

Dectin-1 (15Y9): sc-73897

BACKGROUND

The human β -glucan receptor (Dectin-1) is a small type II transmembrane receptor with a single extracellular carbohydrate recognition (lectin-like) domain and immunoreceptor tyrosine activation motif in its cytoplasmic tail. Dectin-1 exists as two major isoforms (A and B) which differ by the presence of a stalk region separating the carbohydrate recognition domain from the transmembrane region. The primary function of Dectin-1 is to enable β -glucan dependent, nonopsonic recognition of zymosan and other yeast-derived particles by primary macrophages. Dectin-1 also binds T-lymphocytes at a site distinct from the β -glucan binding site, indicating its ability to recognize both endogenous and exogenous ligands. The human Dectin-1B is expressed on the surfaces of several dendritic cell subpopulations during their development from peripheral blood monocytes and is also expressed on the surface of myeloid cell populations, specifically the monocyte/macrophage and neutrophil lineages. Dectin-1 is a target for examining the immunomodulatory properties of β -glucans for therapeutic drug design.

REFERENCES

- Willment, J.A., Gordon, S. and Brown, G.D. 2001. Characterization of the human β -glucan receptor and its alternatively spliced isoforms. *J. Biol. Chem.* 276: 43818-43823.
- Brown, G.D., Taylor, P.R., Reid, D.M., Willment, J.A., Williams, D.L., Martinez-Pomares, L., Wong, S.Y. and Gordon, S. 2002. Dectin-1 is a major β -glucan receptor on macrophages. *J. Exp. Med.* 196: 407-412.
- Gordon, S. 2002. Pattern recognition receptors: doubling up for the innate immune response. *Cell* 111: 927-930.
- Grunebach, F., Weck, M.M., Reichert, J. and Brossart, P. 2002. Molecular and functional characterization of human Dectin-1. *Exp. Hematol.* 30: 1309-1315.
- Taylor, P.R., Brown, G.D., Reid, D.M., Willment, J.A., Martinez-Pomares, L., Gordon, S. and Wong, S.Y. 2002. The β -glucan receptor, Dectin-1, is predominantly expressed on the surface of cells of the monocyte/macrophage and neutrophil lineages. *J. Immunol.* 169: 3876-3882.
- ENTREZ-PROTEIN (NP_072092). World Wide Web URL: <http://www.ncbi.nlm.nih.gov/80/entrez>

CHROMOSOMAL LOCATION

Genetic locus: Clec7a (mouse) mapping to 6 F3.

SOURCE

Dectin-1 (15Y9) is a rat monoclonal antibody raised against the extracellular domain of Dectin-1 of mouse origin.

PRODUCT

Each vial contains 100 μ g IgG_{2b} in 1.0 ml of PBS with < 0.1% sodium azide and protein stabilizer.

RESEARCH USE

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

APPLICATIONS

Dectin-1 (15Y9) is recommended for detection of Dectin-1 of mouse origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000).

Suitable for use as control antibody for Dectin-1 siRNA (m): sc-63277, Dectin-1 shRNA Plasmid (m): sc-63277-SH and Dectin-1 shRNA (m) Lentiviral Particles: sc-63277-V.

Molecular Weight of human Dectin-1: 33 kDa.

Molecular Weight of mouse Dectin-1: 43 kDa.

SELECT PRODUCT CITATIONS

- Zhu, L.L., Zhao, X.Q., Jiang, C., You, Y., Chen, X.P., Jiang, Y.Y., Jia, X.M. and Lin, X. 2013. C-type lectin receptors Dectin-3 and Dectin-2 form a heterodimeric pattern-recognition receptor for host defense against fungal infection. *Immunity* 39: 324-334.
- Zhang, P.P., Xin, X.F., Xu, X.Y., Fang, L.P., Wu, J. and Shi, Y. 2017. Toll-like receptor 2 and Dectin-1 function as promising biomarker for *Aspergillus fumigatus* infection. *Exp. Ther. Med.* 14: 3836-3840.

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.