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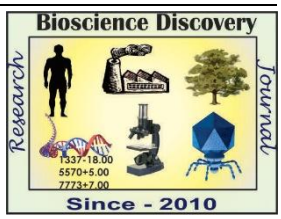

Analysis of phytochemical compounds from methanol leaf extract of plant *Cissampelos pareira* Linn.

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Abstract

Cissampelos pareira Linn. belongs to the Menispermaceae family is a sub-erect or climbing herb, known as Laghupatha in Indian traditional medicine. A very variable, lofty, slender, dioecious, perennial climber this plant commonly distributed throughout tropical and sub-tropical India. Phytochemicals are produced in plant and they are naturally occurring metabolite found in plant. The present study was performed to qualitative and quantitative analysis of leaf methanol extract. qualitative analysis presence of tested phytochemicals alkaloid, phenolic compound, flavonoid, saponin, tannin, and carbohydrate and their quantitative analysis of phytochemicals alkaloid 254.63±0.001, phenolic compound 17.23±0.000, flavonoid 50.66±0.002, saponin 54.83±0.001, tannin 0.796 ±0.002 and carbohydrate 96.20±0.036 (mg/gm).

INTRODUCTION

Cissampelos pareira Linn. (Menispermaceae-family) is a sub-erect or climbing herb, known as Laghupatha in Indian traditional medicine. *Cissampelos pareira* L. plant is very variable, lofty, slender, dioecious, perennial climber this plant commonly distributed throughout tropical and sub-tropical India. This plant contains very essential a group of phytochemicals (Jhuma Samanta and Bhattacharya S., 2011).

Qualitative analysis was performed in presences or absences of phyotochemicals. Qualitative analysis showed the presence of new biologically active phytochemical within the plant material. Quantification of phytochemical was important of pharmaceutical industry because plant was main source of active ingredients. Phytochemicals were present in various part of plant in different amount and phytochemicals were dissolved in various solvent in various amount. Quantifications of secondary metabolites in *Cissampelos pareira* L. leaf methanol extract was used for evaluate of metabolites spectrophotometrically such as Carbohydrate, alkaloid, phenol, flavonoid, saponin and tannin.

MATERIALS AND METHODS

Preparation of leaf methanol extract for further investigation of Qualitative analysis and Quantitative analysis:

The collected plant material was washed with tap water to remove soil and dust particles. Plant parts like leaf, stem and root were separated and dried in shade. The dry leaf plant part was grinded to make fine powder. Extraction was carried organic solvent in methanol. The grinded powder was transferred to the conical flask with methanol solvent was added and this conical flasks was kept at rotary shaker for 72 hours and then mixture was filtered through Whatmann filter paper Number 1. Then filtrate was extract and dried. The qualitative analysis extracted by standard methods of phytochemical such as alkaloid, phenol, flavonoid, tannin, saponin and carbohydrate. In quantitative analysis Alkaloid and carbohydrate were estimated and tannin was present in small amount.

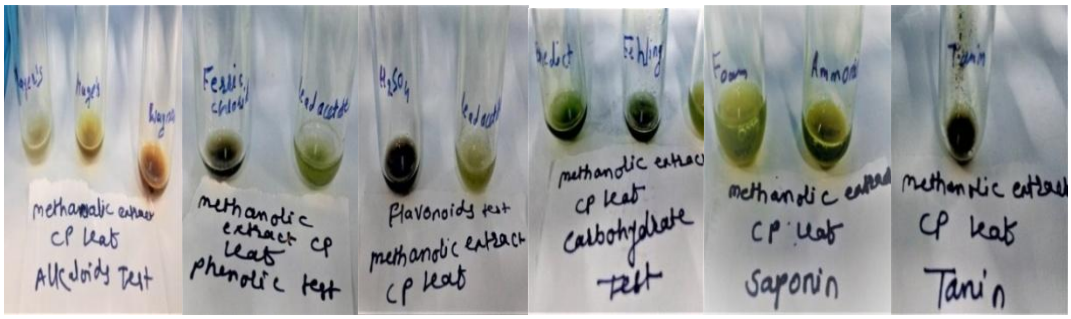
Result and Discussion:
Qualitative Analysis:
Table No.1- Qualitative Phytochemical test of Leaf methanol extract:

Sr. no	Sec. metabolite	Test	Methanol Extract
1.	Alkaloid	Wagner's reagent	+
		Hager's reagent	+
		Mayer's reagent	+
2.	Phenol	Ferric chloride	+
		Lead acetate test	+
3.	Flavonoid	Lead acetate test	+
		H_2SO_4 test	+
4.	Carbohydrate	Fehling solution test	+
		Benedict reagent	+
5.	Saponin	Foam formation H_2O	+
		Ammonia solutions	+
6.	Tannin	Ferric chloride	+

("+" present, "-" Absent).

