

# ZytoLight® SPEC ERBB2/TOP2A/CEN 17 Triple Color Probe

Previously: ZytoLight SPEC HER2/TOP2A/CEN 17 Triple Color Probe



## Background

The ZytoLight® SPEC ERBB2/TOP2A/CEN 17 Triple Color Probe is designed for the simultaneous detection of ERBB2 and TOP2A gene status.

The ERBB2 gene (a.k.a. HER2 and NEU) is located in the chromosomal region 17q12 and encodes a 185 kDa transmembrane glycoprotein. The TOP2A (topoisomerase II alpha) gene is located in the chromosomal region 17q21.2 and encodes a 170 kDa DNA topoisomerase.

The TOP2A gene is frequently either co-amplified or deleted in ERBB2 positive breast cancer cases. TOP2A functions as the target for several anticancer agents, e.g. anthracyclines. Recent data suggests that amplification and deletion of the TOP2A gene locus may account for relative chemosensitivity or resistance to TOP2A inhibitor therapy in ERBB2 positive breast cancer. Thus, determination of the ERBB2 and TOP2A status may help to predict benefit from adjuvant anthracyclines in breast cancer treatment.

## References

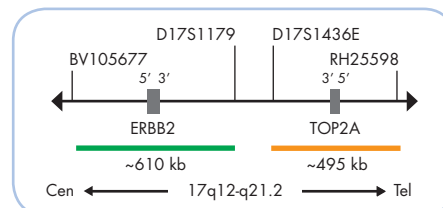
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## Probe Description

The SPEC ERBB2/TOP2A/CEN 17 Triple Color Probe is a mixture of a green fluorochrome direct labeled SPEC ERBB2 probe specific for the chromosomal region 17q12-q21.1 harboring the ERBB2 gene, an orange fluorochrome direct labeled SPEC TOP2A probe specific for the TOP2A gene at 17q21.2, and a blue fluorochrome direct labeled CEN 17 probe specific for the alpha satellite centromeric region of chromosome 17 (D17Z1).



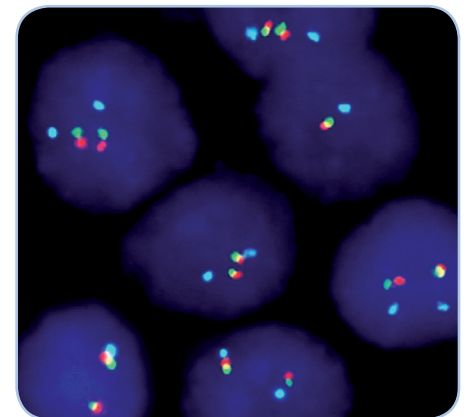
Ideogram of chromosome 17 indicating the hybridization locations.



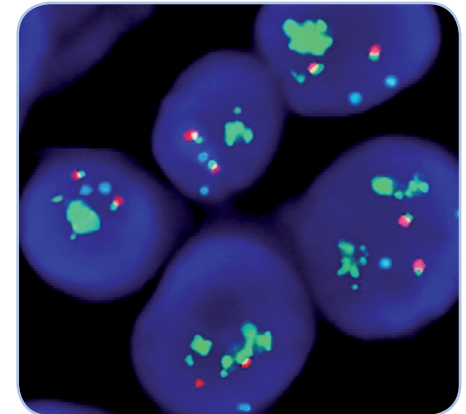
SPEC ERBB2/TOP2A Probe map (not to scale).

## Results

In a normal interphase nucleus, two green, two orange, and two blue signals are expected. In a cell with amplification of the ERBB2 gene locus, multiple copies of the green signal or large green signal clusters will be observed. Amplification of TOP2A will result in multiple copies of the orange signal or large orange signal clusters. Deletion of the TOP2A gene results in a reduced number of orange signals.



SPEC ERBB2/TOP2A/CEN 17 Triple Color Probe hybridized to normal interphase cells as indicated by two green, two orange, and two blue signals per nucleus.



Breast cancer tissue section with two copies of chromosome 17 (blue) and TOP2A (orange) and ERBB2 gene clusters (green) in each nucleus.

Prod. No.	Product	Label	Tests* (Volume)
Z-2093-50	ZytoLight SPEC ERBB2/TOP2A/CEN 17 Triple Color Probe CE IVD	●/●/●	5 (50 µl)
Z-2093-200	ZytoLight SPEC ERBB2/TOP2A/CEN 17 Triple Color Probe CE IVD	●/●/●	20 (200 µl)
Related Products			
Z-2028-5	ZytoLight FISH-Tissue Implementation Kit CE IVD Incl. Heat Pretreatment Solution Citric, 150 ml; Pepsin Solution, 1 ml; Wash Buffer SSC, 150 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, 500 ml; 25x Wash Buffer A, 100 ml; DAPI/DuraTect-Solution, 0.8 ml		20

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