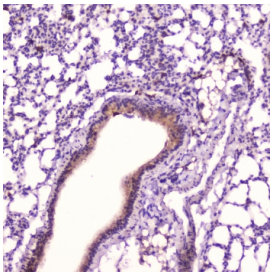
Leptin Antibody / Metabolic Signaling Hormone Antibody (RQ4442)

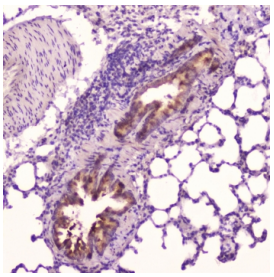
Catalog No.	Formulation	Size
RQ4442	0.5mg/ml if reconstituted with 0.2ml sterile DI water	100 ug

Bulk quote request

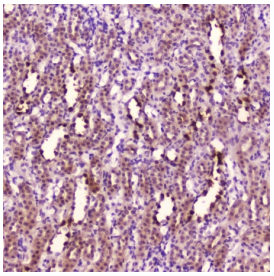
Availability	1-3 business days
Species Reactivity	Mouse, Rat
Format	Antigen affinity purified
Host	Rabbit
Clonality	Polyclonal (rabbit origin)
Isotype	Rabbit IgG
Purity	Antigen affinity
Buffer	Lyophilized from 1X PBS with 2% Trehalose and 0.025% sodium azide
UniProt	P41160
Localization	Secreted
Applications	Western blot: 0.5-1ug/ml Immunohistochemistry (FFPE): 1-2ug/ml ELISA (Capture of mouse recombinant protein): 1-5ug/ml
Limitations	This Leptin Antibody / Metabolic Signaling Hormone Antibody is available for research use only.



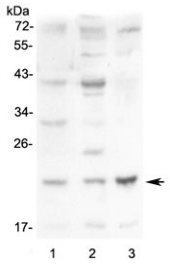
Leptin Antibody Mouse Lung IHC. Immunohistochemistry analysis of FFPE mouse lung tissue using Leptin Antibody / Metabolic Signaling Hormone Antibody at 2 ug/ml. Bronchiolar epithelial cells demonstrate HRP-DAB brown cytoplasmic staining consistent with leptin / LEP expression in respiratory epithelium, while surrounding alveolar regions show comparatively lower background signal. Nuclei are counterstained blue. HIER was performed by boiling tissue sections in pH6 10 mM citrate buffer for 10-20 minutes followed by cooling at room temperature for 20 minutes.



Leptin Antibody Rat Kidney IHC. Immunohistochemistry analysis of FFPE rat kidney tissue using Leptin Antibody / Metabolic Signaling Hormone Antibody at 2 ug/ml. Renal tubular epithelial cells demonstrate diffuse HRP-DAB brown cytoplasmic staining consistent with leptin / LEP-associated metabolic signaling expression in kidney tissue, while nuclei are counterstained blue. HIER was performed by boiling tissue sections in pH6 10 mM citrate buffer for 10-20 minutes followed by cooling at room temperature for 20 minutes.



Leptin Antibody Rat Kidney IHC. Immunohistochemistry analysis of FFPE rat kidney tissue using Leptin Antibody / Metabolic Signaling Hormone Antibody at 2 ug/ml. Renal tubular epithelial cells demonstrate HRP-DAB brown cytoplasmic staining consistent with leptin / LEP expression in kidney tissue, while glomerular regions display comparatively lower signal intensity. Nuclei are counterstained blue. HIER was performed by boiling tissue sections in pH6 10 mM citrate buffer for 10-20 minutes followed by cooling at room temperature for 20 minutes.



Leptin Antibody Mouse Tissue WB. Western blot analysis of mouse small intestine, mouse kidney, and mouse Neuro-2a cell lysates using Leptin Antibody / Metabolic Signaling Hormone Antibody at 0.5 ug/ml. Lane 1: mouse small intestine lysate, Lane 2: mouse kidney lysate, Lane 3: mouse Neuro-2a lysate. A distinct band is detected near 16-17 kDa, consistent with the predicted molecular weight of leptin / LEP. The observed signal pattern supports detection of this adipocyte-derived metabolic signaling hormone across mouse tissue and neuronal-derived cell lysate samples.

