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DDB2 Rabbit pAb

Catalog # AP98859

Product Information

Application	WB, IHC-P, IHC-F, IF
Primary Accession	Q92466
Other Accession	Q92466
Reactivity	Rat, Mouse
Predicted	Human, Rabbit, Horse
Host	Rabbit
Clonality	Polyclonal
Calculated MW	47864
Physical State	Liquid
Immunogen	KLH conjugated synthetic peptide derived from human DDB2
Epitope Specificity	201-300/427
Isotype	IgG
Purity	affinity purified by Protein A
Buffer	0.01M TBS (pH7.4) with 1% BSA, 0.02% Proclin300 and 50% Glycerol.
SIMILARITY	Belongs to the WD repeat DDB2/WDR76 family.Contains 7 WD repeats.
SUBUNIT	Component of the UV-DDB complex which includes DDB1 and DDB2. The UV-DDB complex interacts with monoubiquitinated histone H2A and binds to XPC via the DDB2 subunit. Component of the DCX (DDB1-CUL4-X-box) E3 ubiquitin-protein ligase complex DDB1-CUL4-ROC1 (also known as CUL4-DDB-ROC1 and CUL4-DDB-RBX1), which includes CUL4A or CUL4B, DDB1, DDB2 and RBX1. DDB2 may function as the substrate recognition module within this complex. The DDB1-CUL4-ROC1 complex may associate with the COP9 signalosome, and this inhibits the E3 ubiquitin-protein ligase activity of the complex. A large number of other DCX complexes may also exist in which an alternate substrate targeting subunit replaces DDB2. These targeting subunits are generally known as DCAF (DDB1- and CUL4-associated factor) or CDW (CUL4-DDB1-associated WD40-repeat) proteins. Isoform D1 and isoform D2 do not interact with DDB1.
Post-translational modifications	Phosphorylation by ABL1 negatively regulate UV-DDB activity (By similarity).Ubiquitinated by CUL4A in response to UV irradiation. Ubiquitination appears to both impair DNA-binding and promotes ubiquitin-dependent proteolysis. Degradation of DDB2 at sites of DNA damage may be a prerequisite for their recognition by XPC and subsequent repair. CUL4A-mediated degradation appears to be promoted by ABL1.
DISEASE	Xeroderma pigmentosum complementation group E (XP-E) [MIM:278740]: An autosomal recessive pigmentary skin disorder characterized by solar hypersensitivity of the skin, high predisposition for developing cancers on areas exposed to sunlight and, in some cases, neurological abnormalities. The skin develops marked freckling and other pigmentation abnormalities. XP-E patients show a mild phenotype with minimal or no neurologic features. Note=The disease is caused by mutations affecting the gene represented in this entry.
Important Note	This product as supplied is intended for research use only, not for use in human, therapeutic or diagnostic applications.
Background Descriptions	This gene encodes a protein that is necessary for the repair of ultraviolet

light-damaged DNA. This protein is the smaller subunit of a heterodimeric protein complex that participates in nucleotide excision repair, and this complex mediates the ubiquitylation of histones H3 and H4, which facilitates the cellular response to DNA damage. This subunit appears to be required for DNA binding. Mutations in this gene cause xeroderma pigmentosum complementation group E, a recessive disease that is characterized by an increased sensitivity to UV light and a high predisposition for skin cancer development, in some cases accompanied by neurological abnormalities. [provided by RefSeq].

Additional Information

Gene ID	1643
Other Names	DDBB; UV-DDB2; XPE; 2610043A19Rik; DDB2_BOVIN; DDB2; Damage-specific DNA-binding protein 2; DDB2_HUMAN; DDB p48 subunit (DDBb); UV-damaged DNA-binding protein 2 (UV-DDB 2); DDB2_MOUSE; damage specific DNA binding protein 2; damage-specific DNA binding protein 2 (48kD); xeroderma pigmentosum group E protein; UV-damaged DNA-binding protein 2; DDB p48 subunit
Dilution	WB=1:500-2000,IHC-P=1:100-500,IHC-F=1:100-500,IF=1:100-500
Storage	Store at -20 °C for one year. Avoid repeated freeze/thaw cycles. When reconstituted in sterile pH 7.4 0.01M PBS or diluent of antibody the antibody is stable for at least two weeks at 2-4 °C.

Protein Information

Name	DDB2
Function	Protein, which is both involved in DNA repair and protein ubiquitination, as part of the UV-DDB complex and DCX (DDB1-CUL4-X-box) complexes, respectively (PubMed:10882109, PubMed:11278856, PubMed:11705987, PubMed:12732143, PubMed:15882621, PubMed:16473935, PubMed:18593899, PubMed:32789493, PubMed:9892649). Core component of the UV-DDB complex (UV-damaged DNA-binding protein complex), a complex that recognizes UV-induced DNA damage and recruit proteins of the nucleotide excision repair pathway (the NER pathway) to initiate DNA repair (PubMed:10882109, PubMed:11278856, PubMed:11705987, PubMed:12944386, PubMed:14751237, PubMed:16260596, PubMed:32789493). The UV-DDB complex preferentially binds to cyclobutane pyrimidine dimers (CPD), 6-4 photoproducts (6-4 PP), apurinic sites and short mismatches (PubMed:10882109, PubMed:11278856, PubMed:11705987, PubMed:12944386, PubMed:16260596). Also functions as the substrate recognition module for the DCX (DDB2-CUL4-X-box) E3 ubiquitin-protein ligase complex DDB2-CUL4-ROC1 (also known as CUL4-DDB-ROC1 and CUL4-DDB-RBX1) (PubMed:12732143, PubMed:15882621, PubMed:16473935, PubMed:18593899, PubMed:26572825). The DDB2-CUL4-ROC1 complex may ubiquitinate histone H2A, histone H3 and histone H4 at sites of UV- induced DNA damage (PubMed:16473935, PubMed:16678110). The ubiquitination of histones may facilitate their removal from the nucleosome and promote subsequent DNA repair (PubMed:16473935, PubMed:16678110). The DDB2-CUL4-ROC1 complex also ubiquitinates XPC, which may enhance DNA-binding by XPC and promote NER (PubMed:15882621). The DDB2-CUL4-ROC1 complex also ubiquitinates KAT7/HBO1 in response to DNA

	damage, leading to its degradation: recognizes KAT7/HBO1 following phosphorylation by ATR (PubMed:26572825).
Cellular Location	Nucleus. Chromosome. Note=Accumulates at sites of DNA damage following UV irradiation.
Tissue Location	Ubiquitously expressed; with highest levels in corneal endothelium and lowest levels in brain. Isoform D1 is highly expressed in brain and heart. Isoform D2, isoform D3 and isoform D4 are weakly expressed.

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