

GMP SCF Protein, Human (HEK293, His)

Cat. No.:	HY-P70757G
Synonyms:	Kit Ligand; MGF; SCF; c-Kit ligand; KITLG; sKITLG
Species:	Human
Source:	HEK293
Accession:	P21583 (E26-H214)
Gene ID:	4254
Molecular Weight:	30-50 kDa

PROPERTIES

AA Sequence	<pre> E G I C R N R V T N N V K D V T K L V A N L P K D Y M I T L K Y V P G M D V L P S H C W I S E M V V Q L S D S L T D L L D K F S N I S E G L S N Y S I I D K L V N I V D D L V E C V K E N S S K D L K K S F K S P E P R L F T P E E F F R I F N R S I D A F K D F V V A S E T S D C V V S S T L S P E K D S R V S V T K P F M L P P V A A S S L R N D S S S S N R K A K N P P G D S S L H </pre>
Biological Activity	Measured in a cell proliferation assay using TF-1 human erythroleukemic. The specific activity is $> 5 \times 10^4$ U/mg.
Appearance	Lyophilized powder.
Formulation	Lyophilized from a 0.2 μ m filtered solution of 20 mM PB, 150 mM NaCl, pH 7.4.
Endotoxin Level	<0.1 EU/ μ g, determined by LAL method.
Reconstitution	It is not recommended to reconstitute to a concentration less than 100 μ g/mL in ddH ₂ O. For long term storage it is recommended to add a carrier protein (0.1% BSA, 5% HSA, 10% FBS or 5% Trehalose).
Storage & Stability	Stored at -20°C for 2 years. After reconstitution, it is stable at 4°C for 1 week or -20°C for longer (with carrier protein). It is recommended to freeze aliquots at -20°C or -80°C for extended storage.
Shipping	Room temperature in continental US; may vary elsewhere.

DESCRIPTION

Background	<p>The GMP stem cell factor (SCF) protein serves as a ligand for the receptor-type protein-tyrosine kinase KIT, playing a pivotal role in the regulation of diverse cellular processes. Its functions span the control of cell survival and proliferation, hematopoiesis, stem cell maintenance, gametogenesis, mast cell development, migration, and melanogenesis. Upon binding with KIT, GMP SCF activates multiple signaling pathways, including the phosphorylation of PIK3R1 and subsequent activation of the kinase AKT1. The interaction also triggers signaling cascades involving GRB2, RAS, RAF1, and the MAP</p>
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kinases MAPK1/ERK2 and/or MAPK3/ERK1. Furthermore, GMP SCF and KIT promote the activation of STAT family members (STAT1, STAT3, and STAT5), as well as PLCG1, leading to the production of the cellular signaling molecules diacylglycerol and inositol 1,4,5-trisphosphate. Acting synergistically with other cytokines, likely interleukins, GMP SCF forms a homodimer non-covalently linked and a heterotetramer with KIT, facilitating KIT dimerization and subsequent activation through autophosphorylation.

Caution: Product has not been fully validated for medical applications. For research use only.

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