

DESCRIPTION

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|-------------------------------------|--|--------|------------|
| Source | Human embryonic kidney cell, HEK293-derived human PD-1 protein | | |
| | Human PD-1 (Leu25-Thr168) Accession # Q15116 | HHHHHH | Avi-tag |
| | N-terminus | | C-terminus |
| N-terminal Sequence Analysis | Leu25 | | |
| Structure / Form | Biotinylated via Avi-tag | | |
| Predicted Molecular Mass | 19 kDa | | |

SPECIFICATIONS

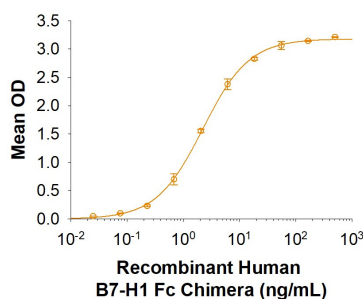
| | |
|------------------------|--|
| SDS-PAGE | 28-45 kDa, reducing conditions |
| Activity | Measured by its binding ability in a functional ELISA. When 500 ng/mL of Biotinylated Recombinant Human PD-1 His-tag Avi-tag protein is immobilized onto Streptavidin coated plate (Catalog # CP004), it binds to Recombinant Human PD-L1/B7-H1 Fc Chimera (Catalog # 156-B7) with an ED ₅₀ of 1.2-7.2 ng/mL. |
| Endotoxin Level | <0.10 EU per 1 µg of the protein by the LAL method. |
| Purity | >95%, by SDS-PAGE visualized with Silver Staining and quantitative densitometry by Coomassie® Blue Staining. |
| Formulation | Lyophilized from a 0.2 µm filtered solution in PBS with Trehalose. See Certificate of Analysis for details. |

PREPARATION AND STORAGE

| | |
|--------------------------------|--|
| Reconstitution | Reconstitute at 200 µg/mL in PBS. |
| Shipping | The product is shipped at ambient temperature. Upon receipt, store it immediately at the temperature recommended below. |
| Stability & Storage | <p>Use a manual defrost freezer and avoid repeated freeze-thaw cycles.</p> <ul style="list-style-type: none"> • 12 months from date of receipt, -20 to -70 °C as supplied. • 1 month, 2 to 8 °C under sterile conditions after reconstitution. • 3 months, ≤ -20 °C under sterile conditions after reconstitution. |

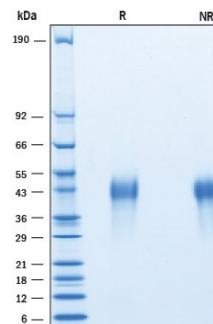
DATA

Binding Activity



When 500 ng/mL of Biotinylated Recombinant Human PD-1 His-tag Avi-tag protein is immobilized onto Streptavidin coated plate (Catalog # CP004), it binds to Recombinant Human PD-L1/B7-H1 Fc Chimera (Catalog # 156-B7) with an ED₅₀ of 1.2-7.2 ng/mL.

SDS-PAGE



2 µg/lane of Biotinylated Recombinant Human PD-1 His-Tag Avitag was resolved with SDS-PAGE under reducing (R) and non-reducing (NR) conditions and visualized by Coomassie® Blue staining, showing bands at 28-45 kDa.

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). Ligand 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:

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