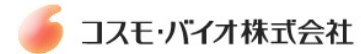


ZytoLight® Probes for Chromosome Enumeration



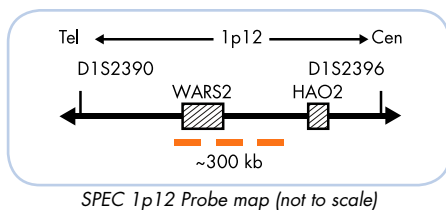
Background

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.

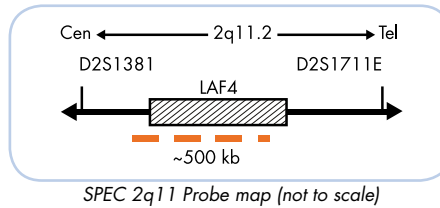
Probe Description

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. 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.

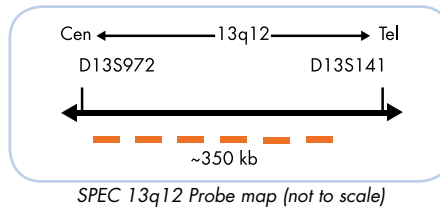
The *ZytoLight*® SPEC 1p12 Probe is designed to hybridize in close proximity of centromere 1 at 1q12 harboring WARS2, D1S2465, and HAO2. Since chromosomes 1, 5, and 19 share the same repetitive sequences, they cannot be differentiated by probes detecting centromere specific repeats.



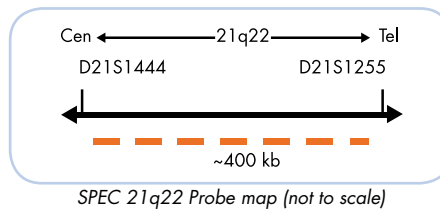
The *ZytoLight*® SPEC 2q11 Probe is specific for the LAF4 (lymphoid nuclear protein related to AF4) gene region in 2q11.2. Due to cross-hybridizations of chromosome 2 alpha satellites to other centromeric regions, probes specific for 2q11 are frequently used for chromosome 2 copy number detection.



The *ZytoLight*® SPEC 13q12 Probe is designed to hybridize in close proximity of centromere 13 at 13q12. Since chromosomes 13 and 21 share the same repetitive sequences, they cannot be differentiated by probes detecting centromere specific repeats.



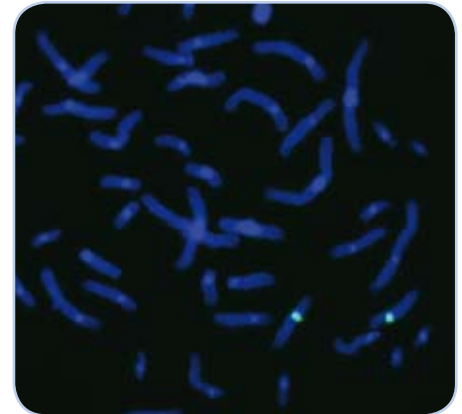
The *ZytoLight*® SPEC 21q22 Probe hybridizes to the so-called Down Syndrome Critical Region on 21q22 commonly duplicated in cases with partial trisomy 21. Since chromosomes 13 and 21 share the same repetitive sequences, they cannot be differentiated by probes detecting centromere specific repeats.



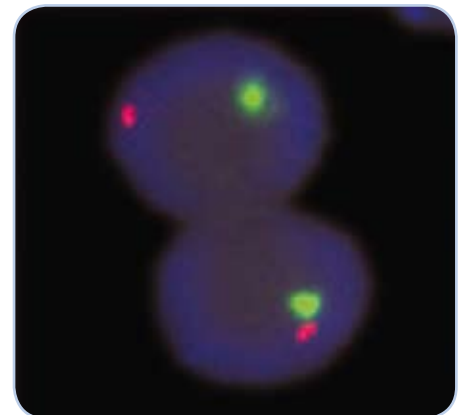
Results

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

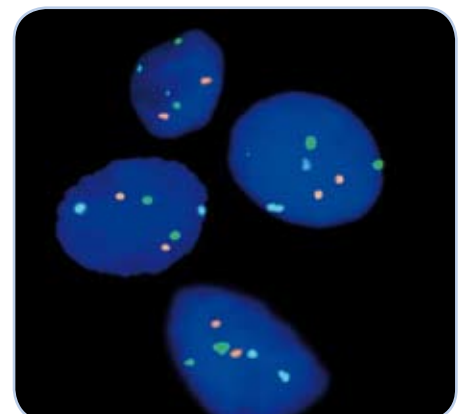
numerical aberrations of the respective chromosome.



