

CD100 (P-17): sc-79403

BACKGROUND

Semaphorins comprise a family of phylogenetically conserved proteins containing a 500 amino acid region termed the "Sema domain" in the amino-terminus. The semaphorin family is subdivided into eight groups. CD100 (SEMA4D) is a transmembrane protein belonging to group IV of the semaphorin family. CD100 is expressed in both embryonic and adult kidney, heart, lung and neural tissues. Plexin-B1, a receptor expressed abundantly in fetal brain and kidney, binds CD100 with high affinity. CD100 is the only member of the semaphorin family that is expressed in the immune system. CD100 activates T cell proliferation and promotes B cell aggregation. CD100 regulates B cell response by negating an inhibitory signal from CD72 that normally diminishes B cell response. This signal is turned off when CD100 binds to CD72 and induces tyrosine dephosphorylation of CD72, followed by the dissociation of SHP-1 from CD72. The gene encoding human CD100 maps to chromosome 9q22.2.

REFERENCES

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2. Herold, C., et al. 1995. Activation signals are delivered through two distinct epitopes of CD100, a unique 150 kDa human lymphocyte surface structure previously defined by BB18 mAb. *Int. Immunol.* 7: 1-8.
3. Furuyama, T., et al. 1996. Identification of a novel transmembrane semaphorin expressed on lymphocytes. *J. Biol. Chem.* 271: 33376-33381.
4. Hall, K.T., et al. 1996. Human CD100, a novel leukocyte semaphorin that promotes B cell aggregation and differentiation. *Proc. Natl. Acad. Sci. USA* 93: 11780-11785.
5. Yu, H.H., et al. 1999. Semaphorin signaling: a little less perplexin. *Neuron* 22: 11-14.
6. Tamagnone, L., et al. 1999. Plexins are a large family of receptors for transmembrane, secreted, and GPI-anchored semaphorins in vertebrates. *Cell* 99: 71-80.
7. Kumanogoh, A., et al. 2000. Identification of CD72 as a lymphocyte receptor for the class IV semaphorin CD100: a novel mechanism for regulating B cell signaling. *Immunity* 13: 621-631.

CHROMOSOMAL LOCATION

Genetic locus: SEMA4D (human) mapping to 9q22.2; Sema4d (mouse) mapping to 13 A5.

SOURCE

CD100 (P-17) is an affinity purified goat polyclonal antibody raised against a peptide mapping within a C-terminal cytoplasmic domain of CD100 of human origin.

STORAGE

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

PRODUCT

Each vial contains 200 µg IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-79403 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

APPLICATIONS

CD100 (P-17) is recommended for detection of CD100 of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2 µg per 100-500 µg 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).

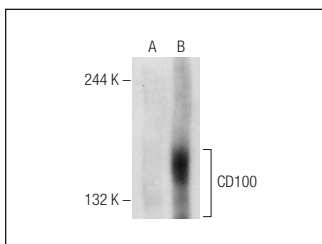
CD100 (P-17) is also recommended for detection of CD100 in additional species, including equine and porcine.

Suitable for use as control antibody for CD100 siRNA (h): sc-42817, CD100 siRNA (m): sc-42818, CD100 shRNA Plasmid (h): sc-42817-SH, CD100 shRNA Plasmid (m): sc-42818-SH, CD100 shRNA (h) Lentiviral Particles: sc-42817-V and CD100 shRNA (m) Lentiviral Particles: sc-42818-V.

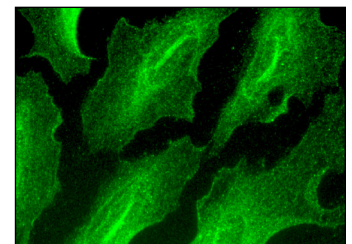
Molecular Weight of CD100: 150 kDa.

Positive Controls: CD100 (h): 293T Lysate: sc-116252, Jurkat whole cell lysate: sc-2204 or SK-N-SH cell lysate: sc-2410.

DATA



CD100 (P-17): sc-79403. Western blot analysis of CD100 expression in non-transfected: sc-117752 (A) and human CD100 transfected: sc-116252 (B) 293T whole cell lysates.



CD100 (P-17): sc-79403. Immunofluorescence staining of methanol-fixed HeLa cells showing membrane localization.

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.

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Try **CD100 (C-3): sc-390675** or **CD100 (D-5): sc-166367**, our highly recommended monoclonal alternatives to CD100 (P-17).