ZytoLight® SPEC FHIT/CEN 3 Dual Color Probe

CE IVD

Background

The ZytoLight® SPEC FHIT/CEN 3 Dual Color Probe is designed for the detection of FHIT gene deletions frequently observed in most of the common epithelial neoplasms.

The FHIT (fragile histidine triad) gene is located in the chromosomal region 3p14.2 and encodes a 16.8 kDa member of the HIT superfamily of nucleoside monophosphate hydrolases and transferases.

The 1.6 Mb FHIT gene encompasses the most carcinogen-sensitive common fragile region FRA3B and the t(3;8) translocation breakpoint associated with hereditary renal carcinoma.

The tumor suppressor gene FHIT is inactivated by deletions in a variety of human tumors e.g. lung, kidney, gastric, breast, pancreatic, and cervical tumors. Since loss of the FHIT locus occurs in a number of preneoplastic lesions, FHIT may represent a potential marker for the detection of tumor precursor cells.

References
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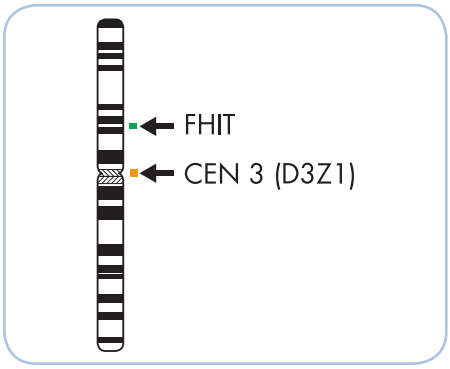
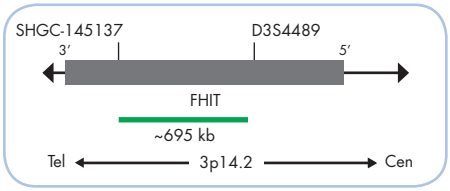
Ishii H, et al. (2003) J Exp Ther Oncol 3: 291-6.
Ohta M, et al. (1996) Cell 84: 587-97.
Pekarsky Y, et al. (2002) Lancet Oncol 3: 748-54.
Schwarz S, et al. (2008) Cytometry A 73: 305-11.
Vieira J, et al. (2010) Genes Chromosomes Cancer 49: 935-47.

Probe Description

The SPEC FHIT/CEN 3 Dual Color probe is a mixture of an orange fluorochrome direct labeled CEN 3 probe specific for the alpha satellite centromeric region of chromosome 3 (D3Z1) and a green fluorochrome direct labeled SPEC FHIT probe hybridizing to sequences of introns 4 and 5 of the human FHIT gene at 3p14.2.



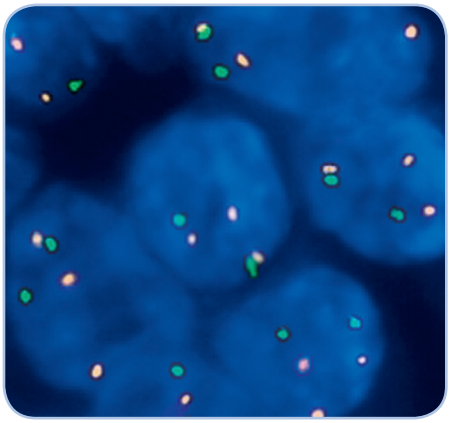
Ideogram of chromosome 3 indicating the hybridization locations.



SPEC FHIT Probe map (not to scale).

Results

In a normal interphase nucleus, two orange and two green signals are expected. In a cell with deletion of the FHIT gene locus, a reduced number of green signals will be observed. Deletions affecting only parts of introns 4 and/or 5 of the FHIT gene might result in a normal signal pattern with green signals of reduced size.



SPEC FHIT/CEN 3 Dual Color Probe hybridized to interphase cells each showing three orange and two green signals.

Prod. No.	Product	Label	Tests* (Volume)
Z-2062-200	ZytoLight SPEC FHIT/CEN 3 Dual Color Probe CE IVD	●/●	20 (200 µl)
Related Products			
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.*

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.*

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