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Ethnopharmacological uses, Phytochemistry and pharmacological attributes of *Argyreia nervosa* (Burm. f.): A review

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Abstract
Popular Indian medicinal plant *Argyreia speciosa* Sweet has been used for many years in traditional Ayurvedic Indian medicine to treat a variety of illnesses. Its common names include *Vidhaara* and *Vrddhadaru*. The plant is found mainly in tropical areas of the world. The therapeutic effects of Sweet's *Argyreia speciosa* has aphrodisiac, immunostimulatory, hepatoprotective, antioxidant, anti-inflammatory, anti-hyperglycemic, anti-diarrheal, antibacterial, antiviral, antiulcer, anticonvulsant, analgesic, and central nervous depressant properties. This plant has produced a wide variety of phytochemical components that have been identified. Its seeds mostly contain the hallucinogenic compound isoeragine, also known as eragine.

Keywords: Argyreia speciose, convolvulaceae, eragoline, lysergic acid, elephant creeper

1. Introduction
The term herb refers to a plant used for medicinal purpose. Medicinal herbs and plant extracts are now generally considered as effective medicines to be respected, appreciated and they play a major role [1]. Sweet Hawaiian Baby Woodrose, also known as *Argyreia nervosa* (Burm. f.), Syn. A. speciosa, is a perennial climbing shrub in the family Convolvulaceae. Its common names include Elephant Creeper, Woolly Morning Glory, Bryddhotareko in Oriya, Samudrasok in Hindi, and Bryddhotareko in English [2]. Bengal, Assam, Orissa, Uttarakhand, Rajasthan, Karnataka, and Kerala are all home to the plant. It typically grows as undergrowth in semideciduous forests and in slightly damp locations like river sides, lake edges, etc. [3]. These plants are now referred to as "biogenic drugs," "legal highs," or "herbal highs." Numerous case reports showing teen abuse of these "legal highs" have been published [4]. The basic chemical associated this plant's seeds include the alkaloids ergoline, Lysergic acid or lysergamide [5]. It is grown mainly naturally in India, from Assam and Bengal to Karnataka, up to an altitude of 300 metres [6]. The plant develops into a little shrub. Then some of the leaves will start to fall off, and it will start to grow into vines. The vines have been observed to reach lengths of up to 31 feet (10 metres). These vines could die and be replaced by new growth if continuous water availability is not maintained. At this stage, the vine will dry out to the nearest node [2]. Simple, green, widely oval leaves measure 9-30 7.5-25 cm, with an obtuse or rounded apex, white tomentose underside, densely hairy or pilise above, and a cordate base. Petiole: 2 to 12.5 cm. Pink, 1.2-2 cm long, inpeduncled capitatecymoses with flowers. Tomentose, 0.5-10 cm long peduncle.Broadly obovate or orbicular bracts that are permanent, stiff, silky, and resemble the outer sepals. Two outer sepals, which are white-silky or hirsute in fruit, are hidden by two inner sepals, which are rectangular and white-silky and measure 7.5 mm [7]. The plant is a rare case of a plant whose psychotropic effects were only recently identified by people outside of Hawaii. The Hawaiian Baby Woodrose was not historically thought of as a hallucinogen, unlike several of its relatives in the Convolvulaceae family, such as the Riveacorymbosa (Ololiuhqui) and Ipomoea tricolour (Tlitliltzin), which have long been employed in shamanic rites in Latin America. Despite the fact that the chemical makeup of its seeds is essentially identical to those of the two aforementioned species, its properties were only found in the 1960s, and the seeds have the highest concentration of psychoactive substances in the entire family [8].

Fig 1: *Argyreia nervosa*

2. Materials and Methods

From its plant, *A. nervosa's* flowers were obtained. Fresh *Argyreia nervosa* flowers were lightly heated with water to produce a 10% w/v water extract. Based on the principles of green chemistry, since we made this neutralize indicator using Water and Flower, we can refer to it as a "Green Indicator [9]. The Botanical Survey of India established the plant's authenticity (BSI). The full aerial portion was dried in the shade and ground into powder with the aid of a mechanical process. The entire aerial part's powder was kept in a suitable location [6]. Taxonomists from the Tropical Botanic Garden and Research Institute (TBGRI) assisted in the identification of the plant, and a voucher specimen was stored in the institute herbarium. To create a water suspension, fresh plant parts were cleaned and homogenised in 2% (W/V) gum acacia [10]. Using green indicator, we do a 0.1M HCl/0.1M NaOH pH metric titration. For the pH metric titration, the following solution system is used: 10 mL of 0.1 M HCl as titrand, 50 mL of double-distilled water, and 5 mL of freshly made green indicator Using 0.1M NaOH as a titrant, we measured the end point of the described solution system using a pH metre. We record the colour shift in the solution system at various pH levels. To determine the applicability of prepared green indicator, we standardised it as a neutralising indication using synthetic indicators such as phenolphthalein and methyl orange [9].

2.1 Selection of animals

The Albino Research and Training Institute's animal home produced female Albino Wistar rats that were 180-220 g in weight for the study. These animals were kept in an environment with a constant temperature of 22+2 degrees Celsius, a relative humidity range of 44-56%, and a 12-hour light/dark cycle. Rats were fed a standard rat diet before and throughout the experiments, and they had unrestricted access to fresh water for a full week. 25 albino rabbits, both sexes, weighing between 1500 and 2000g, were taken out of the animal home [11].

