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Acetylcholine receptors (muscarinic) in GtoPdb v.2023.1

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Abstract

Muscarinic acetylcholine receptors (mAChRs) (**nomenclature as agreed by the NC-IUPHAR Subcommittee on Muscarinic Acetylcholine Receptors [53]**) are activated by the endogenous agonist acetylcholine. All five (M1-M5) mAChRs are ubiquitously expressed in the human body and are therefore attractive targets for many disorders. Functionally, M_1, M_3, and M_5 mAChRs preferentially couple to $G_{q/11}$ proteins, whilst M_2 and M_4 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 [134] and that dimerisation/oligomerisation can be affected by ligands [183, 196].

Contents

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