

Ku-70 (M-19): sc-1487

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

SOURCE

Ku-70 (M-19) is an affinity purified goat polyclonal antibody raised against a peptide mapping at the C-terminus of Ku-70 of mouse 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-1487 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

APPLICATIONS

Ku-70 (M-19) is recommended for detection of Ku-70 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), 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 Ku-70 siRNA (h): sc-29383, Ku-70 siRNA (m): sc-35764, Ku-70 shRNA Plasmid (h): sc-29383-SH, Ku-70 shRNA Plasmid (m): sc-35764-SH, Ku-70 shRNA (h) Lentiviral Particles: sc-29383-V and Ku-70 shRNA (m) Lentiviral Particles: sc-35764-V.

Molecular Weight of Ku-70: 70 kDa.

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

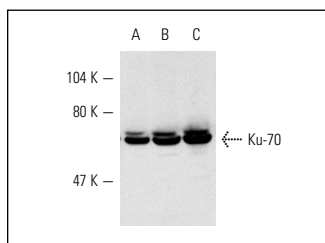
STORAGE

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

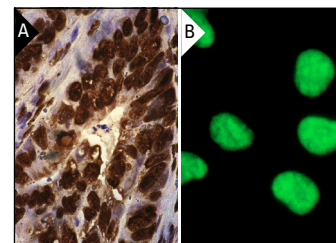
RESEARCH USE

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

DATA



Ku-70 (M-19): sc-1487. Western blot analysis of Ku-70 expression in A-431 (A), HeLa (B) and C32 (C) whole cell lysates.



Ku-70 (M-19): sc-1487. Immunoperoxidase staining of formalin-fixed, paraffin-embedded human colon carcinoma tissue showing nuclear localization (A). Immunofluorescence staining of methanol-fixed HeLa cells showing nuclear localization (B).

SELECT PRODUCT CITATIONS

- 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.
- Gu, Y., et al. 1997. Ku70-deficient embryonic stem cells have increased ionizing radiosensitivity, defective DNA end-binding activity, and inability to support V(D)J recombination. *Proc. Natl. Acad. Sci. USA* 94: 8076-8081.
- Korabiowska, M., et al. 2006. Altered expression of DNA double strand repair genes Ku70 and Ku80 in carcinomas of the oral cavity. *Anticancer Res.* 26: 2101-2105.
- Tomimatsu, N. and Tahimic, C.G. 2007. Ku70/80 modulates ATM and ATR signaling pathways in response to DNA double strand breaks. *J. Biol. Chem.* 282: 10138-10145.
- Sundaresan, N.R., et al. 2008. SIRT3 is a stress-responsive deacetylase in cardiomyocytes that protects cells from stress-mediated cell death by deacetylation of Ku70. *Mol. Cell. Biol.* 28: 6384-6401.
- Seo, J.Y., et al. 2009. Protective effect of lycopene on oxidative stress-induced cell death of pancreatic acinar cells. *Ann. N.Y. Acad. Sci.* 1171: 570-575.
- Trougakos, I.P., et al. 2009. Intracellular clusterin inhibits mitochondrial apoptosis by suppressing p53-activating stress signals and stabilizing the cytosolic Ku70-Bax protein complex. *Clin. Cancer Res.* 15: 48-59.
- Medunjanin, S., et al. 2010. Interaction of the double-strand break repair kinase DNA-PK and estrogen receptor- α . *Mol. Biol. Cell* 21: 1620-1628.



Try **Ku-70 (E-5): sc-17789** or **Ku-70 (A-9): sc-5309**, our highly recommended monoclonal alternatives to Ku-70 (M-19). Also, for AC, HRP, FITC, PE, Alexa Fluor[®] 488 and Alexa Fluor[®] 647 conjugates, see **Ku-70 (E-5): sc-17789**.