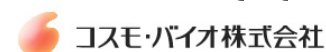


## ZytoDot® Probes for Chromosome Enumeration



### Background

The ZytoDot® 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 ZytoDot® 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 ZytoDot® SPEC™ Probes hybridizing in close proximity to the respective satellite DNA sequences or to other chromosome specific loci.

The ZytoDot® SPEC 1p12 Probe is designed to hybridize in close proximity of centromere 1 at 1q12 harboring WARS2, D1S2465, and HA02. Since chromosomes 1, 5, and 19 share the same repetitive sequences, they cannot be differentiated by probes detecting centromere specific repeats.

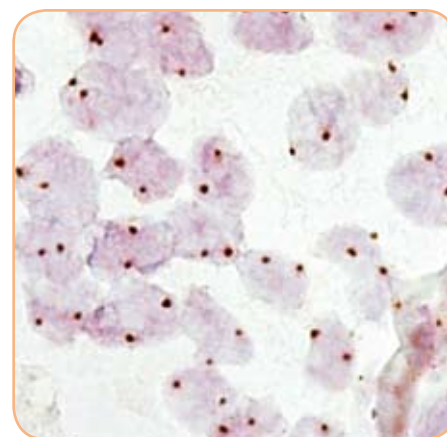
The ZytoDot® SPEC 2q11 Probe is specific for the LAF4 (lymphoid nuclear protein related to AF4) gene region in 2q11.2. Due to cross-hybridizations of chromosome 2 alpha satellites to other centromeric regions, probes specific for 2q11 are frequently used for chromosome 2 copy number detection.

The ZytoDot® 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 ZytoDot® 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.



Normal nuclei each with two CEN 12 signals.

Prod. No.	Product	Chr. Band	Label	Tests*
Coming soon	ZytoDot SPEC 1p12 Probe	1p12		
Coming soon	ZytoDot SPEC 2q11 Probe	2q11.2		
C-3045-400	ZytoDot CEN 3 Probe (Alpha Sat. D3Z1) <sup>A</sup> CE	3p11.1-q11.1	Digoxigenin	40
C-3002-400	ZytoDot CEN 6 Probe (Alpha Sat. D6Z1) <sup>A</sup> CE	6p11.1-q11.1	Digoxigenin	40
C-3008-400	ZytoDot CEN 7 Probe (Alpha Sat. D7Z1) <sup>A</sup> CE	7p11.1-q11.1	Digoxigenin	40
C-3016-400	ZytoDot CEN 8 Probe (Alpha Sat. D8Z2) <sup>A</sup> CE	8p11.1-q11.1	Digoxigenin	40
C-3014-400	ZytoDot CEN 12 Probe (Alpha Sat. D12Z3) <sup>A</sup> CE	12p11.1-q11.1	Digoxigenin	40
Coming soon	ZytoDot SPEC 13q12 Probe	13q12		
C-3006-400	ZytoDot CEN 17 Probe (Alpha Sat. D17Z1) <sup>A</sup> CE	17p11.1-q11.1	Digoxigenin	40
C-3026-400	ZytoDot SPEC 21q22 Probe	21q22	Digoxigenin	40
C-3025-400	ZytoDot CEN X Probe (Alpha Sat. DXZ1) <sup>A</sup> CE	Xp11.1-q11.1	Digoxigenin	40
C-3020-400	ZytoDot CEN Y Probe (Classical Sat. III DYZ1) <sup>A</sup> CE	Yq12	Digoxigenin	40

\* Using 10 µl probe solution per test. <sup>A</sup> Only available as IVD in certain countries. All other countries research use only! Please contact your local dealer for more information.