Anti-DDX4 Antibody [PSH08-54]

HA723000

Product Type:	Recombinant Rabbit monoclonal IgG, primary antibodies
Species reactivity:	Human, Mouse, Rat
Applications:	WB, IHC-P, IHC-Fr
Molecular Wt:	Predicted band size: 79 kDa
Clone number:	PSH08-54

Description: The Vasa gene is a member of the DEAD box family of RNA helicases in Drosophila melanogaster. Its human ortholog, Ddx4, is located on human chromosome 5q. It is syntenic to mouse chromosome 13, where the mouse vasa gene is located. The gene is conserved in many invertebrates and vertebrate species such as Caenorhabditis elegans, Xenopus, Zebrafish, flatworms, echinoderms, molluscs, nematodes, mice and rats as an important part of germ line maintenance and function. One of main function of Vasa protein is in germ cell determination and function. It uses ATP dependent RNA helicase catalytic activity to regulate the translation of multiple mRNAs. Vasa unwinds the duplex RNA by binding and bending short stretches of the duplex in a non-processive manner. The conserved domain may act as chaperones by unwinding RNA secondary structures and refolding properly. pre-mRNA splicing, ribosome biogenesis, nuclear export, translational regulation and degradation. Vasa was found to bind RNA in a sequence-specific manner. In the Drosophila embryos, Vasa binds the Uracil rich motif of the mei-P26 UTR. A mutation in Vasa reduced the interaction of between Mei-P26 and initiation factor eIF58 which in turn significantly reduced translation of the gene. Recent evidence in invertebrates suggests that Vasa has a role in multipotent stem cells, but the exact function is unknown.

Immunogen: Recombinant protein within human DDX4 aa 201-724.

Positive control: Mouse testis tissue lysate, Rat testis tissue lysate, human testis tissue, mouse testis tissue, mouse ovary tissue.

Subcellular location: Cytoplasm, perinuclear region.

Database links: SwissProt: Q9NQI0 Human | Q61496 Mouse | Q64060 Rat

Recommended Dilutions:

WB	1:2,000
IHC-P	1:1,000-1:5,000
IHC-Fr	1:500

Storage Buffer: PBS (pH7.4), 0.1% BSA, 40% Glycerol. Preservative: 0.05% Sodium Azide.

Storage Instruction: Shipped at 4℃. Store at +4℃ short term (1-2 weeks). It is recommended to aliquot into single-use upon delivery. Store at -20℃ long term.

Purity: Protein A affinity purified.

Images

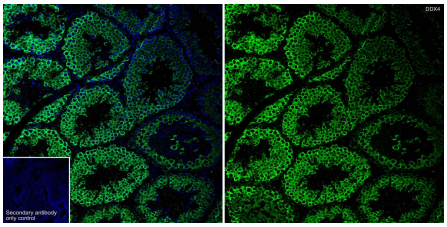

Fig1: Immunofluorescence analysis of frozen mouse testis tissue with Rabbit anti-DDX4 antibody (HA723000) at 1/500 dilution.

The section was pre-treated using heat mediated antigen retrieval with sodium citrate buffer (pH 6.0) for about 2 minutes in microwave oven. The tissues were blocked in 10% negative goat serum for 1 hour at room temperature, washed with PBS, and then probed with the primary antibody (HA723000, green) at 1/500 dilution overnight at 4 ℃, washed with PBS. Goat Anti-Rabbit IgG H&L (iFluor™ 488, HA1121) was used as the secondary antibody at 1/1,000 dilution. Nuclei were counterstained with DAPI (blue).

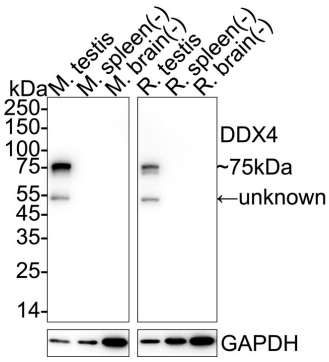

Fig2: Western blot analysis of DDX4 on different lysates with Rabbit anti-DDX4 antibody (HA723000) at 1/2,000 dilution.

Lane 1: Mouse testis tissue lysate
Lane 2: Mouse spleen tissue lysate (negative)
Lane 3: Mouse brain tissue lysate (negative)
Lane 4: Rat testis tissue lysate
Lane 5: Rat spleen tissue lysate (negative)
Lane 6: Rat brain tissue lysate (negative)

Lysates/proteins at 20 µg/Lane.

