# Chromosomal Mapping of Repetitive DNA Sequences in the Genus Bryconamericus (Characidae) and DNA Barcoding to Differentiate Populations

**Por:**dos Santos, AR (dos Santos, Angelica Rossotti)[1]; Usso, MC (Usso, Mariana Campaner)[1]; Gouveia, JG (Gouveia, Juceli Gonzalez)[1]; Araya-Jaime, C (Araya-Jaime, Cristian)[2,4]; Frantine-Silva, W (Frantine-Silva, Wilson)[3]; Giuliano-Caetano, L (Giuliano-Caetano, Lucia)[1]; Foresti, F (Foresti, Fausto)[4]; Dias, AL (Dias, Ana Lucia)[1]

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## Resumen

The mapping of repetitive DNA sites by fluorescence in situ hybridization has been widely used for karyotype studies in different species of fish, especially when dealing with related species or even genera presenting high chromosome variability. This study analyzed three populations of Bryconamericus, with diploid number preserved, but with different karyotype formulae. Bryconamericus ecai, from the Forquetinha river/RS, presented three new cytotypes, increasing the number of karyotype forms to seven in this population. Other two populations of Bryconamericus sp. from the Vermelho stream/PR and Cambuta river/PR exhibited interpopulation variation. The chromosome mapping of rDNA sites revealed unique markings among the three populations, showing inter-and intrapopulation variability located in the terminal region. The molecular analysis using DNA barcoding complementing the cytogenetic analysis also showed differentiation among the three populations. The U2 small nuclear DNA repetitive sequence exhibited conserved features, being located in the interstitial region of a single chromosome pair. This is the first report on its occurrence in the genus Bryconamericus. Data obtained revealed a karyotype variability already assigned to the genus, along with polymorphism of ribosomal sites, demonstrating that this group of fish can be undergoing a divergent evolutionary process, constituting a substantive model for studies of chromosomal evolution.

## Palabras clave

**Palabras clave de autor:**fish cytogenetics; molecular cytogenetics; ribosomal DNA; U2 snDNA; karyotypic polymorphism
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## Información del autor

**Dirección para petición de copias:** Dias, AL (autor para petición de copias)

Univ Estadual Londrina, Dept Biol Geral, Lab Citogenet Anim, Rodovia Celso Garcia Cida, BR-86057970 Londrin

**Direcciones:**

[ 1 ] Univ Estadual Londrina, Dept Biol Geral, Lab Citogenet Anim, Rodovia Celso Garcia Cida, BR-86057970 Lo

[ 2 ] Univ Chile, ICBM Fac Med, Lab Citogenet Vertebrados, Santiago, Chile

[ 3 ] Univ Estadual Londrina, Dept Biol Geral, Lab Genet & Ecol Anim, Londrina, Brazil

[ 4 ] Univ Estadual Paulista, Inst Biociencias, Dept Morfol, Botucatu, SP, Brazil

**Direcciones de correo electrónico:**anadias@uel.br

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