SANTA CRUZ BIOTECHNOLOGY, INC.

Ku86 (S10B1): sc-56136

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.

SOURCE

Ku86 (S10B1) is a mouse monoclonal antibody raised against amino acids 8-221 of placental cell extract 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.

STORAGE

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

PROTOCOLS

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

APPLICATIONS

Ku86 (S10B1) 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.

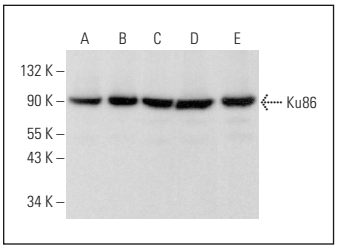
Molecular Weight of Ku86: 86 kDa.

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

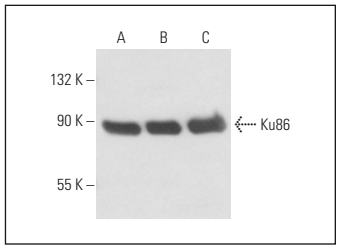
RECOMMENDED SUPPORT REAGENTS

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 (S10B1): sc-56136. Western blot analysis of Ku86 expression in K-562 (**A**), Caco-2 (**B**), HL-60 (**C**), SJRH30 (**D**) and IMR-32 (**E**) whole cell lysates.



Ku86 (S10B1): sc-56136. Western blot analysis of Ku86 expression in K-562 (**A**), HeLa (**B**) and C32 (**C**) whole cell lysates.

SELECT PRODUCT CITATIONS

1. Yin, H. and Glass, J. 2011. The phenotypic radiation resistance of $CD44^{+}/CD24^{-or\ low}$ breast cancer cells is mediated through the enhanced activation of ATM signaling. PLoS ONE 6: e24080.
2. Behera, M., et al. 2013. Survival analysis of patients with stage I non-small-cell lung cancer using clinical and DNA repair pathway expression variables. Clin. Lung Cancer 14: 128-138.
3. Herrero, A.B., et al. 2015. Deregulation of DNA double-strand break repair in multiple myeloma: implications for genome stability. PLoS ONE 10: e0121581.
4. Somyajit, K., et al. 2021. Homology-directed repair protects the replicating genome from metabolic assaults. Dev. Cell 56: 461-477.e7.
5. Ovejero-Sánchez, M., et al. 2022. Chloroquine-induced DNA damage synergizes with nonhomologous end joining inhibition to cause ovarian cancer cell cytotoxicity. Int. J. Mol. Sci. 23: 7518.

RESEARCH USE

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

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.