SANTA CRUZ BIOTECHNOLOGY, INC.

Ku86 (N9C1): sc-56135

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

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., Akizuki, M., Yamagata, H., Inada, S., Yoshida, S. and Homma, M. 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., Hardin, J.A. and Steitz, J.A. 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., Lerman, M.I., Prabhakar, B.S., Isozaki, O., Santisteban, P., Kuppers, R.C., Oates, E.L., Notkins, A.L. and Kohn, L.D. 1989. Cloning and characterization of a cDNA that encodes a 70 kDa novel human thyroid autoantigen. J. Biol. Chem. 264: 3651-3654.
4. Gottlieb, T.M. and Jackson, S.P. 1993. The DNA-dependent protein kinases: requirement for DNA ends and association with Ku antigen. Cell 72: 131-142.
5. Hoff, C.M., Ghosh, A.K., Prabhakar, B.S. and Jacob, S.T. 1994. Enhancer I binding factor, a Ku-related protein, is a positive regulator of RNA polymerase I transcription initiation. Proc. Natl. Acad. Sci. USA 91: 762-766.

CHROMOSOMAL LOCATION

Genetic locus: XRCC5 (human) mapping to 2q35.

SOURCE

Ku86 (N9C1) is a mouse monoclonal antibody raised against Ku86 of human origin.

PRODUCT

Each vial contains 200 µg IgG_1 in 1.0 ml 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

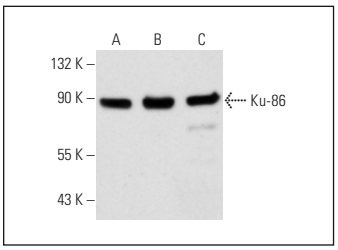
Ku86 (N9C1) is recommended for detection of Ku86 of human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500) and immunohistochemistry (including paraffin-embedded sections) (starting dilution 1:50, dilution range 1:50-1:500).

Suitable for use as control antibody for Ku86 siRNA (h): sc-29384, Ku86 shRNA Plasmid (h): sc-29384-SH and Ku86 shRNA (h) Lentiviral Particles: sc-29384-V.

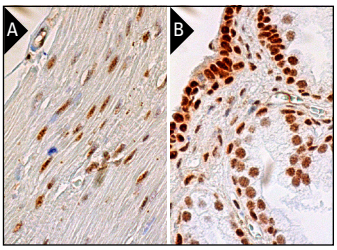
Molecular Weight of Ku86: 86 kDa.

Positive Controls: HeLa whole cell lysate: sc-2200, C32 whole cell lysate: sc-2205 or K-562 whole cell lysate: sc-2203.

DATA



Ku-86 (N9C1): sc-56135. Western blot analysis of Ku-86 expression in K-562 (**A**), HeLa (**B**) and C32 (**C**) whole cell lysates.



Ku86 (N9C1): sc-56135. Immunoperoxidase staining of formalin fixed, paraffin-embedded human smooth muscle tissue showing nuclear staining of smooth muscle cells (**A**). Immunoperoxidase staining of formalin fixed, paraffin-embedded human prostate tissue showing nuclear staining of glandular cells (**B**).

RESEARCH USE

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

PROTOCOLS

See our web site at www.scbt.com for detailed protocols and support products.

CONJUGATES

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.