

DESCRIPTION

Species Reactivity	Human
Specificity	Detects human B7-2/CD86 in direct ELISAs.
Source	Monoclonal Mouse IgG ₁ Clone # 1036411
Purification	Protein A or G purified
Immunogen	Human embryonic kidney cell, HEK293 derived human B7-2/CD86 Leu26-Pro247 Accession # NP_787058
Conjugate	Alexa Fluor Plus 647 Excitation Wavelength: 658 nm Emission Wavelength: 675 nm
Formulation	Supplied 0.2 mg/mL in a saline solution containing BSA and Sodium Azide. *Contains <0.1% Sodium Azide, which is not hazardous at this concentration according to GHS classifications. Refer to the Safety Data Sheet (SDS) for additional information and handling instructions.

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.

Neutralization Optimal dilution of this antibody should be experimentally determined.

DATA

PREPARATION AND STORAGE

Shipping	The product is shipped with polar packs. Upon receipt, store it immediately at the temperature recommended below.
Stability & Storage	Protect from light. Do not freeze. 12 months from date of receipt, 2 to 8 °C as supplied

BACKGROUND

B7-2, also known as CD86, B70, and ETC-1, is a 60-100 kDa variably glycosylated protein in the B7 family. B7 family members are transmembrane cell surface molecules that play important roles in immune activation and the maintenance of immune tolerance (1, 2). Mature human B7-2 consists of a 224 amino acid (aa) extracellular domain (ECD) with two Ig-like domains, a 21 aa transmembrane segment, and a 61 aa cytoplasmic tail (3, 4). Within the ECD, human B7-2 shares 59% aa sequence identity with mouse and rat B7-2. Alternative splicing of human B7-2 generates additional isoforms that lack both Ig-like domains or a region that includes the transmembrane segment. B7-2 is highly expressed on activated antigen presenting cells (APC), e.g. B cells, dendritic cells, and monocytes (4-7), as well as on vascular endothelial cells (8). B7-2 and the closely related B7-1/CD80 exhibit overlapping but distinct functional properties. Their binding to CD28, which is constitutively expressed on T cells, enhances T cell receptor signaling and also provides TCR-independent co-stimulation (3-5, 7, 9-11). B7-1 and B7-2 additionally bind the CD28-related protein, CTLA-4, which is up-regulated and recruited to the immunological synapse (IS) at the onset of T cell activation (3-5, 7, 9, 10). CTLA-4 ligation inhibits the T cell response and supports regulatory T cell function (12). B7-2 is expressed earlier than B7-1 following APC activation (6), and both proteins bind with higher affinity to CTLA-4 than to CD28 (10). B7-2 promotes the stabilization of CD28 in the IS, while B7-1 is primarily responsible for promoting CTLA-4 recruitment and accumulation in the IS (13). The relative participation of B7-1 and B7-2 in T cell co-stimulation can also alter the Th1/Th2 bias of the immune response (14). Both B7-1 and B7-2 serve as cellular receptors for B species adenoviruses (15).

References:

- Greenwald, R.J. *et al.* (2005) *Annu. Rev. Immunol.* **23**:515.
- Bour-Jordan, H. *et al.* (2011) *Immunol. Rev.* **241**:180.
- Freeman, G.J. *et al.* (1993) *Science* **262**:909.
- Azuma, M. *et al.* (1993) *Nature* **366**:76.
- Freeman, G.J. *et al.* (1993) *J. Exp. Med.* **178**:2185.
- Lenschow, D.J. *et al.* (1993) *Proc. Natl. Acad. Sci. USA* **90**:11054.
- Hathcock, K.S. *et al.* (1993) *Science* **262**:905.
- Seino, K. *et al.* (1995) *Int. Immunol.* **7**:1331.
- Chen, C. *et al.* (1994) *J. Immunol.* **152**:4929.
- Lanier, L.L. *et al.* (1995) *J. Immunol.* **154**:97.
- Rudd, C.E. *et al.* (2009) *Immunol. Rev.* **229**:12.
- Wing, K. *et al.* (2011) *Trends Immunol.* **32**:428.
- Pentcheva-Hoang, T. *et al.* (2004) *Immunity* **21**:401.
- Kuchroo, V.K. *et al.* (1995) *Cell* **80**:707.
- Short, J.J. *et al.* (2006) *Virus Res.* **122**:144.

PRODUCT SPECIFIC NOTICES

This product is provided under an intellectual property license from Life Technologies Corporation. The transfer of this product is conditioned on the buyer using the purchased product solely in research conducted by the buyer, excluding contract research or any fee for service research, and the buyer must not (1) use this product or its components for (a) diagnostic, therapeutic or prophylactic purposes; (b) testing, analysis or screening services, or information in return for compensation on a per-test basis; or (c) manufacturing or quality assurance or quality control, and/or (2) sell or transfer this product or its components for resale, whether or not resold for use in research. For information on purchasing a license to this product for purposes other than as described above, contact Life Technologies Corporation, 5781 Van Allen Way, Carlsbad, CA 92008 USA or outlicensing@thermofisher.com.