Revision 3

#3371 Store at -20C

Phospho-Erk5 (Thr218/Tyr220) Antibody

Cell Signaling TECHNOLOGY®

Orders: 877-616-CELL (2355) orders@cellsignal.com

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Web: info@cellsignal.com cellsignal.com

3 Trask Lane | Danvers | Massachusetts | 01923 | USA

For Research Use Only. Not for Use in Diagnostic Procedures.

Applications:	Reactivity:	Sensitivity:	MW (kDa):	Source:	UniProt ID:	Entrez-Gene Id:
WB	H M R Mk	Transfected Only	115	Rabbit	#Q13164	5598

Product Usage Information

Application	Dilution
Western Blotting	1:1000

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.

Specificity / Sensitivity

Phospho-Erk5 (Thr218/Tyr220) Antibody detects immunoprecipitated or transfected levels of Erk5 phosphorylated at threonine 218 and tyrosine 220. This antibody cross-reacts with phosphorylated Erk1 and Erk2. It does not cross-react with phosphorylated p38 MAPK or SAPK/JNK.

Source / Purification

Polyclonal antibodies are produced by immunizing animals with a synthetic phosphopeptide corresponding to residues surrounding Thr218/Tyr220 of human Erk5. Antibodies are purified by protein A and peptide affinity chromatography.

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.
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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

WB: Western Blotting

Cross-Reactivity Key

H: human **M:** mouse **R:** rat **Hm:** hamster **Mk:** monkey **Vir:** virus **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
GP: Guinea Pig **Rab:** rabbit **All:** all species expected

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Limited Uses