

RESUMO - PROTOZOOLOGIA E PATÓGENOS TRANSMITIDOS POR
VETORES

**INSIGHTS INTO PROTOZOAN CONTAMINATION IN BIVALVE MOLLUSKS:
EVIDENCE OF TOXOPLASMA GONDII FROM MARANHÃO ISLAND,
NORTHEASTERN BRAZIL**

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Toxoplasma gondii is a protozoan parasite endemic in Brazil, whose transmission is associated with environmental contamination, including coastal areas such as estuaries. In these areas, the discharge of untreated domestic and animal waste favors the dissemination of oocysts, posing a risk to both wildlife and human health. In this context, bivalve molluscs have been recognized as important indicators of environmental contamination due to their filter-feeding behavior and ability to accumulate microorganisms present in the water. This study aimed to detect the occurrence of *T. gondii* in bivalve molluscs collected from estuarine areas of Maranhão Island, northeastern Brazil. For this

purpose, oysters (*Crassostrea* sp.), sururu mussels (*Mytella* sp.), and clams (*Anomalocardia* sp.) were collected from natural banks in the municipalities of São Luís, Paço do Lumiar, Raposa, and São José de Ribamar between January and December 2022. The samples were organized into gill pools from three individuals of the same species, totaling 180 pools (60 from oysters, 60 from mussels, and 60 from clams), and subjected to DNA extraction followed by PCR targeting the SAG1 gene. Additionally, sequencing of positive samples was performed, followed by comparison in GenBank using BLASTn. The occurrence of *T. gondii* was demonstrated in 1.8% (3/180) of the analyzed samples. Analysis of the sequences demonstrated 98 to 100% genetic similarity with *T. gondii* isolates from different hosts and geographic regions. These findings demonstrate the occurrence of environmental contamination in estuarine ecosystems of Maranhão Island. Furthermore, the absence of specific sanitary policies aimed at monitoring protozoan contamination in aquatic environments is noteworthy, particularly in regions where the consumption of bivalve molluscs is common. This scenario becomes especially concerning given the regional habit of consuming these organisms raw or undercooked, which may represent a potential route of human exposure to the parasite. Overall, these results highlight the need to integrate environmental monitoring with public health strategies, emphasizing the importance of surveillance of waterborne protozoan parasites in vulnerable coastal areas.

Palavras-chave: lamelibranches; *t gondii*; food safety.