

**DESCRIPTION**

<b>Source</b>	Human embryonic kidney cell, HEK293-derived human B7-1/CD80 protein Val35-Asn242, with a C-terminal 6-His tag Accession # P33681.1
<b>N-terminal Sequence Analysis</b>	Val35
<b>Structure / Form</b>	Labeled with Alexa Fluor® 647 Excitation Wavelength: 650 nm Emission Wavelength: 668 nm
<b>Predicted Molecular Mass</b>	25 kDa

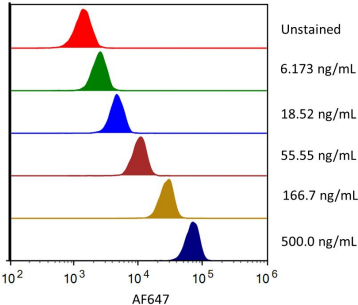
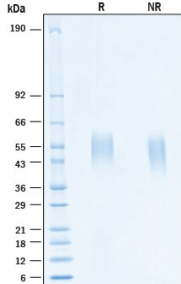
**SPECIFICATIONS**

<b>SDS-PAGE</b>	45-58 kDa, under reducing conditions.
<b>Activity</b>	Measured by flow cytometry for its ability to bind anti-human B7-1 Monoclonal Antibody conjugated beads. The concentration of Recombinant Human B7-1 His-tag Alexa Fluor® 647 (Catalog # AFR9050) that produces 50% of the binding response is 3.00-30.0 ng/mL.
<b>Endotoxin Level</b>	<1.0 EU per 1 µg of the protein by the LAL method.
<b>Purity</b>	>95%, by SDS-PAGE visualized with Silver Staining and quantitative densitometry by Coomassie® Blue Staining.
<b>Formulation</b>	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**

<b>Shipping</b>	The product is shipped with dry ice or equivalent. Upon receipt, store it immediately at the temperature recommended below.
<b>Stability &amp; Storage</b>	<b>Protect from light. Use a manual defrost freezer and avoid repeated freeze-thaw cycles.</b> <ul style="list-style-type: none"> <li>• 6 months from date of receipt, -20 to -70 °C as supplied.</li> <li>• 1 month, 2 to 8 °C under sterile conditions after opening.</li> <li>• 3 months, -20 to -70 °C under sterile conditions after opening.</li> </ul>

**DATA**

<p><b>Flow Cytometry</b></p>  <p><b>Flow cytometry analysis for Recombinant Human B7-1/CD80 His-tag Alexa Fluor® 647 staining on Human B7-1/CD80 Monoclonal Antibody conjugated beads.</b> Streptavidin coated beads conjugated to biotinylated Human B7-1/CD80 (Catalog # <a href="#">BAM1402</a>) were stained with the indicated concentrations of Recombinant Human B7-1/CD80 His-tag Alexa Fluor® 647 Protein (Catalog # AFR9050).</p>	<p><b>SDS-PAGE</b></p>  <p><b>Recombinant Human B7-1/CD80 His-tag Alexa Fluor® 647 Protein SDS-PAGE.</b> 2 µg/lane of Recombinant Human B7-1/CD80 His-tag Alexa Fluor® 647 Protein (Catalog # AFR9050) was resolved with SDS-PAGE under reducing (R) and non-reducing (NR) conditions and visualized by Coomassie® Blue staining, showing bands at 45-58 kDa.</p>
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### 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:

1. Ville, S. *et al.* (2015) *Front. Immunol.* **6**:411.
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3. Freeman, G.J. *et al.* (1993) *Science* **262**:909.
4. Chen, C. *et al.* (1994) *J. Immunol.* **152**:4929.
5. Freeman, G.J. *et al.* (1993) *J. Exp. Med.* **178**:2185.
6. Lanier, L. *et al.* (1995) *J. Immunol.* **154**:97.
7. Freeman, G.J. *et al.* (1989) *J. Immunol.* **143**:2714.
8. Kakoulidou, M. *et al.* (2007) *Scand. J. Immunol.* **66**:529.

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