

## Ku70 (aC-15): sc-27169

### 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.

### REFERENCES

- 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.
- 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.
- 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.
- Reeves, W.H., et al. 1989. Molecular cloning of cDNA encoding the p70 (Ku) lupus autoantigen. *J. Biol. Chem.* 264: 5047-5052.
- 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.
- 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.
- 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.

### SOURCE

Ku70 (aC-15) is an affinity purified goat polyclonal antibody raised against a peptide mapping near the C-terminus of Ku70 of *Arabidopsis thaliana* origin.

### PRODUCT

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

Blocking peptide available for competition studies, sc-27169 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

### STORAGE

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

### APPLICATIONS

Ku70 (aC-25) is recommended for detection of Ku70 of *Arabidopsis thaliana* origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), 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).

Molecular Weight of Ku70: 70 kDa.

### RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use donkey anti-goat IgG-HRP: sc-2020 (dilution range: 1:2000-1:100,000) or Cruz Marker™ compatible donkey anti-goat IgG-HRP: sc-2033 (dilution range: 1:2000-1:5000), Cruz Marker™ Molecular Weight Standards: sc-2035, TBS Blotto A Blocking Reagent: sc-2333 and Western Blotting Luminol Reagent: sc-2048. 2) Immunofluorescence: use donkey anti-goat IgG-FITC: sc-2024 (dilution range: 1:100-1:400) or donkey anti-goat IgG-TR: sc-2783 (dilution range: 1:100-1:400) with UltraCruz™ Mounting Medium: sc-24941.

### SELECT PRODUCT CITATIONS

- Tajada, S., et al. 2013. Down-regulation of CaV1.2 channels during hypertension: how fewer CaV1.2 channels allow more Ca<sup>2+</sup> into hypertensive arterial smooth muscle. *J. Physiol.* 591: 6175-6191.

### RESEARCH USE

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

### PROTOCOLS

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