

**DESCRIPTION**

**Source** Human embryonic kidney cell, HEK293-derived  
Gln25-Ala347  
Accession # Q9R1E9

**N-terminal Sequence Analysis** No results obtained. Gln25 inferred from enzymatic pyroglutamate treatment revealing Asp26

**Predicted Molecular Mass** 35 kDa

**SPECIFICATIONS**

**SDS-PAGE** 35-41 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<sub>50</sub> for this effect is 1-5 µg/mL

**Endotoxin Level** <0.10 EU per 1 µg of the protein by the LAL method.

**Purity** >85%, 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 NaCl. See Certificate of Analysis for details.

**PREPARATION AND STORAGE**

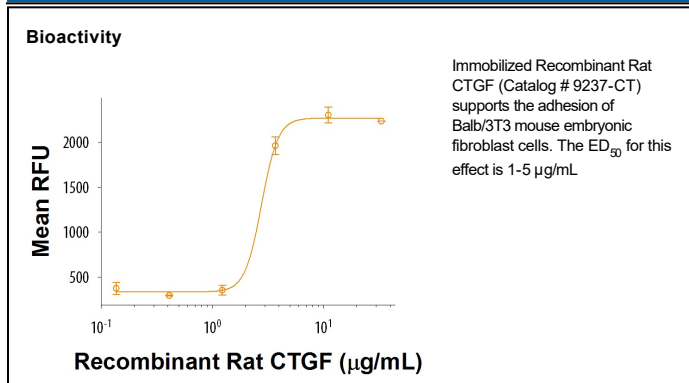
**Reconstitution** Reconstitute at 500 µg/mL in water.

**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**



**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). Rat CTGF shares 94% and 99% amino acid (aa) sequence identity with human and mouse CTGF, respectively. CTGF promotes cell adhesion through interactions with a range of cell surface molecules including heparan sulfate proteoglycans (HSPG), LRPAP, and Integrins  $\alpha$ M,  $\alpha$ V $\beta$ 3,  $\alpha$ 6 $\beta$ 1,  $\alpha$ 1b $\beta$ 3 (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- $\beta$ 1, TGF- $\beta$ 2, and VEGF 165 (10, 11). It blocks BMP-4 and VEGF induced responses but enhances TGF- $\beta$  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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