



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 MTHFD2 Protein
Catalog Number: hRP-0710
Manufacturer: LD Biopharma, Inc.

Introduction

This gene encodes a nuclear-encoded mitochondrial bifunctional enzyme with methylenetetrahydrofolate dehydrogenase and methenyltetrahydrofolate cyclohydrolase (MTHFD2) activities. The enzyme functions as a homodimer and is unique in its absolute requirement for magnesium and inorganic phosphate. Formation of the enzyme-magnesium complex allows binding of NAD. Recent data indicated that this enzyme activity plays an important role in T cell function for AIDS progress and tumor development.

Full-length human MTHFD2 (30 – 350aa) gene was constructed with 15 N-terminal T7 tag. 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: MTHFD2 (NMDMC)
Accession Number: NP_006627
Species: Human
Size: 40 µg / Vial
Composition: 0.4 mg/ml, sterile-filtered, in 20 mM pH 8.0 Tris-HCl Buffer, with proprietary formulation of NaCl, KCl, EDTA, Sucrose and DTT.
Storage: In Liquid. Keep at -20°C for long term storage. Product is stable at 4 °C for at least 30 days.

Key References

Di Pietro, E., et al., *The expression of mitochondrial methylenetetrahydrofolate dehydrogenase-cyclohydrolase supports a role in rapid cell growth.* Biochim. Biophys. Acta 1674 (1), 78-84 (2004)



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

Kokame, K., et al., *Homocysteine-responsive genes in vascular endothelial cells identified by differential display analysis. GRP78/BiP and novel genes.* J. Biol. Chem. 271 (47), 29659-29665 (1996)

Applications

1. May be used for human cell mitochondrial functional study in vitro using protein intracellular delivery method with "ProFectin" reagent based intracellular delivery of this protein.
2. MTHFD2 mRNA were enriched in colon cancer cells, and T/B lymphocytes, so detection of this protein in blood sample may be used as specific bio-marker protein in various disease diagnosis.
3. May be used as antigen for specific antibody production.

Quality Control

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

Recombinant Protein Sequence

MASMTGGQQMGRGEFGSRAPGEPGSAFRGFRSSGVRHEAIIISGTEMAKHIQKEIQRGVESWVS
LGNRRPHLSIILVGDNPASHTYVRNKIRAASAVGICSELILKPKDVSQEELLDVTDQLNMDPRV
SGILVQLPLPDHVDERTICNGIAPEKDVDGFHIINIGRLCLDQHSLIPATASAVWEIIKRTGIQ
TFGKNVVVAGRSKNVGMPIAMLLHTDGEHERPGDATVTIAHRYTPKEQLKIHTQLADIIIVAA
GIPKLITSDMVKEGAVIDVGINYVHDPVTGKTKLVGDVDFEAVKKKAGFITPVPGGVGPMTVA
MLLKNTLLAAKKIIY