

Adiponectin NATIVE, Human Serum

Product Data Sheet

Type: Native	Cat. No.:	
Source: Human pooled serum	RD162023050	(0.05 mg)
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		

Description

Native protein isolated from pooled human serum 226 AA. MW: 24.54 kDa (calculated without glycosylation). Protein identity confirmed by LC-MS/MS.

Identification of Adiponectin from human serum by LC-MS/MS - The 60kDa and 37 kDa bands from SDS-PAGE were excised from the polyacrylamide gel and in-gel digested. Tryptic peptides were analyzed by LC-MS/MS and the both bands were identified as adiponectin precursor (NCBI Reference Sequence: NP_004788.1).

Introduction to the Molecule

Adiponectin, also referred to as Acrp30, AdipoQ and GBP-28, is a recently discovered 244 amino acid 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

ETTTQGPV LPLPKGACTG WMAGIPGHPG HNGAPGRDGR DGTPGEKGEK GDPGLIGPKG DIGETGVPGA EGPRGFPGIQ
GRKGEPGE GA YVYRSAF SVG LETYVTIPNM PIRFTKIFYN QQNHYDGS TG KFHCNIPGLY YFAYHITVYM KDVKVSFLFKK
DKAMLFYTDQ YQENNVDQAS GSVLLHLEVG DQVWLQVYGE GERNGLYADN DNDSTFTGFL LYHDTN

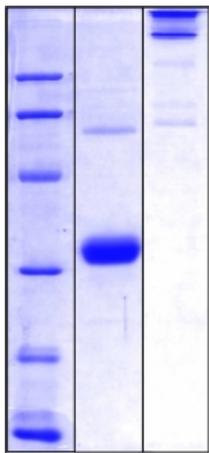
Source

Human pooled serum (All blood samples used for protein preparation were tested and found negative for HBsAg, anti-HCV, HIV Ag/Ab, and syphilis.)

Purity

>90%

SDS-PAGE gel



SDS-PAGE analysis of Human Adiponectin native protein, 12% gel stained with Coomassie Brilliant Blue R250

1. M.W. marker - 14, 21, 31, 45, 66, 97 kDa
2. reduced and heated sample, 2.5µg/lane - **both bands were identified as adiponectin (LC-MS/MS)**
3. non-reduced and non-heated sample, 2.5µg/lane

Endotoxin

< 1.0 EU/ug

Formulation

Filtered (0,4 µm) and lyophilized in 0.5 mg/ml in 20mM TRIS, 50mM NaCl, 1mM CaCl₂, pH 7.5

Reconstitution

Add deionized water to prepare a working stock solution of approximately 0.5 mg/mL and let the lyophilized pellet dissolve completely. Product is not sterile! Please filter the product by an appropriate sterile filter before using it in the cell culture.

Shipping

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

Storage, Stability/Shelf Life

Store 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 limited period of time; it does not show any change after one week at 4°C.

Quality Control Test

- BCA to determine quantity of the protein.
- SDS PAGE to determine purity of the protein.
- Gel permeation chromatography to determine purity and oligomeric state of the native protein.
- LAL to determine quantity of endotoxin.
- Immunoreactivity is confirmed using monoclonal antibodies specific to human adiponectin.

Applications

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

Note

All blood samples used for protein preparation were tested and found negative for HBsAg, anti-HCV, HIV Ag/Ab, and syphilis. Since no test can absolutely assure the absence of all infectious agents, this product should be handled as a potential biohazard. This product is intended for research use only.

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