Revision 3

Store at -20C

#12950

Erk5 (D3I5V) Rabbit mAb

Cell Signaling TECHNOLOGY®

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Applications:	Reactivity:	Sensitivity:	MW (kDa):	Source/Isotype:	UniProt ID:	Entrez-Gene Id:
W, IP	H M R Mk	Endogenous	115	Rabbit IgG	#Q13164	5598

Product Usage Information

Application	Dilution
Western Blotting	1:1000
Immunoprecipitation	1:50

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

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).

Species predicted to react based on 100% sequence homology

Horse

Source / Purification

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

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).

Background References

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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.

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

Cross-Reactivity Key

H: Human **M:** Mouse **R:** Rat **Mk:** Monkey

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