

## Product Information

### Anti-DCLK1

produced in rabbit, affinity isolated antibody

Product Number **SAB4200186**

### Product Description

Anti-DCLK1 is produced in rabbit using as the immunogen a synthetic peptide corresponding to a fragment of human DCLK1 (GeneID: 9201), conjugated to KLH. The corresponding sequence is highly conserved (single amino acid substitution) in rat and mouse DCLK1. The antibody is affinity-purified using the immunizing peptide immobilized on agarose.

Anti-DCLK1 specifically recognizes human, rat, and mouse DCLK1. The antibody may be used in various immunochemical techniques including immunoblotting (~81 kDa). Detection of the DCLK1 band by immunoblotting is specifically inhibited by the DCLK1 immunizing peptide.

Dynamic rearrangement of cytoskeletal structures is required for many aspects of neuronal development and function of the mammalian nervous system, including neuronal migration, process outgrowth, and synaptic plasticity. Many cytoskeletal proteins including specialized microtubule-associated proteins (MAPs) such as MAP2 and tau are selectively expressed during neuronal development.

DCLK1 (also known as DCLK, DCAMKL1, DCDC3A and CLICK1) is a Ser/Thr kinase widely expressed in post-mitotic neurons in the developing nervous system and important for neuronal migration.<sup>1-4</sup> DCLK1 is highly expressed during embryogenesis and is localized to neuronal growth cones where it associates with the microtubule cytoskeleton and regulates microtubule polymerization.<sup>3</sup> DCLK1 consists of an N-terminal doublecortin (DC) domain, responsible for its localization to microtubules and a C-terminal Ser/Thr kinase domain that resembles members of the family of Ca<sup>2+</sup>/calmodulin-dependent protein kinases, but lacks a calmodulin-binding site. Four major DCLK1 transcripts have been described in rodents.<sup>4</sup> DCLK1 kinase domain is susceptible to cleavage by the Ca<sup>2+</sup>-dependent protease calpain, suggesting that a Ca<sup>2+</sup>-responsive mechanism is involved in regulating the DCLK1 kinase activity during embryogenesis. Recently, DCLK1 has been identified as a putative intestinal stem cell marker.<sup>5</sup>

### Reagent

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

Antibody concentration: ~1.5 mg/mL

### Precautions and Disclaimer

For R&D use only. Not for drug, household, or other uses. Please consult the Safety Data Sheet for information regarding hazards and safe handling practices.

### Storage/Stability

Store at -20 °C. For continuous use, store at 2-8 °C for up to one month. For extended storage, freeze in working aliquots at -20 °C. 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. Discard working dilutions if not used within 12 hours.

### Product Profile

**Immunoblotting:** a working antibody concentration of 1.5-3.0 µg/mL is recommended using extracts of postnatal mouse brain (S1 fraction), postnatal rat brain (S1 fraction), and of HEK-293T cells overexpressing human DCLK1.

**Note:** In order to obtain best results in various techniques and preparations, it is recommended to determine optimal working dilutions by titration.

### References

1. Burgess, H.A., and Reiner, O., *Mol. Cell. Neurosci.*, **16**, 529-541 (2000).
2. Burgess, H.A., and Reiner, O., *J. Biol. Chem.*, **277**, 17696-17705 (2002).
3. Lin, P.T., et al., *J. Neurosci.*, **20**, 9152-9161 (2000).
4. Tuy, F.P., et al., *Dev. Neurosci.*, **30**, 171-186 (2008).
5. May, R., et al., *Stem Cells*, **26**, 630-637 (2008).

VS,ER,CS,KAA,PHC,MAM 07/19-1