

Background

Disrupted in schizophrenia 1 (DISC1) is a multifunctional scaffold protein that has important roles in neurodevelopment. DISC1 is expressed in both neuronal progenitor cells and postmitotic neurons in the developing cerebral cortex. DISC1 can interact with both centrosomal proteins and dynein-motor related proteins. In addition, DISC1 interacts with and inhibits the kinase GSK-3 β to enable Wnt activation of β -catenin-mediated gene transcription and neuron proliferation. These functions of DISC1 may be regulated by post-translational modification. PKA and CDK5 can phosphorylate Ser-710, and a non-phosphorylatable Ser-710 mutant shows decreased interaction with the centrosomal proteins, BBS1 and BBS4, while a constitutively phosphorylated Ser-710 mutant shows increased interaction with these proteins. During neuronal progenitor cell proliferation, DISC1 phosphorylation at Ser-710 is low and the interaction with GSK-3 β is enhanced. By contrast, DISC1 phosphorylation is increased, association with GSK-3 β is decreased, and interaction with BBS1 is enhanced during postmitotic neuron migration.

Background References

Mao, Y. et al. (2009) Cell. 136(6):1017.

Brandon, N.J. et al. (2011) Nat Rev Neurosci. 12(12):707.

Ishizuka, K. (2011) Nature. 473(7345):92.

Applications

Blocking 1:1000

ELISA 50 ng/well

End user should determine optimal dilution for their particular applications and experiments.

Western blot membranes were incubated with diluted antibody in 5% non-fat milk, PBS, 0.04% Tween20 for 1 hour at room temperature.

Specificity

The peptide is specifically recognized by anti-DISC1 (a.a. 740-753) antibody (DP3021 and DP3041) in ELISA, and has been shown to block the reactivity of DP3021 and DP3041 during Western blot. In addition, the peptide is recommended for use in blocking DP3021 and DP3041 reactivity in immunocytochemistry.

*All molecular weights (MW) are confirmed by comparison to Bio-Rad Rainbow Markers and to western blot mobilities of known proteins with similar MW.

Peptide Sequence

DISC1 synthetic peptide containing amino acid residues 740 to 753 from mouse DISC1. This peptide sequence is well conserved in rat DISC1, but has 7 amino acid differences with the conserved site in human DISC1.

Buffer and Storage

Blocking Peptide is supplied in 50µl phosphate-buffered saline and 0.05% sodium azide.

Store at -20°C. Stable for 1 year.

Related Products

DP3021 DISC1 (a.a. 740-753) Rabbit Polyclonal

DP3041 DISC1 (a.a. 740-753) Rabbit Polyclonal

DP3061 DISC1 (Ser-710), phospho-specific Rabbit Polyclonal

DK6690 DISC1 Phospho-Regulation Antibody Sampler Kit

DX3065 phospho-DISC1 (Ser-710) Blocking Peptide

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