

DESCRIPTION

Source	Human embryonic kidney cell, HEK293-derived canine PD-1 protein		
	Canine PD-1 (Leu25-Gly168) Accession # NP_001301026.1	IEGRMD	Human IgG ₁ (Pro100-Lys330)
	N-terminus		C-terminus
N-terminal Sequence Analysis	Leu25		
Structure / Form	Disulfide-linked homodimer		
Predicted Molecular Mass	43 kDa		

SPECIFICATIONS

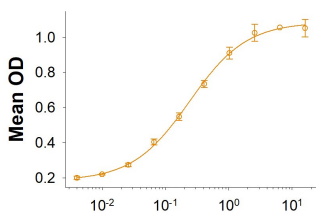
SDS-PAGE	55-70 kDa, under reducing conditions
Activity	Measured by its binding ability in a functional ELISA. When Recombinant Canine PD-1 Fc Chimera (Catalog # 10553-PD) is immobilized at 0.5 µg/mL (100 µL/well), Recombinant Canine PD-L1/B7-H1 Fc Chimera binds with an ED ₅₀ of 0.08-6.4 µg/mL.
Endotoxin 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 PBS with Trehalose. See Certificate of Analysis for details.

PREPARATION AND STORAGE

Reconstitution	Reconstitute at 500 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 to -70 °C under sterile conditions after reconstitution.

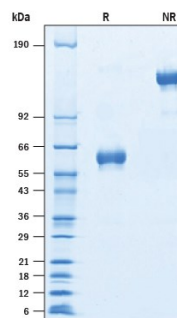
DATA

Binding Activity



When Recombinant Canine PD-1 Fc Chimera (Catalog # 10553-PD) is immobilized at 0.5 µg/mL (100 µL/well), Recombinant Canine PD-L1/B7-H1 Fc Chimera binds with an ED₅₀ of 0.08-6.4 µg/mL.

SDS-PAGE



2 µg/lane of Recombinant Canine PD-1 Fc Chimera (Catalog#10553-PD) was resolved with SDS-PAGE under reducing (R) and non-reducing (NR) conditions and visualized by Coomassie® Blue staining, showing bands at 50-70 kDa and 100-140 kDa, respectively.

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 canine PD-1 consists of an extracellular region (ECD) with one immunoglobulin-like V-type domain, a transmembrane domain, and a cytoplasmic region. The mature ECD of canine PD-1 shares 70% and 57% amino acid sequence identity with human and mouse PD-1 ECD, 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 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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