

Programmed Death Ligand 1 (PD-L1) Immunohistochemistry

Test Description

This test is useful for identification of neoplasms expressing programmed cell death 1-ligand 1 (clone SP263). PD-L1 also known as B7 homolog 1 (B7-H1) or CD274, is a transmembrane protein involved in the regulation of cell-mediated immune responses through interaction with the receptor programmed death protein-1 (PD-1). PD-L1 has been identified as both a prognostic and theranostic marker in a variety of neoplasms. Overexpression of PD-L1 has been observed in carcinomas of the urinary bladder, lung, thymus, colon, pancreas, ovary, breast, kidney, and in melanoma and glioblastoma.

Specimen

Sample Type: FFPE block 3196/19A
Site: Mediastinal Lymph Node
Pathology ID: MOLQ/IHC-20042019
Disease: History of endometrial cancer

Interpretation

The scoring system is based on type and origin of tumor. If additional interpretation or analysis is needed, send request for Pathology Consultation.

Methodology

Immunostaining for PD-L1 protein was done using Ventana Rabbit Anti-Human PD-L1/CD274 Monoclonal Antibody (Clone SP-263) on Ventana Autostainer.

Positive PD-L1 staining/expression is defined as complete and/or partial, circumferential or linear plasma membrane staining at any intensity that can be differentiated from background.

Note

Preclinical studies suggest that positive programmed cell death 1-ligand 1 (PD-L1) immunohistochemistry in tumor cells may predict tumor response to therapy with immune checkpoint inhibitors. This result should not be used as the sole factor in determining treatment, as other factors (eg, tumor mutation burden and microsatellite instability) have also been studied as predictive markers.

References

1. Rosai and Ackerman's Surgical Pathology.
2. Drakes ML *et al.* Stratification of ovarian tumor pathology by expression of programmed cell death-1 (PD-1) and PD-ligand- 1 (PD-L1) in ovarian cancer. *J Ovarian Res* 2018 11:43
3. Klaus Pietzner, *et al.* Checkpoint-inhibition in ovarian cancer: rising star or just a dream? *J Gynecol Oncol.* 2018 Nov; 29(6): e93.
4. PD-L1 and Lung Cancer The Era of Precision-ish Medicine? Alain C. Borczuk *et al.* *Arch Pathol Lab Med—Vol 140, April 2016.*



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Programmed Death Ligand 1 (PD-L1): Negative

Microscopy Evaluation

HE Staining (Figure 1)

Tumor cells: 90%
 Immune cells: 02%

Tumor cells positive for PD-L1 (membrane only): <01%
Immune cells positive for PD-L1: <01%

HE Stained Section

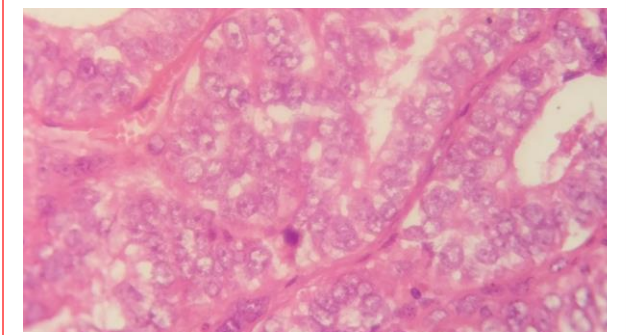
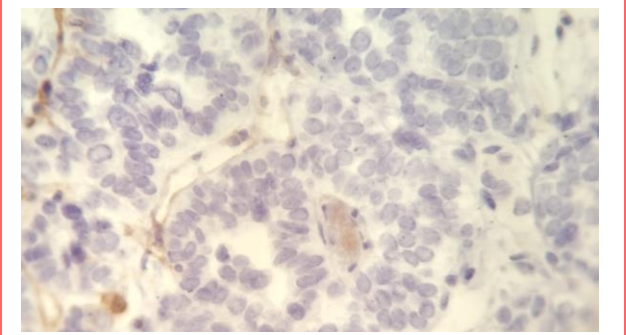


Figure 1

PD-L1 IHC- Tumor Cells



PD-L1 IHC- Immune Cells

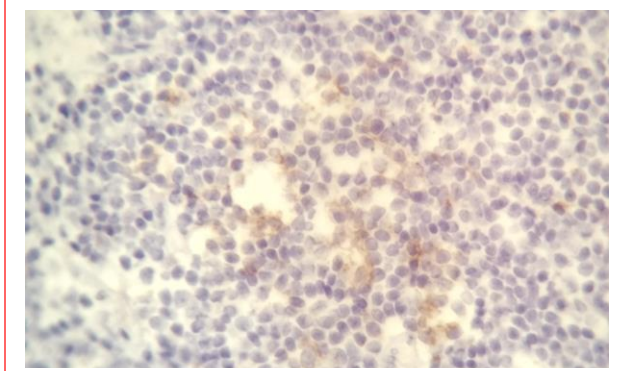


Figure 2

Figure 3