PD1, 7 ml Ready to use 
Clone: MRQ-22 
Cat. no.: MON-RTU1177

Specificity
Programmed death-1 (PD1) is a member of the CD28 family of receptors that includes CD28, cytotoxic T-lymphocyte-associated antigen 4 (CTLA-4), inducible costimulator (ICOS), and B- and T-lymphocyte attenuator. These receptors play a role in the cellular immune response. For example, CD28 serves as a costimulatory receptor that enhances T-cell activation, whereas CTLA-4 serves as an inhibitor of T-cell activation. PD1 also has an inhibitory function on T cells and B cells, and is important in peripheral tolerance. There are at least 2 ligands for PD1, PD-L1, and PD-L2, which are expressed on a range of cells.

CD28 is constitutively expressed on most or all CD4+ T cells and approximately 50% of CD8+ T cells, whereas CTLA-4 is not expressed on resting T cells. PD1 is also expressed on activated T cells, B cells, and myeloid cells. Iwai and coworkers studied the microanatomic distribution of PD1 in human tonsil and found that PD1 is expressed on most T cells and a small subset of B cells in the light zone of germinal centers, but not elsewhere in the tonsil. On that basis, it was postulated that PD1 may play a role in the process of clonal selection of centrocytes, which occurs in this subanatomic site in germinal centers.

PD1 is a new marker of angioimmunoblastic lymphoma and suggests a unique cell of origin for this neoplasm. Unlike CD10 and bcl-6, PD1 is expressed by few B cells, so it may be a more specific and useful diagnostic marker in angioimmunoblastic lymphoma. It also seems to stain a greater percentage of CD3-positive neoplastic cells in angioimmunoblastic lymphoma than either CD10 or bcl-6. In addition, PD1 expression provides new evidence that angioimmunoblastic lymphoma is a neoplasm derived from germinal center-associated T cells. PD1 expression in angioimmunoblastic lymphoma lends further support to this model of T-cell oncogenesis, in which specific subtypes of T cells may undergo neoplastic transformation and result in specific distinct histologic, immunophenotypic, and clinical subtypes of T-cell neoplasia. Chhtanova and coworkers identified a number of genes that are specifically up-regulated in expression in germinal center-associated T cells, in addition to PD1. It will be interesting to determine whether the expression of these other genes can be studied by immunostaining in angioimmunoblastic lymphoma and other lymphoid neoplasms. Furthermore, it may be possible that one or more of these new markers of angioimmunoblastic lymphoma, such as PD1, may provide the basis for an immunotherapeutic approach to the treatment of angioimmunoblastic lymphoma, similar to the use of anti-CD20 and anti-CD52 immunotherapy in B-cell neoplasia.

Immunoglobulin type
IgG1

Use
Paraffin, Frozen
Preparation and Pretreatment
1. Cut 3-4 µm section of formalin-fixed paraffin-embedded tissue and place on positively charged slides; dry overnight at 58°C.
2. Deparaffinize, rehydrate, and epitope retrieve; the preferred method is the use of Heat Induced Epitope Retrieval (HIER) techniques in conjunction with a pressure cooker. The preferred method allows for simultaneous deparaffinization, rehydration, and epitope retrieval. Upon completion, rinse with 5 changes of distilled or deionized water.
3. If using HRP detection system, place slides in peroxide block for 10 minutes; rinse. If using AP detection system, omit this step.

Positive control
Tonsil, Lymph node

Staining pattern
Cytoplasmic

Presentation
7 ml. prediluted. Ready to use
Anti-PD1 is a mouse monoclonal antibody from tissue culture supernatant diluted in phosphate buffered saline, pH 7.4, with protein base, and preserved with sodium azide.

Storage & handling
Store antibody at 2-8°C until expiry date. For extended storage, the solution may be frozen in suitable aliquots. Avoid freeze/thaw cycles.

References:

FOR RESEARCH USE ONLY, NOT FOR DRUG, DIAGNOSTIC OR OTHER USE.

Also available on request:
1 ml, prediluted Ready to use
0.1 ml, concentrate 1:25 - 1:100*
0.5 ml, concentrate 1:25 - 1:100*
1 ml, concentrate 1:25 - 1:100*

* The dilutions set forth above are estimates; actual results may differ because of variability in methods and protocols. Validation of antibody performance/protocol is the responsibility of the end user.