

Acetylcholine receptors (muscarinic) in GtoPdb v.2025.3

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Abstract

Muscarinic acetylcholine receptors (mAChRs) (**nomenclature as agreed by the NC-IUPHAR Subcommittee on Muscarinic Acetylcholine Receptors [58]**) are activated by the endogenous agonist [acetylcholine](#) [63, 162] [154]. All five (M1-M5) mAChRs are ubiquitously expressed in the human body and are therefore attractive targets for many disorders. Functionally, M₁, M₃, and M₅ mAChRs preferentially couple to G_{q/11} proteins, whilst M₂ and M₄ mAChRs predominantly couple to G_{i/o} proteins. Both agonists and antagonists of mAChRs are clinically approved drugs, including [pilocarpine](#) for the treatment of elevated intra-ocular pressure and glaucoma, and [atropine](#) for the treatment of bradycardia and poisoning by muscarinic agents such as organophosphates. Of note, it has been observed that mAChRs dimerise reversibly [140] and that dimerisation/oligomerisation can be affected by ligands [193, 206].

Contents

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