Evolution of the karyotype in two spider families, Atypidae and Pholcidae (Araneae)

Summary

From cytogenetic point of view spiders are very diversified group, they exhibit great diversity in diploid chromosome number from 7 *Ariadna lateralis* (Segestriidae) up to 128 *Cyclocosmia siamensis* (Ctenizidae). Till recently karyotypes of almost all spiders were supposed to consist exclusively of acrocentric chromosomes including X_1X_20 sex chromosome system. However, this idea is based mostly on research of an advanced clade – entelegyne lineage of araneomorph spiders. Karyotypes of mygalomorph and haplogyne spiders remain nearly unexplored.

Presented study is focused on cytogenetics of eight representatives of the family Pholcidae (Araneomorphae, Haplogyne) and *Atypus piceus* and *A. affinis* (Mygalomorphae, fam.Atypidae). Karyotypes, course of meiosis and distribution of nucleolar organizer regions (NOR) have been investigated in selected pholcid species and in one representative of the family Sicariidae (Araneomorphae, Haplogyne). Chromosomes of these groups are mostly biarmed (metacentric or submetacentric) and sex chromosome systems are diversified. Furthermore, distribution of constitutive heterochromatin and NOR has been analysed in *A. piceus* (2n♂ = 41,X0) and *A. affinis* (2n♂ = 14,XY).

Key words: Atypidae, karyotype, meiosis, NOR, Pholcidae, sex chromosomes, spiders

Klíčová slova: Atypidae, karyotyp, meióza, NOR, pavouci, Pholcidae, pohlavní chromozomy