



**LD Biopharma, Inc.**  
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## - PRODUCT DATA SHEET -

**Name of Product:** Recombinant Human RAB13 Protein  
**Catalog Number:** hRP-1641  
**Manufacturer:** LD Biopharma, Inc.

### Introduction

Endocytosis is involved in a wide variety of cellular processes, including uptake and internalization of solutes and components of the extracellular matrix (ECM), regulation of signaling induced by extracellular ligands, trafficking of cell surface receptors, such as integrins, and rearrangement of the actin cytoskeleton. Endocytosis and intracellular trafficking are coordinated by a family of small GTPases termed the Rabs. Rab proteins are classified according to their function and localization in different intracellular compartments and membrane domains. Human ras-related protein Rab13 (Rab13) associates with tight junctions in polarized epithelial cells and as it was expressed in osteoclasts. The expression of RAB13 dramatically increased by up to 20-fold during osteoclast differentiation. Recent report indicated that guanine nucleotide exchange factor DENND2B interacts with / activates Rab13 at the edge of migrating epithelial cancer cells and regulates cancer cell metastasis behavior.

Full-length human ARB13 cDNA (202 aa, Isoform-I, derived from BC000799) was constructed with codon optimization and expressed with a small T7-His-TEV cleavage site Tag (29aa) fusion at its N-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:** RAB13 (GIG4)  
**Accession Number:** NP\_002861  
**Species:** Human  
**Size:** 50 µg / Vial  
**Composition:** 0.5 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

Maria S. Ioannou, et al., *DENND2B activates Rab13 at the leading edge of migrating*



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*cells and promoters metastatic behavior.* J. Cell Biol. Vol.208 No.5 pp: 629-648 (2015)

Hirvonen MJ, et al., *Rab13 is upregulated during osteoclast differentiation and associates with small vesicles revealing polarized distribution in resorbing cells.* J. Histochem. Cytochem. 60 (7), 537-549 (2012)

Ohira M, et al., *Dislocation of Rab13 and vasodilator-stimulated phosphoprotein in inactive colon epithelium in patients with Crohn's disease.* Int. J. Mol. Med. 24 (6), 829-835 (2009)

Nokes RL, et al., *Rab13 regulates membrane trafficking between TGN and recycling endosomes in polarized epithelial cells.* J. Cell Biol. 182 (5), 845-853 (2008)

## **Applications**

1. May be used for in vitro RAB13 protein mediated endocytosis and intracellular trafficking regulation in cancer cells study by intracellular delivery of this protein with "ProFectin" reagent.
2. May be used for mapping RAB13 protein-protein interaction.
3. As antigen for specific antibody production.

## **Quality Control**

Purity: > 90% by SDS-PAGE.

## **Recombinant Protein Sequence**

MASMTGGQQMGRGHHHHHENLYFQGGFEAKAYDHLFKLLLI GDSGVGKTCLII RFAEDNFNNT  
YISTIGIDFKIRTVDIEGKKIKLQVWDTAGQERFKTIT TAYYRGAMGIILVYDITDEKSFENIQ  
NWMKSIKENASAGVERLLLGNKCDMEAKRKVQKEQADK LAREHGIRFFETS AKSSMNVDEAFSS  
LARDILLKSGRRSGNGNKPPSTDLKTCDDKNTNKCSLG