

Semecarpus coriaceus Thwaites (Badulla): Botanical Profile, Traditional Uses, Pharmacological Activities, Toxicity, and Future Research Prospects

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Abstract: *Semecarpus coriaceus* Thwaites (locally known as ‘Badulla’) is an endemic Sri Lankan plant found in its native distribution in montane forests. Local communities are approaching it with caution due to its toxicity. Despite the toxicity, this plant is recognized in Sri Lankan indigenous and Ayurvedic medicine for its tremendous medicinal value. It is used as a substitute for *Semecarpus anacardium* L.f. in Ayurveda and indigenous medicinal practices. This narrative review compiles and critically assesses information on the botanical attributes, traditional uses, toxicity management, and purification techniques of *Semecarpus coriaceus* Thwaites, along with the pharmacological properties and existing scientific literature on the genus *Semecarpus*. Extensive literature searches were carried out using major electronic databases and reputable Ayurvedic and Sri Lankan traditional medicine textbooks and literature. The search terms used included “*Semecarpus coriaceus* Thwaites”, “Badulla”, “*Semecarpus anacardium* L.f.”, “*Semecarpus* genus”, and “pharmacological and bioactivities”. This is a narrative review; statistical tests were not applicable. In Sri Lankan folk, indigenous, and Ayurvedic medicinal systems, the plant is used as a panacea for various ailments. The plant materials should undergo a purification or detoxification process before use, owing to their inherent toxicity. While no direct pharmacological studies on *S. coriaceus* were identified, other species in the genus show significant bioactive potential. There is a significant research gap in scientific research regarding the pharmacological activities of *Semecarpus coriaceus* Thwaites. Studies conducted on the pharmacological properties of other species within the genus and the indigenous uses of *Semecarpus coriaceus* Thwaites suggest it may possess considerable unexplored medicinal potential.

Keywords: *Semecarpus coriaceus* Thwaites; *Semecarpus* genus; *Cassuvium coriaceum* (Thwaites) Kuntze; Badulla; Anacardiaceae; Sri Lankan traditional medicine; ethnobotany; ethnopharmacology; endemic to Sri Lanka

1. Introduction

Sri Lankan traditional medicine has four main systems. These four systems are Ayurveda, Siddha, Unani, and Deshiya Chikitsa. Ayurveda and Deshiya Chikitsa systems predominantly rely on plant remedies [1]. Sri Lanka is recognized as one of the world’s biodiversity hotspots and has the highest biodiversity per 10,000 km² in Asia [2]. Traditional medicine has been practiced on the island for many centuries [3]. Sri Lanka is home to 3771 species of flowering plants, of which nearly a quarter (927, ~24%) are endemic. Of these plants, 1430 are used medicinally, including 174 endemic species (12%) [4]. Additionally, many endemic plant species with promising bioactive potential have been reported. These plants possess a range of biological activities, including antioxidant, antimicrobial, anti-inflammatory, anticancer, antidiabetic, and antihelminthic properties, which highlight their potential for the discovery of novel therapeutic agents [4–8].

Semecarpus coriaceus Thwaites is a plant species belonging to the family Anacardiaceae (cashew family), which is a pan-tropical family of trees, shrubs and woody climbers consisting of approximately 82 genera and over 700 species worldwide [9]. The genus *Semecarpus* contains about 50 species distributed worldwide, and 12 are



endemic to Sri Lanka [10]. *Semecarpus anacardium* is one of the most studied and reported species [11,12]. *Semecarpus coriaceus* Thwaites or *Cassuvium coriaceum* (Thwaites) Kuntze is endemic to Sri Lanka, a medium-sized tree renowned for its exceptionally rich medicinal value in folk and indigenous medicine. Various parts of *Semecarpus coriaceus* Thwaites, including the fruit, fruit stalk, flower, gum, and seed oil, are used in traditional medicine. The plant has been used as a Vata pacifier, blisterogenic agent, antitoxic, cardiostimulant, hepatostimulant, expectorant, general tonic, aphrodisiac, natural antiseptic, antipyretic, and brain tonic [13].

