

**Leptin Antibody**  
**Rabbit Polyclonal Antibody**  
**Catalog # ABV10937****Specification**

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**Leptin Antibody - Product Information**

Application	<b>WB</b>
Primary Accession	<a href="#">P41159</a>
Other Accession	<a href="#">AAH69323</a>
Reactivity	<b>Human</b>
Host	<b>Rabbit</b>
Clonality	<b>Polyclonal</b>
Isotype	<b>Rabbit IgG</b>
Calculated MW	<b>18641</b>

**Leptin Antibody - Additional Information****Gene ID** 3952**Application & Usage****Western blot analysis (0.5-4 µg/ml).  
However, the optimal conditions should be  
determined individually. Recombinant  
human Leptin can be used as a positive  
control.****Other Names**

LEP; OB; OBS; Obese Protein, Leptin

**Target/Specificity**

Leptin

**Antibody Form**

Liquid

**Appearance**

Colorless liquid

**Formulation**

100 µg (0.5 mg/ml) affinity purified rabbit anti-human Leptin polyclonal antibody in phosphate buffered saline (PBS), pH 7.2, containing 30% glycerol, 0.5% BSA, 0.01% thimerosal.

**Handling**

The antibody solution should be gently mixed before use.

**Reconstitution & Storage**

-20 °C

**Background Descriptions****Precautions**

Leptin Antibody is for research use only and not for use in diagnostic or therapeutic procedures.

## Leptin Antibody - Protein Information

Name LEP ([HGNC:6553](#))

### Function

Key player in the regulation of energy balance and body weight control. Once released into the circulation, has central and peripheral effects by binding LEPR, found in many tissues, which results in the activation of several major signaling pathways (PubMed:[17344214](http://www.uniprot.org/citations/17344214), PubMed:[15899045](http://www.uniprot.org/citations/15899045), PubMed:[19688109](http://www.uniprot.org/citations/19688109)). In the hypothalamus, acts as an appetite-regulating factor that induces a decrease in food intake and an increase in energy consumption by inducing anorexigenic factors and suppressing orexigenic neuropeptides, also regulates bone mass and secretion of hypothalamo-pituitary-adrenal hormones. In the periphery, increases basal metabolism, influences reproductive function, regulates pancreatic beta-cell function and insulin secretion, is pro-angiogenic for endothelial cell and affects innate and adaptive immunity (By similarity) (PubMed:[8589726](http://www.uniprot.org/citations/8589726), PubMed:[11460888](http://www.uniprot.org/citations/11460888), PubMed:[19688109](http://www.uniprot.org/citations/19688109), PubMed:[24340098](http://www.uniprot.org/citations/24340098), PubMed:[25060689](http://www.uniprot.org/citations/25060689)). In the arcuate nucleus of the hypothalamus, activates by depolarization POMC neurons inducing FOS and SOCS3 expression to release anorexigenic peptides and inhibits by hyperpolarization NPY neurons inducing SOCS3 with a consequent reduction on release of orexigenic peptides (By similarity). In addition to its known satiety inducing effect, has a modulatory role in nutrient absorption. In the intestine, reduces glucose absorption by enterocytes by activating PKC and leading to a sequential activation of p38, PI3K and ERK signaling pathways which exerts an inhibitory effect on glucose absorption (PubMed:[24340098](http://www.uniprot.org/citations/24340098)). Acts as a growth factor on certain tissues, through the activation of different signaling pathways increases expression of genes involved in cell cycle regulation such as CCND1, via JAK2-STAT3 pathway, or VEGFA, via MAPK1/3 and PI3K-AKT1 pathways (By similarity) (PubMed:[17344214](http://www.uniprot.org/citations/17344214)). May also play an apoptotic role via JAK2-STAT3 pathway and up-regulation of BIRC5 expression (PubMed:[18242580](http://www.uniprot.org/citations/18242580)). Pro-angiogenic, has mitogenic activity on vascular endothelial cells and plays a role in matrix remodeling by regulating the expression of matrix metalloproteinases (MMPs) and tissue inhibitors of metalloproteinases (TIMPs) (PubMed:[11460888](http://www.uniprot.org/citations/11460888)). In innate immunity, modulates the activity and function of neutrophils by increasing chemotaxis and the secretion of oxygen radicals. Increases phagocytosis by macrophages and enhances secretion of pro-inflammatory mediators. Increases cytotoxic ability of NK cells (PubMed:[12504075](http://www.uniprot.org/citations/12504075)). Plays a pro-inflammatory role, in synergy with IL1B, by inducing NOS2 which promotes the production of IL6, IL8 and Prostaglandin E2, through a signaling pathway that involves JAK2, PI3K, MAP2K1/MEK1 and MAPK14/p38 (PubMed:[15899045](http://www.uniprot.org/citations/15899045), PubMed:[19688109](http://www.uniprot.org/citations/19688109)). In adaptive immunity, promotes the switch of memory T-cells towards T helper-1 cell immune responses (By similarity). Increases CD4(+)CD25(-) T-cell proliferation and reduces autophagy during TCR (T-cell receptor) stimulation, through MTOR signaling pathway activation and BCL2 up-regulation (PubMed:[25060689](http://www.uniprot.org/citations/25060689)).

