

DESCRIPTION

Source	Human embryonic kidney cell, HEK293-derived human Dectin-1/CLEC7A protein			
	MD	Human IgG ₁ (Pro100-Lys330)	IEGR	Human Dectin-1/CLEC7A (Thr66-Met247) Accession # Q9BXN2.1
	N-terminus		C-terminus	
N-terminal Sequence Analysis	Met Asp-Pro100			
Structure / Form	Disulfide-linked homodimer			
Predicted Molecular Mass	47 kDa			

SPECIFICATIONS

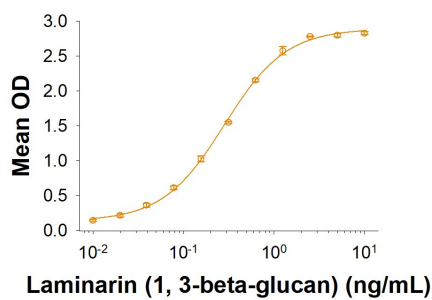
SDS-PAGE	54-64 kDa, under reducing conditions
Activity	Measured by its binding ability in a functional ELISA. When Recombinant Human Dectin-1/CLEC7A Fc Chimera (Catalog # 10364-DC) is immobilized at 0.25 µg/mL (100 µL/well), Biotinylated Laminarin (1, 3-beta-glucan) binds with an ED ₅₀ of 0.08-9.6 ng/mL.
Endotoxin Level	<0.10 EU per 1 µg of the protein by the LAL method.
Purity	>95%, by SDS-PAGE visualized with Silver Staining and quantitative densitometry by Coomassie® Blue Staining.
Formulation	Lyophilized from a 0.2 µm filtered solution in PBS. See Certificate of Analysis for details.

PREPARATION AND STORAGE

Reconstitution	Reconstitute at 500 µg/mL in PBS.
Shipping	The product is shipped at ambient temperature. Upon receipt, store it immediately at the temperature recommended below.
Stability & Storage	<p>Use a manual defrost freezer and avoid repeated freeze-thaw cycles.</p> <ul style="list-style-type: none"> • 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.

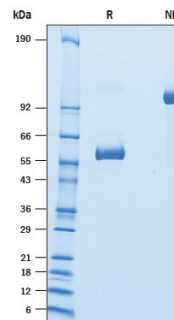
DATA

Binding Activity



When Recombinant Human Dectin-1/CLEC7A Fc Chimera (Catalog # 10364-DC) is immobilized at 0.25 µg/mL (100 µL/well), Biotinylated Laminarin (1, 3-beta-glucan) binds with an ED₅₀ of 0.08-9.6 ng/mL.

SDS-PAGE



2 µg/lane of Recombinant Human Dectin-1/CLEC7A Fc Chimera (Catalog # 10364-DC) was resolved with SDS-PAGE under reducing (R) and non-reducing (NR) conditions and visualized by Coomassie® Blue staining, showing bands at 54-64 kDa and 108-128 kDa, respectively.

BACKGROUND

Dectin-1, also known as CLEC7A and the β -glucan receptor, is a type II transmembrane C-type lectin that participates in the innate immune response to fungal pathogens. Although Dectin-1 structurally resembles other CLEC molecules, it binds its ligands in a calcium-independent manner (1, 2). Mature human Dectin-1 consists of a short N-terminal ITAM-containing cytoplasmic tail, a transmembrane segment, and a C-terminal stalk with a carbohydrate recognition domain (CRD) in the extracellular domain (ECD) (3, 4). Alternate splicing generates one major isoform expressed on the surface of monocytes, macrophages, myeloid DC, neutrophils, eosinophils, B cells, and CD4+ T cells that lacks the stalk region (3-6). The mature ECD of human Dectin-1 shares 59% and 57% amino acid (aa) sequence identity with mouse and rat Dectin-1, respectively. The CRD of Dectin-1 selectively binds β -glucan polymers, a major component of yeast and mycobacterial cell walls (5-7). Yeast β -glucan is accessible to Dectin-1 only during the process of cell budding. Dectin-1 does not recognize the filamentous form of yeast (8). Dectin-1 mediates the phagocytosis of zymosan particles and intact yeast (8-10). In the membrane, Dectin-1 colocalizes 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 also interacts with tetraspanin CD37. This increases its stability on the cell membrane and inhibits ligand-induced signaling (14). Dectin-1 knockout mice show increased susceptibility to pathogenic infection (15, 16).

References:

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