SANTA CRUZ BIOTECHNOLOGY, INC.

DDB1 (B-1): sc-137142

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

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: 24317-2420.
3. Lin, G.Y., et al. 1998. The V protein of the paramyxovirus SV5 interacts with damage-specific DNA binding protein. Virology 249: 189-200.

CHROMOSOMAL LOCATION

Genetic locus: DDB1 (human) mapping to 11q12.2; Ddb1 (mouse) mapping to 19 A.

SOURCE

DDB1 (B-1) is a mouse monoclonal antibody raised against amino acids 1-300 of DDB1 of human origin.

PRODUCT

Each vial contains 200 µg IgG_{2a} kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

APPLICATIONS

DDB1 (B-1) is recommended for detection of DDB1 of mouse, rat and human origin by Western Blotting (starting dilution 1:100, 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 solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

Suitable for use as control antibody for DDB1 siRNA (h): sc-37797, DDB1 siRNA (m): sc-37798, DDB1 shRNA Plasmid (h): sc-37797-SH, DDB1 shRNA Plasmid (m): sc-37798-SH, DDB1 shRNA (h) Lentiviral Particles: sc-37797-V and DDB1 shRNA (m) Lentiviral Particles: sc-37798-V.

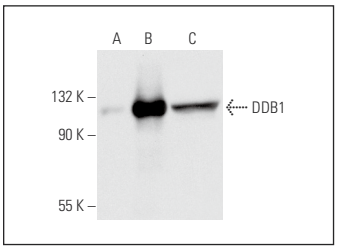
Molecular Weight of DDB1: 127 kDa.

Positive Controls: HeLa + UV cell lysate: sc-2221, human platelet extract: sc-363773 or DDB1 (h): 293T Lysate: 116124.

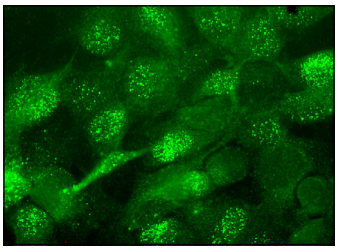
RECOMMENDED SUPPORT REAGENTS

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



DDB1 (B-1): sc-137142. Western blot analysis of DDB1 expression in non-transfected 293T: sc-117752 (**A**), human DDB1 transfected 293T: sc-116124 (**B**) and UV irradiated HeLa (**C**) whole cell lysates.



DDB1 (B-1): sc-137142. Immunofluorescence staining of formalin-fixed Hep G2 cells showing nuclear and cytoplasmic localization.

SELECT PRODUCT CITATIONS

1. Kang, J.A., et al. 2016. Epigenetic regulation of Kcna3-encoding Kv1.3 potassium channel by cereblon contributes to regulation of CD4+ T-cell activation. Proc. Natl. Acad. Sci. USA 113: 8771-8776.
2. Peng, Q., et al. 2020. The small molecule PSSM0332 disassociates the $CRL4A^{DCAF8}$ E3 ligase complex to decrease the ubiquitination of NcoR1 and inhibit the inflammatory response in a mouse sepsis-induced myocardial dysfunction model. Int. J. Biol. Sci. 16: 2974-2988.
3. Marchetti, A.L., et al. 2022. Proteomic analysis of nuclear hepatitis B virus relaxed circular DNA-associated proteins identifies UV-damaged DNA binding protein as a host factor involved in covalently closed circular DNA formation. J. Virol. 96: e0136021.

STORAGE

Store at 4° C, **DO NOT FREEZE**. Stable for one year from the date of shipment. Non-hazardous. No MSDS required.

RESEARCH USE

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

PROTOCOLS

See our web site at www.scbt.com for detailed protocols and support products.