Semecarpus coriaceus Thwaites remains relatively underexplored, especially the Sri Lankan variety. Several review articles have compiled the Ayurvedic descriptions and traditional uses of *Semecarpus coriaceus* Thwaites. However, no scientific studies have proven these traditional claims to date. This review critically summarizes the available information on the botany, ethnomedicinal uses, toxicity, purification methods, and scientific evidence related to *Semecarpus coriaceus* Thwaites, while identifying key future directions for phytochemical and pharmacological investigations.

2. Materials and Methods

A comprehensive literature search was conducted to collect, analyze, and summarize all sources focused on the morphology, ecology, ethnomedicine, pharmacology, and toxicology of *Semecarpus coriaceus* Thwaites. The data presented in this study were systematically collected from scientific databases, including <https://www.scopus.com/> (8 February 2026), <http://www.sciencedirect.com/> (10 February 2026), <https://link.springer.com/> (1 March 2026), <https://www.ncbi.nlm.nih.gov/pubmed/> (5 March 2026), <https://www.researchgate.net/> (6 March 2026), and <https://scholar.google.com/> (6 March 2026). Additional information was sourced from texts on Ayurvedic and Sri Lankan traditional medicine, including the “Compendium of Medicinal Plants”, “Ayurvedic Pharmacopoeia”, and local medicinal plant literature publications. The search terms used were the scientific name of the plant “*Semecarpus coriaceus* Thwaites” and, followed by these terms: “Badulla”, “*Semecarpus anacardium* L.f.”, “*Semecarpus* genus”, and “pharmacological and bioactivities”. Publications lacking sufficient methodological data, non-peer-reviewed sources, and information that lacks credibility were excluded. The species nomenclature and taxonomic information for *Semecarpus* were gathered from World Flora Online (2026) and the recent botanical literature. Recent studies published up to April 2026 were prioritized to reflect the current state regarding the botanical characteristics, ethnomedicinal uses, toxicity, purification methods, and pharmacological activities of *Semecarpus* species.

3. Botanical Description

3.1. Taxonomic Classification and Nomenclature

Semecarpus coriaceus Thwaites belongs to the family Anacardiaceae and the genus *Semecarpus*. It is known by several vernacular names, including “Badulla” in Sinhala, “Senkottam” in Tamil, “Bhallataka” in Sanskrit, and commonly referred to as the “Marking nut tree” in English. The species is also recognized by the scientific synonym *Cassuvium coriaceum* (Thwaites) Kuntze [13,14].

3.2. Geographical Distribution

Semecarpus coriaceus Thwaites is endemic to Sri Lanka and has a native distribution in montane forests above 1200 m. It can be seen in Ramboda, Maturata, Nuwara Eliya, and Hakgala areas [15]. *Semecarpus coriaceus* Thwaites is considered Vulnerable due to its limited distribution and the ongoing decline of its habitat [16].

3.3. Conservation Methods

Peradeniya Botanical Garden, Bandaranayake Memorial Ayurvedic Research Institute in Nawinna, Bathgoda, Pattipola, Pinnaduwa, and Pallekele herbal gardens can be considered as live plant conservation sites in Sri Lanka, and dry specimens are available in the National Herbarium of Peradeniya Botanic Gardens and the Herbarium of Bandaranayake Memorial Ayurvedic Research Institute, Nawinna in Sri Lanka [17].

3.4. Morphology

Semecarpus coriaceus Thwaites is a moderate to large tree (Figure 1a) that belongs to the family Anacardiaceae. The bark (Figure 1b) is smooth and shining. Ultimate branches are thickened and bear prominent leaf scars. The leaves (Figure 1c–e) are simple, alternate, closely placed, measuring 10–16 cm long, and 6–7 cm broad, obovate-oblong shaped with an entire margin, tapering to an acute or slightly rounded base, apex is rounded or emarginate, extremely coriaceous, lateral veins nearly horizontal, curved with the reticulations prominent

beneath and connected with a very short and stout petiole to the stem. Flowers of the tree are pale green, polygamous, typically 0.7–1.2 cm across, smooth in the terminal, short, stout, and appear as closely branched clusters. The calyx of the flower has 5 deciduous lobes. Total number of petals is 5, which are distinct, overlapping, thick, ovate, 4 mm long, 2.5 mm broad, and rounded at apex. Plants have 5 stamens placed outside the annular, faintly lobed disk with 2–3 mm long filaments. Superior ovary, 1-locular with a single pendulous ovule, has 3 styles with somewhat capitate stigmas. Fruits (Figure 1c,f) measuring 1.8–2 cm long and 2.5–2.8 cm are compressed drupes with a strongly apiculate structure and with a small receptacle, sized 0.7–1 cm long, and scarcely cupped [15].



