

## SRPK1 Protein, Human (sf9, His-GST)

<b>Cat. No.:</b>	HY-P76088
<b>Synonyms:</b>	SRSF protein kinase 1; Serine/arginine-rich protein-specific kinase 1; SRPK1
<b>Species:</b>	Human
<b>Source:</b>	Sf9 insect cells
<b>Accession:</b>	Q96SB4-2 (E2-S655)
<b>Gene ID:</b>	6732
<b>Molecular Weight:</b>	Approximately 120 kDa

### PROPERTIES

<b>Biological Activity</b>	No Kinase Activity
<b>Appearance</b>	Lyophilized powder.
<b>Formulation</b>	Lyophilized from a 0.2 $\mu$ m filtered solution of 20 mM Tris, 500 mM NaCl, 2 mM GSH, 10% Glycerol, pH 7.4. Normally 5 % - 8 % trehalose, mannitol and 0.01% Tween 80 are added as protectants before lyophilization.
<b>Endotoxin Level</b>	<1 EU/ $\mu$ g, determined by LAL method.
<b>Reconstitution</b>	It is not recommended to reconstitute to a concentration less than 100 $\mu$ g/mL in ddH <sub>2</sub> O.
<b>Storage &amp; Stability</b>	Stored at -20°C for 2 years. After reconstitution, it is stable at 4°C for 1 week or -20°C for longer (with carrier protein). It is recommended to freeze aliquots at -20°C or -80°C for extended storage.
<b>Shipping</b>	Room temperature in continental US; may vary elsewhere.

### DESCRIPTION

#### Background

SRPK1, a serine/arginine-rich protein-specific kinase, exerts its regulatory influence by phosphorylating substrates at serine residues within arginine/serine-rich (RS) domains, notably targeting SR splicing factors to modulate splicing. This kinase assumes a pivotal role in the intricate splicing regulatory network, orchestrating the intranuclear distribution of splicing factors during interphase and orchestrating the reorganization of nuclear speckles during mitosis. Beyond splicing, SRPK1 extends its impact to diverse cellular activities, including mRNA maturation steps, chromatin reorganization in somatic and sperm cells, and cell cycle progression. Notably, isoform 2 of SRPK1 employs a sophisticated mechanism, involving both processive and distributive phosphorylation steps, when phosphorylating substrates like SRSF1. Furthermore, SRPK1 plays a role in hepatitis B virus (HBV) replication, where isoform 2 negatively regulates replication by affecting the packaging efficiency of pregenomic RNA (pgRNA) without directly phosphorylating the core protein. Additionally, SRPK1's involvement in the splicing of MAPT/TAU exon 10 underscores its multifaceted impact on cellular processes, with the isoform ratio influencing cell fate in contexts such as the K-562 leukaemic cell line, where isoform 2 promotes proliferation, while isoform 1 favors differentiation.

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

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