

ALKBH3 (B-7): sc-376520

BACKGROUND

ALKBH3 (ALKB, alkylation repair homolog 3), also known as ABH3, PCA1 (prostate cancer antigen 1), DEPC1 or DEPC-1, is a 286 amino acid member of the ALKB family of proteins and functions as a dioxygenase with a preference for RNA and single stranded DNA substrates. ALKBH3 is one of many homologs of the *Escherichia coli* protein, ALKB. ALKBH3 is expressed in a wide variety of tissues and localizes to the cytoplasm and the nucleus. It associates with iron and 2-oxoglutarate, coupling the oxidation of substrates to the conversion of 2-oxoglutarate into succinate and CO₂. Via oxidative demethylation, ALKBH3 repairs 1-methyladenine and 3-methylcytosine lesions in alkylated DNA and RNA. Its activity is stimulated by ascorbate. Two isoforms exist for ALKBH3 due to alternative splicing of the gene.

CHROMOSOMAL LOCATION

Genetic locus: ALKBH3 (human) mapping to 11p11.2; Alkbh3 (mouse) mapping to 2 E1.

SOURCE

ALKBH3 (B-7) is a mouse monoclonal antibody raised against amino acids 1-270 mapping at the N-terminus of ALKBH3 of human origin.

PRODUCT

Each vial contains 200 µg IgG₁ kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

ALKBH3 (B-7) is available conjugated to agarose (sc-376520 AC), 500 µg/0.25 ml agarose in 1 ml, for IP; to HRP (sc-376520 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-376520 PE), fluorescein (sc-376520 FITC), Alexa Fluor® 488 (sc-376520 AF488), Alexa Fluor® 546 (sc-376520 AF546), Alexa Fluor® 594 (sc-376520 AF594) or Alexa Fluor® 647 (sc-376520 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-376520 AF680) or Alexa Fluor® 790 (sc-376520 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

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APPLICATIONS

ALKBH3 (B-7) is recommended for detection of ALKBH3 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 ALKBH3 siRNA (h): sc-96711, ALKBH3 siRNA (m): sc-141020, ALKBH3 shRNA Plasmid (h): sc-96711-SH, ALKBH3 shRNA Plasmid (m): sc-141020-SH, ALKBH3 shRNA (h) Lentiviral Particles: sc-96711-V and ALKBH3 shRNA (m) Lentiviral Particles: sc-141020-V.

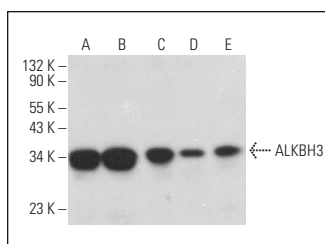
Molecular Weight of ALKBH3: 33 kDa.

Positive Controls: HEL 92.1.7 cell lysate: sc-2270, K-562 whole cell lysate: sc-2203 or DU 145 cell lysate: sc-2268.

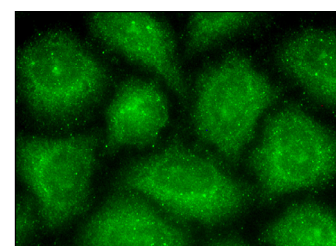
RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgGκ BPHRP: sc-516102 or m-IgGκ BPHRP (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 BPFITC: sc-516140 or m-IgGκ BPE: sc-516141 (dilution range: 1:50-1:200) with UltraCruz® Mounting Medium: sc-24941 or UltraCruz® Hard-set Mounting Medium: sc-359850.

DATA



ALKBH3 (B-7): sc-376520. Western blot analysis of ALKBH3 expression in K-562 (A), HEL 92.1.7 (B), DU 145 (C), M1 (D) and C2C12 (E) whole cell lysates.



ALKBH3 (B-7): sc-376520. Immunofluorescence staining of methanol-fixed HeLa cells showing nuclear and cytoplasmic localization.

SELECT PRODUCT CITATIONS

- Garbicz, D., et al. 2018. Evaluation of anti-cancer activity of stilbene and methoxydibenzo[b,f] oxepin derivatives. *Curr. Cancer Drug Targets* 18: 706-717.
- Woo, H.H. and Chambers, S.K. 2019. Human ALKBH3-induced m¹A demethylation increases the CSF-1 mRNA stability in breast and ovarian cancer cells. *Biochim. Biophys. Acta Gene Regul. Mech.* 1862: 35-46.
- Wollen, K.L., et al. 2021. ALKBH3 partner ASCC3 mediates P-body formation and selective clearance of MMS-induced 1-methyladenosine and 3-methylcytosine from mRNA. *J. Transl. Med.* 19: 287.

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.