

## Product datasheet for **TA328640**

### Muscarinic Acetylcholine Receptor M5 (CHRM5) Rabbit Polyclonal Antibody

#### Product data:

Product Type:	Primary Antibodies
Applications:	WB
Recommended Dilution:	WB: 1:200-1:2000
Reactivity:	Human, Rat
Host:	Rabbit
Clonality:	Polyclonal
Immunogen:	Peptide (C)HNATTVNGTPVNHQPLER, corresponding to amino acid residues 7-24 of human M5 muscarinic receptor. Extracellular, N-terminus.
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 <sub>3</sub> .
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:	cholinergic receptor muscarinic 5
Database Link:	<a href="#">NP_036257</a> <a href="#">Entrez Gene 53949 Rat</a> <a href="#">Entrez Gene 1133 Human</a> <a href="#">P08912</a>



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**Background:**

Acetylcholine is a neurotransmitter which activates two different groups of receptors: nicotinic acetylcholine receptors (nAChRs) which belong to the superfamily of ligand-gated ion channels and muscarinic acetylcholine receptors (mAChR), belonging to the G-protein coupled receptor (GPCR) superfamily. There are five separate gene products that put together this GPCR subfamily, M1-M5, and like all GPCR have seven transmembrane spanning domains. Generally, M1, M3 and M5 muscarinic receptors are known to activate phospholipase C (PLC) via Gq coupling, while M2 and M4 muscarinic receptors couple to Gi/o, and therefore inhibit adenylate cyclase. This classification is however not clear cut. mAChR can activate adenylate cyclase by coupling to Gs. In addition, M2 and M4 muscarinic receptors, when overexpressed can also activate adenylate cyclase in some systems. Evidence suggests that muscarinic receptors can form homo or heterodimers at that the dimer formed can subsequently affect the downstream signaling pathways. Muscarinic receptors have been shown to regulate voltage-gated Ca<sup>2+</sup> channels, namely Cav2.1 as well acid sensing ion channels (ASIC). Generally speaking the actions of muscarinic receptors on ion channels can be either via 2nd messengers or through their direct action on the channels once activated. Furthermore, muscarinic receptors can also promote endocytosis of ion channels (Kv1.2 for example) by recruiting tyrosine kinases that phosphorylate the channel in order to terminate its activity. Other diverse and important functions of muscarinic receptors include cell growth, survival and physiology. Expression of muscarinic receptors is found in neurons in the central nervous system as well as in the peripheral nervous system. In the non-nervous system, these receptors are expressed in the cardiac and smooth muscle, lung, intestine, ovary and urothelium. M5 muscarinic receptor has been the hardest receptor to study as there is no specific pharmacology targeted against the receptor and no high level of expression has been detected in tissues. However, the effects of single knockout mice were studied and it was observed that in M5 muscarinic receptor knockout mice, there is a moderate decrease in ligand binding in the lung and bladder, two organs expressing M5 muscarinic receptor. In addition, it has been proposed that M5 muscarinic receptor may be involved in interstitial cystitis, a urinary bladder disorder.

**Synonyms:**

HM5

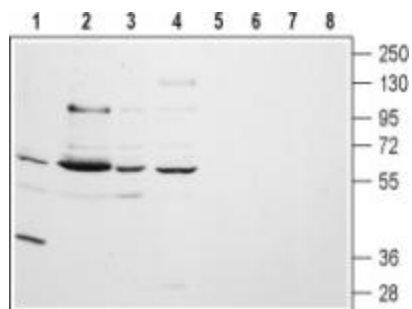
**Protein Families:**

Druggable Genome, GPCR, Transmembrane

**Protein Pathways:**

Calcium signaling pathway, Neuroactive ligand-receptor interaction, Regulation of actin cytoskeleton

## Product images:



Western blot analysis of rat lung (lanes 1 and 5) and brain (lanes 2 and 6) membranes, A-875 (lanes 3 and 7) and MALM-3M (lanes 4 and 8) cell lysates: 1-4. Anti-M5 Muscarinic Receptor (extracellular) antibody, (1:200), 5-8. Anti-M5 Muscarinic Receptor (extracellular) antibody, preincubated with the control peptide antigen.