

Synuclein expression in the african clawed frog *Xenopus laevis*

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The synuclein (syn) family comprises three proteins (α -, β - and γ - syns) encoded by different genes (snca, sncb and sncg). In mammals, α - and β - syn are primarily expressed in the brain where they are localized in pre-synaptic terminals while γ -syn is mainly expressed in the peripheral nervous system. In humans, synucleins are involved in neurodegenerative diseases such as Parkinson's disease and in tumors. However, the normal cellular functions of the three syns have not yet been fully clarified. Members of the syn family were sequenced in representative species of all vertebrates and the comparative analysis of amino acid sequences suggests that syns are evolutionarily conserved, but information about their expression in vertebrate lineages is still scarce. Our research focused on the evolution of syns with the aim of analyzing their molecular and cellular expression in the CNS of representative vertebrates such as the carp *Cyprinus carpio* for teleost fish (1,2) and the green lizard *Anolis carolinensis* for reptiles (3). Current model of our comparative analysis for amphibians is the african clawed frog *Xenopus laevis*. The only information available on syn expression in this species relate to embryonic stages but data on syn expression in the adult are still lacking. At larval stages, amphibian snca is expressed in the brain, branchial arches and somites, and sncb signals were detected in the entire brain and spinal cord whereas sncg was only expressed in the peripheral nervous system including trigeminal nerve and dorsal root ganglion (4). Preliminary data are here reported on syn expression in adult specimen of *X. laevis*, obtained by RT-qPCR, Western blot and IHC. The results demonstrated that syns are expressed both in neuronal and non-neuronal tissues suggesting differences in the expression pattern between developmental and adult stages.

References

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Keywords

Synuclein; amphibian; *Anolis carolinensis*; Western blot; RT-qPCR; immunohistochemistry.