

The karyotype of *Myotis daubentonii*: A first step towards chromosome evolution of the species

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1. Introduction

- Medium size bat;
- Insect predator;
- **Daubenton's bats** catch their prey from still water surfaces using **slow hawking and gaffing techniques**.
- The fur is characterized as **brown-gray** to a **slightly red dark bronze** on the **dorsum** and **silver-gray** to **white** on the **belly**;
- Some diagnostic characters of Daubenton's bats include a **large foot**;
- **Unique trawling bat specie** strictly associated with riparian habitats in **Portugal**;
- Conservation status: **Least Concern**.

Myotis daubentonii



Myotis daubentonii

Cytogenetics is important to evolutionary, taxonomic and phylogenetic studies.



Main objective:

Obtainment of the organized karyotype of *M. daubentonii daubentonii* and chromosome evolution analysis

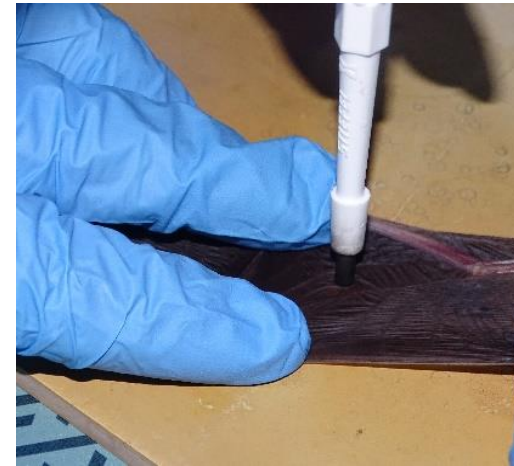
2. Methods



Mist netting

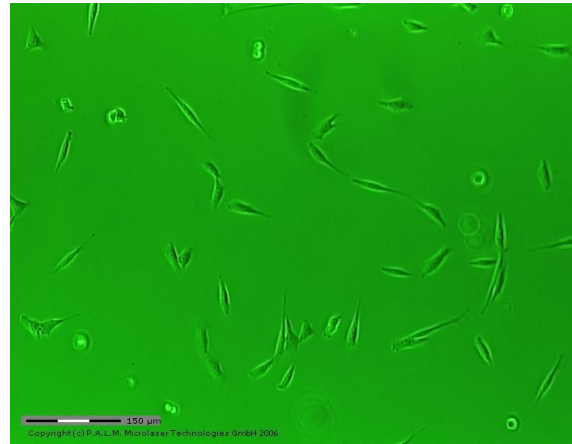
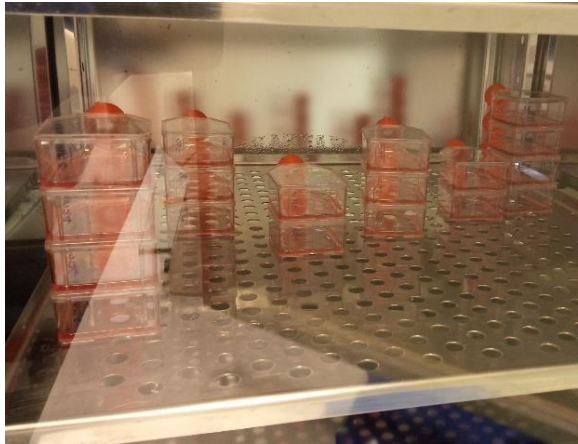


biometric collection



biologic sampling collection (3mm punch)

