

Ku-70/Ku-86 (162): sc-53632

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) which is also known by the synonym Ku-80 or (p80). Ku was first described as an autoantigen to which antibodies were produced in a patient with scleroderma-poly-myositis 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.
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CHROMOSOMAL LOCATION

Genetic locus: XRCC6 (human) mapping to 22q13.2, XRCC5 (human) mapping to 2q35; Xrcc6 (mouse) mapping to 15 E1, Xrcc5 (mouse) mapping to 1 C3.

SOURCE

Ku-70/Ku-86 (162) is a mouse monoclonal antibody raised against human B cell nuclei from plasmacytoid 2p68 cells.

PRODUCT

Each vial contains 50 µg IgG_{2a} in 500 µl of PBS with < 0.1% sodium azide and 0.1% gelatin.

STORAGE

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

APPLICATIONS

Ku-70/Ku-86 (162) is recommended for detection of Ku-70 and Ku-86 of mouse, rat, human and *Xenopus laevis* origin by immunoprecipitation [1–2 µg per 100–500 µg of total protein (1 ml of cell lysate)], immunofluorescence and immunohistochemistry (including paraffin-embedded sections) (starting dilution 1:50, dilution range 1:50-1:500) and flow cytometry (1 µg per 1 x 10⁶ cells).

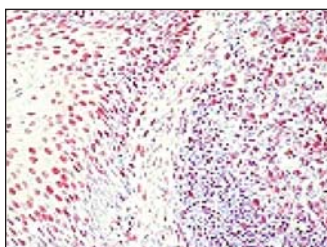
Molecular Weight of Ku-70: 70 kDa.

Molecular Weight of Ku-86: 86 kDa.

RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Immunoprecipitation: use Protein A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/2.0 ml). 2) Immunofluorescence: use goat anti-mouse IgG-FITC: sc-2010 (dilution range: 1:100-1:400) or goat anti-mouse IgG-TR: sc-2781 (dilution range: 1:100-1:400) with UltraCruz™ Mounting Medium: sc-24941. 3) Immunohistochemistry: use ImmunoCruz™: sc-2050 or ABC: sc-2017 mouse IgG Staining Systems.

DATA



Ku-70/Ku-86 (162): sc-53632. Immunoperoxidase staining of formalin-fixed, paraffin-embedded human tonsil tissue showing nuclear localization.

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.