## **PRODUCT** INFORMATION



Adiponectin (human, recombinant)

Item No. 32059

### **Overview and Properties**

Synonyms:	30 kDa Adipocyte Complement-related Protein, Adipose Specific Collagen-like Factor, Adipocyte, C1q and Collagen Domain-containing Protein, Adipocyte Complement- related 30 kDa Protein
Source:	Recombinant C-terminal human IgG1 Fc-tagged adiponectin expressed in HEK293 cells
Amino Acids:	19-244 (full length)
Uniprot No.:	Q15848
Molecular Weight:	51.6 kDa
Storage:	-80°C (as supplied)
Stability:	≥1 year
Purity:	≥80% estimated by SDS-PAGE
Supplied in:	Lyophilized from sterile PBS, pH 7.4, with 5% Trehalose, 5% Mannitol,
	and 0.01% Tween-80

**Endotoxin Testing:**  $<1.0 \text{ EU/}\mu g$ , determined by the LAL endotoxin assay Information represents the product specifications. Batch specific analytical results are provided on each certificate of analysis.



SDS-PAGE Analysis of Adiponectin.

WARNING THIS PRODUCT IS FOR RESEARCH ONLY - NOT FOR HUMAN OR VETERINARY DIAGNOSTIC OR THERAPEUTIC USE.

#### SAFETY DATA

This material should be considered hazardous until further information becomes available. Do not ingest, inhale, get in eyes, on skin, or on clothing. Wash thoroughly after handling. 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 Buyer agrees to purchase the material subject to Cayman's Terms and Conditions. Complete Terms and Conditions including Warranty and Limitation of Liability information can be found on our website.

Copyright Cayman Chemical Company, 08/31/2023

#### CAYMAN CHEMICAL

1180 EAST ELLSWORTH RD ANN ARBOR, MI 48108 · USA PHONE: [800] 364-9897 [734] 971-3335 FAX: [734] 971-3640 CUSTSERV@CAYMANCHEM.COM WWW.CAYMANCHEM.COM

# **PRODUCT** INFORMATION



#### Description

Adiponectin is a pleiotropic adipokine and homolog of the complement 1q (C1q) family encoded by ADIPOQ in humans.<sup>1</sup> It is composed of an N-terminal signal sequence, a hypervariable region, a collagenous domain, and a C-terminal C1g-like globular domain. It is produced in adipocytes, where the approximately 27 kDa monomeric protein is post-translationally modified to induce formation of trimer, hexamer, and high molecular weight (HMW) adiponectin containing 12 to 18 monomers that circulate in serum. These adiponectin multimers have distinct biological activities and do not interconvert once present in the circulation. Peroxisome proliferator-activated receptor  $\gamma$  (PPAR $\gamma$ ) is the major positive regulator of ADIPOQ expression but expression is also regulated by forkhead box protein O1 (FOXO1) and sterol regulatory element binding protein 1c (SREBP1c). Plasma levels of adiponectin are decreased in ob/ob mice and mice with diet-induced obesity that have insulin resistance, and exogenous administration of adiponectin improves insulin sensitivity in these mice by increasing  $\beta$ -oxidation in the skeletal muscle and reducing hepatic and musculoskeletal triglyceride content. Chronic administration of adiponectin reduces hyperglycemia, hyperinsulinemia, and body weight in a mouse model of high-fat diet-induced obesity. High plasma levels of adiponectin are associated with coronary heart disease in diabetic women.<sup>2</sup> Plasma levels of adiponectin are positively correlated with disease severity in patients with chronic kidney disease.<sup>3</sup> Cayman's Adiponectin (human, recombinant) protein is a disulfide-linked homodimer. The reduced monomer, comprised of adiponectin (amino acids 19-244) fused to human IgG1 Fc at its C-terminus, consists of 467 amino acids, has a calculated molecular weight of 51.6 kDa, and a predicted N-terminus of Glu19 after signal peptide cleavage.

#### References

- 1. Fang, H. and Judd, R.L. Adiponectin regulation and function. Compr. Physiol. 8(3), 1031-1063 (2018).
- 2. Katsiki, N., Mantzoros, C.S., and Mikhailidis, D.P. Adiponectin, lipids and atherosclerosis. *Curr. Opin. Lipidol.* **28(4)**, 347-354 (2017).
- 3. Markaki, A., Psylinakis, E., and Spyridaki, A. Adiponectin and end-stage renal disease. *Hormones (Athens)* **15(3)**, 345-354 (2016).

#### CAYMAN CHEMICAL

1180 EAST ELLSWORTH RD ANN ARBOR, MI 48108 · USA PHONE: [800] 364-9897 [734] 971-3335 FAX: [734] 971-3640 CUSTSERV@CAYMANCHEM.COM WWW.CAYMANCHEM.COM