2.2 Chemicals and herbal material

Methanol and water (both LC-MS-grade) were obtained from Roth, Karlsruhe, Germany. LSA stock solution (1 mg/mL in methanol) was delivered by THC Pharm, Frankfurt/Main, Germany. The *Argyreia nervosa* seeds labelled ‘‘Madagaskar High Potency’’ (HP) were purchased from a local so called ‘‘Headshop’’ in Frankfurt/Main, Germany. Seeds labelled ‘‘Holzrose *Argyreia nervosa*’’ were delivered by the internet shop Dragonspice [12, 4].

2.3 Extraction procedure

For extraction coarsely and air dried 350 gms powder of *Argyreia nervosa* leaves was taken. Extraction was carried out by using Distilled water by a maceration process, the extract was concentrated to dryness and it was preserved in a refrigerator. The maceration process was carried out until the solvent found to be colorless. Finally the solvent was filtered and distilled off. By using rotary vacuum flask evaporator [13].

2.3.1 Type of extraction

1. Water extract
2. Alcohol extract
3. Hexane extract
4. Methanolic extract

3. Botanical aspects

3.1 Synonyms

Argyreiaspeciosa (L. F.) Sweet,
Rivea nervosa (Burm. F.) Hallier F.,
Convolvulus nervosus Burm. F.,
Convolvulus speciosus L. F.,
Lettsomia Nervosa, Lettsomia nervosa (Burm. F.) Roxb.,

Table 1: Taxonomical classification

Domain	Eukaryota
Kingdom	Plantae
Subkingdom	Viridaeplantae
Phylum	Tracheophyta
Subphylum	Euphyllophytina
Infraphylum	Radiatopses
Class	Magnoliopsida
Subclass	Lamiidae
Superorder	Solananae
Order	Convolvulales
Family	Convolvulaceae
Subfamily	Asteroideae
Tribe	Ipomoeeae
Genus	Argyreia
Species	Nervosa
Botanical name	*Argyreia nervosa*

Table 2: Vernacular name

English	Elephant creeper, Baby wood-rose, Elephant-climber, Elephant-creeper
Hindi	Samandar-ka-pat, Samundarsokha, Ghav-patta, Bidhara
Marathi	Samudarsoka
Sanskrit	Vridhadaraka
Bengali:	Bijarka
Gujrati	Samudarsoka
Unani	Samudarsokh
Tamil	Kadarpalai, Samuddirapacchai
Telgu	Chandrapada
Kannada	Chandrapada
Nepales	Samudraphool
Sinhalese:	Vriddadaru
Spanis	Hojas De Seda [2].

4. Geographical distribution

Plants in the Convolvulaceae family are mainly found in tropical areas. Our study reveals that tropical nations or areas, such as India, Africa, Mexico, the Middle East, and South China, are where they are most commonly employed in medicine. This plants is primarily grown in gardens due to its attractive leaves and flowers. Convolvulaceae plants

have drawn the attention of scientists throughout the past century due to their high ergoline alkaloid content, a type of psychedelic drug [14, 15]. In India, the plant is mainly found at an altitude of 500m above the ground and found in rajasthan, Uttarakhand, Bengal, Assam, Kerala, Karanataka, and Orissa. It is seen as undergrowth in semi-deciduous forests and mostly at river banks and edges of lakes.

5. Ethnopharmacological uses

5.1 Whole plant

As for stomach issues, foot sores, small pox, syphilis, dysentery and diarrhoea, antifertility, anti-rheumatic, and antifungal, they are all covered. In vasectomies, it is also utilised during recanalization [16].

5.2 Leaf

Fig 2: Argyreia nervosa leaf

The leaves are extensively used all over India for the treatment of ulcers, boils, carbuncles and tumours. The leaf is collected in the folded stage before opening and used freshly in Maharashtra; elsewhere the mature leaves are used. When leaf is applied with the ventral surface in contact with the body and bandaged, the boil, carbuncle or tumour regress and disappear. Antiphlogistic, emollient, poultices of wounds, externally for skin disease, gleet, gonorrhoea and chronic ulcers. Also used as a local stimulant and rubefacient. It is also externally used for ring worm infections and eczema. It is mixed with vinegar and the sap is rubbed to reduce obesity. The leaves contain a mixture of three phytosterolins which exhibit hypoglycemic and CNS depressant activities. The leaves are reported to be effective in diabetes Eczema, itch and other skin disease. Fresh leaves ponded into alump and taken during empty stomach for three consecutive days from 4th day of menstruation and repeated for three successive months to avoid conception for a few years.

