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KD-Validated Anti-DDB1 Rabbit Monoclonal Antibody

Rabbit monoclonal antibody
Catalog # AGI1091

Specification

KD-Validated Anti-DDB1 Rabbit Monoclonal Antibody - Product Information

Application	**WB, FC, ICC**
Primary Accession	Q16531
Reactivity	**Rat, Human, Mouse**
Clonality	**Monoclonal**
Isotype	**Rabbit IgG**
Calculated MW	**Predicted, 127 kDa , observed, 127 kDa KDa**
Gene Name	**DDB1**
Aliases	**DDB1; Damage Specific DNA Binding Protein 1; Xeroderma Pigmentosum Group E-Complementing Protein ; UV-Damaged DNA-Binding Protein 1; UV-Damaged DNA-Binding Factor; DNA Damage-Binding Protein 1; DNA Damage-Binding Protein A; HBV X-Associated Protein 1; XPE-Binding Factor; DDB P127 Subunit; UV-DDB 1; XPE-BF; XAP-1; XAP1; Damage-Specific DNA Binding Protein 1 (127kD); Damage-Specific DNA Binding Protein 1, 127kDa; Damage-Specific DNA-Binding Protein 1; UV-DDB1; WHIKERS; DDBA; XPCE; DDBa; XPCe; XPE**
Immunogen	**A synthesized peptide derived from human DDB1**

KD-Validated Anti-DDB1 Rabbit Monoclonal Antibody - Additional Information

Gene ID	**1642**

Other Names
DNA damage-binding protein 1, DDB p127 subunit, DNA damage-binding protein a, DDBa, Damage-specific DNA-binding protein 1, HBV X-associated protein 1, XAP-1, UV-damaged DNA-binding factor, UV-damaged DNA-binding protein 1, UV-DDB 1, XPE-binding factor, XPE-BF, Xeroderma pigmentosum group E-complementing protein, XPCe, DDB1, XAP1

KD-Validated Anti-DDB1 Rabbit Monoclonal Antibody - Protein Information

Name DDB1

Synonyms XAP1

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:14739464, PubMed:15448697, PubMed:16260596, PubMed:16407242, PubMed:16407252, PubMed:16482215, PubMed:16940174, PubMed:17079684). 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:15448697, PubMed:16260596, PubMed:16407242, PubMed:16940174). The UV-DDB complex preferentially binds to cyclobutane pyrimidine dimers (CPD), 6-4 photoproducts (6-4 PP), apurinic sites and short mismatches (PubMed:15448697, PubMed:16260596, PubMed:16407242, PubMed:16940174). Also functions as a component of numerous distinct DCX (DDB1-CUL4-X-box) E3 ubiquitin-protein ligase complexes which mediate the ubiquitination and subsequent proteasomal degradation of target proteins (PubMed:14739464, PubMed:16407252, PubMed:16482215, PubMed:17079684, PubMed:18332868, PubMed:18381890, PubMed:19966799, PubMed:22118460, PubMed:25043012, PubMed:25108355, PubMed:28886238). The functional specificity of the DCX E3 ubiquitin-protein ligase complex is determined by the variable substrate recognition component recruited by DDB1 (PubMed:14739464, PubMed:16407252, PubMed:16482215, PubMed:17079684, PubMed:18332868, PubMed:18381890, PubMed:19966799, PubMed:22118460, PubMed:25043012, PubMed:25108355). DCX(DDB2) (also known as DDB1-CUL4-ROC1, CUL4-DDB-ROC1 and CUL4-DDB-RBX1) may ubiquitinate histone H2A, histone H3 and histone H4 at sites of UV- induced DNA damage (PubMed:16473935, PubMed:16678110, PubMed:17041588, PubMed:18593899). The ubiquitination of histones may facilitate their removal from the nucleosome and promote subsequent DNA repair (PubMed:16473935, PubMed:16678110, PubMed:<a href="http://www.uniprot.org/citations/17041588"

target="_blank">17041588, PubMed:18593899). DCX(DDB2) also ubiquitinates XPC, which may enhance DNA-binding by XPC and promote NER (PubMed:15882621). DCX(DTL) plays a role in PCNA- dependent polyubiquitination of CDT1 and MDM2-dependent ubiquitination of TP53 in response to radiation-induced DNA damage and during DNA replication (PubMed:17041588). DCX(ERCC8) (the CSA complex) plays a role in transcription-coupled repair (TCR) (PubMed:12732143, PubMed:32355176, PubMed:38316879). The DDB1-CUL4A-DTL E3 ligase complex regulates the circadian clock function by mediating the ubiquitination and degradation of CRY1 (PubMed:26431207). DDB1-mediated CRY1 degradation promotes FOXO1 protein stability and FOXO1-mediated gluconeogenesis in the liver (By similarity). By acting on TET dioxygenses, essential for oocyte maintenance at the primordial follicle stage, hence essential for female fertility (By similarity). Maternal factor required for proper zygotic genome activation and genome reprogramming (By similarity).

