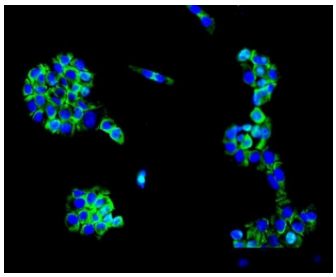
MC4-R Antibody / Energy Homeostasis Receptor Antibody (RQ6059)

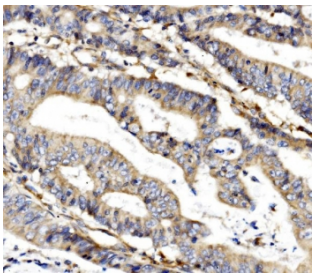
Catalog No.	Formulation	Size
RQ6059	0.5mg/ml if reconstituted with 0.2ml sterile DI water	100 ug

Bulk quote request

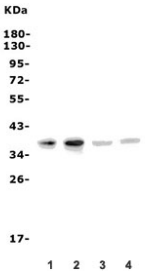
Availability	1-3 business days
Species Reactivity	Human, Mouse, Rat
Format	Antigen affinity purified
Host	Rabbit
Clonality	Polyclonal (rabbit origin)
Isotype	Rabbit IgG
Purity	Affinity purified
Buffer	Lyophilized from 1X PBS with 2% Trehalose and 0.025% sodium azide
UniProt	P32245
Applications	Western blot: 0.5-1ug/ml Immunohistochemistry: 1-2ug/ml Immunofluorescence: 2-4ug/ml Flow cytometry: 1-3ug/million cells
Limitations	This MC4-R Antibody / Energy Homeostasis Receptor Antibody is available for research use only.



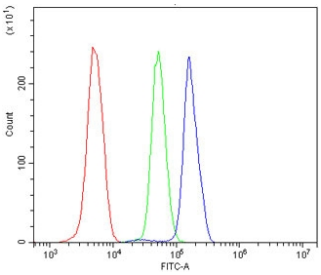
MC4-R Antibody A431 Cell IF. Immunofluorescent staining of FFPE human A431 cells using MC4-R antibody demonstrates prominent cytoplasmic and membranous staining (green), consistent with expression of Melanocortin Receptor 4 (MC4-R). MC4-R is a G protein-coupled receptor that mediates melanocortin-dependent signaling pathways involved in energy homeostasis, appetite regulation, neuroendocrine communication, and metabolic control. The observed staining pattern is consistent with the expected localization of a membrane-associated receptor and supports the utility of MC4-R antibody for studies of melanocortin receptor biology and hormone-mediated signaling pathways. DAPI nuclear stain (blue) identifies cell nuclei and provides contrast to the predominantly cytoplasmic and cell surface-associated distribution of MC4-R. HIER: steam section in pH6 citrate buffer for 20 min.



MC4-R Antibody Human Rectal Cancer IHC. Immunohistochemistry staining of FFPE human rectal cancer tissue using MC4-R antibody demonstrates moderate cytoplasmic and membranous staining within malignant gland-forming epithelial cells, consistent with expression of Melanocortin Receptor 4 (MC4-R). MC4-R is a G protein-coupled receptor that mediates melanocortin signaling pathways involved in energy homeostasis, neuroendocrine communication, and metabolic regulation. The observed staining pattern is consistent with the expected localization of a membrane-associated receptor and supports the utility of MC4-R antibody for studies of receptor-mediated signaling, endocrine regulation, and melanocortin pathway biology. HIER: boil tissue sections in pH8 EDTA for 20 min and allow to cool before testing.



MC4-R Antibody Human Mouse Rat Cell Line WB. Western blot analysis of human U-87 MG and HEK293 cell lysates, together with rat PC-12 and mouse Neuro-2a cell lysates, using MC4-R antibody demonstrates a distinct immunoreactive band at approximately 37-40 kDa across all samples, consistent with expression of Melanocortin Receptor 4 (MC4-R). MC4-R is a G protein-coupled receptor that mediates melanocortin-dependent signaling pathways involved in energy homeostasis, appetite regulation, neuroendocrine communication, and metabolic control. The observed cross-species detection pattern supports the conserved nature of MC4-R and demonstrates the utility of this antibody for studies of melanocortin receptor biology and hormone-mediated signaling pathways. Predicted molecular weight: ~37 kDa.



