

---

## Recombinant Irisin with His-tag (Human)

Type:	Recombinant	Cat. No.:	41354
Tag:	His	Size:	0.1 mg
Source:	E.Coli	Purity :	>95%
Other names:	Irisin	Species:	Human

### Introduction to the Molecule

Exercise enhances muscular endurance and strength, calories expenditure, and prevents the development of obesity and type 2 diabetes. These effects of exercise cannot be explained solely by the expenditure of calories in muscle. A recent study indicated that a novel hormone, irisin, plays an important role in the increase of total body energy expenditure by exercising muscle.

Irisin is a cleaved and secreted fragment of a membrane protein FNDC5. And its circulating concentrations are increased after regular physical activity. Exercise induces the transcriptional regulator PGC-1 $\alpha$  in the skeletal myocyte, which in turn drives the production of the FNDC5. Animal experiments suggested that irisin, cleaved form FNDC5, activates thermogenic programs in white adipose tissue ("browning"), including mitochondrial biogenesis and the expression of uncoupling protein 1 (UCP1), leading to mitochondrial heat production and energy expenditure. Irisin is highly conserved across species, and exercise also increases circulating irisin concentrations in humans. Therefore, the role of irisin in humans may be that it links physical activity to energy metabolic homeostasis, including weight control.

### Description

The recombinant irisin is the extracellular domain of FNDC5 (Asp16 to Thr136). Total 149 AA. Mw: 17 kDa (calculated). N-terminal His-tag and TEV cleavage site, 28 extra AA (highlighted).

### Amino Acid Sequence

MSYYHHHHHH	DYDIPTTENL	YFQGAMGSDS	PSAPVNVTVR	HLKANSVWS
WDVLEDEVVI	GFAISQQKGD	VRMLRFIQEV	NTTTRSCALW	DLEEDTEYIV
HVQAISIQQG	SPASEPVLFK	TPREAEMAS	KNKDEVTMKE	MGRNQQLRT

### Formulation

Lyophilized in 1 mg/mL in PBS

### Reconstitution

Add deionized water to prepare a working stock solution of approximately 1 mg/mL and let the lyophilized pellet dissolve completely.

### Storage

Store lyophilized protein at  $-20^{\circ}\text{C}$ . Aliquot reconstituted protein and store at  $-80^{\circ}\text{C}$ . Avoid repeated freezing /thawing cycles.

### Quality Control Test

BCA to determine quantity of the protein.  
SDS PAGE to determine purity of the protein.

### Applications

ELISA and Western blotting

### SDS - PAGE gel

