

# Ku70 (15): sc-135963

## 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

1. Mimori, T., et al. 1981. Characterization of a high molecular weight acidic nuclear protein recognized by autoantibodies in sera from patients with polymyositis-scleroderma overlap. *J. Clin. Invest.* 68: 611-620.
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. Stuiver, 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.

## CHROMOSOMAL LOCATION

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

## SOURCE

Ku70 (15) is a mouse monoclonal antibody raised against amino acids 57-174 of Ku70 of mouse origin.

## PRODUCT

Each vial contains 50 µg IgG<sub>1</sub> in 500 µl PBS with < 0.1% sodium azide, 0.1% gelatin, 20% glycerol and 0.04% stabilizer protein.

## STORAGE

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

## APPLICATIONS

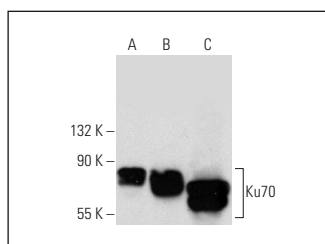
Ku70 (15) is recommended for detection of Ku70 of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)] and immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500).

Suitable for use as control antibody for Ku70 siRNA (h): sc-29383, Ku70 siRNA (m): sc-35764, Ku70 shRNA Plasmid (h): sc-29383-SH, Ku70 shRNA Plasmid (m): sc-35764-SH, Ku70 shRNA (h) Lentiviral Particles: sc-29383-V and Ku70 shRNA (m) Lentiviral Particles: sc-35764-V.

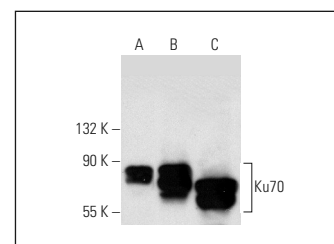
Molecular Weight of Ku70: 70 kDa.

Positive Controls: Ku70 (h2): 293T Lysate: sc-128972, HeLa nuclear extract: sc-2120 or HeLa whole cell lysate: sc-2200.

## DATA



Ku70 (15): sc-135963. Western blot analysis of Ku70 expression in non-transfected 293T: sc-117752 (A), human Ku70 transfected 293T: sc-128972 (B) and HeLa (C) whole cell lysates.



Ku70 (15): sc-135963. Western blot analysis of Ku70 expression in non-transfected 293T: sc-117752 (A), human Ku70 transfected 293T: sc-177443 (B) and HeLa (C) whole cell lysates.

## RESEARCH USE

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

## PROTOCOLS

See our web site at [www.scbt.com](http://www.scbt.com) for detailed protocols and support products.



See **Ku70 (E-5): sc-17789** for Ku70 antibody conjugates, including AC, HRP, FITC, PE, and Alexa Fluor® 488, 546, 594, 647, 680 and 790.