

Recombinant STK11 / LKB1 protein

Catalog No: 81379, 81679

Expressed In: Baculovirus

Quantity: 20, 1000 µg

Concentration: 0.3 µg/µl

Source: Human

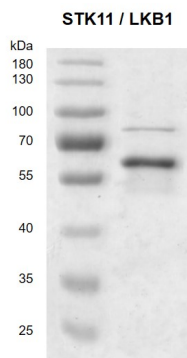
Buffer Contents: Recombinant STK11 / LKB1 protein is supplied in 25 mM HEPES-NaOH pH 7.5, 300 mM NaCl, 10% glycerol, 0.04% Triton X-100, 0.5 mM TCEP.

Background: STK11 (Serine/Threonine Kinase 11) is a tumor suppressor serine/threonine-protein kinase that controls the activity of AMP-activated protein kinase (AMPK) family members and plays a role in various processes such as cell metabolism, cell polarity, apoptosis and DNA damage response. STK11 phosphorylates the T-loop of AMPK family proteins, thus promoting their activity. STK11 phosphorylates PRKAA1, PRKAA2, BRSK1, BRSK2, MARK1, MARK2, MARK3, MARK4, NUA1, NUA2, SIK1, SIK2, SIK3 and SNRK but not MELK and also phosphorylates non-AMPK family proteins such as STRADA, PTEN and possibly p53/TP53. STK11 acts as a key upstream regulator of AMPK by mediating phosphorylation and activation of AMPK catalytic subunits PRKAA1 and PRKAA2 and thereby regulates processes including: inhibition of signaling pathways that promote cell growth and proliferation when energy levels are low, glucose homeostasis in liver, activation of autophagy when cells undergo nutrient deprivation, and B-cell differentiation in the germinal center in response to DNA damage.

Protein Details: Recombinant STK11 / LKB1 protein was expressed in a baculovirus expression system as the full length protein (accession number NP_000446.1) with an N-terminal FLAG tag. The molecular weight of the protein is 49.6 kDa.

Application Notes: This product was manufactured as described in Protein Details. Where possible, Active Motif has developed functional or activity assays for recombinant proteins. Additional characterization such as enzyme kinetic activity assays, inhibitor screening or other biological activity assays may not have been performed for every product. All available data for a given product is shown on the lot-specific Technical Data Sheet.

Storage and Guarantee: Recombinant proteins in solution are temperature sensitive and must be stored at -80°C to prevent degradation. Avoid repeated freeze/thaw cycles and keep on ice when not in storage. This product is guaranteed for 6 months from date of arrival.

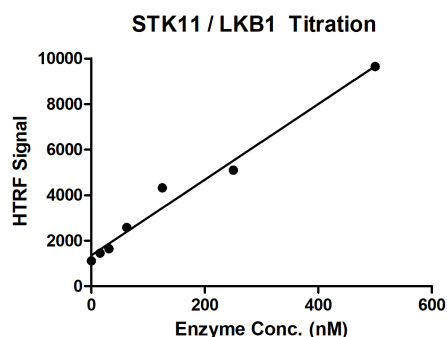


Recombinant STK11 / LKB1 protein

10% SDS-PAGE with Coomassie staining

MW: 49.6 kDa

Purity: >80%



HTRF assay for STK11 / LKB1 activity

1 μ M STK S1 substrate was incubated with different concentrations of STK11 / LKB1 protein in a 10 μ l reaction system containing 1 \times Enzymatic Buffer, 5 mM MgCl₂, 1 mM DTT, and 100 μ M ATP for 1 hour. Then 10 μ l detection reagents containing STK antibody (1:2) and SA-XL665 (1:100) diluted with 1 \times Detection Buffer were added and incubated with the reactions for 30 min. All the operations and reactions were performed at room temperature. HTRF assay was used for detection.