

HERBAL DRUGS USED FOR DE-ADDICTION OF ALCOHOL

Humera Afroz¹ and Afreen Sultana*²¹Associate Professor, Department of Pharmacognosy, Deccan School of Pharmacy.²Student of Deccan School of Pharmacy (Affiliated to OU).Article Received on
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Corresponding Author*Afreen Sultana**Student of Deccan School of
Pharmacy (Affiliated to OU).**ABSTRACT**

Alcoholism is an addiction to the consumption of alcoholic drink which was divided as alcohol dependency and alcohol abuse. It is also known as **alcohol use disorder (AUD)**. Alcohol use can affect all parts of the body, but it particularly affects the brain, heart, liver, pancreas and immune system. This can result in mental illness, Wernicke–Korsakoff syndrome, irregular heartbeat, liver cirrhosis and increased cancer risk. As there are 5-types of Alcoholics: Young Adult Alcoholic, Young Antisocial Alcoholic, Functional Alcoholic,

Intermediate Familial Alcoholic, Chronic Severe Alcoholic. Though there are De-Addiction programs which will be achieved with the help of Medication programmes. Among the medication programmes HERBAL Treatment will be played a measure role in the De-Addiction Program. A number of plants have shown promise as herbal medicine for alcoholism. They include Kudzu (*Pueraria lobata*) Iboga (Tabernanthe iboga). Asian ginseng (*Panax ginseng*). Red Sage (*Salvia miltiorrhiza*). And St. John's wort (*Hypericum perforatum*).

KEYWORDS: Alcohol, Alcoholism, De-Addiction Programmes, Herbal Treatment.

Alcoholism, also known as **alcohol use disorder (AUD)**, is a broad term for any drinking of alcohol that results in mental or physical health problems.^[1] The disorder was previously divided into two types: alcohol abuse and alcohol dependence.^{[2][3]} Alcohol use can affect all parts of the body, but it particularly affects the brain, heart, liver, pancreas and immune system.^{[4][5]} This can result in mental illness, Wernicke–Korsakoff syndrome, irregular heartbeat, liver cirrhosis and increased cancer risk, among other diseases.^{[4][5]} Drinking during pregnancy can cause damage to the baby resulting in fetal alcohol spectrum disorders.^[6] Environmental factors and genetics are two components associated with alcoholism, with

about half the risk attributed to each.^[4] Prevention of alcoholism may be attempted by regulating and limiting the sale of alcohol, taxing alcohol to increase its cost, and providing inexpensive treatment.^[7] One common method involves the use of benzodiazepine medications, such as diazepam.^[8] These can be either given while admitted to a health care institution or occasionally while a person remains in the community with close supervision.^[8] One commonly used form of support is the group Alcoholics Anonymous.^[9] The medications acamprosate, disulfiram or naltrexone may also be used to help prevent further drinking.^[10]

Signs and Symptoms of Alcohol Abuse and Addiction

Physical signs of alcohol overconsumption and intoxication are recognizable by most adults. It includes : Slurred or incoherent speech, Poor balance and clumsiness, Delayed reflexes, Stomach pains, vomiting or nausea. Signs of Alcohol Abuse : include: Loss of control over amount consumed once they begin drinking, Regular inattention to family and professional obligations, Dangerous behaviors that carry risk of legal, financial and/or health consequences for themselves and others, Increase in expressions of anger or other emotions, especially in inappropriate settings. Signs of Alcohol Dependence (Alcoholism) represent a serious medical illness: Significant hangovers, and increase in time needed to recover from after-effects of alcohol use, Increased amount of alcohol consumed because of increased tolerance; or, decrease in the effects of alcohol use without substantial increases in the amount consumed, Reduced attention to personal and professional responsibilities. Withdrawal Symptoms of Alcoholism are : Tremors, convulsions, or uncontrolled shaking of the hands (or even the entire body), Profuse sweating, even in cold conditions, Extreme agitation or anxiety, Persistent insomnia.^[11]

Types of Alcoholics

There are 5-types of Alcoholics

- 1. Young Adult Alcoholic:** This group is typically in their late teens or early 20s, and either just of legal drinking age or slightly younger. Many young adult alcoholics are likely college students who are away from home for the first time.
- 2. Young Antisocial Alcoholic:** Alcoholics is generally in their mid-20s and started drinking young.
- 3. Functional Alcoholic:** Alcoholics is typically middle-aged, well-educated, and may seem to have it all "together" on the outside. They are likely have a steady job, a seemingly stable family life, and do not often fit into the traditional stereotype of an alcoholic.

