Cytokines

Human Recombinant GRO-alpha (CXCL1)

Growth-regulated oncogene alpha

Catalog #	78063	5 µg
	78063.1	25 µg

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Product Description

GRO (growth-regulated oncogene)-alpha or CXCL1 is a member of the CXC family, which plays an integral role in recruitment and activation of neutrophils in response to tissue injury and microbial infection. GRO-alpha was initially identified by its growth stimulatory activity on malignant melanoma cells (Anisowicz et al.; Bechara et al.). GRO-alpha is closely related to GRO-beta (CXCL2), GRO-gamma (CXCL3), and interleukin 8 (CXCL8). Receptor-binding studies have demonstrated that GRO-alpha, -beta, and -gamma signal mainly through G protein-coupled receptor CXCR2 (Ahuja & Murphy). GRO-alpha is expressed in epithelial cells, monocytes, fibroblasts, and melanocytes, and is further induced during inflammatory, epithelialization, and angiogenic processes, such as during healing of human burn wounds (Zaja-Milatovic & Richmond). GRO-alpha, along with CXCL8, has been found to be critical for neutrophil mobilization and degranulation, as well as for vascular permeabilization and angiogenesis (Rudack et al.). GRO-alpha also stimulates mitogenesis in certain human melanoma cells (Unemori et al.).

Product Information

Alternative Names:	GRO-1, Growth related oncogene alpha, Melanoma growth stimulating activity alpha, MGSA-a, MGSA-alpha, NAP-3, Neutrophil activating protein 3
Accession Number:	P09341
Amino Acid Sequence:	ASVATELRCQ CLQTLQGIHP KNIQSVNVKS PGPHCAQTEV IATLKNGRKA CLNPASPIVK KIIEKMLNSD KSN
Predicted Molecular Mass:	7.8 kDa
Species:	Human
Cross Reactivity:	Mouse, Rat
Formulation:	Lyophilized after dialysis against phosphate-buffered saline.
Source:	E. coli

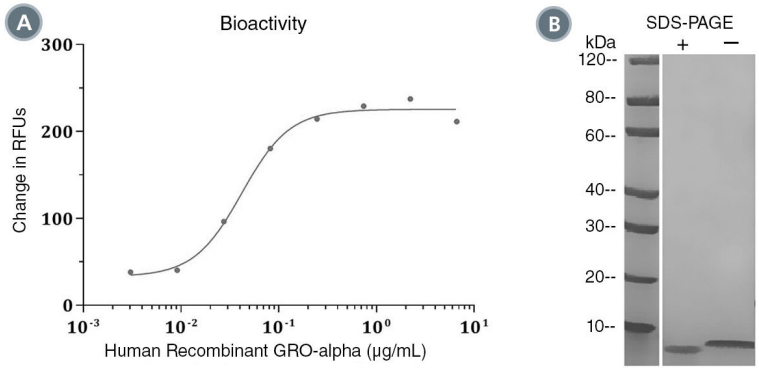
Specifications

Activity:	The specific activity is ≥ 1 x 10^4 units/mg (EC50 ≤ 0.1 µg/mL) as determined by Ca2+ mobilization assay in CHO-K1/Gα15/hCXCR2 cells (human Gα15 and human CXCR2 stably expressed in CHO-K1 cells).
Purity:	≥ 95%
Endotoxin Level:	Measured by kinetic Limulus amebocyte lysate (LAL) analysis and is ≤ 0.2 EU/µg protein.

Preparation and Storage

Storage:	Store at -80°C.
Stability:	Stable as supplied for 12 months from date of receipt.
Preparation:	Centrifuge vial before opening. Reconstitute the product in sterile water to at least 0.1 mg/mL by pipetting the solution down the sides of the vial. Do not vortex. As a general guide, do not store at 2 - 8°C for more than 1 week or at -20°C for more than 3 months. Avoid repeated freeze-thaw cycles.

Data



(A) The biological activity of Human Recombinant GRO-alpha (CXCL1) was tested by its ability to mobilize Ca2+ in CHO-K1/Gα15/hCXCR2 cells (human Gα15 and human CXCR2 stably expressed in CHO-K1 cells). Ca2+ mobilization was measured using a fluorometric assay method. The EC50 is defined as the effective concentration of the growth factor at which Ca2+ mobilization is at 50% of maximum. The EC50 in the above example is less than 0.1 µg/mL.
(B) 2 µg of Human Recombinant GRO-alpha (CXCL1) was resolved with SDS-PAGE under reducing (+) and non-reducing (-) conditions and visualized by Coomassie Blue staining. Human Recombinant GRO-alpha (CXCL1) has a predicted molecular mass of 7.8 kDa.

Related Products

For a complete list of cytokines, as well as related products available from STEMCELL Technologies, visit www.stemcell.com/cytokines or contact us at techsupport@stemcell.com.

References

Ahuja SK & Murphy PM. (1996) The CXC chemokines growth-regulated oncogene (GRO) alpha, GRObeta, GROgamma, neutrophil-activating peptide-2, and epithelial cell-derived neutrophil-activating peptide-78 are potent agonists for the type B, but not the type A, human interleukin-8 receptor. J Biol Chem 271(34): 20545–50.
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