abcam

Product datasheet

Recombinant human c-Kit protein ab83580

3 Images

Description

Product name	Recombinant human c-Kit protein
Biological activity	The ED_{50} of ab83580 is typically 2-4 ug/ml as by its ability to neutralise SCF mediated proliferation of the human growth dependant M-07e cell line.
Purity	> 95 % SDS-PAGE.
Expression system	HEK 293 cells
Protein length	Protein fragment
Animal free	No
Nature	Recombinant
Species	Human
Sequence	Theoretical Sequence: GSSQPSVSPGEPSPPSIHPGKSDLIVRVGDEIRLLCTDP GFVKWTFEIL DETNENKQNEWITEKAEATNTGKYTCTNKHGLSNSIYV FVRDPAKLFLV DRSLYGKEDNDTLVRCPLTDPEVTNYSLKGCQGKPLP KDLRFIPDPKAG IMIKSVKRAYHRLCLHCSVDQEGKSVLSEKFILKVR PAFKAVPVVSVSK ASYLLREGEEFTVTCTIKDVSSSVYSTWKRENSQT KLQEKYNSWHHGDF NYERQATLTISSARVNDSGVFMCYANNTFGSANV TTTLEVVDKGFINIF PMINTTVFVNDGENVDLIVEYEAFPKPEHQQWI YMNRTFTDKWEDYPKS ENESNIRYVSELHLTRLKGTEGGTYTFLVSNS DVNAAIAFNVYVNTKPE ILTYDRLVNGMLQCVAAGFPEPTIDWYFCPG TEQRCSASVLPVDVQTLN SSGPPFGKLVVQSSIDSSAFKHNGTVECKA YNDVGKTSAYFNFAFKGNN KEQIHPHT
Amino acids	23 to 520

Specifications

Our **Abpromise guarantee** covers the use of **ab83580** in the following tested applications.

The application notes include recommended starting dilutions; optimal dilutions/concentrations should be determined by the end user.

Applications	Functional Studies SDS-PAGE
Form	Lyophilized

Preparation and Storage

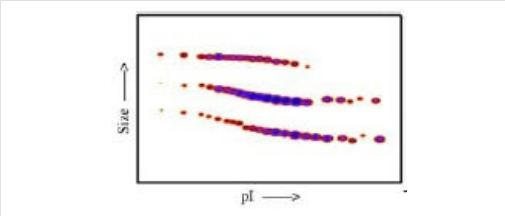
Stability and Storage	Shipped at 4°C. After reconstitution store at -20ºC. Avoid freeze / thaw cycles. Constituents: 10% Trehalose, 1% Human serum albumin This product is an active protein and may elicit a biological response in vivo, handle with caution.
Reconstitution	It is recommended that 0.5 ml of sterile phosphate-buffered saline be added to the vial. Following reconstitution short-term storage at 4°C and longer-term storage of aliquots at -18 to -20°C is recommended. Repeated freeze thawing is not recommended.

General Info

Function	Tyrosine-protein kinase that acts as cell-surface receptor for the cytokine KITLG/SCF and 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. In response to KITLG/SCF binding, KIT can activate several signaling pathways. Phosphorylates PIK3R1, PLCG1, SH2B2/APS and CBL. Activates the AKT1 signaling pathway by phosphorylation of PIK3R1, the regulatory subunit of phosphatidylinositol 3-kinase. Activated KIT also transmits signals via GRB2 and activation of RAS, RAF1 and the MAP kinases MAPK1/ERK2 and/or MAPK3/ERK1. Promotes activation of STAT family members STAT1, STAT3, STAT5A and STAT5B. Activation of PLCG1 leads to the production of the cellular signaling molecules diacylglycerol and inositol 1,4,5-trisphosphate. KIT signaling is modulated by protein phosphatases, and by rapid internalization and degradation of the receptor. Activated KIT promotes phosphorylation of the protein phosphatases PTPN6/SHP-1 and PTPRU, and of the transcription factors STAT1, STAT3, STAT5A and STAT5B. Promotes phosphorylation of PIK3R1, CBL, CRK (isoform Crk-II), LYN, MAPK1/ERK2 and/or MAPK3/ERK1, PLCG1, SRC and SHC1.
Tissue specificity	Isoform 1 and isoform 2 are detected in spermatogonia and Leydig cells. Isoform 3 is detected in round spermatids, elongating spermatids and spermatozoa (at protein level). Widely expressed. Detected in the hematopoietic system, the gastrointestinal system, in melanocytes and in germ cells.
Involvement in disease	Piebald trait Gastrointestinal stromal tumor Testicular germ cell tumor Leukemia, acute myelogenous
Sequence similarities	Belongs to the protein kinase superfamily. Tyr protein kinase family. CSF-1/PDGF receptor subfamily. Contains 5 Ig-like C2-type (immunoglobulin-like) domains. Contains 1 protein kinase domain.
Post-translational	Ubiquitinated by SOCS6. KIT is rapidly ubiquitinated after autophosphorylation induced by

