



LD Biopharma, Inc.
7384 Trade Street, Suite B
San Diego, CA 92121
Tel: 858-876-8266
<http://www.ldbiopharma.com>

- PRODUCT DATA SHEET -

Name of Product: Recombinant Human RUVBL2 Protein
Catalog Number: HTF-2526
Manufacturer: LD Biopharma, Inc. USA

Introduction

Human RuvB like AAA ATPase2 (RUVBL2) gene encodes the second human homologue of the bacterial RuvB gene. Bacterial RuvB protein is a DNA helicase essential for homologous recombination and DNA double-strand break repair. Functional analysis showed that this gene product has both ATPase and DNA helicase activities. As a key component of the NuA4 histone acetyltransferase complex (or INO80 complex), which is involved in transcriptional activation of select genes principally by acetylation of nucleosomal histones H4 and H2A. This modification may both alter nucleosome - DNA interactions and promote interaction of the modified histones with other proteins which positively regulate transcription. INO80 complex may be required for the activation of transcriptional programs associated with oncogene and proto-oncogene mediated growth induction, tumor suppressor mediated growth arrest and replicative senescence, apoptosis, and DNA repair. The NuA4 complex ATPase and helicase activities seem to be, at least in part, contributed by the association of RUVBL1 and RUVBL2 with EP400. NuA4 may also play a direct role in DNA repair when recruited to sites of DNA damage. Component of a SWR1-like complex that specifically mediates the removal of histone H2A.Z/H2AFZ from the nucleosome. RUVBL2 plays an essential role in oncogenic transformation by MYC and also modulates transcriptional activation by the LEF1/TCF1-CTNNB1 complex. It may also inhibit the transcriptional activity of ATF2. It is also involved in the endoplasmic reticulum (ER)-associated degradation (ERAD) pathway where it negatively regulates expression of ER stress response genes.

Full-length human RUVBL2 cDNA (462aa) was constructed with codon optimization using 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: RUVBL2 (REPTIN; INO80J; Tip49b; CGI-46; ECP-51; rvb2)
Accession Number: NP_006657
Species: Human
Size: 25 µg / Vial



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Composition: 0.25 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.

Key References

Raymond AA, ET AL., *Reptin regulates insulin-stimulated Akt phosphorylation in hepatocellular carcinoma via the regulation of SHP-1/PTPN6*. Cell Biochem. Funct. 35 (6), 289-295 (2017)

Breig O, ET AL., *Metalloproteinase meprin alpha regulates migration and invasion of human hepatocarcinoma cells and is a mediator of the oncoprotein Reptin*. Oncotarget 8 (5), 7839-7851 (2017)

Liyanage SU, ET AL., *Characterizing the mitochondrial DNA polymerase gamma interactome by BioID identifies Ruvbl2 localizes to the mitochondria*. Mitochondrion 32, 31-35 (2017)

Hauri S, ET AL., *A High-Density Map for Navigating the Human Polycomb Complexome*. Cell Rep 17 (2), 583-595 (2016)

Ikura T, ET AL., *Involvement of the TIP60 histone acetylase complex in DNA repair and apoptosis*. Cell 102 (4), 463-473 (2000)

Applications

1. May be used for in vitro RUVBL2 mediated gene transcription regulation study in various signaling pathway for various cancer cells by intracellular delivery of this RUVBL2 protein with protein delivery reagent such as ProFectin reagent kit.
2. May be used for mapping RUVBL2 protein-protein interaction.
3. May be used as specific substrate protein for kinase, and ubiquitin (Sumo pathway) related enzyme functional screening assays.
4. Potential biomarker protein / therapeutic target protein for cancer prognosis and cancer treatment drug development.
5. As native human RUVBL2 antigen for specific antibody production.

Quality Control

Purity: > 90% by SDS-PAGE.



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Recombinant Human RUVBL2 Protein Sequence (54.3 kD)

MASMTGGQQMGRGHHHHHENLYFOGGEFGATVTATTKVPEIRDVTRIERIGAHSHIRGLGLDD
ALEPRQASQGMVGQLAARRAAGVVLEMIREGKIAGRAVLIAGQPGTGKTAIAMGMAQALGPDTP
FTAIAGSEIFSLEMSKTEALTQAFRRSIGVRIKEETEIEEGEVVEIQIDRPATGTGSKVGKLT
KTTEMETIYDLGTKMIESLTKDKVQAGDVITIDKATGKISKLGRSFTRARDYDAMGSQTKFVQC
PDGELQKRKEVVHTVSLHEIDVINSRTQGFLALFSGDTGEIKSEVREQINAKVAEWREEGKAEI
IPGVLFIDEVHMLDIESFSFLNRALES DMAPVLIMATNRGITRIRGTSYQSPHGIPIDLLDRLL
IVSTTPYSEKDTKQILRIRCEEEDVEMSEDAYTVLTRIGLETSLRYAIQLITAASLVCRKRKGT
EVQVDDIKRVYSLFLDESRSTQYMKEYQDAFLFNELKGETMDTS