- 4. Intermediate Familial Alcoholic:** the intermediate familial alcoholic will typically be middle-aged and come from a family with multigenerational alcoholism about half of the time.
- 5. Chronic Severe Alcoholic:** A chronic severe alcoholic likely started drinking and struggling with alcohol-related issues and problematic drinking at a young age and is currently middle-aged.^[12]

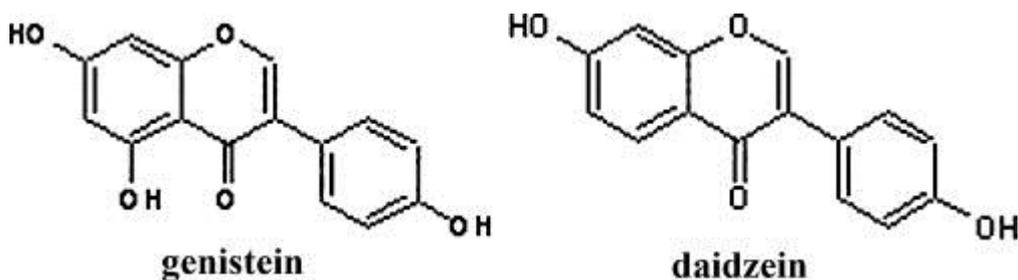
Herbal Medicine For Alcoholism Treatment

A number of plants have shown promise as herbal medicine for alcoholism. They include Kudzu (*Pueraria lobata*) Iboga (*Tabernanthe iboga*). Asian ginseng (*Panax ginseng*). Red Sage (*Salvia miltiorrhiza*). And St. John's wort (*Hypericum perforatum*).^[13]

Detail Description Of Herbal Drugs For Alcoholism

KUDZU (*Pueraria lobata*)

- 1. Synonym:** Japanese arrowroot^[14,15]
- 2. Biological source:** Obtain from the group of plants in the genus *Pueraria*, of subfamily *Faboideae*, in the pea family *Fabaceae*^[16]
- 3. Chemical constituents:** The active constituents of kudzu include daidzin, daidzein, puerarin, genistin, genistein, tectorigenin, glycitin, tectoridin, 6"-O-xylosyltectoridin, 6"-O-xyloglycitin, biochanin A, and spinasterol.^[17,18,19,20,21,22,23,24]



Structure of Genistein and Daidzein

- 4. General Uses:** It is used as soil improvement and preservative, Animal feed, Basketry, As a traditional medicine, Food and beverages^{[44],[14]}
- 5. Alcohol effects:** The isoflavones daidzein, genistein, formononetin and biochanin A isolated from kudzu root have shown to be potent reversible human alcohol dehydrogenase (ADH) isoenzyme inhibitors *in vitro*. The isoflavones produced a competitive inhibition of gamma(g)2-g2-ADH-isoenzyme with respect to ethanol and an uncompetitive inhibition of gamma(g)2-g2-ADH-isoenzyme with respect to NAD⁺. The

most potent inhibitor was genistein with an effective concentration of 0.1micromole. Although flavones such as apigenin, kaempferol, 7-hydroxyflavone, and galangin also demonstrated ADH-inhibiting activity, the effects were more pronounced with isoflavones.^[25]



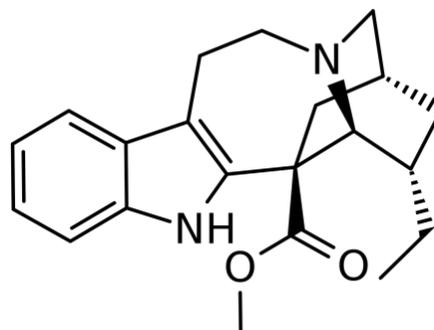
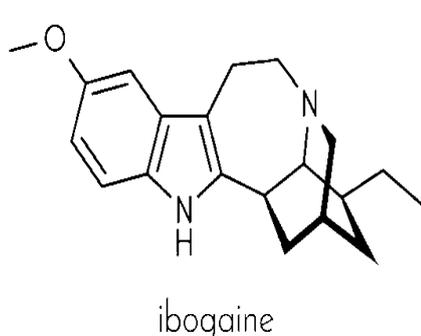
Kudzu flower



Kudzu Plant

IBOGA (*Tabernanthe iboga*)

1. **Synonym :** Iboga^[26]
2. **Biological source :** *Tabernanthe iboga* or simply **iboga** is a perennial rainforest shrub and psychedelic, belongs to the genus, *Tabernanthe* and Family, *Apocynaceae*^[26]
3. **Chemical constitutions :** Alkaloids present in it are ;
 - Coronaridine
 - Ibogaine
 - Ibogamine
 - Tabernanthine
 - Voacangine



