

Recombinant Human SRPK1 Protein (M1-S655), GST tagged

Cat. No. SRPK1-1066H **Lot. No.** (See product label)

SPECIFICATION

Product Overview	Recombinant Human GST-TEV-SRPK1(M1-S655 end) Protein was expressed in E. coli.
Species	Human
Source	E.coli
ProteinLength	M1-S655
Description	Serine/arginine-rich protein-specific kinase which specifically phosphorylates its substrates at serine residues located in regions rich in arginine/serine dipeptides, known as RS domains and is involved in the phosphorylation of SR splicing factors and the regulation of splicing. Plays a central role in the regulatory network for splicing, controlling the intranuclear distribution of splicing factors in interphase cells and the reorganization of nuclear speckles during mitosis. Can influence additional steps of mRNA maturation, as well as other cellular activities, such as chromatin reorganization in somatic and sperm cells and cell cycle progression. Isoform 2 phosphorylates SFRS2, ZRSR2, LBR and PRM1. Isoform 2 phosphorylates SRSF1 using a directional (C-terminal to N-terminal) and a dual-track mechanism incorporating both processive phosphorylation (in which the kinase stays attached to the substrate after each round of phosphorylation) and distributive phosphorylation steps (in which the kinase and substrate dissociate after each phosphorylation event). The RS domain of SRSF1 binds first to a docking groove in the large lobe of the kinase domain of SRPK1. This induces certain structural changes in SRPK1 and/or

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RRM2 domain of SRSF1, allowing RRM2 to bind the kinase and initiate phosphorylation. The cycles continue for several phosphorylation steps in a processive manner (steps 1-8) until the last few phosphorylation steps (approximately steps 9-12). During that time, a mechanical stress induces the unfolding of the beta-4 motif in RRM2, which then docks at the docking groove of SRPK1. This also signals RRM2 to begin to dissociate, which facilitates SRSF1 dissociation after phosphorylation is completed. Isoform 2 can mediate hepatitis B virus (HBV) core protein phosphorylation. It plays a negative role in the regulation of HBV replication through a mechanism not involving the phosphorylation of the core protein but by reducing the packaging efficiency of the pregenomic RNA (pgRNA) without affecting the formation of the viral core particles. Isoform 1 and isoform 2 can induce splicing of exon 10 in MAPT/TAU. The ratio of isoform 1/isoform 2 plays a decisive role in determining cell fate in K-562 leukaemic cell line: isoform 2 favors proliferation where as isoform 1 favors differentiation.

Form	Liquid
Endotoxin	< 0.01 EU per µg of the protein
Purity	90%
Stability	Samples are stable for up to twelve months from date of receipt at -20 to -80 centigrade.
Storage	Store it under sterile conditions at -20 to -80 centigrade. It is recommended that the protein be aliquoted for optimal storage. Avoid repeated freeze-thaw cycles.
Storage Buffer	Supplied as sterile 50 mM Tris-HCl (pH7.5), 200 mM NaCl, 20% glycerol
Shipping	It is shipped out with blue ice.

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GENE INFORMATION

Gene Name	SRPK1 SRSF protein kinase 1 [Homo sapiens (human)]
Official Symbol	SRPK1
Synonyms	SRPK1; SRSF protein kinase 1; SFRS protein kinase 1; serine/arginine rich splicing factor kinase 1; SFRSK1; SR protein kinase 1; SR-protein-specific kinase 1; serine/threonine-protein kinase SRPK1; serine/arginine-rich splicing factor kinase 1;
Gene ID	6732
mRNA Refseq	NM_003137
Protein Refseq	NP_003128
MIM	601939
UniProt ID	Q96SB4

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