

Comparative Study of Phytochemicals of some medical Plants Extracts

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Abstract

An experiment was conducted to study the comparative of the phytochemical analysis of the ethanol extracts of Four medicinal plants Date palm leaves extract, Cumin extract, Sesban extract and Cinnamon extract and its components (tannins, flavonoids, alkaloids, saponins, steroids, trepenoids, phenols, carbohydrate, amino acids, Anthraquinone). It has been proved the existence of alkaloids, tannins, steroids, saponins, trepenoids, carbohydrate and Flavonoids in all plants. While, the results found phenols absent only in Cumin. Anthraquinone was absent in both Date palm leaves and Cinnamon extracts and amino acids absents in both Sesban leaves and Cinnamon extracts. So, we found from this research the Date palm leaves, Sesban leaves and Cinnamon extracts higher activity than Cumin extract, which contain most important of bioactive constituents of plants that used as therapeutic propose.

Keyword: Phytochemicals, medical plants, palm leaves, Cumin, Sesban leaves and Cinnamon

Introduction

Plants contain a wide range of medicinal compounds used to perform many biological functions. Many of these have beneficial effects on health of humans, and the effective of treatment against human diseases. 12,000 of compounds have been isolated so far. thus medicines plants do not differ greatly from conventional drugs in terms of how they work. This enables that medicines plants to be as effective as conventional medicines, but also gives them the same potential to cause harmful side effects (12 and 9). also, in the other examples to use the medical plants in herbal medicine and traditional Chinese medicine. Modern medicine now tends to use the active constituent of plants rather than the whole plants, the Majority of phytochemicals are producing therapeutic activities like antifungal, antibacterial and antioxidant, etc. Which can be used to make pharmaceuticals. The bioactive constituents of plants have most important compounds such as, phenolic, Alkaloids, tannins and flavonoids. Approximately 51% of modern drugs are natural products, which play an important role in drugs developments. The uses of crude plant extract for the determination of the antibacterial activity more successful in the initial steps than screening of pure compounds (8).

In this research used Date palm leaves extract, Cumin extract, Sesban extract and Cinnamon extract to study the comparative of the phytochemical analysis between them, and the reason for choosing the Cumin and Cinnamon because its the most aromatic herbs that give as a flavor in Iraqi dishes, also choosing Date palm leaves because it's in Iraq was considered as a famous cultivation of the world, and

known from the old time in the Civilization of Iraq (Babylonians), while, Chooses of Sesban leaves because Sesban trees very important to resistance desertification in Najaf province.

Material and Methods

In this research each material was extracted by specific method

Collection of Date palm (*Phoenix dactylifera* L.) leaves:

Fresh leaves were collected from Najaf province, leaves were washed in running tap water, rinsed in distilled water and dried for one week in open air, crushed using mortar and pestle, reduced to powder using blender (MX-7011G) for 5 min, then stored in airtight as a powder.

Extraction of polyphenolic compounds from Date palm leaves:

the polyphenolic compounds extracted from palm leaves in two steps according to Markham (11).

Collection of Cumin

Dried seeds of Cumin (*Cuminum cyminum* L.) was buy them from the local market then grinded in an electric grinder to produce a powder.

Collection of Sesban

Sesban leaves (*Sesbania Grandiflora*) **Leaves** collected from private garden\ Faculty of Veterinary\ University of Kufa, then cleaned, washed, shade dried and then change to powder for the study of polyphenols extract.

Collection of Cinnamon

Cinnamon Extract (*Cinnamomum loureirii*)was obtained from Cinnamon plant that was buy them from the local market then

grinded in an electric grinder to produce a powder.

Extraction of Cumin, Sesban and Cinnamon

500gm of powder of all plants was extracted with 2L(70% ethanol) for 48h by using Soxhlet extractor, then net extract was evaporated to dryness using rotary evaporator. The percentage of the solution was calculated according Harborne(5), this crude dissolved was dimethyl sulfoxide in concentration 75%.

Detection of the active constituents of the Date palm leaves, Cumin, Sesban and Cinnamon:

Table 1: Phytochemical analysis of the date Palm leaves, Cumin, Sesban and Cinnamon extracts

Chemical group	Date Palm l	Cumin	Sesban	Cinnamon
Tannins	+	+	+	+
Saponnins	+	+	+	+
Flavonoids	+	+	+	+
Alkaloids	+	+	+	+
Steroids	+	+	+	+
Phenols	+	—	+	+
Terpenoids	+	+	+	+
Carbohydrates	+	+	+	+
Amino acids	+	+	-	—
Anthraquinones	-	+	+	—

(+) indicates presence, (++) indicates presence in high levels, (-) indicates absence.

The phytochemical investigate of the methanol extract of Date Palm leaves and ethanol extracts of Sesban leaves, Cumin and Cinnamon Refers to presence of the same chemical compound i.e. (Tannins, flavonoide, saponnins, terpenoids, steroids and carbohydrates) While, different in amount of the other chemical compound such as, phenols, amino acids and

The standard procedures to identify the chemical constituents was set to measure (tannins, Steroids, Terpenoids, Saponins, Flavonide, Alkaloids, Phenol, Phytosterols and Anthraquinones) according to Sofowora(11), Evans(3), Harborne(6), Dyana and Kanchana(2), Harborne(4 and 7).

Results:

In the present investigation, preliminary phytochemical screening has been shown the results of Date palm leaves, Cumin, Sesban and Cinnamon extracts in (Table ,1).

anthraquinones (Table, 1). The results of phytochemical analysis show presence of (Alkaloids, Flavonoids, Phenols, Tannins and Steroids) in Palm leaves, Cumin, Sesban leaves, Cinnamon extracts which have therapeutically important (Table, 1)

Discussion

Phytochemical analysis of the bioactive compounds (Table, 1) were revealed that some beneficial or toxic effects were shown by a crude plant extracts. In this research compared of phytochemical analysis between Date palm leaves, Cumin, Sesban leaves and Cinnamon extracts constituents, which have shown rich in chemical compounds serve as a good antioxidants. The analysis of palm leaves extract was contained of nine phytochemicals (alkaloids, flavonoids, saponin, tannins, terpenoids, steroids, carbohydrates and amino acids) except anthraquinone. while, the cumin extract was contained nine phytochemicals (Tannins, flavonoids ,alkaloids, sapponine, steroids, carbohydrate , amino acids and anthraquinone) except phenols On the other side , the analysis of Sesban leaves extract was found contains nine phytochemicals (Tannins, flavonoids ,alkaloids, sapponine, steroids, carbohydrate , phenols and anthraquinone) with absent of amino acids in both of sesban leaves and cinnamon extracts that was found contains eight phytochemicals constituents all above without anthraquinone and amino acids(1) Therefore, the phytochemicals of Palm leaves, sesban leaves and cinnamon extracts which proved presence of phenols constituent while, cumin extract absence it. That explained the increase of antioxidant activity refers to the presence of high phenols concentration.

Carotenoids have an important role include retardation of ageing processes and protection of membranes against damage by free radicals. From this research, we have suggested the Palm leaves, Sesban leaves and Cinnamon extracts higher activity than Cumin extract.

Conclusion

The results of present study provide the presence of antioxidant phytochemicals activity in Date palm leaves, Cumin, Sesban leaves and Cinnamon extracts.

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