



Expression and localization of glutamate-gated chloride channel variants in honeybee brain (*Apis mellifera*)

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Résumé en anglais	<p>Due to its specificity to invertebrate species, glutamate-gated chloride channels (GluCls) are the target sites of antiparasitic agents and insecticides, e.g. ivermectin and fipronil, respectively. In nematodes and insects, the GluCls diversity is broadened by alternative splicing. GluCl subunits have been characterized according to their sensitivity to drugs, and to their anatomical localization. In the honeybee, the GluCl gene can encode different alpha subunits due to alternative splicing of exon 3. We examined mRNA expression in brain parts and we confirmed the existence of two GluCl variants with RT-PCR, Amel_GluCl A and Amel_GluCl B. Surprisingly, a mixed isoform not yet described in insect was obtained, we called it Amel_GluCl C. We determined precise immunolocalization of peptide sequence corresponding to Amel_GluCl A and Amel_GluCl B in the honeybee brain. Amel_GluCl A is mainly located in neuropils, whereas Amel_GluCl B is mostly expressed in cell bodies. Both proteins can also be co-localized. According to their anatomical localization, different GluCl variants might be involved in olfactory and visual modalities and in learning and memory.</p>
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