

DESCRIPTION

Source Mouse myeloma cell line, NS0-derived
Phe69-Leu244, with an N-terminal 10-His tag
Accession # Q6QLQ4

N-terminal Sequence Analysis His

Predicted Molecular Mass 21.6 kDa

SPECIFICATIONS

SDS-PAGE 27-37 kDa, reducing conditions

Activity Measured by its ability to bind biotinylated Laminarin (1, 3- β -glucan) in a functional ELISA with an estimated K_D <6 nM.

Endotoxin Level <0.01 EU per 1 μ g of the protein by the LAL method.

Purity >95%, by SDS-PAGE under reducing conditions and visualized by silver stain.

Formulation Lyophilized from a 0.2 μ m filtered solution in PBS. See Certificate of Analysis for details.

PREPARATION AND STORAGE

Reconstitution Reconstitute at 100 μ g/mL in sterile PBS.

Shipping The product is shipped at ambient temperature. Upon receipt, store it immediately at the temperature recommended below.

Stability & Storage Use a manual defrost freezer and avoid repeated freeze-thaw cycles.

- 12 months from date of receipt, -20 to -70 °C as supplied.
- 1 month, 2 to 8 °C under sterile conditions after reconstitution.
- 3 months, -20 to -70 °C under sterile conditions after reconstitution.

BACKGROUND

Dectin-1, also known as CLEC7A and the β -glucan receptor, is a 43 kDa type II transmembrane C-type lectin that functions in the innate immune response to fungal pathogens. Although Dectin-1 resembles other CLEC molecules structurally, it binds ligands in a calcium-independent manner (1, 2). Mature mouse Dectin-1 is a 244 amino acid (aa) glycoprotein that consists of a short ITAM-containing cytoplasmic tail, a transmembrane segment, and a stalk and carbohydrate recognition domain (CRD) in the extracellular domain (3). The CRD of mouse Dectin-1 shares 61%, 60%, and 87% aa sequence identity with that of bovine, human, and rat Dectin-1, respectively. It shares 25% - 34% aa sequence identity with the CRD of other subgroup members CLEC-1, CLEC-2, CLEC9A, CLEC12B, LOX-1, and M1CL. Mouse Dectin-1 is alternately spliced, generating a variant that lacks the stalk region (4). Mouse Dectin-1 is expressed on monocytes, macrophages, and neutrophils, and on some populations of dendritic cells and T cells (5). It is upregulated on macrophages by GM-CSF, IL-4, or IL-13 and downregulated by dexamethasone, IL-10, or LPS (6). The CRD selectively binds β -glucan polymers, a major component of yeast and mycobacterial cell walls (7). Yeast β -glucan is accessible to Dectin-1 only at sites of cell budding, and Dectin-1 does not recognize the filamentous form of yeast (8). Dectin-1 mediates the phagocytosis of zymosan particles and intact yeast (8 - 10). It co-localizes with TLR2 in the presence of zymosan, and the two receptors cooperate in ligand recognition and the propagation of proinflammatory signaling (9, 11 - 13). Dectin-1 interaction with the tetraspanin CD37 increases its stability on the cell membrane and inhibits ligand-induced signaling (14). Genetic knockout of Dectin-1 in mice increases their susceptibility to pathogenic infection (15, 16).

References:

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