

Recombinant Mouse Alkbh1 Protein, Myc/DDK-tagged

Cat. No. Alkbh1-1599M **Lot. No.** (See product label)

SPECIFICATION

Product Overview	Purified recombinant protein of mouse full-length alkB homolog 1, histone H2A dioxygenase (Alkbh1), with C-terminal MYC/DDK tag, expressed in HEK293T cells.
Species	Mouse
Source	HEK293
Description	Dioxygenase that acts as on nucleic acids, such as DNA and tRNA. Requires molecular oxygen, alpha-ketoglutarate and iron. 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. Mainly acts as a tRNA demethylase by removing N1-methyladenine from various tRNAs, with a preference for N1-methyladenine at position 58 (m1A58) present on a stem loop structure of tRNAs. 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, N1-methyladenine-containing tRNAs being preferentially recruited to polysomes to promote translation elongation. In mitochondrion, specifically interacts with mt-tRNA(Met) and mediates oxidation of mt-tRNA(Met) methylated at cytosine(34) to form 5-formylcytosine (f5c) at this position. mt-tRNA(Met) containing the f5c modification at the wobble position enables recognition of the AUA codon in addition to the AUG codon, expanding codon recognition in mitochondrial translation. Specifically demethylates DNA methylated on the 6th position of adenine (N6-methyladenosine) DNA. N6-methyladenosine (m6A) DNA is present at some L1

 Tel: 1-631-559-9269 1-516-512-3133

 Email: info@creative-biomart.com  Fax: 1-631-938-8127

 45-1 Ramsey Road, Shirley, NY 11967, USA

elements in embryonic stem cells and probably promotes their silencing. Demethylates mRNAs containing N3-methylcytidine modification. Also able to repair alkylated single-stranded DNA by oxidative demethylation, but with low activity. 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. 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. 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.

Molecular Mass	43.7 kDa
Purity	> 80% as determined by SDS-PAGE and Coomassie blue staining
Stability	Stable for 12 months from the date of receipt of the product under proper storage and handling conditions. Avoid repeated freeze-thaw cycles.
Storage	Store at -80 centigrade after receiving vials.
Concentration	>50 µg/mL as determined by microplate BCA method
Storage Buffer	25 mM Tris.HCl, pH 7.3, 100 mM glycine, 10% glycerol.

GENE INFORMATION

Gene Name	Alkbh1 alkB homolog 1, histone H2A dioxygenase [<i>Mus musculus</i> (house mouse)]
Official Symbol	Alkbh1

 Tel: 1-631-559-9269 1-516-512-3133

 Email: info@creative-biomart.com  Fax: 1-631-938-8127

 45-1 Ramsey Road, Shirley, NY 11967, USA

Synonyms	ALKBH1; alkB, alkylation repair homolog 1 (E. coli); alkylated DNA repair protein alkB homolog 1; DNA lyase ABH1; alpha-ketoglutarate-dependent dioxygenase ABH1; Abh; alkB; hABH; Alkbh; 2700073G19Rik
Gene ID	211064
mRNA Refseq	NM_001102565
Protein Refseq	NP_001096035
UniProt ID	P0CB42

 Tel: 1-631-559-9269 1-516-512-3133 Email: info@creative-biomart.com  Fax: 1-631-938-8127 45-1 Ramsey Road, Shirley, NY 11967, USA