Introduction
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Medicinal plants have been the subjects of man's curiosity since time immemorial (Constable, 1990). Almost every civilization has a history of medicinal plant use (Ensminger et al., 1983). Approximately 80% of the people in the world's developing countries rely on traditional medicine for their primary health care needs, and about 85% of traditional medicine involves the use of plant extracts (Vieira and Skorupa, 1993). The number of medicinal plants estimated presently is about 2,50,000 species, of which 1,50,000 are said to be growing in tropical countries of the world. Of these about 85,000 species are present in Latin America about 21,000 in Africa and about 50,000 in Tropical Asia (Prendergast et al., 1998).

Plants play a dominant role in the introduction of new therapeutic agents, and also drugs from the higher plants continue to occupy an important niche in modern medicine (Dev, 1997). Most of the pharmaceutical industries are highly dependent on wild population for the supply of raw materials to extract medicinally important compounds.

Systematic scientific investigations during the last few decades on natural products have resulted in identification of a growing number of active constituents. There has been considerable resurgence in the use of herbs and herbal drugs all over the world. Because of the realization of health hazards and toxicity associated with the indiscriminate use of synthetic drugs and antibiotics. About two-thirds of the drugs of modern system of medicine have been developed from natural resources. Medicinal plants have curative properties due to the presence of various complex chemical substances of different composition which are found as secondary metabolites in more than one part of the plant. The secondary metabolites include alkaloids, glycosides, coumarins, flavonoids, steroids etc. These secondary metabolites form the main basis for the manufacturer of drugs of several medicines.

During the past decade, a dramatic increase in exports of medicinal plants attests to worldwide interest in these products as well as in traditional health systems. India has been a traditional exporter of medicinal plants for the past several decades and ranks as
one of the foremost suppliers of medicinal plants in the world. More than 7,500 species of medicinal plants are grown in India. Owing to this, India is considered as a botanical garden of the world and treasure house of biodiversity (Purohit and Vyas, 2005).

A detailed investigation and documentation of plants used in local health traditions and ethnopharmacological evaluation to verify their efficacy and safety can lead to the development of invaluable herbal drugs and isolation of compounds of therapeutic value. In the search for alternatives to production of desirable medicinal compounds from plants, biotechnological approaches specifically plant tissue culture are found to have potential as a supplement to traditional agriculture in the industrial production of bioactive plant metabolites (Ramachandra Rao and Ravishankar, 2000). *In vitro* regeneration holds tremendous potential for the production of high quality plant based medicines.

Lamiaceae, the “Mint” family, comprises about 220 genera and almost 4000 species (Farzaneh Naghibi et al., 2005). A number of medicinal herbs belonging to this family are thoroughly studied for their biological properties and many studies have determined a variety of valuable activities of these plants.

Lamiaceae herbs are a rich source of potentially health beneficial antioxidant polyphenols (Dragland et al., 2003). Essential oils from *Ocimum gratissimum* have been reported to possess an interesting spectrum of antifungal and antinociceptive properties (Dubey et al., 2000; Rabelo et al., 2003). The antioxidative phenolic diterpenes, such as carnosic acid, carnosol, rosmanol, and rosmarinic acid constituents of rosemary have been identified (Senorans et al., 2000; Thorsen and Hildebrandt, 2003).

*Salvia*, the largest genus of the Lamiaceae are used as spices and flavoring agents in perfumery and cosmetics. Many *salvia* species and their isolated constituents possess significant antioxidant activity in enzyme-dependent and enzyme-independent systems (Dorman et al., 1995). The essential oil and ethanolic extract of *S. officinalis* along with the essential oil of *S. lavandulaefolia* have been shown to possess anticholinesterase activities.
activity (Perry et al., 1996). *Salvia* species were also reported to be used for memory enhancing purposes in European folk medicine (Perry et al., 2003).

*Mentha* species have been used as a folk remedy for treatment of nausea, bronchitis, flatulence, anorexia, ulcerative colitis, and liver complaints due to its anti-inflammatory, carminative, antiemetic, diaphoretic, antispasmodic, analgesic, stimulant, emmenagogue, and anticyatharrhal activities (Cowan, 1999; Iscan et al., 2002). Leaves, flowers and the stem of *Mentha* species are frequently used in herbal teas and additives in commercial spice mixtures for many foods to offer aroma and flavor (Kothari and Singh, 1995). Furthermore, it is well documented that the essential oils and extracts from some *Mentha* species including *M. spicata*, *M. piperita*, *M. arvensis*, *M. rotundifolia*, *M. suaveolens* and *M. pulegium* possess antimicrobial and antioxidant properties (Daferera et al., 2003). In Turkey and Europe, *Sideritis* species have been used as a folk medicine for their anti-inflammatory, antirheumatic, digestive and antimicrobial properties (Yesilada and Ezer, 1996).

