

## Background

Cyr61, also known as CCN1, is a 40 - 45 kDa matricellular glycoprotein that plays an important role in cellular adhesion and migration (1). Cyr61 consists of an IGFBP domain, a VWF type C domain, a TSP type I domain, and a cysteine knot domain (2). Mature human Cyr61 shares 93% amino acid sequence identity with mouse and rat Cyr61. It is widely expressed during development and in adult tissues (2, 3). Cyr61 associates with the extracellular matrix (ECM) and with many cell surface molecules including Integrins  $\alpha$ V $\beta$ 3,  $\alpha$ V $\beta$ 5,  $\alpha$ M $\beta$ 2, and  $\alpha$ 6 $\beta$ 1, Syndecan-4, and heparan sulfate proteoglycans (1, 3). Cyr61 mediates the adhesion and migration of multiple cell types and also promotes vascular endothelial cell tubule formation (4 - 6). Plasmin cleavage of ECM-bound Cyr61 releases a 28 kDa N-terminal fragment which retains the ability to promote endothelial cell migration (7). Cyr61 exhibits both tumorigenic and tumor suppressor properties. It is up-regulated and promotes tumorigenesis, angiogenesis, and metastasis in breast, renal, gastric, squamous cell, and colorectal carcinomas as well as in glioma (8 - 12). In contrast, when down-regulated, it suppresses tumor growth in endometrial, hepatic, and non-small cell lung cancers (8, 13, 14). Cyr61 is also up-regulated in injured skin and bone where it induces the expression of growth factors, cytokines, proteases, and integrins involved in wound repair (15, 16).

## References:

1. Chen, Y. and X.Y. Du (2007) *J. Cell. Biochem.* **100**:1337.
2. Jay, P. *et al.* (1997) *Oncogene* **14**:1753.
3. Fang, P. *et al.* (2008) *Int. J. Biochem. Cell Biol.* **40**:98.
4. Chen, N. *et al.* (2000) *J. Biol. Chem.* **275**:24953.
5. Leu, S.-J. *et al.* (2002) *J. Biol. Chem.* **277**:46248.
6. Schutze, N. *et al.* (2007) *BMC Cell Biol.* **8**:45.
7. Pendurthi, U.R. *et al.* (2005) *Cancer Res.* **65**:9705.
8. O'Kelly, J. *et al.* (2008) *Int. J. Oncol.* **33**:59.
9. Chintalapudi, M.R. *et al.* (2008) *Carcinogenesis* **29**:696.
10. Xie, D. *et al.* (2004) *Cancer Res.* **64**:1987.
11. Lin, M.-T. *et al.* (2007) *J. Biol. Chem.* **282**:34594.
12. Monnier, Y. *et al.* (2008) *Cancer Res.* **68**:7323.
13. Tong, X. *et al.* (2001) *J. Biol. Chem.* **276**:47709.
14. Chien, W. *et al.* (2004) *J. Biol. Chem.* **279**:53087.
15. Hadjiargyrou, M. *et al.* (2000) *J. Bone Miner. Res.* **15**:1014.
16. Chen, C.-C. *et al.* (2001) *J. Biol. Chem.* **276**:47329.

## Description

<b>Source</b>	Chinese Hamster Ovary cell line, CHO-derived		
	Human Cyr61 (Ala22 - Asp381) Accession # O00622	IEGRMD	Human IgG <sub>1</sub> (Pro100 - Lys330)
	N-terminus		C-terminus
<b>N-terminal Sequence Analysis</b>	Ala22		
<b>Structure / Form</b>	Disulfide-linked homodimer		
<b>Predicted Molecular Mass</b>	66.3 kDa		

## Specifications

<b>SDS-PAGE</b>	70 - 75 kDa, reducing conditions
<b>Activity</b>	Measured by its ability to mediate Balb/3T3 mouse embryonic fibroblast cell adhesion. Ball, D.K. <i>et al.</i> (2003) <i>Reproduction</i> <b>125</b> :271. Recombinant Human Cyr61/CCN1 Fc Chimera immobilized at 1.5 $\mu$ g/mL, 100 $\mu$ L/well, will mediate > 25% BALB/3T3 cell adhesion (3 x 10 <sup>4</sup> cell/well added).
<b>Endotoxin Level</b>	<1.0 EU per 1 $\mu$ g of the protein by the LAL method.
<b>Purity</b>	>90%, by SDS-PAGE under reducing conditions and visualized by silver stain.
<b>Formulation</b>	Lyophilized from a 0.2 $\mu$ m filtered solution in PBS and NaCl. See Certificate of Analysis for details.

## Preparation and Storage

<b>Reconstitution</b>	Reconstitute at 250 $\mu$ g/mL in sterile PBS.
<b>Shipping</b>	The product is shipped at ambient temperature. Upon receipt, store it immediately at the temperature recommended below.
<b>Stability &amp; Storage</b>	<b>Use a manual defrost freezer and avoid repeated freeze-thaw cycles.</b> <ul style="list-style-type: none"> <li>● 12 months from date of receipt, -20 to -70 °C as supplied.</li> <li>● 3 months, -20 to -70 °C under sterile conditions after reconstitution.</li> </ul>

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FOR RESEARCH USE ONLY  
NOT FOR USE IN HUMANS