

NDH II (E-10): sc-137183

BACKGROUND

Pre-mRNA splicing is a critical step in the posttranscriptional regulation of gene expression. Several protein complexes are involved in proper mRNA splicing and transport. The small nuclear ribonucleoprotein particles (snRNPs) interact with the SRm160/300 splicing coactivator complex to form a large RNA spliceosome. The heterogeneous nuclear ribonucleoproteins (hnRNPs) contribute to the processing and transport of pre-mRNA within the spliceosome. Also, the exon junction complex (EJC), which includes Y14, Aly/REF and Magoh, mediates mRNA export, cytoplasmic localization and nonsense-mediated mRNA decay. The effect on pre-mRNA splicing involves a nuclear complex (CBC). CBC consists of two cap binding proteins, CBP20 and CBP80, which mediate the stimulatory functions of the cap in pre-mRNA splicing, 3'-end formation and U snRNA export. Splicing factor 1 is a nuclear protein that binds the branch point sequence of pre-mRNA in the first step of spliceosome assembly and SRp55 modulates the selection of alternative splice sites in constitutive splicing. Nuclear DNA helicase II (NDH II), also known as RNA helicase A, generates secondary structures that interact with RNA-binding proteins. MDA5 is an ATP-dependent RNA helicase associated with the growth, differentiation and death of human melanoma cells.

REFERENCES

- Kang, D.C., et al. 2002. MDA5: an interferon-inducible putative RNA helicase with double-stranded RNA-dependent ATPase activity and melanoma growth-suppressive properties. *Proc. Natl. Acad. Sci. USA* 99: 637-642.
- Zhang, S., et al. 2004. Multiple functions of nuclear DNA helicase II (RNA helicase A) in nucleic acid metabolism. *Acta Biochim. Biophys. Sin.* 36: 177-183.
- Zhang, S., et al. 2004. Nuclear DNA helicase II (RNA helicase A) binds to an F-Actin containing shell that surrounds the nucleolus. *Exp. Cell Res.* 293: 248-258.
- Zhang, S., et al. 2004. DNA-dependent protein kinase (DNA-PK) phosphorylates nuclear DNA helicase II/RNA helicase A and hnRNP proteins in an RNA-dependent manner. *Nucleic Acids Res.* 32: 1-10.

CHROMOSOMAL LOCATION

Genetic locus: DHX9 (human) mapping to 1q25.3.

SOURCE

NDH II (E-10) is a mouse monoclonal antibody raised against amino acids 1-300 mapping at the N-terminus of NDH II 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. Also available as TransCruz reagent for Gel Supershift and ChIP applications, sc-137183 X, 200 µg/0.1 ml.

STORAGE

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

APPLICATIONS

NDH II (E-10) is recommended for detection of nuclear DNA helicase II of 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 NDH II siRNA (h): sc-45706, NDH II shRNA Plasmid (h): sc-45706-SH and NDH II shRNA (h) Lentiviral Particles: sc-45706-V.

NDH II (E-10) X TransCruz antibody is recommended for Gel Supershift and ChIP applications.

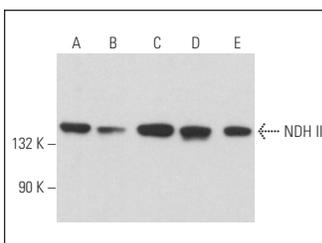
Molecular Weight of NDH II: 130 kDa.

Positive Controls: HeLa nuclear extract: sc-2120, Jurkat whole cell lysate: sc-2204 or NTERA-2 cl.D1 whole cell lysate: sc-364181.

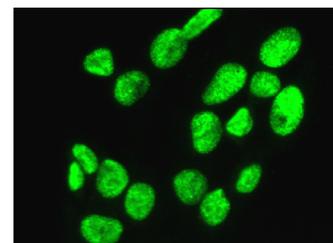
RECOMMENDED SUPPORT REAGENTS

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



NDH II (E-10): sc-137183. Western blot analysis of NDH II expression in HeLa nuclear extract (A) and Jurkat (B), K-562 (C), NTERA-2 cl.D1 (D) and Caco-2 (E) whole cell lysates.



NDH II (E-10): sc-137183. Immunofluorescence staining of formalin-fixed Hep G2 cells showing nuclear localization.

SELECT PRODUCT CITATIONS

- Ottesen, E.W., et al. 2019. Human survival motor neuron genes generate a vast repertoire of circular RNAs. *Nucleic Acids Res.* 47: 2884-2905.
- Valsecchi, C.I.K., et al. 2021. RNA nucleation by MSL2 induces selective X chromosome compartmentalization. *Nature* 589: 137-142.

RESEARCH USE

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