Figure 1. (a). *Semecarpus coriaceus* Thwaites (b). bark (c). branchlet with leaves and fruits (d). Abaxial surface (e). Adaxial surface (f). fruits.

3.5. Cultivation

Semecarpus coriaceus Thwaites is propagated primarily through seeds. Mature seeds are generally separated from ripe fruits and soaked in water for approximately 48 h before sowing to improve germination. Seeds are commonly sown in sand nurseries or in seeding bags containing a mixture of soil and organic manure. As the species develops into a large tree, a planting spacing of approximately 8×5 m is recommended. Seedlings are typically transplanted into prepared planting pits enriched with compost or manure and require regular irrigation during the establishment phase. Under suitable growing conditions, the tree generally reaches maturity within 8–10 years, after which leaves and flowers can be harvested annually. Care should be taken when collecting latex or resin to avoid damaging the tree and to maintain its long-term productivity [15].

4. Traditional Uses in Sri Lankan Ayurveda and Indigenous Medicine

4.1. Organoleptic Properties of *Semecarpus coriaceus* Thwaites

According to Ayurveda, traditional descriptions consistently report the taste of plant material as intensely bitter, pungent, and astringent (Rasa). The properties of plant material are described as easy to digest, unctuous,

and dry. The literature mentions a sweet post-digestive effect (Vipaka), and hot potency (Virya). The inexplicable nature (Prabhava- special potency) of the plant gives it a remarkable power of rejuvenation [17].

4.2. Systemic actions of *Semecarpus coriaceus* Thwaites according to Ayurveda

Semecarpus coriaceus Thwaites demonstrates extensive systemic therapeutic activity. The plant has significant effects on the skin. It helps induce sweating and remove toxins from the body. Not only that, but the plant also has a significant effect in curing skin diseases. Beyond its impact on the skin, the plant also supports the nervous system as a nerve tonic and improves intelligence. The plant has multiple therapeutic effects in the gastrointestinal system, including stimulation of digestion, purgation, stimulation of liver function, and usefulness in parasitic and microbial infections. The plant has beneficial effects on the cardiovascular system, stimulating the heart and reducing edema. The plant acts as a natural expectorant, helping the overall respiratory system. The plant's diuretic effect supports maintaining a healthy urinary system. The plant serves as a uterine tonic, promotes libido, and contributes to natural fertility regulation [17].

4.3. Parts of Use

Available literature reports the use of the following plant parts: seeds, flowers, seed oil, kernel of seeds, and latex [17].

4.4. Traditional Formulations and Indications of *Semecarpus coriaceus* Thwaites

Traditional formulations and their indications are summarized in Table 1 [18].

Table 1. Traditional Formulations and Indications of *Semecarpus coriaceus* Thwaites.

Indication	Traditional Formulation
Hemorrhoids	Purified seeds or a sack of fruit should be burnt to form a smoke, then apply it to the disease.
Dry Hemorrhoids	Blend purified seeds and sesame seeds in equal amounts to a smooth paste and administer.
Alopecia areata	Seed decoction applied with honey.
Abdominal lump	The menstruation induced by the administration of decoction and paste of the seed should be followed by giving rice gruel mixed with jaggery.
Ascites	Powder the purified seeds, myrobalan, and cumin seeds in equal quantities, make into small pills, and give orally.
Parasitic infection	Fresh seeds and Walagasala (<i>Tinospora cordifolia</i>) mixed. Then, heat and thicken in direct sunlight until it becomes a paste on the navel area.
Rejuvenation therapy and enhancing vitality, immunity, and sexual power	2 to 3 drops of seed oil, drink with cow milk for a month.
Chronic skin diseases, venereal diseases, syphilis, nerve-related disorders, and respiratory diseases	Administer 2 drops of seed oil internally mixed with butter, along with olive and ghee oil.
Cough triggered by food impaction or regurgitation	1 to 2 drops of seed oil mixed with 850 mL of milk, to facilitate drinking.
Urinary obstruction	Applied seed oil externally.
Skin diseases	Seed oil is applied along with ghee or butter.