## Cellular Location

Secreted.

## Tissue Location

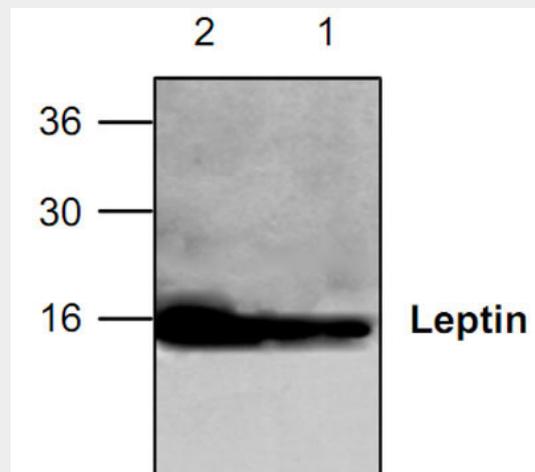
Adipose tissue is the main source of leptin. It is also produced by other peripheral tissues such as the skeletal muscle (PubMed:7789654, PubMed:16052473, PubMed:12448771). Expressed by intercalated and striated tracts of submandibular and parotid salivary gland intralobular ducts (PubMed:12448771). Detected by fundic epithelium of the gastric mucosa (PubMed:10896907). Secreted into blood and gastric juice (PubMed:10896907).

## Leptin Antibody - Protocols

Provided below are standard protocols that you may find useful for product applications.

- [Western Blot](#)
- [Blocking Peptides](#)
- [Dot Blot](#)
- [Immunohistochemistry](#)
- [Immunofluorescence](#)
- [Immunoprecipitation](#)
- [Flow Cytometry](#)
- [Cell Culture](#)

## Leptin Antibody - Images



Western blot analysis with recombinant human Leptin. Lane 1: 10 ng rh-Leptin; Lane 2: 50 ng rh-Leptin.

## Leptin Antibody - Background

Leptin is a recently identified protein product of the mouse obese gene. Mice with mutations in the obese gene that block the synthesis of leptin have been found to be obese and diabetic and to have reduced activity, metabolism and body temperature. cDNA clones encoding leptin have been isolated from human, simian, mouse and rat cells. Human leptin shares approximately 84% sequence identity with the mouse protein. Human Leptin cDNA encodes a 167 amino acid residue protein with a 21 amino acid residue signal sequence that is cleaved to yield the 146 amino acid residue mature protein. The expression of leptin mRNA has been shown to be restricted to adipose tissue. Leptin plays an important role in reproduction, immunological response and neuroendocrine signaling.