

ZytoDot® Probes for Chromosome Enumeration

RUO

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.

CEN 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.

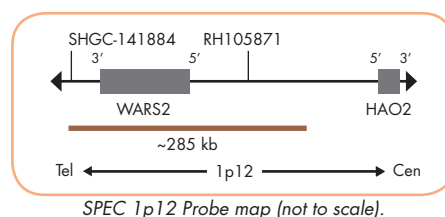
SPEC Probe Description

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

ZytoDot® SPEC Probe Maps

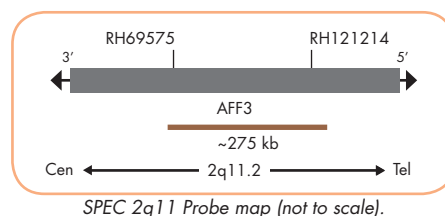
The ZytoDot® SPEC 1p12 Probe is composed of:

- Digoxigenin-labeled polynucleotides (~1.8 ng/μl), which target sequences mapping in 1p12** (chr1:119,537,082-119,664,354 [...] 119,712,804-119,823,167).
- Formamide based hybridization buffer



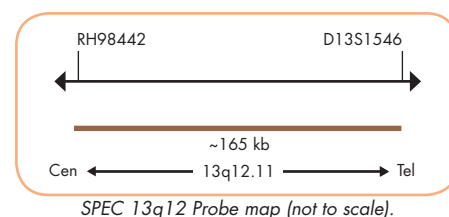
The ZytoDot® SPEC 2q11 Probe is composed of:

- Digoxigenin-labeled polynucleotides (~1.8 ng/μl), which target sequences mapping in 2q11.2** (chr2:100,346,637-100,621,745).
- Formamide based hybridization buffer



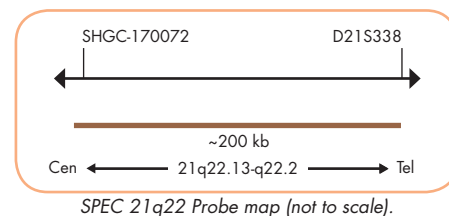
The ZytoDot® SPEC 13q12 Probe is composed of:

- Digoxigenin-labeled polynucleotides (~1.8 ng/μl), which target sequences mapping in 13q12.11** (chr13:20,609,044-20,776,358).
- Formamide based hybridization buffer



The ZytoDot® SPEC 21q22 Probe is composed of:

- Digoxigenin-labeled polynucleotides (~1.8 ng/μl), which target sequences mapping in 21q22.13-q22.2** (chr21:39,583,050-39,784,793).
- Formamide based hybridization buffer

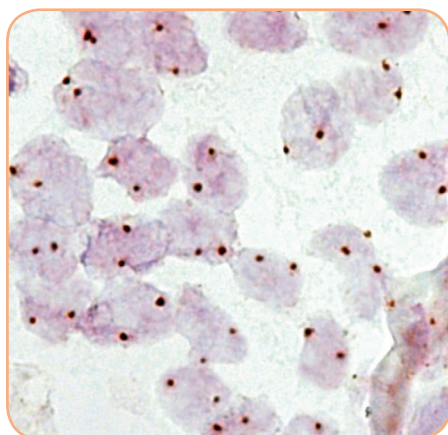


Results

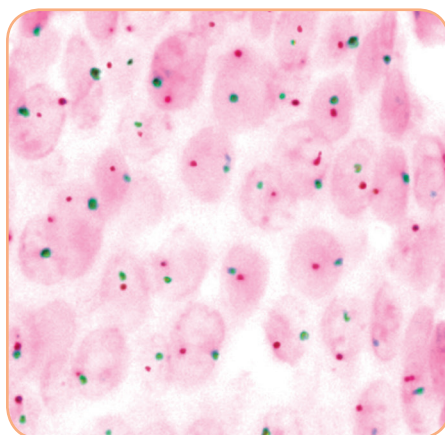
In a normal interphase nucleus, two signals are expected using Chromosome Enumeration Probes specific for autosomes. Using chromosome Y specific probes will result in normal male cells in one signal and in normal female cells in no signal. Using chromosome X specific probes will result in normal male 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

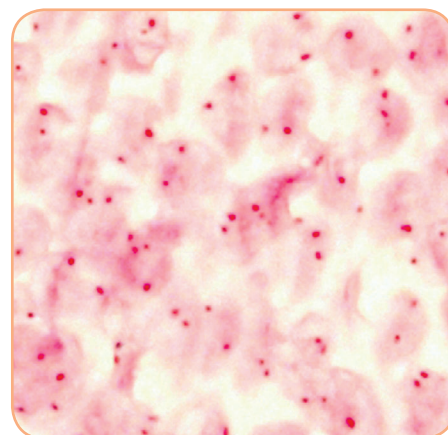
RUO For Research Use Only. Not for use in diagnostic procedures.



Normal nuclei each with two CEN 12 signals.



CEN X/Y Probe hybridized on normal male interphase cells as indicated by one red (chromosome X) and one green (chromosome Y) signal per nucleus.



CEN X/Y Probe hybridized on normal female interphase cells as indicated by two red (chromosome X) signals per nucleus.

Prod. No.	Product	Alpha/Class. Sat.	Chr. Band	Label	Tests* (Volume)
C-3035-400	ZytoDot SPEC 1p12 Probe RUO	-	1p12	DIG	40 (400 µl)
C-3051-400	ZytoDot SPEC 2q11 Probe RUO	-	2q11.2	DIG	40 (400 µl)
C-3045-400	ZytoDot CEN 3 Probe RUO	D3Z1	3p11.1-q11.1	DIG	40 (400 µl)
C-3002-400	ZytoDot CEN 6 Probe RUO	D6Z1	6p11.1-q11	DIG	40 (400 µl)
C-3008-400	ZytoDot CEN 7 Probe RUO	D7Z1	7p11.1-q11.1	DIG	40 (400 µl)
C-3016-400	ZytoDot CEN 8 Probe RUO	D8Z2	8p11.1-q11.1	DIG	40 (400 µl)
C-3014-400	ZytoDot CEN 12 Probe RUO	D12Z3	12p11.1-q11	DIG	40 (400 µl)
C-3052-400	ZytoDot SPEC 13q12 Probe RUO	-	13q12.11	DIG	40 (400 µl)
C-3006-400	ZytoDot CEN 17 Probe RUO	D17Z1	17p11.1-q11.1	DIG	40 (400 µl)
C-3026-400	ZytoDot SPEC 21q22 Probe RUO	-	21q22.13-q22.2	DIG	40 (400 µl)
C-3025-400	ZytoDot CEN X Probe RUO	DXZ1	Xp11.1-q11.1	DIG	40 (400 µl)
C-3020-400	ZytoDot CEN Yq12 Probe RUO	III DYZ1	Yq12	DIG	40 (400 µl)
C-3048-400	ZytoDot 2C CEN X/Y Probe RUO	DXZ1/DYZ3	Xp11.1-q11.1/Yp11.1-q11.1	DNP/DIG	40 (400 µl)

* Using 10 µl probe solution per test. **According to Human Genome Assembly GRCh37/hg19

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