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# MC4 Receptor Antibody

Purified Rabbit Polyclonal Antibody (Pab)
Catalog # AP51334

## Product Information

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| **Application** | WB, IHC-P |
| **Primary Accession** | P32245 |
| **Reactivity** | Human, Mouse, Rat |
| **Host** | Rabbit |
| **Clonality** | Polyclonal |
| **Calculated MW** | 36943 |

## Additional Information

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| **Gene ID** | 4160 |
| **Other Names** | Melanocortin receptor 4, MC4-R, MC4R |
| **Target/Specificity** | KLH-conjugated synthetic peptide encompassing a sequence within the C-term region of human MC4 Receptor. The exact sequence is proprietary. |
| **Dilution** | WB~~1:1000 IHC-P~~N/A |
| **Format** | 0.01M PBS, pH 7.2, 0.09% (W/V) Sodium azide, Glycerol 50% |
| **Storage** | Store at -20 °C.Stable for 12 months from date of receipt |

## Protein Information

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| **Name** | MC4R ( 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). 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, |

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| | 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 |
| **Tissue Location** | Brain, placental, and gut tissues. |

## Background

Receptor specific to the heptapeptide core common to adrenocorticotropic hormone and alpha-, beta-, and gamma-MSH. Plays a central role in energy homeostasis and somatic growth. This receptor is mediated by G proteins that stimulate adenylate cyclase (cAMP).

## References

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Mountjoy K.G.,et al.Mol. Endocrinol. 8:1298-1308(1994).
Kopatz S.A.,et al.Submitted (JAN-2003) to the EMBL/GenBank/DDBJ databases.
Ota T.,et al.Nat. Genet. 36:40-45(2004).
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