



LD Biopharma, Inc.
9924 Mesa Rim Road, Suite B
San Diego, CA 92121
Tel: 858-876-8266
<http://www.ldbiopharma.com>

- PRODUCT DATA SHEET -

Name of Product: Recombinant Human MBD3 Protein
Catalog Number: hTF-1252
Manufacturer: LD Biopharma, Inc.

Introduction

DNA methylation is the major modification of eukaryotic genomes and plays an essential role in mammalian development. Human MBD3 gene belongs to a family of nuclear proteins which are characterized by the presence of a methyl-CpG binding domain (MBD). The encoded protein is a subunit of the NuRD, a multisubunit complex containing nucleosome remodeling and histone deacetylase activities. Unlike the other family members, MBD3 is not capable of binding to methylated DNA. MBD3 mediates the association of metastasis-associated protein 2 with the core histone deacetylase complex. Recent data indicated that by inhibiting mouse MBD3 activity, it will dramatically increase iPS generating efficiency.

Full-length of human MBD3 cDNA (259aa, Isoform-II, derived from BC043619) 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: MBD3
Accession Number: NP_001268383
Species: Human
Size: 50 µg / Vial
Composition: 1.0 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



LD Biopharma, Inc.
9924 Mesa Rim Road, Suite B
San Diego, CA 92121
Tel: 858-876-8266
<http://www.ldbiopharma.com>

Yoach Rais, et al., *Deterministic direct reprogramming of somatic cells to pluripotency*. Nature. 502, 65-70 (2013).

Gunther, K., et al., *Differential roles for MBD2 and MBD3 at methylated CpG islands, active promoters and binding to exon sequences*. Nucleic Acids Res. 41 (5), 3010-3021 (2013)

Walavalkar, N.M., et al., *Unique features of the anti-parallel, heterodimeric coiled-coil interaction between methyl-cytosine binding domain 2 (MBD2) homologues and GATA zinc finger domain containing 2A (GATAD2A/p66alpha)*. J. Biol. Chem. 288 (5), 3419-3427 (2013)

Noh, E.J., et al., *A novel role for methyl CpG-binding domain protein 3, a component of the histone deacetylase complex, in regulation of cell cycle progression and cell death*. Biochem. Biophys. Res. Commun. 378 (3), 332-337 (2009)

Applications

1. May be used for in vitro MBD3 mediated DNA methylation regulation study in iPS cell generation 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 MBD3 protein-protein interaction mapping.
4. As immunogen for specific antibody production.

Quality Control

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

Recombinant Protein Sequence

MASMTGGQQMGRGHHHHHHENLYFQGGEFERKSPSGKKFRSKPQLARYLGGSM DLSTFDFRTGK
MLMSKMNKSRQVRVYDSSNQVKGK PDLNTALPVRQTASIFKQPVTKITNHPSNKVKS DPQKA VD
QPRQLFW EK KLSGLNAFDIAEELVKTM DLPKGLQGVGPGCTDETL LSAIASALHTSTMPITGQL
SAAVEKNPGVWLN T TQPLCKAFMVTDEDIRKQEELVQQVRKRLEEALMADMLAHVEELARDGEA
PLDKACAEDDDEEDEEEEEEPDPDPEMEHV