

DDX3 (2253C5a): sc-81247

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 and spermatogenesis as well as 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 participates in HIV-1 replication and hepatitis C viral infections.

REFERENCES

1. Nekhai, S. and Jeang, K.T. 2006. Transcriptional and posttranscriptional regulation of HIV-1 gene expression: role of cellular factors for Tat and Rev. *Future Microbiol.* 1: 417-426.
2. Chao, C.H., et al. 2006. DDX3, a DEAD box RNA helicase with tumor growth-suppressive property and transcriptional regulation activity of the p21^{waf1/cip1} promoter, is a candidate tumor suppressor. *Cancer Res.* 66: 6579-6588.

CHROMOSOMAL LOCATION

Genetic locus: DDX3X (human) mapping to Xp11.4; Ddx3x (mouse) mapping to X A1.1.

SOURCE

DDX3 (2253C5a) is a mouse monoclonal antibody raised against a recombinant protein corresponding to the N-terminal region of DDX3 of human origin.

PRODUCT

Each vial contains 100 µg IgG₁ kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 1.0% stabilizer protein.

APPLICATIONS

DDX3 (2253C5a) is recommended for detection of DDX3X of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000) and immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)].

Suitable for use as control antibody for DDX3X siRNA (h): sc-77108, DDX3X siRNA (m): sc-77109, DDX3X shRNA Plasmid (h): sc-77108-SH, DDX3X shRNA Plasmid (m): sc-77109-SH, DDX3X shRNA (h) Lentiviral Particles: sc-77108-V and DDX3X shRNA (m) Lentiviral Particles: sc-77109-V.

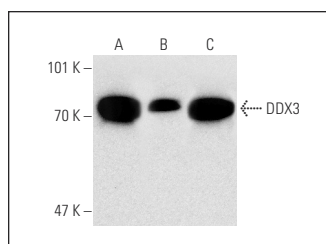
Molecular Weight of DDX3: 73 kDa.

Positive Controls: HeLa whole cell lysate: sc-2200, NIH/3T3 whole cell lysate: sc-2210 or K-562 nuclear extract: sc-2130.

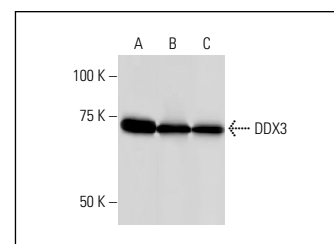
STORAGE

For immediate and continuous use, store at 4° C for up to one month. For sporadic use, freeze in working aliquots in order to avoid repeated freeze/thaw cycles. If turbidity is evident upon prolonged storage, clarify solution by centrifugation.

DATA



DDX3 (2253C5a): sc-81247. Western blot analysis of DDX3 expression in Jurkat (A) and PC-12 (B) whole cell lysates and K-562 nuclear extract (C).



DDX3 (2253C5a): sc-81247. Western Blot analysis of DDX3 expression in HeLa (A), NIH/3T3 (B) and F2408 (C) whole cell lysates.

SELECT PRODUCT CITATIONS

1. Lee, C.H., et al. 2014. Low/negative expression of DDX3 might predict poor prognosis in non-smoker patients with oral cancer. *Oral Dis.* 20: 76-83.
2. Celik, H., et al. 2015. Ezrin binds to DEAD-box RNA helicase DDX3 and regulates its function and protein level. *Mol. Cell. Biol.* 35: 3145-3162.
3. Brisdelli, F., et al. 2019. Proteomic analysis of quercetin-treated K-562 cells. *Int. J. Mol. Sci.* 21: 32.
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5. Yang, P., et al. 2020. G3BP1 is a tunable switch that triggers phase separation to assemble stress granules. *Cell* 181: 325-345.e28.
6. de Castro Fonseca, M., et al. 2021. Molecular and cellular basis of hyper-assembly and protein aggregation driven by a rare pathogenic mutation in DDX3X. *iScience* 24: 102841.
7. Pardeshi, J., et al. 2022. DDX3X functionally and physically interacts with estrogen receptor- α . *Biochim. Biophys. Acta Gene Regul. Mech.* 1865: 194787.
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10. Manjunath, L., et al. 2023. APOBEC3B drives PKR-mediated translation shutdown and protects stress granules in response to viral infection. *Nat. Commun.* 14: 820.

RESEARCH USE

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