The leaf methanol extract of *Cissampelos pareira* L. was used for presence of phytochemicals. Results are shown in Table No. 1 and in photo plate 1. Phytochemicals were found in chloroform extract of leaf part. Alkaloid, phenolic compounds, flavonoids, saponin, carbohydrate and tannin were present in extract as shown in table.

Photo plate 1- Leaf Methanol Extract:



Alkaloid Phenol Flavonoid Carbohydrate Saponin Tannin

Quantitative Analysis:

The total alkaloid content was examined in the leaf methanol extract and expressed in term of Caffeine graph. The graph no. 1 shows standard caffeine curve and from graph regression equation (Y=0.001x+0.079, R^2=0.988), the calculate total alkaloid content in the extract was 254.63±0.001 (mg/gm).

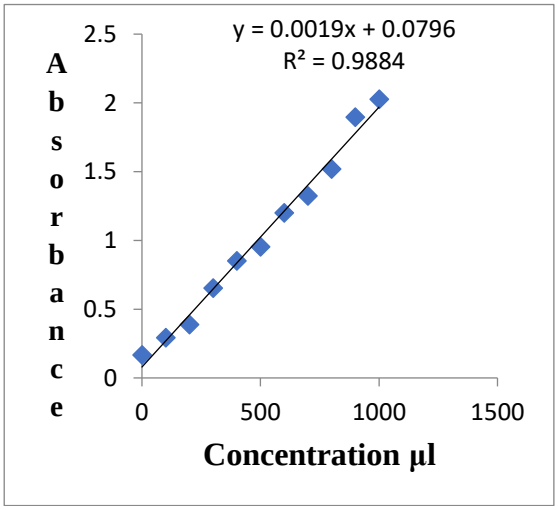
The total phenolic compound content was examined in the leaf methanol extract and expressed in term of Gallic acid graph. The graph no. 2 shows standard Gallic acid curve and from graph the regression equation (Y=0.030x+0.493, R^2=0.980), the calculate total phenolic compound content in the extract was 17.23±0.000 (mg/gm).

The total flavonoid content was examined in the leaf methanol extract and expressed in term of rutin graph. The graph no. 3 shows standard rutin curve and from graph regression equation (Y=0.002x+0.021, R^2=0.978), total flavonoid content in the extract was 50.66±0.002 (mg/gm).

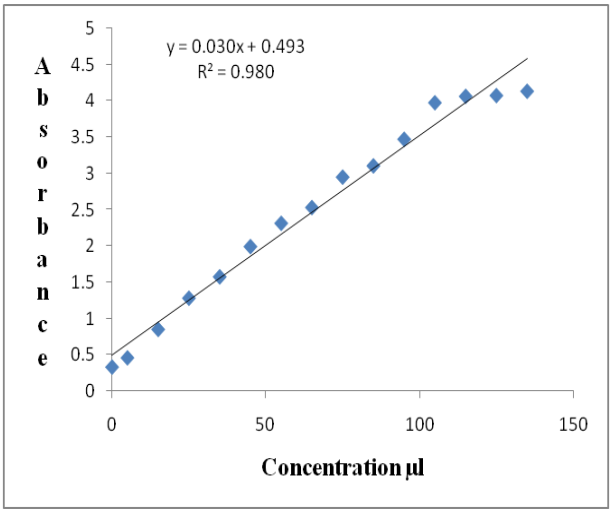
The total saponin content was examined in the leaf methanol extract and expressed in term of diosgenin graph. The graph no. 4 shows standard diosgenin curve and from graph regression equation (Y=0.002x+0.021, R^2=0.978), total saponin content in the extract was 54.83±0.001 (mg/gm).

The total tannin content was examined in the leaf methanol extract and expressed in term of tannic acid graph. The graph no. 5 shows standard tannic acid curve from and the regression equation (Y=0.036x+0.029, R^2=0.963), total tannin content in the extract was 0.796±0.002 (mg/gm).

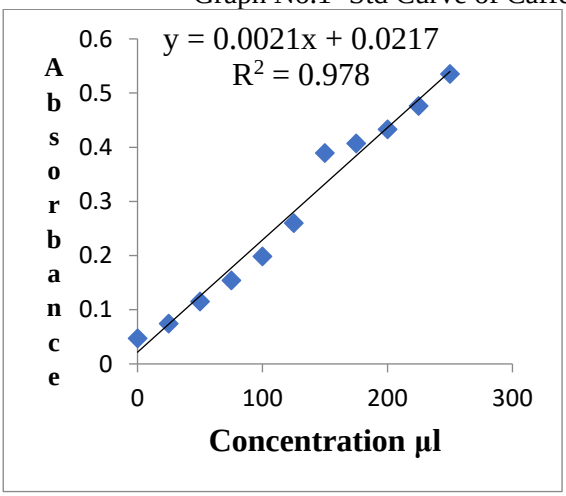
The total carbohydrate content was examined in the leaf methanol extract and expressed in term of glucose graph. The graph no. 6 shows standard glucose curve and from regression equation (Y=0.008x+0.349, R^2=0.974), total glucose content in the extract was 96.20±0.036 (mg/gm).