2. Methods



C-banding



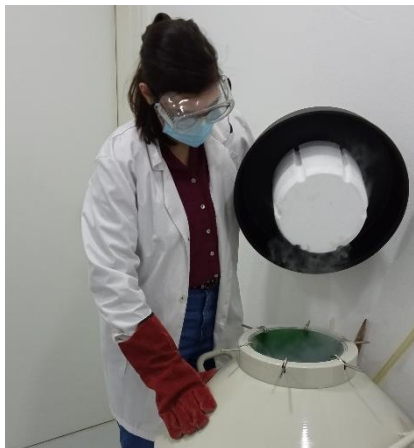
G-banding

Primary cell culture

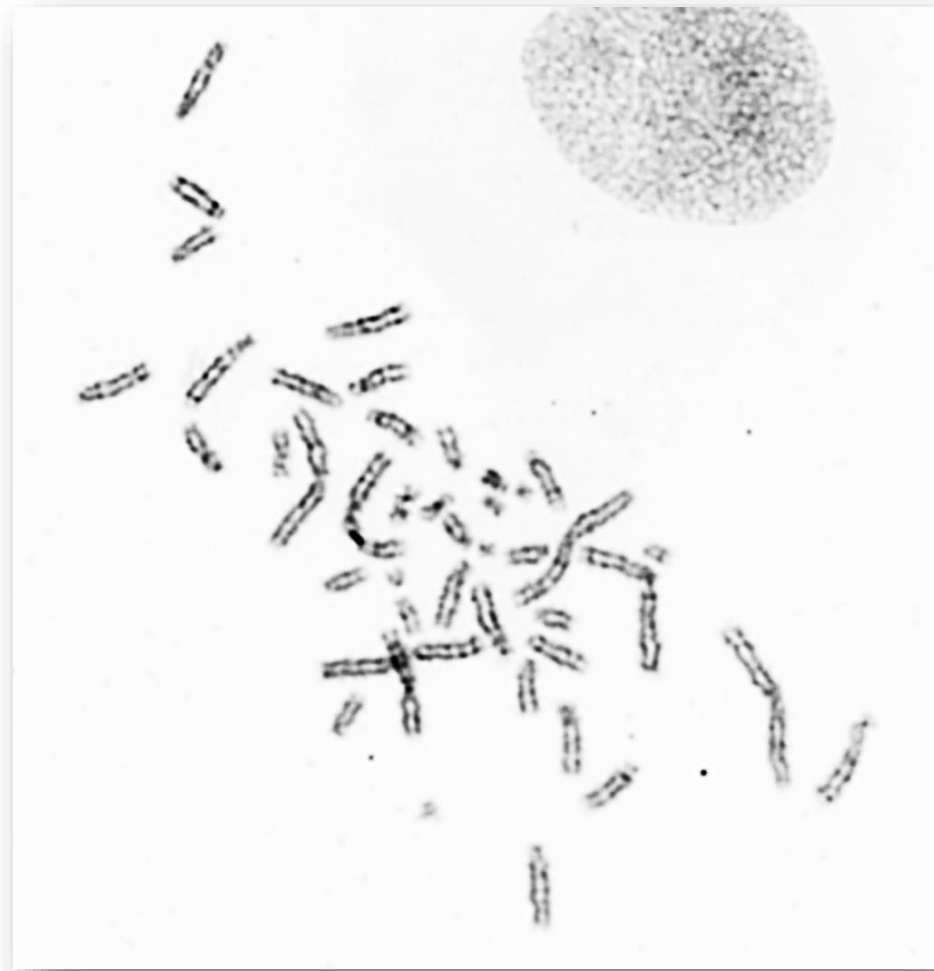
