SANTA CRUZ BIOTECHNOLOGY, INC.

# Ku70 (E-5): sc-17789

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: XRCC6 (human) mapping to 22q13.2; Xrcc6 (mouse) mapping to 15 E1.

## SOURCE

Ku70 (E-5) is a mouse monoclonal antibody raised against amino acids 302-609 mapping at the C-terminus of the 70 kDa subunit of the Ku protein of human 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.

Ku70 (E-5) is available conjugated to agarose (sc-17789 AC), 500 µg/0.25 ml agarose in 1 ml, for IP; to HRP (sc-17789 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-17789 PE), fluorescein (sc-17789 FITC), Alexa Fluor® 488 (sc-17789 AF488), Alexa Fluor® 546 (sc-17789 AF546), Alexa Fluor® 594 (sc-17789 AF594) or Alexa Fluor® 647 (sc-17789 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-17789 AF680) or Alexa Fluor® 790 (sc-17789 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

## APPLICATIONS

Ku70 (E-5) is recommended for detection of Ku70 of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:200-1:2,000), 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).

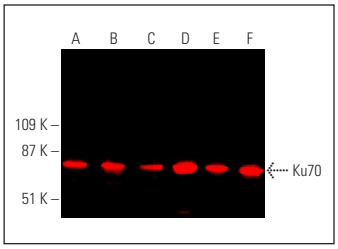
Suitable for use as control antibody for Ku70 siRNA (h): sc-29383, Ku70 siRNA (m): sc-35764, Ku70 shRNA Plasmid (h): sc-29383-SH, Ku70 shRNA Plasmid (m): sc-35764-SH, Ku70 shRNA (h) Lentiviral Particles: sc-29383-V and Ku70 shRNA (m) Lentiviral Particles: sc-35764-V.

Molecular Weight of Ku70: 70 kDa.

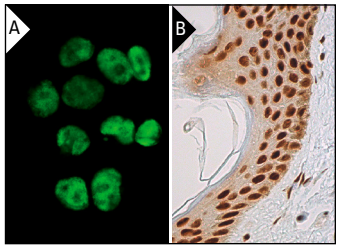
## STORAGE

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

## DATA




Ku70 (E-5): sc-17789. Near-infrared western blot analysis of Ku70 expression in HeLa (**A**), MCF7 (**B**), Jurkat (**C**) and C32 (**D**) nuclear extracts and A-431 (**E**) and SK-MEL-24 (**F**) whole cell lysates. Blocked with UltraCruz® Blocking Reagent: sc-516214. Detection reagent used: m-IgGκ BP-CFL 790: sc-516181.




Ku70 (E-5): sc-17789. Immunofluorescence staining of methanol-fixed HeLa cells showing nuclear staining (**A**). Immunoperoxidase staining of formalin fixed, paraffin-embedded human skin tissue showing nuclear staining of keratinocytes, fibroblasts, Langerhans cells and melanocytes (**B**).

## SELECT PRODUCT CITATIONS


1. Iyer, R., et al. 2004. Effect of reduced EGFR function on the radiosensitivity and proliferative capacity of mouse jejunal crypt clonogens. Radiother. Oncol. 72: 283-289.
2. Di Paola, D. and Zannis-Hadjopoulos, M. 2012. Comparative analysis of pre-replication complex proteins in transformed and normal cells. J. Cell. Biochem. 113: 1333-1347.
3. Chen, X., et al. 2013. Suberoylanilide hydroxamic acid induces hypersensitivity to radiation therapy in acute myelogenous leukemia cells expressing constitutively active FLT3 mutants. PLoS ONE 8: e84515.
4. Hähnel, P.S., et al. 2014. Targeting components of the alternative NHEJ pathway sensitizes KRAS mutant leukemic cells to chemotherapy. Blood 123: 2355-2366.
5. Slotkin, E.K., et al. 2015. MLN0128, an ATP-competitive mTOR kinase inhibitor with potent *in vitro* and *in vivo* antitumor activity, as potential therapy for bone and soft-tissue sarcoma. Mol. Cancer Ther. 14: 395-406.
6. Lin, J., et al. 2016. MicroRNA-181b inhibits thrombin-mediated endothelial activation and arterial thrombosis by targeting caspase recruitment domain family member 10. FASEB J. 30: 3216-3226.
7. Lu, H., et al. 2017. Cell cycle-dependent phosphorylation regulates RECQL4 pathway choice and ubiquitination in DNA double-strand break repair. Nat. Commun. 8: 2039.
8. Sabatella, M., et al. 2018. Repair protein persistence at DNA lesions characterizes XPF defect with Cockayne syndrome features. Nucleic Acids Res. 46: 9563-9577.


## RESEARCH USE

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