SANTA CRUZ BIOTECHNOLOGY, INC.

CD100 (148-2D12): sc-21780

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

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

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2. Herold, C., Bismuth, G., Bensussan, A. and Boumsell, L. 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.
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5. Tamagnone, L., Artigiani, S., Chen, H., He, Z., Ming, G.I., Song, H., Chedotal, A., Winberg, M.L., Goodman, C.S., Poo, M., Tessier-Lavigne, M. and Comoglio, P.M. 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; Sema4d (mouse) mapping to 13 A5.

SOURCE

CD100 (148-2D12) is a mouse monoclonal antibody raised against PHA stimulated human PBL.

RESEARCH USE

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

PRODUCT

Each vial contains 200 µg IgG_1 kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

CD100 (148-2D12) is available conjugated to either phycoerythrin (sc-21780 PE) or fluorescein (sc-21780 FITC), 200 µg/ml, for IF, IHC(P) and FCM.

APPLICATIONS

CD100 (148-2D12) 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 flow cytometry (1 µg per 1 x 10^6 cells).

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.

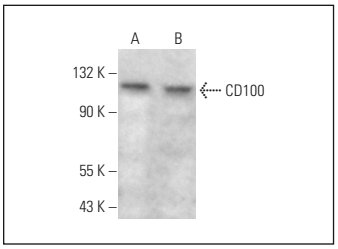
Molecular Weight of CD100: 150 kDa.

Positive Controls: Neuro-2A whole cell lysate: sc-364185, TK-1 whole cell lysate: sc-364798 or Jurkat whole cell lysate: sc-2204.

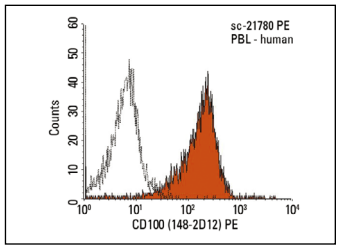
RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgGκ BP-HRP: sc-516102 or m-IgGκ BP-HRP (Cruz Marker): sc-516102-CM (dilution range: 1:1000-1:10000), Cruz Marker™ Molecular Weight Standards: sc-2035, UltraCruz® Blocking Reagent: sc-516214 and Western Blotting Luminol Reagent: sc-2048. 2) Immunoprecipitation: use Protein A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/2.0 ml).

DATA



CD100 (148-2D12): sc-21780. Western blot analysis of CD100 expression in Neuro-2A (**A**) and TK-1 (**B**) whole cell lysates.



CD100 (148-2D12) PE: sc-21780 PE. FCM analysis of human peripheral blood leukocytes. Black line histogram represents the isotype control, normal mouse IgG_1-PE: sc-2866.

STORAGE

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

PROTOCOLS

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