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PRODUCT INFORMATION



CCN3 (human, recombinant)

Item No. 41888

Overview and Properties

Synonyms: Cellular Communication Network Factor 3, IBP-9, IGFBP-9, IGFBP9, IGF-binding Protein 9, Insulin-like Growth Factor-binding Protein 9, NOV

Source: Active recombinant human C-terminal His-tagged CCN3 expressed in insect cells

Amino Acids: 1-357

Uniprot No.: P48745

Molecular Weight: 37 kDa

Storage: -80°C (as supplied)

Stability: ≥1 year

Purity: ≥94% estimated by SDS-PAGE

Supplied in: Lyophilized from sterile 50 mM Tris, pH 7.4, with 100 mM sodium chloride, 0.5 mM phenylmethylsulfonyl fluoride, 10 mM imidazole, and 10% glycerol

Endotoxin Testing: < 1.0 EU/μg, determined by the LAL endotoxin assay

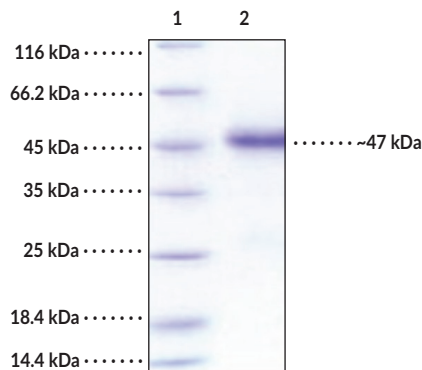
Protein Concentration: *batch specific* mg/ml

Activity: *batch specific* U/ml

Specific Activity: *batch specific* U/mg

Information represents the product specifications. Batch specific analytical results are provided on each certificate of analysis.

Image



Lane 1: MW Markers

Lane 2: CCN3 (human, recombinant)

SDS-PAGE Analysis of CCN3 (human, recombinant). This protein has a calculated molecular weight of 37 kDa. It has an apparent molecular weight of approximately 47 kDa by SDS-PAGE under reducing conditions due to glycosylation.

WARNING
THIS PRODUCT IS FOR RESEARCH ONLY - NOT FOR HUMAN OR VETERINARY DIAGNOSTIC OR THERAPEUTIC USE.

SAFETY DATA
This material should be considered hazardous until further information becomes available. Do not ingest, inhale, get in eyes, on skin, or on clothing. Wash thoroughly after handling. Before use, the user must review the [complete](#) Safety Data Sheet, which has been sent via email to your institution.

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PRODUCT INFORMATION



Description

Cellular communication network factor 3 (CCN3) is a growth factor and member of the CCN protein family with roles in stem cell regulation, hematopoiesis, and the regulation of bone growth, as well as cell growth, differentiation, and migration.^{1,2} It is a secreted protein that is associated with the extracellular matrix (ECM) and is composed of a signal peptide linked to four structural domains: an insulin-like growth factor binding protein domain (IGFBP), a von Willebrand type C repeat (VWC), and a thrombospondin type I domain (TSP-1), all associated with protein binding, and a cysteine knot carboxyl terminal that promotes oligomerization. CCN3 is present in various stem cell lineages, including chondrogenic, osteogenic, and hematopoietic lineages, and acts through the core stem cell signaling pathways mediated by Notch and bone morphogenetic protein (BMP).^{1,3} *Ccn3* expression is upregulated during early phase bone regeneration, and *Ccn3*^{-/-} mice exhibit accelerated bone regeneration compared to wild-type mice, indicating *Ccn3* is a negative regulator of this process.³ However, *Ccn3* expression increases in *Kiss1* neurons in the arcuate nucleus (ARC^{Kiss1}) in female mice during lactation, and reduction of *Ccn3* expression in ARC^{Kiss1} induces bone loss in female lactating mice fed a low-calcium diet.⁴ Cayman's CCN3 (human, recombinant) protein can be used for binding assays. This protein consists of 337 amino acids, has a calculated molecular weight of 37 kDa, and a predicted N-terminus of Thr32 after signal peptide cleavage. By SDS-PAGE under reducing conditions, the apparent molecular mass of the protein is 47 kDa due to glycosylation.

References

1. McCallum, L. and Irvine, A.E. CCN3 - a key regulator of the hematopoietic compartment. *Blood Rev.* **23**(2), 79-85 (2009).
2. Peng, L., Wei, Y., Shao, Y., *et al.* The emerging roles of CCN3 protein in immune-related diseases. *Mediators Inflamm.* **2021**, 5576059 (2021).
3. Matsushita, Y., Sakamoto, K., Tamamura, Y., *et al.* CCN3 protein participates in bone regeneration as an inhibitory factor. *J. Biol. Chem.* **288**(27), 19973-19985 (2013).
4. Babey, M.E., Krause, W.C., Chen, K., *et al.* A maternal brain hormone that builds bone. *Nature* (2024).

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