B7-1/CD80 Protein, Rat (HEK293, Fc)

Cat. No.:	HY-P74398
Synonyms:	T-lymphocyte activation antigen CD80; Activation B7-1 antigen; BB1; B7; CD80; CD28LG; LAB7
Species:	Rat
Source:	HEK293
Accession:	AAB60503 (M1-Q248)
Gene ID:	25408
Molecular Weight:	Approximately 51 kDa

PROPERTIES

Appearance	Lyophilized powder.
Formulation	Lyophilized from a 0.2 μm filtered solution of PBS, pH 7.4. Normally 5 % - 8 % trehalose, mannitol and 0.01% Tween 80 are added as protectants before lyophilization.
Endotoxin Level	<1 EU/μg, determined by LAL method.
Reconsititution	It is not recommended to reconstitute to a concentration less than 100 μg/mL in ddH_2O.
Storage & Stability	Stored at -20°C for 2 years. After reconstitution, it is stable at 4°C for 1 week or -20°C for longer (with carrier protein). It is recommended to freeze aliquots at -20°C or -80°C for extended storage.
Shipping	Room temperature in continental US; may vary elsewhere.

DESCRIPTION

Background	B7-1/CD80, a type I membrane protein, is a member of the B7 family, with an extracellular immunoglobulin constant-like domain and a variable-like domain required for receptor binding. CD80 is also a transmembrane glycoprotein and a member of the Ig superfamily. CD80 can be found on the surface of various immune cells, including B-cells, monocytes, or T-cells, but most typically at antigen-presenting cells (APCs) such as dendritic cells. CD80 has a crucial role in modulating T-cell immune function as a checkpoint protein at the immunological synapse. CD80 binds to CD28 and CTLA-4 with lower affinity and fast binding kinetics, allowing for quick interactions between the communicating cells. These interactions result in an important costimulatory signal in the immunological synapse between antigen-presenting cells, B-cells, dendritic cells and T-cells that result in T and B-cell activation, proliferation and differentiation. Moreover, the interaction of CD80 with CD28, together with TCR and MHC interaction, results in activation of nuclear factor κB (NF-κB), mitogen activated protein kinase (MAPK), and the calcium calcineurin pathway. These changes initiate the production of numerous factors, cytokines, and chemokines by T-cells. CD80, often in tandem with CD86, plays a large and diverse role in regulating both the adaptive and the innate immune system. In addition to interactions with CD28 and CTLA-4, CD80 is also thought to interact with a separate ligand on Natural Killer cells, triggering the Natural Killer cell-mediated cell death of the CD80 carrier[1][2][3].

Caution: Product has not been fully validated for medical applications. For research use only.

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