

Ku80 Antibody

✓ 100 µl
(10 western blots)

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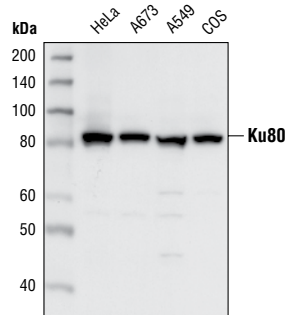
This product is intended for research purposes only. This product is not intended to be used for therapeutic or diagnostic purposes in humans or animals.

Entrez-Gene ID # 7520
Swiss-Prot Acc. # P13010

Applications	Species Cross-Reactivity*	Molecular Wt.	Source
W, IP, IHC-P, IF-IC, F Endogenous	H, Mk, (M, R)	86 kDa	Rabbit**

Background: Ku is a heterodimeric protein composed of two subunits (Ku70 and Ku80) originally identified as autoantigens associated with several autoimmune diseases including scleroderma, polymyositis and systemic lupus erythematosus (1). Ku is an abundant, ubiquitously expressed, nuclear protein that binds to and stabilizes the ends of DNA at telomeres or double-stranded DNA breaks (2,3,4,5). The Ku70/Ku80 heterodimer has ATP-dependent DNA helicase activity and functions as the DNA-binding regulatory component of DNA-dependent protein kinase (DNA-PK) (6,7,8). The assembly of DNA-PK complex at DNA ends is required for nonhomologous end-joining (NHEJ), one mechanism involved in double-stranded DNA break repair and V(D)J recombination (8). DNA-PK has been shown to phosphorylate many proteins, including p53, serum response factor, c-Jun, c-Fos, c-Myc, Oct-1, Sp-1 and RNA polymerase II (1,8). The combined activities of Ku70/Ku80 and DNA-PK implicate Ku in many cellular functions, including cell-cycle regulation, DNA replication and repair, telomere maintenance, recombination and transcriptional activation.

Specificity/Sensitivity: Ku80 antibody detects endogenous levels of total Ku80 protein.



Western blot analysis of lysates from HeLa, A673, A549 and COS cells, using Ku80 antibody.

Source/Purification: Polyclonal antibodies are produced by immunizing animals with a synthetic peptide corresponding to the carboxy terminus of human Ku80. Antibodies are purified by protein A and peptide affinity chromatography.

Storage: Supplied in 10 mM sodium HEPES (pH 7.5), 150 mM NaCl, 100 µg/ml BSA and 50% glycerol. Store at -20°C. Do not aliquot the antibody.

Recommended Antibody Dilutions:

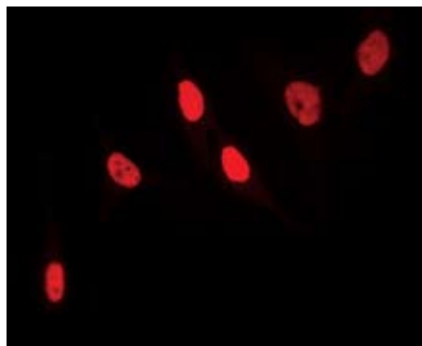
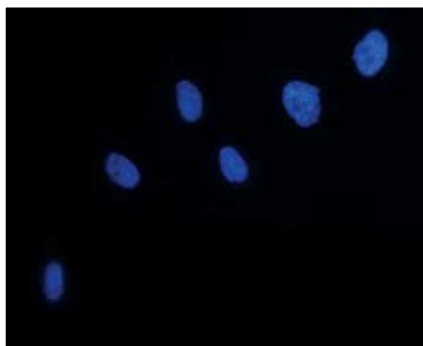
Western blotting	1:1000
Immunoprecipitation	1:25
Immunohistochemistry (Paraffin)	1:300
Unmasking buffer:	Citrate
Antibody diluent:	TBST-5%NGS
Immunofluorescence (IF-IC)	1:400
Flow Cytometry	1:50

For application specific protocols please see the web page for this product at www.cellsignaling.com.

Please visit www.cellsignaling.com for a complete listing of recommended companion products.