*Lamium album* commonly known as 'dead nettle' has antispasmodic, diuretic and haemostatic properties and is used in bladder, kidney and menstrual problems. The activity is chiefly attributed to a variety of flavonoids and other phenolics. *Marrubium vulgare* is a popular remedy for cough as well as for digestive disorders. It contains a terpenoid bitter compound marrubiin, diterpenoids, iridoids and flavonoids. *Stachys officinalis* is used as antiseptic, astringent, anthelmintic and digestive. *Galeopsis speciosa* is used in different European countries as astringent, diuretic and expectorant (Adam Matkowski and Magdalena Piotrowska, 2006).

*Lavandula angustifolia* is well known among people as a powerful aromatic and medicinal herb. The plant is used in traditional and folk medicines of different parts of the world for the treatment of several gastrointestinal, nervous and rheumatic disorders (Leung and Foster, 1996). In pharmacological and biological tests, extracts, fractions, and essential oil of *L. angustifolia* are reported to have anticonvulsive, sedative, spasmolytic, antioxidant, antibacterial and mast cell degranulation inhibitory effects (Kim and Cho, 1999; Lis Balchin and Hart, 1999).
The *Ocimum* are valuable group of Lamiaceae with various culinary properties. *Ocimum basilicum* is act as antihelminthic, antipyretic, expectorant and carminative (Sahoo *et al.*, 1997). The oil obtained from the leaves of *O.sanctum* showed diaphoretic, antiperiodic, antiinflammatory and analgesic activities (Giri *et al.*, 1987). *O. gratissimum* is commonly used in the treatment of respiratory tract infections, diarrhea, skin diseases, pneumonia and antimicrobial activity (Adebolu *et al.*, 2005). *Origanum* is widely used as a culinary herb, to flavor food products and alcoholic beverages (Sivropoulou *et al.*, 1996). The Algerian *O. glandulosum* oil exhibited good antioxidant effectiveness (Belhattab *et al.*, 2005).

The genus *Isodon* is represented by 150 species distributed throughout the world mainly in tropical and subtropical Asia. The leaves of *I. rubescens*, which is the most studied species is used for the treatment of respiratory, gastrointestinal, bacterial infections, inflammation, and cancer. *I. eriocalyx* has been used in the form of a crude drug as an antibacterial and anti-inflammatory agent. Clinical trials showed that this crude drug had excellent efficiency for the treatment of sore throats and inflammation. In addition, the aerial parts of *I. ternifolia, I. lophanthoides*, and *I. megathyrs* are empirically employed as antimalarial and anti-inflammatory agents and also for the treatment of enteritis and jaundice. The leaves of *I. amethystoides* are reputed for their efficacy for the treatment of pneumonia in local folk medicine in Anhui province. The herb *I. serra*, distributed mainly over southeast China, is said to have hepatoprotective and anti-inflammatory activities. In Japan, the leaves of *I. japonica* and *I. trichocarpa* have been used since ancient times as a remedy for gastrointestinal disorders. Generally *Isodon* species are medicinally important due to the presence of cytotoxic diterpenoids. A variety of diterpenoids like ent-kaurenes, seco-kaurenes, phyllocladanes and abietanoids were isolated from *Isodon* with a wide range of biological activities like antibacterial, antitumor, anti-inflammatory, and anti feeding activities (Sun *et al.*, 2006).

*Isodon wigthii* (Bentham) H. Hara, is distributed in Western Ghats of South India up to 8,000 feet. The leaves of *I.wigthii* are used as a dye and coloring agent for nails by the local people of Nilgiris, Tamil nadu. India.
The present study on *Isodon wightii* (Bentham) H. Hara (Syn: *Plectranthus wightii*) was attempted with the following objectives.

- To determine the variety of morphogenetic potential and responses of different explants *in vitro*;
- To isolate and elucidate the structure of biologically active compound;
- To evaluate the antibacterial, antioxidant and cytotoxic activity of the isolated compound and
- To assess the anticarcinogenic potential of the compound.