Adiponectin Human HEK293 Solution

Product Data Sheet

Type: Recombinant
Source: HEK293
Species: Human
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

Cat. No.:

RD172023025-F	(0.025 mg)
RD172023100-F	(0.1 mg)

Description

Total 237 AA. MW: 25.8 kDa (calculated). UniProtKB acc. No. Q15848 (Glu19-Asn244). C-terminal FLAG-tag (11 extra AA). Protein identity confirmed by LC-MS/MS.

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

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

Amino Acid Sequence

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ETTTQGPGVL LPLPKGACTG WMAGIPGHPG HNGAPGRDGR DGTPGEKGEK GDPGLIGPKG DIGETGVPGA EGPRGFPGIQ
GRKGEPGEGA YVYRSAFSVG LETYVTIPNM PIRFTKIFYN QQNHYDGSTG KFHCNIPGLY YFAYHITVYM KDVKVSLFKK
DKAMLFTYDQ YQENNVDQAS GSVLLHLEVG DQVWLQVYGE GERNGLYADN DNDSTFTGFL LYHDTN AAAD YKDDDDK
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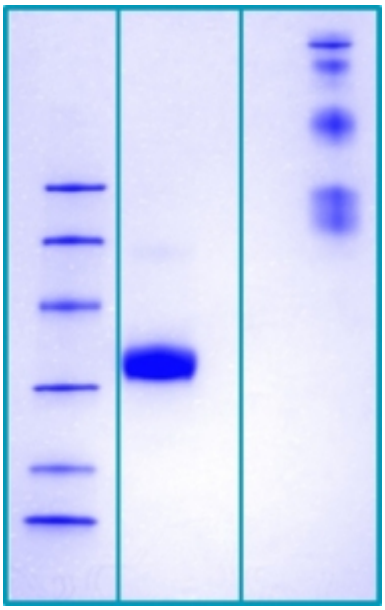
Source

HEK293

Purity

Purity as determined by densitometric image analysis: > 95%

SDS-PAGE gel



4-20% SDS-PAGE separation of Human 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

Endotoxin

< 0.1 EU/µg

Formulation

Sterile filtered (0.2 µm) and frozen 0.4-1.0 mg/ml solution in phosphate buffered saline, pH 7.4.

Reconstitution

Dilute in sterile buffers and media to a working concentration 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 protein at -80 °C. The protein remains stable until the expiry date when stored at -80 °C. Aliquot protein to avoid repeated freezing/thawing cycles and store at -80 °C for long term storage. The protein can be stored at 4 °C for a week.

Quality Control Test

BCA to determine quantity of the protein.
SDS-PAGE to determine purity of the protein.
LAL TEST to determine endotoxin level.

Applications

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

Note

This product is intended for research use only.

HEADQUARTERS: BioVendor Laboratorní medicína, a.s.	Karasek 1767/1	621 00 Brno CZECH REPUBLIC	Phone: +420-549-124-185 Fax: +420-549-211-460	E-mail: Web:	info@biovendor.com sales@biovendor.com www.biovendor.com
AUSTRIA: BioVendor GesmbH	Gaudenzdorfer Gürtel 43-45	1120 Vienna AUSTRIA	Phone: +43-1-89090-25 Fax: +43-1-89051-63	E-mail:	infoAustria@biovendor.com
GERMANY, SWITZERLAND: BioVendor GmbH	Otto-Hahn-Straße 16	34123 Kassel GERMANY	Phone: +49-6221-433-9100 Fax: +49-6221-433-9111	E-mail:	infoEU@biovendor.com
USA, CANADA AND MEXICO: BioVendor LLC	128 Bingham Rd. Suite 1300	Asheville, NC 28806 USA	Phone: +1-828-575-9250 +1-800-404-7807 Fax: +1-828-575-9251	E-mail:	infoUSA@biovendor.com