

## Product datasheet for **TA328870**

### Chrm4 Rabbit Polyclonal Antibody

#### Product data:

Product Type:	Primary Antibodies
Applications:	IF, WB
Recommended Dilution:	WB: 1:200-1:2000; FC: 1:50-1:600
Reactivity:	Human, Mouse, Rat
Host:	Rabbit
Clonality:	Polyclonal
Immunogen:	Peptide(C) RTLNPASKWSK, corresponding to amino acid residues 330-340 of rat M4 Muscarinic Receptor. 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, 0.05% 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 4
Database Link:	<a href="#">NP_113735</a> <a href="#">Entrez Gene 1132 Human</a> <a href="#">Entrez Gene 12672 Mouse</a> <a href="#">Entrez Gene 25111 Rat</a> <a href="#">P08485</a>



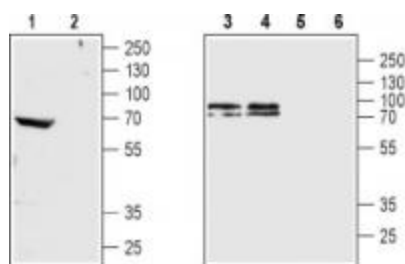
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**Background:**

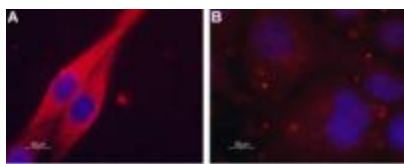
Acetylcholine is a neurotransmitter which activates two different groups of receptors: nicotinic acetylcholine receptors (nAChRs) which belong to the superfamily of ligand-gated ion channels and muscarinic acetylcholine receptors (mAChR), belonging to the G-protein coupled receptor (GPCR) superfamily. There are five separate gene products that put together this GPCR subfamily, M1-M5. 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. M4 muscarinic receptor is mostly expressed in the striatum where it colocalizes with D1 dopamine receptors. Malfunction of M4 muscarinic receptor is associated with a number of psychological and neurodegenerative diseases like schizophrenia, Alzheimer's and Parkinson's diseases.

**Synonyms:**

HM4; M4R; OTTHUMP00000205575

**Product images:**

Western blot analysis of rat brain membrane (lanes 1 and 2), mouse brain membrane (lane 3 and 5) and SH-SY5Y cell lysates (lanes 4 and 6): 1, 3, 4. Anti-M4 Muscarinic Receptor antibody, (1:200). 2, 5, 6. Anti-M4 Muscarinic Receptor antibody, preincubated with the control peptide antigen.



Expression of M4 muscarinic receptor in C6 transfected cells. Immunocytochemical staining of paraformaldehyde-fixed and permeabilized C6 cells. A. Transfected cells were stained using Anti-M4 Muscarinic Receptor antibody, (1:100) followed by goat anti-rabbit-AlexaFluor-594 secondary antibody (red). B. Non-transfected cells were stained using Anti-M4 Muscarinic Receptor antibody (1:100), followed by goat anti-rabbit-AlexaFluor-594 secondary antibody (red). DAPI is used as the counterstain (blue).