

# ZytoLight® SPEC IKZF1 /CEN 7 Dual Color Probe



## Background

The *ZytoLight*® SPEC IKZF1/CEN 7 Dual Color Probe is designed for the detection of deletions affecting the IKZF1 (IKAROS family zinc finger 1, a.k.a. ZNFN1A1, IKAROS) gene. The IKZF1 gene is located on 7p12.2 and encodes a zinc finger transcription factor, which is required for normal hematopoietic differentiation and proliferation, particularly in lymphoid lineages. Genomic deletions affecting the IKZF1 gene are found in approximately 15% of pediatric and ~40% of adult B-cell precursor acute lymphoblastic leukemia (B-ALL) cases. The frequency is remarkably high in BCR-ABL1-positive (~70%) and BCR-ABL1-like (~40%) pediatric B-ALL. IKZF1 deletions were also identified in the progression of chronic myeloid leukemia to lymphoid blast crisis. The most frequent deletions in B-ALL affect the whole gene or exons 4 to 7. Deletions affecting other exons (i.e., exons 2 to 7, exons 2 to 8, and exons 4 to 8) were also observed. IKZF1 deletions are associated with poor prognosis and high risk of relapse in cases of B-ALL. Hence, the detection of IKZF1 deletions by FISH may help in predicting the clinical outcome in patients with B-ALL.

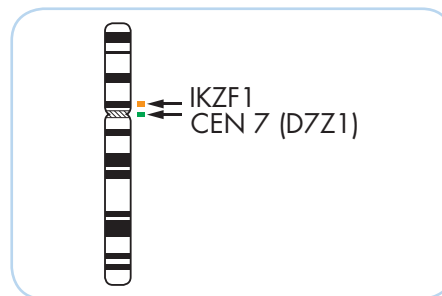
### References

- Boer JM, et al. (2016) *Leukemia* 30: 32-8.
- Hashiguchi J, et al. (2018) *J Mol Diagn* 20: 446-54.
- Iacobucci I, et al. (2009) *Blood* 114: 2159-67.
- Meyer C, et al. (2013) *Am J Blood Res* 3: 165-73.
- Mullighan CG, et al. (2008) *Nature* 453: 110-4.

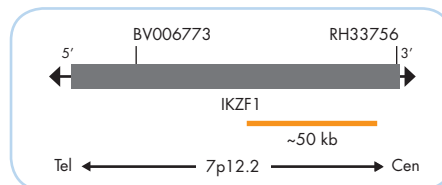
## Probe Description

The *ZytoLight*® SPEC IKZF1/CEN 7 Dual Color Probe is composed of:

- ZyOrange (excitation 547 nm/emission 572 nm) labeled polynucleotides (~4.5 ng/µl), which target sequences mapping in 7p12.2\*\* (chr7:50,412,912-50,463,612) harboring the IKZF1 gene region.
- ZyGreen (excitation 503 nm/emission 528 nm) labeled polynucleotides (~4.5 ng/µl), which target sequences mapping in 7p11.1-q11.1 specific for the alpha satellite centromeric region D7Z1 of chromosome 7.
- Formamide based hybridization buffer



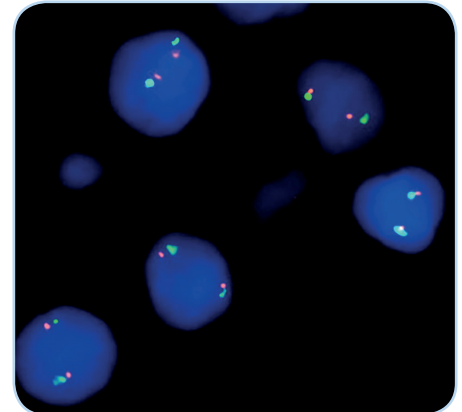
Ideogram of chromosome 7 indicating the hybridization locations.



SPEC IKZF1 Probe map (not to scale).

## Results

In a normal interphase nucleus, two orange and two green signals are expected. In a cell with an IKZF1 deletion, one or no copy of the orange signal will be observed.



SPEC IKZF1/CEN 7 Dual Color Probe hybridized to normal interphase cells as indicated by two orange and two green signals in each nucleus.

Prod. No.	Product	Label	Tests* (Volume)
Z-2304-50	ZytoLight SPEC IKZF1/CEN 7 Dual Color Probe	●/●	5 (50 µl)
<b>Related Products</b>			
Z-2099-20	ZytoLight FISH-Cytology Implementation Kit		20
Incl. Cytology Pepsin Solution, 4 ml; 20x Wash Buffer TBS, 50 ml; 10x MgCl <sub>2</sub> , 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			

\* Using 10 µl probe solution per test. labeled products are only available in certain countries. All other countries research use only! Please contact your local dealer for more information.

\*\*According to Human Genome Assembly GRCh37/hg19