



Chemical composition and preliminary study of biological effects of the essential oil of *Cunila fasciculata* (Lamiaceae)

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The genus *Cunila* (Lamiaceae: Nepetoideae) occurs in both North and South America, and comprises 20 species with two different centers of distribution: in North America with 9 species and in the southern region of South America with 11 species (1). Many species of *Cunila* from the southern region of South America have been widely used in folk medicine as a treatment for chronic cough and respiratory infections, as a natural flavoring in a traditional beverage from Rio Grande do Sul State, and in regional culinary practice (1). Many studies on the chemical composition of essential oils of *Cunila* species have also reported bactericidal, fungicidal, and insecticidal activities (2). *Cunila fasciculata* is a native plant of Southern of Brazil, Argentine and Uruguay, used in the Brazilian folk medicine as a stimulant, emmenagogue, antispasmodic and in the treatment of respiratory infections. In this work the chemical composition of the essential oil of aerial parts of *C. fasciculata* obtained by hydrodistillation was analyzed by CG-FID and CG/MS. Samples of aerial parts of *C. fasciculata* plants were collected in the municipality of Ibarama, central region of the Rio Grande do Sul State, Brazil. This oil was tested *in vitro* against nine human cancer cell lines by Sulforhodamine B assay to determine the concentration of total growth inhibition (TGI) in µg/mL. Cancer cells lines tested were U251 (glioma) MCF-7 (breast), NCI-ADR/RES (drug resistant ovarian), 786-0 (kidney), NCI-460 (lung), OVCAR-3 (ovarian), HT-29 (colon), K562 (leukemia) and PC-3 (prostate). Additionally, we report the antimicrobial activity against *Acinetobacter baumannii*, a tough bacterium isolated from human clinical process (University hospital, UFGD, Dourados, Brazil). For this experiment, the *Cunila* oil was subjected to an initial screening using the disk diffusion method on agar according to the Clinical and Laboratory Standards Institute with adaptations (3). The oil was obtained in a yield of 0.6%. Among the major compounds identified in the oil were found the monoterpenoids menthone (15.5%), piperitone (8%), isomenthone (7.3%), and linalol (4.8%), and the sesquiterpenes caryophyllene oxide (16%), caryophyllene (7.2%), spathulenol (6.8%), humulene (5.4%) and germacrene D (5.0%). The *Cunila* oil was more effective in inhibiting the growth of cells OVCAR-03 (ovarian) (TGI 49.7 µg/mL). In this previous screening was considered the *Cunila* oil as active against bacteria *A. baumannii*, showing a zone of inhibition of 10 mm. This finding is highlighted because this bacterium is a resistant strain to antibiotics.

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