

XRNA PD-L1 Green

Human RNA FISH

Order No.:
R-0203-020-FI

Description

The XRNA PD-L1 probe kit comprises 96 oligos detecting the human PD-L1 mRNA. We are using the proprietary HuluFISH enzymatic multi fluorophore labeling technique enabling the detection of RNA at the single-cell, single-molecule level in cell and tissue samples. The probe kit is labeled in green (Atto488).

Clinical Details

Programmed death ligand 1 (PD-L1) is the main ligand of the programmed cell death 1 (PD-1) receptor. PD-1 functions as coinhibitory receptor which can be constitutively expressed or induced on myeloid, lymphoid, normal epithelial and cancer cells. PD-L1 is encoded by the PDCDL1 gene located on chromosome 9p24.1. The resulting type I transmembrane protein is known to be constitutively expressed at low levels on resting lymphocytes and antigen-presenting cells, but also other cell types such as Langerhans' islet cells, where it plays a part in tissue homeostasis in proinflammatory response. Furthermore, the 'immune privileged' status of tissues such as testis, placenta and the anterior chamber of the eye is mediated by PD-L1, which prevents induction of the inflammatory response after exposure to exogenous antigens. In the course of infection and/or inflammation, PD-L1 plays a key role as suppressive signal on haematopoietic, epithelial, and endothelial cells. The expression of PD-L1 is influenced by multiple signalling pathways including toll-like receptor and IFN- γ receptor 1 and 2 mediated signal transduction.

In carcinogenesis, multiple oncogenic mechanisms lead to elevated PD-L1 expression levels via different dysregulated signalling pathways, causing the gain of an immune evasion mechanism in cancer cells. As a result, various types of cancer cells, including non-small cell lung cancer cells, show elevated PD-L1 levels on their surface. PD-1/PD-L1 is considered as an immune checkpoint, which can inhibit immune surveillance and promote tumor growth under oncogenic pathological conditions.

Note

*For Research Use Only (RUO). Not for diagnostic procedures.
Powered by HuluFISH technology from PixelBiotech.*

Literature

- Kythreotou et al (2018) Clin Pathol 71:189-194
- Pawelczyk et al (2019) J Mol Sci 20:824
- Davis and Patel (2019) J. Immunotherapy Cancer 7: 278

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Modern immunotherapy methods (immune checkpoint inhibitors) use monoclonal antibodies targeting PD-1 or PD-L1 to reestablish the anti-tumor immune response and suppress tumor growth. Meanwhile, several PD-1/PD-L1 immune checkpoint inhibitors have been approved or are currently being evaluated in clinical studies, as PD-L1 is a well-established immune-based biomarker in carcinogenesis.

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