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ProductInformation

ANTI-HUMAN STEM CELL FACTOR (SCF)
Developed in Goat, Affinity Isolated Antibody

Product Number **S 2931**

Product Description

Anti-Human SCF is developed in goat using recombinant, human SCF (rhSCF) expressed in *E. coli* as immunogen. The antibody is purified using human SCF affinity chromatography.

Anti-Human SCF will neutralize the biological activity of rhSCF. The antibody will also neutralize the biological activity of rmSCF at a 10 fold higher concentration of antibody. The antibody may also be used in immunoblotting and ELISA. The antibody shows < 60% cross-reactivity with rmSCF. In addition, by ELISA, it shows no cross-reactivity with other cytokines tested.*

Stem Cell Factor[1] (SCF), also called c-*kit* Ligand[2] (KL) or Mast Cell Growth Factor[3] (MGF), is a peptide growth factor/cytokine with broad activities, especially related to hematopoiesis. Among the many activities of SCF are the ability to act on early hematopoietic progenitor/stem cells and to stimulate the proliferation and survival of mast cells. Also, SCF is one of the most potent stimulators of multilineage progenitors (CFU-GEMM) in both human and murine bone marrow cells.[2,4] SCF acts synergistically with other growth factors, including erythropoietin, G-CSF, M-CSF, GM-CSF, IL-3 and IL-6, to increase the number and size of colonies of hematopoietic progenitors.[1,2,5] SCF appears to play an important role in the survival, proliferation or migration of primordial germ cells and melanoblasts during both development[6,7] and maturation.[8,9]
Natural, human SCF is a 25-35 kDa glycoprotein as determined using SDS-PAGE.[1,2,3,10] Under non-denaturing conditions, SCF appears to be a non-covalently linked dimer of 50-55 kDa.[10] SCF is synthesized as a transmembrane protein[11,12] which is then cleaved, presumably at the cell surface, to yield a soluble protein.[13,14] An alternative form of SCF exists whereby the proteolytic cleavage site is spliced out, allowing the transmembrane section to remain intact and biologically active SCF (38 kDa) to remain attached to the cell surface.[11,13] The predominant message in many cells is the secreted form of SCF, but the attached (spliced) and secreted forms are expressed at similar levels in some cells.
The receptor for SCF is the c-*kit* ligand,[15-17] a transmembrane 150-165 kDa glycoprotein belonging to the receptor tyrosine kinase subclass III family,[18] which includes receptors to PDGF and M-CSF. Human SCF is 500-1000 fold less active on murine cells.[19]

Reagents

Mass/vial:	0.1 mg
Immunogen:	Recombinant Human SCF
Host animal:	Goat
Form:	Affinity Isolated Antibody
Formulation:	Lyophilized from PBS without additives.
Endotoxin:	<10 ng/mg by LAL method
Sterility:	0.2 µm-filtered, aseptic fill

Preparation Instructions

To one vial of lyophilized powder, add 1 ml of 0.2 µm-filtered PBS to produce a 0.1 mg/ml stock solution of Anti-Human SCF. If aseptic technique is used, no further filtration should be needed for use in cell culture environments.

Storage/Stability

Prior to reconstitution, store at –20 °C. Reconstituted product may be stored at 2-8 °C for up to one month. For prolonged storage, freeze in working aliquots at –20 °C. Avoid repeated freezing and thawing.

Procedure

Anti-Human SCF is tested for its ability to neutralize the bioactivity of rhSCF in a cell proliferation assay using a factor-dependent cell line, TF-1.[20] The ND_{50} of the antibody is defined as the concentration of antibody resulting in a one-half maximal inhibition of bioactivity of rhSCF that is present at a concentration just high enough to elicit a maximum response. In this bioassay, rhSCF is preincubated with various dilutions of the antibody for 1 hour at 37 °C in a 96-well microtiter plate. TF-1 cells are added to each well. The total volume of 100 µl, containing antibody, rhSCF at 10 ng/ml and cells at 1 x 10^5 cells/ml, is incubated for 48 hours at 37 °C in a 5% CO_2 humidified incubator and then pulsed for the last 4 hours with ^{3}H-thymidine. Cells are harvested onto glass filters and the ^{3}H-thymidine incorporation into DNA is measured.

