Revision 1

Store at -20C

#5428

DDB-1 Antibody

Cell Signaling TECHNOLOGY®

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Applications:	Reactivity:	Sensitivity:	MW (kDa):	Source/Isotype:	UniProt ID:	Entrez-Gene Id:
W	H M R Mk	Endogenous	127	Rabbit	#Q16531	1642

Product Usage Information

Application	Dilution
Western Blotting	1:1000

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

DDB-1 Antibody detects endogenous levels of total DDB-1 protein.

Source / Purification

Polyclonal antibodies are produced by immunizing animals with a synthetic peptide corresponding to residues near the carboxy terminus of human DDB-1 protein. Antibodies are purified by protein A and peptide affinity chromatography.

Background

Damaged **D**NA-**B**inding Protein (DDB) consists of a 127 kDa subunit (DDB-1) and a 48 kDa subunit (DDB-2) that contribute to the formation of the UV-damaged DNA-binding protein complex (UV-DDB) (1-3). In conjunction with CUL4A and ROC-1, the UV-DDB complex forms an E3 ubiquitin ligase that recognizes a broad spectrum of DNA lesions such as cyclobutane pyrimidine dimers, 6-4 photoproducts, apurinic sites and short mismatches. The complex polyubiquitinates components of the nucleotide excision repair pathway (4-6). Loss of DDB activity has been identified in a subset of xeroderma pigmentosum complementation group E (XP-E) patients and has been linked to the deficient repair of cyclobutane pyrimidine dimers in cells derived from these patients (7-10).
DDB-1 is a relatively abundant protein that is vital for normal cell function and is evolutionarily conserved in mammals, insects, worms and plants. Unlike DDB-2, lesions in *DDB-1* have yet to be indentified in XP-E patients. In association with ROC-1 and CUL4A, DDB-1 functions to recruit substrate-specific targeting subunits, generally known as DCAFs or CDWs, to CUL4-RING E3 ubiquitin-protein ligase complexes (11,12). Ubiquitination of histone H2A, histone H3 and histone H4 at sites of UV-induced DNA damage by the DDB1-DDB2-CUL4A-ROC1 E3 ubiquitin-protein ligase complex may facilitate their removal from the nucleosome in order to promote DNA repair (13-15). DDB-1, in association with other CUL4-based E3 ligase complexes, has also been found to be a regulator of mTOR signaling (16,17).

Background References

1. Reardon, J.T. et al. (1993) *J Biol Chem* 268, 21301-8.
2. Keeney, S. et al. (1993) *J Biol Chem* 268, 21293-300.
3. Hwang, B.J. and Chu, G. (1993) *Biochemistry* 32, 1657-66.
4. Chu, G. and Chang, E. (1990) *Proc Natl Acad Sci USA* 87, 3324-7.
5. Hirschfeld, S. et al. (1990) *Mol Cell Biol* 10, 2041-8.
6. Payne, A. and Chu, G. (1994) *Mutat Res* 310, 89-102.
7. Chu, G. and Chang, E. (1988) *Science* 242, 564-7.
8. Nichols, A.F. et al. (1996) *J Biol Chem* 271, 24317-20.
9. Kataoka, H. and Fujiwara, Y. (1991) *Biochem Biophys Res Commun* 175, 1139-43.
10. Keeney, S. et al. (1992) *Mutat Res* 273, 49-56.
11. He, Y.J. et al. (2006) *Genes Dev* 20, 2949-54.
12. Lee, J. and Zhou, P. (2007) *Mol Cell* 26, 775-80.
13. Wang, H. et al. (2006) *Mol Cell* 22, 383-94.
14. Kapetanaki, M.G. et al. (2006) *Proc Natl Acad Sci USA* 103, 2588-93.
15. Guerrero-Santoro, J. et al. (2008) *Cancer Res* 68, 5014-22.
16. Ghosh, P. et al. (2008) *Cell Cycle* 7, 373-81.
17. Hu, J. et al. (2008) *Genes Dev* 22, 866-71.

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

Cross-Reactivity Key

H: Human **M:** Mouse **R:** Rat **Mk:** Monkey

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