5.3 Roots

Fig 3: Shows the Roots

The root is aphrodisiac, nervine, alterative, diuretic, tonic, antigonorrheic, intellect-promoting, thermogenic, sweet, alterative, emollient, digestive, aperient, purgative, carminative, aphrodisiac, nervine, alterative, emollient, anti-inflammatory, and antirheumatic. Anorexia, loss of appetite, dyspepsia, flatulence, colic, chronic ulcer, ascites, haemorrhoids, hemiplegia, nerve weakness, neuralgic symptoms, brain problems, synovitis, and general weakness might all benefit from it. Roots have a cardiotonic effect and are therefore helpful for heart debility. It is used to treat obesity since it has emaciation-inducing effects. Leucorrhoea, diabetes mellitus, infected wounds, syphilis, cough, bronchitis, pharyngitis, and pulmonary TB are other conditions for which it is recommended. In the Yunani medical system, the root is used to treat chronic ulcers, gleet, gonorrhoea, and stranguria. The powdered root is used with milk for synovitis. [3].

Fig 4: Shows the Seeds

5.4 Seeds

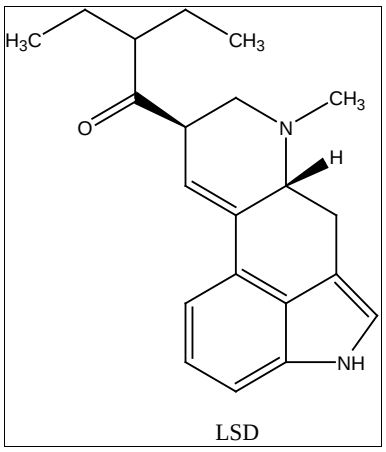
It has significant hypotensive and spasmolytic activity and is used to treat anorexia, diabetes, and a number of skin problems. Seed has spasmolytic and CVS (cardio-vascular system) activity. A fraction containing three alcohols, one of which being ergometrine, was the source of the hypotensive activity [17]. The seeds are used secretly as a hallucinogen. After eating seed, there have been reports of toxic psychosis including hallucinations, orientation problems, and psychomotor agitation and anxiety. The presence of alkaloids, including lysergacidamide, lysergacidethylamide, and their structurally related isomers led to the (psycho) pharmaceutical effect (LSD). It produced psychic effects that were considerably dissimilar from those of LSD but resembled those of scopolamine [18].

6. Phytochemistry

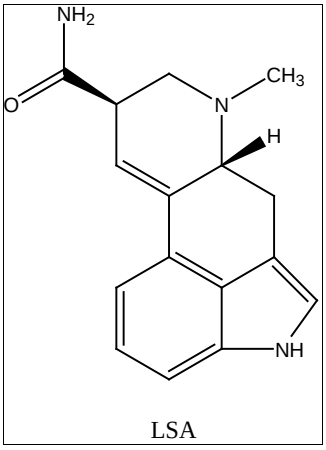
6.1 Seeds

Fatty oil was discovered to contain the glycosides of palmitic, oleic, stearic, behenic, linoleic, and linolenic acids when it was extracted from the seeds of *Argyreia speciosa*. Three different alkaloids, of which only one was identified as ergometrine, were mixed up in the ethanolic extract of the seeds. Ethyl caffeate and caffeic acid were the other components that were identified [1]. Various ergoline alkaloids, especially ergine, Lysergic acid, & lysergamide, are found in the seeds [20]. Ergometrine, lysergol, lysergic acid, and other alkaloids have been found, according to a more recent study, to contribute to its pharmacological effects. Glycosides of Palmitic, Oleic, Streaic, Behenic, Linoleic, and Linolenic acids made up the fatty oil from seed extracts. By using GLC analysis, it is possible to identify the following acids: myristoleic, myristic, palmitic,

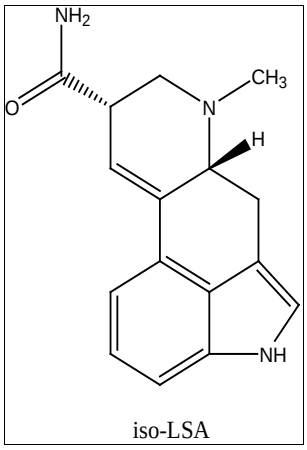
oleic, stearic, linoleic, linolenic, non-adecanoic, eicosenoic, heneicosanoic, and behenic. such as 12-methylmyristic acid & 15-methylstearic acid, were branched fatty acids. Caffeic acid, ethyl caffeate, and the alkaloid ergometrine were all found in the ethanolic extract. A total of 30-.6% crude protein, 10.4% albumin, 8.8% globulin, and 10.6% glutenin are present. Fruits contain n-triacontanol, β -sitosterol, p-hydroxycinnamoyl octadecanoate, as well as caffeic acid. Leaf extract produced from petroleum ether contains 1-triacetanol, epifriedelinol acetate, and beta-sitosterol. Quercetin, flavonoids, and kaempferol. Tetradecanylpalmitate, 5,8-oxidotetracosan-10-one is the main component of hexane extract from roots. Hexadecanyl and Stigma steryl p-hyroxycinnamate esters both are found. [21].



