Revision 4

Ku80 Antibody

#2753 Store at -20C

Cell Signaling TECHNOLOGY®

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For Research Use Only. Not for Use in Diagnostic Procedures.

Applications:	Reactivity:	Sensitivity:	MW (kDa):	Source/Isotype:	UniProt ID:	Entrez-Gene Id:
W, IP, IHC-P, IF-IC, FC-FP	H Mk	Endogenous	86	Rabbit	#P13010	7520

Product Usage Information

Application	Dilution
Western Blotting	1:1000
Immunoprecipitation	1:25
Immunohistochemistry (Paraffin)	1:150 - 1:600
Immunofluorescence (Immunocytochemistry)	1:100 - 1:400
Flow Cytometry (Fixed/Permeabilized)	1:50 - 1:100

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.

Specificity/Sensitivity

Ku80 antibody detects endogenous levels of total Ku80 protein.

Species predicted to react based on 100% sequence homology

Mouse, Rat

Source / Purification

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

Background

Ku is a heterodimeric protein composed of two subunits (Ku70 and Ku80) originally identified by researchers 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 (2-5). 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) (6-8). The assembly of the 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.

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, 7594-7601.
3. Jin, S. and Weaver, D.T. (1997) *EMBO J.* 16, 6874-6885.
4. Boulton, S.J. and Jackson, S.P. (1998) *EMBO J.* 17, 1819-1828.
5. Gravel, S. et al. (1998) *Science* 280, 741-744.
6. Cao, Q.P. et al. (1994) *Biochemistry* 33, 8548-8557.
7. Lees-Miller, S.P. et al. (1990) *Mol. Cell Biol.* 10, 6472-6481.
8. Collis, S.J. et al. (2005) *Oncogene* 24, 949-961.

Species Reactivity

Species reactivity is determined by testing in at least one approved application (e.g., western blot).

Western Blot Buffer

IMPORTANT: For western blots, incubate membrane with diluted primary 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 Blotting **IP:** Immunoprecipitation **IHC-P:** Immunohistochemistry (Paraffin) **IF-IC:** Immunofluorescence (Immunocytochemistry) **FC-FP:** Flow Cytometry (Fixed/Permeabilized)

Cross-Reactivity Key

H: Human **Mk:** Monkey

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