Cell line



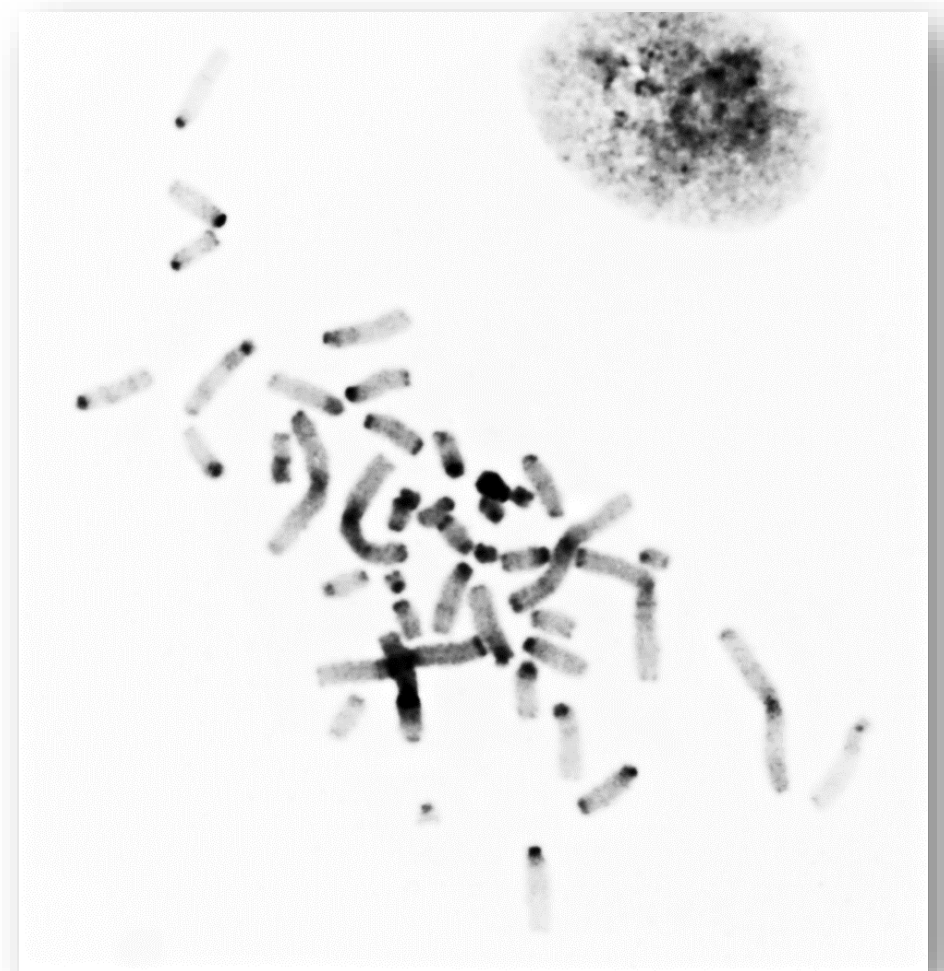
Cryopreservation (Bat Cell Bank)
Further studies



