Recombinant Human MAGP-2/MFAP5

Catalog Number: 4914-MG

DESCRIPTION

Source	Mouse myeloma cell line, NS0-derived human MAGP-2/MFAP5 protein Ile22-Leu173 with a C-terminal 6-His tag Accession # Q13361
N-terminal Sequence Analysis	Ile22 & Ser154
Structure / Form	Monomer
Predicted Molecular Mass	18.1 kDa

SPECIFICATIONS

SDS-PAGE	25-35 kDa, reducing conditions
Activity	Measured by the ability of the immobilized protein to support the adhesion of BUD-8 human fibroblast cells at 10 µg/mL. Optimal dilutions should be determined by each laboratory for each application.
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 400 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.

BACKGROUND

MAGP-2 (Microfibril-associated glycoprotein 2), also called MFAP5 (microfibril associated protein 5) is a secreted, cell-associated 25 kDa mammalian member of the MFAP family of proteins (1). Human MAGP-2 cDNA encodes 173 amino acids (aa) including a 21 aa signal sequence, an RDG motif (aa 30-32; absent in MAGP-1) and a central cysteine-rich binding domain (aa 84-140) (1-3). One potential splice variant shows a 10 aa deletion between aa 73-82 that includes the only potential glycosylation site (4). Mature human MAGP-2 shares 80%, 82%, 82%, 84% and 85% aa identity with mouse, rat, bovine, porcine and canine MAGP-2, respectively. Both MAGP-1 and MAGP-2 bind and covalently crosslink fibrillins 1 and 2 through the binding domain, but MAGP-2 has more limited distribution and binds a more limited set of extracellular matrix proteins (1-3). However, the MAGP-2 RGD motif binds to the integrin αvβ3, allowing cell attachment to microfibrils (5). MAGP-2 is thought to facilitate microfibril assembly and induce elastin fiber formation (1-3, 6). Through its binding to EGF repeats, MAGP-2 mediates the metalloproteinase-dependent release of Jagged1 and the metalloproteinase-independent release of Notch extracellular domains (7, 8). In endothelial cells, MAGP-2 promotes angiogenic sprouting through inhibiting Notch signaling, binding integrin αvβ3 (which then enhances VEGF signaling), and/or enhancing endothelial cell response to FGF basic and EGF (9, 10). In ovarian cancer, MAGP-2 expression is associated with cancer cell survival, increased microvessel density, and poor prognosis (11). Skin MAGP-2 expression is increased in human scleroderma and the tight skin (TSK) mouse; MAGP-2 may contribute to abnormal collagen accumulation in these conditions by increasing the half-life of type I collagen (12, 13). Fibrillin-1 mutations within the region that binds MAGP-2 can be found in Marfan syndrome (6).

References:

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Global | bio-techne.com info@bio-techne.com techsupport@bio-techne.com TEL: 1.612.379.2956
USA | TEL: 800.343.7475 Canada | TEL: 855.668.8722 Europe | Middle East | Africa TEL: +44.0.1235.529449
China | info.cn@bio-techne.com TEL: 400.821.3475