# ZytoLight® SPEC ERBB2/CEN 17 Dual Color Probe

## Previously: ZytoLight SPEC HER2/CEN 17 Dual Color Probe

CE IVD

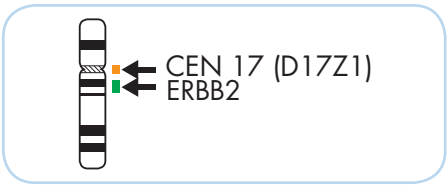
### Background

The ZytoLight® SPEC ERBB2/CEN 17 Dual Color Probe is designed for the detection of ERBB2 gene amplification frequently observed in solid malignant neoplasms e.g. breast cancer samples. The ERBB2 gene (a.k.a. HER2 and NEU) is located in the chromosomal region 17q12 and encodes a 185-190 kDa transmembrane glycoprotein, p185, acting as a cellular growth factor receptor. The p185 protein belongs to the EGFR (epidermal growth factor receptor) subgroup of the RTK (receptor tyrosine kinase) superfamily also including EGFR (ERBB1, HER1), ERBB3 (HER3), and ERBB4 (HER4) Amplification of the proto-oncogene ERBB2, observed in approximately 20% of all breast cancer samples, has been correlated with a poor prognosis of the disease. Similar results have been obtained for a variety of other malignant neoplasms e.g. ovarian cancer, stomach cancer, and carcinomas of the salivary gland.

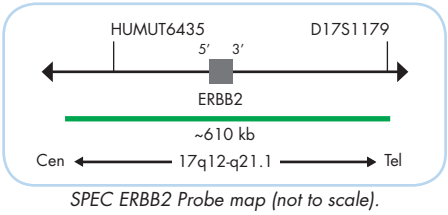
**References**
Baselga J, et al. (1999) Semin Oncol 26: 78-83.
Brockhoff G, et al. (2016) Histopathology 69: 635-46.
Brunello E, et al. (2012) Histopathology 60: 482-8.
Brunner K, et al. (2010) Anal Quant Cytol Histol 32: 78-89.
Coussens L, et al. (1985) Science 230: 1132-9.
Ettl T, et al. (2012) Br J Cancer 106: 719-26.
Hwang CC, et al. (2011) Histopathology 59: 984-92.
Hynes NE & Stern DF (1994) Biochim Biophys Acta 1198: 165-84.
Moelans CB, et al. (2011) Crit Rev Oncol Hematol 80: 380-92.
Park JB, et al. (1989) Cancer Res 49: 6605-9.
Popescu NC, et al. (1989) Genomics 4: 362-6.
Sassen A, et al. (2008) Breast Cancer Res 10: R2.
Slamon DJ, et al. (1987) Science 235: 177-82.
Voutsas IF, et al. (2013) Int J Radiat Biol 89: 319-25.
Wolff AC, et al. (2018) J Clin Oncol 14: 437-41.

### Probe Description

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



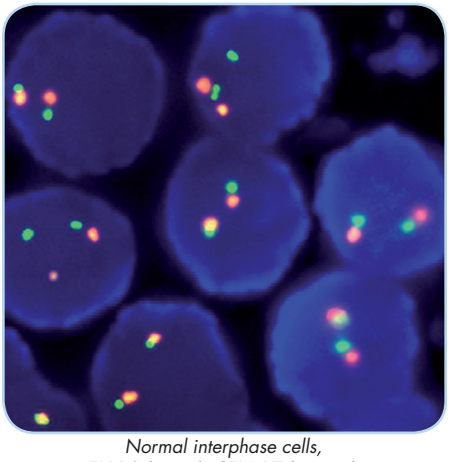

*Ideogram of chromosome 17 indicating the hybridization locations.*



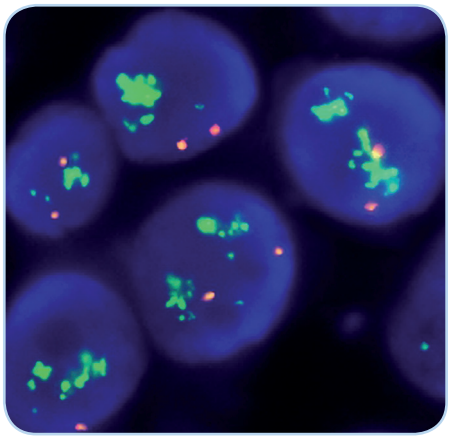

*SPEC ERBB2 Probe map (not to scale).*

### Results

In a normal interphase nucleus, two orange and two green signals are expected. In a cell with amplification of the ERBB2 gene locus, multiple copies of the green signal or green signal clusters will be observed.



*Normal interphase cells, ERBB2 (green), CEN 17 (orange).*



*Breast carcinoma tissue section, ERBB2 gene cluster (green), CEN 17 (orange).*

| Prod. No. | Product | Label | Tests* (Volume) |
|---|---|---|---|
| Z-2015-50 | ZytoLight SPEC ERBB2/CEN 17 Dual Color Probe CE IVD | ●/● | 5 (50 µl) |
| Z-2015-200 | ZytoLight SPEC ERBB2/CEN 17 Dual Color Probe CE IVD | ●/● | 20 (200 µl) |
| Z-2020-5 | ZytoLight SPEC ERBB2/CEN 17 Dual Color Probe Kit CE IVD<br>Incl. Heat Pretreatment Solution Citric, 150 ml; Pepsin Solution, 1 ml; Wash Buffer SSC, 210 ml; Probe, 0.05 ml; 25x Wash Buffer A, 50 ml; DAPI/DuraTect-Solution, 0.2 ml | ●/● | 5 |
| Z-2020-20 | ZytoLight SPEC ERBB2/CEN 17 Dual Color Probe Kit CE IVD<br>Incl. Heat Pretreatment Solution Citric, 500 ml; Pepsin Solution, 4 ml; Wash Buffer SSC, 560 ml; Probe, 0.2 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.*



ZytoLight® FISH probes are direct labeled using the unique ZytoLight® *Direct Label System II* providing improved signal intensity. Advanced specificity of the single copy SPEC probes is obtained by the unique ZytoVision® *Repeat Subtraction Technique.*



ZytoVision GmbH · Fischkai 1
27572 Bremerhaven · Germany
www.zytovision.com

138