

DDX3 (C-4): sc-365768

BACKGROUND

DEAD box proteins, characterized by the conserved motif Asp-Glu-Ala-Asp, are putative RNA helicases implicated in several cellular processes involving modifications of RNA secondary structure and ribosome and spliceosome assembly. Based on their distribution patterns, some members of this family may be involved in embryogenesis, spermatogenesis, and cellular growth and division. DDX3 (DEAD box polypeptide 3) is involved in RNA metabolism. Two DDX3 paralogs are found in humans; DDX3X is encoded by a gene found on the X chromosome while DDX3Y is encoded by a gene on the Y chromosome. DDX3Y is exclusively expressed in testis and is required for normal spermatogenesis. DDX3X is ubiquitously expressed and predominantly localizes to the nuclear speckles, participating in RNA splicing, transcription, translation initiation, mRNA transport and cell cycle regulation. DDX3X also partakes in HIV-1 replication and hepatitis C viral infections.

CHROMOSOMAL LOCATION

Genetic locus: DDX3X (human) mapping to Xp11.4, DDX3Y (human) mapping to Yq11.21; Ddx3x (mouse) mapping to X A1.1, Ddx3y (mouse) mapping to Y A1.

SOURCE

DDX3 (C-4) is a mouse monoclonal antibody raised against amino acids 1-114 mapping at the N-terminus of DDX3x of human origin.

PRODUCT

Each vial contains 200 µg IgG_{2b} kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

DDX3 (C-4) is available conjugated to agarose (sc-365768 AC), 500 µg/0.25 ml agarose in 1 ml, for IP; to HRP (sc-365768 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-365768 PE), fluorescein (sc-365768 FITC), Alexa Fluor[®] 488 (sc-365768 AF488), Alexa Fluor[®] 546 (sc-365768 AF546), Alexa Fluor[®] 594 (sc-365768 AF594) or Alexa Fluor[®] 647 (sc-365768 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor[®] 680 (sc-365768 AF680) or Alexa Fluor[®] 790 (sc-365768 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

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APPLICATIONS

DDX3 (C-4) is recommended for detection of DDX3X and DDX3Y 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), immunohistochemistry (including paraffin-embedded sections) (starting dilution 1:50, dilution range 1:50-1:500) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

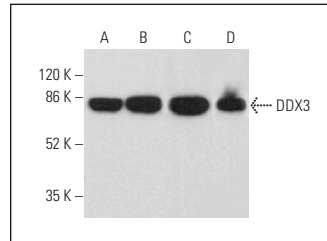
Molecular Weight of DDX3: 73 kDa.

Positive Controls: HeLa whole cell lysate: sc-2200, K-562 nuclear extract: sc-2130 or RAW 264.7 whole cell lysate: sc-2211.

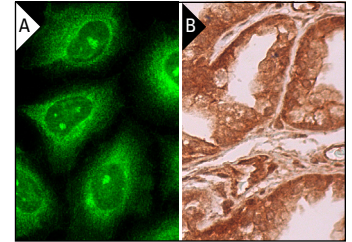
STORAGE

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

DATA



DDX3 (C-4): sc-365768. Western blot analysis of DDX3 expression in PC-12 (A), HeLa (B) and RAW 264.7 (C) whole cell lysates and K-562 nuclear extract (D). Detection reagent used: m-IgGκ BP-HRP: sc-516102.



DDX3 (C-4): sc-365768. Immunofluorescence staining of methanol-fixed HeLa cells showing nucleolar and cytoplasmic localization (A). Immunoperoxidase staining of formalin fixed, paraffin-embedded human prostate tissue showing nuclear and cytoplasmic staining of glandular cells (B).

SELECT PRODUCT CITATIONS

- Yang, J., et al. 2015. LIN28A modulates splicing and gene expression programs in breast cancer cells. *Mol. Cell. Biol.* 35: 3225-3243.
- Wang, X., et al. 2017. (DEAD)-box RNA helicase 3 modulates NFκB signal pathway by controlling the phosphorylation of PP2A-C subunit. *Oncotarget* 8: 33197-33213.
- Chen, H.H., et al. 2018. DDX3 activates CBC-eIF3-mediated translation of uORF-containing oncogenic mRNAs to promote metastasis in HNSCC. *Cancer Res.* 78: 4512-4523.
- Yang, F., et al. 2019. *Cis*-acting circ-CTNNB1 promotes β-catenin signaling and cancer progression via DDX3-mediated transactivation of YY1. *Cancer Res.* 79: 557-571.
- Begovich, K., et al. 2020. Conserved metabolite regulation of stress granule assembly via AdoMet. *J. Cell Biol.* 219: e201904141.
- Puhach, O., et al. 2020. Murine cytomegaloviruses m139 targets DDX3 to curtail interferon production and promote viral replication. *PLoS Pathog.* 16: e1008546.
- Wang, Y., et al. 2021. Distinct Ring1b complexes defined by DEAD-box helicases and EMT transcription factors synergistically enhance E-cadherin silencing in breast cancer. *Cell Death Dis.* 12: 202.
- Puvvula, P.K. and Moon, A.M. 2021. Novel cell-penetrating peptides derived from scaffold-attachment-factor A inhibits cancer cell proliferation and survival. *Front. Oncol.* 11: 621825.
- Puvvula, P.K., et al. 2021. Inhibiting an RBM39/MLL1 epigenomic regulatory complex with dominant-negative peptides disrupts cancer cell transcription and proliferation. *Cell Rep.* 35: 109156.

RESEARCH USE

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