

# DDX54 (T-14): sc-132653

## 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/spliceosome assembly. Based on their distribution patterns, some members of this family may be involved in embryogenesis, spermatogenesis, and cellular growth and division. DDX54 (DEAD polypeptide 54), also known as DP97, is an 881 amino acid protein that contains 2 bipartite nuclear localization signals, 3 nuclear receptor boxes (LXXLL motifs), a potential CoRNR box, and several stretches of glutamate and lysine residues. DDX54 is ubiquitously expressed, with highest expression in pancreas and lung. DDX54 co-localizes with ER $\alpha$  to structures in the nucleoplasm. DDX54 represses ER $\alpha$  transcriptional activity and acts as a nuclear receptor co-repressor against ER $\beta$ , progesterone, glucocorticoid and RAR $\alpha$ .

## REFERENCES

1. Py, B., et al. 1996. A DEAD-box RNA helicase in the *Escherichia coli* RNA degradosome. *Nature* 381: 169-172.
2. Imamura, O., et al. 1997. Cloning and characterization of a putative human RNA helicase gene of the DEAH-box protein family. *Biochem. Biophys. Res. Commun.* 240: 335-340.
3. Eisen, A., et al. 1998. A novel DEAD-box RNA helicase exhibits high sequence conservation from yeast to humans. *Biochim. Biophys. Acta* 1397: 131-136.
4. Rajendran, R.R., et al. 2003. Regulation of nuclear receptor transcriptional activity by a novel DEAD box RNA helicase (DP97). *J. Biol. Chem.* 278: 4628-4638.
5. Zhang, D.Y., et al. 2006. Molecular cloning and characterization of a putative nuclear DEAD box RNA helicase in the spruce budworm, *Choristoneura fumiferana*. *Arch. Insect Biochem. Physiol.* 61: 209-219.
6. Online Mendelian Inheritance in Man, OMIM™. 2007. Johns Hopkins University, Baltimore, MD. MIM Number: 611665. World Wide Web URL: <http://www.ncbi.nlm.nih.gov/omim/>
7. Jain, C. 2008. The *E. coli* RhlE RNA helicase regulates the function of related RNA helicases during ribosome assembly. *RNA* 14: 381-389.

## CHROMOSOMAL LOCATION

Genetic locus: DDX54 (human) mapping to 12q24.13; Ddx54 (mouse) mapping to 5 F.

## SOURCE

DDX54 (T-14) is an affinity purified goat polyclonal antibody raised against a peptide mapping near the N-terminus of DDX54 of human origin.

## PRODUCT

Each vial contains 200  $\mu$ g IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-132653 P, (100  $\mu$ g peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

## APPLICATIONS

DDX54 (T-14) is recommended for detection of DDX54 of mouse, rat and human origin by Western Blotting (starting dilution 1:200, 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); non cross-reactive with other DDX family members.

DDX54 (T-14) is also recommended for detection of DDX54 in additional species, including equine, canine, bovine and porcine.

Suitable for use as control antibody for DDX54 siRNA (h): sc-96216, DDX54 siRNA (m): sc-142945, DDX54 shRNA Plasmid (h): sc-96216-SH, DDX54 shRNA Plasmid (m): sc-142945-SH, DDX54 shRNA (h) Lentiviral Particles: sc-96216-V and DDX54 shRNA (m) Lentiviral Particles: sc-142945-V.

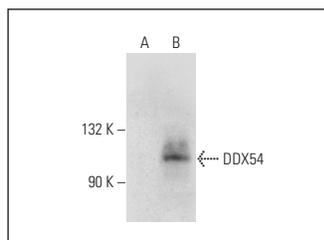
Molecular Weight of DDX54: 99 kDa.

Positive Controls: HeLa whole cell lysate: sc-2200 or DDX54 (h): 293T Lysate: sc-175129.

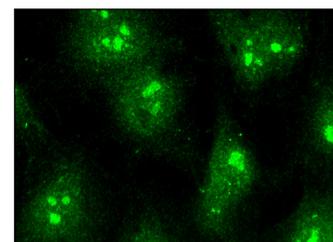
## RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use donkey anti-goat IgG-HRP: sc-2020 (dilution range: 1:2000-1:100,000) or Cruz Marker™ compatible donkey anti-goat IgG-HRP: sc-2033 (dilution range: 1:2000-1:5000), Cruz Marker™ Molecular Weight Standards: sc-2035, TBS Blotto A Blocking Reagent: sc-2333 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 donkey anti-goat IgG-FITC: sc-2024 (dilution range: 1:100-1:400) or donkey anti-goat IgG-TR: sc-2783 (dilution range: 1:100-1:400) with UltraCruz™ Mounting Medium: sc-24941.

## DATA



DDX54 (T-14): sc-132653. Western blot analysis of DDX54 expression in non-transfected: sc-117752 (A) and human DDX54 transfected: sc-175129 (B) 293T whole cell lysates.



DDX54 (T-14): sc-132653. Immunofluorescence staining of formalin-fixed HepG2 cells showing nucleolar and nuclear localization.

## STORAGE

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

## RESEARCH USE

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