

Product Name: ALKBH1 (5W8) Rabbit Monoclonal Antibody
Catalog #: AMRe06787



Summary

Production Name	ALKBH1 (5W8) Rabbit Monoclonal Antibody
Description	Rabbit Monoclonal Antibody
Host	Rabbit
Application	WB,ELISA
Reactivity	Human

Performance

Conjugation	Unconjugated
Modification	Unmodified
Isotype	IgG
Clonality	Monoclonal
Form	Liquid
Storage	Store at 4°C short term. Aliquot and store at -20°C long term. Avoid freeze/thaw cycles.
Buffer	Rabbit IgG in phosphate buffered saline , pH 7.4, 150mM NaCl, 0.02% New type preservative N and 50% glycerol. Store at +4°C short term. Store at -20°C long term. Avoid freeze / thaw cycle.
Purification	Affinity purification

Immunogen

Gene Name	ALKBH1
Alternative Names	ABH; ABH1; alkB; ALKBH; ALKBH1; hABH;
Gene ID	8846.0
SwissProt ID	Q13686.

Application

Dilution Ratio	WB 1:500-1:2000
Molecular Weight	44kDa

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Background

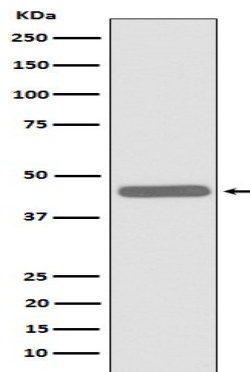
Dioxygenase that repairs alkylated single-stranded DNA and RNA containing 3-methylcytosine by oxidative demethylation. Requires molecular oxygen, alpha-ketoglutarate and iron. Dioxygenase that acts as on nucleic acids, such as DNA and tRNA (PubMed: [18603530](http://www.uniprot.org/citations/18603530), PubMed: [27745969](http://www.uniprot.org/citations/27745969), PubMed: [27497299](http://www.uniprot.org/citations/27497299)). Requires molecular oxygen, alpha-ketoglutarate and iron (PubMed: [18603530](http://www.uniprot.org/citations/18603530), PubMed: [27497299](http://www.uniprot.org/citations/27497299)). A number of activities have been described for this dioxygenase, but recent results suggest that it mainly acts as on tRNAs and mediates their demethylation or oxidation depending on the context and subcellular compartment (PubMed: [27745969](http://www.uniprot.org/citations/27745969), PubMed: [27497299](http://www.uniprot.org/citations/27497299)). Mainly acts as a tRNA demethylase by removing N(1)-methyladenine from various tRNAs, with a preference for N(1)-methyladenine at position 58 (m1A58) present on a stem loop structure of tRNAs (PubMed: [27745969](http://www.uniprot.org/citations/27745969)). Acts as a regulator of translation initiation and elongation in response to glucose deprivation: regulates both translation initiation, by mediating demethylation of tRNA(Met), and translation elongation, N(1)-methyladenine-containing tRNAs being preferentially recruited to polysomes to promote translation elongation (PubMed: [27745969](http://www.uniprot.org/citations/27745969)). In mitochondrion, specifically interacts with mt-tRNA(Met) and mediates oxidation of mt-tRNA(Met) methylated at cytosine(34) to form 5-formylcytosine (f(5)c) at this position (PubMed: [27497299](http://www.uniprot.org/citations/27497299)). mt-tRNA(Met) containing the f(5)c modification at the wobble position enables recognition of the AUA codon in addition to the AUG codon, expanding codon recognition in mitochondrial translation (PubMed: [27497299](http://www.uniprot.org/citations/27497299)). Specifically demethylates DNA methylated on the 6th position of adenine (N(6)-methyladenosine) DNA (PubMed: [30392959](http://www.uniprot.org/citations/30392959), PubMed: [30017583](http://www.uniprot.org/citations/30017583)). N(6)-methyladenosine (m6A) DNA is present at some L1 elements in embryonic stem cells and probably promotes their silencing (By similarity). Demethylates mRNAs containing N(3)-methylcytidine modification (PubMed: [31188562](http://www.uniprot.org/citations/31188562)). Also able to repair alkylated single-stranded DNA by oxidative demethylation, but with low activity (PubMed: [18603530](http://www.uniprot.org/citations/18603530)). Also has DNA lyase activity and introduces double-stranded breaks at abasic sites: cleaves both single-stranded DNA and double-stranded DNA at abasic sites, with the greatest activity towards double-stranded DNA with two abasic sites (PubMed: [19959401](http://www.uniprot.org/citations/19959401)). DNA lyase activity does not require alpha-ketoglutarate and iron and leads to the formation of an irreversible covalent protein-DNA adduct with the 5' DNA product (PubMed: [19959401](http://www.uniprot.org/citations/19959401), PubMed: [19959401](http://www.uniprot.org/citations/19959401)).

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<http://www.uniprot.org/citations/23577621>). DNA lyase activity is not required during base excision repair and class switch recombination of the immunoglobulin heavy chain during B lymphocyte activation. May play a role in placental trophoblast lineage differentiation (By similarity).

Research Area

Image Data



Western blot analysis of ALKBH1 expression in Jurkat cell lysate.

Note

For research use only.