

**TITLE:** IDENTIFICATION OF THE FUNGAL COMMUNITY PRESENT IN ARCHAEOLOGICAL ARTIFACTS FROM THE ARCHAEOLOGICAL SITE CUEVA LIMA, ANTARTIC

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Most studies on Antarctica are centralized in the event of their discovery, dissociating studies related to microorganisms that are fundamental for the preservation of historical artifacts such as fungi. Biophysical deterioration of historic wood plaques in the Antarctic regions is an important part of the presence of fungi that cause both a disfigurement on the surface of the artifacts and a moderate decomposition. This study aimed to isolate and identify fungi present on surface of different archaeological artifacts. Samples were collected with sterile swabs by smears on the surface of four artifacts (tissue fragment, skin tissue, wood fragment and whale bone). These artifacts are preserved in the Laboratory of Antarctic Studies in Human Sciences of UFMG. The swabs were submerged in 0.85% saline solution and processed in the Laboratory of Polar Microbiology and Tropical Connections of UFMG. For fungal isolation, the swabs were inoculated on Sabouraud, DG18 and DRBC with 200 µg / mL chloramphenicol at 10°C and 25°C for up to 30 days. The fungal mycelial DNAs were extracted and submitted to transcribed sequences (ITS) in GenBank through the Basic Local Alignment Search Tool (BLAST). Thirty filamentous fungi were isolated, 19 from the wood fragment, 3 from the tissue fragment, 4 from the skin tissue, and 4 from the whale bone. Species belonging to the genus *Penicillium* and *Acremonium cellulolyticus* were recovered from the surface of the wood fragment. In the fragment of tissue and tissue with skin, species of the genus *Trichoderma* were predominant. *Penicillium* and *Mortierella hyaline* species were isolated from whale bone. The genera *Acremonium* and *Mortierella* have already been found in decomposing Antarctic wood, and species of the genus *Penicillium* and *Mortierella* are cosmopolitan genera found in various Antarctic habitats. *Trichoderma* species are commonly isolated from different regions of Antarctica and producing lignocellulolytic enzymes. This demonstrates that there is presence of decomposition caused for fungi in the polar regions, being a cause for the interest of conservators who work in preservation of structures and artifacts in this environment. These researches can contribute to deceleration of the process of deterioration by fungi and to preserve archaeological artifacts that constitute the polar heritage.

**Keywords:** Archaeological artifacts; fungi; historic conservation; Antarctic

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