Human Adiponectin ELISA Kit ab99968

Overview

Product name: Human Adiponectin ELISA Kit
Detection method: Colorimetric
Sample type: Cell culture supernatant, Serum, Plasma
Assay type: Sandwich (quantitative)
Sensitivity: < 25 pg/ml
Recovery: < 96%

Sample specific recovery

<table>
<thead>
<tr>
<th>Sample type</th>
<th>Average %</th>
<th>Range</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cell culture supernatant</td>
<td>96.59</td>
<td>83% - 107%</td>
</tr>
<tr>
<td>Serum</td>
<td>93.57</td>
<td>83% - 104%</td>
</tr>
<tr>
<td>Plasma</td>
<td>90.29</td>
<td>80% - 103%</td>
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</table>

Assay duration: Multiple steps standard assay
Species reactivity: Reacts with: Human

Product overview

Abcam’s Human Adiponectin ELISA (Enzyme-Linked Immunosorbent Assay) kit is an in vitro enzyme-linked immunosorbent assay for the quantitative measurement of Human Adiponectin in serum, plasma, and cell culture supernatants.

This assay employs an antibody specific for Human Adiponectin coated on a 96-well plate. Standards and samples are pipetted into the wells and Adiponectin present in a sample is bound to the wells by the immobilized antibody. The wells are washed and biotinylated anti-Human Adiponectin antibody is added. After washing away unbound biotinylated antibody, HRP-conjugated streptavidin is pipetted to the wells. The wells are again washed, a TMB substrate solution is added to the wells and color develops in proportion to the amount of Adiponectin bound. The Stop Solution changes the color from blue to yellow, and the intensity of the color is measured at 450 nm.

Notes

Optimisation may be required with urine samples.

Tested applications

Suitable for: Sandwich ELISA

Platform

Microplate
Storage instructions
Store at -20°C. Please refer to protocols.

Function
Important adipokine involved in the control of fat metabolism and insulin sensitivity, with direct anti-diabetic, anti-atherogenic and anti-inflammatory activities. Stimulates AMPK phosphorylation and activation in the liver and the skeletal muscle, enhancing glucose utilization and fatty-acid combustion. Antagonizes TNF-alpha by negatively regulating its expression in various tissues such as liver and macrophages, and also by counteracting its effects. Inhibits endothelial NF-kappa-B signaling through a cAMP-dependent pathway. May play a role in cell growth, angiogenesis and tissue remodeling by binding and sequestering various growth factors with distinct binding affinities, depending on the type of complex, LMW, MMW or HMW.

Tissue specificity
Synthesized exclusively by adipocytes and secreted into plasma.

Involvement in disease
Defects in ADIPOQ are the cause of adiponectin deficiency (ADPND) [MIM:612556]. ADPND results in very low concentrations of plasma adiponectin. Genetic variations in ADIPOQ are associated with non-insulin-dependent diabetes mellitus (NIDDM) [MIM:125853]; also known as diabetes mellitus type 2. NIDDM is characterized by an autosomal dominant mode of inheritance, onset during adulthood and insulin resistance.

Sequence similarities
Contains 1 C1q domain.
Contains 1 collagen-like domain.

Domain
The C1q domain is commonly called the globular domain.

Post-translational modifications
Hydroxylated Lys-33 was not identified in PubMed:16497731, probably due to poor representation of the N-terminal peptide in mass fingerprinting. HMW complexes are more extensively glycosylated than smaller oligomers. Hydroxylation and glycosylation of the lysine residues within the collagen-like domain of adiponectin seem to be critically involved in regulating the formation and/or secretion of HMW complexes and consequently contribute to the insulin-sensitizing activity of adiponectin in hepatocytes. O-glycosylated. Not N-glycosylated. O-linked glycans on hydroxylysines consist of Glc-Gal disaccharides bound to the oxygen atom of post-translationally added hydroxyl groups. Sialylated
to varying degrees depending on tissue. Thr-22 appears to be the major site of sialylation. Higher sialylation found in SGBS adipocytes than in HEK fibroblasts. Sialylation is not required neither for heterodimerization nor for secretion. Not sialylated on the glycosylated hydroxylysines. Desialylated forms are rapidly cleared from the circulation.

**Cellular localization**

Secreted.

**Applications**

Our Abpromise guarantee covers the use of ab99968 in the following tested applications. The application notes include recommended starting dilutions; optimal dilutions/concentrations should be determined by the end user.

<table>
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<tr>
<th>Application</th>
<th>Abreviews</th>
<th>Notes</th>
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<tbody>
<tr>
<td>Sandwich ELISA</td>
<td></td>
<td>Use at an assay dependent concentration.</td>
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</table>

**Images**

Adiponectin measured in biological fluids showing quantity (pg) per mL of tested sample. Human serum and plasma were diluted 2700-24300 fold. Rat and mouse serum were diluted 1-3 fold. Human urine and saliva were diluted 300-2700 fold.

Representative Standard Curve using ab99968
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