abcam

ab230451

Anti-MC3-R antibody

Key facts

Isotype	IgG
Host species	Rabbit
Storage buffer	pH: 7.4 Preservative: 0.09% Sodium azide Constituents: PBS
Form	Liquid
Clonality	Polyclonal
Immunogen	Synthetic Peptide within Human MC3R aa 50-150 conjugated to Keyhole Limpet Haemocyanin. The exact immunogen used to generate this antibody is proprietary information. Database link P41968
Purification technique	Affinity purification Protein A
Concentration	0.5 mg/mL The concentration of this product may be batch-dependent Batch concentration finder →

Reactivity data

IHC-P

Tested

Species	Human
Dilution info	1/100
Notes	Perform heat-mediated antigen retrieval before commencing with IHC staining protocol.

WB

Tested

Species	Human
Dilution info	1/1000
Notes	-

Flow Cyt (Intra)

Tested

Species	Human
Dilution info	-
Notes	-

Target data

See full target information MC3R

Function

G protein-coupled receptor for melanocyte-stimulating hormones (alpha, beta, and gamma-MSH) and corticotropin/ACTH, which are peptide products of the POMC precursor (PubMed:37524700, PubMed:8463333). Upon activation, couples to G(s) protein, stimulating adenylate cyclase and the cAMP-dependent signaling pathway, which contributes to the regulation of energy homeostasis (PubMed:18231126, PubMed:37524700, PubMed:8463333). Required for expression of anticipatory patterns of activity and wakefulness during periods of limited nutrient availability and for the normal regulation of circadian clock activity in the brain (By similarity). Binding of the Agouti-related protein/AGPR antagonist precludes alpha-MSH-induced signaling, blocking cAMP production (PubMed:9311920).

Storage

Shipped at conditions	Blue Ice
Appropriate short-term storage duration	1-2 weeks
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	MC3-R also known as melanocortin 3 receptor is a member of the melanocortin receptor family. It functions as a G-protein-coupled receptor with a mass of approximately 35 kDa. MC3-R is expressed mainly in the hypothalamus and pituitary gland with lower expression seen in other regions of the brain and peripheral tissues. It binds to several peptide hormones including alpha- beta- and gamma-melanocyte-stimulating hormones (MSH) and adrenocorticotropic hormone (ACTH).
Biological function summary	MC3-R serves roles in controlling energy homeostasis and inflammatory responses. This receptor is not part of a complex but it contributes to several physiological processes such as modulation of fat storage and glucose metabolism. It influences feeding behavior and energy expenditure by acting on specific neuropeptides. Its activity links to several neuroendocrine functions as well.
Pathways	MC3-R integrates into the central melanocortin system which involves the regulation of energy balance. It operates alongside other melanocortin receptors such as MC4-R to mediate appetite and body weight management. The receptor also participates in the regulation of the hypothalamic-pituitary-adrenal (HPA) axis interacting with proteins like pro-opiomelanocortin (POMC) and Agouti-related peptide (AgRP) in its pathways.
Associated diseases and disorders	MC3-R connects to obesity and metabolic syndrome. Disruptions in its signaling can lead to abnormal energy balance and weight gain. This receptor also relates to inflammatory diseases as dysregulation of its pathways may contribute to chronic inflammatory conditions. MC4-R and POMC are among the proteins that associate with MC3-R in these disorders reflecting its role in complex physiological and pathological processes.

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

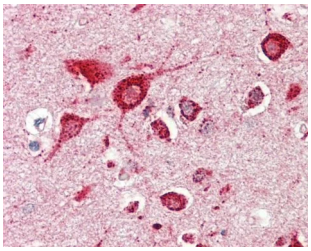
We do not recommend this combination. It is not covered by our product promise.

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.

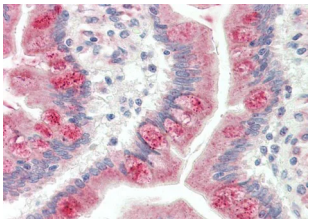
4 product images



Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-MC3-R antibody (ab230451)

MC3-R Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) staining using rabbit Anti-MC3-R antibody

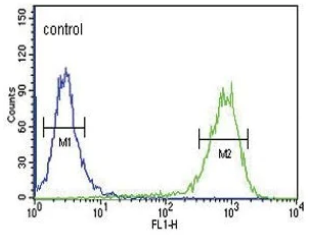
Formalin-fixed, paraffin-embedded human brain (cortex) tissue stained for MC3 Receptor / MC3-R using ab230451 at 1/100 dilution in immunohistochemical analysis.



Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-MC3-R antibody (ab230451)

MC3-R Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) staining using rabbit Anti-MC3-R antibody

Formalin-fixed, paraffin-embedded human small intestine tissue stained for MC3 Receptor / MC3-R using ab230451 at 1/100 dilution in immunohistochemical analysis.

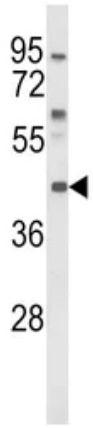


Flow Cytometry (Intracellular) - Anti-MC3-R antibody (ab230451)

MC3-R Flow Cytometry (Intracellular) staining using rabbit Anti-MC3-R antibody

Intracellular flow cytometric analysis of K562 (human chronic myelogenous leukemia cell line from bone marrow) cells labeling MC3 Receptor / MC3-R with ab230451 at 1/10 dilution (right histogram) compared to a negetive control (left histogram). FITC-conjugated goat-anti-rabbit secondary antibodies were used for the analysis.

Western blot - Anti-MC3-R antibody (ab230451)



All lanes:
Western blot - Anti-MC3-R antibody (ab230451) at 1/1000 dilution

All lanes:
K562 (human chronic myelogenous leukemia cell line from bone marrow) whole cell lysate at 35 µg

Predicted band size: 40 kDa

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