

Ku-86 (B-1): sc-5280

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 auto-antigen 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.

CHROMOSOMAL LOCATION

Genetic locus: XRCC5 (human) mapping to 2q35; Xrcc5 (mouse) mapping to 1 E.

SOURCE

Ku-86 (B-1) is a mouse monoclonal antibody raised against amino acids 433-732 of the 86 kDa subunit of the Ku protein of human origin.

PRODUCT

Each vial contains 200 µg IgG₁ in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Available as Alexa Fluor® 405 (sc-5280 AF405), Alexa Fluor® 488 (sc-5280 AF488) or Alexa Fluor® 647 (sc-5280 AF647) conjugates for flow cytometry or immunofluorescence; 100 µg/2 ml.

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APPLICATIONS

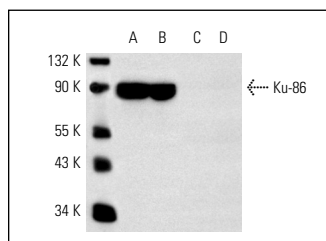
Ku-86 (B-1) is recommended for detection of Ku-86 of human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500), immunohistochemistry (including paraffin-embedded sections) (starting dilution 1:50, dilution range 1:50-1:500), flow cytometry (1 µg per 1 x 10⁶ cells) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

Suitable for use as control antibody for Ku-86 siRNA (h): sc-29384, Ku-86 shRNA Plasmid (h): sc-29384-SH and Ku-86 shRNA (h) Lentiviral Particles: sc-29384-V.

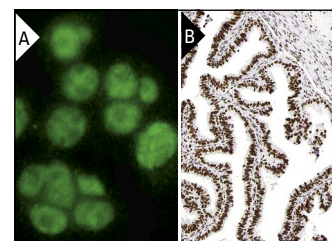
Molecular Weight of Ku-86: 86 kDa.

Positive Controls: HeLa whole cell lysate: sc-2200, C32 whole cell lysate: sc-2205 or A-431 whole cell lysate: sc-2201.

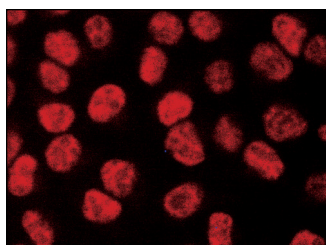
DATA



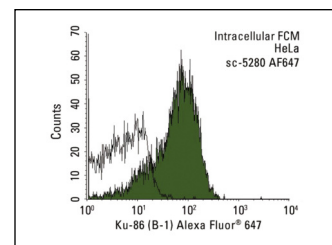
Ku-86 (B-1): sc-5280. Western blot analysis of Ku-86 expression in A-431 (A), HeLa (B), MM-142 (C) and KNRK (D) whole cell lysates.



Ku-86 (B-1): sc-5280. Immunofluorescence staining of methanol-fixed HeLa cells showing nuclear staining (A). Immunoperoxidase staining of formalin fixed, paraffin-embedded human fallopian tube tissue showing nuclear staining of glandular cells. Kindly provided by The Swedish Human Protein Atlas (HPA) program (B).



Ku-86 (B-1): sc-5280. Immunofluorescence staining of methanol-fixed HeLa cells showing nuclear localization.



Ku-86 (B-1) AF647: sc-5280 AF647. Intracellular FCM analysis of fixed and permeabilized HeLa cells. Black line histogram represents the isotype control, normal mouse IgG₁: sc-24636.

SELECT PRODUCT CITATIONS

- Karmakar, P., et al. 2002. Ku heterodimer binds to both ends of the Werner protein and functional interaction occurs at the Werner N-terminus. *Nucleic Acids Res.* 30: 3583-3591.
- Myung, K., et al. 2004. Regulation of telomere length and suppression of genomic instability in human somatic cells by Ku-86. *Mol. Cell. Biol.* 24: 5050-5059.
- Sucharov, C.C., et al. 2004. The Ku protein complex interacts with YY1, is up-regulated in human heart failure, and represses α myosin heavy-chain gene expression. *Mol. Cell. Biol.* 24: 8705-8715.
- Wu, X., et al. 2005. The double-edged sword of activation-induced cytidine deaminase. *J. Immunol.* 174: 934-941.
- Gama, V., et al. 2006. Involvement of the ubiquitin pathway in decreasing Ku-70 levels in response to drug-induced apoptosis. *Exp. Cell Res.* 312: 488-499.

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.