#4604 Store at –20°C

Doublecortin Antibody

Cell Signaling TECHNOLOGY®

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For Research Use Only. Not For Use In Diagnostic Procedures.

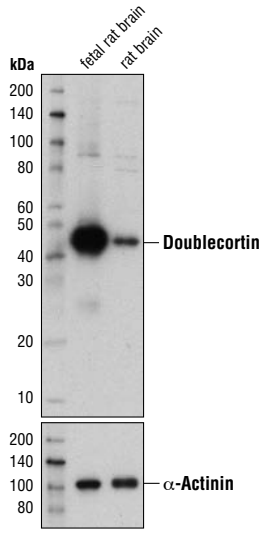
Entrez-Gene ID #1641
Swiss-Prot Acc. #O43602

Applications	Species Cross-Reactivity*	Molecular Wt.	Source
W, IP, IF-F, F Endogenous	H, M, R, Mk, Dm	45 kDa	Rabbit**

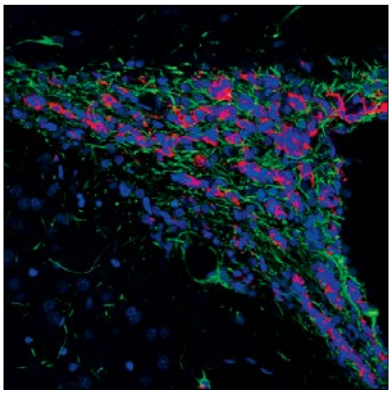
Background: Mutations in *Doublecortin* cause Lissencephaly (smooth brain), a neuronal migration disorder characterized by epilepsy and mental retardation (1). Doublecortin is a microtubule associated protein, stabilizing and bundling microtubules. A conserved doublecortin domain mediates the interaction with microtubules and interestingly, most missense mutations cluster in this domain (2). JNK, CDK5 and PKA all phosphorylate doublecortin: JNK phosphorylates Thr321, Thr331 and Ser334; 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).

Specificity/Sensitivity: Doublecortin Antibody detects endogenous levels of total doublecortin protein. Non-specific immune cell staining has been observed with this antibody in certain tissues.

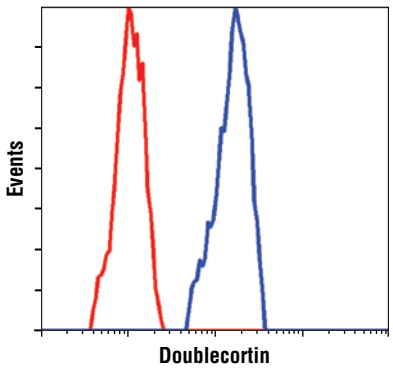
Source/Purification: Polyclonal antibodies are produced by immunizing animals with a synthetic peptide corresponding to human doublecortin. Antibodies are purified by protein A and peptide affinity chromatography.



Western blot analysis of extracts from fetal rat brain and rat brain, using Doublecortin Antibody (upper) or α-Actinin (D6F6) XP® Rabbit mAb #6487 (lower).



Confocal immunofluorescent image of Doublecortin Antibody (red) and GFAP (GA5) Mouse mAb #3670 (green) staining the subventricular zone of the striatum in reperfused ischemic rat brain. Blue pseudocolor = DRAQ5® #4084 (fluorescent DNA dye).



Flow cytometric analysis of SK-N-MC cells, using Doublecortin antibody (blue) compared to a nonspecific negative control antibody (red).

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.*

***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
Immunofluorescence (IF-F)	1:800
Fixative:	4% Formaldehyde
Permeabilization:	0.3% Triton X-100
Flow Cytometry	1:100

For product specific protocols and a complete listing of recommended companion products please see the product web page at www.cellsignal.com.

Background References:

(1) Gleeson, J.G. et al. (1998) *Cell* 92, 63–72.
(2) Reiner, O. et al. (2004) *Cell Cycle* 3, 747–751.
(3) Gdalyahu, A. et al. (2004) *EMBO J.* 23, 823–832.
(4) Schaar, B.T. et al. (2004) *Neuron* 41, 203–213.
(5) Tanaka, T. et al. (2004) *Neuron* 41, 215–227.

IMPORTANT: For western blots, incubate membrane with diluted 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 **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.