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Rabbit Anti-STK4 antibody

SL55209R

Product Name	**[KO validated anti]** STK4
Chinese Name	蛋白激酶 MST 抗体
Alias	Kinase responsive to stress; Krs2; Mammalian STE20 like protein kinase 1; Mammalian STE20-like protein kinase 1; Mammalian sterile 20 like 1; MST-1; Serine/threonine kinase 4; Serine/threonine protein kinase Krs 2; Serine/threonine-protein kinase 4; Serine/threonine-protein kinase Krs-2; STE20 like kinase MST1; STE20-like kinase MST1; MST1; STK4_HUMAN; TIIAC; YSK3.
Research Area	Tumour Cell biology immunology Signal transduction Apoptosis transcriptional regulatory factor Kinases and Phosphatases
Immunogen Species	Rabbit
Clonality	Polyclonal
React Species	Human, Mouse, Rat,
Applications	WB=1:500-2000,ICC/IF=1:50 - 1:100,IP=0.5μg-4μg antibody for 200μg-400μg extracts of whole cells,ELISA=1:5000-10000 not yet tested in other applications. optimal dilutions/concentrations should be determined by the end user.
Theoretical molecular weight	56kDa
Cellular localization	The nucleus cytoplasmic
Form	Liquid
Concentration	1mg/ml
immunogen	Recombinant human STK4: 303-487/487
Lsotype	IgG
Purification	affinity purified by Protein A
Buffer Solution	1M TBS(pH7.4) with 1% BSA, 3% Proclin300 and 50% Glycerol.
Storage	Store at -20 °C for one year. Avoid repeated freeze/thaw cycles. The lyophilized antibody is stable at room temperature for at least one month and for greater than a

year when kept at -20°C. When reconstituted in sterile pH 7.4 1M PBS or diluent of antibody the antibody is stable for at least two weeks at 2-4 °C.

Attention

This product as supplied is intended for research use only, not for use in human, therapeutic or diagnostic applications.

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Product Detail

The protein encoded by this gene is a cytoplasmic kinase that is structurally similar to the yeast Ste20p kinase, which acts upstream of the stress-induced mitogen-activated protein kinase cascade. The encoded protein can phosphorylate myelin basic protein and undergoes autophosphorylation. A caspase-cleaved fragment of the encoded protein has been shown to be capable of phosphorylating histone H2B. The particular phosphorylation catalyzed by this protein has been correlated with apoptosis, and it's possible that this protein induces the chromatin condensation observed in this process. [provided by RefSeq, Jul 2008]

Function:

Stress-activated, pro-apoptotic kinase which, following caspase-cleavage, enters the nucleus and induces chromatin condensation followed by internucleosomal DNA fragmentation. Key component of the Hippo signaling pathway which plays a pivotal role in organ size control and tumor suppression by restricting proliferation and promoting apoptosis. The core of this pathway is composed of a kinase cascade wherein STK3/MST2 and STK4/MST1, in complex with its regulatory protein SAV1, phosphorylates and activates LATS1/2 in complex with its regulatory protein MOB1, which in turn phosphorylates and inactivates YAP1 oncoprotein and WWTR1/TAZ. Phosphorylation of YAP1 by LATS2 inhibits its translocation into the nucleus to regulate cellular genes important for cell proliferation, cell death, and cell migration. STK3/MST2 and STK4/MST1 are required to repress proliferation of mature hepatocytes, to prevent activation of facultative adult liver stem cells (oval cells), and to inhibit tumor formation (By similarity). Phosphorylates 'Ser-14' of histone H2B (H2BS14ph) during apoptosis. Phosphorylates FOXO3 upon oxidative stress, which results in its nuclear translocation and cell death initiation. Phosphorylates MOBKL1A, MOBKL1B and RASSF2. Phosphorylates TNNI3 (cardiac Tn-I) and alters its binding affinity to TNNC1 (cardiac Tn-C) and TNNT2 (cardiac Tn-T). Phosphorylates FOXO1 on 'Ser-212' and regulates its activation and stimulates transcription of PMAIP1 in a FOXO1-dependent manner. Phosphorylates SIRT1 and inhibits SIRT1-mediated p53/TP53 deacetylation, thereby promoting p53/TP53 dependent transcription and apoptosis upon DNA damage. Acts as an inhibitor of PKB/AKT1. Phosphorylates AR on 'Ser-650' and suppresses its activity by intersecting with PKB/AKT1 signaling and antagonizing formation of AR-chromatin complexes.

