SANTA CRUZ BIOTECHNOLOGY, INC.

ALKBH2 (C-9): sc-515789

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

ALKBH2 (alkB, alkylation repair homolog 2), also known as ABH2, is a 261 amino acid protein that localizes to the nucleus and belongs to the ALKB family. Expressed in heart, colon, liver, testis, ovary, prostate and small intestine, ALKBH2 uses iron as a cofactor and functions as a dioxygenase that catalyzes the repair of alkylated DNA and RNA containing 1-methyladenine and 3-methylcytosine. ALKBH2 is functionally activated by ascorbate and requires oxygen and α-ketoglutarate for enzymatic activity. The gene encoding ALKBH2 maps to human chromosome 12q24.11, which encodes over 1,100 genes and comprises approximately 4.5% of the human genome. Chromosome 12 is associated with a variety of diseases and afflictions, including hypochondrogenesis, achondrogenesis, Kniest dysplasia, Noonan syndrome and Trisomy 12p, which causes facial developmental defects and seizure disorders.

REFERENCES

1. Duncan, T., et al. 2002. Reversal of DNA alkylation damage by two human dioxygenases. Proc. Natl. Acad. Sci. USA 99: 16660-16665.
2. Aas, P.A., et al. 2003. Human and bacterial oxidative demethylases repair alkylation damage in both RNA and DNA. Nature 421: 859-863.
3. Lee, D.H., et al. 2005. Repair of methylation damage in DNA and RNA by mammalian ALKB homologues. J. Biol. Chem. 280: 39448-39459.
4. Ringvoll, J., et al. 2006. Repair deficient mice reveal mABH2 as the primary oxidative demethylase for repairing 1meA and 3meC lesions in DNA. EMBO J. 25: 2189-2198.
5. Ringvoll, J., et al. 2008. ALKB homologue 2-mediated repair of ethenoadenine lesions in mammalian DNA. Cancer Res. 68: 4142-4149.
6. Yang, C.G., et al. 2008. Crystal structures of DNA/RNA repair enzymes ALKB and ABH2 bound to dsDNA. Nature 452: 961-965.

CHROMOSOMAL LOCATION

Genetic locus: ALKBH2 (human) mapping to 12q24.11.

SOURCE

ALKBH2 (C-9) is a mouse monoclonal antibody raised against amino acids 69-202 mapping within an internal region of ALKBH2 of human origin.

PRODUCT

Each vial contains 200 µg IgG_1 kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

ALKBH2 (C-9) is available conjugated to agarose (sc-515789 AC), 500 µg/ 0.25 ml agarose in 1 ml, for IP; to HRP (sc-515789 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-515789 PE), fluorescein (sc-515789 FITC), Alexa Fluor® 488 (sc-515789 AF488), Alexa Fluor® 546 (sc-515789 AF546), Alexa Fluor® 594 (sc-515789 AF594) or Alexa Fluor® 647 (sc-515789 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-515789 AF680) or Alexa Fluor® 790 (sc-515789 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

APPLICATIONS

ALKBH2 (C-9) is recommended for detection of ALKBH2 of 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 ALKBH2 siRNA (h): sc-96063, ALKBH2 shRNA Plasmid (h): sc-96063-SH and ALKBH2 shRNA (h) Lentiviral Particles: sc-96063-V.

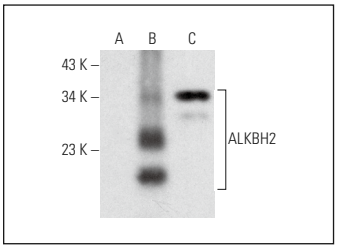
Molecular Weight of ALKBH2: 29 kDa.

Positive Controls: ALKBH2 (h): 293T Lysate: sc-111420, U-698-M whole cell lysate: sc-364799 or IMR-32 nuclear extract: sc-2148.

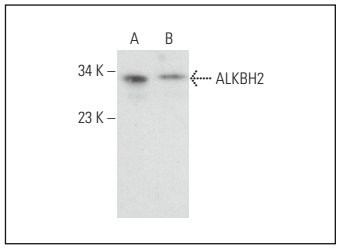
RECOMMENDED SUPPORT REAGENTS

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



ALKBH2 (C-9): sc-515789. Western blot analysis of ALKBH2 expression in non-transfected 293T: sc-117752 (**A**) and human ALKBH2 transfected 293T: sc-111420 (**B**) whole cell lysates and IMR-32 nuclear extract (**C**).



ALKBH2 (C-9): sc-515789. Western blot analysis of ALKBH2 expression in IMR-32 nuclear extract (**A**) and U-698-M whole cell lysate (**B**).

SELECT PRODUCT CITATIONS

1. Rošic, S., et al. 2018. Evolutionary analysis indicates that DNA alkylation damage is a byproduct of cytosine DNA methyltransferase activity. Nat. Genet. 50: 452-459.

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.