



LD Biopharma, Inc.
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<http://www.ldbiopharma.com>

- PRODUCT DATA SHEET -

Name of Product: Recombinant Human RAD51B-11R Protein
Catalog Number: hRP-1691
Manufacturer: LD Biopharma, Inc.

Introduction

The protein encoded by human DNA repair protein RAD51 homolog 2 (RAD51B) gene is a member of the RAD51 protein family. RAD51 family members are evolutionarily conserved proteins essential for DNA repair by homologous recombination. This protein has been shown to form a stable heterodimer with the family member RAD51C, which further interacts with the other family members, such as RAD51, XRCC2, and XRCC3. RAD51B is involved in the homologous recombination repair (HRR) pathway of double-stranded DNA breaks arising during DNA replication or induced by DNA –damaging agents. Over-expression of this gene was found to cause cell cycle G1 delay and cell apoptosis, which suggested a role of this protein in sensing DNA damage. At least three alternatively spliced transcript variants encoding distinct isoforms have been observed. Rearrangements between this locus and high mobility group AT-hook 2 (HMGA2) have been observed in uterine leiomyomata.

Full-length human RAD51B (383aa, Isoform-I, derived from BC030219) gene was constructed using gene synthesis technology with codon optimization. 29 aa (T7 / His / TEV cleavage site) Tag fusion at N-terminal, and 11R tag fusion at C-terminal. This protein 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: RAD51B (R51H2; RAD51L1; REC2)
Accession Number: NP_002868
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, 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



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McAllister K, et al., *Identification of BACH2 and RAD51B as rheumatoid arthritis susceptibility loci in a meta-analysis of genome-wide data*. *Arthritis Rheum.* 65 (12), 3058-3062 (2013)

Slupianek, A., et al., *BCR/ABL kinase interacts with and phosphorylates the RAD51 paralog, RAD51B*. *Leukemia* 23 (12), 2308-2310 (2009)

Thomas G, et al., *A multistage genome-wide association study in breast cancer identifies two new risk alleles at 1p11.2 and 14q24.1 (RAD51L1)*. *Nat. Genet.* 41 (5), 579-584 (2009)

Lio YC, et al., *Complex formation by the human Rad51B and Rad51C DNA repair proteins and their activities in vitro*. *J. Biol. Chem.* 278 (4), 2469-2478 (2003)

Applications

1. May be used for in vitro RAD51B mediated double-stranded DNA repair pathway regulation study by intracellular delivery of this protein.
2. May be used for RAD51B protein-protein interaction mapping.
3. May be used as specific substrate protein for kinase and ubiquitin (Sumo pathway) related enzyme functional screening assays.
4. As antigen for specific antibody production.

Quality Control

Purity: > 90% by SDS-PAGE.

Recombinant Protein Sequence

MASMTGGQQMGRGHHHHHENLYFQGGFEGSKKLRVGLSQELCDRLSRHQILTCQDFLCLSPLELMKVTGLSYRGVHELLCMVSRACAPKMQTAYGIKAQRSADFSPAFLSTTLSALDEALHGGVACGSLTEITGPPGCGKTQFCIMMSILATLPTNMGLEGAVVYIDTESAFSAERLVEIAESRFPRYFNTEEKLLLTSSKVHLYRELTCDEVLQRIELEEIIISKGIKLVILDSVASVVRKEFDAQLQGNLKERNKFLAREASSLKYLAEEFSIPVILTNQITTHLSGALASQADLVSPADDLSLSEGTSGSSCVIAALGNTWHSVNTRLILQYLDSEERRQILIAKSPLAPFTSFVYTIKEEGLVLQETTFCSVTQAE LNWAPEILPPQPPEQLGLQMCHHTQLIFLEESGGGGSPGRRRRRRRRRRR