

# DISC-1 (B-2): sc-365591

## BACKGROUND

The “disrupted in schizophrenia” gene locus DISC is associated with patients afflicted with schizophrenia as a result of chromosomal translocations. DISC-1 encodes a large protein predicted to contain a globular N-terminal domain and a helical C-terminal domain, both of which have the potential to form interactions with other proteins. DISC-1 interacts with proteins involved in the centrosome and cytoskeletal system, including MIP-T3, MAP-1A and nudel; proteins which localize receptors to membranes, including  $\alpha$ -actinin-2 and spectrin  $\beta$ IV; and proteins which transduce signals from membrane receptors, including ATF-4 and ATF-5. Therefore, DISC-1 is thought to be involved in intracellular transport, neurite architecture and/or neuronal migration, all of which are thought to be pathogenic in the schizophrenic brain. DISC-1 localizes to the nucleus, whereas mutant DISC-1 localization occurs mainly in the cytoplasm.

## REFERENCES

- Morris, J.A., et al. 2003. DISC1 (disrupted-in-schizophrenia 1) is a centrosome-associated protein that interacts with MAP1A, MIPT3, ATF4/5 and NUDEL: regulation and loss of interaction with mutation. *Hum. Mol. Genet.* 12: 1591-608.
- Miyoshi, K., et al. 2003. Disrupted-in-schizophrenia 1, a candidate gene for schizophrenia, participates in neurite outgrowth. *Mol. Psychiatry* 8: 685-694.
- Ozeki, Y., et al. 2003. Disrupted-in-schizophrenia-1 (DISC-1): mutant truncation prevents binding to NudE-like (NUDEL) and inhibits neurite outgrowth. *Proc. Natl. Acad. Sci. USA* 100: 289-294.

## CHROMOSOMAL LOCATION

Genetic locus: DISC1 (human) mapping to 1q42.2; Disc1 (mouse) mapping to 8 E2.

## SOURCE

DISC-1 (B-2) is a mouse monoclonal antibody raised against amino acids 601-810 mapping near the C-terminus of DISC-1 of human origin.

## PRODUCT

Each vial contains 200  $\mu$ g IgG<sub>2a</sub> kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

DISC-1 (B-2) is available conjugated to agarose (sc-365591 AC), 500  $\mu$ g/0.25 ml agarose in 1 ml, for IP; to HRP (sc-365591 HRP), 200  $\mu$ g/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-365591 PE), fluorescein (sc-365591 FITC), Alexa Fluor® 488 (sc-365591 AF488), Alexa Fluor® 546 (sc-365591 AF546), Alexa Fluor® 594 (sc-365591 AF594) or Alexa Fluor® 647 (sc-365591 AF647), 200  $\mu$ g/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-365591 AF680) or Alexa Fluor® 790 (sc-365591 AF790), 200  $\mu$ g/ml, for Near-Infrared (NIR) WB, IF and FCM.

## STORAGE

Store at 4° C, **\*\*DO NOT FREEZE\*\***. Stable for one year from the date of shipment. Non-hazardous. No MSDS required.

## APPLICATIONS

DISC-1 (B-2) is recommended for detection of DISC-1 of mouse, rat and human origin by Western Blotting (starting dilution 1:100, dilution range 1:100-1:1000), immunoprecipitation [1-2  $\mu$ g per 100-500  $\mu$ g of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

Suitable for use as control antibody for DISC-1 siRNA (h): sc-60539, DISC-1 siRNA (m): sc-60540, DISC-1 siRNA (r): sc-106989, DISC-1 shRNA Plasmid (h): sc-60539-SH, DISC-1 shRNA Plasmid (m): sc-60540-SH, DISC-1 shRNA Plasmid (r): sc-106989-SH, DISC-1 shRNA (h) Lentiviral Particles: sc-60539-V, DISC-1 shRNA (m) Lentiviral Particles: sc-60540-V and DISC-1 shRNA (r) Lentiviral Particles: sc-106989-V.

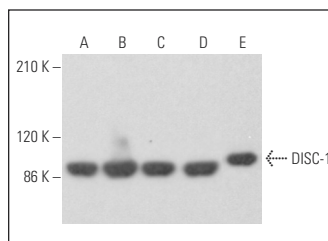
Molecular Weight of DISC-1 L isoform: 100 kDa.

Molecular Weight of DISC-1 LV isoform: 98 kDa.

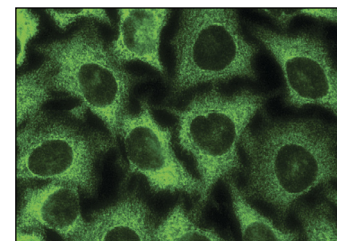
Molecular Weight of DISC-1 S isoform: 71 kDa.

Positive Controls: MOLT-4 cell lysate: sc-2233, HeLa whole cell lysate: sc-2200 or A549 cell lysate: sc-2413.

## DATA



DISC-1 (B-2): sc-365591. Western blot analysis of DISC-1 expression in SK-N-SH (A), MOLT-4 (B), A549 (C), RAW 264.7 (D) and HeLa (E) whole cell lysates.



DISC-1 (B-2): sc-365591. Immunofluorescence staining of methanol-fixed HeLa cells showing cytoplasmic localization.

## SELECT PRODUCT CITATIONS

- Bon, C., et al. 2019. SINEUP non-coding RNAs rescue defective frataxin expression and activity in a cellular model of Friedreich's ataxia. *Nucleic Acids Res.* 47: 10728-10743.
- Chen, L., et al. 2022. Disrupted in schizophrenia 1 regulates ectopic neurogenesis in the mouse hilus after pilocarpine-induced status epilepticus. *Neuroscience* 494: 69-81.
- Lee, D., et al. 2022. Quantification of a neurological protein in a single cell without amplification. *ACS Omega* 7: 20165-20171.
- Chen, J., et al. 2022. DISC1 inhibits GSK3 $\beta$  activity to prevent tau hyperphosphorylation under diabetic encephalopathy. *Biofactors*. E-published.

## RESEARCH USE

For research use only, not for use in diagnostic procedures.

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