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Obesity related hormone and signal transduction targets

Adeponectin antibodies (Cat # Adpn-101AP, P-Adpn and PC-Adpn)

Alternate nomenclature: Acrp30 and apM1 protein

Adenectin (Adpn) is a protein hormone, exclusively secreted from adipose tissue in to the blood stream that modulates number of metabolic processes, including glucose regulation and fatty acid catabolism. Plasma levels of Adpn are relatively high compared to many other hormones and the concentrations are inversely correlated with body fat percentage in adults, while the association in infants and young children is mofre unclear. Adiponectin is secreted into the bloodstream where it accounts for approximately 0.01% of all plasma protein at around 5-10 µg/mL. Plasma concentrations reveal a sexual dimorphism, with females having higher levels than males. Levels of adiponectin are reduced in diabetics compared to non-diabetics. Weight reduction significantly increases circulating levels. The hormone plays a role in the suppression of the metabolic derangements that may result in type 2 diabetes, obesity, atherosclerosis and non-alcoholic fatty liver disease (NAFLD). Adiponectin exerts some of its weight reduction effects via the brain. This is similar to the action of leptin, but the two hormones perform complementary actions. Adiponectin was first characterized in mice as a transcript overexpressed in preadipocytes (precursors of fat cells) differentiating into adipocytes. The human homologue was identified as the most abundant transcript in adipose tissue.

Adiponectin is a 244-amino-acid-long polypeptide, Adpn gene is located on chromosome 3p27a region high lighted as affecting genetic susceptibility to type 2 diabetes. The globular structure of adpn resembles the TNF structure despite unrelated protein sequences. Primarily the Adpn has three distinct structural motifs, first is a short signal squence that targets the hormone for secretion outside the cell; next is a short variable region thatis species related and the third is a 65-amino acid region with similarity to collagenous proteins; the last is a globular domain. Overall this gene shows similarity to the complement 1Q factors. Adpn exist as self associated homotrimers containing three molecules of Adpn, these homotrimers continue to associate with other Adpn molecules to form hexamers and dodecamers. The role of these high molecular aggregates remain to be elucidated. Adiponectin binds to a two GPCR that have been identified and characterized. hese have distinct tissue specificities within the body and have different affinities to the various forms of adiponectin. The receptors affect the downstream target AMP kinase, an important cellular metabolic rate control point. Expression of the receptors are correlated with insulin levels, as well as reduced in mouse models of diabetes, particularly in skeletal muscle and adipose tissue.

The Adeponectin-selective antibody was generated against a peptide from the globular domain that is unique to Adpn protein. The affinity purified mono epitope-specific rabbit polyclonal antibody strongly labels a 30kDa protein of Adpn in PC-Adpn western blot positive western blot positive control samples. Limited quantities of antigenic blocking peptide for Adpn-101AP and western blot positive controls in ready-to-use buffer are also available. *FabGennix Inc.* will conjugate Adeponectin antibodies with FITC, Biotin or other fluoresent probes at a nominal charge. *FabGennix Inc.* also provides antibodies against many GPCRs, leptin and other obesity related proteins, for a complete listing, please visit [www.FabGennix.com](http://www.FabGennix.com).

| Catalog #   | Host Species | Nature  | Cross reactivity | Quantity   | Volume  |
|-------------|--------------|---|------------------|------------|---------|
| Adpn-101AP  | Rabbit       | Affinity purified rabbit Adeponectin Antibody | pig              | 100ug      | 200ul   |
| FITC-Adpn   | Rabbit       | FITC-conjugated Adpn antibody                 | pig              | 100ug      | 200ul   |
| Biotin-Adpn | Rabbit       | Biotin-Conjugated Adpn antibody               | pig              | 100ug      | 200ul   |
| P-Adpn      | Rabbit       | Antigenic blocking peptide for Adpn-101AP     | n/a              | 250 µg     | 100ul   |
| PC-Adpn     | Rabbit       | Western blot positive control for adpn        | n/a              | for 5 appl | inquire |

R = rat; M = mouse; H = human; C = chicken; monk = monkey ; \* not all variants are labeled equally

**Immunogen:** Synthetic peptide unique to Adiponectin globular C-terminal doamin. The peptide sequence corresponds to amino acids 198-218.

**Concentration:** Adpn-101AP-101AP IgG concentration 0.65-1.25 mg/ml.

**Applications:** Antibody Adpn-101AP is ideal for WB, use of this antibody in other applications has not yet worked out. The dilution of Adpn-101AP antibody is for reference only, investigators are expected to determine the optimal conditions for specific assay. WB; 1:500; IMM & i.p pull-down assays:> n.d

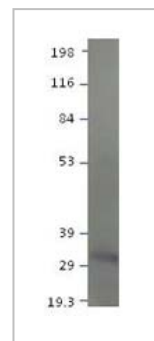
**Reactivity:** This antibody detects a broad diffuse band of 30 kDa in PC-Adpn smaples. The antibody also reacts to some higher molecular weight proteins that may be multimeric forms of the adiponectin.

**Protocols:** Standard protocol for various applications (WB, IMM and IHC) for this antibody can be obtained by contacting Technical services. All dilutions for this antibody for a specific use is for reference only and investigators may require standardization in the laboratory.

**Form/Storage:** The antiserum is supplied in antibody stabilization buffer with 0.02% sodium azide. For long-term storage of antibodies, store at -20°C. *FabGennix Int. Inc.* does not recommend storage of very dilute antibody solutions unless they are prepared in specially formulated multi use antibody dilution buffer (Cat # DilUbuffer). Working solutions of antibodies in DilUbuffer should be filtered through 0.45µ filter after every use for long-term storage.

**References:**

1. Phornphutkul C, Wu KY, Auyeung V, Chen Q, Gruppuso PA. mTOR signaling contributes to chondrocyte differentiation. *Dev Dyn.* 2008 Mar;237(3):702-12.
2. Xiangyu Liu and X. F. Steven Zheng. Endoplasmic Reticulum and Golgi Localization Sequences for Mammalian Target of Rapamycin. *Mol Biol Cell.* 2007 March; 18(3): 1073-1082.



Western blot of Adiponectin using Adpn-101AP (1:500) in (diluObuffer) and PC-Adpn sample. MW of Adiponectin is 30kDa.

**Announcements:** A new FITC and Biotin-conjugated-Adpn antibody is also available from FabGennix International Inc. Please inquire for larger packing sizes.

\*For users who may require large amounts of Adpn-101AP, please enquire about bulk material discounts.  
This Product is for Research Use Only and is NOT intended for use in humans or clinical diagnosis.

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