

AlkB Protein, E.coli (Myc, His-SUMO)

Cat. No.:	HY-P71479
Synonyms:	alkB; aidD; b2212; JW2200Alpha-ketoglutarate-dependent dioxygenase AlkB; EC 1.14.11.33; Alkylated DNA repair protein AlkB; DNA oxidative demethylase AlkB
Species:	E.coli
Source:	E. coli
Accession:	P05050 (1M-216E)
Gene ID:	946708
Molecular Weight:	Approximately 44.1 kDa

PROPERTIES

AA Sequence	<pre> M L D L F A D A E P W Q E P L A A G A V I L R R F A F N A A E Q L I R D I N D V A S Q S P F R Q M V T P G G Y T M S V A M T N C G H L G W T T H R Q G Y L Y S P I D P Q T N K P W P A M P Q S F H N L C Q R A A T A A G Y P D F Q P D A C L I N R Y A P G A K L S L H Q D K D E P D L R A P I V S V S L G L P A I F Q F G G L K R N D P L K R L L L E H G D V V V W G G E S R L F Y H G I Q P L K A G F H P L T I D C R Y N L T F R Q A G K K E </pre>
Biological Activity	The enzyme activity of this recombinant protein is testing in progress, we cannot offer a guarantee yet.
Appearance	Lyophilized powder.
Formulation	Lyophilized after extensive dialysis against solution in Tris-based buffer, 50% glycerol.
Endotoxin Level	<1 EU/μg, determined by LAL method.
Reconstitution	It is not recommended to reconstitute to a concentration less than 100 μg/mL in ddH ₂ O.
Storage & Stability	Stored at -20°C for 2 years. After reconstitution, it is stable at 4°C for 1 week or -20°C for longer (with carrier protein). It is recommended to freeze aliquots at -20°C or -80°C for extended storage.
Shipping	Room temperature in continental US; may vary elsewhere.

DESCRIPTION

Background	Iron-dependent dioxygenases of the AlkB protein family found in most organisms throughout the tree of life play a major role in oxidative dealkylation processes. In higher eukaryotes including yeast, plants and mammals, members of the AlkB family play pivotal roles. In humans, this family draws particular interest because of its involvement in DNA repair and progression of cancer, as they are frequently overexpressed in tumors and counteract the effects of alkylating drugs such as temozolamide used in chemotherapy. The alkylation-sensitive phenotype of E. coli alkB mutants marks the alkB pathway as
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an extremely effective defense mechanism against the cytotoxic effects of the SN2, but not the SN1, alkylating agents^{[1][2]}.

REFERENCES

- [1]. V Van Deuren, et al. Structural determinants of nucleobase modification recognition in the AlkB family of dioxygenases. *DNA Repair (Amst)*. 2020 Dec;96:102995.
- [2]. B J Chen, et al. The Escherichia coli AlkB protein protects human cells against alkylation-induced toxicity. *J Bacteriol*. 1994 Oct;176(20):6255-61.
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Caution: Product has not been fully validated for medical applications. For research use only.

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