Human PD-1 Antibody

Recombinant Monoclonal Rabbit IgG Clone # 2705E
Catalog Number: MAB11638

DESCRIPTION

Species Reactivity	Human
Specificity	Detects a synthetic peptide specific for human PD-1 around amino acid 130 in Direct ELISA.
Source	Recombinant Monoclonal Rabbit IgG Clone # 2705E
Purification	Protein A or G purified from cell culture supernatant
Immunogen	Synthetic Peptide Accession # Q15116
Formulation	Lyophilized from a 0.2 μm filtered solution in PBS with Trehalose.

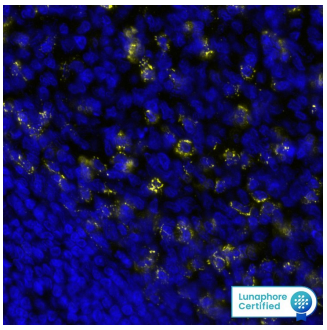
APPLICATIONS

Please Note: *Optimal dilutions should be determined by each laboratory for each application. General Protocols are available in the Technical Information section on our website.*

	Recommended Concentration	Sample
Multiplex Immunofluorescence	15 µg/mL	Immersion fixed paraffin-embedded sections of human tonsil
Immunohistochemistry	1-10 µg/mL	Immersion fixed paraffin-embedded sections of human tonsil

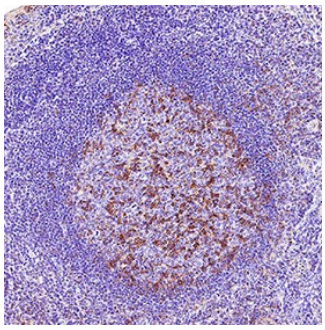
DATA

Multiplex Immunofluorescence



Detection of PD1 in Human Tonsil via seqIF™ staining on COMET™ PD1 Antibody was detected in immersion fixed paraffin-embedded sections of human Tonsil using Rabbit Anti-Human PD1, Monoclonal Antibody (Catalog # MAB11638) at 15ug/mL at 37 ° Celsius for 4 minutes. Before incubation with the primary antibody, tissue underwent an all-in-one dewaxing and antigen retrieval preprocessing using PreTreatment Module (PT Module) and Dewax and HIER Buffer H (pH 9; Epredia Catalog # TA-999-DHBH).Tissue was stained using the Alexa Fluor™ Plus 647 Goat anti-Rabbit IgG Secondary Antibody at 1:200 at 37 ° Celsius for 2 minutes. (Yellow; Lunaphore Catalog # DR647RB) and counterstained with DAPI (blue; Lunaphore Catalog # DR100). Specific staining was localized to the membrane. Protocol available in COMET™ Panel Builder.

Immunohistochemistry



Detection of PD-1 in Human Tonsil. PD-1 was detected in immersion fixed paraffin-embedded sections of human tonsil using Rabbit Anti-Human PD-1 Monoclonal Antibody (Catalog # MAB11638) at 3 µg/ml for 1 hour at room temperature followed by incubation with the Anti-Rabbit IgG VisUCyte™ HRP Polymer Antibody (Catalog # VC003). Before incubation with the primary antibody, tissue was subjected to heat-induced epitope retrieval using VisUCyte Antigen Retrieval Reagent-Basic (Catalog # VCTS021). Tissue was stained using DAB (brown) and counterstained with hematoxylin (blue). Specific staining was localized to the cell surface. View our protocol for IHC Staining with VisUCyte HRP Polymer Detection Reagents.

PREPARATION AND STORAGE

Reconstitution	Reconstitute lyophilized material at 0.2 mg/ml in sterile PBS. For liquid material, refer to CoA for concentration.
Shipping	Lyophilized product is shipped at ambient temperature. Liquid small pack size (-SP) is shipped with polar packs. Upon receipt, store immediately at the temperature recommended below.
Stability & Storage	**Use a manual defrost freezer and avoid repeated freeze-thaw cycles.** • 12 months from date of receipt, -20 to -70 °C as supplied. • 1 month, 2 to 8 °C under sterile conditions after reconstitution. • 6 months, -20 to -70 °C under sterile conditions after reconstitution.

