

**DESCRIPTION**

**Source** Chinese Hamster Ovary cell line, CHO-derived  
Asp32-Glu143, with a C-terminal 6-His tag  
Accession # Q8NAU1

**N-terminal Sequence Analysis** Asp32

**Predicted Molecular Mass** 13 kDa

**SPECIFICATIONS**

**SDS-PAGE** 15-37 kDa, reducing conditions

**Activity** Measured by its ability to induce p38 MAPK activation in 3T3-L1 mouse embryonic fibroblast adipose-like cells.  
1 µg/mL of Recombinant Human Irisin can effectively induce p38 MAPK activation.

**Endotoxin Level** <0.10 EU per 1 µg of the protein by the LAL method.

**Purity** >95%, by SDS-PAGE visualized with Silver Staining and quantitative densitometry by Coomassie® Blue Staining.

**Formulation** Lyophilized from a 0.2 µm filtered solution in MOPS, NaCl and TCEP with BSA as a carrier protein. See Certificate of Analysis for details.

**PREPARATION AND STORAGE**

**Reconstitution** Reconstitute at 100 µg/mL in PBS containing at least 0.1% human or bovine serum albumin.

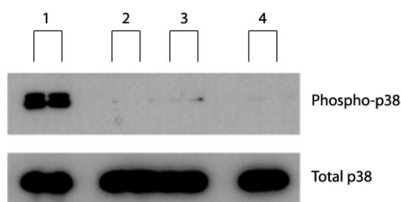
**Shipping** The product is shipped at ambient temperature. Upon receipt, store it immediately at the temperature recommended below.

**Stability & Storage** Use a manual defrost freezer and avoid repeated freeze-thaw cycles.

- 12 months from date of receipt, -20 to -70 °C as supplied.
- 1 month, 2 to 8 °C under sterile conditions after reconstitution.
- 3 months, -20 to -70 °C under sterile conditions after reconstitution.

**DATA**

**Bioactivity**



**Recombinant Human Irisin Induces p38 MAPK Phosphorylation in 3T3-L1 Preadipocytes.** 3T3-L1 preadipocytes were incubated with 1 µg/ml of Recombinant Human Irisin for 15 minutes. The cells were lysed and Western blots were performed with anti-phospho p38 MAPK and total p38 MAPK antibodies. Experiments are shown in duplicate.

1. R&D Systems
2. Competitor 1
3. Competitor 2
4. Untreated control

**BACKGROUND**

Irisin (also known as FNDC5) is a 12 kDa glycosylated polypeptide hormone that regulates energy metabolism, stem cell differentiation, and neuronal development (1, 2). Human Irisin is synthesized as a 212 amino acid (aa) precursor encoding a type 1 transmembrane protein with a 121 aa extracellular domain (ECD), a 21 aa transmembrane domain, and a 39 aa cytoplasmic domain. The ECD of Irisin contains a fibronectin type III domain and multiple glycosylation sites. The ECD is proteolytically cleaved to release the 112 aa soluble Irisin hormone into circulation (2-5). Mature human, mouse, and rat Irisin share 100% sequence identity. Expression of Irisin is induced in skeletal muscle and subcutaneous adipose tissue during and shortly after exercise (2, 6). Irisin induces expression of peroxisome proliferator-activated receptor  $\gamma$  co-activator 1 $\alpha$  (PGC1 $\alpha$ ) and uncoupling protein-1 (UCP1), mitochondrial-associated metabolic proteins (7, 8). Irisin induces the transition of white adipose tissue into more metabolically active beige adipose tissue. In mice, expression of Irisin has been shown to regulate obesity and diabetes (1, 2). A similar function in humans is suggested (9). Irisin also regulates neuronal cell differentiation and neurite outgrowth in the brain and is involved in the differentiation of osteoblasts (10-14).

**References:**

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