



LD Biopharma, Inc.
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- PRODUCT DATA SHEET -

Name of Product: Recombinant YFP-Human **IRGM** Protein
Catalog Number: HRP-3671
Manufacturer: LD Biopharma, Inc. USA

Introduction

Human Immunity-related GTPase family M protein (IRGM) encodes a putative GTPase which is required for clearance of acute protozoan and bacterial infections. IRGM functions in innate immune response probably through regulation of autophagy. It may regulate pro-inflammatory cytokine production and prevent endotoxemia upon infection. It may also play a role in macrophages adhesion and motility.

Full-length human IRGM cDNA (180aa) 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: IRGM (IFI1; IRGM1; LRG47)
Accession Number: NP_001139277.1
Species: Human
Size: 50µg / Vial
Composition: 0.5mg / 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

Fang S, et al., *IRGM/Irgm1 facilitates macrophage apoptosis through ROS generation and MAPK signal transduction: Irgm1 (+/-) mice display increases atherosclerotic plaque stability*. Theranostics 11 (19), 9358-9375 (2021)



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Tan YQ, et al., *Interferon-gamma activated T-cell IRGM-autophagy axis in oral lichen planus*. Int Immunopharmacol 94, 107478 (2021)

Guo X, et al., *IRGM promotes the PINK1-mediated mitophagy through the degradation of Mitofilin in SH-SY5Y cells*. FASEB J 34 (11), 14768-14779 (2020)

Applications

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

Quality Control

Purity: > 92 % by SDS-PAGE.

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

Recombinant **YFP**- Human IRGM Fusion Protein Sequence (48.1 kD)

MK**HHHHH**QVSKGEELFTGVVPIVVELDGDVNGHKFSVSGEGEGDATYGKLTLLCTTGKLPV
PWPTLVTTTLGYGVQCFARYPDHMKQHDFKSAPEGYVQERTIFFKDDGNYKTRAEVKFEGLT
VNRIELKGI DFKEDGNI LGHKLEYNNSHN VYITADKQKNGIKANFKIRHNI EDGGVQLADHYQ
QNTPIGDGPVLLPDNHYSYQSALFKDPNEKRDHMLLEFLTAAGITEGMNELYK**GSEAMNVEK**
ASADGNLPEVISNIKETLKI VSRTPVNITMAGDSGNGMSTFISALRNTGHEGKASPTELVKAT
QRCASYFSSHFSNVVLWDLPGTGSATTTL ENYLMEMQFNRYDFIMVASAQFSMNHVMLAKTAE
MGKKFYIVWTKLDMDLSTGALPEVQLLQIRENVLENLQKERVCEY