

## c-Kit/CD117 Protein, Human, Recombinant (aa 540-972, His & GST)

### General Information

Synonyms:	C-Kit;PBT;SCFR;CD117;v-kit Hardy-Zuckerman 4 feline sarcoma viral oncogene homolog
Protein Construction:	A DNA sequence encoding the human KIT isoform 2 (P10721-2) cytoplasmic domain (Thr 540-Val 972) was fused with the N-terminal polyhistidine-tagged GST tag at the N-terminus. Predicted N terminal: Gln 26
Species:	Human
Expression Host:	Baculovirus Insect Cells
Accession:	P10721-2
Molecular Weight:	76.8 kDa (predicted); 68 kDa (reducing conditions)

### QC Testing

Biological Activity:	No Kinase Activity
Purity:	> 92 % as determined by SDS-PAGE
Endotoxin:	< 1.0 EU/μg of the protein as determined by the LAL method.
Formulation:	Lyophilized from a solution filtered through a 0.22 μm filter, containing 50 mM Tris, 100 mM NaCl, pH 8.0, 20% gly, 3 mM DTT. Typically, a mixture containing 5% to 8% trehalose, mannitol, and 0.01% Tween 80 is incorporated as a protective agent before lyophilization.

### Preparation and Storage

#### Reconstitution:

A Certificate of Analysis (CoA) containing reconstitution instructions is included with the products. Please refer to the CoA for detailed information.

#### Stability & Storage:

It is recommended to store recombinant proteins at -20°C to -80°C for future use. Lyophilized powders can be stably stored for over 12 months, while liquid products can be stored for 6-12 months at -80°C. For reconstituted protein solutions, the solution can be stored at -20°C to -80°C for at least 3 months. Please avoid multiple freeze-thaw cycles and store products in aliquots.

Actual storage temperature shall be subject to the COA.

#### Shipping:

In general, lyophilized powders are shipped with blue ice, while solutions are shipped with dry ice.

### Protein Background

C-Kit is a type 3 transmembrane receptor for MGF (mast cell growth factor, also known as stem cell factor). c-Kit contains 5 Ig-like C2-type (immunoglobulin-like) domains and 1 protein kinase domain. It belongs to the protein kinase superfamily, tyr protein kinase family, and CSF-1/PDGF receptor subfamily. C-Kit has tyrosine-protein kinase activity. Binding of the ligands leads to the autophosphorylation of KIT and its association with substrates

such as phosphatidylinositol 3-kinase. Antibodies to c-Kit are widely used in immunohistochemistry to help distinguish particular types of tumor in histological tissue sections. It is used primarily in the diagnosis of GISTs. In GISTs, c-Kit staining is typically cytoplasmic, with stronger accentuation along the cell membranes. C-Kit antibodies can also be used in the diagnosis of mast cell tumors and in distinguishing seminomas from embryonal carcinomas. Mutations in the c-Kit gene are associated with gastrointestinal stromal tumors, mast cell disease, acute myelogenous leukemia, and piebaldism. Defects in KIT are a cause of acute myelogenous leukemia (AML). AML is a malignant disease in which hematopoietic precursors are arrested in an early stage of development. Note=Somatic mutations that lead to constitutive activation of KIT are detected in AML patients. Cancer Immunotherapy Immune Checkpoint Immunotherapy Targeted Therapy

### Reference

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- Edling CE, et al. (2007) c-Kit--a hematopoietic cell essential receptor tyrosine kinase. *Int J Biochem Cell Biol*. 39(11): 1995-8.
- McIntyre A, et al. (2005) Amplification and overexpression of the KIT gene is associated with progression in the seminoma subtype of testicular germ cell tumors of adolescents and adults. *Cancer Res*. 65(18):8085-9.

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