abcam

Product datasheet

Human SCF ELISA Kit ab176109

SimpleStep ELISA

1 References 5 Images

Overview

Product name Human SCF ELISA Kit

Detection method Colorimetric

Precision

Intra-assay

Sample	n	Mean	SD	CV%
Pooled Serum	24			6%

Inter-assay

Sample	n	Mean	SD	CV%
Pooled Serum	6			2%

Sample type Serum, Plasma, Cell culture media, Hep Plasma, Cit plasma

Assay type Sandwich (quantitative)

Sensitivity 0.51 pg/ml

Range 15.63 pg/ml - 1000 pg/ml

Recovery

Sample specific recovery

Sample type	Average %	Range
Serum	102	92% - 111%
Cell culture media	106	100% - 113%
Hep Plasma	105	91% - 115%
Cit plasma	89	79% - 103%

Assay time 1h 30m

Assay duration One step assay

Species reactivity **Reacts with:** Human

Product overview

Human Stem Cell Factor (SCF) ELISA kit (ab176109) is a single-wash 90 min sandwich ELISA designed for the quantitative measurement of SCF protein in human plasma, serum and cell culture supernatant samples. It uses our proprietary SimpleStep ELISA® technology. Quantitate human SCF with 0.51 pg/ml sensitivity.

SimpleStep ELISA® technology employs capture antibodies conjugated to an affinity tag that is recognized by the monoclonal antibody used to coat our SimpleStep ELISA® plates. This approach to sandwich ELISA allows the formation of the antibody-analyte sandwich complex in a single step, significantly reducing assay time. See the SimpleStep ELISA® protocol summary in the image section for further details. Our SimpleStep ELISA® technology provides several benefits:

-Single-wash protocol reduces assay time to 90 minutes or less
-High sensitivity, specificity and reproducibility from superior antibodies
-Fully validated in biological samples
-96-wells plate breakable into 12 x 8 wells strips

A 384-well SimpleStep ELISA® microplate (**ab203359**) is available to use as an alternative to the 96-well microplate provided with SimpeStep ELISA® kits.

Notes

SCF is the ligand for the receptor-type protein-tyrosine kinase KIT. SCF is expressed in fibroblasts, liver cells, Sertoli cells, endothelial cells, neurons, macrophages, oocytes, Schwann cells and numerous carcinoma cell lines. SCF can be found as a cell membrane protein or as a soluble protein after secretion due to proteolytic processing in the extracellular domain. Both forms have growth factor activities; however the membrane form is also important for cell-cell adhesion and interaction.

Soluble SCF is a heavily N- and O-glycosylated protein that exists as a non-covalently linked homodimer or as a heterotetramer with its receptor. Binding to the receptor, results in KIT activation by autophosphorylation. This leads to multiple signaling cascades (via AKT, GRB2, RAS, MAPK amongst others) that are important in the regulation of cell survival, proliferation, hematopoiesis, stem cell maintenance, gametogenesis, mast cell development, migration, melanogenesis and neurite-inductive activity of dorsal root ganglia neurons.

Genetic defects in SCF are the cause of familial progressive hyperpigmentation (melanosis universalis hereditaria). SCF has also been involved in other conditions such as mastocytosis, mast cell leukemia, myeloid leukemia, aplastic anemia and gastrointestinal stromal tumor.

Platform

Microplate

Properties

Storage instructions

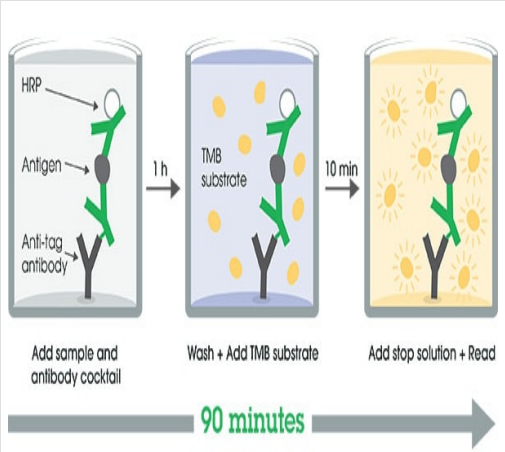
Store at +4°C. Please refer to protocols.

Components	1 x 96 tests
10X Human SCF Capture Antibody	1 x 600µl
10X Human SCF Detector Antibody	1 x 600µl
10X Wash Buffer PT (ab206977)	1 x 20ml
Antibody Diluent CPI - HAMA Blocker (ab193969)	1 x 6ml

Components	1 x 96 tests
Human SCF Lyophilized Recombinant Protein	2 vials
Plate Seals	1 unit
Sample Diluent 50BP	1 x 20ml
Sample Diluent NS (ab193972)	1 x 50ml
SimpleStep Pre-Coated 96-Well Microplate (ab206978)	1 unit
Stop Solution	1 x 12ml
TMB Development Solution	1 x 12ml

