

**IDENTIFICATION AND CHARACTERIZATION OF TWO TRANSPOSABLE ELEMENTS AND AN AMNIOTE ULTRA-CONSERVED ELEMENT (UCE) IN THE GENOME OF *Zootoca vivipara***

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We isolated two DNA sequences, here named Zv516 and Zv817 (of 516 and 817 bp), in the common European lizard *Zootoca vivipara*, characterizing their nucleotide content, copy number, chromosomal location and conservation in different amniote taxonomic groups.

Molecular and bioinformatic analyses showed that Zv516 and Zv817 contain truncated traits of two different repeated interspersed DNA sequences, SINE Squam1 and TC1 Mariner, belonging to class I and II Transposable Elements (TEs), respectively. Quantitative dot blot evidenced that both TEs represent about 0.03% of the genome of *Z. vivipara*, with about 3200-4500 copies, and comparable quantities were found in different squamate groups. *Fluorescent In Situ Hybridization* (FISH) located both sequences on all chromosome pairs, with probes from Zv516 preferentially distributed on centromeric and telomeric regions, while probes from Zv817 were also on interstitial chromosome regions.

A different trait of Zv817 (of about 300 bp) was identified as an amniote Ultra-Conserved Element (UCE) occurring in reptiles, birds and mammals (identities from 86% to 100%), while no significant identities were found in Whole-Genome Shotgun (WGS) archives of amphibians, fishes and various tested invertebrate groups. Upstream and downstream regions (of about 1000 bp) of the same UCE are also conserved in different reptile groups with high identities at family level (>96%).

Phylogenetic analyses performed both with the isolated UCE and its contigs provided tree topologies which were largely consistent with accepted evolutionary relationships at different taxonomic level.

Further discussion will cover aspects of the genomic evolution of the isolated TEs and UCE.