

## Brk Protein, Mouse (sf9, His-GST)

<b>Cat. No.:</b>	HY-P72856
<b>Synonyms:</b>	Protein-tyrosine kinase 6; SRC-related intestinal kinase; Ptk6; Sik
<b>Species:</b>	Mouse
<b>Source:</b>	Sf9 insect cells
<b>Accession:</b>	Q64434 (M1-V451)
<b>Gene ID:</b>	20459
<b>Molecular Weight:</b>	Approximately 66 kDa

### PROPERTIES

<b>AA Sequence</b>	<p>M V S W D K A H L G    P K Y V G L W D F K    A R T D E E L S F Q    A G D L L H V T K K</p> <p>E E L W W W A T L L    D A E G K A L A E G    Y V P H N Y L A E K    E T V E S E P W F F</p> <p>G C I S R S E A M H    R L Q A E D N S K G    A F L I R V S Q K P    G A D Y V L S V R D</p> <p>A Q A V R H Y R I W    K N N E G R L H L N    E A V S F S N L S E    L V D Y H K T Q S L</p> <p>S H G L Q L S M P C    W K H K T E P L P H    W D D W E R P R E E    F T L C K K L G A G</p> <p>Y F G E V F E A L W    K G Q V H V A V K V    I S R D N L L H Q H    T F Q A E I Q A M K</p> <p>K L R H K H I L S L    Y A V A T A G D P V    Y I I T E L M P K G    N L L Q L L R D S D</p> <p>E K A L P I L E L V    D F A S Q V A E G M    C Y L E S Q N Y I H    R D L A A R N V L V</p> <p>T E N N L C K V G D    F G L A R L V K E D    I Y L S H E H N V P    Y K W T A P E A L S</p> <p>R G H Y S I K S D V    W S F G V L L H E I    F S R G Q M P Y P G    M S N H E T F L R V</p> <p>D A G Y R M P C P L    E C P P N I H K L M    L S C W S R D P K Q    R P C F K D L C E K</p> <p>L T G I T R Y E N L    V</p>
<b>Biological Activity</b>	The enzyme activity of this recombinant protein is testing in progress, we cannot offer a guarantee yet.
<b>Appearance</b>	Solution.
<b>Formulation</b>	Supplied as a 0.2 µm filtered solution of 20 mM Tris, 500 mM NaCl, pH 7.4, 10% glycerol
<b>Endotoxin Level</b>	<1 EU/µg, determined by LAL method.
<b>Reconstitution</b>	N/A
<b>Storage &amp; Stability</b>	Stored at -80°C for 1 year. It is stable at -20°C for 3 months after opening. It is recommended to freeze aliquots at -80°C for extended storage. Avoid repeated freeze-thaw cycles.
<b>Shipping</b>	Shipping with dry ice.

### DESCRIPTION

## Background

Brk Protein, a non-receptor tyrosine-protein kinase, intricately regulates diverse signaling pathways pivotal for the differentiation and maintenance of normal epithelia, as well as tumor growth. Its function appears to be context-dependent and varies based on cell type and intracellular localization. Brk Protein phosphorylates various substrates, including RNA-binding proteins (KHDRBS1/SAM68, KHDRBS2/SLM1, KHDRBS3/SLM2, and SFPQ/PSF), transcription factors (STAT3 and STAT5A/B), and signaling molecules (ARHGAP35/p190RhoGAP, PXN/paxillin, BTK/ATK, STAP2/BKS). It also associates with upstream proteins in signaling pathways, such as ADAM15, EGFR, ERBB2, ERBB3, and IRS4. In normal tissues, Brk Protein promotes cellular differentiation and apoptosis, while in tumors, it contributes to cancer progression by sensitizing cells to mitogenic signals, enhancing proliferation, anchorage-independent survival, and migration/invasion. Its association with EGFR, ERBB2, ERBB3 may contribute to mammary tumor development via augmentation of EGF-induced signaling through BTK/AKT and PI3 kinase. Brk Protein facilitates migration and proliferation by promoting EGF-mediated phosphorylation of ARHGAP35/p190RhoGAP and activating RAS, while inactivating RhoA. Additionally, Brk Protein activates STAT3 and STAT5B to promote proliferation. The nuclear and cytoplasmic localization of Brk Protein plays distinct roles, with nuclear Brk Protein potentially regulating growth in normal epithelia, and cytoplasmic Brk Protein activating oncogenic signaling pathways.

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

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