

Positive Allosteric Modulators of Nicotinic Acetylcholine Receptor

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Title: Positive Allosteric Modulators of Nicotinic Acetylcholine Receptor

Patent/Patent Application Number: WO 2013/007621 A1 **Publication date:** January 17, 2013

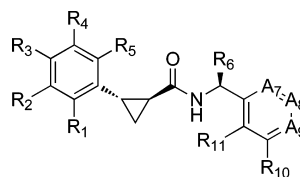
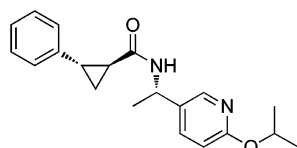
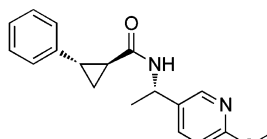
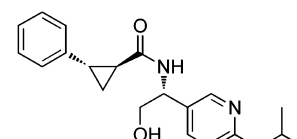
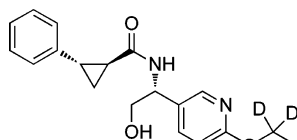
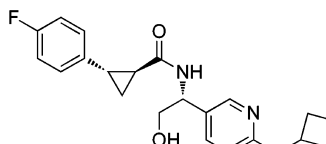
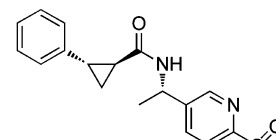
Priority Application: **Priority date:** July 8, 2011

Inventors: Eskildsen, J.; Sams, A. G.; Pueschl, A.

Assignee Company: H. Lundbeck A/S, Den.

Disease Area: autism, neurodegenerative diseases **Biological Target:** nicotinic acetylcholine receptor $\alpha 7$ ($\alpha 7$ nAChR)

Summary: The patent application claims cyclopropylcarboxamide derivatives as positive allosteric modulators of nicotinic acetylcholine receptor for the treatment of a variety of diseases, including autism and neurodegenerative diseases such Alzheimer's disease and Parkinson's disease.

Important Compound Classes:**Key Structures:****Compound 1****Compound 3****Compound 26****Compound 36****Compound 42****Compound 51****Biological Assays:**

The human $\alpha 7$ nAChR is stably expressed in the rat GH4C1 cell line. Activation of the channel was measured by loading cells with the calcium-sensitive fluorescent dye Calcium-4 and then measuring real-time changes in fluorescence upon treatment with test compounds.

Pharmacological Data:

$\alpha 7$ nAChR functional assay for positive allosteric modulators (PAMS)

Compound	EC ₅₀	Compound	EC ₅₀
1	670	36	1600
3	5800	42	790
26	390	52	2000

Synthesis:

synthesis of 52 examples is described

Claims:

Claim 13: Use of compounds for the treatment of a variety of diseases such as, for example, autism spectrum disorder, Huntington's disease, Alzheimer's disease, Parkinson's disease, dementia, cognitive impairment, ADHD, inflammatory disorders.

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Notes

The author declares no competing financial interest.