Revision 6

Store at -20C

#2180

# Ku80 (C48E7) Rabbit mAb

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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 | H Mk | Endogenous | 86 | Rabbit IgG | #P13010 | 7520 |

## Product Usage Information

| Application | Dilution |
|---|---|
| Western Blotting | 1:1000 |
| Immunoprecipitation | 1:50 |
| Immunohistochemistry (Paraffin) | 1:400 - 1:1600 |
| Immunofluorescence (Immunocytochemistry) | 1:200 - 1:800 |

## Storage

Supplied in 10 mM sodium HEPES (pH 7.5), 150 mM NaCl, 100 µg/ml BSA, 50% glycerol and less than 0.02% sodium azide. Store at –20°C. Do not aliquot the antibody.

For a carrier free (BSA and azide free) version of this product see product #44110.

## Specificity/Sensitivity

Ku80 (C48E7) Rabbit mAb detects endogenous levels of total Ku80 protein.

## Source / Purification

Monoclonal antibody is produced by immunizing animals with a synthetic peptide corresponding to the carboxy terminus of human Ku80.

## 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 BSA, 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)

## Cross-Reactivity Key

**H:** Human **Mk:** Monkey

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