Jasmine grandiflorum

TAXONOMICAL CLASSIFICATION:[1]

- *Kingdom: Plantae*
- *Phylum: Spermatophyta*
- *Subphylum: Angiospermae*
- *Class: Dicotyledonae*
- *Order: Oleales*
- *Family: Oleaceae*
- *Genus: Jasminum*
- *Species: Jasminum grandiflorum*

INTRODUCTION:[2,3]

A climbing shrub. The leaves are opposite, with 3 to 7 lance-shaped, entire ovate to somewhat elliptic in shape with acuminate mucronate apex, petiole almost lacking, imparipinnately compound, with three paired foliates ending with a single leaf at the tip. The leaflets are elongate-lanceolate, acute, 7 to 11 terminal leaflet somewhat large than laterals, narrowing at the base, ovate-lanceolate, acute or acuminate, laterals ovate, terminal one larger than laterals and often partially united with surfaces with a ciliate margin. Flowers are terminal and axillary cymes, calyx lobes long and linear, more than half as long as the corolla tubes. The fruit is a black berry, elliptic, globose berries when ripe. The plant is cultivated in well drained loamy soil and also on a variety of soils such as black, lateritic and clay loam with good drainage system as the plant is highly susceptible to water logging. It can be propagated by shoot tip culture method. Flowering of jasmine plants starts in the first year itself. The yield being ½, 5 and 10 tonnes/ha flowers within first, second and third year respectively. The harvesting of the flower is done in the month of May to December (in South India) and July to November (in North India). A fragrant lactone cis-5-(2-pentenyl) pentanolide [C43] from the oil and wax portion of the flowers of Jasminum grandiflorum was the first report of isolation of a compound from the flowers. The small molecules identified from n-hexane extract of flowers are cis-3-hexenol,2-vinylpyridine, myrcene, benzyl alcohol, p-cresol, linalool, methyl benzoate, benzyl cyanide, benzyl acetate, αterpineol, linalyl acetate, geraniol, indole, eugenol, methyl

dihydrojasmonate, methyl anthranilate, cisjasmone, methyl N-methylanthranilate, vanillin, nerolidol, cis-3-hexenyl benzoate, farnesol, benzyl benzoate, methyl palmitate, isophytol, geranyllinalool, methyl linoleate and phytol. Secoiridoid constituents of flowers include, 2"- epifraxamoside [C44], demethyl-2"-epifraxamoside [C45], jasminanhydride [C46] 17 , 7-ketologanin [C47], oleoside-11-methyl ester [C48], 7-glucosyl11-methyl oleoside [C49], ligstroside [C5], oleuropein [C1], 8-epi-kingiside [C50], 10-hydroxy-oleuropein [C51], 10-hydroxy- ligstroside [C52], oleoside-7, 11-dimethyl ester [C53], jasgranoside and jaspolyoside. Flavonoid glycosides- kaempferol- 3-O-α-L-rhamnopyranosyl (1→3)- [α-L- rhamnopyranosyl (1→6)]- β- Dgalactopyranoside [C54] and kaempferol-3-Orutinoside [C55] also constitute the molecules elaborated by the flowers of Jasminum grandiflorum.

PROPERTIES AND USES: [4,5]

- Antiulcer
- Antioxidant
- Spasmolytic Activity
- Antiviral Activity
- Antimicrobial Activity
- Antifungal activity
- Antibacterial
- Anti-Inflammatory Activity

Analgesic Activity

- Cytoprotective Activity

- Chemo Preventive and Lipid Peroxidative Activities
- Anti-Breast Cancer Activity
- Wound Healing Activity
- Anti-Acne Activity
- Anthelmintic Activity
- Antifertility Activity
- Hepatoprotective Activity
- Anticonvulsant Activity
- Insecticidal effect
- Dermatological effect

SIDE EFFECTS OF EXCESS CONSUMPTION:[6]

When taken by mouth: Jasmine is **LIKELY SAFE** for most people in food amounts. There isn't enough reliable information to know if jasmine is safe when taken by mouth as a medicine.

When applied to the skin: There isn't enough reliable information to know if jasmine is safe when applied to the skin as a medicine. Jasmine might cause allergic reactions in some people.