Subunit:

Homodimer; mediated via the coiled-coil region. Interacts with NORE1, which inhibits autoactivation. Interacts with and stabilizes SAV1. Interacts with RASSF1.

Interacts with FOXO3. Interacts with RASSF2 (via SARAH domain). Interacts with AR, PKB/AKT1, TNNI3 and SIRT1.

Subcellular Location:
Cytoplasm. Nucleus. Note=The caspase-cleaved form cycles between the nucleus and cytoplasm.

Tissue Specificity:
Expressed in prostate cancer and levels increase from the normal to the malignant state (at protein level). Ubiquitously expressed.

Post-translational modifications:
Autophosphorylated on serine and threonine residues. Phosphorylation at Thr-120 and Thr-387 by PKB/AKT1, leads to inhibition of its: kinase activity, nuclear translocation and autophosphorylation at Thr-183. It also diminishes its cleavage by caspases and its ability to phosphorylate FOXO3.
Proteolytically cleaved by caspase-3 during apoptosis at Asp-326 and Asp-349 resulting in a 37 kDa or a 39 kDa subunit respectively. The 39 kDa subunit is further cleaved into the 37 kDa form. Proteolytic cleavage results in kinase activation and nuclear translocation of the truncated form (MST1/N). It is less likely that cleavage at Asp-349 is a prerequisite for activation as this site is not conserved in the murine ortholog.

Similarity:
Belongs to the protein kinase superfamily. STE Ser/Thr protein kinase family. STE20 subfamily.
Contains 1 protein kinase domain.
Contains 1 SARAH domain.

SWISS:
Q13043

Gene ID:
6789

Database links:

Entrez Gene: 6789 Human

Entrez Gene: 58231 Mouse

Entrez Gene: 311622 Rat

Omim: 604965 Human

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SwissProt: Q13043 Human

SwissProt: Q9JI11 Mouse

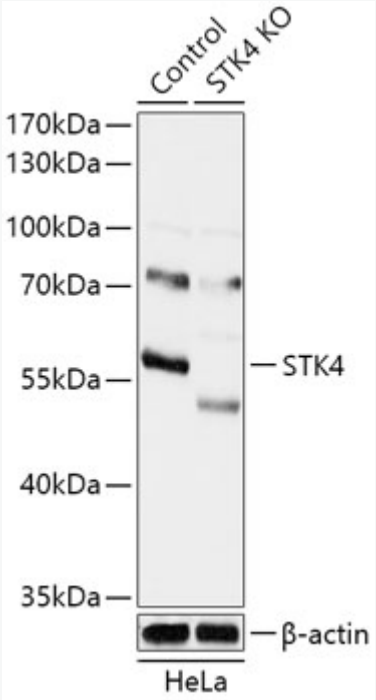
Unigene: 472838 Human

Unigene: 479158 Mouse

蛋白激酶 MST(Mammalian Sterile20-like Kinase) 是各种组织均有表达的丝氨酸/苏氨酸（Serine/Threonine）蛋白激酶。属于人丝氨酸/苏氨酸激酶的哺乳动物 STE20 样激酶(MST)，MST1 和 MST2 在 caspase 蛋白酶激活的 Apoptosis 的上游和下游都起作用。

Apoptosis 中 MST1 被 caspase 蛋白酶切割和激活，能诱导 Apoptosis 形态上的改变如染色质凝聚。哺乳动物 STE20 样激酶 2 (Mst2) 与 Mst1 蛋白激酶很相似,有近 90%的同源性。

Product Picture



Sample:

