

Erk5 (D3I5V) Rabbit mAb



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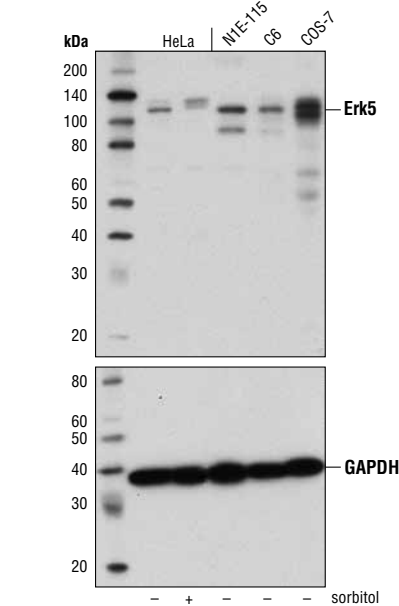
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Applications W, IP Endogenous	Species Cross-Reactivity* H, M, R, Mk, (Hr)	Molecular Wt. 115 kDa	Isotype Rabbit **
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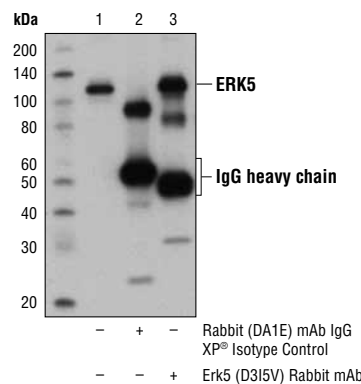
Background: Erk5 (Mitogen-activated protein kinase 7, Big mitogen-activated protein kinase 1) is a member of the MAPK superfamily implicated in the regulation numerous cellular processes including proliferation, differentiation, and survival (1-4). Like other MAPK family members, Erk5 contains a canonical activation loop TEY motif (Thr218/Tyr220) that is specifically phosphorylated by MAP2K5 (MEK5) in a growth factor-dependent, Ras-independent mechanism (5-7). For example, EGF stimulation promotes Erk5 phosphorylation that induces its translocation to the nucleus where it phosphorylates MEF2C and other transcriptional targets (5,6). Erk5 is also activated in response to granulocyte colony-stimulating factor (G-CSF) in hematopoietic progenitor cells where it promotes survival and proliferation (7). In neuronal cells, Erk5 is required for NGF-induced neurite outgrowth, neuronal homeostasis, and survival (8,9). Erk5 is thought to play a role in blood vessel integrity via maintenance of endothelial cell migration and barrier function (10-12). Although broadly expressed, research studies have shown that mice lacking *erk5* display numerous cardiac defects, suggesting Erk5 plays a critical role in vascular development and homeostasis (1,2).

Specificity/Sensitivity: Erk5 (D3I5V) Rabbit mAb recognizes endogenous levels of total Erk5 protein. This antibody detects isoforms 1 and 2 of human Erk5 and isoforms 1-3 of murine Erk5 (note multiple bands in western blot image).

Source/Purification: Monoclonal antibody is produced by immunizing animals with a synthetic peptide corresponding to residues surrounding Leu556 of human Erk5 protein.



Western blot analysis of extracts from HeLa cells, untreated (-) or sorbitol-treated (400 mM, 15 min; +), and N1E-115, C6, and COS-7 cells using Erk5 (D3I5V) Rabbit mAb (upper) and GAPDH (D16H11) XP® Rabbit mAb #5174 (lower).



Immunoprecipitation of Erk5 from HeLa cell extracts using Rabbit (DA1E) mAb IgG XP® Isotype Control #3900 (lane 2) or Erk5 (D3I5V) Rabbit mAb (lane 3). Lane 1 is 10% input. Western blot analysis was performed using Erk5 (D3I5V) Rabbit mAb.

Entrez Gene ID #5598
UniProt ID #Q13164

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.

*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	1:50

For product 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:

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- (2) Hayashi, M. and Lee, J.D. (2004) *J Mol Med* 82, 800-8.
- (3) Wang, X. and Tournier, C. (2006) *Cell Signal* 18, 753-60.
- (4) Nishimoto, S. and Nishida, E. (2006) *EMBO Rep* 7, 782-6.
- (5) Kato, Y. et al. (1998) *Nature* 395, 713-6.
- (6) Kato, Y. et al. (1997) *EMBO J* 16, 7054-66.
- (7) Dong, F. et al. (2001) *J Biol Chem* 276, 10811-6.
- (8) Obara, Y. et al. (2009) *J Biol Chem* 284, 23564-73.
- (9) Finegan, K.G. et al. (2009) *Cell Death Differ* 16, 674-83.
- (10) Spiering, D. et al. (2009) *J Biol Chem* 284, 24972-80.
- (11) Sawhney, R.S. et al. (2009) *J Cell Physiol* 219, 152-61.
- (12) Zhao, Z. et al. (2009) *Mol Cell Biochem* 322, 171-8.

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.

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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.