

## CD117/c-kit Protein, Human (HEK293, His)

Cat. No.:	HY-P72752
Synonyms:	Mast/stem cell growth factor receptor Kit; SCFR; PBT; CD117; KIT
Species:	Human
Source:	HEK293
Accession:	P10721 (Q26-T520)
Gene ID:	3815
Molecular Weight:	Approximately 150 kDa

### PROPERTIES

AA Sequence	<div> Q P S V S P G E P S W T F E I L D E T N S I Y V F V R D P A Y S L K G C Q G K P C S V D Q E G K S V G E E F T V T C T I D F N Y E R Q A T L E V V D K G F I N I Q Q W I Y M N R T F E G G T Y T F L V S L Q C V A A G F P E G P P F G K L V V Q F A F K G N N K E Q </div> <div> P P S I H P G K S D E N K Q N E W I T E K L F L V D R S L Y L P K D L R F I P D L S E K F I L K V R K D V S S S V Y S T T I S S A R V N D S F P M I N T T V F V T D K W E D Y P K S N S D V N A A I A F P T I D W Y F C P G S S I D S S A F K H I H P H T </div> <div> L I V R V G D E I R K A E A T N T G K Y G K E D N D T L V R P K A G I M I K S V P A F K A V P V V S W K R E N S Q T K L G V F M C Y A N N T N D G E N V D L I V E N E S N I R Y V S N V Y V N T K P E I T E Q R C S A S V L N G T V E C K A Y N </div> <div> L L C T D P G F V K T C T N K H G L S N C P L T D P E V T N K R A Y H R L C L H V S K A S Y L L R E Q E K Y N S W H H G F G S A N V T T T L E Y E A F P K P E H E L H L T R L K G T L T Y D R L V N G M P V D V Q T L N S S D V G K T S A Y F N </div>
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### DESCRIPTION

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## Background

CD117/c-kit, a tyrosine-protein kinase, serves as a cell-surface receptor for the cytokine KITLG/SCF, playing a pivotal role in the orchestration of cellular processes such as cell survival, proliferation, hematopoiesis, stem cell maintenance, gametogenesis, mast cell development, migration, and melanogenesis. Upon binding to KITLG/SCF, KIT activates diverse signaling pathways, leading to the phosphorylation of PIK3R1, PLCG1, SH2B2/APS, and CBL. The AKT1 signaling pathway is activated through the phosphorylation of PIK3R1, the regulatory subunit of phosphatidylinositol 3-kinase. Additionally, KIT transmits signals via GRB2, activating RAS, RAF1, and the MAP kinases MAPK1/ERK2 and/or MAPK3/ERK1. Furthermore, KIT induces the activation of STAT family members STAT1, STAT3, STAT5A, and STAT5B. PLCG1 activation results in the production of diacylglycerol and inositol 1,4,5-trisphosphate. Protein phosphatases modulate KIT signaling, and the receptor undergoes rapid internalization and degradation. Activated KIT promotes phosphorylation events involving PTPN6/SHP-1, PTPRU, STAT1, STAT3, STAT5A, STAT5B, PIK3R1, CBL, CRK (isoform Crk-II), LYN, MAPK1/ERK2 and/or MAPK3/ERK1, PLCG1, SRC, and SHC1.

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**Caution: Product has not been fully validated for medical applications. For research use only.**

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