

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

1. 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.
2. 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.
3. 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.

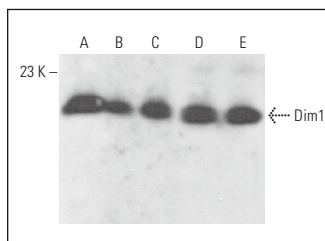
Positive Controls: Hep G2 nuclear extract: 264819, Jurkat nuclear extract: sc-2132 or HeLa nuclear extract: sc-2120.

RECOMMENDED SUPPORT REAGENTS

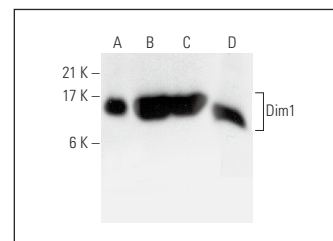
To ensure optimal results, the following support reagents are recommended:

- 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

1. 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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