SunLong Biotech Co.,LTD
Tel: 0086-571-56623320 Fax:0086-571-56623318
E-mail:sales@sunlongbiotech.com
www.sunlongbiotech.com

[Marker Primary Antibody]

Rabbit Anti-c-Kit/AF647 Conjugated antibody

Catalog Number: SL10005R-AF647

FOR RESEARCH USE ONLY

[DATASHEET]

Host:	Rabbit
Isotype:	IgG
Clonality:	Polyclonal
Target:	Anti-c-Kit/AF647
Immunogen:	KLH conjugated synthetic peptide derived from human CD117
Purification:	affinity purified by Protein A
Concentration:	1mg/ml
Storage:	Store at -20 °C for one year. Avoid repeated freeze/thaw cycles. The lyophilized antibody is stable at room temperature for at least one month and for greater than a year when kept at -20°C. When reconstituted in sterile pH 7.4 1M PBS or diluent of antibody the antibody is stable for at least two weeks at 2-4 °C.
Applications:	Flow-Cyt=1μg/Test IF=1:100-500 not yet tested in other applications. optimal dilutions/concentrations should be determined by the end user.
Reactivity:	Human,Mouse,Rat(predicted:Pig,Cow,Horse,Sheep)
Background:	background: c-Kit is a transmembrane tyrosine kinase encoded by the cKit proto oncogene. c-Kit acts to regulate a variety of biological responses including cell proliferation, apoptosis, chemotaxis and adhesion. Ligand binding to the extracellular domain leads to autophosphorylation on several tyrosine residues within the cytoplasmic domain, and activation. Mutations in c-Kit have been found to be important for tumor growth and progression in a variety of cancers including mast cell diseases, gastrointestinal stromal tumor, acute myeloid leukemia, Ewing sarcoma and lung cancer. Phosphorylation at tyrosine 721 of c-Kit allows binding and activation of PI3 kinase. **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

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	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. **Subunit:** Monomer in the absence of bound KITLG/SCF. Homodimer in the presence of bound KITLG/SCF, forming a heterotetramer with two KITLG/SCF molecules. Interacts (via phosphorylated tyrosine residues) with the adapter proteins GRB2 and GRB7 (via SH2 domain), and SH2B2/APS. Interacts (via C-terminus) with MPDZ (via the tenth PDZ domain). Interacts (via phosphorylated tyrosine residues) with PIK3R1 and PIK3 catalytic subunit. Interacts (via phosphorylated tyrosine) with CRK (isoform Crk-II), FYN, SHC1 and MATK/CHK (via SH2 domain). Interacts with LYN and FES/FPS. Interacts (via phosphorylated tyrosine residues) with the protein phosphatases PTPN6/SHP-1 (via SH2 domain), PTPN11/SHP-2 (via SH2 domain) and PTPRU. Interacts with PLCG1. Interacts with DOK1 and TEC. **Subcellular Location :** Isoform 1: Cell membrane; Single-pass type I membrane protein. Isoform 2: Cell membrane; Single-pass type I membrane protein. Isoform 3: Cytoplasm. Note=Detected in the cytoplasm of spermatozoa, especially in the equatorial and subacrosomal region of the sperm head. **Subcellular Location:** Isoform 1: Cell membrane; Single-pass type I membrane protein. Isoform 2: Cell membrane; Single-pass type I membrane protein. Isoform 3: Cytoplasm. Note=Detected in the cytoplasm of spermatozoa, especially in the equatorial and subacrosomal region of the sperm head. **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. **Post-translational modifications:** Ubiquitinated by SOCS6. KIT is rapidly ubiquitinated after autophosphorylation induced by 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-

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	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. DISEASE: Defects in KIT are a cause of piebald trait (PBT) [MIM:172800]. PBT is an autosomal dominant genetic developmental abnormality of pigmentation characterized by congenital patches of white skin and hair that lack melanocytes. Defects in KIT are a cause of gastrointestinal stromal tumor (GIST) [MIM:606764]. Defects in KIT have been associated with testicular germ cell tumor (TGCT) [MIM:273300]. A common solid malignancy in males. Germ cell tumors of the testis constitute 95% of all testicular neoplasms. **Similarity:** 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. **Database links:** **Entrez Gene:** 3815 Human **Entrez Gene:** 16590 Mouse **Entrez Gene:** 64030 Rat Omim: 164920 Human **SwissProt:** P10721 Human **SwissProt:** P05532 Mouse **Unigene:** 479754 Human **Unigene:** 247073 Mouse **Unigene:** 54004 Rat Important **Note:** This product as supplied is intended for research use only, not for use in human, therapeutic or diagnostic applications.