4.5. Toxicity and Purification of *Semecarpus coriaceus* Thwaites according to Sri Lankan Ayurveda and Indigenous Medicine

The fruit of *Semecarpus coriaceus* Thwaites, when raw, has been reported to cause irritation, blisters, toxicity, and contact dermatitis. Hence, it should be used for medicine preparation only after a specific purification process known as 'Shodhana' in Ayurveda. The plant-induced dermal allergy is commonly managed with sesame oil, ghee, and coconut oil as soothing agents. According to Sri Lankan Ayurveda, there are a few purification processes. The fruits should be cut open and rubbed vigorously with brick powder for a week, then tied in a cloth and washed thoroughly with hot water. Before beginning the purification process, coconut oil must be applied to the hands. After that, it should be washed. Another method practiced in some traditions is to boil the fruits and wash them with cold water. Lastly, one more ancient and very effective method is to crush nuts, mix them with ghee, and fry until they release a smoky aroma [18].

4.6. Safety

Excessive intake of *Semecarpus coriaceus* Thwaites fruit may lead to dose-dependent adverse effects, including a burning sensation, excessive sweating, and excessive thirst. In cases of overdose, immediate symptomatic and supportive care is recommended. Treating with sesame oil, ghee, and coconut oil can be recommended. An excessive amount of coconut milk is prepared for drinking and inducing purgation [18]. The latex of *Semecarpus coriaceus* Thwaites is harmful to children, pregnant and lactating mothers. Overuse in pregnant women may cause abortion, severe toxicity and fatal outcomes [18].

Semecarpus coriaceus Thwaites belongs to the same genus and family as *Semecarpus anacardium* L.f., a widely distributed and extensively researched non-endemic congener that shares close morphological and chemotaxonomic similarities in traditional Ayurvedic practice in Sri Lanka. *Semecarpus coriaceus* Thwaites has long been used as a regional substitute for *Semecarpus anacardium* L.f., particularly in areas where the latter is less accessible. This usage reflects both botanical similarities and historical ethnobotanical knowledge. While no pharmacological studies on *Semecarpus coriaceus* Thwaites exist, the extensive scientific evidence for *Semecarpus anacardium* L.f. provides a valuable comparative benchmark.

The following section reviews the phytochemistry, biological activities, and clinical studies of *Semecarpus anacardium* L.f., offering a framework for inferring the potential therapeutic properties of *Semecarpus coriaceus* Thwaites and identifying future research priorities. In Ayurvedic practice, *Semecarpus coriaceus* Thwaites is viewed as a genuine substitute for *Semecarpus anacardium* L.f. Both plants undergo the same purification processes, are included in the same classical and regional formulations, and are prescribed for comparable therapeutic uses and disease conditions. This traditional interchangeability further supports the extrapolation of pharmacological and clinical evidence from the well-studied *Semecarpus anacardium* L.f. to the relatively under-researched *Semecarpus coriaceus* Thwaites [19].

5. Reported Pharmacological Activities of the *Semecarpus* Genus

Semecarpus coriaceus Thwaites has not been scientifically examined for any pharmacological activities thus far. Nevertheless, several other species within the same genus (*Semecarpus*) have been thoroughly studied and shown to possess various promising biological activities (see Table 2).

Table 2. Reported pharmacological activities of the *Semecarpus* genus.

