ZytoLight® Probes for Chromosome Enumeration

RUO

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.

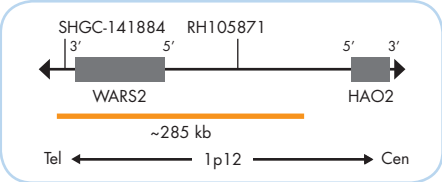
SPEC Probe Description

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 1p12 Probe is composed of:

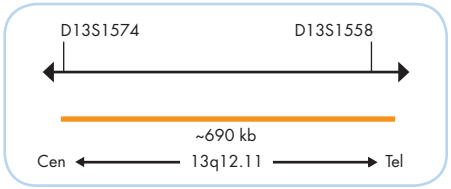
- ZyOrange (excitation 547 nm/emission 572 nm) labeled polynucleotides (~4.5 ng/µl), which target sequences mapping in 1p12** (chr1:119,537,102-119,823,147).
- Formamide based hybridization buffer



SPEC 1p12 Probe map (not to scale).

The ZytoLight® SPEC 13q12 Probe is composed of:

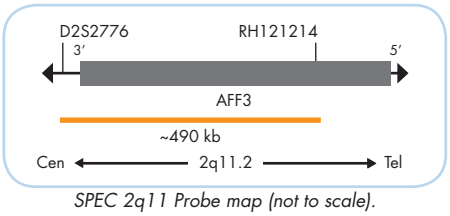
- ZyOrange (excitation 547 nm/emission 572 nm) labeled polynucleotides (~4.5 ng/µl), which target sequences mapping in 13q12.11** (chr13:20,200,365-20,892,494).
- Formamide based hybridization buffer



SPEC 13q12 Probe map (not to scale).

The ZytoLight® SPEC 2q11 Probe is composed of:

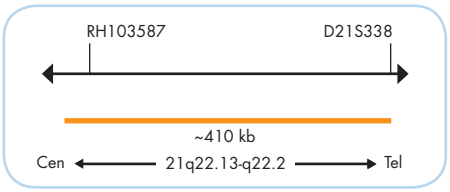
- ZyOrange (excitation 547 nm/emission 572 nm) labeled polynucleotides (~4.5 ng/µl), which target sequences mapping in 2q11.2** (chr2:100,132,806-100,621,725).
- Formamide based hybridization buffer



SPEC 2q11 Probe map (not to scale).

The ZytoLight® SPEC 21q22 Probe is composed of:

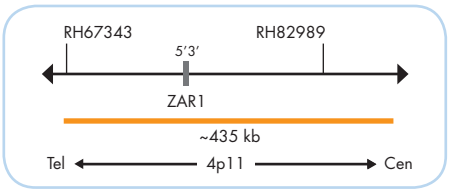
- ZyOrange (excitation 547 nm/emission 572 nm) labeled polynucleotides (~4.5 ng/µl), which target sequences mapping in 21q22.13-q22.2** (chr21:39,372,983-39,784,773).
- Formamide based hybridization buffer



SPEC 21q22 Probe map (not to scale).

The ZytoLight® SPEC 4p11 Probe is composed of:

- ZyOrange (excitation 547 nm/emission 572 nm) labeled polynucleotides (~4.5 ng/µl), which target sequences mapping in 4p11** (chr4:48,329,914-48,762,386).
- Formamide based hybridization buffer



SPEC 4p11 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-2101-200	ZytoLight SPEC 1p12 Probe RUO	-	1p12	●	20 (200 µl)
Z-2049-200	ZytoLight SPEC 2q11 Probe RUO	-	2q11.2	●	20 (200 µl)
Z-2001-200	ZytoLight CEN 3 Probe RUO	D3Z1	3p11.1-q11.1	●	20 (200 µl)
Z-2083-200	ZytoLight SPEC 4p11 Probe RUO	-	4p11	●	20 (200 µl)
Z-2002-200	ZytoLight CEN 6 Probe RUO	D6Z1	6p11.1-q11	●	20 (200 µl)
Z-2003-200	ZytoLight CEN 7 Probe RUO	D7Z1	7p11.1-q11.1	●	20 (200 µl)
Z-2067-200	ZytoLight CEN 9 Probe RUO	III D9Z3	9q12	●	20 (200 µl)
Z-2079-200	ZytoLight CEN 10 Probe RUO	D10Z1	10p11.1-q11.1	●	20 (200 µl)
Z-2085-200	ZytoLight SPEC 13q12 Probe RUO	-	13q12.11	●	20 (200 µl)
Z-2006-200	ZytoLight CEN 17 Probe RUO	D17Z1	17p11.1-q11.1	●	20 (200 µl)
Z-2007-200	ZytoLight CEN 18 Probe RUO	D18Z1	18p11.1-q11.1	●	20 (200 µl)
Z-2086-200	ZytoLight SPEC 21q22 Probe RUO	-	21q22.13-q22.2	●	20 (200 µl)
Z-2008-200	ZytoLight CEN X Probe RUO	DXZ1	Xp11.1-q11.1	●	20 (200 µl)
Z-2010-200	ZytoLight CEN Yq12 Probe RUO	III DYZ1	Yq12	●	20 (200 µl)
Z-2123-200	ZytoLight CEN Y (DYZ3) Probe RUO	DYZ3	Yp11.1-q11.1	●	20 (200 µl)

** Using 10 µl probe solution per test.*

RUO *For Research Use Only. Not for use in diagnostic procedures.*