SANTA CRUZ BIOTECHNOLOGY, INC.

Ku86 (B-4): sc-515736

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.

CHROMOSOMAL LOCATION

Genetic locus: XRCC5 (human) mapping to 2q35; Xrcc5 (mouse) mapping to 1 C3.

SOURCE

Ku86 (B-4) is a mouse monoclonal antibody specific for an epitope mapping between amino acids 711-730 at the C-terminus of Ku86 of mouse origin.

PRODUCT

Each vial contains 200 µg IgG_1 kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Ku86 (B-4) is available conjugated to agarose (sc-515736 AC), 500 µg/ 0.25 ml agarose in 1 ml, for IP; to HRP (sc-515736 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-515736 PE), fluorescein (sc-515736 FITC), Alexa Fluor® 488 (sc-515736 AF488), Alexa Fluor® 546 (sc-515736 AF546), Alexa Fluor® 594 (sc-515736 AF594) or Alexa Fluor® 647 (sc-515736 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-515736 AF680) or Alexa Fluor® 790 (sc-515736 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

APPLICATIONS

Ku86 (B-4) is recommended for detection of Ku86 of mouse, rat and human origin by Western Blotting (starting dilution 1:100, 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) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

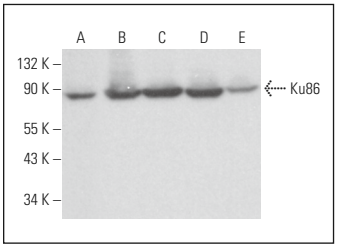
Suitable for use as control antibody for Ku86 siRNA (h): sc-29384, Ku86 siRNA (m): sc-35765, Ku86 shRNA Plasmid (h): sc-29384-SH, Ku86 shRNA Plasmid (m): sc-35765-SH, Ku86 shRNA (h) Lentiviral Particles: sc-29384-V and Ku86 shRNA (m) Lentiviral Particles: sc-35765-V.

Molecular Weight of Ku86: 86 kDa.

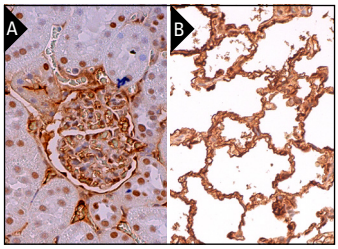
RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgGκ BP-HRP: sc-516102 or m-IgGκ BP-HRP (Cruz Marker): sc-516102-CM (dilution range: 1:1000-1:10000), Cruz Marker™ Molecular Weight Standards: sc-2035, UltraCruz® Blocking Reagent: sc-516214 and Western Blotting Luminol Reagent: sc-2048. 2) Immunoprecipitation: use Protein A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/2.0 ml). 3) Immunofluorescence: use m-IgGκ BP-FITC: sc-516140 or m-IgGκ BP-PE: sc-516141 (dilution range: 1:50-1:200) with UltraCruz® Mounting Medium: sc-24941 or UltraCruz® Hard-set Mounting Medium: sc-359850. 4) Immunohistochemistry: use m-IgGκ BP-HRP: sc-516102 with DAB, 50X: sc-24982 and Immunohistomount: sc-45086, or Organo/Limonene Mount: sc-45087.

DATA



Ku86 (B-4): sc-515736. Western blot analysis of Ku86 expression in MM-142 (**A**), Raji (**B**), NAMALWA (**C**) and HEK293 (**D**) whole cell lysates and KNRK nuclear extract (**E**).



Ku86 (B-4): sc-515736. Immunoperoxidase staining of formalin fixed, paraffin-embedded rat kidney tissue showing nuclear and cytoplasmic staining of cells in glomeruli and nuclear staining of cells in tubules (**A**). Immunoperoxidase staining of formalin fixed, paraffin-embedded rat lung tissue showing nuclear, cytoplasmic and membrane staining of pneumocytes and macrophages (**B**).

SELECT PRODUCT CITATIONS

1. Liang, F., et al. 2019. DNA requirement in FANCD2 deubiquitination by USP1-UAF1-RAD51AP1 in the Fanconi anemia DNA damage response. Nat. Commun. 10: 2849.
2. Chen, D., et al. 2020. Targeting the radiation-induced TR4 nuclear receptor-mediated QKI/circZEB1/miR-141-3p/ZEB1 signaling increases prostate cancer radiosensitivity. Cancer Lett. 495: 100-111.
3. Saha, J., et al. 2021. Ablating putative Ku70 phosphorylation sites results in defective DNA damage repair and spontaneous induction of hepatocellular carcinoma. Nucleic Acids Res. 49: 9836-9850.
4. Koike, M., et al. 2024. Molecular cloning, subcellular localization, and rapid recruitment to DNA damage sites of chicken Ku70. Sci. Rep. 14: 1188.

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.