

# Recombinant Rat CXCL1/GRO-alpha Protein

Catalog No.: RP01917 **Recombinant**

## Sequence Information

Species	Gene ID	Swiss Prot
Rat	81503	P14095

### Tags

C-Avi-His

### Synonyms

Gro1; CINC-1; rRtGRO- $\alpha$ /CXCL1; Growth-regulated alpha protein; C-X-C motif chemokine 1; CINC-1

## Product Information

Source	Purification
HEK293 cells	

### Endotoxin

<0.1EU/ $\mu$ g of the protein by LAL method.

### Formulation

Lyophilized from a 0.22  $\mu$ m filtered solution of PBS, pH 7.4.

### Reconstitution

Centrifuge the vial before opening. Reconstitute to a concentration of 0.1-0.5 mg/mL in sterile distilled water. Avoid vortex or vigorously pipetting the protein. For long term storage, it is recommended to add a carrier protein or stabilizer (e.g. 0.1% BSA, 5% HSA, 10% FBS or 5% Trehalose), and aliquot the reconstituted protein solution to minimize free-thaw cycles.

## Background

CXCL1, also known as KC, GRO  $\alpha$ , and CINC-1, is an approximately 8 kDa proinflammatory chemokine that plays a key role in neutrophil migration and activation. Mature human CXCL1 shares 64% and 67% aa sequence identity with mouse and rat CXCL1, respectively. It is produced by many cell types in inflammatory sites and during chronic inflammatory diseases. CXCL1 can associate into bioactive dimers and primarily signals through CXCR2/IL-8 RB but can also bind with lower affinity to CXCR2/IL-8 RA. It induces neutrophil migration, extravasation, respiratory burst, and degranulation and also induces T cells to produce proinflammatory IL-17. CXCL1 additionally binds to Syndecan-1 on epithelial cells which acts as a sink for CXCL1 activity until Syndecan-1 cleavage by MMP-7. CXCL1 is up-regulated in spinal cord astrocytes by inflammatory stimuli or tumor cell injection, and it exacerbates pain sensation by potentiating excitatory NMDA neurotransmission. In the circulatory system, CXCL1 interacts with CXCR2 on endothelial cells to promote lymphatic tube formation and angiogenesis. It promotes the hypertrophic differentiation of chondrocytes resulting in cartilage matrix deposition, calcification, and remodeling. It interacts with both CXCR1 and CXCR2 on adipose stromal cells and promotes their recruitment to prostate tumors in obese patients. It also binds CXCR2 on ovarian cancer cells, leading to cleavage of cell surface HB-EGF, transactivation of EGF R, and cell proliferation.

## Basic Information

### Description

Recombinant Rat CXCL1/GRO-alpha Protein is produced by HEK293 cells expression system. The target protein is expressed with sequence (Gly24-Lys96) of Rat CXCL1/GRO-alpha (Accession #NP\_110472.1) fused with a Avi-His tag at the C-terminus.

### Bio-Activity

### Storage

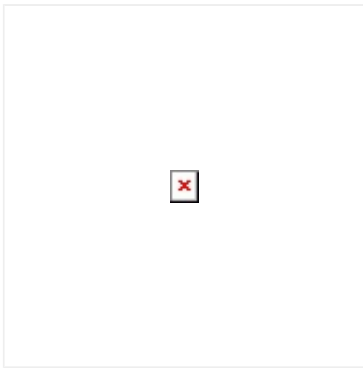
Store the lyophilized protein at -20°C to -80°C for long term. After reconstitution, the protein solution is stable at -20°C for 3 months, at 2-8°C for up to 1 week. Avoid repeated freeze/thaw cycles.

## Contact

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## Validation Data

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Recombinant Rat CXCL1/GRO-alpha Protein was determined by SDS-PAGE with Coomassie Blue, showing a band at 10-15 KD.