

Dim1 (B-11): sc-514093

BACKGROUND

The Dim protein family consists of two classes, Dim1 and Dim2, which share a common thioredoxin-like fold, but most likely function in different biological pathways. Dim1, also known as TXNL4A (thioredoxin-like protein 4A) or Spliceosomal U5 snRNP-specific 15 kDa protein, is a 142 amino acid protein that plays an essential role in pre-mRNA splicing. Due to a failure to express early zygotic transcripts, deletion of the gene encoding Dim1 in *Schizosaccharomyces pombe* leads to embryonal lethality during gastrulation. Since Dim1 shows sensitivity to a microtubule destabilizing drug, thiabendazole, it also may play a role in the formation of the mitotic spindle. This evidence demonstrates that Dim1 is essential for G₂/M progression of the cell cycle and chromosomal segregation during mitosis. Localized to the nucleus, Dim1 interacts with hnRNP F, hnRNP H2, Cas-L and PQBP-1 to effect gene expression.

REFERENCES

- Berry, L.D. and Gould, K.L. 1997. Fission yeast dim1⁺ encodes a functionally conserved polypeptide essential for mitosis. *J. Cell Biol.* 137: 1337-1354.
- Reuter, K., et al. 1999. Identification, characterization and crystal structure analysis of the human spliceosomal U5 snRNP-specific 15 kD protein. *J. Mol. Biol.* 294: 515-525.
- Zhang, Y.Z., et al. 1999. The evolutionarily conserved Dim1 protein defines a novel branch of the thioredoxin fold superfamily. *Physiol. Genomics* 1: 109-118.

CHROMOSOMAL LOCATION

Genetic locus: TXNL4A (human) mapping to 18q23; Txnl4a (mouse) mapping to 18 E3.

SOURCE

Dim1 (B-11) is a mouse monoclonal antibody specific for an epitope mapping between amino acids 119-142 at the C-terminus of Dim1 of human origin.

PRODUCT

Each vial contains 200 µg IgG₁ kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Dim1 (B-11) is available conjugated to agarose (sc-514093 AC), 500 µg/0.25 ml agarose in 1 ml, for IP; to HRP (sc-514093 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-514093 PE), fluorescein (sc-514093 FITC), Alexa Fluor® 488 (sc-514093 AF488), Alexa Fluor® 546 (sc-514093 AF546), Alexa Fluor® 594 (sc-514093 AF594) or Alexa Fluor® 647 (sc-514093 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-514093 AF680) or Alexa Fluor® 790 (sc-514093 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

Blocking peptide available for competition studies, sc-514093 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% stabilizer protein).

RESEARCH USE

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

APPLICATIONS

Dim1 (B-11) is recommended for detection of Dim1 of mouse, rat and human origin by Western Blotting (starting dilution 1:100, dilution range 1:100-1:1000), immunoprecipitation [1-2 µg per 100-500 µg 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 Dim1 siRNA (h): sc-77145, Dim1 siRNA (m): sc-143039, Dim1 shRNA Plasmid (h): sc-77145-SH, Dim1 shRNA Plasmid (m): sc-143039-SH, Dim1 shRNA (h) Lentiviral Particles: sc-77145-V and Dim1 shRNA (m) Lentiviral Particles: sc-143039-V.

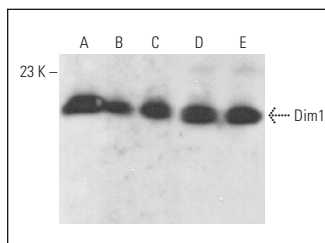
Molecular Weight of Dim1: 15 kDa.

Positive Controls: Hep G2 nuclear extract: 264819, Jurkat nuclear extract: sc-2132 or HeLa nuclear extract: sc-2120.

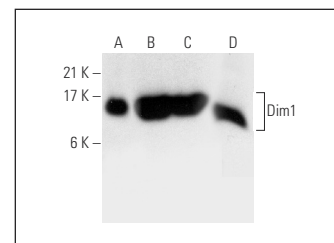
RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgGκ BP-HRP: sc-516102 or m-IgGκ BP-HRP (Cruz Marker): sc-516102-CM (dilution range: 1:1000-1:10000), Cruz Marker™ Molecular Weight Standards: sc-2035, UltraCruz® Blocking Reagent: sc-516214 and Western Blotting Luminol Reagent: sc-2048. 2) Immunoprecipitation: use Protein A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/2.0 ml). 3) Immunofluorescence: use m-IgGκ BP-FITC: sc-516140 or m-IgGκ BP-PE: sc-516141 (dilution range: 1:50-1:200) with UltraCruz® Mounting Medium: sc-24941 or UltraCruz® Hard-set Mounting Medium: sc-359850.

DATA



Dim1 (B-11): sc-514093. Western blot analysis of Dim1 expression in Hep G2 nuclear extract (A) and Ramos (B), MOLT-4 (C), BYDP (D) and 3611-RF (E) whole cell lysates.



Dim1 (B-11): sc-514093. Western blot analysis of Dim1 expression in Hep G2 (A), Jurkat (B) and HeLa (C) nuclear extracts and rat brain tissue extract (D).

SELECT PRODUCT CITATIONS

- Klimesova, K., et al. 2021. TSSC4 is a component of U5 snRNP that promotes tri-snRNP formation. *Nat. Commun.* 12: 3646.

STORAGE

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

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