

CD100 (H-300): sc-20928

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 150 kDa transmembrane protein belonging to group IV of the semaphorin family. CD100 is expressed in both embryonic and adult kidney, heart, lung and neural tissues. A receptor expressed abundantly in fetal brain and kidney, plexin-B1, 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-q31.

REFERENCES

1. Bougeret, C., et al. 1992. Increased surface expression of a newly identified 150 kDa dimer early after human T lymphocyte activation. *J. Immunol.* 148: 318-323.
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. 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.

CHROMOSOMAL LOCATION

Genetic locus: SEMA4D (human) mapping to 9q22.2.

SOURCE

CD100 (H-300) is a rabbit polyclonal antibody raised against amino acids 563-862 mapping at the C-terminus of CD100 of human origin.

PRODUCT

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

STORAGE

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

RESEARCH USE

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

APPLICATIONS

CD100 (H-300) is recommended for detection of CD100 of 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).

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

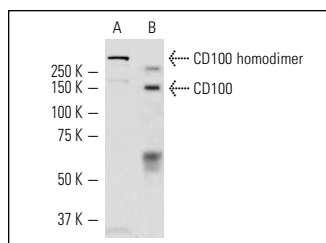
Molecular Weight of CD100: 150 kDa.

Positive Controls: WEHI-231 whole cell lysate: sc-2213 or SK-N-SH cell lysate: sc-2410.

RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use goat anti-rabbit IgG-HRP: sc-2004 (dilution range: 1:2000-1:100,000) or Cruz Marker™ compatible goat anti-rabbit IgG-HRP: sc-2030 (dilution range: 1:2000-1:5000), Cruz Marker™ 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 goat anti-rabbit IgG-FITC: sc-2012 (dilution range: 1:100-1:400) or goat anti-rabbit IgG-TR: sc-2780 (dilution range: 1:100-1:400) with UltraCruz™ Mounting Medium: sc-24941.

DATA



CD100 (H-300): sc-20928. Western blot analysis of CD100 expression in SK-N-SH (A) and WEHI-231 (B) whole cell lysates.

SELECT PRODUCT CITATIONS

1. Regev, A., et al. 2007. Semaphorin-4D (Sema-4D), the plexin-B1 ligand, is involved in mouse ovary follicular development. *Reprod. Biol. Endocrinol.* 5: 12.

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