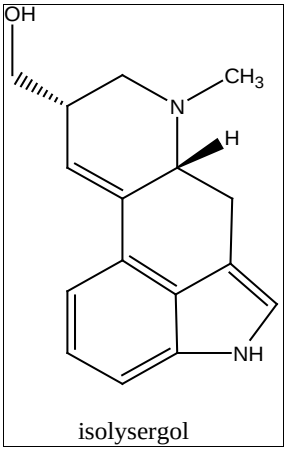
LSD



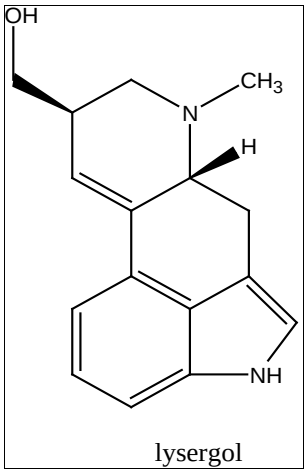
LSA



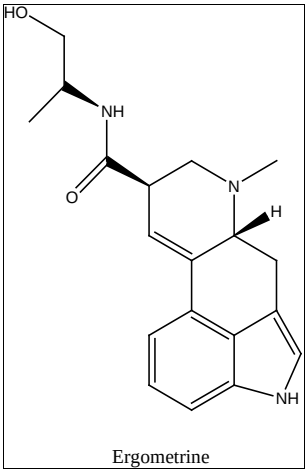
iso-LSA



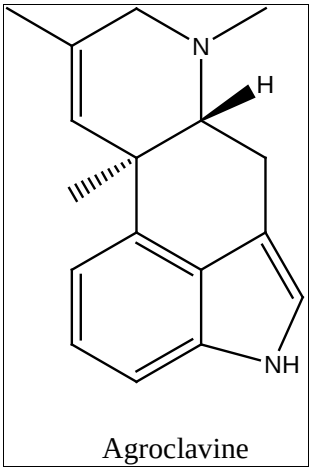
isolysergol



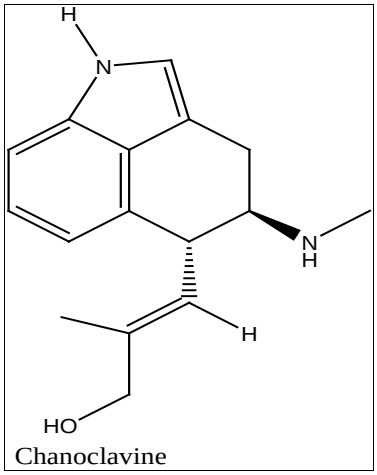
lysergol



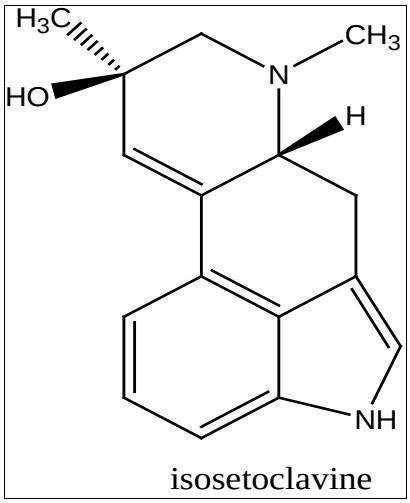
Ergometrine



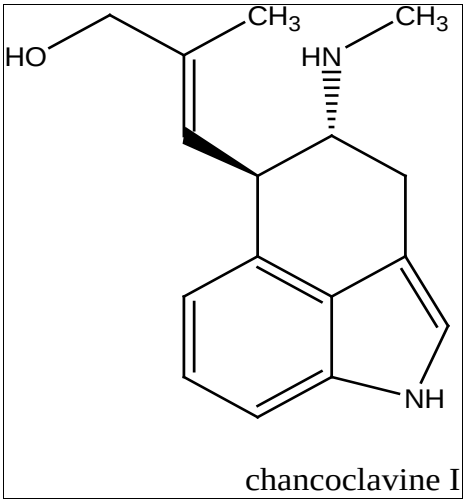
Agroclavine



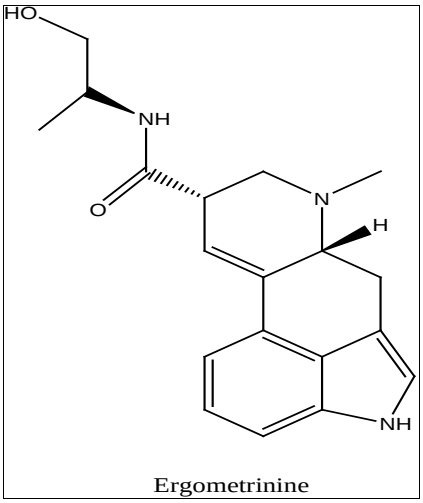
Chanoclavine



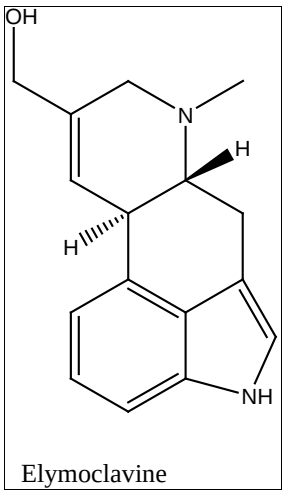
isosetoclavine



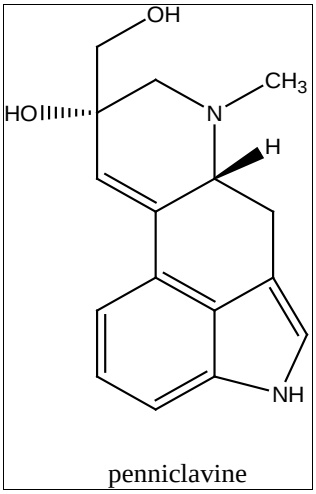
chancoclavine I



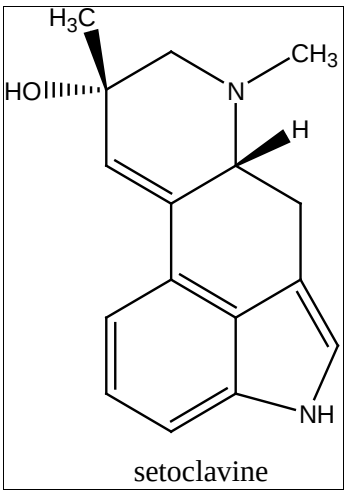
Ergometrinine



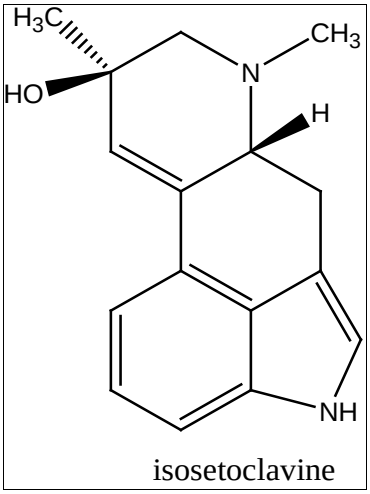
Elymoclavine



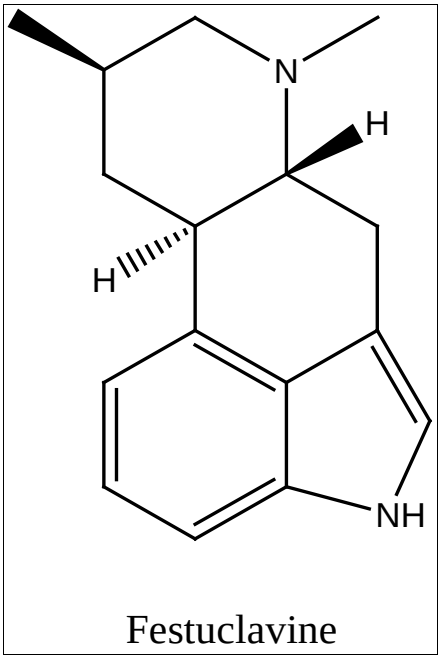
penniclavine



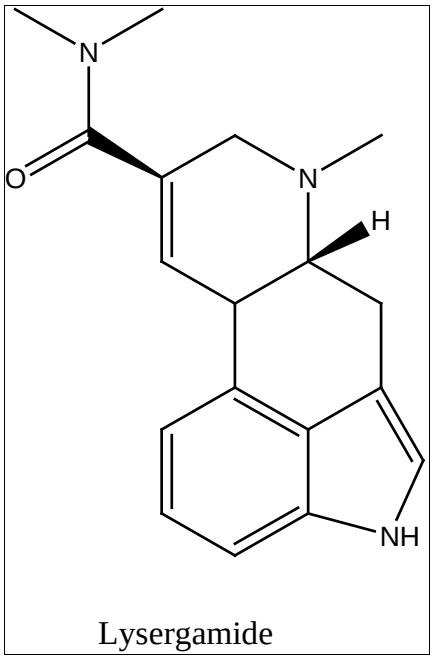
setoclavine



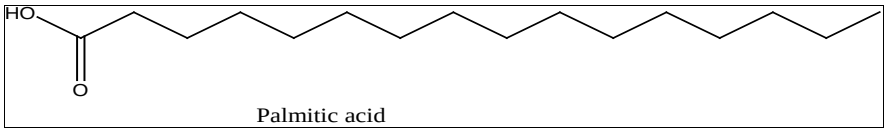
isosetoclavine



