Recombinant Human CTGF/CCN2

Catalog Number: 9190-CC

DESCRIPTION

Source	Mouse myeloma cell line, NS0-derived Gln27-Ala349 Accession # Q5M8T4
N-terminal Sequence Analysis	No results obtained. Gln27 inferred from enzymatic pyroglutamate treatment revealing Asn28
Predicted Molecular Mass	35 kDa

SPECIFICATIONS

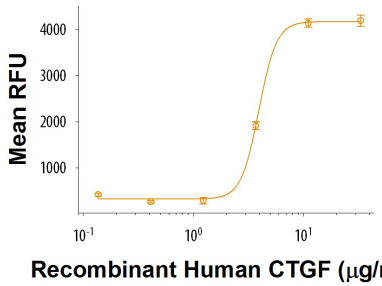
SDS-PAGE	35-45 kDa, reducing conditions
Activity	Measured by its ability to mediate Balb/3T3 mouse embryonic fibroblast cell adhesion. Ball, D.K. *et al.* (2003) Reproduction **125**:271. The ED_{50} for this effect is1.5-7.5 µg/mL. Also measured by its ability to induce C2C12 mouse myoblast cells proliferation.
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	**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



Immobilized Recombinant Human CTGF (Catalog # 9190-CC) supports the adhesion of Balb/3T3 mouse embryonic fibroblast cells. The ED_{50} for this effect is 1.5-7.5 µg/mL.

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BACKGROUND

Connective Tissue Growth Factor (CTGF), also known as CCN2, is a 36-38 kDa member of the CCN (CYR61/CTGF/NOV) family of secreted matricellular proteins (1). Like other CCN proteins, mature human CTGF consists of IGF-binding protein domain, a vWF-C domain, a TSP-1 domain, and a cysteine knot heparin-binding domain (2). Human CTGF shares 94% amino acid (aa) sequence identity with mouse and rat CTGF. Alternative splicing generates an additional isoform with a 27 aa deletion within the TSP-1 domain. CTGF promotes cell adhesion through interactions with a range of cell surface molecules including heparan sulfate proteoglycans (HSPG), LRPAP, and Integrins αM, αVβ3, α6β1, αIIbβ3 (3-7). It also binds to and regulates signaling through the Wnt receptors LRP6 and Frizzled-8 and the NGF receptors TrkA and NGF R (8, 9). In addition, CTGF binds directly to BMP-4, TGF-β1, TGF-β2, and VEGF 165 (10, 11). It blocks BMP-4 and VEGF induced responses but enhances TGF-β induced responses (10-13). Within VEGF complexes, CTGF can be degraded by a variety of proteases, resulting in restoration of angiogenic activity (11). CTGF promotes fibroblast differentiation from mesenchymal stem cells and their production of type I Collagen and Tenascin C (5, 14). It promotes chondrocyte proliferation and cartilage matrix synthesis (15-17). CTGF is expressed in vascular mural and endothelial cells (EC) during development and promotes pericyte-EC association and angiogenesis (2, 17, 18, 19). It is expressed in the cerebral cortex and olfactory bulb and plays an important role in nervous system development (8, 12).

References:

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