Recombinant Human PD-1 Fc Chimera
Catalog Number: 1086-PD

DESCRIPTION

Source
Mouse myeloma cell line, NS0-derived

<table>
<thead>
<tr>
<th>Human PD-1</th>
<th>Human IgG1</th>
</tr>
</thead>
<tbody>
<tr>
<td>(Leu25 - Gln167)</td>
<td>(Pro100 - Lys330)</td>
</tr>
<tr>
<td>Accession # QBIX89</td>
<td></td>
</tr>
</tbody>
</table>

N-terminal Sequence Analysis
Leu25

Structure / Form
Disulfide-linked homodimer

Predicted Molecular Mass
42.6 kDa (monomer)

SPECIFICATIONS

SDS-PAGE
60-70 kDa, reducing conditions

Activity
Measured by its binding ability in a functional ELISA.
Immovilized Recombinant Human PD-1 Fc Chimera at 1 µg/mL (100 µL/well) can bind Recombinant Human B7-H1 Fc Chimera (Catalog # 156-B7) with a linear range of 0.0078-0.5 µg/mL.

Endotoxin Level
<0.01 EU per 1 µg of the protein by the LAL method.

Purity
>95%, by SDS-PAGE under reducing conditions and visualized by silver stain.

Formulation
Lyophilized from a 0.2 µm filtered solution in PBS. See Certificate of Analysis for details.

PREPARATION AND STORAGE

Reconstitution
Reconstitute at 100 µg/mL in sterile 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.

BACKGROUND

Programmed Death-1 (PD-1) is a type I transmembrane protein belonging to the CD28/CTLA-4 family of immunoreceptors that mediate signals for regulating immune responses (1). Members of the CD28/CTLA-4 family have been shown to either promote T cell activation (CD28 and ICOS) or down-regulate T cell activation (CTLA-4 and PD-1) (2). PD-1 is expressed on activated T cells, B cells, myeloid cells and on a subset of thymocytes. In vitro, ligation of PD-1 inhibits TCR-mediated T-cell proliferation and production of IL-1, IL-4, IL-10 and IFNγ. In addition, PD-1 ligation also inhibits BCR mediated signaling. PD-1 deficient mice have a defect in peripheral tolerance and spontaneously develop autoimmune diseases (2, 3).

Two B7 family proteins, PD-L1 (also called B7-H1) and PD-L2 (also known as B7-DC), have been identified as PD-1 ligands. Unlike other B7 family proteins, both PD-L1 and PD-L2 are expressed in a wide variety of normal tissues including heart, placenta and activated spleens (4). The wide expression of PD-L1 and PD-L2 and the inhibitor effects on PD-1 ligation indicate that PD-1 might be involved in the regulation of peripheral tolerance and may help prevent autoimmune diseases (2).

The human PD-1 gene encodes a 288 aa protein with a putative 20 aa signal peptide, a 148 aa extracellular region with one immunoglobulin-like V-type domain, a 24 aa transmembrane domain and a 95 aa cytoplasmic region. 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 in mediating PD-1 signaling. Mouse and human PD-1 share approximately 60% aa sequence identity (4).

References:

1. Ishida, Y. et al. (1992) EMBO J. 11:3887.