

PRODUCT DATASHEET

Adiponectin Rat HEK293

Cat. No.: RD372023100

Type: Recombinant protein

Size: 0.1 mg

Source: HEK293

Species: Rat

Description

Total 238 AA. MW: 25.7 kDa (calculated). UniProtKB acc. No. Q8K3R4 (Gly18–Asn244). C-terminal linker (3 extra AA) and C-terminal Flag-tag (8 extra AA). Protein identity confirmed by LC-MS/MS.

Other names

Adipocyte C1q and collagen domain-containing protein, Adipocyte complement-related 30 kDa protein, ACRP30, Adipose most abundant gene transcript 1 protein, apM-1, Gelatin-binding protein, ADIPOQ, ACDC, APM1, GBP28

Introduction to the molecule

Adiponectin, also referred to as Acrp30, AdipoQ and GBP-28, is a recently discovered 244 aminoacid protein, the product of the apM1 gene, which is physiologically active and specifically and highly expressed in adipose cells. The protein belongs to the soluble defence collagen superfamily; it has a collagen-like domain structurally homologous with collagen VIII and X and complement factor C1q-like globular domain. Adiponectin forms homotrimers, which are the building blocks for higher order complexes found circulating in serum. Together, these complexes make up approximately 0.01% of total serum protein. Adiponectin receptors AdipoR1 and AdipoR2 have been recently cloned; AdipoR1 is abundantly expressed in skeletal muscle, whereas AdipoR2 is predominantly expressed in the liver. Paradoxically, adipose tissue-expressed adiponectin levels are inversely related to the degree of adiposity. Adiponectin concentrations correlate negatively with glucose, insulin, triglyceride concentrations, liver fat content and body mass index and positively with high-density lipoprotein-cholesterol levels, hepatic insulin sensitivity and insulin-stimulated glucose disposal. Adiponectin has been shown to increase insulin sensitivity and decrease plasma glucose by increasing tissue fat oxidation. Of particular interest is that low adiponectin serum levels predict type 2 diabetes independent of other risk factors. Adiponectin also inhibits the inflammatory processes of atherosclerosis suppressing the expression of adhesion and cytokine molecules in vascular endothelial cells and macrophages, respectively. This adipokine plays a role as a scaffold of newly formed collagen in myocardial remodelling after ischaemic injury and also stimulates angiogenesis by promoting cross-talk between AMP-activated protein kinase and Akt signalling in endothelial cells. Low serum adiponectin levels are found in patients with coronary artery disease. Moreover, high circulating levels of adiponectin are associated with decreased risk of myocardial infarction, independent of other factors. Altogether, adiponectin has the potential to become a clinically relevant parameter to be measured routinely in subjects at risk for type 2 diabetes, atherosclerosis and the metabolic syndrome.

Research topic

Animal studies, Coronary artery disease, Diabetology - Other Relevant Products, Energy metabolism and body weight regulation, Chronic renal failure

Amino Acid sequence

GITATEGPGA LVPPPKETCA GWMAGIPGYG GHNGIPGRDG RDGTPGEKGE KGDAGVLGPK GDPGDAGMTG AEGPRGFPGT
PGRKGEPGEA AYMYSFAFSV GLETRVTVPN VPIRFTKIFY NQQNHVDGST GKFHCNIPGL YYFSYHITVY MKDVKVSLFK
KDKAVLFTYD QYQEKNDQA SGSMMLHLEV GDQVWLQVYG EGDNNGLYAD NVNDSTFTGF LLYHDTNAAA DYKDDDDK

Purity

Purity as determined by densitometric image analysis: >90%

Biological activity

The biological activity of Adiponectin is measured by its ability to inhibit proliferation of mouse 3T3 fibroblasts stimulated by PDGF. The ED50 for the effect is typically 5-15 µg/mL.

Endotoxin

< 1.0 EU/ug

Formulation:

Filtered (0.4 µm) and lyophilized in 20 mM Tris buffer, 50 mM NaCl, pH 7.5.

Reconstitution:

Add 200 µl of deionized water to prepare a working stock solution of approximately 0.5 mg/ml and let the lyophilized pellet dissolve completely. Filter sterilize your culture media/working solutions containing this non-sterile product before using in cell culture.

Shipping

At ambient temperature. Upon receipt, store the product at the temperature recommended below.

Storage, Stability/Shelf Life

Store the lyophilized protein at -80 °C. Lyophilized protein remains stable until the expiry date when stored at -80 °C. Aliquot reconstituted protein to avoid repeated freezing/thawing cycles and store at -80 °C for long term storage. Reconstituted protein can be stored at 4 °C for a week.

Quality control

BCA to determine quantity of the protein.

SDS PAGE to determine purity of the protein.

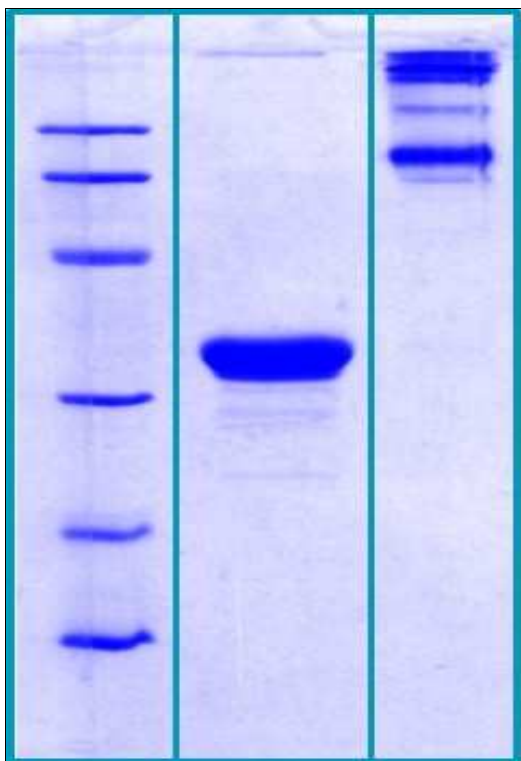
LAL to determine quantity of endotoxin.

Applications

Cell culture and/or animal studies, ELISA, Western blotting

Note

This product is intended for research use only.



14 % SDS-PAGE separation of Rat Adiponectin:

1. M.W. marker – 14, 21, 31, 45, 66, 97 kDa

2. Reduced and boiled sample, 2.5 µg/lane

3. Non-reduced and non-boiled sample, 2.5 µg/lane