**Background**

The ZytoLight® SPEC COL1A1/PDGFB Dual Color Dual Fusion Probe is designed for the detection of the specific translocations involving the chromosomal region 17q21.33 harboring the COL1A1 (a.k.a. OI4) gene, and the chromosomal region 22q13.1, harboring the PDGFB (a.k.a PDGF2, SIS) gene. The 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 17q21-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, and results in PDGFB-mediated autocrine and/or paracrine activation of the plateled-derived growth factor receptor-β (PDGFRB). The accurate diagnosis of DFSP is important because of the intermediate malignant nature of the DFSP and can be facilitated by Fluorescence in situ Hybridization (FISH) analyses.

**Probe Description**

The SPEC COL1A1/PDGFB Dual Color Dual Fusion Probe is a mixture of an orange fluorochrome direct labeled COL1A1 probe covering the breakpoint region of the COL1A1 gene and a green fluorochrome direct labeled PDGFB probe covering the breakpoint region of the PDGFB gene.

**Results**

In a normal interphase nucleus, two orange and two green signals are expected. A reciprocal translocation involving two breakpoints splits the two signals and generates a fusion signal on each of the chromosomes involved. The chromosomal regions which are not translocated are indicated by the single orange and green signal, respectively.

**Reference**


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**Prod. No.** | **Product** | **Label** | **Tests** | **(Volume)**
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Z-2116-50 | ZytoLight® SPEC COL1A1/PDGFB Dual Color Dual Fusion Probe | C | o/o | 5 (50 μl)
Z-2116-200 | ZytoLight® SPEC COL1A1/PDGFB Dual Color Dual Fusion Probe | C | o/o | 20 (200 μl)

**Related Products**

Z-2028-5 | ZytoLight® FISH-Tissue Implementation Kit | C | 5

Z-2028-20 | ZytoLight® FISH-Tissue Implementation Kit | C | 20