#3764 Store at –20°C

Phospho-ASK1(Ser967) Antibody

☑ 100 µl
(10 western blots)

Cell Signaling TECHNOLOGY®

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Entrez-Gene ID # 4217
Swiss-Prot Acc. # Q99683

Applications	Species Cross-Reactivity*	Molecular Wt.	Source
W Transfected	H, (M, R)	155 kDa	Rabbit**

Background: Apoptosis signal-regulating kinase 1 (ASK1), a MAP kinase kinase kinase, plays essential roles in stress-induced apoptosis (1,2). ASK1 is activated in response to a variety of stress-related stimuli through distinct mechanisms and activates MKK4 and MKK3, which in turn activate JNK and p38 (3). Overexpression of ASK1 activates JNK and p38 and induces apoptosis in several cell types through signals involving the mitochondrial cell death pathway. Embryonic fibroblasts or primary neurons derived from ASK1-/- mice are resistant to stress-induced JNK and p38 activation and cell death (4,5). Phosphorylation at Ser967 is essential for ASK1 association with 14-3-3 protein and suppression of cell death (6). Oxidative stress induces dephosphorylation of Ser967 and phosphorylation of Thr845 in the activation loop of ASK1, and both are correlated with ASK1 activity and ASK1-dependent apoptosis (7,8). On the other hand, Akt phosphorylates ASK1 at Ser83, which attenuates ASK1 activity and promotes cell survival (9).

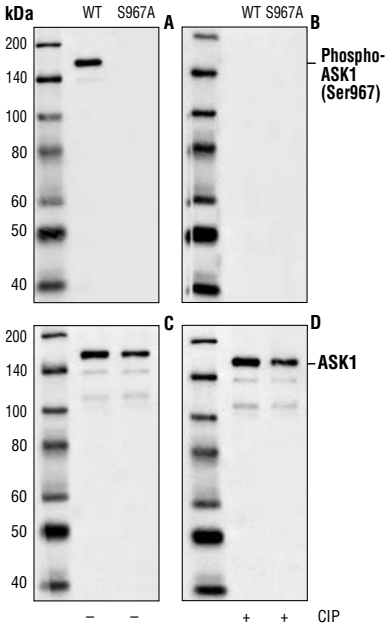
Phosphorylation at Ser967 of ASK1 leads to association of 14-3-3 and suppression of ASK1 kinase activity (6).

Specificity/Sensitivity: Phospho-ASK1 (Ser967) Antibody detects transfected ASK1 only when phosphorylated at serine 967.

Source/Purification: Polyclonal antibodies are produced by immunizing animals with a synthetic phosphopeptide (KLH-coupled) corresponding to residues around serine 967 of human ASK1. Antibodies are purified by protein A and peptide affinity chromatography.

Background References:

(1) Ichijo, H. et al. (1997) *Science* 275, 90–94.
(2) Wang, X.S. et al. (1996) *J. Biol. Chem.* 271, 31607–31611.
(3) Matsuzawa, A. and Ichijo, H. (2001) *J. Biochem. (Tokyo)* 130, 1–8.
(4) Tobiume, K. et al. (2001) *EMBO Rep.* 2, 222–228.
(5) Nishitoh, H. et al. (2002) *Genes Dev.* 16, 1345–1355.
(6) Zhang, L. et al. (1999) *Proc. Natl. Acad. Sci. USA* 96, 8511–8515.
(7) Tobiume, K. et al. (2002) *J. Cell. Physiol.* 191, 95–104.
(8) Goldman, E.H. et al. (2004) *J. Biol. Chem.* in press, .
(9) Kim, A.H. et al. (2001) *Mol. Cell. Biol.* 21, 893–901.
(10) Zhang, L. et al. (1999) *Proc. Natl. Acad. Sci. USA* 96, 8511–8515.



Western blot analysis of extracts from COS7 cells transfected with wild-type or Ser967Ala mutant ASK1, using Phospho-ASK1 (Ser967) Antibody (A,B) or ASK1 Antibody #3762 (C,D). The phospho-specificity of the antibody was further characterized by treating the membrane with calf intestinal alkaline phosphatase (CIP) after Western transfer (B,D).

Storage: Supplied in 10 mM sodium HEPES (pH 7.5), 150 mM NaCl, 100 µg/ml BSA and 50% glycerol. Store at –20°C. *Do not aliquot the antibody.*

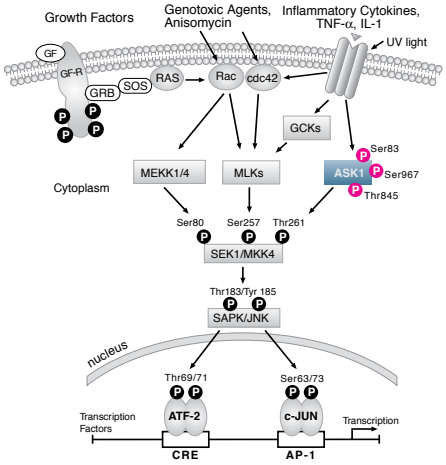
***Species cross-reactivity is determined by western blot.**

****Anti-rabbit secondary antibodies must be used to detect this antibody.**

Recommended Antibody Dilutions:
Western Blotting 1:1000

For application specific protocols please see the web page for this product at www.cellsignal.com.

Please visit www.cellsignal.com for a complete listing of recommended companion products.



ASK1 Signaling Pathway

IMPORTANT: For western blots, incubate membrane with diluted antibody in 5% w/v BSA, 1X TBS, 0.1% Tween-20 at 4°C with gentle shaking, overnight.

Applications Key: **W**—Western **IP**—Immunoprecipitation **IHC**—Immunohistochemistry **ChIP**—Chromatin Immunoprecipitation **IF**—Immunofluorescence **F**—Flow cytometry **E-P**—ELISA-Peptide
Species Cross-Reactivity Key: **H**—human **M**—mouse **R**—rat **Hm**—hamster **Mk**—monkey **Mi**—mink **C**—chicken **Dm**—D. melanogaster **X**—Xenopus **Z**—zebrafish **B**—bovine **Dg**—dog **Pg**—pig **Sc**—S. cerevisiae **Ce**—C. elegans **Hr**—Horse **All**—all species expected Species enclosed in parentheses are predicted to react based on 100% homology.