ZytoLight® SPEC CDKN2A/CEN 3/7/17 Quadruple Color Probe

Previously: ZytoLight SPEC p16/CEN 3/7/17 Quadruple Color Probe

CE IVD

Background

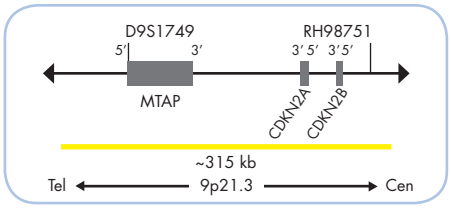
The ZytoLight® SPEC CDKN2A/CEN 3/7/17 Quadruple Color Probe is designed for the simultaneous detection of CDKN2A gene status and enumeration of chromosomes 3, 7, and 17 in tumor cells. The tumor suppressor gene CDKN2A (a.k.a. p16 or p16INK4a) is located in the chromosomal region 9p21.3 and is inactivated by homozygous deletions with high frequency in a variety of human primary tumors e.g. renal cell and bladder carcinoma, prostate and ovarian adenocarcinoma, non-small cell lung cancer, sarcoma, glioma, mesothelioma, and melanoma.
Additionally, non-random numerical chromosome aberrations are frequently observed in a variety of solid tumors.

Hence, detection of these specific chromosome aberrations in tumor cells can serve as a valuable diagnostic aid in tumor classification and staging. For example, in bladder cancer monosomy 3, 7, and 17 is significantly associated with T3-4 stages. In papillary renal cell carcinoma trisomy 7 or 17 is frequently found, while chromophobic RCC is characterized by widespread chromosomal losses.

References
Barocas DA, et al. (2006) BJU Int 99: 290-5.
Gallucci M, et al. (2005) J Clin Pathol 58: 367-71.
Kamb A, et al. (1994) Science 264: 436-40.
Sharpless NE (2005) Mutat Res 576: 22-38.

Probe Description

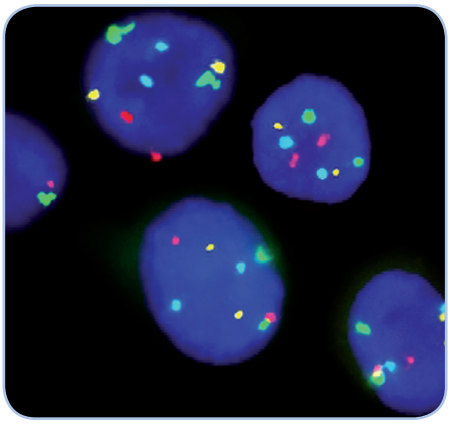
The SPEC CDKN2A/CEN 3/7/17 Quadruple Color Probe is a mixture of a gold fluorochrome direct labeled SPEC CDKN2A probe specific for the CDKN2A gene at 9p21.3, a red fluorochrome direct labeled CEN 3 probe specific for the alpha satellite centromeric region of chromosome 3 (D3Z1), a green fluorochrome direct labeled CEN 7 probe specific for the alpha satellite centromeric region of chromosome 7 (D7Z1), and a blue fluorochrome direct labeled CEN 17 probe specific for the alpha satellite centromeric region of chromosome 17 (D17Z1).



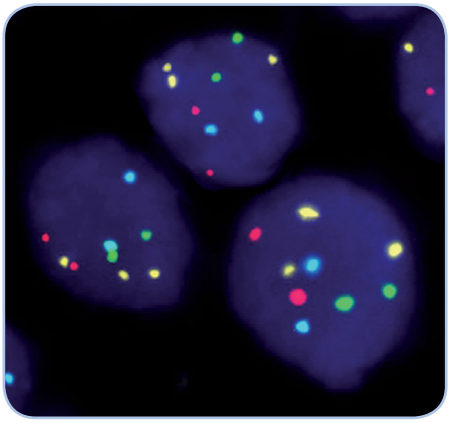
SPEC CDKN2A Probe map (not to scale).

Results

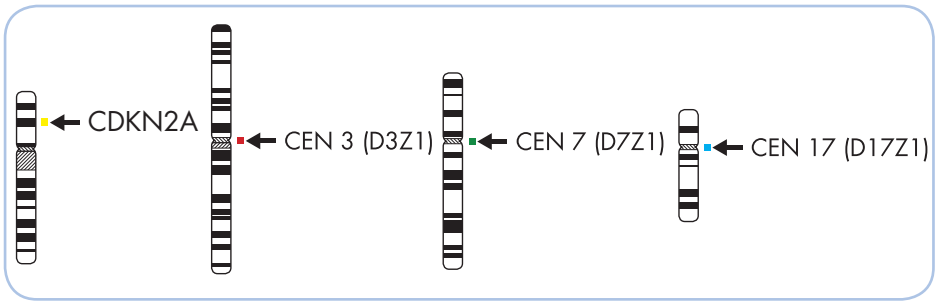
In a normal interphase nucleus, two gold, two red, two green, and two blue signals are expected. In a cell with deletion of the CDKN2A gene locus, a reduced number of gold signals will be observed. In cells with aneusomy of chromosomes 3, 7, or 17 more or less signals of the respective color will be visible.



Normal cytological specimen hybridized with SPEC CDKN2A/CEN 3/7/17 Quadruple Color Probe as indicated by two gold (CDKN2A), two red (CEN 3), two green (CEN 7), and two blue (CEN 17) signals.



SPEC CDKN2A/CEN 3/7/17 Quadruple Color Probe hybridized to tumor cells showing a trisomy 9 as indicated by three CDKN2A signals (gold) in each nucleus.



Ideograms of chromosomes 9, 3, 7, and 17 indicating the hybridization locations.

Prod. No.	Product	Label	Tests* (Volume)
Z-2081-50	ZytoLight SPEC CDKN2A/CEN 3/7/17 Quadruple Color Probe CE IVD	●/●/●/●	5 (50 µl)
Z-2081-200	ZytoLight SPEC CDKN2A/CEN 3/7/17 Quadruple Color Probe CE IVD	●/●/●/●	20 (200 µl)

** 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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