CEN 8 Enumeration Probe on a metaphase spread.



CEN X/Y Dual Color Probe on interphase cells.



SPEC 13/CEN 18/SPEC 21 Triple Color Probe on cytology specimen.

Prod. No.	Product	Chr. Band	Label	Tests*
Z-2101-200	ZytoLight SPEC 1p12 Probe ^Δ C€	1p12	●	20
Z-2049-200	ZytoLight SPEC 2q11 Probe	2q11.2	●	20
Z-2001-200	ZytoLight CEN 3 Probe (Alpha Sat. D3Z1)	3p11.1-q11.1	●	20
Z-2083-200	ZytoLight CEN 4 Probe (Alpha Sat. D4Z1)	4p11.1-q11.1	●	20
Z-2002-200	ZytoLight CEN 6 Probe (Alpha Sat. D6Z1)	6p11.1-q11.1	●	20
Z-2003-200	ZytoLight CEN 7 Probe (Alpha Sat. D7Z1)	7p11.1-q11.1	●	20
Z-2004-200	ZytoLight CEN 8 Probe (Alpha Sat. D8Z2) ^Δ C€	8p11.1-q11.1	●	20
Z-2067-200	ZytoLight CEN 9 Probe (Classical Sat. III D9Z3)	9q12	●	20
Z-2079-200	ZytoLight CEN 10 Probe (Alpha Sat. D10Z1)	10p11.1-q11.1	●	20
Z-2005-200	ZytoLight CEN 11 Probe (Alpha Sat. D11Z1)	11p11.1-q11.1	●	20
Z-2050-200	ZytoLight CEN 12 Probe (Alpha Sat. D12Z3) ^Δ C€	12p11.1-q11.1	●	20
Z-2085-200	ZytoLight SPEC 13q12 Probe ^Δ C€	13q12	●	20
Z-2095-200	ZytoLight SPEC 13/CEN 18/SPEC 21 Triple Color Probe ^Δ C€	13q12/18p11.1-q11.1/21q22	●/●/●	20
Z-2095-50	ZytoLight SPEC 13/CEN 18/SPEC 21 Triple Color Probe ^Δ C€	13q12/18p11.1-q11.1/21q22	●/●/●	5
Z-2006-200	ZytoLight CEN 17 Probe (Alpha Sat. D17Z1) ^Δ C€	17p11.1-q11.1	●	20
Z-2007-200	ZytoLight CEN 18 Probe (Alpha Sat. D18Z1)	18p11.1-q11.1	●	20
Z-2086-200	ZytoLight SPEC 21q22 Probe ^Δ C€	21q22	●	20
Z-2008-200	ZytoLight CEN X Probe (Alpha Sat. DXZ1)	Xp11.1-q11.1	●	20
Z-2010-200	ZytoLight CEN Y Probe (Classical Sat. III DYZ1)	Yq12	●	20
Z-2016-200	ZytoLight CEN X/Y Dual Color Probe ^Δ C€	Xp11.1-q11.1/Yq12	●/●	20
Z-2016-50	ZytoLight CEN X/Y Dual Color Probe ^Δ C€	Xp11.1-q11.1/Yq12	●/●	5
Related Products				
Z-2104-40	ZytoLight Aneusomy Probe Set ^Δ C€ Incl. ZytoLight CEN X/Y Dual Color Probe, 0.2 ml; ZytoLight SPEC 13/CEN 18/SPEC 21 Triple Color Probe, 0.2 ml			40
Z-2104-10	ZytoLight Aneusomy Probe Set ^Δ C€ Incl. ZytoLight CEN X/Y Dual Color Probe, 0.05 ml; ZytoLight SPEC 13/CEN 18/SPEC 21 Triple Color Probe, 0.05 ml			10
Z-2028-20	ZytoLight FISH-Tissue Implementation Kit ^Δ C€ Incl. Heat Pretreatment Solution Citric, 500 ml; Pepsin Solution, 4 ml; Wash Buffer SSC, 500 ml; 25x Wash Buffer A, 100 ml; DAPI/Antifade-Solution, 0.8 ml			20
Z-2099-20	ZytoLight FISH-Cytology Implementation Kit ^Δ C€ 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/Antifade-Solution, 0.8 ml			20

* Using 10 µl probe solution per test. ^Δ Only available as IVD in certain countries. All other countries research use only! Please contact your local dealer for more information.