**DESCRIPTION**

**Source**
Mouse myeloma cell line, NS0-derived

Human B7-1 (Val35-Asn242)
Accession # NP_005182
IEGRMD

Human IgG1 (Pro100-Lys330)
6-His tag

**N-terminal Sequence** Val35
**Analysis**
Disulfide-linked homodimer

**Predicted Molecular Mass** 51.3 kDa (monomer)

**SPECIFICATIONS**

**SDS-PAGE** 70-90 kDa, reducing conditions

**Activity** Measured by its ability to induce IL-2 secretion by Jurkat human acute T cell leukemia cells. Freeman, G.J. et al. (1993) Science 262:909. The ED$_{50}$ for this effect is 0.025-0.15 µg/mL in the presence of PHA.

**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. 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**

B7-1/CD80 and B7-2/CD86, together with their receptors CD28 and CTLA-4, constitute one of the dominant co-stimulatory pathways that regulate T- and B-cell responses (1). Although both CTLA-4 and CD28 can bind to the same ligands, CTLA-4 binds to B7-1 and B7-2 with a 20-100 fold higher affinity than CD28 and is involved in the down-regulation of the immune response (2-6). Mature human B7-1 consists of a 208 aa extracellular domain (ECD) with two immunoglobulin-like domains, a 21 aa transmembrane domain, and a 25 aa cytoplasmic domain (7). Within the ECD, human B7-1 shares 50% aa sequence identity with mouse and rat B7-1. Alternative splicing generates a 30 kDa soluble isoform that lacks the transmembrane segment and retains the ability to bind CD28 and CTLA-4 and an isoform that lacks the second Ig-like domain and the transmembrane segment (8). Both human and mouse B7-1 and B7-2 can bind to either human or mouse CD28 and CTLA-4 (1). B7-1 is expressed on activated B cells, activated T cells, and macrophages. B7-2 is constitutively expressed on interdigitating dendritic cells, Langerhans cells, peripheral blood dendritic cells, memory B cells, and germinal center B cells (2).

**References:**