

#3761 Store at -20°C

# Phospho-ASK1 (Ser83) Antibody

100 µl  
 (10 western blots)



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This product is intended for research purposes only. This product is not intended to be used for therapeutic or diagnostic purposes in humans or animals.

Applications	Species Cross-Reactivity*	Molecular Wt.	Source
W, IP Transfected	H	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<sup>-/-</sup> 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).

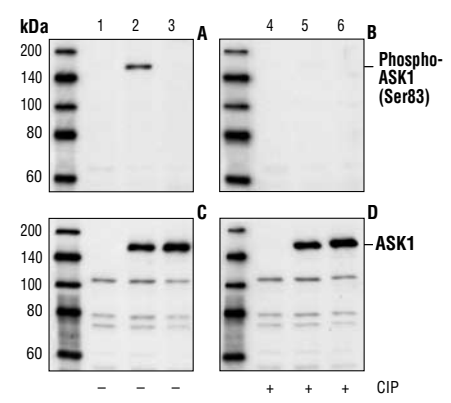
ASK1 is a substrate for phosphorylation at Ser83 by Akt, and that this phosphorylation is associated with a decrease in stimulated ASK1 kinase activity (6).

**Specificity/Sensitivity:** Phospho-ASK1 (Ser83) Antibody detects transfected ASK1 only when phosphorylated at Ser83.

**Source/Purification:** Polyclonal antibodies are produced by immunizing animals with a synthetic phosphopeptide (KLH-coupled) corresponding to residues around Ser83 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.



Western blot analysis of extracts from NIH/3T3 cells, untransfected (lanes 1 and 4) or transfected wild type (lanes 2 and 5) or Ser83Ala mutant (lanes 3 and 6) ASK1, using Phospho-ASK1 (Ser83) Antibody (A and B) or ASK1 Antibody #3762 (C and D). The phospho-specificity of the antibody was further characterized by treating the membranes (B and D) with calf intestinal alkaline phosphatase (CIP) after Western transfer.

- (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.

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

**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.

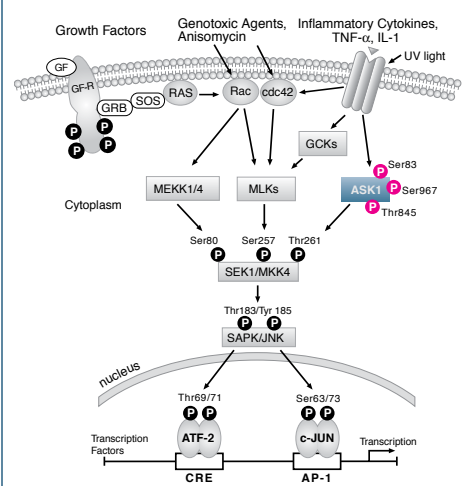
**\*Species cross-reactivity is determined by western blot.**

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

**Recommended Antibody Dilutions:**  
 Western blotting 1:1000  
 Immunoprecipitation 1:100

For application specific protocols please see the web page for this product at [www.cellsignal.com](http://www.cellsignal.com).

Please visit [www.cellsignal.com](http://www.cellsignal.com) for a complete listing of recommended companion products.



**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.