EXTRACTION AND ISOLATION OF BIOACTIVE COMPOUNDS, BIOLOGICAL ACTIVITIES AND EXTRACTION OF ALKALOIDS FROM *PERGULARIA TOMENTOSA* PLANT.

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Abstract

The term of medicinal plants includes the plants that possess therapeutic properties or exert beneficial pharmacological effect on the human or animal. Knowing that the Sahara represents the three quarters of the grounds of our country, and that it contains a vast practically unexplored flora. This fact tempted us to study a plant which is in the Sahara pertaining to the family of Asclepiadacea.

This study was aimed to assess *in vitro* antioxidant activity using DPPH test and anti-diabetic activity, and to isolate some bioactive compounds present in *Pergularia tomentosa*. As well as, extraction of total alkaloids from leaves of this plant.

The inhibition of DPPH• was expressed as an IC_{50} value which varied between 0.41 ± 0.02 and0.8 ± 0.001 mg/ml for stems extracts. While, it varied between 0.10 ± 0.02 and 1.88 ± 0.32 mg/ml for leaves extracts. The highest percentage of inhibition of α-amylase was estimated at 36.44 in ethyl acetate stems extract. While, the less inhibition was estimated at 2.74% in queues stems extract. The use of different chromatographic methods conduct us to isolate and to purify some bioactif compounds.

Key-words: *Pergularia tomentosa* L., DPPH test , anti-diabetic activity, alkaloids.

Methodology

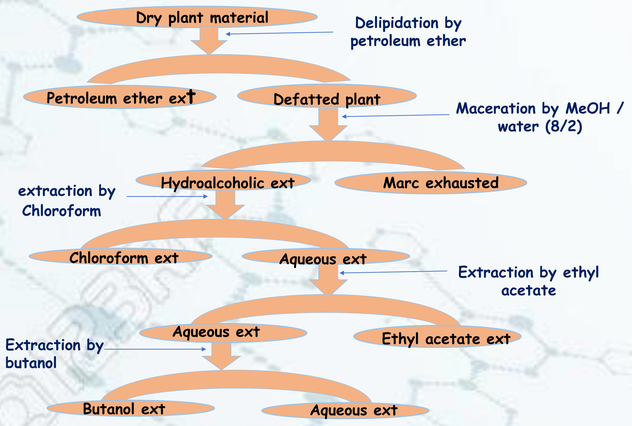


Figure 1: protocol of extraction of Polyphenols [1]. (ext= extract)

Determination of antioxidant and anti-diabetic activities

Antioxidant activity of different extracts of *P. tomentosa* was determined by using DPPH• test [2].The antioxidant capacity of different extracts was expressed as an IC_{50}.

Anti-diabetic activity of different stems extracts was determined using the inhibition of α-amylase enzyme.

Extraction of alkaloids

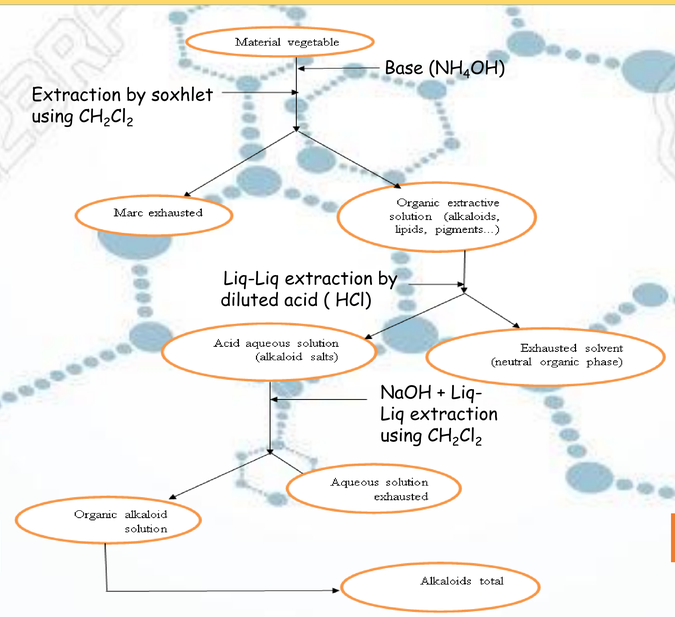
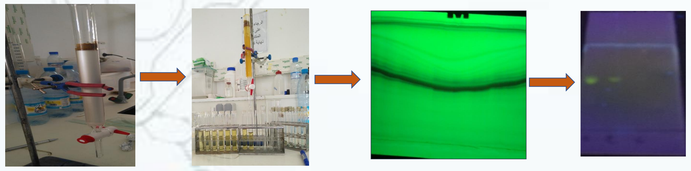


Figure 2: protocol of extraction of alkaloids [1].

Isolation and purification compounds

The copmounds isolated from *P. Tomentosa* were obtained by using different technique chromatographic such as silca gel column, C18 column, sephadex column and TLC plate.



Results

Table1: IC50 values of different extracts.

Extract	IC50 (mg/ml)	
	Stems	Leaves
crude	0.8 ± 0.001	0.375 ±0.01
Chloroform	0.53 ± 0.12	0.605± 0.03
Ethyl acetate	0.41 ± 0.02	0.10 ± 0.02
Butanol	0.79 ±0.22	0.27 ±0.01
Aqueous	/	1.88 ± 0.32

Table2: Percentage of inhibition of α-amylase.

Stems extract	Percentage of inhibition (I%)
Chloroform	22,03
Ethyl acetate	36.44
Butanol	19,22
Aqueous	2.74

Conclusion

This phytochimical study showed that this plant contain various secondary metabolites.

The present findings suggest that extracts obtained from *Pergularia tomentosa* L. possess antioxidant and anti-diabetic properties.

The use of different chromatographic methods conduct us to isolate and purify bioactif compounds, their chemical structure will be confirmed by using different spectroscopic methods such us: NMR (H, C, HMBC, HSQC, COSY), IR, MS.

Referances

[1] BRUNETON J;Pharmacognosie phytochimie plantes médicinales, 5e édition, Lavoisier, p IV, Itali (2016)

[2] MANSOURI A., EMBAREK G., KOKKALOU E. et KEFALAS P.; Food Chemistry, 89(3), pp 411-420 (2005).