ZytoLight® Probes for Chromosome Enumeration

CE
IVD

Background

The ZytoLight® Chromosome Enumeration Probes are designed for identification and enumeration of human chromosomes in interphase cells and as an adjunct to standard karyotyping in metaphases. These probes will produce sharp, bright signals specific for each individual chromosome.

CEN Probe Description

For most chromosomes, direct labeled ZytoLight® CEN™ Probes hybridizing to highly repetitive human satellite DNA sequences mainly located at the centromeric regions of chromosomes are applicable.

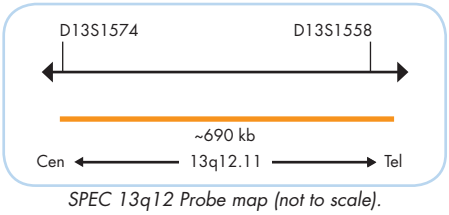
SPEC Probe Description

As several chromosomes share the same repetitive sequences resulting in cross-hybridization signals, they cannot be differentiated by centromere specific probes. Instead, these chromosomes can be identified by direct labeled ZytoLight® SPEC™ Probes hybridizing in close proximity to the respective satellite DNA sequences or to other chromosome specific loci.

ZytoLight® SPEC Probe Maps

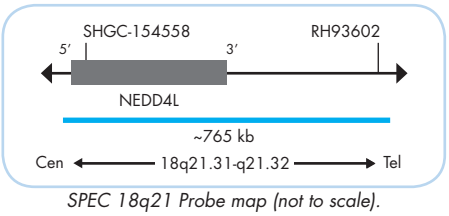
The ZytoLight® SPEC 13q12 Probe is composed of:

- ZyOrange (excitation 547 nm/emission 572 nm) labeled polynucleotides (~4.5 ng/µl), which target sequences mapping in 13q12.11** (chr13:20,200,365-20,892,494).
- Formamide based hybridization buffer



SPEC 13q12 Probe map (not to scale).

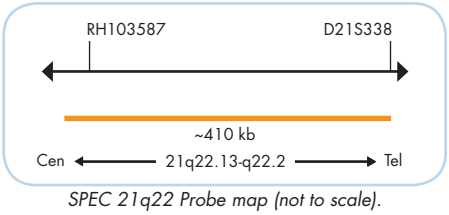
The SPEC 18q21 Probe, included in the ZytoLight® SPEC 18/CEN X/Y Triple Color Probe, is composed of:
ZyBlue (excitation 418 nm/emission 467 nm) labeled polynucleotides (~37 ng/µl), which target sequences mapping in 18q21.31-q21.32** (chr18:55,690,725-56,455,119



SPEC 18q21 Probe map (not to scale).

The ZytoLight® SPEC 21q22 Probe is composed of:

- ZyOrange (excitation 547 nm/emission 572 nm) labeled polynucleotides (~4.5 ng/µl), which target sequences mapping in 21q22.13-q22.2** (chr21:39,372,983-39,784,773).
- Formamide based hybridization buffer



SPEC 21q22 Probe map (not to scale).

Results

In a normal interphase nucleus, two signals are expected using Chromosome Enumeration Probes specific for autosomes. Using chromosome Y specific probes will result in normal male cells in one signal and in normal female cells in no signal. Using chromosome X specific probes will result in normal male cells in one signal and in normal female cells in two signals per nucleus. Other signal patterns indicate numerical aberrations of the respective chromosome.

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

Prod. No.	Product	Alpha/Class. Sat.	Chr. Band	Label	Tests* (Volume)
Z-2004-50/-200	ZytoLight CEN 8 Probe CE IVD	D8Z2	8p11.1-q11.1	●	5/20 (50/200 µl)
Z-2005-200	ZytoLight CEN 11 Probe CE IVD	D11Z1	11p11.11-q11	●	20 (200 µl)
Z-2050-200	ZytoLight CEN 12 Probe CE IVD	D12Z3	12p11.1-q11	●	20 (200 µl)
Z-2095-50/-200	ZytoLight SPEC 13/CEN 18/SPEC 21 Triple Color Probe CE IVD	D18Z1	13q12.11/18p11.1/21q22.13-q22.2	●/●/●	5/20 (50/200 µl)
Z-2164-200	ZytoLight SPEC 13/21 Dual Color Probe CE IVD	-	13q12.11/21q22.13-q22.2	●/●	20 (200 µl)
Z-2163-200	ZytoLight SPEC 18/CEN X/Y Triple Color Probe CE IVD	DXZ1/DYZ3	18q21.31-q21.32/Xp11.1-q11.1/Yp11.1-q11.1	●/●/●	20 (200 µl)
Z-2180-200	ZytoLight SPEC 21/CEN X/Yq12 Triple Color Probe CE IVD	DXZ1/ III DYZ1	21q22.13-q22.2/Xp11.1-q11.1/Yq12	●/●/●	20 (200 µl)
Z-2016-50/-200	ZytoLight CEN X/Yq12 Dual Color Probe CE IVD	DXZ1/III DYZ1	Xp11.1-q11.1/Yq12	●/●	5/20 (50/200 µl)
Z-2120-200	ZytoLight CEN X/Y Dual Color Probe CE IVD	DXZ1/ DYZ3	Xp11.1-q11.1/Yp11.1-q11.1	●/●	20 (200 µl)
Related Products					
Z-2279-20	ZytoLight Aneuploidy Panel 18/X/Y and 13/21 CE IVD Incl. ZytoLight SPEC 18/CEN X/Y Triple Color Probe, 0.2 ml (Z-2163-200); ZytoLight SPEC 13/21 Dual Color Probe, 0.2 ml (Z-2164-200)				20
Z-2104-5	ZytoLight Aneuploidy Panel X/Y and 13/18/21 CE IVD Incl. ZytoLight CEN X/Yq12 Dual Color Probe, 0.05 ml (Z-2016-50); ZytoLight SPEC 13/CEN 18/SPEC 21 Triple Color Probe, 0.05 ml (Z-2095-50)				5
Z-2104-20	ZytoLight Aneuploidy Panel X/Y and 13/18/21 CE IVD Incl. ZytoLight CEN X/Yq12 Dual Color Probe, 0.2 ml (Z-2016-200); ZytoLight SPEC 13/CEN 18/SPEC 21 Triple Color Probe, 0.2 ml (Z-2095-200)				20
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/DuraTect-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/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 $MgCl_2$, 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. IVD labeled products are only available in certain countries. All other countries research use only! Please contact your local dealer for more information.*