Cytogenetic analysis in the neotropical fish Astyanax goyacensis Eigenmann, 1908 (Characidiae, incertae sedis): karyotype description and occurrence of B microchromosomes

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Abstract (provisional)

Background
B chromosomes, also known as supernumerary or accessory chromosomes, are additional chromosomes over the standard complement found in various groups of plants and animals. We investigated the presence of, and characterized, supernumerary microchromosomes in Astyanax goyacensis using classical and molecular cytogenetic methods. Three specimens possessed 2n = 50 chromosomes (2m + 26sm + 8st + 5a), and two specimens contained 1 to 9 additional B microchromosomes varying intra- and inter-individually. Chromosome painting with a B chromosome-specific probe yielded signals for several B microchromosomes, with one exhibiting no markings. Acrocentric chromosomes of the standard complement were also painted. Fluorescence in situ hybridization (FISH) using ribosomal probes located two chromosome pairs carrying 18S rDNA marked on the short arm, and one pair carrying 5S rDNA with pericentromeric markings. One chromosome was observed in synteny with 18S Astron.

Findings

Conclusion
These data contribute to knowledge of the karyotype evolution, the origin of B chromosomes, and to an understanding of the functionality of rDNA.

The complete article is available as a provisional PDF. The fully formatted PDF and HTML versions are in production.