

## Rabbit Anti-ASK1 antibody

SL1425R

<b>Product Name</b>	ASK1
<b>Chinese Name</b>	Apoptosis 信号调节激酶 1 抗体
<b>Alias</b>	MAPK/ERK kinase kinase 5; MEK kinase 5; MEKK 5; Apoptosis signal-regulating kinase 1; ASK-1; ASK1; MAPKKK5; MEKK5; M3K5_HUMAN.
<b>Research Area</b>	Tumour Cell biology immunology Signal transduction
<b>Immunogen Species</b>	Rabbit
<b>Clonality</b>	Polyclonal
<b>React Species</b>	Human(predicted:Mouse,Rat)
<b>Applications</b>	Flow-Cyt=3ug/Test not yet tested in other applications. optimal dilutions/concentrations should be determined by the end user.
<b>Theoretical molecular weight</b>	155kDa
<b>Cellular localization</b>	cytoplasmic
<b>Form</b>	Liquid
<b>Concentration</b>	1mg/ml
<b>immunogen</b>	KLH conjugated synthetic peptide derived from human ASK1: 321-460/1374 <Cytoplasmic>
<b>Lsotype</b>	IgG
<b>Purification</b>	affinity purified by Protein A
<b>Buffer Solution</b>	1M TBS(pH7.4) with 1% BSA, 3% Proclin300 and 50% Glycerol.
<b>Storage</b>	Shipped at 4°C. Store at -20 °C for one year. Avoid repeated freeze/thaw cycles.
<b>Attention</b>	This product as supplied is intended for research use only, not for use in human, therapeutic or diagnostic applications.
<b>PubMed</b>	<a href="#">PubMed</a>
<b>Product Detail</b>	Mitogen-activated protein kinase (MAPK) signaling cascades include MAPK or extracellular signal-regulated kinase (ERK), MAPK kinase (MKK or

MEK), and MAPK kinase kinase (MAPKKK or MEKK). MAPKK kinase/MEKK phosphorylates and activates its downstream protein kinase, MAPK kinase/MEK, which in turn activates MAPK. The kinases of these signaling cascades are highly conserved, and homologs exist in yeast, Drosophila, and mammalian cells. MAPKKK5 contains 1,374 amino acids with all 11 kinase subdomains. Northern blot analysis shows that MAPKKK5 transcript is abundantly expressed in human heart and pancreas. The MAPKKK5 protein phosphorylates and activates MKK4 (aliases SERK1, MAPKK4) in vitro, and activates c-Jun N-terminal kinase (JNK)/stress-activated protein kinase (SAPK) during transient expression in COS and 293 cells; MAPKKK5 does not activate MAPK/ERK.

**Function:**

Serine/threonine kinase which acts as an essential component of the MAP kinase signal transduction pathway. Plays an important role in the cascades of cellular responses evoked by changes in the environment. Mediates signaling for determination of cell fate such as differentiation and survival. Plays a crucial role in the apoptosis signal transduction pathway through mitochondria-dependent caspase activation. MAP3K5/ASK1 is required for the innate immune response, which is essential for host defense against a wide range of pathogens. Mediates signal transduction of various stressors like oxidative stress as well as by receptor-mediated inflammatory signals, such as the tumor necrosis factor (TNF) or lipopolysaccharide (LPS). Once activated, acts as an upstream activator of the MKK/JNK signal transduction cascade and the p38 MAPK signal transduction cascade through the phosphorylation and activation of several MAP kinase kinases like MAP2K4/SEK1, MAP2K3/MKK3, MAP2K6/MKK6 and MAP2K7/MKK7. These MAP2Ks in turn activate p38 MAPKs and c-jun N-terminal kinases (JNKs). Both p38 MAPK and JNKs control the transcription factors activator protein-1 (AP-1).

**Subunit:**

Homodimer when inactive. Binds both upstream activators and downstream substrates in multimolecular complexes. Associates with and inhibited by HIV-1 Nef. Part of a cytoplasmic complex made of HIPK1, DAB2IP and MAP3K5 in response to TNF. This complex formation promotes MAP3K5-JNK activation and subsequent apoptosis. Interacts with SOCS1 which recognizes phosphorylation of Tyr-718 and induces MAP3K5/ASK1 degradation in endothelial cells. Interacts with the 14-3-3 family proteins such as YWHAB, YWHAE, YWHAQ, YWHAH, YWHAZ and SFN. Interacts with ARRB2, BIRC2, DAB2IP, IGF1R, MAP3K6/ASK2, PGAM5, PIM1, PPP5C, SOCS1, STUB1, TRAF2, TRAF6 and TXN. Interacts with ERN1 in a TRAF2-dependent manner. Interacts with calcineurin subunit PPP3R1 and with PPM1L (By similarity). Interacts (via N-terminus) with RAF1 and this interaction inhibits the proapoptotic function of MAP3K5. Interacts with

DAB2IP (via N-terminus C2 domain); the interaction occurs in a TNF-alpha-dependent manner.

