Antioxidant and antimicrobial activities of the essential oil of *Tabernaemontana catharinensis* A.DC. leaves

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**Introduction:** Studies have demonstrated beneficial properties of essential oils in the prevention/treatment of antibacterial, antiviral, antioxidant and anti-inflammatory agents. The purpose of this study was to evaluate the antioxidant and antimicrobial activities of essential oil of *T. catharinensis* leaves (Apocynaceae). The species is native from South America, with occurrence in Argentine, Uruguay, Paraguay and Southern Brazil, where is known as “Cobrina”.

**Experimental part:** The fresh leaves (200g) were collected in Bossoroca (Rio Grande do Sul State) in April of 2011 and extracted using a hydrodistillation process in a Clevenger apparatus for 4 hours. The material was deposited in herbarium of Department of Biology of UFSM catalogued under number of register SMBD 12.355. Dilutions of essential oil (250 - 7.81 µg/mL) were mixed with 1.0 mL of DPPH in ethanol solution, after 30 min, absorption was measured at 518 nm. The results were expressed in IC₅₀ (concentration required to inhibit 50% of the DPPH). Essential oil was evaluated against *C. albicans*, *C. neoformans*, *K. pneumoniae*, *P. aeruginosa*, *E. faecalis*, *P. mirabilis*, *S. aureus*, *Malassezia sp.*, *Aspergillus sp.*, *Aeromonas sp.*, *S. aureus* and *E. coli*. The minimal inhibitory concentration (MIC) of the oil against the test microorganisms were determined by the broth microdilution method M27-A2.

**Results/Discussion:** Essential oil of *T. catharinensis* showed IC₅₀ = 26.52 ± 0.09 µg/mL, this result proved that this essential oil possess significant antioxidant properties. Additionally, essential oil presented only moderately activity against *K. pneumoniae* (MIC = 750 µg/mL), other strains showed MIC > 1000 µg/mL.

**Conclusion:** Evaluation of antioxidant and antimicrobial activities is the first work described for essential oil of the *T. catharinensis*, and, taken together, the data obtained here inspire more studies supporting the possibility of linking the chemical contents with particular biological properties.

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