

## Antimicrobials molecules in the peel of the pineapple

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**Introduction:** Pineapple is a fruit rich in vitamins and minerals, besides of that, the peel contains special properties, as antibacterial and antifungal substances. These properties could be isolated and possibly preserve others foods. **Objective:** The objective of this work is to identify and characterize antimicrobials molecules in peel of the pineapple. **Methods:** The peel of one pineapple was triturate on trifluoroacetic acid 0.1% and placed in ice bath beneath agitation by thirty minutes. The acid extract obtained was filtered to remove most solid and submitted to a pre-purification with C18 Sep Pak cartridge and eluted at different concentration of acetonitrile (5%, 40% and 80%). These fractions was dried by lyophilization, reconstituted in TFA 0.05% and applied to a reversed phase chromatography on a preparative ODS-C18 column. The column effluent was monitored by absorbance at 225 nm and the antimicrobial activity was determined by liquid growth inhibition assay against *Aspergillus niger*, *Cryptococcus neoformans*, *Micrococcus luteus*, *Escherichia coli*, *Candida albicans* and *Cladosporium herbarum*. Fractions that showed activity were dried by vacuum centrifugation using a Speed-Vac and then reconstituted in formic acid to be evaluated by mass spectrometry (Orbitrap – LC/MS). Data were analyzed by comparison against proteins stored in the database. **Results and Discussion:** Through the techniques applied were founded 28 fractions with activity, among them, 2 fractions showed activity against *Aspergillus niger*, 3 fractions showed activity against *Candida albicans*, 22 fractions showed activity against *Micrococcus luteus*, 1 fraction showed activity against *Escherichia coli* and 5 fractions show a decrease in the growth of *Cladosporium herbarum*. **Conclusion:** Through the mass spectrometry it was possible to identify similarities between 3 molecules already described in the literature: bromelain, jacalin and a small rubber particle protein, these 3 could be replacement of chemical preservatives in natural antimicrobial compounds.

**Key-words:** Antimicrobial, Chemical preservatives, Pineapple.  
**Support by:** Fundap, CNPq and Fapesp.