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Qualitative Phytochemical analysis of *Costus igneus* leaf extracts

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ABSTRACT

Plants have been an important source of medicine since ancient times. Phytochemicals are naturally occurring in medicinal plants that have defense mechanism and protect from various diseases. In present study qualitative phytochemical analysis were conducted in *Costus igneus* plant leaves to find the presence of active chemical compound. The dried leaves were extracted with different solvent such as petroleum ether, ethanol and water. Phytochemical analysis revealed the presence of compounds like Alkaloids, Steroids, Terpenoids, Glycosides, Tannins, Phenol, Flavinoids, Proteins and Saponins. Since the plant contain bioactive potential compounds, it is reliable to possess pharmacological values and are being employed for the treatment of different ailments in the indigenous system of medicine.

Keywords: *Costus igneus*, Alkaloids, Steroids, Terpenoids, Glycosides

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CONTENTS

1. Introduction	1235
2. Materials and Methods	1236
3. Results and discussion	1236
4. Acknowledgements.	1236
5. References	1236

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1. Introduction

Medicinal plants have been recognized and used throughout history for various therapeutic purposes. They have formed the basis of health care throughout the world. Plants come into preparation of various drugs singly or in combination International Journal of Medicine and Pharmaceutical Research

or even are used as the source of raw material for the other medicines [1]. They synthesize a wide variety of chemical compound that are used to perform important biological function. The medicinal value of plant is due to the
1235

presence of bioactive compounds in them. In recent years, secondary plant metabolites (Phytochemicals), previously with unknown pharmacological activities have been intensively investigated as a source of medicinal plants [2].

Costus igneus, also known as insulin plant belongs to Costaceae family. It is a prostrate growing spreading plant reaching about two feet tall. The lance shaped leaves with lobed margin are spirally arranged. The white flowers grow intermittently throughout the year. It is known as insulin plant for its purported antidiabetic properties. Consumption of *Costus igneus* leaves lowers the blood glucose level. The leaves of *C. igneus* reduced the fasting and postprandial blood sugar levels, bringing them towards normal, in dexamethasone induced hyperglycemia in rats. The bioactive compounds present in the plant are responsible for the medicinal properties of the plant [3]. Medicinal plants are useful for healing as well as for curing of human diseases because of the presence of phytochemical constituents [4]. The present effort has been to analyzed the presence of phytochemical compound in *C. igneus* plant extract.

2. Materials and Methods

Medicinal plants have been recognized and used throughout history for various therapeutic purposes. They have formed the basis of health care throughout the world. Plants come into preparation of various drugs singly or in combination or even are used as the source of raw material for the other medicines [1]. They synthesize a wide variety of chemical compound that are used to perform important biological function. The medicinal value of plant is due to the presence of bioactive compounds in them. In recent years, secondary plant metabolites (Phytochemicals), previously with unknown pharmacological activities have been intensively investigated as a source of medicinal plants [2]. *Costus igneus*, also known as insulin plant belongs to Costaceae family. It is a prostrate growing spreading plant reaching about two feet tall. The lance shaped leaves with lobed margin are spirally arranged. The white flowers grow intermittently throughout the year. It is known as insulin

plant for its purported antidiabetic properties. Consumption of *Costus igneus* leaves lowers the blood glucose level. The leaves of *C. igneus* reduced the fasting and postprandial blood sugar levels, bringing them towards normal, in dexamethasone induced hyperglycemia in rats. The bioactive compounds present in the plant are responsible for the medicinal properties of the plant [3]. Medicinal plants are useful for healing as well as for curing of human diseases because of the presence of phytochemical constituents [4]. The present effort have been to analyzed the presence of phytochemical compound in *C. igneus* plant extract.

3. Results and Discussion

In the present study qualitative phytochemical analysis were conducted in *Costus igneus* plant leaves to find the presence of active chemical compound. The dried leaves of *Costus igneus* were extracted with different solvent such as petroleum ether, ethanol, and water. The study revealed the presence of various phytochemicals (Table: 1). Among the extracts, ethanol extract contained most of the compounds such as Alkaloids, Steroids, Terpenoids, Glycosides, Tannins, Phenol, Flavinoids and Proteins. Petroleum Ether extract indicated the presence of Alkaloids, Steroids, Terpenoids and Glycosides. Phytochemical compounds like Alkaloids, Saponin and Flavinoids were found in aqueous extract.

4. Conclusion

Medicinal plants have continued to be a valuable source of natural products for maintaining health throughout human history. Screening of *C.igneus* leaves revealed the presence of active chemical compounds like Alkaloids, Steroids, Terpenoids, Glycosides, Tannins, Phenol, Flavinoids, Proteins and Saponins. These phytoconstituents are considered as active medicinal chemical constituents that have commercial interest in pharmaceutical companies for modern drug development. Therefore, phytochemical compounds identified in *Costus igneus* can be a source of oral drugs to be used in the treatment of opportunistic infections and serve as a clue for future drug discovery.

Table 1: Phytochemical analysis of *Costus igneus*

S.No	Extract	1	2	3	4	5	6	7	8	9	10
1	Ethanol	+	+	+	+	+	-	+	+	+	-
2	Petroleum Ether	+	+	+	+	-	-	-	-	-	-
3	Aqueous	+	-	-	-	-	+	-	+	-	-

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