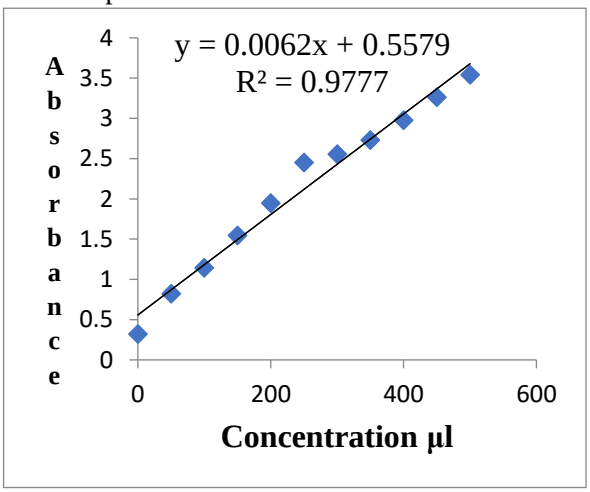
Graph No.1- Std Curve of Caffeine.



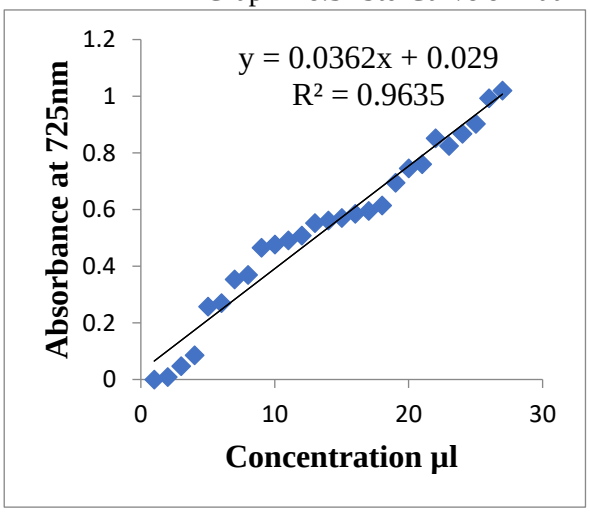
Graph No. 2- Std Curve of Gallic acid



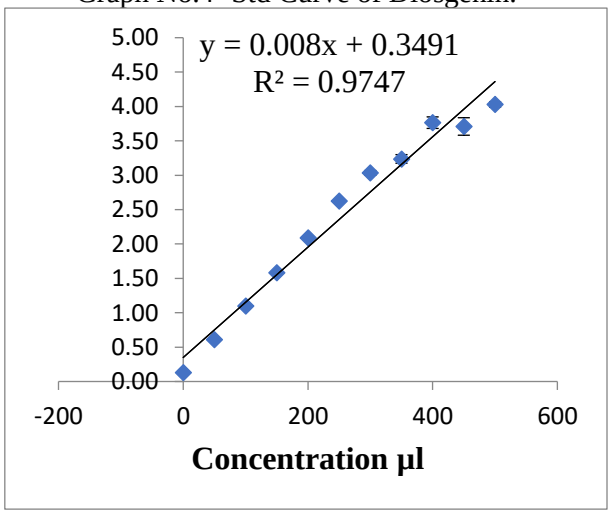
Graph No.3- Std Curve of Rutin



Graph No.4- Std Curve of Diosgenin.



Graph No. 5- Std Curve of Tannic acid



Graph No.6- Std curve of Glucose.

Table no. 2. Phytochemical Content (mg/gm) in Leaf Methanol Extract:

Sr. No	Parameter	Content (mg/gm)
1	Alkaloid	254.63±0.001
2	Phenol	17.23±0.000
3	Flavonoid	50.66±0.002
4	Saponin	54.83±0.001
5	Tannin	0.796±0.002
6	Carbohydrate	96.20±0.036

Values represent, mean ± SE on each of three replicates

Conclusion

From the present study, it can be concluded that, the extractive value is useful to find the effective solvent for extraction. In the present study has been to be methanol is good solvent used for extraction. It gives the idea about the phytochemical dissolved in their solvent. The qualitative analysis presence of phytochemical such as alkaloid, phenol, flavonoid, tannin, saponin and carbohydrate. In quantitative analysis Alkaloid 254.63±0.001and carbohydrate 96.20±0.036 were present in large amount and tannin 0.796±0.002 was present in small amount.

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