

## DESCRIPTION

<b>Species Reactivity</b>	Rat
<b>Specificity</b>	Detects rat B7-2/CD86 in direct ELISAs and Western blots. In direct ELISAs and Western blots, no cross-reactivity with recombinant mouse (rm) B7-1, recombinant rat B7-1, rmB7-2, rmB7-H1, rmB7-H2, rmB7-H3, or rmPD-L2 is observed.
<b>Source</b>	Monoclonal Mouse IgG <sub>2B</sub> Clone # 199602
<b>Purification</b>	Protein A or G purified from hybridoma culture supernatant
<b>Immunogen</b>	Mouse myeloma cell line NS0-derived recombinant rat B7-2/CD86 Val29-Ile250 Accession # NP_064466
<b>Formulation</b>	Lyophilized from a 0.2 µm filtered solution in PBS with Trehalose. See Certificate of Analysis for details. *Small pack size (-SP) is supplied as a 0.2 µm filtered solution in PBS.

## APPLICATIONS

**Please Note:** Optimal dilutions should be determined by each laboratory for each application. *General Protocols* are available in the *Technical Information* section on our website.

	Recommended Concentration	Sample
<b>Western Blot</b>	1 µg/mL	Recombinant Rat B7-2/CD86 Fc Chimera (Catalog # 1340-B2)

## PREPARATION AND STORAGE

<b>Reconstitution</b>	Reconstitute at 0.5 mg/mL in sterile PBS.
<b>Shipping</b>	The product is shipped at ambient temperature. Upon receipt, store it immediately at the temperature recommended below. *Small pack size (-SP) is shipped with polar packs. Upon receipt, store it immediately at -20 to -70 °C
<b>Stability &amp; Storage</b>	<b>Use a manual defrost freezer and avoid repeated freeze-thaw cycles.</b> <ul style="list-style-type: none"> <li>● 12 months from date of receipt, -20 to -70 °C as supplied.</li> <li>● 1 month, 2 to 8 °C under sterile conditions after reconstitution.</li> <li>● 6 months, -20 to -70 °C under sterile conditions after reconstitution.</li> </ul>

## BACKGROUND

For optimal T cell expansion and activation, a signal induced by the engagement of the T cell receptor and a co-stimulatory signal(s) through distinct T cell surface molecules are required. Members of the B7 superfamily of counter-receptors were identified by their ability to interact with co-stimulatory molecules found on the surface of T cells. Members of the B7 superfamily are type I membrane proteins and include B7-1 (CD80), B7-2 (CD86), B7-H1 (PD-L1), B7-H2 (B7RP-1), B7-H3, and PD-L2 (1). B7-2 is expressed constitutively at low levels on most antigen presenting cells (APC) and is rapidly upregulated upon cell activation (2). T cells express two different receptors (CD28 and CTLA-4) capable of binding both B7-1 and B7-2 (2). B7-2 binds to CD28 with the low affinity but binds to CTLA-4 with intermediate affinity. In contrast, B7-1 binds CD28 with intermediate affinity and CTLA-4 with high affinity. Additionally, these molecules have different kinetics for binding CD28 and CTLA-4 with B7-2 having a higher-binding dissociation kinetics (1). Engagement of CD28 by B7-2 increases T cell proliferation and IL-2, IL-4, and IFN-γ production, thereby enhancing the immune response (3). In contrast, engagement of CTLA-4 is involved in the down-regulation of the immune response (4). Rat B7-2 cDNA encodes a 313 amino acid (aa) precursor protein containing an extracellular domain, a transmembrane domain, and a cytoplasmic domain. Rat and human B7-1 share 54% aa identity.

## References:

1. Coyle, A.J. and J-C. Gutierrez-Ramos (2001) *Nature Immunol.* **2**:203.
2. Sharpe, A.H. and G.J. Freeman (2002) *Nature Reviews* **2**:116.
3. Freeman, G.J. *et al.* (1995) *Immunity* **5**:523.
4. Walunas, T.L. *et al.* (1994) *Immunity* **1**:405.