

# CD100 (30): sc-136250

## 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 9q22.2.

## 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. Yu, H.H. and Kolodkin, A.L. 1999. Semaphorin signaling: a little less per-plexin. *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 (30) is a mouse monoclonal antibody raised against amino acids 721-861 of CD100 of human origin.

## PRODUCT

Each vial contains 50 µg IgG<sub>1</sub> in 0.5 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

## APPLICATIONS

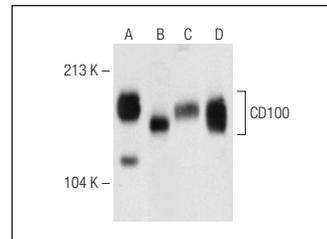
CD100 (30) is recommended for detection of CD100 of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)] and immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500).

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.

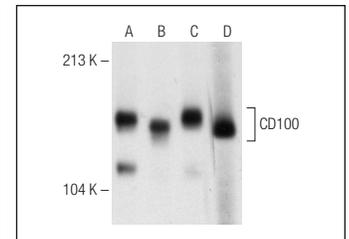
Molecular Weight of CD100: 150 kDa.

Positive Controls: Jurkat whole cell lysate: sc-2204, HL-60 whole cell lysate: sc-2209 or J774.A1 cell lysate: sc-3802.

## DATA



CD100 (30): sc-136250. Western blot analysis of CD100 expression in HL-60 (A), Jurkat (B) and human PBL (C) whole cell lysates and human kidney tissue extract (D).



CD100 (30): sc-136250. Western blot analysis of CD100 expression in J774.A1 (A), WEHI-231 (B) and WEHI-3 (C) whole cell lysates and mouse kidney tissue extract (D).

## SELECT PRODUCT CITATIONS

1. Ma, Y.X., et al. 2022. Silicified collagen scaffold induces semaphorin 3A secretion by sensory nerves to improve *in-situ* bone regeneration. *Bioact. Mater.* 9: 475-490.

## 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. Not for resale.

## PROTOCOLS

See our web site at [www.scbt.com](http://www.scbt.com) for detailed protocols and support products.