Lane 1: Hela (Human) Cell Lysate at 25 ug

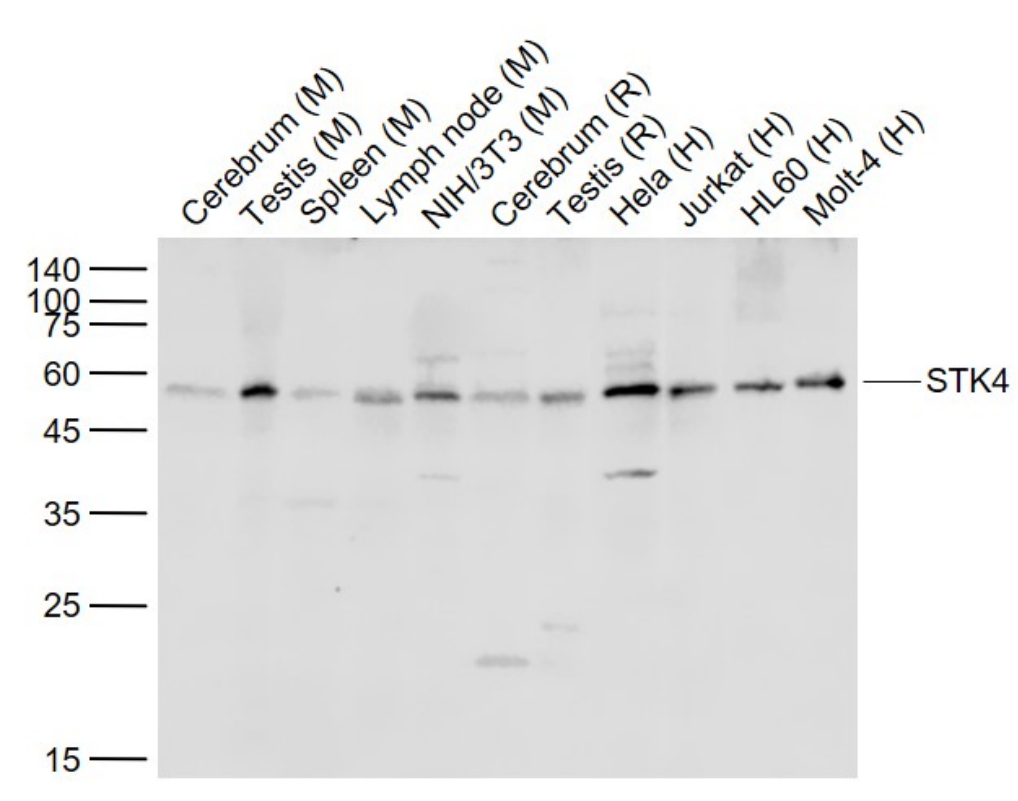
Lane 2: STK4 knockout (KO) Hela (Human) Cell Lysate at 25 ug

Primary: Anti-STK4 (SL55209R) at 1/1000 dilution

Secondary: HRP Goat Anti-Rabbit IgG (H+L) at 1:10000 dilution

Predicted band size: 60 kD

Observed band size: 57 kD



Sample:

Lane 1: Cerebrum (Mouse) Lysate at 40 ug

Lane 2: Testis (Mouse) Lysate at 40 ug

Lane 3: Spleen (Mouse) Lysate at 40 ug

Lane 4: Lymph node (Mouse) Lysate at 40 ug

Lane 5: NIH/3T3 (Mouse) Cell Lysate at 30 ug

Lane 6: Cerebrum (Rat) Lysate at 40 ug

Lane 7: Testis (Rat) Lysate at 40 ug

Lane 8: Hela (Human) Cell Lysate at 30 ug

Lane 9: Jurkat (Human) Cell Lysate at 30 ug

Lane 10: HL60 (Human) Cell Lysate at 30 ug

Lane 11: Molt-4 (Human) Cell Lysate at 30 ug

Primary: Anti-STK4 (SL55209R) at 1/1000 dilution

Secondary: IRDye800CW Goat Anti-Rabbit IgG at 1/20000 dilution

Predicted band size: 60 kD

Observed band size: 58 kD