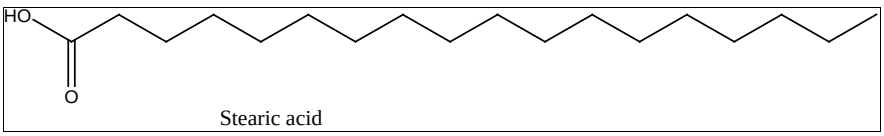
Festuclavine



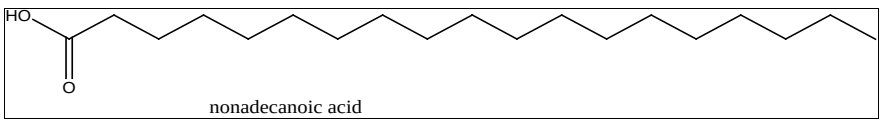
Lysergamide



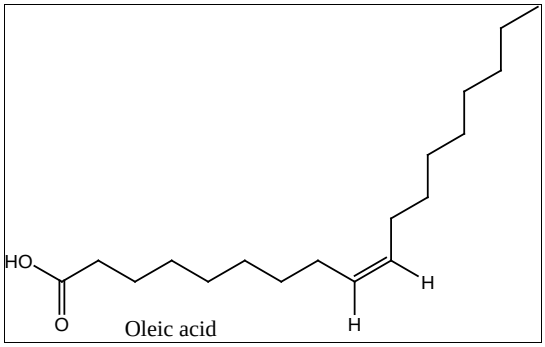
Palmitic acid



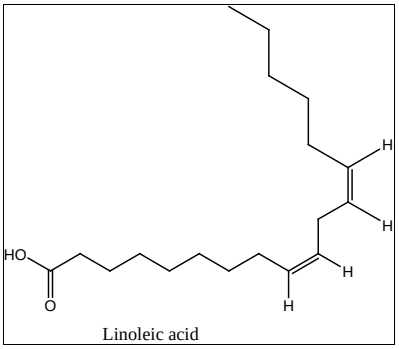
Stearic acid



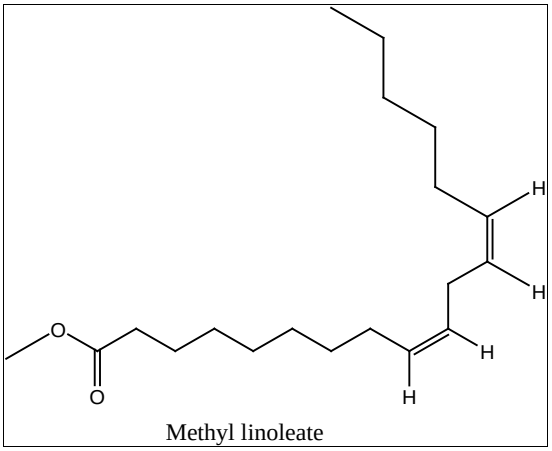
nonadecanoic acid



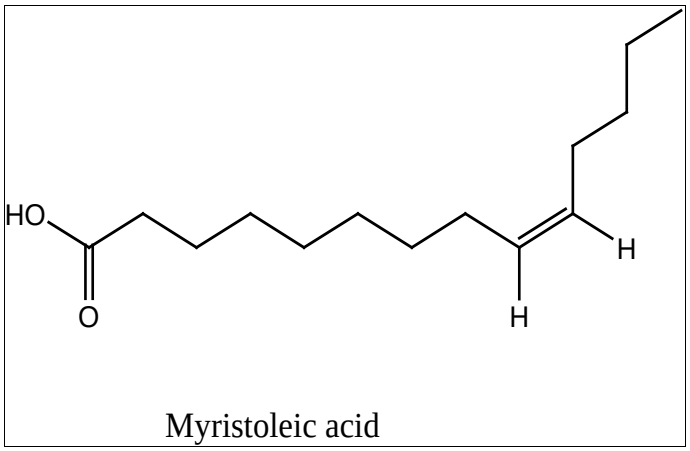
Oleic acid



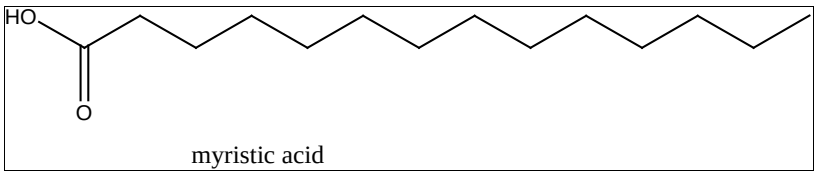
Linoleic acid



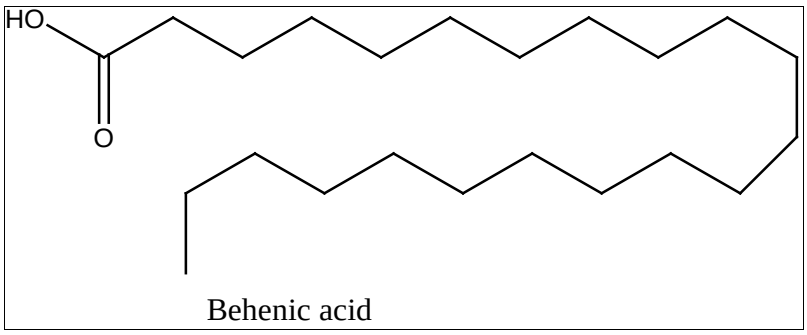
Methyl linoleate



Myristoleic acid



myristic acid



Behenic acid

6.2 Fruits

As per reports, the fruits of *Argyreia speciosa* contain caffeic acid, n-triacontanol, -sitosterol, and p-hydroxycinnamoyl octadecanolate.

6.3 Leaves

The flavonoids quercetin, kaempferol, and kaempferol 3-O-L-rhamnopyranoside were identified in the leaves. Two flavoneglycosides, 7, 8, 3′, 4′, 5′-pentahydroxyflavone 5-O—L-rhamnopyranoside and 7, 8, 3′, 4′, 5′-pentahydroxyflavone 5-O—D-glucopyranoside, were detected in leaves [22].

6.4 Roots

Alkaloids, glycosides, amino acids, flavonoids, and tannins both were detected in the aqueous extract taken from the roots of *Argyreia nervosa*. Using methanol to isolate the roots of *Argyreia nervosa*, it was observed that tannins, alkaloids, flavonoids, glycosides, amino acids, and steroids were identified [19]. Tetradecanyl palmitate, 5, 8-oxidotetracosan-10-one, were synthesized from extraction the roots of *Argyreia speciosa* in hexane [23]. The root was being used to isolate two aryl esters, stigmasteryl p-hydroxycinnamate and hexadecanyl p-hydroxycinnamate, as well as the coumarin scopoletin. Also obtained from root was a coumarin glycoside termed as L-ester coumarin,6-methoxy-7-o-alpha-D-glu [24].