Bio-Techne®
Global | bio-techne.com info@bio-techne.com techsupport@bio-techne.com TEL: 1.612.379.2956
USA | TEL: 800.343.7475 Canada | TEL: 855.668.8722 Europe | Middle East | Africa TEL: +44.0.1235.529449
China | info.cn@bio-techne.com TEL: 400.821.3475

BACKGROUND

Programmed Death-1 receptor (PD-1), also known as CD279, is type I transmembrane protein belonging to the CD28 family of immune regulatory receptors (1). Other members of this family include CD28, CTLA-4, ICOS, and BTLA (2-5). Mature human PD-1 consists of a 148 amino acid (aa) extracellular region (ECD) with one immunoglobulin-like V-type domain, a 24 aa transmembrane domain, and a 95 aa cytoplasmic region. The human PD-1 ECD shares 65% aa sequence identity with the mouse PD-1 ECD. The cytoplasmic tail contains two tyrosine residues that form the immunoreceptor tyrosine-based inhibitory motif (ITIM) and immunoreceptor tyrosine-based switch motif (ITSM) that are important for mediating PD-1 signaling. PD-1 acts as a monomeric receptor and interacts in a 1:1 stoichiometric ratio with its ligands PD-L1 (B7-H1) and PD-L2 (B7-DC) (6, 7). PD-1 is expressed on activated T cells, B cells, monocytes, and dendritic cells while PD-L1 expression is constitutive on the same cells and also on nonhematopoietic cells such as lung endothelial cells and hepatocytes (8, 9). Ligation of PD-L1 with PD-1 induces co-inhibitory signals on T cells promoting their apoptosis, anergy, and functional exhaustion (10). Thus, the PD-1: PD-L1 interaction is a key regulator of the threshold of immune response and peripheral immune tolerance (11). Finally, blockade of the PD-1: PD-L1 interaction by either antibodies or genetic manipulation accelerates tumor eradication and shows potential for improving cancer immunotherapy (12, 13, 14).

References:

1. Ishida, Y. *et al.* (1992) EMBO J. **11**:3887.
2. Sharpe, A.H. and G. J. Freeman (2002) Nat. Rev. Immunol. **2**:116.
3. Coyle, A. and J. Gutierrez-Ramos (2001) Nat. Immunol. **2**:203.
4. Nishimura, H. and T. Honjo (2001) Trends Immunol. **22**:265.
5. Watanabe, N *et al.* (2003) Nat. Immunol. **4**:670.
6. Zhang, X. *et al.* (2004) Immunity **20**:337.
7. Lázár-Molnár, E. *et al.* (2008) Proc. Natl. Acad. Sci. USA **105**:10483.
8. Nishimura, H *et al.* (1996) Int. Immunol. **8**:773.
9. Keir, M.E. *et al.* (2008) Annu. Rev. Immunol. **26**:677.
10. Butte, M.J. *et al.* (2007) Immunity **27**:111.
11. Okazaki, T. *et al.* (2013) Nat. Immunol. **14**:1212.
12. Iwai, Y. *et al.* (2002) Proc. Natl. Acad. Sci. USA **99**: 12293.
13. Nogrady, B. (2014) Nature **513**:S10.
14. Swaika, A. *et al.* (2015) Mol. Immunol. **67**:4.

Bio-Techne®
Global | bio-techne.com info@bio-techne.com techsupport@bio-techne.com TEL: 1.612.379.2956
USA | TEL: 800.343.7475 Canada | TEL: 855.668.8722 Europe | Middle East | Africa TEL: +44.0.1235.529449
China | info.cn@bio-techne.com TEL: 400.821.3475