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TopBP1 (D8G4L) 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:
WB, IP	H	Endogenous	170	Rabbit IgG	#Q92547	11073

Product Usage Information

Application

Western Blotting

Dilution

1:1000

Immunoprecipitation

1:100

Specificity / Sensitivity

TopBP1 (D8G4L) Rabbit mAb recognizes endogenous levels of total TopBP1 protein.

Source / Purification

Monoclonal antibody is produced by immunizing animals with a synthetic peptide corresponding to residues surrounding Leu27 of human TopBP1 protein.

Background

Topoisomerase II Binding Protein 1 (TopBP1) contains eight BRCT domains, which facilitate interaction with various proteins, phosphopeptides, and DNA. Through these interactions, TopBP1 functions in the regulation of DNA replication, DNA repair, checkpoint control, and transcription (1). TopBP1 contacts the checkpoint kinase ATR and its binding partner ATRIP, and induces ATR and Chk1 activation in collaboration with claspin (2,3). Activation of ATR is dependent on recruitment of TopBP1 through the MRN (MRE11-RAD50-NBS1) complex, and the 911 (RAD9-RAD1-HUS1) complex is required for full activation (4). TopBP1 stabilizes Bloom syndrome helicase (BLM) during S phase of the cell cycle to suppress sister chromatid exchange and maintain genome stability (5). TopBP1 also regulates initiation of DNA replication along with the DNA replication factor Treslin (6,7). TopBP1 has been shown to prevent replication associated DNA damage during neurogenesis (8), and to interact with mutant p53, mediating mutant p53 gain-of-function activity such as growth promotion and resistance to chemotherapeutic drugs (9). Phosphorylation of TopBP1 at Ser1159 by Akt regulates TopBP1 oligomerization and function in E2F1-dependent transcriptional regulation (10).

Background References

1. Garcia, V. et al. (2005) *DNA Repair (Amst)* 4, 1227-39.
2. Lindsey-Boltz, L.A. and Sancar, A. (2011) *J Biol Chem* 286, 19229-36.
3. Burrows, A.E. and Elledge, S.J. (2008) *Genes Dev* 22, 1416-21.
4. Duursma, A.M. et al. (2013) *Mol Cell* 50, 116-22.
5. Wang, J. et al. (2013) *Mol Cell* 52, 667-78.
6. Kumagai, A. et al. (2010) *Cell* 140, 349-59.
7. Boos, D. et al. (2013) *Science* 340, 981-4.
8. Lee, Y. et al. (2012) *Nat Neurosci* 15, 819-26.
9. Liu, K. et al. (2011) *Mol Cell Biol* 31, 4464-81.
10. Liu, K. et al. (2013) *Mol Cell Biol* 33, 4685-700.

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

WB: Western Blotting **IP:** Immunoprecipitation

Cross-Reactivity Key

H: human **M:** mouse **R:** rat **Hm:** hamster **Mk:** monkey **Vir:** virus **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
GP: Guinea Pig **Rab:** rabbit **All:** all species expected

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