

Ku70 (h): 293T Lysate: sc-111431

BACKGROUND

The Ku protein is localized in the nucleus and is composed of subunits referred to as Ku70 (p70) and Ku86 (p86) which is also known by the synonym Ku80 or (p80). 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.

REFERENCES

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2. Mimori, T., et al. 1986. Characterization of the DNA-binding protein antigen Ku recognized by autoantibodies from patients with rheumatic disorders. *J. Biol. Chem.* 261: 2274-2278.
3. Chan, J.Y.C., et al. 1989. Cloning and characterization of a cDNA that encodes a 70 kDa novel human thyroid autoantigen. *J. Biol. Chem.* 264: 3651-3654.
4. Reeves, W.H., et al. 1989. Molecular cloning of cDNA encoding the p70 (Ku) lupus autoantigen. *J. Biol. Chem.* 264: 5047-5052.
5. Yaneva, M., et al. 1989. cDNA-derived amino acid sequence of the 86 kDa subunit of the Ku antigen. *J. Biol. Chem.* 264: 13407-13411.
6. Prabhakar, B.S., et al. 1990. Cell surface expression of the 70 kD component of Ku, a DNA-binding nuclear antigen. *J. Clin. Invest.* 86: 1301-1305.
7. Stuver, M.H., et al. 1990. The autoantigen Ku is indistinguishable from NF IV, a protein forming multimeric protein-DNA complexes. *J. Exp. Med.* 172: 1049-1054.
8. Gottlieb, T.M., et al. 1993. The DNA-dependent protein kinases: requirement for DNA ends and association with Ku antigen. *Cell* 72: 131-142.
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STORAGE

Store at -20° C. Repeated freezing and thawing should be minimized. Sample vial should be boiled once prior to use. Non-hazardous. No MSDS required.

PROTOCOLS

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

CHROMOSOMAL LOCATION

Genetic locus: XRCC6 (human) mapping to 22q13.2.

PRODUCT

Ku70 (h): 293T Lysate represents a lysate of human Ku70 transfected 293T cells and is provided as 100 µg protein in 200 µl SDS-PAGE buffer.

APPLICATIONS

Ku70 (h): 293T Lysate is suitable as a Western Blotting positive control for human reactive Ku70 antibodies. Recommended use: 10-20 µl per lane.

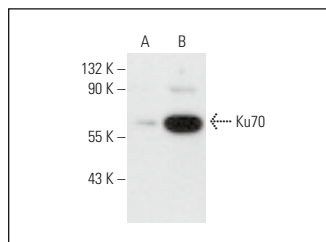
Control 293T Lysate: sc-117752 is available as a Western Blotting negative control lysate derived from non-transfected 293T cells.

Ku70 (G-4): sc-166386 is recommended as a positive control antibody for Western Blot analysis of enhanced human Ku70 expression in Ku70 transfected 293T cells (starting dilution 1:100, dilution range 1:100-1:1,000).

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.

DATA



Ku70 (G-4): sc-166386. Western blot analysis of Ku70 expression in non-transfected: sc-117752 (A) and human Ku70 transfected: sc-111431 (B) 293T whole cell lysates.

RESEARCH USE

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