

Qty: 100 μg/400 μL Rabbit anti-Doublecortin **Catalog No.** 48-1200 Lot No.

Rabbit anti-Doublecortin

FORM

This polyclonal antibody is supplied as a 400 µL aliquot at a concentration of 0.25 mg/mL in phosphate buffered saline (pH 7.4) containing 0.1% sodium azide. This antibody is epitope-affinity purified from rabbit antiserum.

PAD: ZMD.681

IMMUNOGEN

Synthetic peptide derived from the C-terminal region of the human doublecortin protein (Accession# NP_000546, O43602), which is identical to mouse and rat sequence.

SPECIFICITY

This antibody is specific for the doublecortin (doublecortex, DCX, DBCN, LISX, SCLH, XLIS) protein. On Western blots, it identifies the target band at ~40 kDa.

REACTIVITY

Reactivity has been confirmed with HEK 293T cell lysates transfected with human doublecortin cDNA (Invitrogen Ultimate[™] ORF Clone, Cat# IOH22620) and mouse fetal brain homogenates. Based on amino acid sequence homology, reactivity with rat is expected.

Sample	Western Blotting	Immuno- precipitation	Immuno- cytochemistry
Human	+++	+++	ND
Mouse	+++	+++	ND
Rat	ND	ND	ND

(Excellent +++, Good++, Poor +, No reactivity 0, Not applicable N/A, Not Determined ND)

USAGE

Working concentrations for specific applications should be determined by the investigator. Appropriate concentrations will be affected by several factors, including secondary antibody affinity, antigen concentration, sensitivity of detection method, temperature and length of incubations, etc. The suitability of this antibody for applications other than those listed below has not been determined. The following concentration ranges are recommended starting points for this product.

Western Blotting: 1-3 μg/mL Immunoprecipitation: 5 μg/IP reaction

STORAGE

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Store at 2-8°C for up to one month. Store at -20°C for long-term storage. Avoid repeated freezing and thawing.

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BACKGROUND

In the developing cortex, cortical neurons must migrate over long distances to reach the site of their final differentiation. Doublecortin is a cytoplasmic protein which appears to direct neuronal migration by regulating the organization and stability of microtubules.¹ DCX is expressed in migrating neurons throughout the central and peripheral nervous system during embryonic and postnatal development. DCX protein localization overlaps with that of microtubules in cultured primary cortical neurons, and this overlapping expression was disrupted by microtubule depolymerization.² In addition, doublecortin interacts with LIS1, the regulatory gamma subunit of platelet activating factor acetylhydrolase, and this interaction is important to proper microtubule function in the developing cortex.^{3, 5}

Inhibition of DCX expression disrupted radial migration of the migrating neurons. Many neurons prematurely stopped migrating to form subcortical band heterotopias within the intermediate zone and then the white matter, and many neurons migrated into inappropriate neocortical lamina within normotopic cortex.^{4, 5} Mutations of doublecortin are a cause of X-linked lissencephaly ('smooth brain').

REFERENCES

- 1. Gleeson JG, et al. Cell 92(1): 63-72, 1998.
- 2. Gleeson JG, et al. *Neuron* 23(2):257-271, 1999.
- 3. Caspi M, et al. Hum Mol Genet 9(15):2205-2213, 2000.
- 4. Bai J, et al. Nat Neurosci 6(12):1277-1283, 2003.
- 5. Vreugdenhil E, et al. *Eur J Neurosci* 25(3):635-648, 2007.

RELATED PRODUCTS

Product	Conjugate	Cat. No.
Protein A	Sepharose 4B	10-1041
rec-Protein G	Sepharose 4B	10-1241
ZyMAX™ Goat anti-rabbit IgG	Unconjugated	81-6100
ZyMAX™ Goat anti-mouse IgG	Unconjugated	81-6500

Secondary antibody conjugates.

Conjugate	Goat anti-rabbit lgG (H+L)	Goat anti-mouse lgG (H+L)	Ex/Em*	Fluorescence similar to
Alexa Fluor® 488	A11008	A11001	495/519	FITC
Alexa Fluor® 555	A21428	A21422	555/565	СуЗ
Alexa Fluor® 594	A11012	A11005	590/617	Texas Red
Alexa Fluor® 647	A21244	A21235	650/668	Cy5
HRP	81-6120	81-6520	NA**	NA
AP	81-6122	81-6522	NA	NA
Biotin	B2770	B2763	NA	NA

*Excitation/emission (nm); **Not applicable

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For additional secondary antibody conjugates, visit www.invitrogen.com/antibodies

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