

NAChR $\alpha 4\beta 2$ subtype and their relation with nicotine addiction, cognition, depression and hyperactivity disorder.

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Abstract

BACKGROUND:

Neuronal $\alpha 4\beta 2$ 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 $\alpha 4\beta 2$ 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 $\alpha 4\beta 2$ " 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 $\alpha 4\beta 2$ relating to the cited diseases. The $\alpha 4\beta 2$ 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 $\alpha 4\beta 2$ nAChRs for the treatment of cognition and diseases like nicotine dependence, depression and attention-deficit hyperactivity disorder.