

Ku70/Ku86 (3F247): sc-71471

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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- 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 kDa 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.
- Mimori, T., et al. 1990. Isolation and characterization of cDNA encoding the 80 kDa subunit protein of the human autoantigen Ku (p70/p80) recognized by autoantibodies from patients with scleroderma-polymyositis overlap syndrome. *Proc. Natl. Acad. Sci. USA* 87: 1777-1781.

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

Ku70/Ku86 (3F247) is a mouse monoclonal antibody raised against B cell nuclei from plasmacytoid 2p68 cells of human origin.

PRODUCT

Each vial contains 50 µg IgG_{2a} in 0.5 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

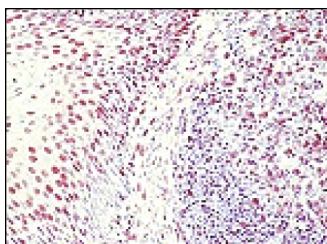
APPLICATIONS

Ku70/Ku86 (3F247) is recommended for detection of Ku70 and Ku86 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 (starting dilution 1:50, dilution range 1:50-1:500), 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 Ku70: 70 kDa.

Molecular Weight of Ku86: 86 kDa.

DATA



Ku70/Ku86 (3F247): sc-71471. Immunoperoxidase staining of formalin-fixed, paraffin-embedded human tonsil tissue showing nuclear localization.

SELECT PRODUCT CITATIONS

- Silva, B.A., et al. 2013. Targeting telomere-containing chromosome ends with a near-infrared femtosecond laser to study the activation of the DNA damage response and DNA damage repair pathways. *J. Biomed. Opt.* 18: 095003.
- Kruer, T.L., et al. 2013. Characterization of estrogen response element binding proteins as biomarkers of breast cancer behavior. *Clin. Biochem.* 46: 1739-1746.
- Silva, B.A., et al. 2014. DNA damage to a single chromosome end delays anaphase onset. *J. Biol. Chem.* 289: 22771-22784.

STORAGE

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

RESEARCH USE

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



See **Ku86 (B-1): sc-5280** for Ku86 antibody conjugates, including AC, HRP, FITC, PE, and Alexa Fluor® 488, 546, 594, 647, 680 and 790.