

Ku70 (G-4): sc-166386

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.

CHROMOSOMAL LOCATION

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

SOURCE

Ku70 (G-4) is a mouse monoclonal antibody specific for an epitope mapping between amino acids 564-595 at the C-terminus of Ku70 of mouse origin.

PRODUCT

Each vial contains 200 µg IgG_{2b} kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-166386 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% 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 (G-4) is recommended for detection of Ku70 of mouse, rat and 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 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.

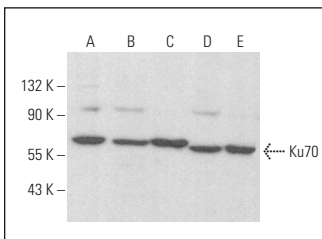
Molecular Weight of Ku70: 70 kDa.

Positive Controls: KNRK nuclear extract: sc-2141, A-431 nuclear extract: sc-2122 or Ku70 (h): 293T Lysate: sc-111431.

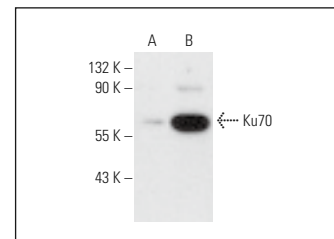
RECOMMENDED SUPPORT REAGENTS

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



Ku70 (G-4): sc-166386. Western blot analysis of Ku70 expression in C32 whole cell lysate (A) and HeLa (B), A-431 (C), NIH/3T3 (D) and KNRK (E) nuclear extracts.



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.

CONJUGATES

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.