3. Results and discussion



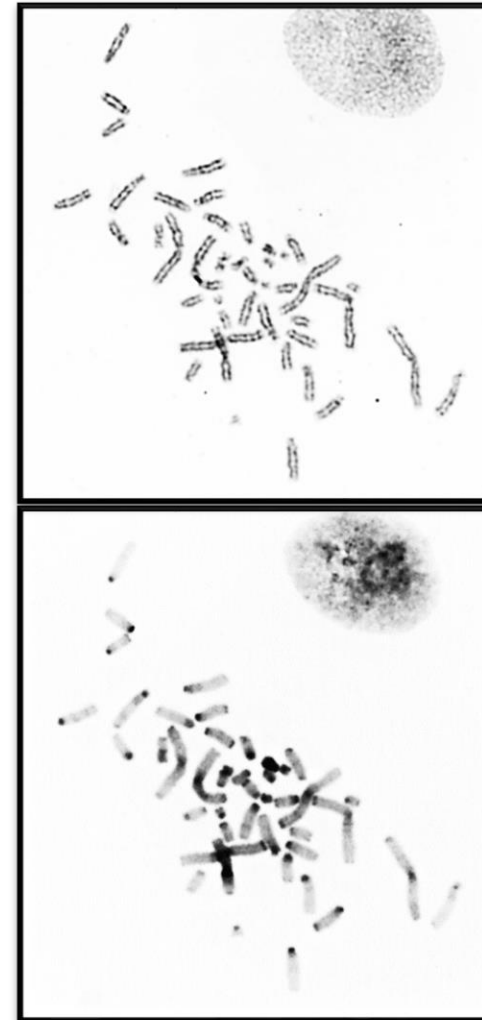
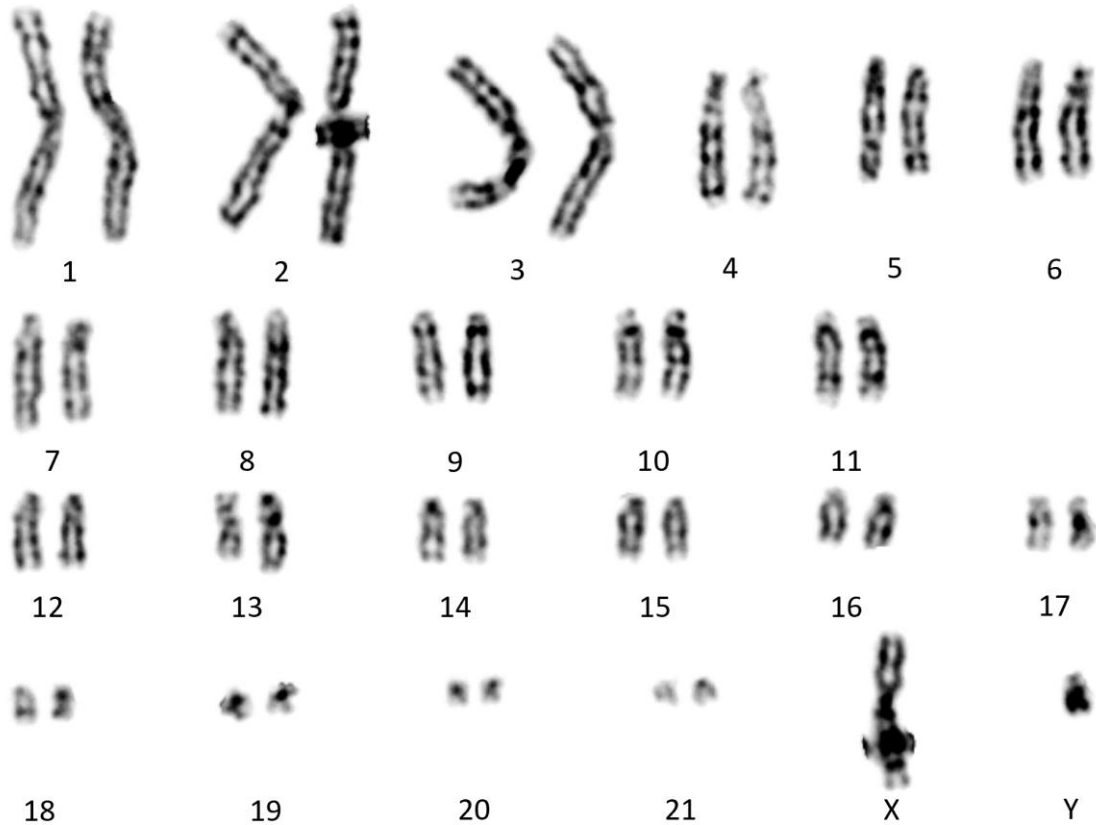
G-banding



C-banding

3. Results and discussion

Myotis daubentonii daubentonii
2n=44



Most of *Myotis* species exhibit 44 chromosomes, however their organization isn't yet fully known. The repetitive fraction (constitutive heterochromatin and transposable elements) of these genomes is poorly understood

4. Conclusions and future perspectives

Why is *M. daubentonii daubentonii* karyotype important?

- **Knowledge** about the species itself;
- First step to complex **evolutionary studies**.



What's next?

- Obtainment and comparison with the karyotype of *M. daubentonii nathalinae*;
- Obtainment of the **karyotype** of all the bat species existing in **Portugal**;
- Analysis of the **mobile genome** (set of transposable elements in each genome) of these species and its involvement in their karyotype organization and evolution that may impact on the diversity and peculiar biology of bat species.

Thank you!

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Cytogenomics and Animal Genomics_Lab



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