Doublecortin Antibody

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.

IMPORTANT: For western blots, incubate membrane with diluted antibody in 5% w/v nonfat dry milk, 1X TBST, 0.1% Tween®20 at 4°C with gentle shaking, overnight.

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
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: