Recombinant Human PD-1 Fc Chimera Alexa Fluor® 647

Catalog Number: AFR1086

DESCRIPTION

Source

Mouse myeloma cell line, NS0-derived human PD-1 protein

Human PD-1 (Leu25-Gln167) Accession # Q15116.3	IEGRMD	Human IgG_1 (Pro100-Lys330)

N-terminus C-terminus

N-terminal Sequence Analysis

Leu25

Structure / Form

Disulfide-linked homodimer
Labeled with Alexa Fluor® 647
Excitation Wavelength: 650 nm
Emission Wavelength: 668 nm

Predicted Molecular Mass

42.6 kDa (monomer)

SPECIFICATIONS

SDS-PAGE

60-70 kDa, under reducing conditions.

Activity

Measured by flow cytometry for its ability to bind anti-human PD-1 Monoclonal Antibody conjugated beads.The concentration of Recombinant Human PD-1 Fc Chimera Alexa Fluor® 647 (Catalog # AFR1086) that produces 50% of the binding response is 0.25-5.00 ng/mL.

Endotoxin Level

<1.0 EU per 1 µg of the protein by the LAL method.

Purity

>90%, by SDS-PAGE visualized with Silver Staining and quantitative densitometry by Coomassie® Blue Staining.

Formulation

Supplied as a 0.2 µm filtered solution in PBS with BSA as a carrier protein. See Certificate of Analysis for details.

PREPARATION AND STORAGE

Shipping

The product is shipped with dry ice or equivalent. Upon receipt, store it immediately at the temperature recommended below.

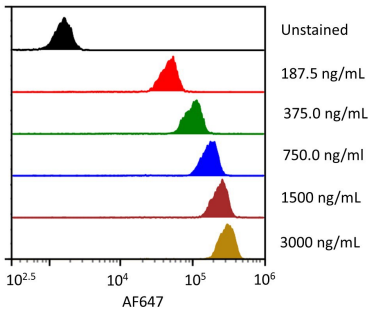
Stability & Storage

Protect from light. Use a manual defrost freezer and avoid repeated freeze-thaw cycles.

- 6 months from date of receipt, -20 to -70 °C as supplied.
- 1 month, 2 to 8 °C under sterile conditions after opening.
- 3 months, -20 to -70 °C under sterile conditions after opening.

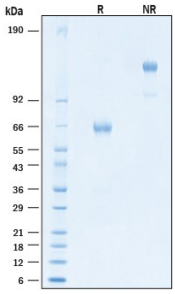
DATA

Flow Cytometry



Flow cytometry analysis for Recombinant Human PD-1 Fc Chimera Alexa Fluor® 647staining on anti-human PD-1 Monoclonal Antibody conjugated beads. Streptavidin coated beads conjugated to biotinylated anti-human PD-1 Monoclonal Antibody were stained with the indicated concentrations of Recombinant Human PD-1 Fc Chimera Alexa Fluor® 647 (Catalog # AFR1086).

SDS-PAGE



Recombinant Human PD-1 Fc Chimera Alexa Fluor® 647 Protein SDS-PAGE. 2 µg/lane of Recombinant Human PD-1 Fc Chimera Alexa Fluor® 647 Protein (Catalog # AFR1086) was resolved with SDS-PAGE under reducing (R) and non-reducing (NR) conditions and visualized by Coomassie® Blue staining, showing bands at 60-70 kDa and 120-140 kDa, respectively.

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BACKGROUND

PD-1 (Programmed Death-1 receptor), also known as CD279, is a receptor expressed on T cells responsible for modulating T cell activation. Like CTLA-4, PD-1 is classified as an immune checkpoint inhibitory receptor. When PD-1 protein binds to PD-L1, it initiates a negative signaling cascade inhibiting activation of T cells. 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. Normally, PD-1 helps keep T cells from attacking other cells in the body. However, many cancers take advantage of this by expressing high amounts of PD-L1 allowing cancer cells to evade the body's own immune response. Blocking the PD-1:PD-L1 interaction has proven successful in treating many different cancer types. PD-1 protein is type I transmembrane receptor 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 an extracellular region (ECD) with one immunoglobulin-like V-type domain, a transmembrane domain, and a cytoplasmic region. The mature ECD of human PD-1 shares 61% amino acid sequence identity with mouse PD-1 ECD. PD-1 protein 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).

References:

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