Revision 4

Store at -20C

#3453

Phospho-Doublecortin (Ser334) 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, IP, IF-F	H M R	Endogenous	45	Rabbit	#O43602	1641

Product Usage Information

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

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-Doublecortin (Ser334) Antibody detects endogenous levels of doublecortin only when phosphorylated at Ser334.

Source / Purification

Polyclonal antibodies are produced by immunizing animals with a synthetic phosphopeptide corresponding to residues surrounding Ser334 of doublecortin. Antibodies are purified by protein A and peptide affinity chromatography.

Background

Mutations in doublecortin (*DCX*) cause Lissencephaly (smooth brain), a neuronal migration disorder characterized by epilepsy and mental retardation (1). Doublecortin is a microtubule-associated protein that stabilizes and bundles microtubules. A conserved doublecortin domain mediates the interaction with microtubules, and interestingly most missense mutations cluster in this domain (2). Kinases JNK, CDK5, and PKA phosphorylate doublecortin. JNK phosphorylates Thr321, Thr331, and Ser334 while PKA phosphorylates Ser47 and CDK5 phosphorylates Ser297 (3-5). Phosphorylation of Ser297 lowers the affinity of doublecortin to microtubules. Furthermore, mutations of Ser297 result in migration defects (5).

Doublecortin phosphorylated at Ser334 is enriched in growth cones and affects neurite outgrowth and neuronal migration (3).

Background References

1. Gleeson, J.G. et al. (1998) *Cell* 92, 63-72.
2. Reiner, O. et al. (2004) *Cell Cycle* 3, 747-51.
3. Gdalyahu, A. et al. (2004) *EMBO J* 23, 823-32.
4. Schaar, B.T. et al. (2004) *Neuron* 41, 203-13.
5. Tanaka, T. et al. (2004) *Neuron* 41, 215-27.

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-F:** Immunofluorescence (Frozen)

Cross-Reactivity Key

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

Trademarks and Patents

Limited Uses

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