NACbR α4β2 subtype and their relation with nicotine addiction, cognition, depression and hyperactivity disorder.

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Abstract

BACKGROUND:
Neuronal α4β2 nAChRs are receptors involved in the role of neurotransmitters regulation and release, and this ionic channel participates in biological process of memory, learning and attention. This work aims review the structure and functioning of the α4β2 nAChR emphasizing its role in the treatment of associated diseases like nicotine addiction and underlying pathologies such as cognition, depression and attention-deficit hyperactivity disorder.

METHODS:
The authors realized extensive bibliographic research using the descriptors "Nicotine Receptor α4β2" and "cognition", "depression", "attention-deficit hyperactivity disorder", besides cross-references of the selected articles and after analysis of references in the specific literature.

RESULTS:
As results, it was found 180 relevant articles presenting the main molecules with affinity to nAChR α4β2 relating to the cited diseases. The α4β2 nAChR subtype is a remarkable therapeutic target since this is the most abundant receptor in the central nervous system.

CONCLUSION:
In summary, this review presents perspectives on the pharmacology and therapeutic targeting of α4β2 nAChRs for the treatment of cognition and diseases like nicotine dependence, depression and attention-deficit hyperactivity disorder.