

#3483 Store at -20°C

MKP5 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.

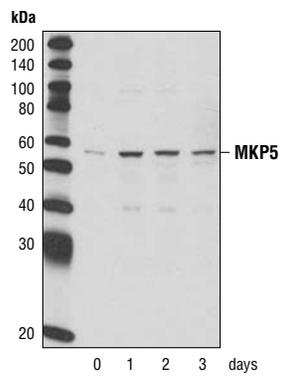
Applications	Species Cross-Reactivity*	Molecular Wt.	Source
W Endogenous	H, M, R	54 kDa	Rabbit**

Background: MAP kinases are inactivated by dual-specificity protein phosphatases known as MAPK phosphatases (MKP), that differ in their substrate specificity, tissue distribution, inducibility by extracellular stimuli and cellular localization. MKPs specifically dephosphorylate both threonine and tyrosine residues in MAPK P-loops and have been shown to play important roles in regulating the function of the MAPK family (1,2). At least 13 members of the family (MKP-1, PAC-1, VHR, MKP-2, HVH3, MKP-3, PYST2, HVH5, MKP-4, MKP-5, MKP-6, MKP-7, DSP2) display unique substrate specificities for various MAP kinases (3). MAPK phosphatases typically contain an amino-terminal rhodanese-fold responsible for MKP docking to MAPK family members and a carboxy-terminal catalytic domain (4). These phosphatases can play important roles in development, immune system function, stress responses and metabolic homeostasis (5), and also in the development of cancer and the response of cancer cells to chemotherapy (6).

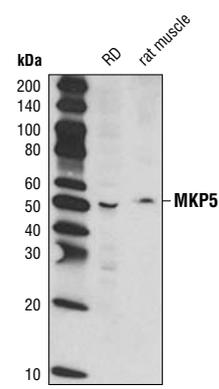
Dual specificity phosphatase 10 (DUSP10 or MKP5) selectively phosphorylates and inactivates p38α MAP kinase and JNK, but does not appear to affect p44/42 MAPK. Activated JNK phosphorylates the ATF2 transcription factor during periods of oxidative stress, which induces expression of MKP5 and related phosphatases. Increased MKP5 activity helps to further coordinate JNK activity during the stress response (7). Studies using MKP5 deficient mice demonstrated a likely role of this phosphatase in both the adaptive and innate immune responses (8).

Specificity/Sensitivity: MKP5 Antibody detects endogenous levels of total MKP5 protein.

Source/Purification: Polyclonal antibodies are produced by immunizing animals with a synthetic peptide corresponding to human MKP5. Antibodies are purified by protein A and peptide affinity chromatography.



Western blot analysis of extracts from C2C12 cells, differentiated for the indicated time periods, using MKP5 Antibody.



Western blot analysis of extracts from RD and rat muscle cells using MKP5 Antibody.

Entrez-Gene ID #11221
Swiss-Prot Acc. #Q9Y6W6

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.

Background References:

- (1) Camps, M. et al. (2000) *FASEB J* 14, 6–16.
- (2) Theodosiou, A. and Ashworth, A. (2002) *Genome Biol* 3, REVIEWS3009.
- (3) Salojin, K. and Oravec, T. (2007) *J Leukoc Biol* 81, 860–9.
- (4) Tanoue, T. et al. (2002) *J Biol Chem* 277, 22942–9.
- (5) Dickinson, R.J. and Keyse, S.M. (2006) *J Cell Sci* 119, 4607–15.
- (6) Wu, G.S. (2007) *Cancer Metastasis Rev* 26, 579–85.
- (7) Teng, C.H. et al. (2007) *J Biol Chem* 282, 28395–407.
- (8) Zhang, Y. et al. (2004) *Nature* 430, 793–7.

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.