ASSESSMENT OF THE LEISHMANICIDAL POTENTIAL OF TWO MICROALGAL EXTRACTS AGAINST THREE *LEISHMANIA* SPECIES.

VITÓRIA PEREIRA DE OLIVEIRA[1], JULIA SANTOS PINTO SOUSA[1], ESTHER CARVALHO NASCIMENTO[1], AISHA THAINÁ BARRETO MARQUES[1], SUZANA TELLES DA CUNHA LIMA[1], CARLOS EDUARDO SAMPAIO GUEDES[1].

[1]INSTITUTO DE BIOLOGIA, UNIVERSIDADE FEDERAL DA BAHIA, BAHIA, BRASIL

Leishmaniasis, a neglected tropical disease caused by protozoa of the genus *Leishmania*, manifests in three clinical forms: cutaneous, mucocutaneous, and visceral. Despite existing therapies, limitations such as adverse effects, invasive administration, treatment duration, and sometimes high costs highlight the need for new therapeutic alternatives. In this scenario, microalgae emerge as promising sources for biomolecule discovery due to their high biotechnological potential. Thus, this study evaluated the leishmanicidal potential of extracts from two microalgae species (IBLC015 and IBLC007) against the axenic promastigotes of *L. braziliensis*, *L. infantum*, and *L. amazonensis*. The microalgae were cultivated, centrifuged, and lyophilized. Their dry biomass was extracted with ethanol, followed by rotary evaporation and resuspension in DMSO. Leishmanicidal activity was assessed by direct counting in a Neubauer chamber, while the cytotoxicity of the extracts on macrophage cell lines (RAW) was determined using the alamarBlue™ cell viability indicator, both exposed to varying concentrations of the crude extracts. The IBLC015 extract exhibited IC_{50} values below 100 µg/ml for all tested species: 58.75 µg/ml against *L. amazonensis*, 54.5 µg/ml against *L. braziliensis*, and 76.62 µg/ml against *L. infantum*. In contrast, the IBLC007 extracts showed IC_{50} values of 368.6 µg/ml, 112.3 µg/ml, and 90.2 µg/ml, respectively, with only the last value below 100 µg/ml. Additionally, IBLC007 exhibited lower cytotoxicity against RAW cells (CC_{50} of 368.5 µg/ml), whereas IBLC015 showed a CC_{50} of 188.8 µg/ml. The highest selectivity index (SI = 4.08) was observed for IBLC007 against *L. infantum*, the species associated with the most severe form of the disease, followed by IBLC015 against *L. amazonensis* (SI = 3.46) and IBLC007 against the same species (SI = 3.44). Overall, all algal extracts exhibited antileishmanial activity, making them promising sources of biomolecules for future investigations.

Supported by: This work was supported by Conselho Nacional de Desenvolvimento Científico e Tecnológico (CNPq/MCTI/FNDCT Nº 18/2021 e CNPq-Brazil, Nº 312382/2020-0); Financiadora de Estudos e Projetos (MCTIC/FINEP/CT-INFRA 03/2018); Coordenação de Aperfeiçoamento de Pessoal de Nível Superior (CAPES) and Universidade Federal da Bahia.

Keywords: Bioprospection; Leishmaniasis and Treatment.