MC4-R Antibody U937 Flow Cytometry. Flow cytometric analysis of human U937 cells using MC4-R antibody demonstrates a clear rightward shift of the blue histogram (MC4-R antibody) relative to the green histogram (isotype control) and red histogram (cells alone), consistent with expression of Melanocortin Receptor 4 (MC4-R). MC4-R is a G protein-coupled receptor that mediates melanocortin signaling pathways involved in energy homeostasis, appetite regulation, neuroendocrine communication, and metabolic control. The observed staining pattern supports detection of endogenous MC4-R expression and demonstrates the utility of this antibody for studies of receptor-mediated signaling, endocrine regulation, and melanocortin pathway biology. Cells were stained with 1 ug antibody per million cells following blocking with goat sera.

Description

MC4-R Antibody / Energy Homeostasis Receptor Antibody is designed for the detection and study of MC4-R (Melanocortin Receptor 4), a member of the melanocortin receptor family and the G protein-coupled receptor (GPCR) superfamily. MC4-R functions as a key regulator of neuroendocrine signaling pathways that coordinate energy balance, feeding behavior, and metabolic homeostasis. Through its ability to respond to melanocortin peptides, MC4-R serves as an important molecular link between hormonal signals and physiologic regulation of energy utilization throughout the body.

As an energy homeostasis receptor, MC4-R participates in signaling networks that help maintain appropriate balance between energy intake and expenditure. Activation of MC4-R influences intracellular signaling pathways that regulate neuronal activity, endocrine communication, and physiologic responses involved in maintaining metabolic equilibrium. These functions have established MC4-R as one of the most extensively studied receptors involved in systemic energy regulation and neuroendocrine control.

MC4-R is primarily recognized for its role within central nervous system pathways that integrate hormonal, nutritional, and environmental information. The receptor contributes to signaling mechanisms that influence feeding behavior, body weight regulation, and overall metabolic status. Because maintenance of energy homeostasis requires precise communication between neuronal and endocrine systems, MC4-R occupies a central position within conserved physiologic regulatory networks.

Beyond its role in appetite and metabolism, MC4-R has attracted significant research interest in studies of neuroendocrine biology, endocrine signaling, obesity-associated pathways, and developmental physiology. As a GPCR, MC4-R mediates complex signaling events that influence cellular responses to extracellular hormonal cues. Researchers continue to investigate how melanocortin receptor pathways contribute to physiologic adaptation, metabolic regulation, and maintenance of homeostasis under changing environmental conditions.

The biologic importance of MC4-R is underscored by its highly conserved function across vertebrate species and its central role within melanocortin signaling networks. Investigation of MC4-R expression and regulation has provided valuable insight into the molecular mechanisms that coordinate communication between the nervous system and peripheral metabolic tissues. Consequently, MC4-R remains an important target for studies of neurobiology, endocrinology, and metabolic signaling.

MC4-R Antibody is useful for investigating energy homeostasis, appetite regulation, neuroendocrine signaling, melanocortin receptor biology, and metabolic control pathways. Researchers utilize MC4-R Antibody reagents to evaluate protein expression patterns and study molecular mechanisms governing hormone-mediated signaling, physiologic homeostasis, and receptor-dependent cellular responses.

Explore additional antibodies to metabolic regulators, appetite control pathways, and energy homeostasis signaling proteins on our Metabolism Antibodies page.

Application Notes

Optimal dilution of the MC4-R Antibody / Energy Homeostasis Receptor Antibody should be determined by the researcher.

Immunogen

Amino acids QELRKTFKEIICCYPLGGLCDLSSRY from the human protein were used as the immunogen for the MC4-R antibody.

Storage

After reconstitution, the MC4-R 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

MC4-R Antibody, MC4R Antibody, Melanocortin Receptor 4 Antibody, Energy Homeostasis Receptor Antibody, Appetite Regulation Receptor Antibody, Neuroendocrine Signaling Receptor Antibody, Melanocortin Receptor Antibody

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