Recombinant Human MDGA1

Catalog Number: 5055-MD

DESCRIPTION

Source	Mouse myeloma cell line, NS0-derived Gln19-Gly931, with a C-terminal 6-His tag Accession # Q8NFP4
N-terminal Sequence Analysis	No results obtained: Gln19 predicted
Predicted Molecular Mass	101.9 kDa

SPECIFICATIONS

SDS-PAGE	120-140 kDa, under reducing conditions
Activity	Measured by its ability to enhance neurite outgrowth of E16-E18 rat embryonic cortical neurons. Able to significantly enhance neurite outgrowth when immobilized at 7.5-30 µg/mL on a nitrocellulose-coated microplate.
Endotoxin Level	<0.10 EU per 1 µg 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 µm filtered solution in PBS. See Certificate of Analysis for details.

PREPARATION AND STORAGE

Reconstitution	Reconstitute at 500 µg/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

MDGA1 (MAM domain containing glycosylphosphatidylinositol anchor 1) is a 135-140 kDa glycoprotein within the IgCAM superfamily of adhesion molecules (1-3). MDGA1 is thought to mediate neuronal migration, neurite outgrowth, and cell-cell adhesion within the central and peripheral nervous system (1, 4-8). Human MDGA1 precursor is a 955 amino acid (aa) protein that produces a 914 aa mature protein with six Ig-like domains, a fibronectin type III domain (aa 640-739), a MAM domain (aa 751-918), and a GPI anchor (aa 932) (1-3). Mature human MDGA1 shares 95%, 96%, and 98% aa sequence identity with mature mouse, rat, and canine MDGA1, respectively. Potential human variants of 973, 904 and 587 aa contain a 48 aa substitution for aa 936-955, a 58 aa substitution for aa 847-955, and a 51 aa substitution for aa 537-955, respectively. Human MDGA1 also shares 54% aa sequence identity with human MDGA2, and may also share some functional redundancy (1, 4). MDGA1 is mainly expressed on restricted populations of neurons in the central and peripheral nervous system, such as embryonic neurons destined for cortical layers 2/3, migrating basilar pontine neurons and D1 interneurons of the spinal cord (1, 5-7). Deletion or down-regulation of mouse MDGA1 slows radial migration of neurons, indicating a role for MDGA1 in radial migration of cortical neurons (4, 5). MAM and Ig-like domains are involved in heterophilic and homophilic adhesion (7, 8). MDGA1 expression is also reported on primary cells and cell lines from leukemias, lymphomas, and tumors of the lung, colon, uterus, stomach and breast (3).

References:

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