Recombinant Human SCGF-α/CLEC11a

Catalog Number: 1904-SC

DESCRIPTION

Source	Mouse myeloma cell line, NS0-derived Gly19-Phe323, with an N-terminal Met and a C-terminal 6-His tag Accession # Q9Y240
N-terminal Sequence Analysis	Met
Predicted Molecular Mass	34.7 kDa

SPECIFICATIONS

SDS-PAGE	50 kDa, reducing conditions
Activity	Measured by its ability to promote the expansion of E16 rat liver mononuclear cells *in vitro*, in the presence of Recombinant Mouse SCF/c-kit Ligand (Catalog # 455-MC), Recombinant Mouse Thrombopoietin/Tpo (Catalog # 488-TO), and Recombinant Mouse Flt-3 Ligand (Catalog # 427-FL). The ED_{50} for this effect is 0.12-0.6 µg/mL in the presence of cross-linking antibody, Mouse Anti-polyHistidine Monoclonal Antibody (Catalog # MAB050).
Endotoxin Level	<0.10 EU per 1 µg of the protein by the LAL method.
Purity	>90%, by SDS-PAGE visualized with Silver Staining and quantitative densitometry by Coomassie® Blue Staining.
Formulation	Lyophilized from a 0.2 µm filtered solution in PBS with BSA as a carrier protein. See Certificate of Analysis for details.

PREPARATION AND STORAGE

Reconstitution	Reconstitute at 100 µg/mL in PBS containing at least 0.1% human or bovine serum albumin.
Shipping	The product is shipped at ambient temperature. Upon receipt, store it immediately at the temperature recommended below.
Stability & Storage	**Use a manual defrost freezer and avoid repeated freeze-thaw cycles.** ● 12 months from date of receipt, -20 to -70 °C as supplied. ● 1 month, 2 to 8 °C under sterile conditions after reconstitution. ● 3 months, -20 to -70 °C under sterile conditions after reconstitution.

BACKGROUND

Stem Cell Growth Factor (SCGF), also known as LSLCL, P47, and CLEC11A, is a secreted glycoprotein that acts on primitive hematopoietic stem/progenitor cells to support their proliferation and differentiation. Mature human SCGF contains an N-terminal Glu-rich region with an RGD motif, a leucine zipper region, and a C-terminal lectin-like domain (1, 2). The RGD motif is absent in mouse and rat SCGF (1). Full length human SCGF (the alpha isoform) shares approximately 83% amino acid (aa) sequence identity with mouse and rat SCGF. A shorter SCGF beta isoform lacks 78 aa of the lectin domain (1-3). This recombinant protein corresponds to the SCGF alpha isoform. SCGF is produced by various hematopoietic cell lines and by $CD34^+$ and $CD34^+CD33^+$ bone marrow cells as a 47 kDa sulfated and O-glycosylated sialoprotein (2-6). It is also expressed by infiltrating macrophages in some gastrointestinal tract tumors (7). Mouse SCGF mRNA has been detected in proliferating chondrocytes, the primary ossification center, perichondrium, and periosteum (6). SCGF should not be confused with the similarly named SCF (stem cell factor)/c-Kit Ligand which exerts distinct activities during hematopoietic differentiation. SCGF exhibits erythroid burst (BFU-E) promoting activity in the absence of SCF/c-kit Ligand but suppresses the formation of erythroid bursts induced by SCF (4, 6). SCGF cooperates with IL-3, Flt-3 Ligand, GM-CSF, or G-CSF to enhance the growth of granulocyte-macrophage colonies (CFU-GM) (4, 6). It also promotes (with Flt-3 Ligand and VEGF) the maintenance and expansion of $CD34^+CD133^+$ progenitor cells as well as their differentiation into the endothelial lineage (8, 9). Serum levels of SCGF increase during stem cell transplantation and correlate with the recovery of hematopoiesis (5). Circulating SCGF levels are decreased in severe malarial anemia, and an SCGF promoter polymorphism (-539C/T) is associated with resistance to malarial anemia (10, 11).

References:

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