Species	Activity	Extract/Plant Part	Model Used	Key Finding	Reference
<i>S. parvifolia</i>	Anticancer	Leaf (Water extract)	In vitro (HEP-2 laryngeal carcinoma cells); MTT, SRB & LDH assays; Brine shrimp assay	EC ₅₀ (µg/mL) values for MTT: 301.09 ± 28.2; LDH a: 864.9 ± 36.6; LDH b: 702.2 ± 16.0; SRB: 554.8 ± 14.1; Brine Shrimp: >4000	[20]
<i>S. nigroviridis</i>	Antimicrobial	Leaf (Methanol extract)	Agar dilution method	MIC: 2000 mg/L against <i>S. aureus</i> (NCTC 6571).	[21]
<i>S. subpeltata</i>	Antioxidant	Bark (Ethyl acetate extract)	In vitro (Folin-Ciocalteu)	Total polyphenol content: 68.68 ± 0.2 mg gallic acid equivalents /g of extract. DPPH EC ₅₀ : 267.50 ± 0.3 µg/mL	[22]
<i>S. anacardium</i> L.f.	Antioxidant	Nut (Ethanol extract)	In vitro (Enzymic: superoxide dismutase (SOD) & Peroxidase; Non-enzymic: Phenolics & Tocopherol)	High enzymic & non-enzymic antioxidant activity; SOD: 70.32 ± 4.56 µg/mL, Peroxidase: 87.33 ± 2.41 µg/mL	[23]
<i>S. anacardium</i> L.f.	Anti-inflammatory	Fruits (Methanolic, Ethanolic, Chloroform, Ethyl acetate, Pet ether)	In vivo (Carrageenan-induced rat paw edema in rats at 150 mg/kg body weight)	All extracts showed significant anti-inflammatory activity ($p < 0.05$ – 0.001); pet ether extract was most effective (39.02% inhibition), followed by chloroform (35.77%), close to the aspirin standard (44.77%)	[24]
<i>S. anacardium</i> L.f.	Anticancer	Mature Fruit (Raw & Purified)	In vivo (Ehrlich Ascites Carcinoma—EAC model in mice)	Extract at 2000 mg/kg (oral, Wistar rats) caused no mortality, abnormal clinical signs, body weight changes, or gross lesions. LD ₅₀ > 2000 mg/kg	[25]
<i>S. anacardium</i> L.f.	Anticancer	Leaf (Acetone extract)	In vitro (MTT assay on HepG2 liver cancer cells)	Dose-dependent cytotoxicity observed; IC ₅₀ = 2.43 µg/mL	[12]

Table 2. Cont.

Species	Activity	Extract/Plant Part	Model Used	Key Finding	Reference
<i>S. anacardium</i> L.f.	Antimicrobial	Seeds (n-Butanolic extract/Isolated acyclic isoprenoid)	In vitro (Well diffusion method)	The largest zones of inhibition were observed against <i>E. coli</i> (22 ± 1.21 mm vs. 31 ± 1.42 mm for control) and <i>B. cereus</i> (19 ± 1.13 mm vs. 26 ± 1.03 mm for control), followed by <i>S. aureus</i> (16 ± 0.93 mm vs. 19 ± 1.21 mm for control) and <i>A. baumannii</i> (13 ± 0.85 mm vs. 18 ± 1.11 mm for control)	[26]
<i>S. anacardium</i> L.f.	Antimicrobial	Nut (Petroleum ether extract)	In vitro (Agar well method)	The extract showed stronger antibacterial activity than ampicillin against all tested organisms, with the highest inhibition against <i>S. typhi</i> (26 mm vs. 7 mm), followed by <i>M. luteus</i> (23 vs. 10 mm), <i>K. pneumoniae</i> (22 vs. 6.5 mm), <i>E. coli</i> (19 vs. 6 mm), and <i>B. subtilis</i> (14 vs. 11.4 mm).	[27]
<i>S. anacardium</i> L.f.	Antidiabetic	Stem Bark (Ethanol extract)	In vivo (Alloxan-induced diabetic rats)	In rats; reduced blood glucose, TC, TG, LDL ($p < 0.05$); improved liver function (decreased SGOT/SGPT, increased glycogen) at extract 200 mg/kg & 400 mg/kg; 100% survival at extract 400 mg/kg.	[28]
<i>S. anacardium</i> L.f.	Phytochemical standardization	leaf (ethanol extract)	Pharmacopoeial standardization (powder microscopy, physicochemical & phytochemical screening, HPTLC fingerprinting)	Established standardization parameters; HPTLC profiling (Rf values, 254/366 nm scans) confirmed phytochemical fingerprint	[29]
<i>S. anacardium</i> L.f.	Phytochemical standardization	leaf (ethanol extract)	LC-MS & NMR of ethyl acetate fraction	Identified bioflavonoid called semecarpetin	[29]

Collectively, studies conducted on *Semecarpus* species such as *S. anacardium* L.f., *S. parvifolia*, *S. nigroviridis*, and *S. subpeltata* have demonstrated promising antioxidant, anti-inflammatory, anticancer, antimicrobial, and antidiabetic properties in various scientific studies. These biological effects have been largely attributed to the secondary metabolites reported within the genus. While these effects cannot be directly linked to *S. coriaceus* Thwaites, the extensive traditional use of *S. coriaceus* Thwaites in Ayurvedic practices and within Sri Lankan indigenous medicine, along with pharmacological evidence from closely related *Semecarpus* species, indicates that *S. coriaceus* Thwaites may have therapeutic potential that needs to be tested directly.

