abcam

ab50424

Anti-Leptin Receptor antibody

Key facts

Isotype	IgG
Host species	Goat
Storage buffer	pH: 7.3 Preservative: 0.02% Sodium azide Constituents: 0.5% BSA, 0.5% Tris buffered saline
Form	Liquid
Clonality	Polyclonal
Immunogen	Synthetic Peptide within Human LEPR aa 800-850. The exact immunogen used to generate this antibody is proprietary information. Database link P48357
Purification technique	Affinity purification Immunogen
Specificity	This antibody is expected to recognise all three reported isoforms (NP_002294.2; NP_001003679.1; NP_001003680.1) of Leptin Receptor.
Concentration	0.5 mg/mL The concentration of this product may be batch-dependent Batch concentration finder →
Purification notes	Purified from goat serum by ammonium sulphate precipitation followed by antigen affinity chromatography using the immunizing peptide.

Reactivity data

WB

Tested

Species	Human
Dilution info	1-2 µg/mL

Notes	1 hour primary incubation is recommended for this product.

Species	Mouse
Dilution info	1-2 µg/mL
Notes	-

Species	Rat
Dilution info	1-2 µg/mL
Notes	-

Predicted

Species	Dog
Dilution info	-
Notes	-

IHC-P

Expected

Species	Human
Dilution info	Use at an assay dependent concentration.
Notes	-

Predicted

Species	Dog, Mouse, Rat
Dilution info	-
Notes	-

Flow Cyt

Tested

Species	Human
Dilution info	10 µg/mL

Notes	-

Expected

Species	Mouse, Rat
Dilution info	Use at an assay dependent concentration.
Notes	-

Predicted

Species	Dog
Dilution info	-
Notes	-

Target data

See full target information LEPR

Function

Receptor for hormone LEP/leptin (Probable) (PubMed:22405007). On ligand binding, mediates LEP central and peripheral effects through the activation of different signaling pathways such as JAK2/STAT3 and MAPK cascade/FOS. In the hypothalamus, LEP acts as an appetite-regulating factor that induces a decrease in food intake and an increase in energy consumption by inducing anorexinogenic factors and suppressing orexigenic neuropeptides, also regulates bone mass and secretion of hypothalamo-pituitary-adrenal hormones (By similarity) (PubMed:9537324). In the periphery, increases basal metabolism, influences reproductive function, regulates pancreatic beta-cell function and insulin secretion, is pro-angiogenic and affects innate and adaptive immunity (PubMed:12504075, PubMed:25060689, PubMed:8805376). Control of energy homeostasis and melanocortin production (stimulation of POMC and full repression of AgRP transcription) is mediated by STAT3 signaling, whereas distinct signals regulate NPY and the control of fertility, growth and glucose homeostasis. Involved in the regulation of counter-regulatory response to hypoglycemia by inhibiting neurons of the parabrachial nucleus. Has a specific effect on T lymphocyte responses, differentially regulating the proliferation of naive and memory T -ells. Leptin increases Th1 and suppresses Th2 cytokine production (By similarity). Isoform A. May transport LEP across the blood-brain barrier. Binds LEP and mediates LEP endocytosis. Does not induce phosphorylation of and activate STAT3. Isoform E. Antagonizes Isoform A and isoform B-mediated LEP binding and endocytosis.

Storage

Shipped at conditions	Blue Ice

Appropriate short-term storage conditions	+4°C
Appropriate long-term storage conditions	-20°C
Aliquoting information	Upon delivery aliquot
Storage information	Avoid freeze / thaw cycle

Supplementary info

This supplementary information is collated from multiple sources and compiled automatically.

Activity summary	The Leptin Receptor commonly known as LEPR or OB-R is a protein that plays an important role in energy homeostasis and weight regulation. Mechanically it functions as a receptor for leptin the hormone predominantly produced by adipocytes. Leptin binding triggers activation of intracellular signaling pathways. The molecular weight of the Leptin Receptor can vary as it exists in several isoforms due to alternative splicing. It is prominently expressed in the hypothalamus and other tissues involved in energy regulation such as the liver and skeletal muscle.
Biological function summary	The Leptin Receptor acts as a gateway for leptin to exert its effects on the central nervous system and peripheral tissues. When leptin binds to LEPR it facilitates the formation of receptor complexes that engage downstream signaling molecules like STAT3 and MAPK. This results in regulation of appetite and energy expenditure. LEPR is not part of a complex with other receptors but it interacts with intracellular signaling proteins to mediate leptin's physiological effects.
Pathways	The Leptin Receptor is integral to the JAK-STAT signaling pathway and the MAPK pathway both of which are important in maintaining energy balance. LEPR activates JAK2 upon ligand binding leading to phosphorylation events that propagate the signal. It is closely associated with other proteins like SOCS3 which acts as a feedback inhibitor of leptin signaling playing a balancing role in the pathways mentioned.
Associated diseases and disorders	The Leptin Receptor has significant associations with obesity and certain types of diabetes. LEPR mutations or deficiencies can lead to hyperphagia leading to severe obesity due to the disruption of normal leptin signaling. Additionally interactions between leptin and insulin signaling pathways can impact the development of Type 2 diabetes. In these conditions the Leptin Receptor often interacts with the insulin receptor highlighting its role in the complex network of metabolic regulation.

Product promise

Tested

We have tested this species and application combination and it works. It is covered by our product promise.

Expected

We have not tested this specific species and application combination in-house, but expect it will work. It is covered by our product promise.

Predicted

This species and application combination has not been tested, but we predict it will work based on strong homology. However, this combination is not covered by our product promise.

Not recommended

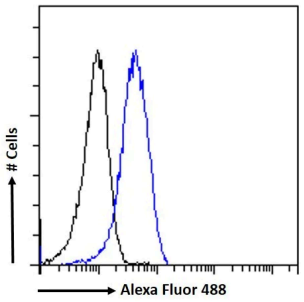
We do not recommend this combination. It is not covered by our product promise.

We are dedicated to supporting your work with high quality reagents and we are here for you every step of the way should you need us.

In the unlikely event of one of our products not working as expected, you are covered by our product promise.

Full details and terms and conditions can be found here:
Terms & Conditions.

1 product image



Flow Cytometry - Anti-Leptin Receptor antibody (ab50424)

Leptin Receptor Flow Cytometry staining using goat Anti-Leptin Receptor antibody

Flow cytometric analysis of paraformaldehyde fixed A431 cells (blue line), permeabilized with 0.5% Triton. Primary incubation 1hr (10µg/mL) followed by Alexa Fluor 488 secondary antibody (1µg/mL). IgG control: Unimmunized goat IgG (black line) followed by Alexa Fluor 488 secondary antibody.

Please note: All products are 'FOR RESEARCH USE ONLY. NOT FOR USE IN DIAGNOSTIC OR THERAPEUTIC PROCEDURES'.