



Chromosomal analysis of three Brazilian “eleutherodactyline” frogs (Anura: Terrarana), with suggestion of a new species

SÉRGIO SIQUEIRA¹, ODAIR AGUIAR JR², CHRISTINE STRÜSSMANN³,
MARIA LÚCIA DEL-GRANDE⁴, SHIRLEI MARIA RECCO-PIMENTEL^{1,5}

¹Departamento de Biologia Celular, Instituto de Biologia, Universidade Estadual de Campinas, (UNICAMP), 13083-863 Campinas, São Paulo, Brazil. E-mails: siqueirajrs@gmail.com; shirlei@unicamp.br

²Departamento de Biociências, Universidade Federal de São Paulo (UNIFESP), Campus Baixada Santista, 11060-001 Santos, São Paulo, Brazil. E-mail: odair.junior@unifesp.br

³Departamento de Ciências Básicas e Produção Animal, Faculdade de Agronomia e Medicina Veterinária, Universidade Federal do Mato Grosso, (UFMT), 78060-600 Cuiabá, Mato Grosso, Brazil, christine@ufmt.br

⁴Departamento de Ciências Naturais, Universidade Estadual do Sudoeste da Bahia (UESB), 45083-900 Vitória da Conquista, Bahia, Brazil. E-mail: delgrande@uesb.br

⁵Corresponding author

Abstract

The karyotypes of four Brazilian “eleutherodactyline” samples were analyzed aiming to provide additional cytogenetic data for future understanding of the evolutionary and systematic relationships of this large anuran group. The populations consisted of *Pristimantis dundeei* (Chapada dos Guimarães and Rondonópolis, Mato Grosso), *Pristimantis* aff. *dundeei* (Aripuanã, Mato Grosso) and *Ischnocnema paulodutraei* (Ilhéus, Bahia). The data revealed that *P. dundeei* and *P. aff. dundeei* have $2n=28$ chromosomes, whereas *I. paulodutraei* has $2n=30$. All pairs of chromosomes were telocentric, except for the subtelocentric pair 4 in *I. paulodutraei*. Differences in Ag-NOR pattern and interstitial heterochromatin positions clearly distinguished *P. aff. dundeei* from *P. dundeei*, and differentiated them from *I. paulodutraei*. The specimens of *I. paulodutraei* showed two distinct color patterns, but they did not differ in their cytogenetic characteristics. Karyotypes with $2n=28$ and $2n=30$ chromosomes have not been previously described for Brazilian “eleutherodactylines” which, to date, had been characterized as $2n=20$, $2n=22$ and $2n=34$. The NOR position differences identified between *P. dundeei* and *P. aff. dundeei*, allied to their known distinct behavior and ecological data, suggested that the *P. aff. dundeei* from the Aripuanã sampling location is a new species. Similarities between *I. paulodutraei* and species currently assigned to *Pristimantis* are herein discussed on the basis of chromosome number and morphological characteristics.

Key words: *Pristimantis*, *Ischnocnema*, cytogenetics, karyotype, NOR, C-banding

Introduction

Eleutherodactylus was, for a long time, the largest vertebrate genus and had been considered to encompass a high degree of speciation (Bogart & Hedges 1995). However, following recent comprehensive studies (Frost *et al.* 2006; Heinicke *et al.* 2007; Hedges *et al.* 2008), this taxon has undergone a radical restructuring, including partitions into new taxa. Approximately 700 species, formerly included in the subfamily Eleutherodactylinae (Leptodactylidae), were recently split into the new genera *Euhyas* (94 species), *Craugastor* (116 species), *Pelorius* (6 species), *Syrhopus* (24 species), and *Eleutherodactylus* (492 species), according to Frost *et al.* (2006). They were assigned to the family Brachycephalidae, which contain more than 800 species grouped in 19 genera (Frost *et al.* 2006). In a further reorganization, Heinicke *et al.* (2007) recognized two additional genera, *Pristimantis* (393 species), and *Limnophys* (15 species) and considered *Euhyas*, *Pelorius* and *Syrrho-*