Biotinylated Recombinant Human PD-1 Fc Chimera Avi-tag

Catalog Number: AVI1086

DESCRIPTION

Source

Chinese Hamster Ovary cell line, CHO-derived human PD-1 protein

Human PD-1 (Leu25-Thr168) Accession # Q15116.3	IEGRMD	Human IgG_1 (Pro100-Lys330)	HP, 3x (GGGS)	Avi-tag

N-terminal Sequence Analysis	Leu25
Structure / Form	Disulfide-linked homodimer, biotinylated via Avi-tag
Predicted Molecular Mass	45 kDa

SPECIFICATIONS

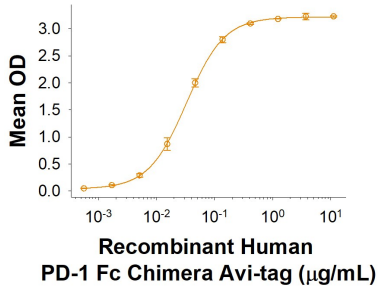
SDS-PAGE	62-88 kDa, under reducing conditions
Activity	Measured by its binding ability in a functional ELISA. When Recombinant Human B7-H1/PD-L1 Fc Chimera (Catalog # 156-B7) is immobilized at 1 µg/mL (100 µL/well), the concentration of Biotinylated Recombinant Human PD-1 Fc Chimera Avi-tag (Catalog # AVI1086) that produces 50% of the optimal binding response is 10-90 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 250 µg/mL in PBS.
Shipping	The product is shipped at ambient temperature. Upon receipt, store it 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. • 3 months, -20 to -70 °C under sterile conditions after reconstitution.

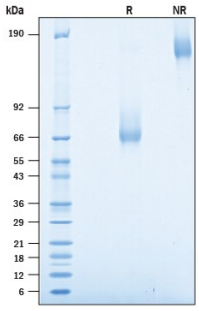
DATA

Binding Activity



When Recombinant Human B7-H1/PD-L1 Fc Chimera (Catalog # 156-B7) is immobilized at 1 µg/mL, 100 µg/well, Recombinant Human PD-1 Fc Chimera Avi-tag (Catalog # AVI1086) binds with an ED_{50} of 0.01-0.09 µg/mL.

SDS-PAGE



2 µg/lane of Biotinylated Recombinant Human PD-1 Fc Chimera Avi-tag (Catalog # AVI1086) was resolved with SDS-PAGE under reducing (R) and non-reducing (NR) conditions and visualized by Coomassie® Blue staining, showing bands at 62-88 kDa and 120-180 kDa, respectively.

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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 China TEL +86 (21) 52380373
Europe | Middle East | Africa TEL +44 (0)1235 529449

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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 mouse PD-1 consists of a 149 amino acid (aa) extracellular region (ECD) with one immunoglobulin-like V-type domain, a 21 aa transmembrane domain, and a 98 aa cytoplasmic region. The mouse PD-1 ECD shares 65% aa sequence identity with the human 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).

References:

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