

TITLE: CHEMICAL COMPOSITION AND ANTIFUNGAL ACTIVITY OF THE ESSENTIAL OIL FROM *Campomanesia xanthocarpa* AGAINST STRAINS OF *Trichophyton rubrum*.

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ABSTRACT:

Trichophyton rubrum is a dermatophytic fungus that colonizes the surface of the human skin and is the most frequent cause of mycoses in the hands, groin and body. These fungi feed on keratin found on the skin and can cause granulomas in immunocompromised patients. Typical antifungal agents such as ketoconazole, terbinafine or fluconazole ointments are commonly used for the treatment of such fungal infections. These drugs can also be found in the form of a tablet or capsules for oral use. Onychomycosis should be treated orally because many ointments can't penetrate nail infections. This research seeks to find new therapeutic compounds from natural products for the treatment of such infections, as well as to define the chemical composition of the natural product used. For this purpose, the essential oil extracted from the *Campomanesia xanthocarpa* plant was used against of the dermatophyte fungus *T. rubrum*. For the assay the broth microdilution technique was used, in which serial dilutions were performed on plates (96 wells), in order to obtain different concentrations of the natural product used as recommended by CLSI M38-A against four strains of mentioned species identified as LABMIC 0203, LABMIC 0204, LABMIC 0205, LABMIC 0206. For the control was used standard drug ketoconazole. In all strains tested a MIC (minimum inhibitory concentration) of 2.5 mg/mL was found, as well as an MFC (minimum fungicidal concentration) of 5.0 mg/ml. The chemical composition showed a high index of (2E, 6E)-Farnesol (34.71%) followed by D-limonene (10,21%), among other constituents with low presence as p-cymene (5.29%) and E-caryophyllene (4.14%). Based on the obtained results it can be concluded that the natural product presents a good antifungal activity compared to the standard drug used in the positive control. In the obtained constituents it is observed that the antifungal potential is due to the major constituents found in the essential oil, since the others presented a low representativeness, varying from 0.5% to 4%. Such constituents with possible antifungal activity should be further isolated and tested separately for a more accurate outcome of the activity.

Key words: antifungal activity, chemical composition, trichophyton rubrum