

# Product Information

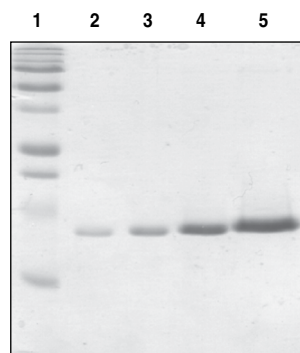


## Irisin (human recombinant)

Item No. 11451 • Batch No. XXXXXX

<b>Synonyms:</b>	Fibronectin Type III Domain 5, FNDC5, FRCP2, PeP
<b>Source:</b>	Recombinant protein expressed in <i>E. coli</i> . An N-terminal hexahistidine-tag and SUMOpro tag were removed by cleavage with SUMO protease 1 (Ulp1). <i>SUMOpro and SUMO Protease 1 were used under non-exclusive license from LifeSensors, Inc. www.lifesensors.com.</i>
<b>Amino Acids:</b>	1-111 (full-length; amino acids 16-127 of FNDC5)
<b>Genbank Accession No.:</b>	NP_Q8NAU1
<b>M<sub>r</sub>:</b>	12.4 kDa
<b>Purity:</b>	≥95% estimated by SDS-PAGE
<b>Stability:</b>	≥1 year at -80°C; avoid freeze/thaw cycles by aliquoting protein.
<b>Supplied in:</b>	50 mM Tris, pH 8.0, containing 150 mM sodium chloride, and 20% glycerol
<b>Protein Concentration:</b>	<i>batch specific</i> mg/ml
<b>Additional Information:</b>	This protein has not been tested for enzyme activity

Physical exertion and exercise are the primary defenses against obesity, insulin resistance, and diabetes. The transcriptional co-activator peroxisome proliferator-activated receptor C coactivator 1a (PGC-1 $\alpha$ ), regulates mitochondrial biogenesis and function.<sup>1</sup> Expression of the membrane protein fibronectin type III domain-containing protein 5 (FNDC5) is stimulated in muscle by PGC1- $\alpha$  in response to exercise. FNDC5 is proteolytically cleaved and secreted as the hormone peptide irisin (named after the Greek goddess messenger Iris). Irisin has been shown to convert white adipose fat to brown adipose fat upon physical exertion. Brown adipose fat allows for mitochondrial uncoupling leading to thermogenic programs and heat expenditure.<sup>2</sup> The physiological responses induced by the effects of irisin have the potential to increase weight loss and reduce insulin resistance and obesity.



Lane 1: MW Markers  
Lane 2: Irisin (1  $\mu$ g)  
Lane 3: Irisin (2  $\mu$ g)  
Lane 4: Irisin (5  $\mu$ g)  
Lane 5: Irisin (10  $\mu$ g)

### References

1. Kelly, D.P. Irisin, light my fire. *Science* **336**, 42-43 (2012).
2. Boström, P., Wu, J., Jedrychowski, M.P., *et al.* A PGC1- $\alpha$ -dependent myokine that drives brown-fat-like development of white fat and thermogenesis. *Nature* **481**, 463-468 (2012).

### Related Products

For a list of related products please visit: [www.caymanchem.com/catalog/11451](http://www.caymanchem.com/catalog/11451)

**WARNING: THIS PRODUCT IS FOR LABORATORY RESEARCH ONLY: NOT FOR ADMINISTRATION TO HUMANS. NOT FOR HUMAN OR VETERINARY DIAGNOSTIC OR THERAPEUTIC USE.**

#### SAFETY DATA

This material should be considered hazardous until information to the contrary becomes available. Do not ingest, swallow, or inhale. Do not get in eyes, on skin, or on clothing. Wash thoroughly after handling. This information contains some, but not all, of the information required for the safe and proper use of this material. Before use, the user must review the complete Safety Data Sheet, which has been sent *via* email to your institution.

#### WARRANTY AND LIMITATION OF REMEDY

Cayman Chemical Company makes **no warranty or guarantee** of any kind, whether written or oral, expressed or implied, including without limitation, any warranty of fitness for a particular purpose, suitability and merchantability, which extends beyond the description of the chemicals hereof. Cayman **warrants only** to the original customer that the material will meet our specifications at the time of delivery.

Cayman will carry out its delivery obligations with due care and skill. Thus, in no event will Cayman have **any obligation or liability**, whether in tort (including negligence) or in contract, for any direct, indirect, incidental or consequential damages, even if Cayman is informed about their possible existence.

This limitation of liability does not apply in the case of intentional acts or negligence of Cayman, its directors or its employees.

Buyer's **exclusive remedy** and Cayman's sole liability hereunder shall be limited to a refund of the purchase price, or at Cayman's option, the replacement, at no cost to Buyer, of all material that does not meet our specifications.

Said refund or replacement is conditioned on Buyer giving written notice to Cayman within thirty (30) days after arrival of the material at its destination. Failure of Buyer to give said notice within thirty (30) days shall constitute a waiver by Buyer of all claims hereunder with respect to said material.

For further details, please refer to our **Warranty and Limitation of Remedy located on our website and in our catalog.**

Copyright Cayman Chemical Company, 12/11/2014

### Cayman Chemical

#### Mailing address

1180 E. Ellsworth Road  
Ann Arbor, MI  
48108 USA

#### Phone

(800) 364-9897  
(734) 971-3335

#### Fax

(734) 971-3640

#### E-Mail

[custserv@caymanchem.com](mailto:custserv@caymanchem.com)

#### Web

[www.caymanchem.com](http://www.caymanchem.com)