

# ZytoLight® SPEC RET Dual Color Break Apart Probe



## Background

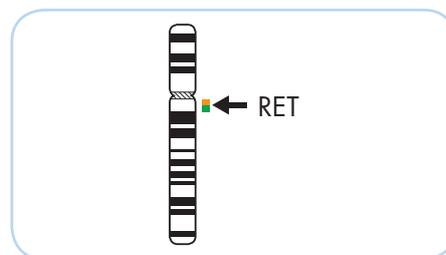
The ZytoLight® SPEC RET Dual Color Break Apart Probe (PL105) is intended to be used for the qualitative detection of translocations involving the human RET gene at 10q11.21 in formalin-fixed, paraffin-embedded specimens, such as non-small cell lung cancer (NSCLC) or papillary thyroid carcinoma (PTC), by fluorescence *in situ* hybridization (FISH). The probe is intended to be used in combination with the ZytoLight® FISH-Tissue Implementation Kit (Prod. No. Z-2028-5/-20).

The product is intended for professional use only. All tests using the product should be performed in a certified, licensed anatomic pathology laboratory under the supervision of a pathologist/human geneticist by qualified personnel. The probe is intended to be used as an aid to the differential diagnosis of NSCLC or PTC and therapeutic measures should not be initiated based on the test result alone.

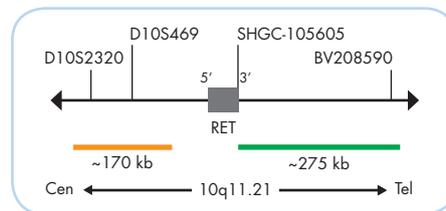
## Probe Description

The ZytoLight® SPEC RET Dual Color Break Apart Probe is composed of:

- ZyGreen (excitation 503 nm/emission 528 nm) labeled polynucleotides (~10.0 ng/µl), which target sequences mapping in 10q11.21\*\* (chr10:43,626,274-43,902,346) distal to the RET breakpoint region.
- ZyOrange (excitation 547 nm/emission 572 nm) labeled polynucleotides (~4.5 ng/µl), which target sequences mapping in 10q11.21\*\* (chr10:43,340,888-43,510,171) proximal to the RET breakpoint region.
- Formamide based hybridization buffer



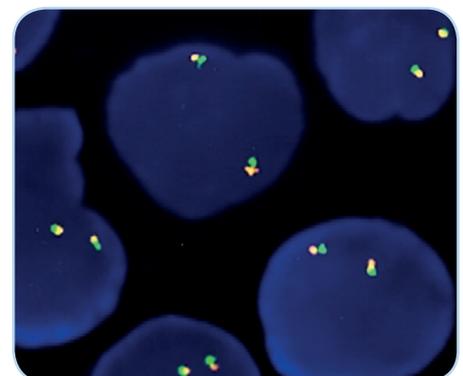
Ideogram of chromosome 10 indicating the hybridization locations.



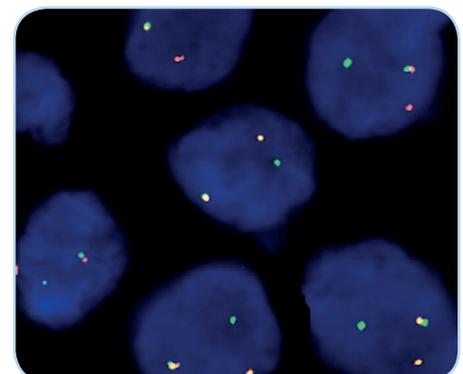
SPEC RET Probe map (not to scale).

## Results

In an interphase nucleus lacking a translocation involving the 10q11.21 band, two orange/green fusion signals are expected representing two normal (non-rearranged) 10q11.21 loci. A signal pattern consisting of one orange/green fusion signal, one orange signal, and a separate green signal indicates one normal 10q11.21 locus and one 10q11.21 locus affected by a translocation or inversion. Isolated green signals are the result of deletions proximal to the RET breakpoint region.



SPEC RET Dual Color Break Apart Probe hybridized to normal interphase cells as indicated by two orange/green fusion signals per nucleus.



Paraffin-embedded human thyroid tumor cell line (TPC-1) with translocation affecting the 10q11.21 locus as indicated by one orange/green fusion (non-rearranged) signal, one orange signal, and one separate green signal.

| Prod. No.        | Product  | Label | Tests* (Volume) |
|------------------|--|-------|-----------------|
| Z-2148-50        | ZytoLight SPEC RET Dual Color Break Apart Probe  | /     | 5 (50 µl)       |
| Z-2148-200       | ZytoLight SPEC RET Dual Color Break Apart Probe  | /     | 20 (200 µl)     |
| Related Products |  |       |                 |
| Z-2028-5         | ZytoLight FISH-Tissue Implementation Kit<br>Incl. Heat Pretreatment Solution Citric, 150 ml; Pepsin Solution, 1 ml; Wash Buffer SSC, 210 ml; 25x Wash Buffer A, 50 ml; DAPI/DuraTect-Solution, 0.2 ml  |       | 5               |
| Z-2028-20        | ZytoLight FISH-Tissue Implementation Kit<br>Incl. Heat Pretreatment Solution Citric, 500 ml; Pepsin Solution, 4 ml; Wash Buffer SSC, 560 ml; 25x Wash Buffer A, 100 ml; DAPI/DuraTect-Solution, 0.8 ml |       | 20              |

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

\*\*According to Human Genome Assembly GRCh37/hg19