4. **General Uses :** Fever, Flu, High blood pressure, HIV/AIDS, Nerve disorders.^[27]

5. **Used in treating Alcoholism:** Ibogaine does not have addictive properties, therefore it is not typically used as a stimulant or for recreational purposes. The roots of ibogaine have been found to have strong and long lasting psychedelic properties, which can include hallucinations. The research also identified ibogaine as a substance that can greatly reduce alcohol withdrawal symptoms and is capable of interrupting brain pathways or rather the receptor systems responsible for addiction.^[28]



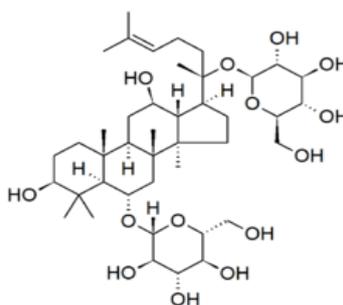
IBOGA Plant



IBOGA Fruit

ASIAN GINSENG (*Panax Ginseng*)

1. **Synonym:** Radix Ginseng, Shin-seng, Panax root, Ginseng root, Korean ginseng, Chinese ginseng and true ginseng.^[29]
2. **Biological source:** Ginseng is the dried root of *Panax ginseng* (*P. schinseng*) (Araliaceae) Collected from 5-6 years old plants, in autumn, carefully cleaned and dried. Other varieties of ginseng include *Panax quinquefolius* (*Panax quinquefolium*, American Ginseng) and *P. pseudoginseng* (*P. notoginseng*, Himalayan ginseng).^[29]
3. **Chemical constituents:** The dried roots and rhizomes of ginseng (*P. ginseng* C. A. Meyer) contain many physiologically important constituents. These include ginseng saponins, ginseng oils and phytosterol, carbohydrates and sugars, organic acids, nitrogenous substances, amino acids and peptides, vitamins and minerals, and certain enzymes that have been isolated and characterized. The major constituents are Ginsenoside, Protopanaxadiol, Protopanaxatriol, Panaxytriol.^[30]

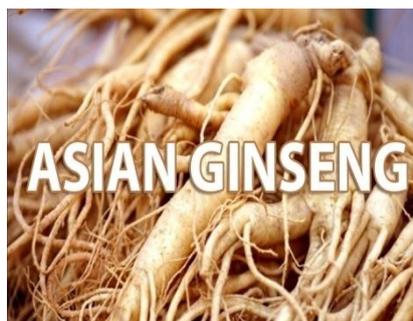


Ginsenoside

- 4. General Uses: Alzheimer's disease.** Evidence shows that taking Panax ginseng root daily for 12 weeks can improve mental performance in people with Alzheimer's disease. **Lung disease called chronic obstructive pulmonary disease (COPD).** Taking Panax ginseng by mouth seems to improve lung function and some symptoms of COPD.^[31]
- 5. Red ginseng relieves the effects of Alcohol consumption and hangover symptoms in healthy men:** Heavy drinking causes hangover symptoms, because the action of alcohol dehydrogenase forms acetaldehyde, which is metabolized by acetaldehyde dehydrogenase into acetate. Red ginseng shows positive effects on alcohol metabolism in animal studies. While the plasma acetaldehyde concentration slightly increased, the RGD(Red ginseng anti-hangover drink) showed positive effects on hangover symptoms. Considering the reduction of plasma alcohol levels, expiratory concentrations, and hangover severity, we conclude that red ginseng relieves the symptoms of alcohol hangover.^[32]



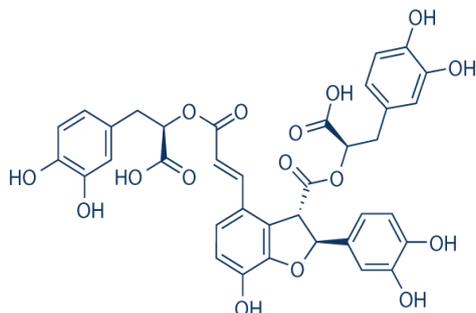
Ginseng Plant



Ginseng Roots

RED SAGE (*Salvia Miltiorrhiza*)