7. Pharmacological activities

Pharmacological studies on *A. nervosa* have focused on its nootropic, aphrodisiac, immunomodulatory, hepatoprotective, antioxidant, anti-inflammatory, antihyperglycemic, antidiarrheal, nematicidal, antiulcer, anticonvulsant, analgesic, and central nervous depressant actions.

7.1 General pharmacology

In a preliminary biological screening, the 50% ethanolic extract of the seeds had an action on the dog and cat cardiovascular system. On the isolated guinea pig ileum, the extract additionally exhibited antispasmodic effects. The antibacterial, antifungal, antiprotozoal, antiviral, and anticancer activities of the seed extract were absent. Additionally, the seed extract had no action on the central nervous system, preganglionically activated nictitating membrane, or respiration in test animals. The extract's LD50 in mice was 500 mg/kg i.p. The plant's 50% ethanolic extract lacked any diuretic, antiviral, antifungal, antiprotozoal, or antibacterial properties. Experimental animals used to study the effects of the extract on the CVS and CNS included isolated guinea pig ileum, rat uterus, respiration, preganglionically activated nictitating membrane, and CVS. The extract's LD50 was 825 mg/kg i.p. in mice.

7.2 Wound healing

The efficacy of the ethanolic and water extract extracted from the leaves of the *A. nervosa* plant to treat wounds in mice was tested. After the formation of the wound in the mouse model, the extract was administered topically for 14 days. Both extracts significantly accelerated wound healing, although the water extract was more efficient. In both

diabetic and healthy rats, the ethanolic extract ointment had a significant wound impact. Significant increases in the rates of hydroxyl proline content, wound contraction, breaking strength, and lower rates of epithelization point were observed in water extract [25].

7.3 Aphrodisiac activity

The plant's root, flower, and to a smaller extent, leaf (mixed thoroughly in 2% gum acacia) showed aphrodisiac action as shown by an increase in mice's tendency to mount. When several root extracts were evaluated, the alcohol extract (200 mg/kg; p.o. single dosage) was determined to have the activity. Male mouse mounting behaviour was promoted by the extract 60 minutes after injection in a concentration-dependent manner. The male mice who received the root or flower treatments also showed a striking improvement in mating efficiency. Furthermore, it was observed that there were more males among the pups that the mice treated with the herbal drugs fathered than among those that the control mice fathered. As a result, the plant has the potential to be developed into a potent treatment for enhancing male sexual activity [26].

7.4 Nootropic activity

A. speciosa roots' aqueous extract has been shown to have nootropic and anticholinesterase activity at dosages of 100 and 200 mg/kg [27]. The elevated plus maze test as well as the passive shock avoidance paradigm were used to examine nootropic. In both young and old mice, an aqueous extract of the roots of *A. speciosa* reduced transfer latencies and increased step-down latencies. It effectively treated amnesia brought on by scopolamine, diazepam, and age. Using the radial arm maze and Morris water maze tests, the effects of *A. speciosa* root hydro alcoholic extract (200 mg and 400 mg/kg) on learning and memory were also studied in mice. The number of days needed to train the mice and the time it required the treated mice to find food in the radial arm maze were lowered after treatment. Treatment mice demonstrated a significant decrease in the number of days required to train the mouse's escape latency in the Morris water maze [28].

7.5 Immunomodulatory activity

The dried root of *A. speciosa* was observed to boost cellular and humoral immunity when extracted with 95% ethanol [29]. *A. speciosa* root extract taken orally to mice at dosages of 50, 100, and 200 mg/kg potentiated the delayed-type hypersensitivity reaction put on by both sheep red blood cells and oxazolone. When mice were treated to sheep red blood cells, it greatly increased the level of circulating antibodies they produced. Also, chronic treatment greatly improved both the myelosuppressive effects of cyclophosphamide and the total white blood cell count.

7.6 Hepatoprotective and antioxidant activity

A. speciosa root extracts in ethanol and ethyl acetate (200 mg and 400 mg/kg) proved hepatoprotective effect against rats' carbon tetrachloride-induced hepatotoxicity. Additionally, they proved in rat studies antioxidant activity against oxidative stress. The structural integrity of the hepatocyte cell membrane or the regeneration of injured liver cells was protected by the ethanolic extract and ethyl acetate extract (200 and 400 mg/kg) of *A. speciosa* roots. It has been discovered that these two extracts can increase or maintain the activity of liver enzymes that fight reactive oxygen species. The amelioration of pathological abnormalities brought on by CCl4 and biochemical markers of liver damage provided proof of the hepatoprotective activity of *A. speciosa* roots.

