

09.032 Piper spp. Amazon: antimicrobial activity of extracts and essential oils. Soares-Mota MR¹, Batista AC¹, Cunha ALB¹, Santos SM², Souza DJF², Pohlit AM³, Fernandes OCCF⁴, Chaves CMC¹ ¹EMBRAPA – Medicinal Plants, ²Literatus, ³INCA – Natural Products Research, ⁴Fiocruz – Biodiversity

Introduction: The Family Piperaceae is one of the most represented in the flora of the Amazon biome. Some species of *Piper* are used in folk medicine for the treatment of various diseases. The present work aims to study pharmacological *in vitro* antimicrobial extracts and essential oil of *Piper* species against species of bacteria and fungi commonly associated with human diseases. **Methods:** The leaves of *Piper hispidum* (**Ph**), *Piper tuberculatum* (**Pt**) and *Piper marginatum* (**Pm**) were collected and the leaf powder were exhaustively extracted with H₂O/EtOH (1:1), concentrated entirely and dried to provide the hydroalcoholic extract, designated **EEA_{Ph}**, **EEA_{Pt}** and **EEA_{Pm}**. In a water bath at a temperature of about 120 °C, the powder of the leaves of **Ph**, **Pm** and **Pt** in distilled water under manual shaking, filtered and lyophilized to obtain the aqueous extract termed **EA_{Ph}**, **EA_{Pt}** and **EA_{Pm}**. The extraction of essential oils was conducted in *Clevenger* type system by hydrodistillation and was coded **O_{Ph}**, **O_{Pt}** and **O_{Pm}**. The extracts and essential oils were analyzed the minimum inhibitory concentration test (MIC) in sterile microplates of 96 holes were added 100 µL of liquid culture medium (broth) in all holes. The line in the plate samples were added (100 µL) of the extracts and essential oils to be analyzed at a concentration of 100 µg/mL solubilized in alcohol. The MIC was determined as the lowest concentration of active compound capable of inhibiting cell growth. **Results:** The minimum inhibitory concentration against *Staphylococcus aureus* through with extracts **EEA_{Ph}** (25 µg/mL), **EEA_{Pt}** (1,5 µg/mL), **EEA_{Pm}** (1,5 µg/mL), **EA_{Ph}** (25 µg/mL), **EA_{Pt}** (1,5 µg/mL), **EA_{Pm}** (6,2 µg/mL) and essential oils **O_{Ph}** (12,5 µg/mL), **O_{Pt}** (3,1 µg/mL), **O_{Pm}** (1,5 µg/mL); against *Escherichia coli* through with extracts **EEA_{Ph}** (25 µg/mL), **EEA_{Pt}** (12,5 µg/mL), **EEA_{Pm}** (12,5 µg/mL), **EA_{Ph}** (50 µg/mL), **EA_{Pt}** (12,5 µg/mL), **EA_{Pm}** (6,2 µg/mL) and essential oils **O_{Ph}** (12,5 µg/mL), **O_{Pt}** (12,5 µg/mL), **O_{Pm}** (1,5 µg/mL); against *Pseudomonas aeruginosa* through with extracts **EEA_{Ph}** (25 µg/mL), **EEA_{Pt}** (12,5 µg/mL), **EEA_{Pm}** (12,5 µg/mL), **EA_{Ph}** (50 µg/mL), **EA_{Pt}** (3,1 µg/mL), **EA_{Pm}** (1,5 µg/mL) and essential oils **O_{Ph}** (12,5 µg/mL), **O_{Pt}** (1,5 µg/mL), **O_{Pm}** (1,5 µg/mL). The results of antifungal activity were confirmed for the extracts **EEA_{Ph}** (50 µg/mL), **EEA_{Pt}** (50 µg/mL), **EEA_{Pm}** (50 µg/mL), **EA_{Ph}** (50 µg/mL), **EA_{Pt}** (50 µg/mL), **EA_{Pm}** (50 µg/mL) and essential oils **O_{Ph}** (50 µg/mL), **O_{Pm}** (50 µg/mL), **O_{Pm}** (50 µg/mL) against yeast *Candida albicans*. Results were negative in tests using *Penicillium sp.* and *Aspergillus sp.* **Discussion:** The study so far is proving the potential therapeutic antimicrobial activity of extracts and essential oils from the leaves of *Piper spp.* Such activity is probably related to the presence of compounds of the class of terpenes, alkaloids and amide already described with similar activity in the Family Piperaceae species. The group aims to identify the active chemicals compounds of the species of *Piperspp.* The study as prototypes certainly contributes to obtaining herbal effective. **Acknowledgements:** This research was supported by grants from CAPES (Coordination of Improvement of Higher Education Personnel).