Cellular Location
Cytoplasm. Nucleus. Note=Primarily cytoplasmic (PubMed:10777491, PubMed:11673459). Translocates to the nucleus following UV irradiation and subsequently accumulates at sites of DNA damage (PubMed:10777491, PubMed:11673459). More concentrated in nuclei than in cytoplasm in germinal vesicle (GV) stage oocytes, zygotes and the 2-cell stage, but distributed in the cytoplasm at the MII-stage oocytes (By similarity). {ECO:0000250|UniProtKB:Q3U1J4, ECO:0000269|PubMed:10777491, ECO:0000269|PubMed:11673459}

KD-Validated Anti-DDB1 Rabbit Monoclonal Antibody - Protocols

Provided below are standard protocols that you may find useful for product applications.

- Western Blot
- Blocking Peptides
- Dot Blot
- Immunohistochemistry
- Immunofluorescence
- Immunoprecipitation
- Flow Cytomety
- Cell Culture

KD-Validated Anti-DDB1 Rabbit Monoclonal Antibody - Images

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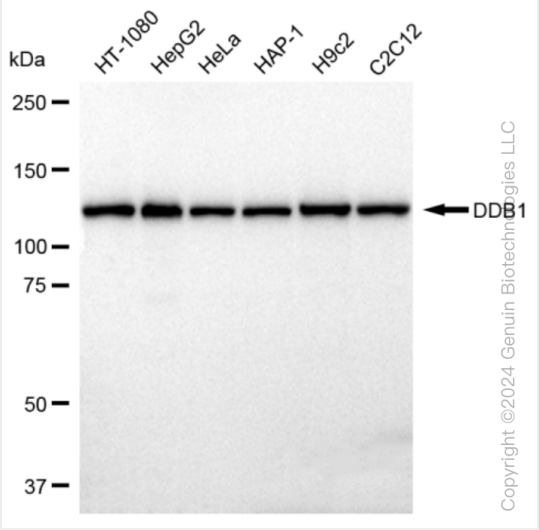
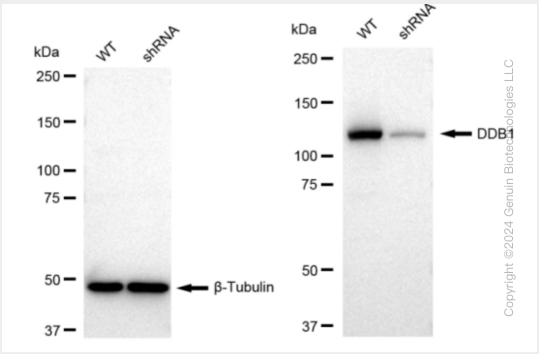
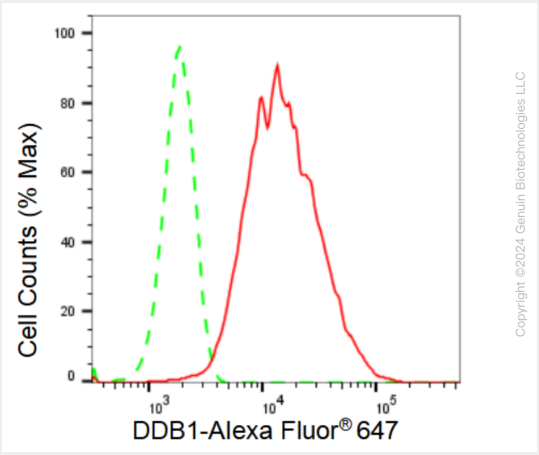


Western blotting analysis using anti-DDB1 antibody (Cat#AGI1091). Total cell lysates (30 µg) from various cell lines were loaded and separated by SDS-PAGE. The blot was incubated with anti-DDB1 antibody (Cat#AGI1091, 1:50,000) and HRP-conjugated goat anti-rabbit secondary antibody respectively.



Western blotting analysis using anti-DDB1 antibody (Cat#AGI1091). DDB1 expression in wild type (WT) and DDB1 shRNA knockdown (KD) HeLa cells with 30 µg of total cell lysates. β-Tubulin serves as a loading control. The blot was incubated with anti-DDB1 antibody (Cat#AGI1091, 1:50,000) and HRP-conjugated goat anti-rabbit secondary antibody respectively.



Flow cytometric analysis of DDB1 expression in HepG2 cells using DDB1 antibody (Cat#AGI1091, 1:2,000). Green, isotype control; red, DDB1.

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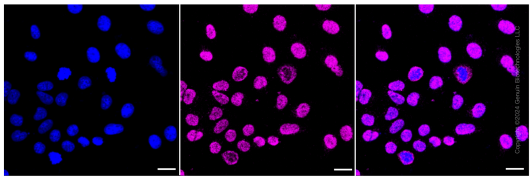

Immunocytochemical staining of HepG2 cells with DDB1 antibody (Cat#AGI1091, 1:1,000). Nuclei were stained blue with DAPI; DDB1 was stained magenta with Alexa Fluor® 647. Images were taken using Leica stellaris 5. Protein abundance based on laser Intensity and smart gain: Medium. Scale bar: 20 µm.