7.7 Analgesic and anti-inflammatory activity

The roots' alcoholic extract (50, 100, and 200 mg/kg) demonstrated a statistically significant anti-inflammatory action against the albino rats granuloma formation method. The extract has no effect on rat arthritis brought on by formalin. A 95% methanolic of root (50-200 mg/kg p.o.) was efficient against carrageenan-induced paw edema and induced rat arthritis [38 Methanolic extract of *A. speciosa* root (30, 100, and 300 mg/kg p.o.) reduced significantly acetic acid-induced writhing in pain models used to evaluate analgesic activity, whereas 100 and 300 mg/kg p.o. significantly increased latency to tail flick in tail immersion method and elevated mean basal reaction time in hot plate method [31, 32].

7.8 Hypoglycemic activity

In normal and alloxan-induced diabetic rats, the methanolic extract of the stem of *A. speciosa* was studied for its hypoglycemic and antihyperglycemic actions. After the treatment, the levels of blood sugar were examined at 0 h, 1, 2, 4, 6, 8, 12, 16 and 24 h. In normal and diabetic control groups, oral glucose tolerance tests were performed. Normal and diabetic groups were also treated with tolbutamide and plant extract. Alcoholic extract of *A. speciosa* decreased blood glucose levels in diabetic rats (24.72% at 250 mg/kg, 31.10% at 500 mg/kg, and 40.47% at 750 mg/kg body weight) and normal rats (26.42% at 250 mg/kg, 28.50% at 500 mg/kg, and 34.25% at 750 mg/kg body weight) [11, 33].

7.9 Anticovulsant activity

At dosages of 200 and 400 mg/kg, the hydroalcoholic extract of *A. speciosa* greatly delayed the time required for the first clones to develop and mice to start dying, preserving 16.66 and 33.33% of the mice given pentylenetetrazole. Clonazepam (0.1 mg/kg) and phenytoin (20 mg/kg) provided complete protection, whereas in the case of maximal electroshock seizures, the dose of 200 and 400 mg/kg significantly reduced the duration of hind limb extention and both doses were statistically found to be equal to the reference standards [34].

7.10 Central nervous depressant activity

The effects of the hydroalcoholic extract of the roots of *A. speciosa* in n-hexane (n-HF), chloroform (CF), ethyl acetate (EAF), and water (WF) on the central nervous system were examined. Using spontaneous motor activity and mouse sleep induction produced by pentobarbital, the neuro-pharmacological activity of all the fractions (100, 200, and 500 mg/kg, p.o.) was examined. The positive control was chlorpromazine. Based on the findings, all of the fractions had central nervous system depressant action since they decreased mice's spontaneous motor activity and improved pentobarbital-induced hypnosis [35].

7.11 Antimicrobial activity

While inactive against Escherichia coli, the leaves' alcoholic extract showed antibacterial property against Staphylococcus aureus. The aqueous extract had no effect

on either bacterium. *Salmonella typhi*, *Salmonella paratyphi*, *Shigella boydii*, *Shigella flexneri*, *Streptococcus - haemolyticus*, and *Bacillus subtilis* were among the microorganisms that the seed oil was found to have *in vitro* antimicrobial properties against [36]. The oil had no action on *S. aureus*. Also, *Aspergillus flavus*, *Colletotrichum capsici*, *Cryptococcus neoformans*, *Alternaria solani*, *Helminthosporium* sp., *Colletotrichum dematium*, *Aspergillus niger*, *Aspergillus sydowi*, and *Fusarium oxysporum* were all resistant to the antifungal actions of the seed oil. It was determined that *Penicillium* sp. was resistant to the oil. Scopoletin and hexadecanyl p-hydroxycinnamate, which were isolated from the root, were examined for their ability to prevent the development of Fusarium fusiformis, *Fusarium semitectum*, and *Alternaria alternate*. Both chemicals produced 100% suppression against Alternaria alternate at a dose of 1000 ppm. The substances also shown phytotoxicity in terms of preventing wheat seed germination from growing its roots [37].

7.12 Antiviral activity

In CAM (Chorioallantoic membranes) cultures, the plant and fruit extract showed interferon-like antiviral activity against the vaccinia virus but no activity against the bacteria that causes Ranikhet disease [38].

7.13 Antiulcer activity

In rats with stomach ulcers brought on by ethanol, aspirin, stress, and fourth pylorus ligation, a 50% ethanolic extract of the flower of *A. speciosa* (100-200 mg/ kg, p.o.) indicated ulcer-protective activities. When taken orally twice daily for five days, the *A. speciosa* flower's ethanolic extract (half by volume) had a dose-dependent effect on ulcer prevention (100 to 200 mg/kg). A dose of 150 mg/kg given twice daily for ten days had a healing effect on an ulcer index induced by acetic acid (50%) with reduced perforations [39].

8. Conclusion

For herbal medicines, phytochemical and pharmacological (Preclinical and clinical) research are essential. Plant has reported to contain many phytoconstituents. Its seeds contain various ergoline alkaloids such as ergine. In the entire family Convolvulaceae, the seeds have the highest concentration of psychotropic substances. Aphrodisiac, immunomodulatory, hepatoprotective, anti-oxidant, anti-inflammatory, anti-hyperglycemic, anti-diarrheal, antimicrobial, antiviral, antiulcer, anti-convulsant, analgesic, and central nervous depressant properties of *Argyreia speciosa* Sweet have been clinically proven. This plant is linked to a number of conventional, ethnomedical, and pharmaceutical uses.

9. References

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