SANTA CRUZ BIOTECHNOLOGY, INC.

# DDB2 (2246C4a): sc-81246

## BACKGROUND

Damaged DNA-binding protein (DDB) is a heterodimer composed of two subunits, p127 and p48, which are designated DDB1 and DDB2, respectively. The DDB heterodimer is involved in repairing DNA damaged by ultraviolet light. Specifically, DDB, also designated UV-damaged DNA-binding protein (UV-DDB), xeroderma pigmentosum group E binding factor (XPE-BF) and hepatitis B virus X-associated protein-1 (XAP-1), binds to damaged cyclobutane pyrimidine dimers (CPDs). Mutations in the DDB2 gene are implicated as causes of xeroderma pigmentosum group E, an autosomal recessive disease in which patients are defective in nucleotide excision DNA repair. XPE is characterized by hypersensitivity of the skin to sunlight with a high frequency of skin cancer as well as neurologic abnormalities. The hepatitis B virus (HBV) X protein interacts with DDB1, which may mediate HBX transactivation.

## REFERENCES


1. Dualan, R., et al. 1995. Chromosomal localization and cDNA cloning of the genes (DDB1 and DDB2) for the p127 and p48 subunits of a human damage-specific DNA-binding protein. Genomics 29: 62-69.
2. Nichols, A.F., et al. 1996. Mutations specific to the xeroderma pigmentosum group E DDB-phenotype. J. Biol. Chem. 271: 24317-24320.


## CHROMOSOMAL LOCATION

Genetic locus: DDB2 (human) mapping to 11p11.2.

## SOURCE

DDB2 (2246C4a) is a mouse monoclonal antibody raised against a recombinant protein corresponding to the N-terminal region of DDB2 of human origin.

## PRODUCT

Each vial contains 100 µg $IgG_1$ kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 1.0% stabilizer protein.

## RESEARCH USE

For research use only, not for use in diagnostic procedures.

## APPLICATIONS

DDB2 (2246C4a) is recommended for detection of DDB2 of human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500) and flow cytometry (1 µg per 1 x $10^6$ cells).

Suitable for use as control antibody for DDB2 siRNA (h): sc-37799, DDB2 shRNA Plasmid (h): sc-37799-SH and DDB2 shRNA (h) Lentiviral Particles: sc-37799-V.

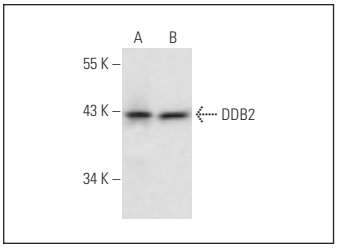
Molecular Weight of DDB2: 48 kDa.

Positive Controls: HeLa nuclear extract: sc-2120, SK-N-MC nuclear extract: sc-2154 or K-562 nuclear extract: sc-2130.

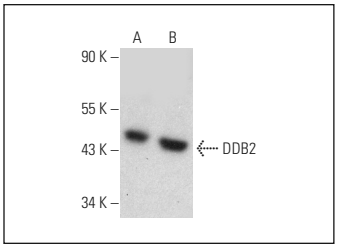
## RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgGκ BP-HRP: sc-516102 or m-IgGκ BP-HRP (Cruz Marker): sc-516102-CM (dilution range: 1:1000-1:10000), Cruz Marker™ Molecular Weight Standards: sc-2035, UltraCruz® Blocking Reagent: sc-516214 and Western Blotting Luminol Reagent: sc-2048. 2) Immunoprecipitation: use Protein A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/2.0 ml). 3) Immunofluorescence: use m-IgGκ BP-FITC: sc-516140 or m-IgGκ BP-PE: sc-516141 (dilution range: 1:50-1:200) with UltraCruz® Mounting Medium: sc-24941 or UltraCruz® Hard-set Mounting Medium: sc-359850.

## DATA




DDB2 (2246C4a): sc-81246. Western blot analysis of DDB2 expression in SK-N-MC (**A**) and K-562 (**B**) nuclear extracts.




DDB2 (2246C4a): sc-81246. Western blot analysis of DDB2 expression in HeLa nuclear extract (**A**) and Raji whole cell lysate (**B**).

## SELECT PRODUCT CITATIONS


1. Zhang, L., et al. 2012. The deubiquitinating protein USP24 interacts with DDB2 and regulates DDB2 stability. Cell Cycle 11: 4378-4384.
2. Matsunuma, R., et al. 2015. UV damage-induced phosphorylation of HBO1 triggers $CRL4^{DDB2}$-mediated degradation to regulate cell proliferation. Mol. Cell. Biol. 36: 394-406.
3. Niida, H., et al. 2017. Phosphorylated HBO1 at UV irradiated sites is essential for nucleotide excision repair. Nat. Commun. 8: 16102.
4. Minamino, M., et al. 2018. Temporal regulation of ESCO2 degradation by the MCM complex, the CUL4-DDB1-VPRBP complex, and the anaphase-promoting complex. Curr. Biol. 28: 2665-2672.e5.
5. Füzesi-Levi, M.G., et al. 2020. CSNAP, the smallest CSN subunit, modulates proteostasis through Cullin-RING ubiquitin ligases. Cell Death Differ. 27: 984-998.
6. He, Y.H., et al. 2021. ERα determines the chemo-resistant function of mutant p53 involving the switch between lincRNA-p21 and DDB2 expressions. Mol. Ther. Nucleic Acids 25: 536-553.
7. Koyauchi, T., et al. 2022. Chromatin-remodeling factor BAZ1A/ACF1 targets UV damage sites in an MLL1-dependent manner to facilitate nucleotide excision repair. Biochim. Biophys. Acta Mol. Cell Res. 1869: 119332.


## STORAGE

For immediate and continuous use, store at 4° C for up to one month. For sporadic use, freeze in working aliquots in order to avoid repeated freeze/thaw cycles. If turbidity is evident upon prolonged storage, clarify solution by centrifugation.