SANTA CRUZ BIOTECHNOLOGY, INC.

Ku-70 (H-308): sc-9033

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

The Ku protein is localized in the nucleus and is composed of subunits referred to as Ku-70 (or p70) and Ku-86 or (p86). Ku was first described as an autoantigen to which antibodies were produced in a patient with scleroderma polymyositis overlap syndrome, and was later found in the sera of patients with other rheumatic diseases. Both subunits of the Ku protein have been cloned, and a number of functions have been proposed for Ku, including cell signaling, DNA replication and transcriptional activation. Ku is involved in Pol II-directed transcription by virtue of its DNA binding activity, serving as the regulatory component of the DNA-associated protein kinase that phosphorylates Pol II and transcription factor Sp. Ku proteins also activate transcription from the U1 small nuclear RNA and the human transferrin receptor gene promoters. A Ku-related protein designated the enhancer 1 binding factor (E1BF), composed of two subunits, has been identified as a positive regulator of RNA polymerase I transcription initiation.

CHROMOSOMAL LOCATION

Genetic locus: XRCC6 (human) mapping to 22q13.2; Xrcc6 (mouse) mapping to 15 E1.

SOURCE

Ku-70 (H-308) is a rabbit polyclonal antibody raised against amino acids 302-609 of Ku-70 of human origin.

PRODUCT

Each vial contains 200 µg IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

APPLICATIONS

Ku-70 (H-308) is recommended for detection of Ku-70 of mouse, rat and human origin by Western Blotting (starting dilution 1:200, 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).

Suitable for use as control antibody for Ku-70 siRNA (h): sc-29383, Ku-70 siRNA (m): sc-35764, Ku-70 shRNA Plasmid (h): sc-29383-SH, Ku-70 shRNA Plasmid (m): sc-35764-SH, Ku-70 shRNA (h) Lentiviral Particles: sc-29383-V and Ku-70 shRNA (m) Lentiviral Particles: sc-35764-V.

Molecular Weight of Ku-70: 70 kDa.

Positive Controls: A-431 whole cell lysate: sc-2201, Jurkat nuclear extract: sc-2132 or C32 nuclear extract: sc-2136.

RESEARCH USE

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

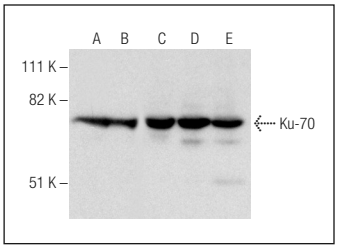
PROTOCOLS

See our web site at www.scbt.com or our catalog for detailed protocols and support products.

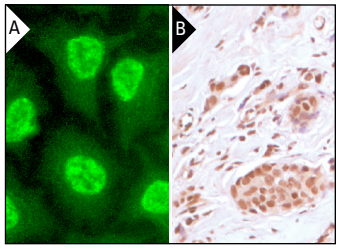
STORAGE

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

DATA



Ku-70 (H-308): sc-9033. Western blot analysis of Ku-70 expression in A-431 (**A**), C32 (**B**), Jurkat (**C**), MCF7 (**D**) nuclear extracts and HeLa whole cell lysate (**E**).



Ku-70 (H-308): sc-9033. Immunofluorescence staining of methanol-fixed HeLa cells showing nuclear localization (**A**). Immunoperoxidase staining of formalin-fixed, paraffin-embedded human breast tumor showing nuclear staining (**B**).

SELECT PRODUCT CITATIONS

1. Sawada, M., et al. 2003. Ku-70 suppresses the apoptotic translocation of Bax to mitochondria. Nat. Cell Biol. 5: 320-329.
2. Lee, H.S., et al. 2010. A cooperative activation loop among SWI/SNF, γ-H2AX and H3 acetylation for DNA double-strand break repair. EMBO J. 29: 1434-1445.
3. Mondal, N.K., et al. 2010. Micronucleus formation, DNA damage and repair in premenopausal women chronically exposed to high level of indoor air pollution from biomass fuel use in rural India. Mutat. Res. 697: 47-54.
4. Tichy, E.D., et al. 2010. Mouse embryonic stem cells, but not somatic cells, predominantly use homologous recombination to repair double-strand DNA breaks. Stem Cells Dev. 19: 1699-1711.
5. Bandhakavi, S., et al. 2010. Quantitative nuclear proteomics identifies mTOR regulation of DNA damage response. Mol. Cell. Proteomics. 9: 403-414.
6. Liu, Y.C., et al. 2010. CpG-B oligodeoxynucleotides inhibit TLR-dependent and -independent induction of type I IFN in dendritic cells. J. Immunol. 184: 3367-3376.
7. Shahi, A., et al. 2011. Mismatch-repair protein MSH6 is associated with Ku70 and regulates DNA double-strand break repair. Nucleic Acids Res. 39: 2130-2143.

MONOS Satisfaction Guaranteed

Try **Ku-70 (E-5): sc-17789** or **Ku-70 (A-9): sc-5309**, our highly recommended monoclonal alternatives to Ku-70 (H-308). Also, for AC, HRP, FITC, PE, Alexa Fluor® 488 and Alexa Fluor® 647 conjugates, see **Ku-70 (E-5): sc-17789**.