## SANTA CRUZ BIOTECHNOLOGY, INC.

# B7-1 (V-17): sc-1632



## BACKGROUND

T cell proliferation and lymphokine production are triggered by occupation of the TCR by antigen, followed by a costimulatory signal that is delivered by a ligand expressed on antigen presenting cells. The B7-related cell surface proteins CD80 (B7-1) and CD86 (B7-2) are expressed on antigen presenting cells, bind the homologous T cell receptors CTLA-4 (cytotoxic T lymphocyteassociated protein-4) and CD28 and trigger costimulatory signals for optimal T cell activation. CTLA-4 shares 31% overall amino acid identity with CD28 and it has been proposed that CD28 and CTLA-4 are functionally redundant. SLAM is a novel receptor on T cells that, when engaged, potentiates T cell expansion in a CD28-independent manner. B7, also designated BB1, is another ligand or counterreceptor for CD28 and CTLA-4 that is expressed on the antigen-presenting cell.

## REFERENCES

- Freeman, G.J., et al. 1991. Structure, expression, and T cell costimulatory activity of the murine homolog of the human B lymphocyte activation antigen B7. J. Exp. Med. 174: 625-631.
- Schwartz, R.H. 1992. Costimulation of T lymphocytes: the role of CD28, CTLA-4, and B7/BB1 in IL-2 production and immunotherapy. Cell 71: 1065-1068.
- Peach, R.J., et al. 1995. Both extracellular immunoglobin-like domains of CD80 contain residues critical for binding T cell surface receptors CTLA-4 and CD28. J. Biol. Chem. 270: 21181-21187.
- Fargeas, C.A., et al. 1995. Identification of residues in the V domain of CD80 (B7-1) implicated in functional interactions with CD28 and CTLA-4. J. Exp. Med. 182: 667-675.
- Gribben, J.G., et al. 1995. CTLA-4 mediates antigen-specific apoptosis of human T cells. Proc. Natl. Acad. Sci. USA 92: 811-815.
- Harlan, D.M., et al. 1995. Potential roles of the B7 and CD28 receptor families in autoimmunity and immune evasion. Clin. Immunol. Immunopath. 75: 99-111.

#### CHROMOSOMAL LOCATION

Genetic locus: Cd80 (mouse) mapping to 16 B5.

#### SOURCE

B7-1 (V-17) is an affinity purified goat polyclonal antibody raised against a peptide mapping at the N-terminus of B7-1 of mouse origin.

## PRODUCT

Each vial contains 200  $\mu g$  IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-1632 P, (100  $\mu$ g peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

## **STORAGE**

Store at 4° C, \*\*DO NOT FREEZE\*\*. Stable for one year from the date of shipment. Non-hazardous. No MSDS required.

#### APPLICATIONS

B7-1 (V-17) is recommended for detection of B7-1 of mouse and rat origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2  $\mu$ g per 100-500  $\mu$ g of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

Suitable for use as control antibody for B7-1 siRNA (m): sc-37204, B7-1 shRNA Plasmid (m): sc-37204-SH and B7-1 shRNA (m) Lentiviral Particles: sc-37204-V.

Molecular Weight of B7-1: 60 kDa.

Positive Controls: mouse PBL whole cell lysate or rat skeletal muscle tissue extract.

### **RECOMMENDED SECONDARY REAGENTS**

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use donkey anti-goat IgG-HRP: sc-2020 (dilution range: 1:2000-1:100,000) or Cruz Marker<sup>™</sup> compatible donkey anti-goat IgG-HRP: sc-2033 (dilution range: 1:2000-1:5000), Cruz Marker<sup>™</sup> Molecular Weight Standards: sc-2035, TBS Blotto A Blocking Reagent: sc-2333 and Western Blotting Luminol Reagent: sc-2048. 2) Immunoprecipitation: use Protein A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/2.0 ml). 3) Immunofluorescence: use donkey anti-goat IgG-FITC: sc-2024 (dilution range: 1:100-1:400) or donkey anti-goat IgG-TR: sc-2783 (dilution range: 1:100-1:400) with UltraCruz<sup>™</sup> Mounting Medium: sc-24941.

## DATA



B7-1 (V-17): sc-1632. Western blot analysis of B7-1 expression in rat skeletal muscle tissue extract.

#### SELECT PRODUCT CITATIONS

- Rival, C., et al. 2008. Functional and phenotypic characteristics of testicular macrophages in experimental autoimmune orchitis. J. Pathol. 215: 108-117.
- Liang, J., et al. 2008. A novel CCCH-zinc finger protein family regulates proinflammatory activation of macrophages. J. Biol. Chem. 283: 6337-6346.

#### **RESEARCH USE**

For research use only, not for use in diagnostic procedures.

#### PROTOCOLS

See our web site at www.scbt.com or our catalog for detailed protocols and support products.