DOSAGE: [7]

- Powder of dried leaf – 5-10gm
- Fresh juice of flower – 5-10 ml
- Decoction – 50-70 ml

RESEARCH:

1. *Jasminum grandiflorum* belongs to the family Oleaceae and is known to have anti-inflammatory, antimicrobial, antioxidant, and antiulcer activities. The present study was undertaken to study its analgesic and anticonvulsant effects in rats and mice. The antinociceptive activity of the hydroalcoholic extract of *J. grandiflorum* leaves (HEJGL) was studied using tail flick and acetic acid – induced writhing method. Similarly, its anticonvulsant activity was observed by maximal electroshock (MES) method and pentylenetetrazol (PTZ) method. Statistical analysis was performed using one-way analysis of variance (ANOVA) followed by Dunnett's test. At doses of

50, 100, and 200 mg/kg, HEJGL showed significant analgesic and anticonvulsant effects in experimental animals. In view of its analgesic and anticonvulsant activity, the JGL extract can be used in painful conditions as well as in seizure disorders. [8]

2. The leaves of *Jasminum grandiflorum* (JG) are in clinical use in Ayurveda for wound management. Since, oxidative stress and inflammation are the primary causes in delayed wound healing, so here its antioxidant and anti-inflammatory activities have been investigated using in vitro as well as in vivo models. The solvent-free methanolic extract of dried leaves of JG were tested for its trapping capacity toward pre-generated $ABTS^{\bullet+}$ radicals, instantly generated superoxide and hydroxyl radicals, along with metal chelation property, reducing power and total phenolic content. Further, it was tested on LPS-induced nitric oxide and cell viability, on primary culture of rat peritoneal macrophages. Its anti-inflammatory property was also tested on carrageenan-induced paw edema in rats. This extract significantly inhibited iron-induced lipid peroxidation and trapped $ABTS^{\bullet+}$, superoxide and OH radicals. It significantly inhibited nitric oxide (NO) release, without affecting the cell viability at 800 μg/ml concentration and reduced the formation of paw edema in rats. Thus, it could be suggested that the aforesaid anti-inflammatory properties of JG leaves are associated to its high phenolic content (2.25 ± 0.105 mg/l of gallic acid equivalent), reducing power and its free radical-scavenging property. [9]
3. In this study different species of Jasminum like Jasminum grandiflorum, Jasminum sambac cultivar variety, Jasminum aungustifolium, Jasminum sambac wild variety, Jasminum sambac cultivar variety, Jasminum auriculatum, Jasminum humile and Jasminum officinale were extracted with various solvents and the concentrated crude extracts were checked for its antibacterial activity against selected human pathogens viz., E.coli, Bacillus sp., Streptococcus sp., Salmonella sp., Pseudomonas sp., Serratia marcescens, Klebsiella pneumonia and Staphylococcus aureus. It was found that most of the samples showed antimicrobial activity against some of the pathogens. The methanolic and ethanolic extract was found to be a better solvent to elute the chemical compound and show antimicrobial activity. Jasminum sambac wild variety, showed the highest activity along with Diethyl ether extract against Pseudomonas aeruginosa. [10]
4. The present study was undertaken to evaluate the effect of oleuropein (Ole) derived from the flowers of JOG on hepatitis B virus (HBV) replication in HepG2 2.2.15 cell line in vitro and duck hepatitis B virus (DHBV) replication in ducklings in vivo. The extracellular hepatitis B e antigen (HBeAg) and hepatitis B surface antigen (HBsAg) concentrations in cell culture medium were determined by ELISA. DHBV in duck serum was analyzed by dot blot. Ole blocks effectively

HBsAg secretion in HepG2 2.2.15 cells in a dose-dependent manner (IC_{50} = 23.2 µg/ml). Ole (80 mg/kg, intraperitoneally, twice daily) also reduced viremia in DHBV-infected ducks. Ole therefore warrants further investigation as a potential therapeutic agent for HBV infection. [11]

PRECAUTIONS & WARNINGS: [6]

Pregnancy and breast-feeding: There isn't enough reliable information to know if jasmine is safe to use in medicinal amounts when pregnant or breast-feeding. Stay on the safe side and stick to food amounts.

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