

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

Vunda, S.L.L<sup>1</sup>; Sauter, I.P<sup>2\*</sup>; Apel, M.A<sup>1</sup>; Cibulski, S.P<sup>3</sup>; Roehe, P.M<sup>3</sup>; Bordignon, S<sup>1</sup>; von Poser, G.L<sup>1</sup>; Rott, M.B<sup>2,4</sup>.

**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 toxic 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*.

<sup>1</sup> Programa de Pós-Graduação em Ciências Farmacêuticas, UFRGS, Av. Ipiranga, 2752, 90610-000 Porto Alegre, Rio Grande do Sul, Brazil

<sup>2</sup> Programa de Pós-Graduação em Microbiologia Agrícola e do Ambiente, Rua Sarmento Leite, 500, 90050-170 Porto Alegre, Rio Grande do Sul, Brazil \* [ipsauter@gmail.com](mailto:ipsauter@gmail.com)

<sup>3</sup> Programa de Pós-Graduação em Ciências Veterinárias, UFRGS, Av. Bento Gonçalves, 9090, 91540-000 Porto Alegre, Rio Grande do Sul, Brazil

<sup>4</sup> Departamento de Microbiologia, Setor de Parasitologia, Instituto de Ciências Básicas da Saúde, UFRGS, Rua Sarmento Leite, 500, 90050-170 Porto Alegre, Rio Grande do Sul, Brazil