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> [Nat Prod Res.](#) 2022 Jan 24;1-5. doi: 10.1080/14786419.2022.2032694. Online ahead of print.

***Trigonella teheranica*: a valuable source of phytochemicals with antibacterial, antioxidant and cytotoxic properties**

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PMID: 35073800 DOI: [10.1080/14786419.2022.2032694](https://doi.org/10.1080/14786419.2022.2032694)

Abstract

Trigonella genus is a member of Fabaceae family, which is used as medicinal plant. The aim of this study was investigation of phytochemicals and some biological activities of *Trigonella teheranica* for the first time. The essential oils (EOs) of different parts (leaves, fruits and roots) were obtained and analyzed by GC-MS. Also, their chloroform and methanol extracts were prepared, too. The antimicrobial effects, antioxidant activities and cytotoxic effects against cancer (MDA-MB-231, MRC5 and HT-29) cell lines were investigated. N-hexadecanoic acid was the major compound of leaves and fruits EOs, and hexanal was abundant component of roots EO. The extracts showed stronger antibacterial effects than volatile oils against Gram-positive bacteria such as *Staphylococcus aureus* and *Bacillus subtilis*. All methanol extracts showed strong antioxidant effects, while the volatile oils, especially of leaves was the most effective in cytotoxic assay. Also, three derivatives of coumaric acid were isolated and identified from *T. teheranica*.

Keywords: Fenugreek; coumaric acid derivatives; essential oil; methanol extract.

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