Revision 1

#2089 Store at -20C

MCF2/Dbl Antibody

Cell Signaling TECHNOLOGY®

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

Applications:	Reactivity:	Sensitivity:	MW (kDa):	Source/Isotype:	UniProt ID:	Entrez-Gene Id:
W	H M R	Endogenous	100	Rabbit	#P10911	4168

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

MCF2/Dbl Antibody recognizes endogenous levels of total MCF2/Dbl protein. Based on amino acid sequence homology, the antibody is expected to recognize splice variants 1-4 of human MCF2/Dbl. The antibody is not expected to recognize the onco-Dbl protein formed through amino-terminal truncation.

Source / Purification

Polyclonal antibodies are produced by immunizing animals with a synthetic peptide corresponding to the amino terminus of human MCF2/Dbl. Antibodies are purified using protein A and peptide affinity chromatography.

Background

The MCF2/Dbl proto-oncogene product is the founding member of the Dbl family of Rho guanine nucleotide exchange factors (GEFs) that are characterized by their Dbl homology (DH) domain (1). GEFs stimulate the formation of the active, GTP-bound form of small GTPases such as Rho, Rac and Cdc42, signaling to various downstream molecules and regulating diverse cell functions. While the overexpressed, full-length Dbl gene has transforming activity (2), mutations resulting in truncated Dbl cause the protein to become highly oncogenic. This truncated form of Dbl, which lacks the amino-terminal 497 amino acids, has constitutive GEF activity (3) and is more stable than the full-length variant (4), allowing for increased signaling to downstream effector molecules.
Dbl interacts with ezrin, a member of the ezrin/radixin/moesin (ERM) family of proteins that links the plasma membrane to the actin cytoskeleton. Dbl interacts with ezrin in lipid microdomains, which leads to Cdc42 activation and the regulation of processes such as filopodia formation and cell polarity (5,6). Dbl localization and biological activities are regulated in part by phosphatidylinositol 3-kinase (PI3K) (7). Dbl is also involved in cell survival and inhibits apoptosis through induction of Akt phosphorylation at Thr308 (8).

Background References

1. Zheng, Y. (2001) *Trends Biochem Sci* 26, 724-32.
2. Ron, D. et al. (1988) *EMBO J* 7, 2465-73.
3. Hart, M.J. et al. (1991) *Nature* 354, 311-4.
4. Kamynina, E. et al. (2007) *Mol Cell Biol* 27, 1809-22.
5. Batchelor, C.L. et al. (2007) *Cell Cycle* 6, 353-63.
6. Prag, S. et al. (2007) *Mol Biol Cell* 18, 2935-48.
7. Vanni, C. et al. (2006) *Cell Cycle* 5, 2657-65.
8. Morley, S. et al. (2007) *Cell Signal* 19, 211-8.

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 nonfat dry milk, 1X TBS, 0.1% Tween® 20 at 4°C with gentle shaking, overnight.

Applications Key

W: Western Blotting

Cross-Reactivity Key

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

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