

PP79. *In vitro* antimicrobial and anti-mycobacterial activity of *Piper nigrum* Linn. essential oil

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Keywords: *Piper nigrum*, essential oil, antimycobacterial, toxicity

In the present study, it was aimed to determine the phytochemical components and evaluate the antimicrobial and antimycobacterial activity of *Piper nigrum* L. (Piperaceae) essential oil. It is well known that black pepper preparations have a wide spectrum of biological activity along with its antimicrobial activity. The antimicrobial properties of black pepper extracts were evaluated previously [1,2].

Commercially available black pepper dried fruits were used as study material. The dry black pepper fruits were pounded, and the essential oil was obtained by hydrodistillation using the Clevenger apparatus. The phytochemical analysis of the essential oil was performed by GC-FID and GC/MS, simultaneously. In addition, *in vitro* antibacterial and antimycobacterial effects against *Staphylococcus aureus*, *S. epidermidis*, methicillin-resistant *S. aureus*, *Streptococcus pyogenes*, *Moraxella catarrhalis*, *Haemophilus influenzae*, *Mycobacterium smegmatis*, *M. avium* and *M. fortuitum* subsp. *fortuitum* were assessed by microdilution methods according to CLSI standards [3,4].

The black pepper essential oil was obtained in 10.7 mL/kg yield. According to the GC/FID and GC/MS results, the major constituent of the oil was determined as caryophyllene oxide (28.7%). The antibacterial activity results showed that the oil was effective at different concentrations in the concentration range of 0.16-2.5 mg/mL. According to the antimycobacterial activity results, the essential oil's minimum inhibitory concentrations were 0.08-0.31 mg/mL. LOX-antiinflammatory activity and *Caenorhabditis elegans* toxicity evaluations are under progress for the mode of action and selectivity of the activity.

References:

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Acknowledgments: *C. elegans* strains used in this work were kindly provided by the CGC, which is funded by the NIH Office of Research Infrastructure Programs (P40 OD010440).

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