

# ZytoLight® SPEC PDGFB Dual Color Break Apart Probe

## Background

The ZytoLight® SPEC PDGFB Dual Color Break Apart Probe is designed for the detection of specific translocations involving the chromosomal region 22q13.1 harboring the PDGFB (a.k.a. SIS) gene. The PDGFB gene (platelet-derived growth factor beta polypeptide) belongs to the platelet-derived growth factor family and encodes a protein which acts as a receptor tyrosine kinase.

The most frequent translocation involving the PDGFB gene is t(17;22)(q21.3;q13.1) juxtaposing the PDGFB gene next to the COL1A1 gene in 17q22. Reciprocal translocations involving t(17;22)(q21.3;q13.1) are characteristic for dermatofibrosarcoma protuberans (DFSP) patients. DFSP is a highly recurrent, infiltrative skin tumor of intermediate malignancy.

The rearrangements are cytogenetically characterized by the presence of supernumerary ring chromosomes containing low-level amplified sequences from chromosomes 17q22-qter and 22q10-q13.1, or unbalanced derivatives of the t(17;22)(q21.3;q13.1) translocation.

The rearrangement results in a COL1A1-PDGFB fusion protein which is post-transcriptionally processed to a functional platelet-derived growth factor beta chain (PDGFB) protein.

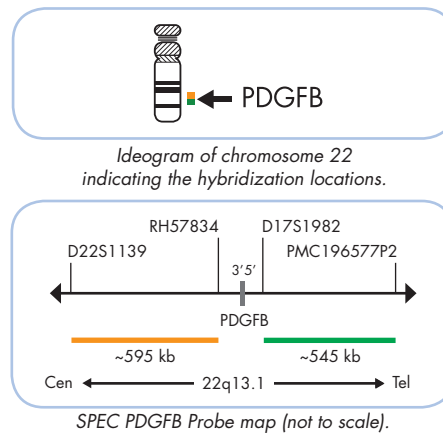
The importance of accurately diagnosing DFSP lies in its intermediate malignant nature and the availability of a therapy with significant anti-neoplastic activity but relatively minor adverse effects for cases not amenable to surgical excision.

### References

- Broom RJ, et al. (2012) Clin Genitourin Cancer 10: 202-6.
- Labropoulos SV & Razis ED (2007) Biologics 4: 347-53.
- Patel KU, et al. (2008) Human Pathol 39: 184-93.
- Shimizu A, et al. (1999) Cancer Res 59: 3719-23.
- Simon MP, et al. (1997) Nat Genet 15: 95-8.
- Sirvent N, et al. (2003) Genes Chromosomes Cancer 37: 1-19.

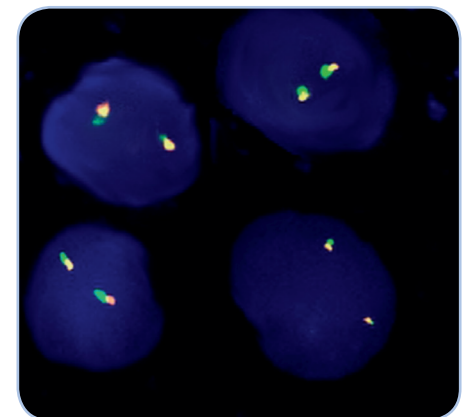
## Probe Description

The SPEC PDGFB Dual Color Break Apart Probe is a mixture of two direct labeled probes hybridizing to the 22q13.1 band. The orange fluorochrome direct labeled probe hybridizes proximal to the break-point region of the PDGFB gene, and the green fluorochrome direct labeled probe hybridizes distal to the breakpoint region of the PDGFB gene.

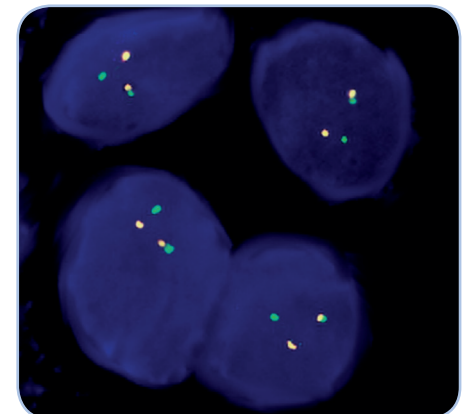


## Results

In an interphase nucleus lacking a translocation involving the 22q13.1 band two orange/green fusion signals are expected representing two normal (non-rearranged) 22q13.1 loci. A signal pattern consisting of one orange/green fusion signal, one orange signal, and a separate green signal indicates one normal 22q13.1 locus and one 22q13.1 locus affected by a 22q13.1 translocation.



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



Dermatofibrosarcoma protuberans tissue section with translocation affecting the 22q13.1 locus as indicated by one non-rearranged orange/green fusion signal, one orange signal, and one separate green signal indicating the translocation.

Prod. No.	Product	Label	Tests* (Volume)
Z-2119-200	ZytoLight SPEC PDGFB Dual Color Break Apart Probe CE IVD	●/●	20 (200 µl)
<b>Related Products</b>			
Z-2028-20	ZytoLight FISH-Tissue Implementation Kit CE IVD		20
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			

\* 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.