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 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) and 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, for example during the wound healing process 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 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

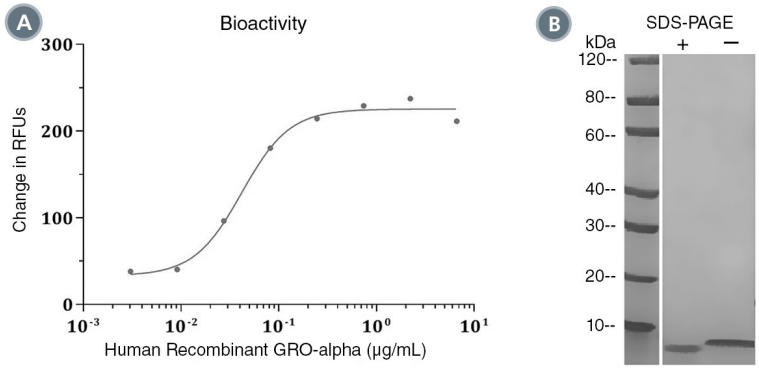
Specifications

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. Resuspend the product in sterile water or phosphate-buffered saline to at least 0.1 mg/mL by pipetting the solution down the sides of the vial. Do not vortex. Store at 2 - 8°C for up to 1 week or at -20°C to -80°C for up to 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 example above 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, please visit our website at 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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