

DESCRIPTION

Source	Mouse myeloma cell line, NS0-derived rat PD-1 protein		
	Rat PD-1 (Leu25-Gln167) Accession # NP_001100397	IEGRMDP	Mouse IgG _{2a} (Glu98-Lys330)
	N-terminus		C-terminus

N-terminal Sequence Analysis	Leu25
Structure / Form	Disulfide-linked homodimer
Predicted Molecular Mass	43 kDa

SPECIFICATIONS

SDS-PAGE	57-70 kDa, reducing conditions
Activity	Measured by its binding ability in a functional ELISA. When Recombinant Rat PD-L1/B7-H1 Fc Chimera (Catalog # 9835-B7) is coated at 1 µg/mL (100 µL/well), the concentration of Recombinant Rat PD-1 Fc Chimera (Catalog # 9814-PD) that produces 50% optimal binding response is typically 0.1-0.6 µg/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 Tris, NaCl and EDTA with Sucrose and Mannitol. See Certificate of Analysis for details.

PREPARATION AND STORAGE

Reconstitution	Reconstitute at 500 µg/mL in water.
Shipping	The product is shipped with polar packs. Upon receipt, store it immediately at the temperature recommended below.
Stability & Storage	<ul style="list-style-type: none"> • 12 months from date of receipt, ≤ -20 °C as supplied. • 1 month, 2 to 8 °C under sterile conditions after reconstitution. • 3 months, ≤ -20 °C under sterile conditions after reconstitution.

DATA

<p>Binding Activity</p> <p>When Recombinant Rat PD-L1/B7-H1 Fc Chimera (Catalog # 9835-B7) is coated at 1 µg/mL, 100 µL/well, Recombinant Rat PD-1 Fc Chimera (Catalog # 9814-PD) binds with an ED₅₀ of 0.1-0.6 µg/mL.</p>	<p>SDS-PAGE</p> <p>2 µg/lane of Recombinant Rat PD-1 was resolved with SDS-PAGE under reducing (R) and non-reducing (NR) conditions and visualized by Coomassie® blue staining, showing bands at 57-70 kDa and 110-140 kDa, respectively.</p>
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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 rat PD-1 consists of a 142 amino acid (aa) extracellular domain (ECD), a 28 aa transmembrane segment, and a 95 aa cytoplasmic domain. The ECD of rat PD-1 shares 67% and 87% aa sequence identity with the human and mouse PD-1, respectively. 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 on non-hematopoietic 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). Blockade of the PD-1: PD-L1 interaction by either antibodies or genetic manipulation accelerates tumor eradication and shows potential for improving cancer immunotherapy (12-14).

References:

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