TECHNICAL NOTICE
THE MEDICAL FOUNDATION

PD-L1 Immunohistochemical Stain 22C3 ● Test Menu Change

Notification Date: 24 Jul 2017
Effective Date: 24 Jul 2017

PD-L1 Immunohistochemical Stain 22C3 .....CPT 88360
PD-L1 Clone 22C3 pharmDx, DAKO, Agilent Pathology Solutions

Clinical Significance: The human immune system exhibits complex interactions between immune cells and potential targets such as tumor cells. One such interaction is between programmed cell death protein 1 (PD-1), which is expressed by T-cells, and programmed death ligand 1 (PD-L1), which is the ligand for PD-1 and may be identified on some tumor cells. In cancer, it is postulated that PD-L1 expression could represent one mechanism by which T-cell anergy is induced, allowing a tumor cell to escape the immune system defenses. This observation has led to the development of specific therapies targeting this interaction. In non-small cell carcinoma of lung (including both squamous and adenocarcinoma, NSCLC), Keytruda® (pembrolizumab) is an anti-PD-1 cancer immunotherapeutic drug that blocks the PD-1/PD-L1 interaction between tumor cells and activated T-cells. When NSCLC tumor cells show upregulation of PD-L1 as detected by immunohistochemistry, this is a biomarker for response to anti-PD-1 therapy. This PD-L1 IHC 22C3 pharmDx is an FDA approved, companion diagnostic immunohistochemical test for PD-L1 expression designed for use in patients with NSCLC.

Method: Immunohistochemical stain using a specific antibody clone, 22C3, applied to formalin fixed, paraffin embedded NSCLC tissue.

Use: This test is indicated as an aid in identifying patients with NSCLC for treatment with Keytruda®:

- A previously treated patient with NSCLC showing a Tumor Proportion Score (TPS, as determined by this test) of ≥1%, may be eligible for treatment with Keytruda®.
- A previously untreated patient with NSCLC showing a TPS (as determined by this test) of ≥50%, may be eligible for treatment with Keytruda®.

Reference Range:

Immunohistochemical reactivity is grouped into 3 categories, based on interpretation criteria that apply to specific patient populations (see Use, above):

1. **No PD-L1 Expression.** Tumor Proportion Score (TPS) <1%, with partial or complete cell membrane staining (at ≥ 1+ stain intensity) in <1% of viable tumor cells.

2. **Low PD-L1 Expression.** TPS 1-49%, with partial or complete cell membrane staining (at ≥ 1+ stain intensity) in ≥ 1-49% of viable tumor cells.

3. **High PD-L1 Expression**: TPS ≥ 50%, with partial or complete cell membrane staining (at ≥ 1+ stain intensity) in ≥ 50% of viable tumor cells

Specimen Requirements:

1. Submit formalin fixed, paraffin embedded tissue block containing NSCLC tumor tissue. Neutral buffered formalin is the required fixative, and tissue should be sectioned and fixed as soon as possible after surgery for best immunohistochemical staining properties. In selecting the paraffin block, submit the largest area of tumor available that shows the least degeneration or necrosis and the least fibrous stroma. Preservation of nuclear detail can help assess quality of fixation.

2. Tissue specimen must contain a minimum of 100 viable tumor cells to produce a valid result.

3. Avoid decalcified specimens when possible.

4. Please include copy of corresponding pathology report.

Cause for Specimen Rejection:
• Insufficient well preserved tumor cells in submitted tissue block when assessed by routine light microscopy.
• Specimens processed in alternative fixatives (alcohol, Prefer®) or heavy metal fixatives (B-4 or B-5).

Specimen Storage and Transportation: Room temperature. Avoid excessive heat (greater than 55°C). Transport in cooled container during summer months.

Specimen Stability: Room temperature: Up to 5 years.

Testing Schedule: Within 7 days

TMF Online Test Directory

Questions: Please contact **CLIENT SERVICES 800-950-7263,** or Shadia Alam MD, salam@sbmf.org,
Or Donna Emge, Histology Manager demge@sbmf.org