LD Biopharma, Inc.
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- PRODUCT DATA SHEET -

Name of Product: Recombinant Human MBD4 Protein
Catalog Number: hTF-1253
Manufacturer: LD Biopharma, Inc.

Introduction

The protein encoded by human MBD4 gene is a member of a family of nuclear proteins related by the presence of a methyl-CpG binding domain (MBD). These proteins are capable of binding specifically to methylated DNA, and some members can also repress transcription from methylated gene promoters. MBD4 protein contains an MBD domain at the N-terminus that functions both in binding to methylated DNA and in protein interactions and a C-terminal mismatch-specific glycosylase domain that is involved in DNA repair. Alternatively spliced transcript variants encoding multiple isoforms have been observed for this gene.

Full-length of human MBD4 cDNA (580aa) was constructed with codon optimization and expressed with a small T7-His-TEV cleavage site Tag (31aa) fusion at its N-terminal. This protein was expressed in E. coli as inclusion bodies, refolded using our unique "temperature shift inclusion body refolding" technology and chromatographically purified.

Gene Symbol:	MBD4 (MED1)
Accession Number:	NP_003916
Species:	Human
Size:	25 µg / Vial
Composition:	0.25 mg/ml, sterile-filtered, in 20 mM pH 8.0 Tris-HCl Buffer, with proprietary formulation of NaCl, KCl, EDTA, arginine, DTT and Glycerol.
Storage:	In Liquid. Keep at -20°C for long term storage. Product is stable at 4 °C for at least 7 days.

Key References

Otani,J., et al., *Structural basis of the versatile DNA recognition ability of the methyl-CpG binding domain of methyl-CpG binding domain protein 4*. J. Biol. Chem. 288 (9), 6351-

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Morera,S., et al., *Biochemical and structural characterization of the glycosylase domain of MBD4 bound to thymine and 5-hydroxymethyuracil-containing DNA*. Nucleic Acids Res. 40 (19), 9917-9926 (2012)

Hendrich,B., et al., *The thymine glycosylase MBD4 can bind to the product of deamination at methylated CpG sites*. Nature 401 (6750), 301-304 (1999)

Applications

1. May be used for in vitro MBD4 mediated DNA methylation / repair pathway regulation study for cell differentiation applications with “ProFectin” based intracellular delivery of this protein.

2. May be used as specific protein substrate for kinase and ubiquitin (Sumo pathway) related enzyme functional screening assays.

3. May be used for MBD4 protein-protein interaction mapping.

4. As immunogen for specific antibody production.

Quality Control

1. Purity: > 90% by SDS-PAGE.

Recombinant Protein Sequence

MASMTGGQQMGRGHHHHHHENLYFQGGEFGTTGLESLSLGDRGAAPTVTSSERLVPDPPNDLRK
EDVAMELERVGEDEEQMMIKRSSECNPLLQEPIASAQFGATAGTECRKSVPCGWERVVKQRLFG
KTAGRFDVYFISPQGLKFRSKSSLANYLHKNGETSLKPEDFDFTVLSKRGIKSRYKDCSMAALT
SHLQNQSNNSNWNLRTRSKCKKDVFMPPSSSSELQESRGLSNFTSTHLLLKEDEGVDDVNFRKV
RKPKGKVTILKGIPIKKTKKGCRKSCSGFVQSDSKRESVCNKADAESEPVAQKSQLDRTVCISD
AGACGETLSVTSEENSLVKKKERSLSSGSNFCSEQKTSGIINKFCSAKDSEHNEKYEDTFLESE
EIGTKVEVVERKEHLHTDILKRGSEMDNNCSPTRKDFTGEKIFQEDTIPRTQIERRKTSLYFSS
KYNKEALSPPRRKAFKKWTPPRSPFNLVQETLFHDPWKLLIATIFLNRTSGKMAIPVLWKFLEK
YPSAEVARTADWRDVSELLKPLGLYDLRAKTIVKFSDEYLTKQWKYPIELHGIGKYGNDSYRIF
CVNEWKQVHPEDHKLNKYHDWLWENHEKLSLS