Predicted band size: 79 kDa
Observed band size: 75 kDa

Exposure time: 4 seconds; ECL: K1801;

4-20% SDS-PAGE gel.

Proteins were transferred to a PVDF membrane and blocked with 5% NFDM/TBST for 1 hour at room temperature. The primary antibody (HA723000) at 1/2,000 dilution was used in 5% NFDM/TBST at 4℃ overnight. Goat Anti-Rabbit IgG - HRP Secondary Antibody (HA1001) at 1/50,000 dilution was used for 1 hour at room temperature.

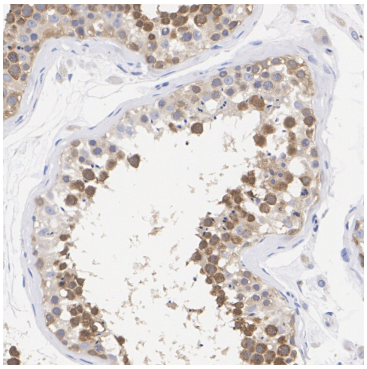

Fig3: Immunohistochemical analysis of paraffin-embedded human testis tissue with Rabbit anti-DDX4 antibody (HA723000) at 1/1,000 dilution.

The section was pre-treated using heat mediated antigen retrieval with Tris-EDTA buffer (pH 9.0) for 20 minutes. The tissues were blocked in 1% BSA for 20 minutes at room temperature, washed with ddH_2O and PBS, and then probed with the primary antibody (HA723000) at 1/1,000 dilution for 1 hour at room temperature. The detection was performed using an HRP conjugated compact polymer system. DAB was used as the chromogen. Tissues were counterstained with hematoxylin and mounted with DPX.

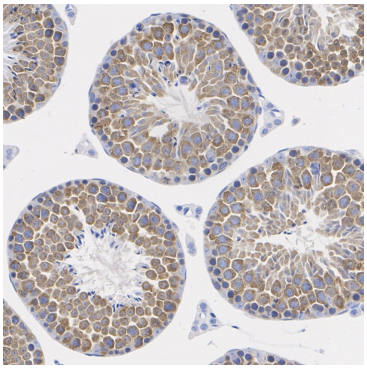

Fig4: Immunohistochemical analysis of paraffin-embedded mouse testis tissue with Rabbit anti-DDX4 antibody (HA723000) at 1/5,000 dilution.

The section was pre-treated using heat mediated antigen retrieval with Tris-EDTA buffer (pH 9.0) for 20 minutes. The tissues were blocked in 1% BSA for 20 minutes at room temperature, washed with ddH_2O and PBS, and then probed with the primary antibody (HA723000) at 1/5,000 dilution for 1 hour at room temperature. The detection was performed using an HRP conjugated compact polymer system. DAB was used as the chromogen. Tissues were counterstained with hematoxylin and mounted with DPX.

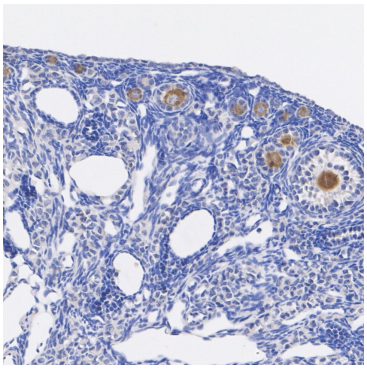

Fig5: Immunohistochemical analysis of paraffin-embedded mouse ovary tissue with Rabbit anti-DDX4 antibody (HA723000) at 1/1,000 dilution.

The section was pre-treated using heat mediated antigen retrieval with Tris-EDTA buffer (pH 9.0) for 20 minutes. The tissues were blocked in 1% BSA for 20 minutes at room temperature, washed with ddH_2O and PBS, and then probed with the primary antibody (HA723000) at 1/1,000 dilution for 1 hour at room temperature. The detection was performed using an HRP conjugated compact polymer system. DAB was used as the chromogen. Tissues were counterstained with hematoxylin and mounted with DPX.

Background References

1. Miao Y et al. DDX4 enhances antiviral activity of type I interferon by disrupting interaction of USP7/SOCS1 and promoting degradation of SOCS1. mBio. 2024 Mar
2. Xu C et al. Building RNA-protein germ granules: insights from the multifaceted functions of DEAD-box helicase Vasa/Ddx4 in germline development. Cell Mol Life Sci. 2021 Dec