

α 7 nicotinic acetylcholine receptors and memory processes: mechanistic and behavioral studies

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$\alpha 7$ nicotinic acetylcholine receptors and memory processes: mechanistic and behavioral studies

Nick P. van Goethem
Maastricht, 25 juni 2015

1. When keeping the considerations of rodent strain, species, housing conditions and estrous cycle in mind, the object recognition task is a valuable tool in behavioral and pharmacological memory research. *(this dissertation)*
2. Interventions with nicotinic acetylcholine receptor (nAChR) function are associated with effects on memory. *(this dissertation)*
3. Low $\alpha 7$ nAChR partial agonist concentrations potentiate ACh-evoked currents through a co-agonism mechanism, this probably accounts for the pro-cognitive effects observed in rodents. *(this dissertation)*
4. Activation of $\alpha 7$ nAChRs by exposure to a low agonist concentration, utilizing the co-agonist mechanism, opens new and promising therapeutic avenues in combination with classical AChE inhibitors at lower than typically prescribed doses which will most likely minimize side-effects. *(this dissertation)*
5. Subchronic treatment with optimal concentrations an $\alpha 7$ nAChR partial agonist does not lead to the development of behavioral tolerance in rats. *(this dissertation)*
6. While the main focus of the $\alpha 7$ nAChR as a target for cognition enhancement has traditionally involved agonists and positive modulators, antagonists may also prove to be a valuable tool for cognition enhancement in neurological and psychiatric disorders. *(this dissertation)*
7. "Poison is in everything, and no thing is without poison. The dosage makes it either a poison or a remedy." *(Paracelsus, 1493-1541)*
8. "Coming together is a beginning. Keeping together is progress. Working together is success." *(Henry Ford, 1863-1947)*
9. The biggest risk factor for developing cognitive impairments is having a brain.
10. Dead = not good