Results

Bioactivity:	ND_{50} = 0.05 – 0.1 µg/ml
Indirect ELISA:	0.5 – 1 µg/ml antibody detects 0.6 ng/well of rhSCF.
Indirect Immunoblotting:	0.1 – 0.2 µg/ml antibody detects rhSCF at 2 ng/lane under non-reducing and reducing conditions.

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*rhACT II, rhANG, rhAnnexin V, rhAR, rhB7-1, rhB7-2, rmB7-2, rhBTC, rhμ-NGF, rrβ-NGF, rhBDNF, rmC10, rhCD8, rhCD28, rrCINC-1, rhCNTF, rhCNTF sRα, rrCNTF, rrCNTF sRα, rhEGF, rhENA-78, rhEotaxin, rmEotaxin, rhEPO, rhEPO R, rhFGF acidic, rhFGF basic, rhFGF-4, rhFGF-5, rhFGF-6, rhFGF-7, rmFGF-8b, rhFGF-9, rhFlk2/Flt3 ligand, rhG-CSF, rhG-CSF Rα, rmG-CSF, rhGDNF, rrGDNF, rhGM-CSF, rhGM-CSF Rα, rmGM-CSF, rhGROα, rhGROβ, rhGROγ, rhHB-EGF, rhHCC-1, rhHRG, rhHGF, rhI-309, rhIFN-γ, rmIFN-γ, rrIFN-γ, rhIGF-I, rhIGF-I R, rhIGF-II, rhIL-1α, rhIL-1 RI, rhIL-1 RII, rmIL-1α, rhIL-1β, rmIL-1β, rrIL-1β, rhIL-1ra, rmIL-1 ra, rhIL-2, rhIL-2sRα, rhIL-2 sRβ, rhIL-2 sRγ, rmIL-2, rrIL-2, rhIL-3, rhIL-3 sRα, rmIL-3, rhIL-4, rhIL-4 sR, rmIL-4, rrIL-4, rhIL-5, rhIL-5 sRα, rmIL-5, rhIL-6, rhIL-6 sR, rmIL-6, rhIL-7, rhIL-7 R, rmIL-7, rhIL-8, rhIL-9, rhIL-9 sR, rmIL-9, rhIL-10, rhIL-10 sR, rmIL-10, rmIL-10 sR, rhIL-11, rmIL-11, rhIL-12, rmIL-12, rhIL-13, rmIL-13, rhIL-15, rhIL-17, rhIP-10, rmJAK-1, rmJAK-2, rmJE, rmKC, rhLIF, rhLIF R, rmLIF, rmLymphotactin, rhM-CSF, rmM-CSF, rhMCP-1, rhMCP-1 R, rhMCP-2, rhMCP-3, rhMidkine, rhMIF, rmMIG, rhMIP-1α, rmMIP-1α, rhMIP-1β, rmMIP-1β, rmMIP-2, rhMSP, rhNT-3, rhNT-4, rhOB, rmOB, rhOSM, rmOSM, rhPD-ECGF, hPDGF, pPDGF, rhPDGF-AA, rhPDGF-AB, rhPDGF-BB, rrPDGF-BB, rhPDGF R, rhPlGF, rhPTN, rhRANTES, rmRANTES, rhSDF-1β/PBSF, rhsgp130, rhSLPI, rhSTAT-1, rhSTAT-2, rmSTAT-3, rmSTAT-4, hTfR, rhTGF-α, rhTGF-β1, rhTGF-β2, rhTGF-β3, raTGF-β5, rhLAP (TGF-β1), rhLatent TGF-β1, rhTGF-βsRII, rhTGF-β sRIII, rhTNF-α, rmTNF-α, rrTNF-α, rhTNF-β, rhsTNF RI, rmsTNF RI, rhsTNF RII, rmsTNF RII, rhTPO, rmTPO, rhTyk-2, rhVEGF, rhVEGF/PlGF, rmVEGF

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