Recombinant Human MBL

Catalog Number: 9086-MB

DESCRIPTION

Source	Human embryonic kidney cell, HEK293-derived Glu21-Ile248 Accession # CAB56121
N-terminal Sequence Analysis	Glu21
Predicted Molecular Mass	24 kDa

SPECIFICATIONS

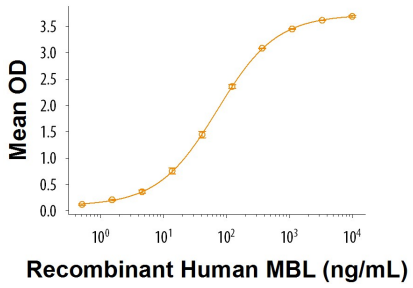
SDS-PAGE	31-36 kDa, reducing conditions
Activity	Measured by its binding ability in a functional ELISA. When Mannan is immobilized at 0.1 µg/mL (100 µL/well), the concentration of Recombinant Human MBL that produces 50% of the optimal binding response is approximately 25-150 ng/mL.
Endotoxin Level	<0.10 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 and Trehalose. 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	**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.

DATA

Bioactivity



When Mannan is coated at 0.1 µg/mL (100 µL/well), Recombinant Human MBL (Catalog # 9086-MB) binds with a typical ED_{50} of 25-150 ng/mL.

BACKGROUND

Human mannose/mannan-binding lectin (MBL) is a 25-30 kDa secreted glycoprotein in the collectin family of pattern-recognition molecules (1, 2). Mature human MBL contains a cysteine-rich region, a collagen-like segment, and a C-type lectin domain that binds to neutral bacterial carbohydrates (3). Human MBL shares 61% amino acid sequence identity with mouse and rat MBL and carries variable post-translation modifications including O-glycosylation and proline and lysine hydroxylation (4). Its collagen-like region mediates MBL association into disulfide-stabilized trimers which further associate into complexes containing three or four copies of the basic trimer (4, 5). MBL is secreted by hepatocytes and opsonizes bacteria through interactions with microbial carbohydrates (5). Tetrameric complexes of MBL show greater carbohydrate binding capacity compared to the trimers (5). MBL multimers can associate with the serine proteases MASP-1, -2, and -3 and promote their cleavage of Complement Component C3 (5-8). Proteolytic cleavage of C3 triggers activation of the complement system and formation of the membrane attack complex, leading to destruction of opsonized bacteria (2). In addition, MBL binds to the scavenger receptor CD91 which mediates the clearance of apoptotic material (9).

References:

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