

Characterization of nicotine acetylcholine receptor subunits in the cockroach *Periplaneta americana* mushroom bodies reveals a strong expression of $\beta 1$ subunit: involvement in nicotine-induced currents

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R�sum� en anglais	Nicotinic acetylcholine receptors are ligand-gated ion channels expressed in many insect structures, such as mushroom bodies, in which they play a central role. We have recently demonstrated using electrophysiological recordings that different native nicotinic receptors are expressed in cockroach mushroom bodies Kenyon cells. In the present study, we demonstrated that eight genes coding for cockroach nicotinic acetylcholine receptor subunits are expressed in the mushroom bodies. Quantitative real-time polymerase chain reaction (PCR) experiments demonstrated that $\beta 1$ subunit was the most expressed in the mushroom bodies. Moreover, antisense oligonucleotides performed against $\beta 1$ subunit revealed that inhibition of $\beta 1$ expression strongly decreases nicotine-induced currents amplitudes. Moreover, co-application with 0.5 μM α -bungarotoxin completely inhibited nicotine currents whereas 10 μM d-tubocurarine had a partial effect demonstrating that $\beta 1$ -containing neuronal nicotinic acetylcholine receptor subtypes could be sensitive to the nicotinic acetylcholine receptor antagonist α -bungarotoxin.
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- [1] <http://okina.univ-angers.fr/e.taillebois/publications>
- [2] <http://okina.univ-angers.fr/publications?f%5Bauthor%5D=11297>
- [3] <http://okina.univ-angers.fr/publications?f%5Bkeyword%5D=21828>
- [4] <http://okina.univ-angers.fr/publications?f%5Bkeyword%5D=21829>
- [5] <http://okina.univ-angers.fr/publications?f%5Bkeyword%5D=21830>
- [6] <http://okina.univ-angers.fr/publications?f%5Bkeyword%5D=21831>
- [7] <http://okina.univ-angers.fr/publications/ua15201>
- [8] <http://dx.doi.org/10.1002/arch.21340>
- [9] <http://onlinelibrary.wiley.com/wol1/doi/10.1002/arch.21340/abstract>
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