



LD Biopharma, Inc.
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- PRODUCT DATA SHEET -

Name of Product: Recombinant Human RRM2B Protein
Catalog Number: hRP-1991
Manufacturer: LD Biopharma, Inc.

Introduction

Human ribonucleoside-diphosphate reductase subunit M2 B (RRM2B) gene encodes the small subunit of a p53-inducible ribonucleotide reductase. This heterotetrameric enzyme catalyzes the conversion of ribonucleoside diphosphates to deoxyribonucleoside diphosphates. The product of this reaction is necessary for DNA synthesis. RRM2B plays a pivotal role in cell survival by repairing damaged DNA in a p53/TP53-dependent manner. It supplies deoxyribonucleotides for DNA repair in cells arrested at G1 or G2. It contains an iron-tyrosyl free radical center required for catalysis. RRM2B forms an active ribonucleotide reductase (RNR) complex with RRM1, which is expressed both in resting and proliferating cells in response to DNA damage. Mutations in this gene have been associated with autosomal recessive mitochondrial DNA depletion syndrome, autosomal dominant progressive external ophthalmoplegia-5, and mitochondrial neurogastrointestinal encephalopathy. Alternatively spliced transcript variants have been described.

Full-length mature form of human RRM2B cDNA (350aa. Isoform-I) was constructed with codon optimization gene synthesis technology and expressed with a small T7-His-TEV cleavage site Tag (29aa) fusion at its N-terminal. It was expressed in E.coli as inclusion bodies. The final product was refolded using our unique “temperature shift inclusion body refolding” technology and chromatographically purified.

Gene Symbol: RRM2B (MTDPS8A; MTDPS8B; P53R2)
Accession Number: NP_056528
Species: Human
Size: 20 µg / Vial
Composition: 0.2 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 -80°C for long term storage. Product is stable at 4 °C for at least 30 days.



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Key References

Tebbi A, et al., *Caspase-dependent Proteolysis of Human Ribonucleotide Reductase Small Subunits R2 and p53R2 during Apoptosis*. J. Biol. Chem. 290 (22), 14077-14090 (2015)

Smith P, et al., *2.6 Å X-ray crystal structure of human p53R2, a p53-inducible ribonucleotide reductase*. Biochemistry 48 (46), 11134-11141 (2009)

Tyynismaa H, et al., *A heterozygous truncating mutation in RRM2B causes autosomal-dominant progressive external ophthalmoplegia with multiple mtDNA deletions*. Am. J. Hum. Genet. 85 (2), 290-295 (2009)

Applications

1. May be used for in vitro RRM2B mediated deoxyribonucleoside diphosphates synthesis pathway regulation study for various cells by intracellular delivery of this protein with protein delivery reagent such as ProFectin reagent kit.
2. May be used for mapping protein-protein interaction.
3. Potential biomarker protein for monitoring tumor prognosis.
4. As immunogen for specific antibody production.

Quality Control

Purity: > 90% by SDS-PAGE.

Recombinant Protein Sequence

MASMTGGQQMGRGHHHHHHENLYFQGGFEGDPERPEAAGLDQDERSSSDTNESEIKSNEEPLLR
KSSRRFVIFPIQYPDIWKMYKQAQASFWTAEVDLSKDLPHWNKKADEKYFISHILAFFAASD
GIVNENLVERFSQEVQVPEARCFYGFQILINLVHSEMYSLIDTYIRDPKKREFLFNAIETMPY
VKKKADWALRWIADRKSTFGERVVAFAAVEGVFFSGSFAAIFWLKKRGLMPGLTFSNELISRDE
GLHCDFACLMFQYLVNKPSEERVREIIVDAVKIEQEFLTEALPVGLIGMNCILMKQYIEFVADR
LLVELGFSKVFQAENPFDFMENISLEGKTNFFEKRVSEYQRFVMAETTDNVFTLDAF