Antimicrobial inhibitory activity by extracts from leaves of *Morus nigra*

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**Introduction:** The search for biologically active compounds for therapeutic purposes in plants has enriched the therapeutic options with new anti-inflammatory, antimicrobial, antitumor drugs among others. In the search for solutions for the development of multi-resistant bacteria, this study aims to scientifically confirm the antimicrobial activity of extracts from leaves of *Morus nigra* as an antimicrobial. Despite the many reports on *Morus nigra* and its compounds, the antimicrobial activity has not been fully studied. The mulberry belongs to the genus *Morus* of the family *Moraceae*. There are 24 species of *Morus* and one subspecies, with at least 100 known varieties (Ercisli, S., et al. Food Chemistry 103, 1380, 2007).

**Experiments:** The antimicrobial activity of a crude ethanol extract of *M. nigra* leaves and its hexane and ethyl acetate fractions, obtained from partition of immiscible liquids, were studied *in vitro*, which were then tested against *Staphylococcus aureus* (ATCC 25923) and *Escherichia coli* (ATCC 25922). The Minimal Inhibition Concentration (MIC) was determined according to the disc-diffusion method by NCCLS, 2003. The crude ethanol extract and hexane fraction were used to inhibit both *E. coli* and *S. aureus*, while the ethyl acetate fraction was used only against *S. aureus*.

**Results/Discussion:** The crude ethanol extract and its hexane fraction of *M. nigra* were poorly active against *E. coli*, showing a inhibitory halo of 7mm (minimal concentration in disc of 0.125µg/20µL for crude ethanol extract and 0.06µg/20µL for the hexane fraction), while the same extracts and also the ethyl acetate fraction showed better inhibitory results, ranging from 7 to 11mm halo (minimal concentration in disc of 0.125µg/20µL for all extracts studied).

**Conclusion:** The ethanol extract and its fractions from leaves of *Morus nigra* suggest interesting antimicrobial activity against *S. aureus*. This plant will be studied in order to isolate and identify phytochemical compounds involved in this antimicrobial activity, potentially useful in control of multiresistant bacteria.

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