

## A Chemical Study of Some Phenolic Compounds of the Genus Fenugreek Located at Mosul Dam Site Using High-Pressure Liquid Chromatography (HPLC)

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### ABSTRACT

Trigonella genus has been widely cultivated in Iraq. It has various medicinal properties, including reducing fat and blood sugar, antibacterial, anti-ulcer, and analgesic, plus common phenolic compounds such as phenolic acids, flavonoids, anthocyanins, coumarins, and lignins. The HPLC analysis is one of the most frequently applied techniques to evaluate phenolic compounds present in plants. Chemical characterization of every phenolic compound is not possible due to the rich diversity and complexity of these compounds present in plants. In addition, phenolic compounds are the most abundant compounds of some Trigonella L. species grow in Iraq. Identified of some compounds from extract materials could be used to invent new and more potent antimicrobial drugs of natural origin also to identify some active compounds through the use of HPLC technology in diagnosing and identifying these compounds, which will certainly play an important role in discovering effective medications for many disease conditions. This work will be provided a solid foundation for future pharmacological research on these plants' extracts. Also to know the active compounds and their activity for three trigonella species medicinal plants extracts. This study was conducted in 2020 which investigate the active compounds in three alcoholic extracts belong to Trigonella genus was used, representing three plant samples extracts by using the soxhlet device and then detecting the active compounds by using HPLC technique. Results: Current study is based on the extraction of free and bound phenolic compounds (PC) in aerial parts, the RP-HPLC-DAD was applied for separation and detection of phenolic compounds (PC). The HPLC profiling revealed the existence of 16 phenolic compounds, however, only 6 compounds were identified, while the rest were not identified due to the lake of reference standards. The results showed that there were many differences in the types of phenolic compounds between the diagnosed samples within the Trigonalla genus in the legume family, where seven types of phenolic compounds appeared. In the first type, Trigonella filipes, four of them were diagnosed, while the others remained unknown glycosides, and the identified compounds were Quercetin, Resorcinol, Salicylic acid. The three species share two compounds: Salicylic acid and Trigonelline.

