



LD Biopharma, Inc.
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- PRODUCT DATA SHEET -

Name of Product: Recombinant YFP-Human **SPIN1** Protein
Catalog Number: HTF-3582
Manufacturer: LD Biopharma, Inc. USA

Introduction

Human Spindlin-1 (SPIN1) gene encodes a chromatin reader that specifically recognizes and binds histone H3 both trimethylated at 'Lys-4' and asymmetrically dimethylated at 'Arg-8' (H3K4me3 and H3R8me2a) and acts as an activator of Wnt signaling pathway downstream of PRMT2. In case of cancer, SPIN1 promotes cell cancer proliferation via activation of the Wnt signaling pathway. Overexpression of SPIN1 induces metaphase arrest and chromosomal instability. It localizes to active rDNA loci and promotes the expression of rRNA genes. SPIN1 may also play a role in cell-cycle regulation during the transition from gamete to embryo. It is involved in oocyte meiotic resumption, a process that takes place before ovulation to resume meiosis of oocytes blocked in prophase I: may act by regulating maternal transcripts to control meiotic resumption.

Full-length human SPIN1 cDNA (261aa, BC013571) was constructed with codon optimization gene synthesis and expressed with YFP Protein as N-terminal (YFP; 256aa) fusion protein 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:	SPIN1 (OCR; SPIN)
Accession Number:	NP_006708
Species:	Human
Size:	50µg / 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, DTT and others.
Storage:	In Liquid. Keep at -80°C for long term storage. Product is stable at 4 °C for at least two weeks.

Key References



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Porzberg MRB, et al. *Recognition of Dimethylarginine Analogues by Tandem Tudor Domain Protein Spindlin1*. *Molecules* 27 (3), 983 (2022)

Zhou L, et al., *The microRNA-381(miR-381)/Spindlin1 (SPIN1) axis contributes to cell proliferation and invasion of colorectal cancer cells by regulating the Wnt/beta-catenin pathway*. *Bioengineered* 12 (2), 12036-12048 (2021)

Luise C, et al., *Structure-Based Design, Docking and Binding Free Energy Calculations of A366 Derivatives as Spindlin1 Inhibitors*. *Int J Mol Sci* 22 (11), 5910 (2021)

Applications

1. May be used for in vitro SPIN1 protein mediated gene transcription regulation in Wnt pathway for various cells study using intracellular delivery of recombinant human YFP- SPIN1 protein with protein delivery reagent such as ProFectin.
2. May be used for SPIN1 protein-protein interaction assay.
3. May be used as specific substrate protein for SPIN1 specific kinase, and ubiquitin (Sumo pathway) related enzyme functional screening assays.
4. As native human SPIN1 antigen for its specific antibody production.

Quality Control

Purity: > 92 % by SDS-PAGE.

YFP protein: **Ex λ** = 517nm, and **Em λ** = 530nm.

Recombinant **YFP**- Human SPIN1 Fusion Protein Sequence (58.7 kD)

MK**HHHHH**HQVSKGEEELFTGVVPII~~VELDGDVNGHKFSVSGEGEGDATYGKLT~~KLKLLCTTGKLPVPWPTLV
TTLGYGVQCFARYPDHMKQHDFFKSAMPEGYVQERTIFFKDDGNYKTRAEVVKFEGDTLVNRIELKGI~~DFK~~
EDGNILGHKLEYNYN~~SHNVYITADKQKNGIKANFKIRHNI~~EDGGVQLADHYQQNTPIGDGPVLLPDNHYL
SYQSALFKDPNEKRDHMLLEFLTAAGITEGMNELYK**GS**ENLY**FQGEF**KTPFGKTPGQRSRADAGHAGVS
ANMMKKRTSHKKHRSSVGPSPKPVSQPRRNIVGCRIQHGWKEGNGPVTQWKGTVLDQVPVNPSLYLIK~~YDG~~
FDCVYGLELNKDERVSALEVLDPDRVATSRI~~SDAHLADTMIGKAVEHMFETEDGSKDEWRGMV~~LARAPVMN
TWFYITYEKDPVLYMYQLDDYKEGDLRIMPDSNDSPPAEREPEVVD~~SLV~~GKQVEYAKEDGSKRTGMVI
HQVEAKPSVYFIKFD~~DD~~FHIYVYDLVKTS