SANTA CRUZ BIOTECHNOLOGY, INC.

Ku-86 (C-20): sc-1484

SANTA CRUZ BIOTECHNOLOGY
The Power to Question

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 C3.

SOURCE

Ku-86 (C-20) is an affinity purified goat polyclonal antibody raised against a peptide mapping at the C-terminus of Ku-86 of human origin.

PRODUCT

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

Blocking peptide available for competition studies, sc-1484 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

Available as agarose conjugate for immunoprecipitation, sc-1484 AC, 500 µg/0.25 ml agarose in 1 ml.

APPLICATIONS

Ku-86 (C-20) is recommended for detection of Ku-86 of mouse, rat and 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 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 siRNA (m): sc-35765, Ku-86 shRNA Plasmid (h): sc-29384-SH, Ku-86 shRNA Plasmid (m): sc-35765-SH, Ku-86 shRNA (h) Lentiviral Particles: sc-29384-V and Ku-86 shRNA (m) Lentiviral Particles: sc-35765-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.

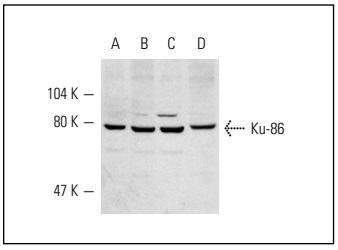
RESEARCH USE

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

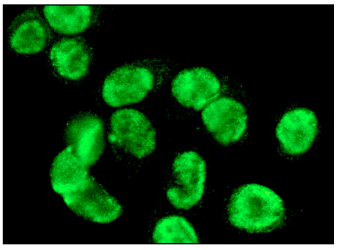
STORAGE

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

DATA



Ku-86 (C-20): sc-1484. Western blot analysis of Ku-86 expression in A-431 (**A**), HeLa (**B**), C32 (**C**) and MM-142 (**D**) whole cell lysates.



Ku-86 (C-20): sc-1484. Immunofluorescence staining of methanol-fixed HeLa cells showing nuclear staining.

SELECT PRODUCT CITATIONS

1. Jin, S., et al. 1997. Double-strand break repair by Ku-70 requires heterodimerization with Ku-80 and DNA binding functions. EMBO J. 16: 6874-6885.
2. Warmerdam, D.O., et al. 2010. Differential dynamics of ATR-mediated checkpoint regulators. J. Nucleic Acids. E-Published.
3. Fan, J., et al. 2010. Cells expressing FLT3/ITD mutations exhibit elevated repair errors generated through alternative NHEJ pathways: implications for genomic instability and therapy. Blood 116: 5298-5305.
4. Medunjanin, S., et al. 2010. Transcriptional activation of DNA-dependent protein kinase catalytic subunit gene expression by oestrogen receptor-α. EMBO Rep. 11: 208-213.
5. Li, B., et al. 2011. Depletion of Ku70/80 reduces the levels of extrachromosomal telomeric circles and inhibits proliferation of ALT cells. Aging 3: 395-406.
6. Baldeyron, C., et al. 2011. HP1α recruitment to DNA damage by p150^{CAF-1} promotes homologous recombination repair. J. Cell Biol. 193: 81-95.
7. Smits, V.A. 2012. EDD induces cell cycle arrest by increasing p53 levels. Cell Cycle 11: 715-720.
8. Lakota, K., et al. 2012. International cohort study of 73 anti-Ku-positive patients: association of p70/p80 anti-Ku antibodies with joint/bone features and differentiation of disease populations by using principal-components analysis. Arthritis Res. Ther. 14: R2.