

DESCRIPTION

Species Reactivity	Rat
Specificity	Detects rat B7-1/CD80 in direct ELISAs and Western blots. In direct ELISAs, approximately 15% cross-reactivity with recombinant mouse (rm) B7-1 is observed, 5% cross-reactivity with recombinant human B7-1 is observed, and less than 1% cross-reactivity with rmB7-H3, recombinant rat B7-2, rmB7-H1, and rmpD-L2 is observed.
Source	Polyclonal Goat IgG
Purification	Antigen Affinity-purified
Immunogen	Mouse myeloma cell line NS0-derived recombinant rat B7-1/CD80 Ile39-Gln248 Accession # AAB60503
Formulation	Lyophilized from a 0.2 µm filtered solution in PBS with Trehalose.

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
Western Blot	0.1 µg/mL	Recombinant Rat B7-1/CD80 Fc Chimera (Catalog # 1214-B7)
Immunocytochemistry	5-15 µg/mL	Immersion fixed rat splenocytes

PREPARATION AND STORAGE

Reconstitution	Reconstitute at 0.2 mg/mL in sterile PBS.
Shipping	The product is shipped at ambient temperature. Upon receipt, store it immediately at the temperature recommended below.
Stability & Storage	<p>Use a manual defrost freezer and avoid repeated freeze-thaw cycles.</p> <ul style="list-style-type: none"> • 12 months from date of receipt, -20 to -70 °C as supplied. • 1 month, 2 to 8 °C under sterile conditions after reconstitution. • 6 months, -20 to -70 °C under sterile conditions after reconstitution.

BACKGROUND

It is widely accepted that T cells require a signal induced by the engagement of the T cell receptor and a “co-stimulatory” signal(s) through distinct T cell surface molecules for optimal T cell expansion and activation. 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 include B7-1 (CD80), B7-2 (CD86), B7-H1 (PD-L1), B7-H2 (B7RP-1), B7-H3 and PD-L2 (1). B7-1 is expressed on activated B cells, activated T cells, mature dendritic cells and macrophages (2). T cells express two different receptors capable of binding B7-1, CD28 and CTLA-4. CTLA-4 binds to B7-1 with a 20-100 fold higher affinity than CD28. Engagement of CD28 by B7-1 increases T cell proliferation and IL-2 production and enhances the immune response (3). In contrast, engagement of CTLA-4 is involved in the down-regulation of the immune response (4). Rat B7-1 is a 320 amino acid (aa) protein containing an extracellular domain, a transmembrane domain and a cytoplasmic domain. Rat and human B7-1 share 47% amino acid identity.

References:

1. Coyle, A.J. and J-C. Gutierrez-Ramos (2001) *Nature Immunol.* **2**:203.
2. Azuma, M. *et al.* (1992) *Nature* **366**:76.
3. Gimmi, C.D. *et al.* (1991) *Proc. Natl. Acad. Sci. USA* **88**:6575.
4. Walunas, T.L. *et al.* (1994) *Immunity* **1**:405.