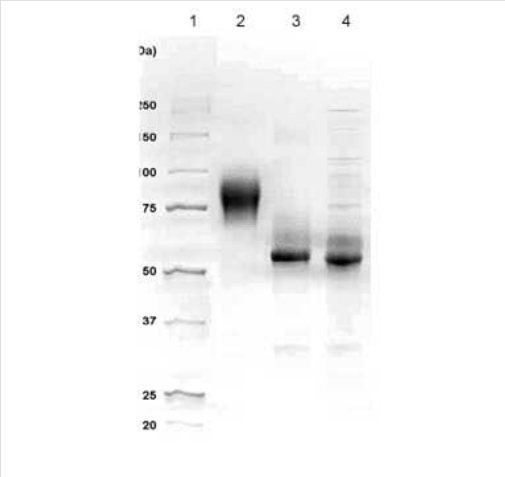
modifications	KITLG/SCF binding, leading to internalization and degradation. Autophosphorylated on tyrosine residues. KITLG/SCF binding enhances autophosphorylation. Isoform 1 shows low levels of tyrosine phosphorylation in the absence of added KITLG/SCF (in vitro). Kinase activity is down-regulated by phosphorylation on serine residues by protein kinase C family members. Phosphorylation at Tyr-568 is required for interaction with PTPN11/SHP-2, CRK (isoform Crk-II) and members of the SRC tyrosine-protein kinase family. Phosphorylation at Tyr-570 is required for interaction with PTPN6/SHP-1. Phosphorylation at Tyr-703, Tyr-823 and Tyr-936 is important for interaction with GRB2. Phosphorylation at Tyr-721 is important for interaction with PIK3R1. Phosphorylation at Tyr-823 and Tyr-936 is important for interaction with GRB7.
Cellular localization	Cell membrane and Cytoplasm. Detected in the cytoplasm of spermatozoa, especially in the equatorial and subacrosomal region of the sperm head.

Images



Functional Studies - Recombinant human c-Kit protein (ab83580)

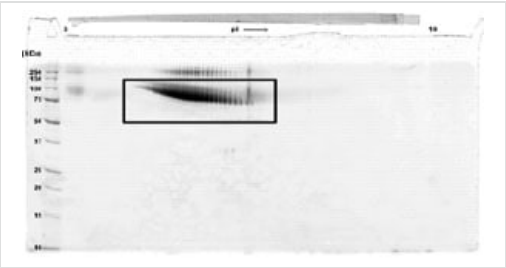
Densitometry of protein isoforms visualised by 2-DE. The densitometry scan demonstrates that the purified human cell expressed protein exists in multiple glycoforms, which differ according to their level of post-translational modification. The triangle indicates the theoretical MW and pI of the protein.



SDS-PAGE - Recombinant human c-Kit protein (ab83580)

1D SDS-PAGE of ab83580 before and after treatment with glycosidases to remove oligosaccharides.
Lane 1 – MW markers; Lane 2 – ab83580; Lane 3 – ab83580 treated with PNGase F to remove potential N-linked glycans; Lane 4 – ab83580 treated with a glycosidase cocktail to remove potential N- and O-linked glycans. Approximately 5 µg of protein was loaded per lane.

Drop in MW after treatment with PNGase F indicates presence of N-linked glycans. Additional bands in lane 3 and lane 4 are glycosidase enzymes.



SDS-PAGE - Recombinant human c-Kit protein (ab83580)

A sample of ab83580 without carrier protein was reduced and alkylated and focused on a 3-10 IPG strip then run on a 4-20% Tris-HCl 2D gel. Approximately 40 µg of protein was loaded; Gel was stained using coloidal Coomassie Brilliant Blue. Spot train indicates presence of multiple glycoforms of c-Kit.

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