Abstract (English)

Lacertoidea, a clade of squamate reptiles, includes several families, with Lacertidae being the most species-rich and karyologically most explored. This widely diversified group is known for presence of all-acrocentric karyotypes and ZZ/ZW sex chromosomes. Despite this, the origins and evolutionary rates of their chromosomes have been previously unexplored. Additionally, the variability in their W sex chromosomes and reports of environmental sex determination (ESD) led some authors to believe in multiple independent origins of their sex chromosomes. This thesis addresses these gaps by applying bioinformatic, cytogenetic, and molecular approaches. We collected data on karyotypes and phylogenetic relationships of lacertoidean species to estimate the evolutionary rates of chromosome numbers between their clades via maximum likelihood models. Our analysis revealed that while the evolution of chromosome number is highly dynamic in Teiidae, Gymnophthalmidae, and Amphisbaenia, it is considerably decreased in Lacertidae. Further examination of chromosome synteny in lacertids and their outgroups indicated that two opposing processes - fusions of ancestral microchromosomes and fissions of homologs of bi-armed macrochromosomes - likely led to the origin of the derived and stable lacertid karyotype. Using fluorescence *in situ* hybridization (FISH) and C-banding, we examined the lacertid W chromosome across 15 species from ten genera, revealing species-specific accumulations of 22 microsatellite and telomeric motifs that do not follow the phylogenetic pattern. This suggests that the repetitive sequences within degenerated sex chromosomes are among the most evolutionarily dynamic regions of the genome. Finally, we examined the homology and the age of lacertid Z chromosomes across 45 species, including 26 genera, confirming homologous differentiated ZZ/ZW sex chromosomes dating back approximately 85 million years. This evidence challenges previous reports of transitions to ESD in lacertids, emphasising the stability of their sex determination system. Lacertid chromosomes demonstrate that derived all-acrocentric karyotypes and differentiated sex chromosomes can be extremely stable over a long evolutionary time.