

Product datasheet for **TA328639**

MC4 Receptor (MC4R) Rabbit Polyclonal Antibody

Product data:

Product Type:	Primary Antibodies
Applications:	IF, IHC, WB
Recommended Dilution:	WB: 1:200-1:2000; IHC: 1:100-1:3000
Reactivity:	Human, Mouse, Rat
Host:	Rabbit
Clonality:	Polyclonal
Immunogen:	Peptide (C)HRGMHTSLHLWNRSS, corresponding to amino acid residues 6-20 of human MC4R. Extracellular, N terminal.
Formulation:	Lyophilized. Concentration before lyophilization ~0.8mg/ml (lot dependent, please refer to CoA along with shipment for actual concentration). Buffer before lyophilization: phosphate buffered saline (PBS), pH 7.4, 1% BSA, 0.05% NaN ₃ .
Reconstitution Method:	Add 50 ul double distilled water (DDW) to the lyophilized powder.
Purification:	Affinity purified on immobilized antigen.
Conjugation:	Unconjugated
Storage:	Store at -20°C as received.
Stability:	Stable for 12 months from date of receipt.
Gene Name:	melanocortin 4 receptor
Database Link:	NP_005903 Entrez Gene 17202 Mouse Entrez Gene 25635 Rat Entrez Gene 4160 Human P32245



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Background:

Melanocortin Receptor 4 (MC4R) is one of five members of the melanocortin receptor family, which belongs to the 7-transmembrane domain, G protein-coupled receptor (GPCR) superfamily. The ligands of these receptors, the melanocortins, are a group of structurally-related peptides comprising the α -, β -, and γ -melanocyte-stimulating hormone (α -, β -, γ -MSH) and the adrenocorticotrophic hormone (ACTH), all of which are derived from post-translational processing of a common precursor peptide, proopiomelanocortin (POMC). One of the salient features of the melanocortin signaling system is the existence of two endogenous antagonists, proteins that bind specifically to the receptor and have an inhibitory effect. These antagonist proteins are termed agouti (or agouti signaling protein, ASP) and agouti-related protein (AGRP). All five melanocortin receptors bind their agonists (the melanocortins) and their endogenous antagonists (agouti/ASP and AGRP) with differing affinities. The order of potency for MC4R activation is α -MSH = ACTH > β -MSH >> γ -MSH. AGRP and agouti/ASP are both endogenous antagonists of MC4R. MC4R is widely expressed in the brain including the cortex, thalamus, hypothalamus, and brain stem. The best understood physiological role of MC4R is in the regulation of feeding behavior and the control of body weight. Indeed, mice with a targeted disruption of the MC4R gene display an obese phenotype characterized by increased adiposity, hyperphagia, and hyperleptinaemia. Similarly, MC4R mutations in humans have been associated with severe childhood obesity including characteristics very similar to the MC4R knockout mouse phenotype. All these make MC4R an attractive drug target for the treatment of obesity.

Synonyms:

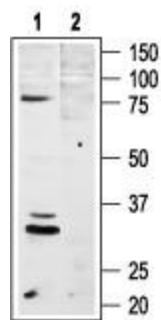
MGC126851; MGC138197

Protein Families:

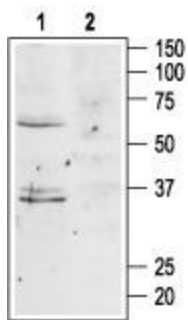
Druggable Genome, GPCR, Transmembrane

Protein Pathways:

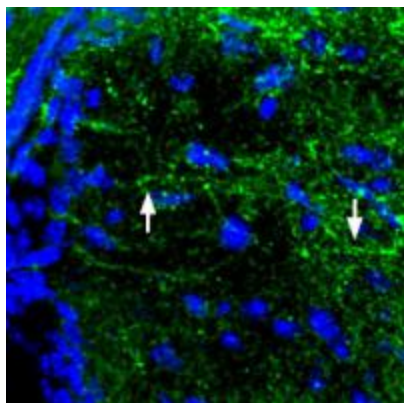
Neuroactive ligand-receptor interaction

Product images:

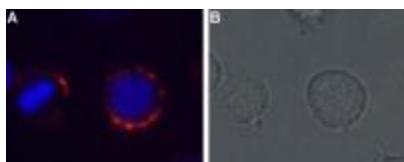
Western blot analysis of rat brain lysates: 1. Anti-Melanocortin Receptor 4 (extracellular) antibody, (1:400). 2. Anti-Melanocortin Receptor 4 (extracellular) antibody, preincubated with the control peptide antigen.



Western blot analysis of mouse brain lysates: 1. Anti-Melanocortin Receptor 4 (extracellular) antibody, (1:400). 2. Anti-Melanocortin Receptor 4 (extracellular) antibody, preincubated with the control peptide antigen.



Expression of MC4R in mouse brain. Immunohistochemical staining of perfusion-fixed frozen mouse brain sections using Anti-Melanocortin Receptor 4 (extracellular) antibody, (1:100). MC4R (green fluorescence) is expressed in the mouse hypothalamus in axonal processes (arrows). Hoechst 33342 is used as the counterstain (blue).



Expression of MC4R in rat pituitary cell line. Immunocytochemical staining of live intact GH3 cells with Anti-Melanocortin Receptor 4 (extracellular) antibody, (1:50). A. MC4R staining was observed, followed by Alexa-555-conjugated goat anti-rabbit secondary antibody (red staining). Hoechst 33342 (blue) is used to visualize the nuclei. B. Live view of the same field as A.