

## STK11 Protein, Human (His-SUMO)

|                          |   |
|--------------------------|---|
| <b>Cat. No.:</b>         | HY-P71549   |
| <b>Synonyms:</b>         | hLKB1; Liver kinase B1; LKB1; PJS; Polarization related protein LKB1; Renal carcinoma antigen NY-REN-19; Serine/Threonine Kinase 11; Serine/threonine protein kinase 11; Serine/threonine protein kinase LKB1; Serine/threonine protein kinase STK11; Serine/threonine-protein kinase 11; Serine/threonine-protein kinase LKB1; Serine/threonine-protein kinase XEEK1; Stk11; STK11_HUMAN |
| <b>Species:</b>          | Human   |
| <b>Source:</b>           | E. coli   |
| <b>Accession:</b>        | Q15831 (M1-C430)  |
| <b>Gene ID:</b>          | 6794  |
| <b>Molecular Weight:</b> | Approximately 72 kDa. The reducing (R) protein migrates as 72 kDa in SDS-PAGE maybe due to relative charge.   |

### PROPERTIES

#### AA Sequence

|             |             |             |             |
|-------------|-------------|-------------|-------------|
| MEVVDPQQLG  | MFTEGELMSV  | GMDTFIHRID  | STEVIIYQPRR |
| KRAKLI GKYL | MGDLLGEGSY  | GKVKEVLDSE  | TLCRRAVKIL  |
| KKKKLRRI PN | GEANVKKEIQ  | LLRRLRHKNV  | IQLVDVLYNE  |
| EKQKMYMVME  | YCVCGMQEML  | DSVPEKRFPV  | CQAHGYFCQL  |
| IDGLEYLHSQ  | GIVHKDIKPG  | NLLLTGGTL   | KISDLGVAEA  |
| LHPFAADDTC  | RTSQGSPA FQ | PPEIANGLD T | FSGFKVDIWS  |
| AGVTLYNITT  | GLYPFEGDNI  | YKLFENIGKG  | SYAIPGDCGP  |
| PLSDLLKGML  | EYEPAKRFSI  | RQIRQHSWFR  | KKHPPAEAPV  |
| PIPPSPDTKD  | RWRSM TVVPY | LEDLHGADED  | EDLFDIEDDI  |
| IYTQDFTVPG  | QVPEEEASHN  | GQRRGLPKAV  | CMNGTEAAQL  |
| STKSRAEGRA  | PNPARKACSA  | SSKIRRLSAC  |             |

**Biological Activity** The enzyme activity of this recombinant protein is testing in progress, we cannot offer a guarantee yet.

**Appearance** Lyophilized powder.

**Formulation** Lyophilized from a 0.2 µm sterile filtered 10 mM Tris-HCl, 1 mM EDTA, 6% Trehalose, pH 8.0.

**Endotoxin Level** <1 EU/µg, determined by LAL method.

**Reconstitution** It is not recommended to reconstitute to a concentration less than 100 µg/mL in ddH<sub>2</sub>O.

**Storage & Stability** 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.

**Shipping**

Room temperature in continental US; may vary elsewhere.

**DESCRIPTION****Background**

STK11 Protein, a tumor suppressor serine/threonine-protein kinase, intricately regulates the activity of AMP-activated protein kinase (AMPK) family members, exerting influence over diverse cellular processes including metabolism, cell polarity, apoptosis, and the DNA damage response. Operating through the phosphorylation of the T-loop of AMPK family proteins, such as PRKAA1, PRKAA2, BRSK1, BRSK2, MARK1, MARK2, MARK3, MARK4, NUAK1, NUAK2, SIK1, SIK2, SIK3, and SNRK, STK11 facilitates their activation while excluding MELK. Beyond the AMPK family, STK11 extends its regulatory reach to non-AMPK proteins like STRADA, PTEN, and possibly p53/TP53. Functioning as a pivotal upstream regulator of AMPK, STK11 orchestrates cellular responses including the inhibition of growth-promoting signaling pathways during low energy conditions, maintenance of glucose homeostasis in the liver, initiation of autophagy in nutrient-deprived cells, and facilitation of B-cell differentiation in the germinal center in response to DNA damage. Additionally, STK11 plays a crucial role in cellular polarity by remodeling the actin cytoskeleton and is essential for cortical neuron polarization through the phosphorylation and activation of BRSK1 and BRSK2. In the realm of DNA damage response, STK11 interacts with p53/TP53, participating in transcription activation on the CDKN1A/WAF1 promoter, and acts as a mediator of p53/TP53-dependent apoptosis. Furthermore, STK11 is implicated in UV radiation-induced DNA damage response by phosphorylating CDKN1A in collaboration with NUAK1, contributing to its degradation for optimal DNA repair, and it also plays a role in spermiogenesis.

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

Tel: 609-228-6898

Fax: 609-228-5909

E-mail: [tech@MedChemExpress.com](mailto:tech@MedChemExpress.com)

Address: 1 Deer Park Dr, Suite Q, Monmouth Junction, NJ 08852, USA