Background References:

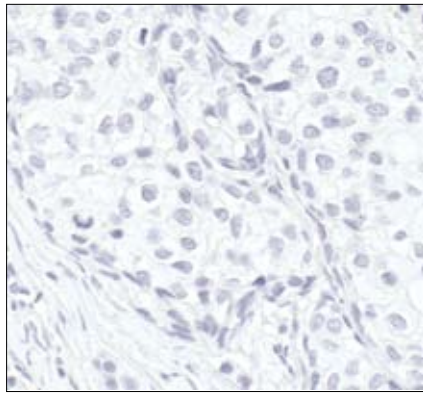
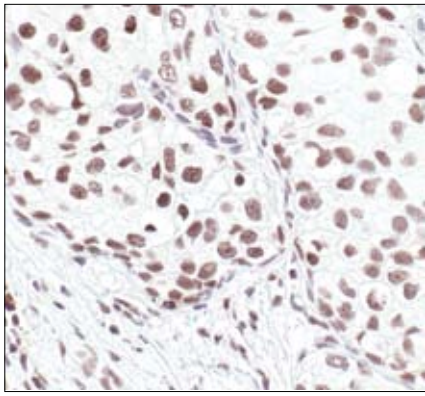
- (1) Tuteja, R. and Tuteja, N. (2000) *Crit. Rev. Biochem. Mol. Biol.* 35, 1–33.
- (2) Blier, P.R. et al. (1993) *J. Biol. Chem.* 268, 7594–601.
- (3) Jin, S. and Weaver, D.T. (1997) *EMBO J.* 16, 6874–85.
- (4) Boulton, S.J. and Jackson, S.P. (1998) *EMBO J.* 17, 1819–28.
- (5) Gravel, S. et al. (1998) *Science* 280, 741–4.
- (6) Cao, Q.P. et al. (1994) *Biochemistry* 33, 8548–57.
- (7) Lees-Miller, S.P. et al. (1990) *Mol. Cell. Biol.* 10, 6472–81.
- (8) Collis, S.J. et al. (2005) *Oncogene* 24, 949–61.



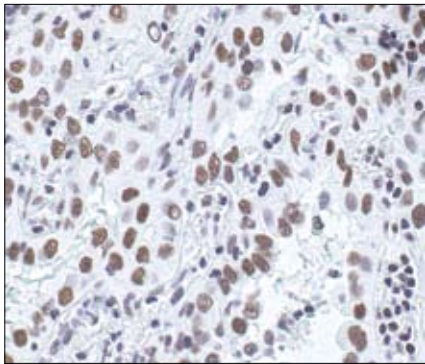
DAPI staining (left) and immunofluorescence staining (right) of paraformaldehyde-fixed HeLa cells, using Ku80 Antibody.

IMPORTANT: For western blots, incubate membrane with diluted antibody in 5% w/v nonfat dry milk, 1X TBS, 0.1% Tween-20 at 4°C with gentle shaking, overnight.

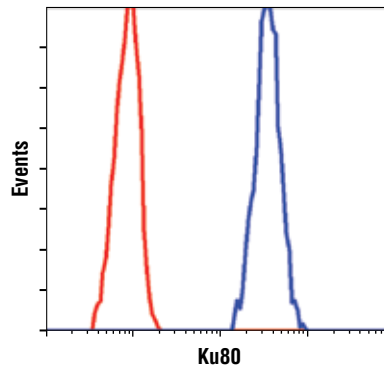
Applications Key: W—Western IP—Immunoprecipitation IHC—Immunohistochemistry ChIP—Chromatin Immunoprecipitation IF—Immunofluorescence F—Flow cytometry E-P—ELISA-Peptide
Species Cross-Reactivity Key: H—human M—mouse R—rat Hm—hamster Mk—monkey Mi—mink C—chicken Dm—D. melanogaster X—Xenopus Z—zebrafish B—bovine
 Dg—dog Pg—pig Sc—S. cerevisiae Ce—C. elegans Hr—Horse All—all species expected Species enclosed in parentheses are predicted to react based on 100% homology.



Immunohistochemical analysis of paraffin-embedded human breast carcinoma, showing nuclear localization, using Ku80 Antibody preincubated with control peptide (left) or antigen-specific peptide (right).



Immunohistochemical analysis of paraffin-embedded human lung carcinoma, showing nuclear localization, using Ku80 Antibody.



Flow cytometric analysis of HeLa cells, using Ku80 Antibody (blue) compared to a nonspecific negative control antibody (red).