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Identification by PCR of tapeworm fragments collected from cats in Alba County

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Abstract: *Tapeworm infestations play a significant role in animals in general, and particularly in dogs and cats. It is well known that both canids and felids harbor numerous cestode species in their digestive tracts; these parasites - whether due to their impressive size or their sheer numbers - negatively impact the host's health, a situation compounded by their zoonotic potential. Six tapeworm fragments shed by cats in Alba County between 2021 and 2025 were collected and subsequently examined via PCR, using the primers CEST3 (5'- YGA YTC TTT TTA GGG GAA GGT GTG-3') forward, and CEST5 (5'- GCG GTG TGT ACM TGA GCT AAAC -3') reverse, respectively. The six cestode samples examined by PCR revealed the presence of three cestode species in these cats: Hydatigera (Taenia) taeniaeformis, Taenia hydatigena, and Dipylidium caninum. Inside the species H. taeniaeformis, the similarity of one of the analyzed sequences to Hydatigera kamiyai n. sp. - which belongs to the North-Eurasian clade - leads to the identification of this new species in Romania for the first time. Further epidemiological studies are also needed to confirm with certainty the presence of the new cestode species in Romania.*

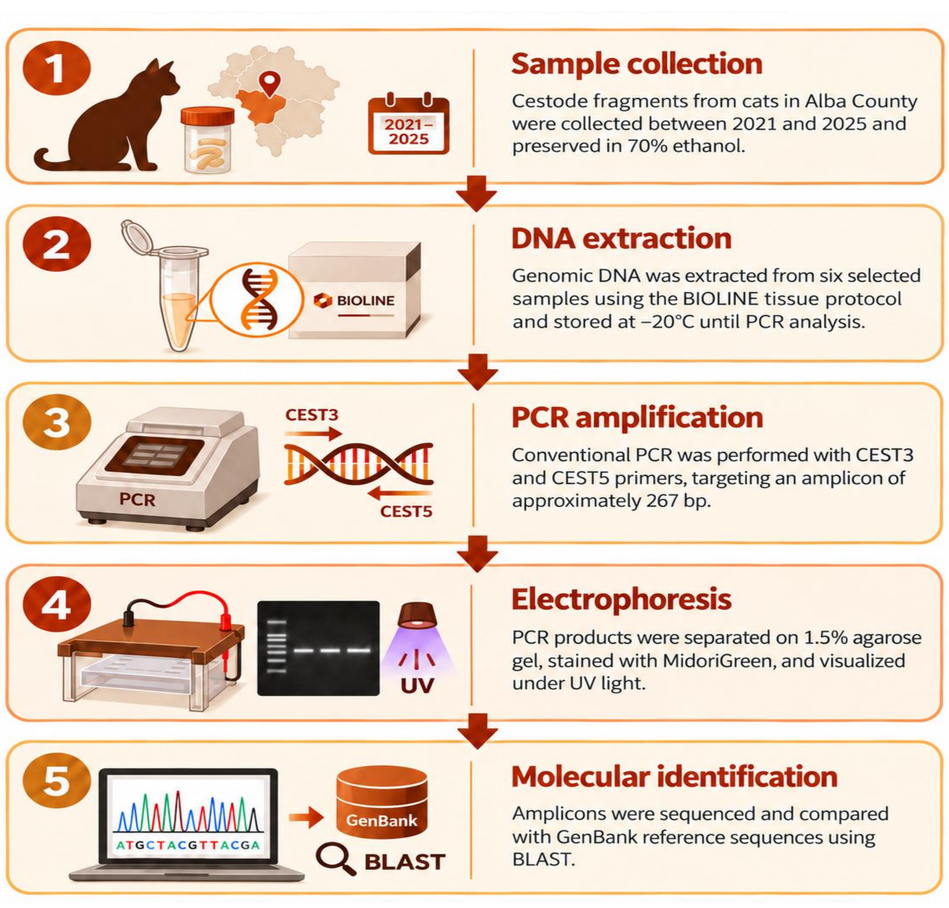
Keywords: cats; tapeworms; Alba County; Hydatigera kamiyai n. sp.

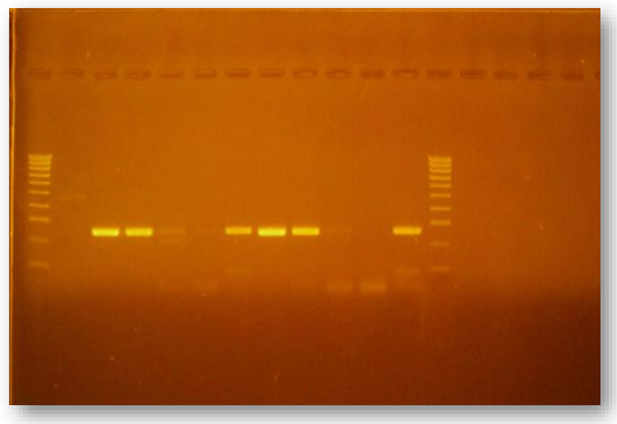
• Introduction

Cestode infections are frequently encountered in domestic carnivores and represent an important concern in veterinary parasitology. Cats can act as definitive hosts for several tapeworm species, including *Hydatigera taeniaeformis* and *Dipylidium caninum*. Their exposure to intermediate hosts, particularly rodents and fleas, contributes to parasite transmission.

The objective of this study was to identify cestode species from cats in Alba County, Romania, using PCR amplification and DNA sequencing, and to investigate their molecular similarity to previously characterized cestode species.

• Materials and methods





• Results and discussions

Molecular analysis of six cestode samples identified three species: *Hydatigera (Taenia) taeniaeformis* (n = 3; 50%), *Taenia hydatigena* (n = 2; 33.3%), and *Dipylidium caninum* (n = 1; 16.7%). PCR amplification produced bands of approximately 270 bp, and species identification was confirmed by sequencing and BLAST analysis. One *H. taeniaeformis* sequence showed similarity to *Hydatigera kamiyai*, suggesting its possible occurrence in Romania.

The detection of three cestode species highlights the diversity of tapeworms infecting cats in Alba County. The identification of *T. hydatigena*, less commonly reported in cats, may reflect particular feeding habits. Importantly, the molecular similarity to *H. kamiyai*, a species associated with the northern Eurasian clade, suggests its potential presence in Romania, although further investigations are required for confirmation.

• Conclusions

PCR analysis identified three cestode species in cats from Alba County: *Hydatigera taeniaeformis*, *Taenia hydatigena*, and *Dipylidium caninum*. Molecular similarity to *Hydatigera kamiyai* suggests its possible occurrence in Romania, requiring further investigation for confirmation.