

Phytochemical screening from the leaves extracts of *Stachys mouretii*

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OBJECTIVES

Our interest is focused in particular on :

- ❖ Extraction of the leaves of *Stachys mouretii* with different solvents.
- ❖ Preliminary phytochemical analysis
- ❖ isolation and identification of new biologically active molecules.
- ❖ Evaluation the biological activities.

INTRODUCTION

Stachys mouretii is an endemic plant of Morocco belonging to the *Lamiaceae* family. The genus *Stachys* L. is one of the largest genera of the *Lamiaceae* (also known as *Labiatae*), and it consists of approximately 300 species displaying a remarkable range of variation. It is mainly distributed in the warm temperate regions of the Mediterranean and south-west Asia, with secondary distributions in North and South America and Southern Africa.

Different *Stachys* species, which are known as betony, woundwort or mountain tea in folk medicine and used in the preparations of yogurt or jelly or traditionally as flavorings and seasonings. Furthermore, plants of this genus have been used for centuries as herbal remedies in the treatment of several complaints. (1).

In recent years, pharmacological studies on different taxa of this genus demonstrated some effects of extracts or isolated components such as anti-inflammatory, antitoxic, antibacterial, antioxidant and cytotoxic. Many other *Stachys* are used for the healing of skin, stomach, ulcer, asthma, rheumatic diseases and vaginal tumors (1,2). Phytochemical studies on *Stachys* species reported the presence of phenylethanoid glycosides, iridoids, triterpenoids, steroids, diterpenes, flavonoids, fatty acids, polysaccharides and other secondary metabolites.

We have chosen *Stachys mouretii* as the object of our study since no investigation has been carried out on this species to date.

METHODS

Collection of plant material

The leaves of *Stachys mouretii* were collected in April 2018 from Talasmtan forest in the region of Ouazzane. Then, they were thoroughly washed with water to remove dust and dried under the shade at room temperature for 7 days. The dried leaves were ground using kitchen blender to obtain the course powder and kept in an air tight container till further use

Preparation of extracts

The dried powdered leaves of *Stachys mouretii* (160g) were extracted exhaustively by Soxhlet method with increasing polarity of solvents (hexane, ethyl acetate and methanol).

Phytochemical screening of leaves extracts

The identification of secondary metabolites was carried out via phytochemical screening using qualitative analyses based on a set of staining / precipitation reactions and thin layer chromatography techniques. These separating analyses use organic solvents and reagents allowing the detection of the sought molecules in a specific way.



RESULTS

Percentage yield of crude extracts

After 12h continuous hot extraction of powder leaves of *Stachys mouretii* in hexane, 24h in ethyl acetate and 24h in methanol different amounts were obtained. The amounts that have been found are 3.9g of hexanic extract, 5.5g of ethyl acetate extract and 18.8g of methanolic extract.

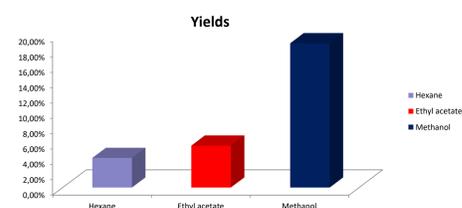


Fig. 1: Yields of Hexane, Ethyl acetate and Methanol extracts of *Stachys mouretii*.

Preliminary phytochemical screening

Preliminary phytochemical analysis showed the presence of major classes of secondary metabolites such as, sterols/steroids, terpenes/terpenoids, flavonoids and polyphenols (table 1). Saponins, tannins and alkaloids were found to be absent in all extracts.

Extracts	Hexane	Ethyl acetate	Methanol
Sterols/Steroids	+	-	-
Terpenes/Terpenoids	+	-	-
Polyphenols	-	+	+
Tannins	-	-	-
Flavonoids	-	+	+
Alkaloids	-	-	-
Saponins	-	-	-

Table. 1 : Results of preliminary phytochemical screening of *Stachys mouretii*. Leaves extracts.

CONCLUSION

- ❖ The phytochemical screening of *Stachys mouretii* leaves extracts revealed the richness of this plant in potentially bioactive compounds such as, sterols/steroids, terpenes/terpenoids, flavonoids, and polyphenols and the separation of these compounds is currently in progress.
- ❖ Numerous reports available on phenolic compounds have demonstrated their usefulness in exhibiting potential biological activities such as antioxidant, antidiabetic, hepatoprotective, anti-inflammatory, antimicrobial, anticancer... (3,4) and according to our phytochemical study this plant can find applications in the medicinal fields.

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