Revision 1

#3679 Store at -20C

MSK2 (D41A4) XP® Rabbit mAb

Cell Signaling TECHNOLOGY®

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Applications:	Reactivity:	Sensitivity:	MW (kDa):	Source/Isotype:	UniProt ID:	Entrez-Gene Id:
W, IP, IF-IC	H	Endogenous	85, 90	Rabbit IgG	#O75676	8986

Product Usage Information

Application	Dilution
Western Blotting	1:1000
Immunoprecipitation	1:50
Immunofluorescence (Immunocytochemistry)	1:200

Storage

Supplied in 10 mM sodium HEPES (pH 7.5), 150 mM NaCl, 100 µg/ml BSA, 50% glycerol and less than 0.02% sodium azide. Store at –20°C. Do not aliquot the antibody.

Specificity/Sensitivity

MSK2 (D41A4) XP® Rabbit mAb detects endogenous levels of total MSK2 protein.

Source / Purification

Monoclonal antibody is produced by immunizing animals with a synthetic peptide corresponding to the region surrounding Pro751 of human MSK2.

Background

Mitogen- and stress-activated protein kinase 1 (MSK1) and MSK2 are serine/threonine kinases that promote immediate early gene transcription in stress- or mitogen-induced cells (1-4,7, 8) and LPS-stimulated macrophages (9). MSK2, also known as RSKB, contains two catalytic domains and has been shown to interact directly with p38 MAP kinase (10). MSK2 is phosphorylated and activated in response to tumor necrosis factor, epidermal growth factor or phorbol ester in HeLa cells or murine embryonic fibroblasts (MEFs) in a p38- and ERK-dependent manner (8,11). Phosphorylation on residues Ser196 and Thr568 within the activation loop of both catalytic domains is required for full kinase activation (11). Both MSK1 and MSK2 contain a functional nuclear localization sequence that is sufficient and required for nuclear targeting (10). Consistent with their nuclear localization, these kinases play an important role in regulating transcriptional responses to stress and mitogens. Activation of MSK2 in HeLa cells or MEFs results in rapid phosphorylation of histone H3, HMG-14, CREB and ATF1 and acetylation of histone H3 associated with immediate early gene transcription (3,4,6,7).

Background References

1. Ananieva, O. et al. (2008) *Nat Immunol* 9, 1028-36.
2. Sury, M.D. et al. (2006) *Free Radic Biol Med* 41, 1372-83.
3. Duncan, E.A. et al. (2006) *J Biol Chem* 281, 12521-5.
4. Darragh, J. et al. (2005) *Biochem J* 390, 749-59.
5. Doehn, U. et al. (2004) *Biochem J* 382, 425-31.
6. Davie, J.R. (2003) *Sci STKE* 2003, PE33.
7. Soloaga, A. et al. (2003) *EMBO J* 22, 2788-97.
8. Wiggin, G.R. et al. (2002) *Mol Cell Biol* 22, 2871-81.
9. Caivano, M. and Cohen, P. (2000) *J Immunol* 164, 3018-25.
10. Tomás-Zuber, M. et al. (2001) *J Biol Chem* 276, 5892-9.
11. Tomás-Zuber, M. et al. (2000) *J Biol Chem* 275, 23549-58.

Species Reactivity

Species reactivity is determined by testing in at least one approved application (e.g., western blot).

Western Blot Buffer

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

Applications Key

W: Western Blotting **IP:** Immunoprecipitation **IF-IC:** Immunofluorescence (Immunocytochemistry)

Cross-Reactivity Key

H: Human

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