

PO120
PHYTOCHEMICAL CONSTITUENTS OF *Gunnera tinctoria* (NALCA)
AND ITS ACTIVITY AGAINST *Helicobacter pylori*

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Introduction

Helicobacter pylori (Hp) is a pathogen whose global prevalence reach 50%, is involved in gastric diseases such as gastritis, duodenal ulcer and gastric cancer. To eradicate this bacterium, antibiotic triple therapy is used, which may show side effects associated with abandonment and failure. This is a critical factor because could promote selection of antibiotic resistance. Therefore, there is a constant search for new molecules with safer and selective profile against this pathogen. The aim of this work was to continue to identification of bioactive molecules from extracts of the edible petiole of *Gunnera tinctoria* (nalca), based on their ability to inhibit the growth of *H. pylori*.

Methods

Extracts were analyzed through HPLC-ESI-MS/MS HPTLC/MS/MS and GC-MS/MS allowing the assignation of the main polyphenol constituents identity. Antimicrobial effect was assessed using *H. pylori* strains 43504, SS1 and J99 and confirmed by transmission electron microscopy. Also, inhibition of urease and carbonic anhydrase enzymes were performed in order to evaluate the effect of extracts upon *H. pylori* virulence factors.

Results and conclusions

Tannin-rich extracts from *G. tinctoria* promoted ultrastructure alterations characterized by the formation of "Blebs" in the bacterial membrane. Such modifications suggested that tannin fraction generate disruption of bacterial membrane leading to cell lyses and death. Additionally, extracts from this specie inhibit urease and carbonic anhydrase suggesting that Nalca activity not only affect bacterial morphology but also with two virulence factors that have a key role in the early steps of infection. In conjunction, our findings indicates that *G. tinctoria* could be a powerful resource for the preparation of nutraceuticals, phytotherapeutic and functional ingredients destined to prevent or complement the pharmacological therapy of *H. pylori*.

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