

ZytoLight® SPEC CD274,PDCD1LG2/CEN 9 Dual Color Probe



Background

The ZytoLight® SPEC CD274,PDCD1LG2/CEN 9 Dual Color Probe is designed for the detection of CD274,PDCD1LG2 gene cluster amplifications observed in various carcinomas, e.g. classical non-Hodgkin lymphoma and mediastinal large B-cell lymphoma.

The CD274 (cluster of differentiation 274, a.k.a. PDCD1G1, PDL1) and PDCD1LG2 (programmed cell death 1 ligand 2, a.k.a. PDL2, CD273) genes, which are separated by 42 kilobases, are located on chromosome 9p24.1.

The genes encode ligands for the PD-1 receptor of T-cells. CD274 is expressed by cancer cells of various tumor types, including melanoma, non-small cell lung cancer (NSCLC), breast cancer, and renal cell carcinomas. It is believed that interactions between the T-cell PD-1 receptor and its ligands CD274 or PDCD1LG2 expressed by tumor cells prevent the immune system from attacking the tumor cells.

The blockade of the PD-1/CD274, PDCD1LG2 pathway has yielded promising results in clinical trials conducted on tumors that express the PD-1 receptor. In early phase clinical trials compounds blocking PD-1 and CD274 have shown to be especially effective in advanced-stage NSCLC patients positive for CD274. Hence, targeting PD-1 or CD274,PDCD1LG2 represents a promising new treatment for this cancer entity.

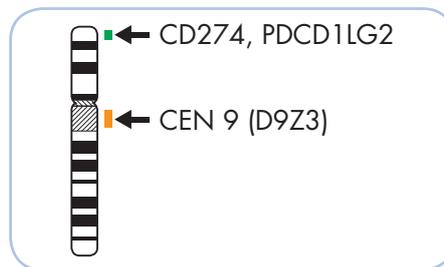
Consequently, the identification of CD274,PDCD1LG2 gene copy number detected by Fluorescence *in situ* Hybridization might be of prognostic and predictive relevance in diverse cancers.

References

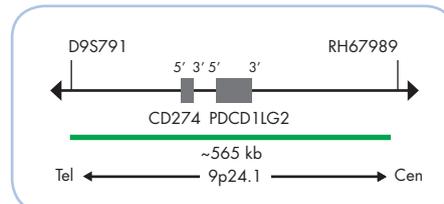
- Green MR, et al. (2012) Clin Cancer Res 18: 1611-8.
- Hao Y, et al. (2014) Clin Cancer Res 20: 2674-83.
- Mamalis A, et al. (2014) Arch Dermatol Res 306: 511-9.
- Schalper KA, et al. (2014) Clin Cancer Res 20: 2773-82.
- Velcheff V, et al. (2014) Lab Invest 94: 107-16.

Probe Description

The SPEC CD274, PDCD1LG2/CEN 9 Dual Color Probe is a mixture of a green fluorochrome direct labeled SPEC CD274, PDCD1LG2 probe specific for the CD274 and PDCD1LG2 genes at 9p24.1 and an orange fluorochrome direct labeled CEN 9 probe specific for the classical satellite III region of chromosome 9 (D9Z3) at 9q12.



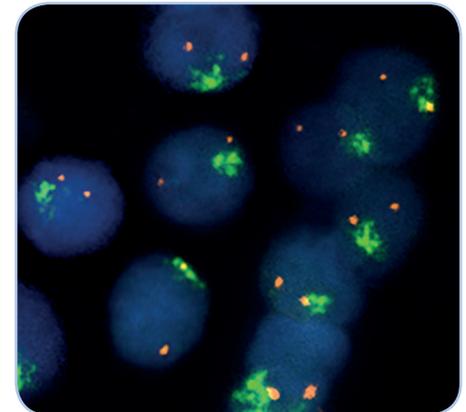
Ideogram of chromosome 9 indicating the hybridization locations.



SPEC CD274, PDCD1LG2 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 CD274,PDCD1LG2 gene cluster, multiple copies of the green signal or large green signal clusters will be observed.



Primary mediastinal large B-cell lymphoma tissue section with amplification of the CD274,PDCD1LG2 gene region as indicated by green signal clusters in each nucleus.

Prod. No.	Product	Label	Tests* (Volume)
Z-2179-200	ZytoLight SPEC CD274,PDCD1LG2/CEN 9 Dual Color Probe CE IVD	●/●	20 (200 µl)
Related Products			
Z-2028-20	ZytoLight FISH-Tissue Implementation Kit CE IVD		20
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			

* 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.