ZytoLight® SPEC AXL/19p13 Dual Color Probe

CE IVD

Background

The ZytoLight® SPEC AXL/19p13 Dual Color Probe is designed for the detection of amplifications of the chromosomal region harboring the AXL gene.

The AXL (AXL receptor tyrosine kinase, a.k.a. ARK, Tyro7) gene is located on chromosome 19q13.2 and encodes a receptor tyrosine kinase which is a member of the TAM (TYRO3/AXL/MERTK) family. AXL overexpression has been reported in several human cancers including colon, esophageal, thyroid, breast, lung, liver, glioblastoma, and acute leukemia. Binding of the ligand growth arrest-specific 6 (GAS6) to AXL activates the downstream MAPK and PI3K/Akt signaling pathways, thereby promoting proliferation and survival of normal and cancer cells. AXL expression was shown to be associated with migration and invasion resulting in tumor progression and metastasis in various cancer types including lung adenocarcinoma where AXL was found to be overexpressed in 48% of patient samples.

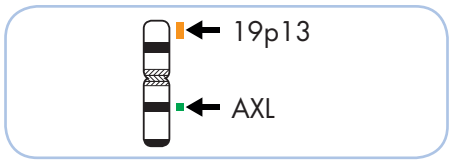
Overexpression of AXL tyrosine kinase correlates with an adverse prognosis in glioblastoma multiforme, pancreatic adenocarcinoma, and breast cancer. Inhibition of AXL was shown to reduce tumor growth in xenograft models indicating that AXL may be an important target for new therapeutic developments in AXL overexpressing cancers.

Hence, the identification of AXL gene copy number changes by Fluorescence *in situ* Hybridization and targeted AXL signaling inhibition may be of therapeutic significance in various types of tumors.

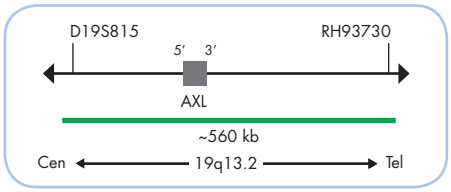
References
Gjerdrum C, et al. (2010) Proc Natl Acad Sci U S A 107: 1124-9.
Hutterer M, et al. (2008) Clin Cancer Res 14: 130-8.
Knubel KH, et al. (2014) Oncotarget 5: 1338- 51.
Koorstra JB, et al. (2009) Cancer Biol Ther 8: 618-26.
Li Y, et al. (2009) Oncogene 28: 3442-55.
Shieh YS, et al. (2005) Neoplasia 7: 1058-64.
Song X, et al. (2011) Cancer 117: 734-43.
Verma A, et al. (2011) Mol Cancer Ther 10: 1763-73.

Probe Description

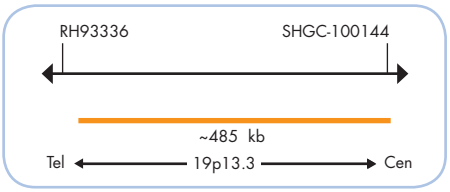
The SPEC AXL/19p13 Dual Color Probe is a mixture of a green fluorochrome direct labeled SPEC AXL probe hybridizing to the AXL gene in the chromosomal region 19q13.2 and an orange fluorochrome direct labeled SPEC 19p13 probe specific for 19p13.3. Since chromosomes 1, 5, and 19 share the same repetitive sequences, probes specific for 19p13.3 are commonly used for chromosome 19 copy number detection.



Ideogram of chromosome 19 indicating the hybridization locations.



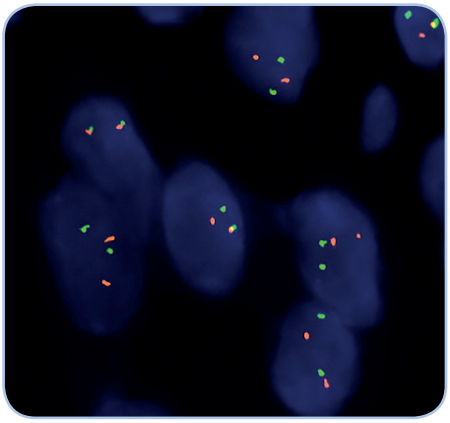
SPEC AXL Probe map (not to scale).



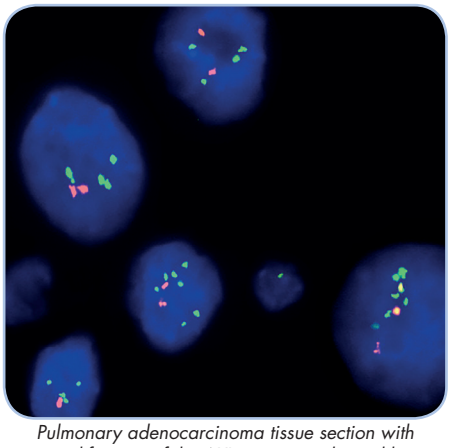
SPEC 19p13 Probe map (not to scale).

Results

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



SPEC AXL/19p13 Dual Color Probe hybridized to normal interphase cells as indicated by two orange and two green signals per nucleus.



Pulmonary adenocarcinoma tissue section with amplification of the AXL gene as indicated by multiple green signals in each nucleus.

Prod. No.	Product	Label	Tests* (Volume)
Z-2154-200	ZytoLight SPEC AXL/19p13 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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