harboring the TFE3 (transcription factor binding to IGHM enhancer 3, a.k.a. TFEA) gene.

Translocations involving the chromosomal region Xp11.2 are frequently detected in renal cell carcinomas (RCCs) which usually affect children and adolescents. The Xp11.2 translocation RCCs represent a predominant and aggressive subtype in the pediatric age group but can also occur in adults. Macroscopically, Xp11.2 translocation RCCs may mimic conventional clear cell RCCs and thus, differential diagnosis of Xp11.2 translocation RCCs is clinically important.

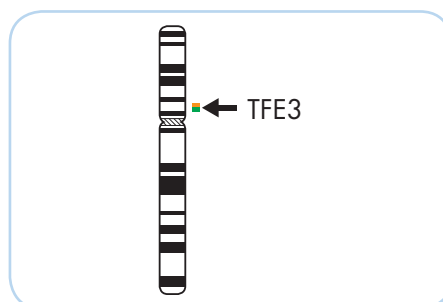
Additionally, the unbalanced chromosomal translocation of der(17)t(X;17)(p11.23;q25) is cytogenetically characteristic for alveolar soft part sarcoma (ASPS). ASPS is a rare high grade mesenchymal malignancy affecting mainly adolescents. This translocation fuses the TFE3 gene at Xp11.23 to the ASPSCR1 (alveolar soft part sarcoma chromosome region, candidate 1, a.k.a ASPL) gene on 17q25.3. Diagnosis of ASPS is often difficult due to histologic overlap with other tumors, particularly in small biopsies. Thus, FISH analysis can improve accuracy of ASPS diagnosis.

## References

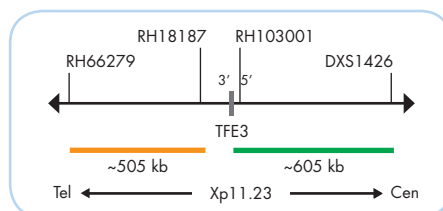
- Argani P, et al. (2001) Am J Pathol 159: 179-92.
- Armah HB, et al. (2009) Diagn Pathol 4: 15.
- Dijkhuizen T, et al. (1995) Genes Chromosomes Cancer 14: 43-50.
- Ladanyi M, et al. (2001) Oncogene 20: 48-57.
- Llomas-Velasco M, et al. (2013) Histopathology 63: 122-9.
- Pflueger D, et al. (2013) Neoplasia 15: 1231-40.
- Wiliams A, et al. (2011) Virchows Arch 458: 291-300.
- Wu A, et al. (2008) Histopathology 53: 533-44.
- Yan BC, et al. (2009) Arch Pathol Lab Med 133: 1026-32.

## Probe Description

The SPEC TFE3 Dual Color Break Apart Probe is a mixture of two direct labeled probes hybridizing to the Xp11.23 band. The orange fluorochrome direct labeled probe hybridizes distal to the TFE3 gene, the green fluorochrome direct labeled probe hybridizes proximal to that gene.



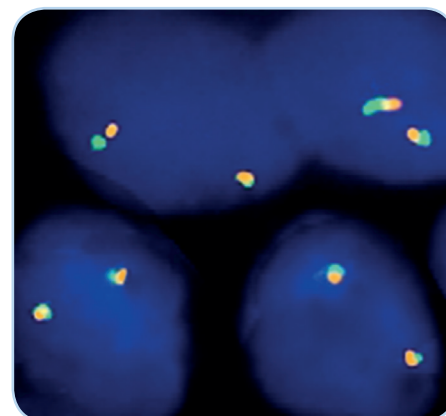
Ideogram of chromosome X indicating the hybridization locations.



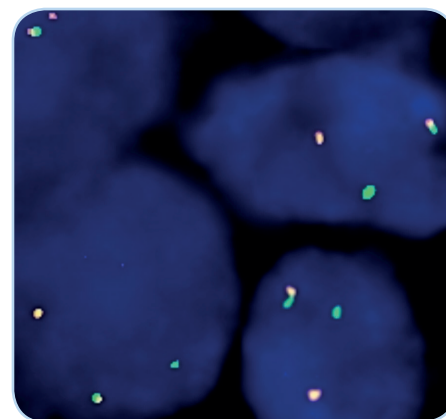
SPEC TFE3 Probe map (not to scale).

## Results

In a female interphase nucleus lacking a translocation involving the Xp11.23 band two orange/green fusion signals are expected representing two normal (non-rearranged) Xp11.23 loci. In a normal male interphase nucleus one orange/green fusion signal is expected representing one normal (non-rearranged) Xp11.23 locus. One separate green and separate orange signal indicate one Xp11.23 locus affected by a translocation.



SPEC TFE3 Dual Color Break Apart Probe hybridized to normal interphase cells as indicated by two orange/green fusion signals per nucleus.



Renal cell carcinoma section with translocation affecting the Xp11.23 locus as indicated by one non-rearranged green/orange fusion signal, one separate green signal, and one separate orange signal.

Prod. No.	Product	Label	Tests* (Volume)
Z-2109-50	ZytoLight SPEC TFE3 Dual Color Break Apart Probe CE IVD	●/●	5 (50 µl)
Z-2109-200	ZytoLight SPEC TFE3 Dual Color Break Apart 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, 210 ml; 25x Wash Buffer A, 50 ml; DAPI/DuraTest-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, 560 ml; 25x Wash Buffer A, 100 ml; DAPI/DuraTest-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.