



**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 sfGFP-Human Feimin Fusion Protein  
**Catalog Number:** HRP-4374  
**Manufacturer:** LD Biopharma, Inc. USA

### Introduction

The human **C5orf24 gene** encodes a 188-amino acid protein, which has recently been shown to play a critical role in exercise performance. Research demonstrates that the C5orf24 protein was mainly produced in myocytes, which can be phosphorylated and activated by AMPK during exercise. This activation enhances exercise performance by suppressing muscle thermogenesis. Due to its functional significance, the C5orf24 protein has been renamed **Feimin**. Upon phosphorylation, Feimin undergoes nuclear translocation, where it binds to FOXC2. This interaction leads to the inhibition of Sln transcription, which subsequently promotes Ca<sup>2+</sup> reuptake into the sarcoplasmic reticulum (SR). As a result, heat production is reduced, and exercise performance is enhanced. This mechanism highlights Feimin's pivotal role in regulating muscle function and energy efficiency during physical activity.

Full-length human Feimin cDNA (187aa) was constructed with codon optimization gene synthesis and expressed with a SuperGFP protein at N-terminal (sfGFP; 257aa) as fusion protein. The final product was expressed as soluble protein and affinity-chromatographically purified.

**Gene Symbol:** Feimin ( C5orf24 )  
**Accession Number:** NP\_689622  
**Species:** Human  
**Size:** 50 µg / Vial  
**Composition:** 1.0 mg/ml, sterile-filtered, in 20% Glycerol + PBS buffer  
**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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Ying Peng, et al., *Cellular Feimin enhances exercise performance by suppressing muscle thermogenesis*. Nature metabolism. (2025)  
<https://doi.org/10.1038/s42255-024-01176-8>

## Applications

1. May be used for Feimin protein-protein interaction mapping assay.
2. May be used as specific substrate protein for Feimin related kinase, and ubiquitin (Sumo pathway) enzyme functional screening assays.
3. As native human Feimin immunogen for its antibody production.

## Quality Control

Purity: > 85 % by SDS-PAGE.

sfGFP protein: **Ex  $\lambda$**  = 485nm, and **Em  $\lambda$**  = 510nm.

## Recombinant sfGFP- Human Feimin Fusion Protein Sequence ( 49.97 kD )

MKHHHHHHQVSKGEEELFTGVVPIILVELDGDVNGHKFSVRGEGEGDATNGKLTTLKFICTTGKLPVPWPTLV  
TTLTYGVCFSRYPDHMKRHDFFKSAMPEGYVQERTISFKDDGTYKTRAEVKFEGDTLVNRIELKGIDFK  
EDGNILGHKLEYNFNHNHNYITADKQKNGIKANFKIRHNVEDGSVQLADHYQQNTPIGDGPVLLPDNHYL  
STQSVLSKDPNEKRDMVLLLEFVTAAGITHGMDELYKSGLRSGGSGGENLYFQGSFEMHPVASSNPAFCG  
PGKPSCLNEDAMRAADQFDIYSSQQSKYSHTVNHKPMVCQRQDPLNETHLQTTSGRSIEIKDELKKKKNL  
NRSGKRGRPSGTTKSAGYRTSTGRPLGTTKAAGFKTSPGRPLGTTKAAGYKVSPPRPPGSIKALSRLADL  
GYGCGTAAFPYPMMHGRAVHGVEETSSEVKPPNE