

Abstract

Paroedura genus includes 17 described species endemic to Madagascar and the Comoros Islands, where they went through a significant adaptive radiation. The genus *Paroedura* is monophyletic and well supported hypothesis on phylogenetic relationships among its species was published. Species vary considerably in body size and morphology and in preferences for habitat, some species live in sympatry. The genus *Paroedura* belongs to cytogenetically poorly studied family Gekkonidae which exhibits high variability in modes of sex determination and in comparison with basal gecko lineages, also considerable variability in the chromosome number and morphology. Karyotypes of only two species of the genus (*P. picta*, *P. sp.*) have been published. The aim of my thesis was to describe karyotypes of both sexes in all available species of the genus using conventional and molecular cytogenetic methods, to perform the phylogenetic analysis of karyotype evolution and chromosomal rearrangements in the genus, to assess the role of these rearrangements in the speciation of the genus and to detect sex chromosomes.

I acquired karyotypes of both sexes in nine species representing the most of major phylogenetic lineages of the genus. According to the results, species can be divided into three groups according to diploid chromosome number and similarity of macrochromosome morphology. In six species (*P. masobe*, *P. karstophila*, *P. oviceps*, *P. stumpffi*, *P. lohatsara*, *P. picta*) I observed diploid chromosome number $2n=36$ with the largest pair of macrochromosomes acrocentric or subtelocentric, the third pair submetacentric and all other chromosomes acrocentric. Two species (*P. bastardi*, *P. ibityensis*) have karyotype of $2n=34$ with the first and the third pair submetacentric and all other acrocentric. *P. gracilis* completely differs with the karyotype $2n=38$ and all macrochromosomes acrocentric. Using the FISH with the telomeric probe I mostly obtained the signal only in the telomeric regions. The interstitial telomeric signals were detected in *P. stumpffi* and *P. bastardi*. C-banding in combination with DAPI staining uncovered homomorphic ZZ/ZW sex chromosomes with heterochromatinized W chromosome in five species. The results of phylogenetic analysis of the data are presented in the discussion.