10320 Camino Santa Fe, Suite G
San Diego, CA 92121
Tel: 858.875.1900 Fax: 858.875.1999

MC4 Receptor Antibody

Rabbit mAb
Catalog # AP91945

Product Information

Application	WB
Primary Accession	P32245
Reactivity	Rat, Human, Mouse
Clonality	Monoclonal
Other Names	MC4R; Melanocortin 4 receptor;
Isotype	Rabbit IgG
Host	Rabbit
Calculated MW	36943

Additional Information

Dilution	WB 1:500~1:2000
Purification	Affinity-chromatography
Immunogen	A synthesized peptide derived from human MC4 Receptor
Description	Receptor specific to the heptapeptide core common to adrenocorticotropic hormone and alpha-, beta-, and gamma-MSH. This receptor is mediated by G proteins that stimulate adenylate cyclase.
Storage Condition and Buffer	Rabbit IgG in phosphate buffered saline , pH 7.4, 150mM NaCl, 0.02% sodium azide and 50% glycerol. Store at +4°C short term. Store at -20°C long term. Avoid freeze / thaw cycle.

Protein Information

Name	MC4R {ECO:0000303|PubMed:29311635, ECO:0000312|HGNC:HGNC:6932}
Function	G protein-coupled receptor that binds melanocyte-stimulating hormones (alpha- and beta-MSH) and corticotropin/ACTH, which are peptide products of the POMC precursor (PubMed:12646665, PubMed:14764818, PubMed:25163632, PubMed:32327598, PubMed:33858992, PubMed:8392067). Functions as a central component of the leptin-melanocortin pathway, which is essential for maintaining energy homeostasis (PubMed:32327598, PubMed:33858992). Upon activation, couples to G(s) protein, stimulating adenylate cyclase and the cAMP- dependent signaling pathway, which promotes anorexogenic signaling in the hypothalamus and contributes to a negative energy balance (PubMed:12588803, PubMed:14764818, PubMed:25163632, PubMed:33858992). Regulates food intake: activation by agonists suppresses appetite, whereas the antagonist Agouti-related protein/AGRP precludes agonist- induced signaling, thereby stimulating appetite (PubMed:9311920, PubMed:29311635). Modulates the firing activity of neurons in paraventricular nucleus (PVN) of the hypothalamus via alpha-MSH and AGRP regulation of inwardly rectifying

potassium channel KCNJ13 closure, independently of G(s) signaling (PubMed:32327598). In the PVN, also interacts with opsin 3/OPN3, which couples to G(i/o) proteins to inhibit MC4R-mediated cAMP signaling, thereby promoting food intake (PubMed:39951488). In intestinal epithelial cells, contributes to inhibition of hepatic glucose production via nesfatin-1/NUCB2, leading to increased cAMP levels and glucagon-like peptide 1 (GLP-1) secretion (PubMed:39562740). Interaction with MGRN1 displaces the G(s) protein, further decreasing MC4R signaling activity (PubMed:19737927). Also activated by gamma-MSH, though with low potency (PubMed:8392067).

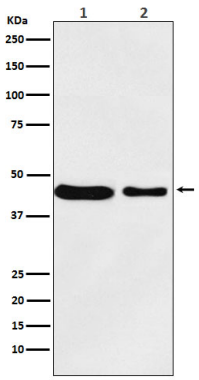
Cellular Location

Cell membrane; Multi-pass membrane protein. Cell projection, cilium membrane; Multi-pass membrane protein

Tissue Location

Brain, placental, and gut tissues.

Images



Western blot analysis of MC4 Receptor expression in (1) MCF7 cell lysate; (2) RAW264.7 cell lysate.

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