**Subcellular Location:**

Cytoplasm. Endoplasmic reticulum. Note=Interaction with 14-3-3 proteins alters the distribution of MAP3K5/ASK1 and restricts it to the perinuclear endoplasmic reticulum region.

**Tissue Specificity:**

Abundantly expressed in heart and pancreas.

**Post-translational modifications:**

Phosphorylated at Thr-838 through autophosphorylation and by MAP3K6/ASK2 which leads to activation. Thr-838 is dephosphorylated by PPP5C. Ser-83 and Ser-1033 are inactivating phosphorylation sites, the former of which is phosphorylated by AKT1 and AKT2. Phosphorylated at Ser-966 which induces association of MAP3K5/ASK1 with the 14-3-3 family proteins and suppresses MAP3K5/ASK1 activity. Calcineurin (CN) dephosphorylates this site. Also dephosphorylated and activated by PGAM5. Ubiquitinated. Tumor necrosis factor (TNF) induces TNFR2-dependent ubiquitination leading to proteasomal degradation.

**Similarity:**

Belongs to the protein kinase superfamily. STE Ser/Thr protein kinase family. MAP kinase kinase kinase subfamily. Contains 1 protein kinase domain.

**SWISS:**

Q99683

**Gene ID:**

4217

**Database links:**

[Entrez Gene: 4217](#) Human

[Entrez Gene: 26408](#) Mouse

[Entrez Gene: 293015](#) Rat

[Omim: 602448](#) Human

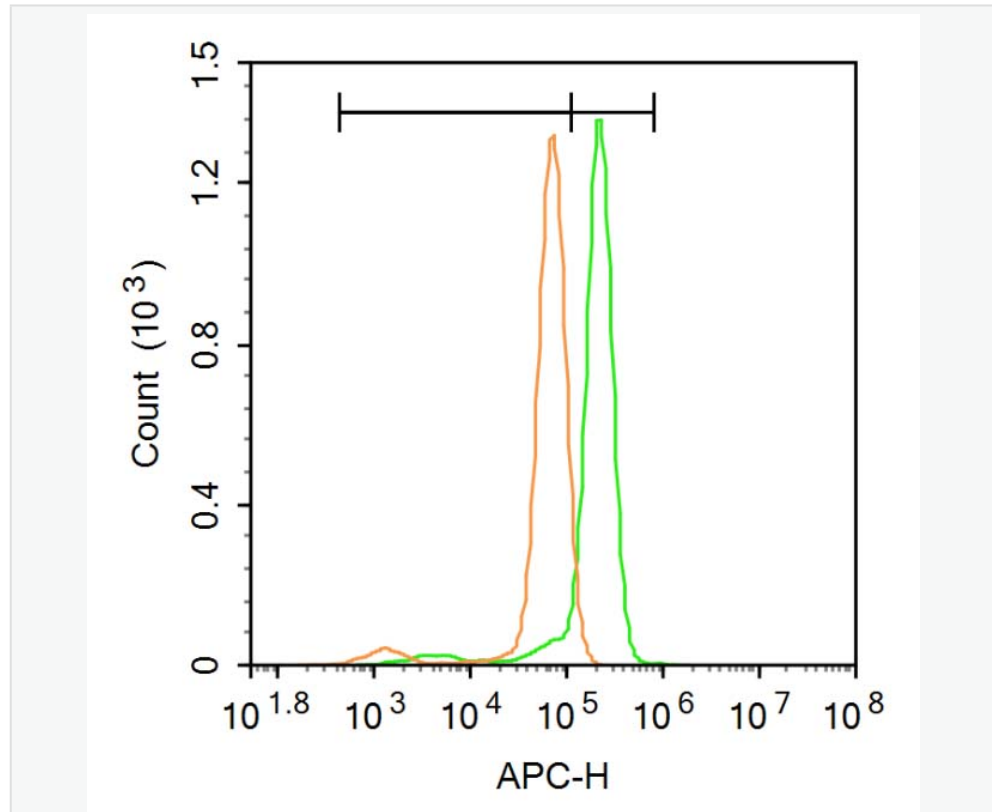
[SwissProt: Q99683](#) Human

[SwissProt: O35099](#) Mouse

[Unigene: 186486](#) Human

[Unigene: 6595](#) Mouse

**Product Picture**



Blank control (Black line): HUVEC (Black).

Primary Antibody (green line): Rabbit Anti-ASK1 antibody (SL1425R)

Dilution:  $1\mu\text{g}/10^6$  cells;

Isotype Control Antibody (orange line): Rabbit IgG .

Secondary Antibody (white blue line): Goat anti-rabbit IgG-AF647

Dilution:  $1\mu\text{g}/\text{test}$ .

Protocol

The cells were fixed with 4% PFA (10min at room temperature)and then permeabilized with 0.1% PBST for 20 min at room temperature. The cells were then incubated in 5%BSA to block non-specific protein-protein interactions for 30 min at room temperature .Cells stained with Primary Antibody for 30 min at room temperature. The secondary antibody used for 40 min at room temperature. Acquisition of 20,000 events was performed.