- 1. Synonyms:** Chinese sage, tan shen, or danshen^[33]
- 2. Biological source:** It is a perennial plant in the genus *Salvia*, highly valued for its roots in traditional Chinese medicine. Native to China and Japan, it grows at 90 to 1,200 m (300 to 3,940 ft) elevation, preferring grassy places in forests and belonging to the family, *Lamiaceae*.^[33]
- 3. Chemical constituents:** Chemical compounds isolated from *Salvia miltiorrhiza* include salvianolic acid (or salvianolic acid B)^[34,35], dihydrotanshinone, tanshinone I, and tanshinone IIA^[36,37] Tanshinone IIA is one of the most abundant constituents of the root of *Salvia miltiorrhiza*^[36]



Salvianolic acid B

- 4. General Uses: Chest pain (angina).** Early research suggests that taking danshen with other ingredients by mouth for up to 6 months is as effective as isosorbide dinitrate for reducing chest pain in heart disease patients. **High blood pressure.** Early research shows that taking danshen with other ingredients along with medication to lower blood pressure might help lower blood pressure in people with high blood pressure better than taking blood pressure-lowering medication alone.^[38]
- 5. Reducing effect of *Salvia miltiorrhiza* extracts on alcohol intake: Influence of vehicle:** A previous study demonstrated that an extract of *Salvia miltiorrhiza*, a medicinal herb highly valued in Chinese folk medicine for the treatment of different pathologies, including insomnia, was capable of reducing voluntary alcohol intake in selectively bred Sardinian alcohol-preferring (sP) rats. The results of the present study demonstrate that Polysorbate 80 is a proper vehicle for unravelling the reducing effect of *Salvia miltiorrhiza* extracts on alcohol intake.^[39]



Red Sage Flower



Red Sage Plant

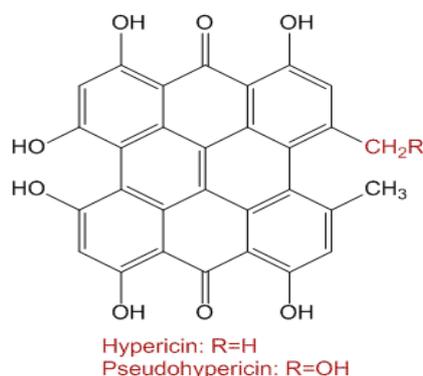
St. JOHN'S WORT (*Hypericum perforatum*)

1. **Synonyms:** Klamath weed, amber touch-and-heal, rosin rose, goatweed and millepertuis.^[40,41,42]

- 2. Biological source:** Dried aerial parts of *Hypericum perforatum* and belonging to the family, Hypericaceae (Clusiaceae) ^[40,41,42]
- 3. Chemical constituents:** St. John's Wort consists of a variety of constituents including naphodianthrones (less than 0.1%-0.15%), flavonoids, phloroglucinols and essential oils. ^[40,41,42]

Structure of hypericin and pseudohypericin - two major constituents of St. John's Wort.

Essential oils are present in concentrations of 0.05%-0.9%. It consists of mono- and sesquiterpenes.



- 4. General Uses:** St. John's wort has potential antidepressant and antiviral effects. It is also useful as an antibacterial, anti-inflammatory and is known to have wound-healing and skin-healing properties also used as Antidepressant Activity, Initially it was believed that anti-depressant activity of hypericin was due to inhibition of MAO (monoamine oxidase) enzyme. ^[40,41,42]

5. St. John's Wort Herb For Alcoholism

1. St. John's wort reduces alcohol intake and alcohol cravings.
2. It attenuates alcohol dependence and ameliorates alcohol withdrawal symptoms.
3. St. John's wort can help reduce depressive symptoms coexisting with alcohol abuse disorder.
4. St. John's wort can protect brain health from alcohol toxicity. ^[43]

**St. John's Wort Flower****St. John's Wort Plant**

CONCLUSION

Underage alcohol use remains a major public health and safety problem in the world, creating serious personal, social, and economic consequences for adolescents, their families, communities, and the Nation as a whole. Pervasive drinking by youth and the emergence of alcohol misuse and dependence in late adolescence are intertwined with developmental processes. Though there are De-Addiction programs which will be achieved with the help of Medication, Psychological Counselling, Recreational and Motivational Therapy which are very effective. Traditional HERBAL treatments with Herbal Drugs can compliment for Alcohol withdrawal and possibly relapse prevention with less expense and perhaps fewer side effects with notable exceptions. Here also concluding that HERBAL Treatment will be played a measure role in the De-Addiction Program.

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Mrs. Humera Afroz ^[1] Afreen Sultana^[2]

[1] Associate Professor, Department of Pharmacognosy, Deccan School of Pharmacy.

[2] Student of Deccan School of Pharmacy (affiliated to OU).

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