AMOEBCIDAL ACTIVITY AND CHEMICAL COMPOSITION OF ESSENTIAL OIL OF CROTON PALIDULUS AND CROTON ISABELII (EUPHORBIACEAE)

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RESUMO: Acanthamoeba spp. are free-living protozoan widely distributed in the environment, occurring in vegetative trophozoite and resistance cyst stages during their life cycle. Acanthamoeba spp. can cause two well-recognized diseases: Acanthamoeba keratitis and Acanthamoeba granulomatous encephalitis. Acanthamoeba keratitis has been recognized as a significant ocular microbial infection, being an acute inflammation of the cornea that can result in blindness when not properly treated in the initial stage. Early diagnosis followed by adequate treatment is indispensable to patients presenting such disease. The infection is difficult to cure because the treatment must be maintained during a long period. Therefore, more effective drugs against Acanthamoeba spp. must be developed and medicinal plants can be useful in this search. Plants of the genus Croton (Euphorbiaceae) are found in Rio Grande do Sul and have never been studied as amoebicidal against these protozoan. In this work, we investigated the chemical composition of essential oil of C. palidulus and C. isabelii and assessed its toxical activity. The leaves of the fresh plants were submitted to hydrodistillation and their essential oils were analyzed by gas chromatography-mass spectrometry (GC/MS). For the assessment of the amoebicidal activity concentrations of 10, 5, 2.5, 1 and 0.5 mg/mL were tested. C. palidulus at the concentrations of 10, 5 and 2.5 mg/mL was lethal to 100% of Acanthamoeba polyphaga trophozoites in 24 h while at the same condition the C. isabelii was unable to kill the trophozoites. The essential oils showed cytotoxic activity against mammalian cells by MTT assay. For that reason further studies with the major component of the essential oil has to be carried out.

KEYWORDS: Acanthamoeba, Keratitis, Croton palidulus, Croton isabelii.