

Product datasheet for **TA328624**

MC1 Receptor (MC1R) 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, Rat
Host:	Rabbit
Clonality:	Polyclonal
Immunogen:	Peptide (C)HAQGIARLHKRQRPVH, corresponding to amino acid residues 217-232 of human MC1R. 3rd intracellular loop.
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, 0.025% 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 1 receptor
Database Link:	NP_002377 Entrez Gene 102552838 Rat Entrez Gene 4157 Human Q01726



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Background:

Melanocortin Receptor 1 (MC1R) belongs to a five-member receptor family known as the melanocortin receptors. The melanocortin receptors are members of the 7-transmembrane domain, G protein-coupled receptor (GPCR) superfamily. The receptors ligands, the melanocortins, are a group of structurally derived peptides consisting of α -, β - and γ -melanocyte stimulating hormone (α -, β -, γ -MSH) and the adrenocorticotrophic hormone (ACTH) all of which are derived from the post-translational processing of a common precursor peptide, proopiomelanocortin (POMC). One of the most salient features of the melanocortin signaling system is the presence of two endogenous antagonists, that is proteins that bind specifically to the receptor but instead of activating it have an inhibitory effect. The 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 and AGRP) with different affinities. MC1R was the first member of the melanocortin receptor family to be cloned. The receptor transduces signals via Gs resulting in the activation of adenylate cyclase and production of cAMP. MC1R binds its ligands with the following potency: α -MSH = ACTH > β -MSH > γ -MSH. MC1R also binds the endogenous antagonist agouti with high affinity. MC1R can be described as the α -melanocyte α -MSH receptor. The receptor is expressed in the skin where it has a key role in determining skin and hair pigmentation. In fur-bearing mammals, the local ratio between α -MSH and agouti will determine coat pigmentation as α -MSH stimulates and agouti inhibits melanin production. In humans, especially in Caucasians, the MC1R gene is highly polymorphic and several allelic variants have been correlated with red-hair, poor tanning ability and increased risk of melanoma. In addition, MC1R expression in melanoma has been shown to be upregulated up to 20-fold when compared to normal melanocytes. The melanocortins and particularly α -MSH have significant anti-inflammatory properties. Since α -MSH binds to MC1R with the highest potency, it was proposed that the latter mediated the anti-inflammatory effects of α -MSH. Indeed, MC1R expression has been demonstrated in several cells of the immune system including macrophages and neutrophils.

Synonyms:

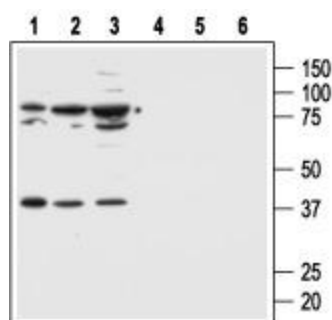
CMM5; MSH-R; SHEP2

Protein Families:

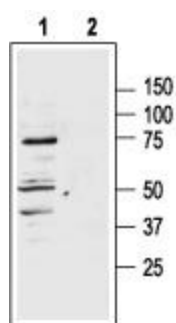
Druggable Genome, GPCR, Transmembrane

Protein Pathways:

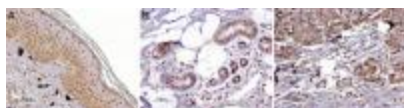
Melanogenesis, Neuroactive ligand-receptor interaction

Product images:


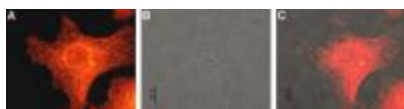
Western blot analysis of human normal skin fibroblast cell line Malme-3 (lanes 1 and 4) and human malignant melanoma cell lines Malme-3M (lanes 2 and 5) and A875 (lanes 3 and 6): 1, 2, 3. Anti-Melanocortin Receptor 1 antibody, (1:500). 4, 5, 6. Anti-Melanocortin Receptor 1 antibody, preincubated with the control peptide antigen



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



Expression of MC1R in normal skin and melanoma. Immunohistochemical staining of paraffin embedded normal skin and melanoma sections using Anti-Melanocortin Receptor 1 antibody (1:100). MCR1 staining (red-brown color) is highly specific in A. epidermal cells, B. eccrine sweat gland cells and C. melanoma cells. Color reaction was obtained with DAB. Hematoxylin is used as the counterstain.



Expression of MC1R in human Malme-3M cells. Immunocytochemical staining of human paraformaldehyde fixed and permeabilized malignant melanoma cell lines (Malme-3M). A. Cells were stained with Anti-Melanocortin Receptor 1 antibody, (1:200) followed by goat-anti-rabbit-AlexaFluor-555 secondary antibody. B. Live view of the same field as in (A). C. Computer merge of (A) and (B).