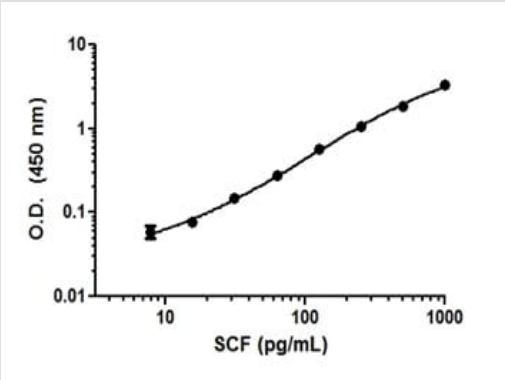
Function	Ligand for the receptor-type protein-tyrosine kinase KIT. Plays an essential role in the regulation of cell survival and proliferation, hematopoiesis, stem cell maintenance, gametogenesis, mast cell development, migration and function, and in melanogenesis. KITLG/SCF binding can activate several signaling pathways. Promotes phosphorylation of PIK3R1, the regulatory subunit of phosphatidylinositol 3-kinase, and subsequent activation of the kinase AKT1. KITLG/SCF and KIT also transmit signals via GRB2 and activation of RAS, RAF1 and the MAP kinases MAPK1/ERK2 and/or MAPK3/ERK1. KITLG/SCF and KIT promote activation of STAT family members STAT1, STAT3 and STAT5. KITLG/SCF and KIT promote activation of PLCG1, leading to the production of the cellular signaling molecules diacylglycerol and inositol 1,4,5-trisphosphate. KITLG/SCF acts synergistically with other cytokines, probably interleukins.
Involvement in disease	Hyperpigmentation with or without hypopigmentation, familial progressive Deafness, congenital, unilateral or asymmetric
Sequence similarities	Belongs to the SCF family.
Developmental stage	Acts in the early stages of hematopoiesis.
Post-translational modifications	A soluble form (sKITLG) is produced by proteolytic processing of isoform 1 in the extracellular domain. Found in two differentially glycosylated forms, LMW-SCF and HMW-SCF. LMW-SCF is fully N-glycosylated at Asn-145, partially N-glycosylated at Asn-90, O-glycosylated at Ser-167, Thr-168 and Thr-180, and not glycosylated at Asn-97 or Asn-118. HMW-SCF is N-glycosylated at Asn-118, Asn-90 and Asn-145, O-glycosylated at Ser-167, Thr-168 and Thr-180, and not glycosylated at Asn-97. A soluble form exists as a cleavage product of the extracellular domain.
Cellular localization	Secreted; Cell membrane and Cytoplasm. Cytoplasm, cytoskeleton. Cell membrane. Cell projection, lamellipodium. Cell projection, filopodium.

Images



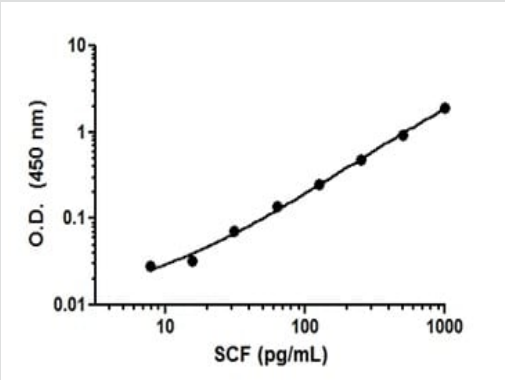
SimpleStep ELISA technology allows the formation of the antibody-antigen complex in one single step, reducing assay time to 90 minutes. Add samples or standards and antibody mix to wells all at once, incubate, wash, and add your final substrate. See protocol for a detailed step-by-step guide.

Other - Human SCF ELISA Kit (ab176109)



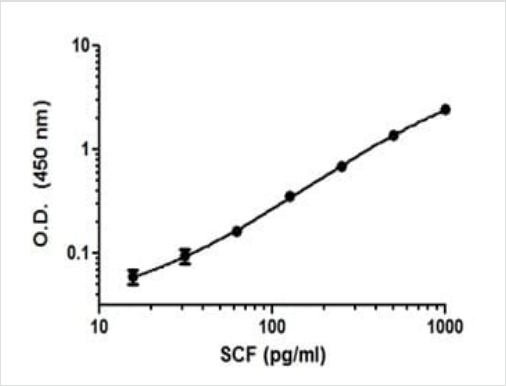
Background-subtracted data values (mean +/- SD) are graphed.

Example of SCF standard curve in Sample Diluent NS.



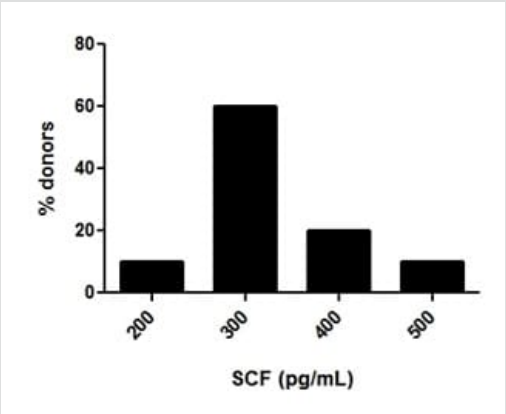
Background-subtracted data values (mean +/- SD) are graphed.

Example of SCF standard curve in Sample Diluent 50BP.



Example of SCF standard curve in 100% cell culture media.

Background-subtracted data values (mean +/- SD) are graphed.



Frequency histogram of SCF levels in serum of individual normal healthy donors.

The levels of SCF in serum samples were tested from ten individual healthy donors. Levels were interpolated from the standard curve in Sample diluent 50BP and corrected for sample dilution. The levels of SCF are shown for the percentage of individuals within each 100 pg/mL bin center of the distribution. The mean level of SCF was 330 pg/mL with a range of 185 to 498 pg/mL and a standard deviation of 82 pg/mL.