

ALKBH3 (K-15): sc-167074

BACKGROUND

ALKBH3 (ALKB, alkylation repair homolog 3), also known as ABH3, PCA-1 (prostate cancer antigen-1) 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.

REFERENCES

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- Mishina, Y., et al. 2004. Interaction of human and bacterial ALKB proteins with DNA as probed through chemical cross-linking studies. *Nucleic Acids Res.* 32: 1548-1554.
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- Sundheim, O., et al. 2006. Human ABH3 structure and key residues for oxidative demethylation to reverse DNA/RNA damage. *EMBO J.* 25: 3389-3397.

CHROMOSOMAL LOCATION

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

SOURCE

ALKBH3 (K-15) is an affinity purified goat polyclonal antibody raised against a peptide mapping within an internal region of ALKBH3 of human origin.

PRODUCT

Each vial contains 200 µg IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-167074 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

APPLICATIONS

ALKBH3 (K-15) is recommended for detection of ALKBH3 of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), 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); non cross-reactive with other ALKBH family members.

ALKBH3 (K-15) is also recommended for detection of ALKBH3 in additional species, including equine, canine, bovine, porcine and avian.

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: K-562 whole cell lysate: sc-2203.

RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use donkey anti-goat IgG-HRP: sc-2020 (dilution range: 1:2000-1:100,000) or Cruz Marker™ compatible donkey anti-goat IgG-HRP: sc-2033 (dilution range: 1:2000-1:5000), Cruz Marker™ Molecular Weight Standards: sc-2035, TBS Blotto A Blocking Reagent: sc-2333 and Western Blotting Luminol Reagent: sc-2048. 2) Immunofluorescence: use donkey anti-goat IgG-FITC: sc-2024 (dilution range: 1:100-1:400) or donkey anti-goat IgG-TR: sc-2783 (dilution range: 1:100-1:400) with UltraCruz™ Mounting Medium: sc-24941.

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 or our catalog for detailed protocols and support products.



Try **ALKBH3 (B-7): sc-376520**, our highly recommended monoclonal alternative to ALKBH3 (K-15).