Description

Leptin (LEP) is a secreted peptide hormone encoded by the LEP gene that functions as a central regulator of appetite, energy expenditure, metabolic homeostasis, and neuroendocrine signaling. Leptin Antibody / Metabolic Signaling Hormone Antibody is useful for investigating adipokine-mediated signaling pathways involved in obesity, insulin sensitivity, inflammatory regulation, and endocrine communication. Leptin antibody, also referred to as LEP antibody, Obesity factor antibody, Adipokine antibody, or Satiety hormone antibody in the literature, recognizes a key adipocyte-derived signaling molecule that communicates systemic energy status to the hypothalamus and peripheral tissues. This rabbit polyclonal antibody supports research applications focused on metabolic regulation, adipose tissue biology, and obesity-associated signaling networks.

Leptin is primarily produced by white adipose tissue and circulates as an endocrine hormone that regulates appetite suppression and energy expenditure through activation of the leptin receptor (LEPR/Ob-R) in hypothalamic neurons. Binding of leptin to LEPR activates downstream signaling cascades including JAK2-STAT3, PI3K-AKT, MAPK/ERK, and AMPK-associated pathways involved in feeding behavior, glucose metabolism, lipid utilization, and neuroendocrine control. Physiologically, leptin serves as an important feedback mediator linking adipose tissue mass to central nervous system regulation of hunger and metabolic balance.

In addition to its established role in body weight regulation, leptin participates in immune modulation, angiogenesis, reproductive biology, wound healing, and inflammatory signaling. Elevated circulating leptin levels are frequently associated with obesity, metabolic syndrome, insulin resistance, type 2 diabetes mellitus, cardiovascular disease, and chronic low-grade inflammation. Leptin additionally influences macrophage activation, T cell responses, cytokine production, and adipose tissue inflammatory remodeling, supporting its classification as both a metabolic and immunomodulatory signaling factor.

Leptin signaling has also been implicated in cancer biology, particularly in malignancies associated with obesity-related metabolic dysregulation. Increased leptin pathway activity has been linked to tumor proliferation, angiogenesis, epithelial-

mesenchymal transition, and microenvironment remodeling in breast cancer, colorectal cancer, ovarian cancer, pancreatic cancer, and hepatocellular carcinoma. Because leptin integrates endocrine, metabolic, inflammatory, and proliferative signaling networks, LEP-directed antibodies are widely used in obesity research, endocrine biology, cancer metabolism, and translational metabolic disease studies.

At the cellular level, leptin is synthesized within secretory compartments of adipocytes and other leptin-producing cells before extracellular release into circulation. Immunohistochemical and immunofluorescence studies commonly demonstrate cytoplasmic staining patterns consistent with peptide hormone synthesis and secretory pathway localization. In tissue sections, leptin expression may be observed in adipocytes, epithelial cells, placental tissues, inflammatory microenvironments, and selected tumor cell populations depending on physiologic state and disease context. This rabbit polyclonal Leptin antibody provides a useful approach for studying metabolic signaling hormone biology, adipokine-associated communication pathways, and systemic energy regulation mechanisms.

Additional obesity and endocrine signaling research antibodies are available in our Metabolism Antibodies page.

Application Notes

Optimal dilution of the Leptin Antibody / Metabolic Signaling Hormone Antibody should be determined by the researcher.

Immunogen

Mouse Leptin recombinant protein (amino acids V22-C167) was used as the immunogen for the Leptin antibody.

Storage

After reconstitution, the Leptin antibody can be stored for up to one month at 4oC. For long-term, aliquot and store at -20oC. Avoid repeated freezing and thawing.

Alternate Names

LEP antibody, Obesity factor antibody, Adipokine antibody, Satiety hormone antibody, Adipocyte-derived hormone antibody

Copyright © NSJ Bioreagents. All rights reserved.