Rat B7-2/CD86 Antibody

Antigen Affinity-purified Polyclonal Goat IgG
Catalog Number: AF1340

DESCRIPTION

Species Reactivity	Rat
Specificity	Detects rat B7-2/CD86 in ELISAs and Western blots. In sandwich immunoassays, less than 20% cross-reactivity with recombinant mouse (rm) B7-2 is observed and less than 0.2% cross-reactivity with recombinant rat B7-1, rmB7-1, and recombinant human B7-2 is observed.
Source	Polyclonal Goat IgG
Purification	Antigen Affinity-purified
Immunogen	Mouse myeloma cell line NS0-derived recombinant rat B7−2/CD86 Val29-Ile250 Accession # O35531
Formulation	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
Western Blot	0.1 µg/mL	Recombinant Rat B7−2/CD86 Fc Chimera (Catalog # 1340-B2)
Flow Cytometry	2.5 µg/10^6 cells	Rat monocytes
Immunohistochemistry	5-15 µg/mL	Perfusion fixed frozen sections of rat thymus
Rat B7-2/CD86 Sandwich Immunoassay		**Reagent**
ELISA Capture	0.2-0.8 µg/mL	Rat B7−2/CD86 Antibody (Catalog # AF1340)
ELISA Detection	0.1-0.4 µg/mL	Rat B7−2/CD86 Biotinylated Antibody (Catalog # BAF1340)
Standard		Recombinant Rat B7−2/CD86 Fc Chimera (Catalog # 1340-B2)

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. *Small pack size (-SP) is shipped with polar packs. Upon receipt, store it immediately at -20 to -70 °C
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. ● 6 months, -20 to -70 °C under sterile conditions after reconstitution.

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 a 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.