Recombinant Mouse COMP/Thrombospondin-5

Catalog Number: 8958-CP

DESCRIPTION

Source	Mouse myeloma cell line, NS0-derived Gln20-Val755, with a C-terminal 6-His tag Accession # Q9R0G6
N-terminal Sequence Analysis	No results obtained. Gln20 inferred from enzymatic pyroglutamate treatment revealing Gly21
Structure / Form	Disulfide-linked pentamer
Predicted Molecular Mass	81 kDa

SPECIFICATIONS

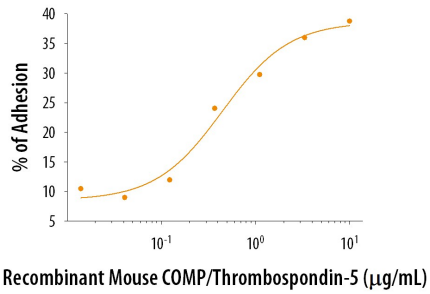
SDS-PAGE	85-115 kDa, reducing conditions
Activity	Measured by its ability to induce adhesion of ATDC5 mouse chondrogenic cells. The ED_{50} for this effect is typically 0.15-0.9 µg/mL.
Endotoxin Level	<0.10 EU per 1 µg of the protein by the LAL method.
Purity	>90%, by SDS-PAGE visualized with Silver Staining and quantitative densitometry by Coomassie® Blue Staining.
Formulation	Lyophilized from a 0.2 µm filtered solution in Tris and NaCl with Trehalose See Certificate of Analysis for details.

PREPARATION AND STORAGE

Reconstitution	Reconstitute at 500 µg/mL in PBS.
Shipping	The product is shipped with polar packs. 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

Binding Activity



Recombinant Mouse COMP/Thrombospondin-5 (Catalog # 8958-CP) induces adhesion of ATDC5 mouse chondrogenic cells. The ED_{50} for this effect is typically 0.15-0.9 µg/mL.

bio-techne
bio-techne.com
Global info@bio-techne.com techsupport@bio-techne.com
North America TEL 800 343 7475 Europe | Middle East | Africa TEL +44 (0)1235 529449
China info.cn@bio-techne.com TEL +86 (21) 52380373
Rest of World bio-techne.com/find-us/distributors TEL +1 612 379 2956

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BACKGROUND

Cartilage Oligomeric Matrix Protein (COMP), also known as Thrombospondin-5, is a 110 kDa multidomain calcium binding protein that associates with other extracellular matrix molecules. Thrombospondin-1 and -2 constitute subgroup A and form homotrimers, whereas Thrombospondin-3, -4, and COMP constitute subgroup B and form homopentamers (1-4). Mouse COMP contains a non-collagenous coiled-coil domain, four EGF-like repeats, eight TSP type-3 repeats, and a globular TSP C-terminal domain (5). It shares 92% and 98% aa sequence identity with human and rat COMP, respectively. The coiled coil domain mediates the association of COMP into disulfide-linked homopentamers with a central hub and peripheral globular domains connected by flexible strands (6, 7). An axial pore is formed by the coiled coil assembly and binds vitamin D_3 which is involved in bone and cartilage metabolism (8). An RGD sequence in the third TSP type-3 repeat mediates chondrocyte attachment *via* Integrin α5β1, although when reduced and in the absence of calcium, attachment is mediated *via* Integrin αVβ3 (9). COMP is up-regulated in rheumatoid arthritis and osteoarthritis, hepatocellular carcinomas, chronic pancreatitis, and pancreatic carcinomas (10-12). Elevated circulating COMP levels are used as a biomarker for early onset of some skeletal disorders (10). Several mutations are associated with skeletal dysplasias, and the most common, a point mutation in the third TSP type-3 repeat, results in diminished calcium binding ability (13, 14).

References:

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Global info@bio-techne.com techsupport@bio-techne.com
North America TEL 800 343 7475 Europe | Middle East | Africa TEL +44 (0)1235 529449
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