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ProductInformation

Anti-Doublecortin (N-terminal)
produced in rabbit, affinity isolated antibody

Catalog Number **D9943**

Product Description

Anti-Doublecortin (N-terminal) is produced in rabbit using as immunogen a synthetic peptide corresponding to amino acids 1-17 located at the N-terminus of rat doublecortin (GeneID: 84394), conjugated to KLH. This sequence is identical in mouse, and highly conserved in human doublecortin (single amino acid substitution). The antibody is affinity-purified using the immunizing peptide immobilized on agarose.

Anti-Doublecortin (N-terminal) specifically recognizes human, rat, and mouse doublecortin by immunoblotting (~40 kDa). Staining of the doublecortin band in immunoblotting is specifically inhibited by the immunizing peptide.

The mammalian cortex is formed during development by the precise layering of multiple neuronal types in an organized fashion. This laminar organization is essential for normal brain development and cognitive functions. Doublecortin (also termed DCX, doublecortex, X-linked lissencephaly, LISX, XLIS) is a 40 kDa microtubule-associated protein (MAP) that is essential for migration of neurons during the development of the cerebral cortex. Mutations in the human DCX gene cause lissencephaly (“smooth brain”) or subcortical laminar heterotopia (SCLH).[1, 2] Lissencephaly is a severe cortical malformation disorder with massive disorganization of neurons that results in migrational arrest of virtually all cortical neurons to their normal destination, and produces profound mental retardation and seizures. DCX interaction with MAPs stabilizes microtubules (MTs).[3, 4] The interaction with MTs is via a conserved N-terminal doublecortin (DC) domain. The expression and phosphorylation of DCX is regulated during brain development. DCX can be phosphorylated at multiple sites, by different kinases, including JNK, Cdk5, PKA and MARK/PAR-1 family of protein kinases.[5-7] The localization of DCX in growth cones with filamentous actin has been shown to require phosphorylation by JNK, suggesting a role of DCX in the JNK signaling pathway.[6, 7]

Reagent

Supplied as a solution in 0.01 M phosphate buffered saline, pH 7.4, containing 15 mM sodium azide as a preservative.

Antibody concentration: ~1.5 mg/mL

Precautions and Disclaimer

This product is for R&D use only, not for drug, household, or other uses. Please consult the Material Safety Data Sheet for information regarding hazards and safe handling practices.

Storage/Stability

For continuous use, store at 2-8 °C for up to one month. For extended storage, freeze in working aliquots. Repeated freezing and thawing, or storage in “frost-free” freezers, is not recommended. If slight turbidity occurs upon prolonged storage, clarify the solution by centrifugation before use. Working dilutions should be discarded if not used within 12 hours.

Product Profile

Immunoblotting: a working concentration of 0.5-1 µg/mL is recommended using HEK-293T cells expressing human doublecortin and rat brain extract (S1 fraction), and 1-2 µg/mL using mouse brain extract (S1 fraction).
Note: In order to obtain the best results using various techniques and preparations, we recommend determining the optimal working dilutions by titration.

References

1. des Portes, V., et al., *Cell*, **92**, 51-61 (1998).
2. Gleeson, J.G., et al., *Cell*, **92**, 63-72 (1998).
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4. Horesh, D., et al., *Hum. Mol. Genet.*, **8**, 1599-1610 (1999).
5. Reiner, O., et al., *Cell Cycle*, **3**, 747-751 (2004).
6. Gdalyahu, A., et al., *EMBO J.*, **23**, 823-832 (2004).
7. Graham, M.E., et al., *Biochem. J.*, **381**, 471-481 (2004).

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