5.1. Scientific Evidence on the Toxicity of the *Semecarpus* Genus

The toxicity has been reported from the *Semecarpus anacardium* L.f., due to compounds such as phenolic lipids, including bhilawanol, anacardic acid, cardol, catechol derivatives [30].

A case report described a male 27 years of age who had dermal exposure to latex of *Semecarpus anacardium* L.f., developed urticaria followed by nephrotic syndrome and acute interstitial nephritis, indicating systemic toxicity. The individual presented with significant proteinuria, low albumin levels, and generalized edema; histological examination of the renal tissue revealed lymphocytic infiltration of the interstitium. According to the authors' suggestions, the presence of phytochemicals that inhibit COX-1 and COX-2 may have caused the reaction, equivalent to the results in nephrotoxic effects seen with NSAIDs [31].

Studies on the related species *Semecarpus anacardium* have demonstrated that traditional purification processes significantly reduce toxicity by lowering anacardic acid content. Five purification methods were used, and for each method, anacardic acid content was measured by HPLC in unpurified, intermediate, and purified samples. Although all five purification methods were shown to reduce toxicity in purified samples, one was found to be the most effective. This involved sequentially boiling the cloth-wrapped nuts in *Tamarindus indica* L. leaf decoction, *Butea monosperma* decoction, cow dung filtrate, and finally aloe vera juice. This is recommended for further research and medicine preparation [32].

Studies on purified *Semecarpus anacardium* L.f. indicate that although the purified drupe extract is non-lethal at high doses, it remains a potent local irritant. In tests on albino rats, no systemic or blood-related changes were observed. However, dermal exposure resulted in significant inflammation, swelling, and tissue hyperplasia

within 48 h. Although the extract has low oral toxicity, it is considered a potential mutagen (ICH M7 class 3), its reactive oil fraction must be handled with care even after purification [33].

5.2. Plant Material Collection (Recommendation for Future Studies)

The optimal time frame for collecting fresh plant samples in Sri Lanka is between April and November. Flowers bloom in April, and the fruiting season occurs from June to November [17]. The *Semecarpus* genus has several morphologically similar species; accurate plant identification and authentication are essential before scientific investigation. A qualified plant taxonomist can perform authentication. After preparing the voucher specimen, it can be deposited in a recognized national or international herbarium. This process is crucial for preventing misidentification and ensuring the repeatability and reliability of study results [34]. Due to the highly toxic and irritating nature of the plant latex, which can cause severe allergic reactions, all collectors must strictly use appropriate personal protective equipment (PPE). This includes resistant gloves, long-sleeved protective clothing, and a full-face shield to prevent direct skin contact and inhalation of latex. Proper training in the safe handling of toxic plants and emergency protocols is advised [18,35].

5.3. Future Research Directions for *Semecarpus coriaceus* Thwaites

Semecarpus coriaceus Thwaites remains one of the least explored species in its genus, despite its traditional use in Sri Lankan indigenous medicine and Ayurveda. The table below suggests future research studies (see Table 3).

Table 3. Future research directions for *Semecarpus coriaceus* Thwaites.

Research Area	Why it Matters	Recommended Future Work
Phytochemical standardization	No phytochemical data currently exists for <i>S. coriaceus</i> ; related species like <i>S. anacardium</i> have been standardized using pharmacognostic protocols, identifying bioflavonoids such as semecarpetin.	HPTLC fingerprinting, LC-MS, and NMR analysis [36]
Antioxidant activity	Traditionally used as a rejuvenator to enhance vitality, immunity, and sexual power; strong antioxidant activity is reported in the same genus.	DPPH, ABTS, and in vivo antioxidant assays [37]
Anti-inflammatory	Traditionally used for hemorrhoids, dry hemorrhoids, nerve disorders, and inflammatory conditions; significant anti-inflammatory effects demonstrated in the same genus.	Heat-induced Human Red Blood Cell Membrane Stabilization Assay, Protein Denaturation Assay & in vivo anti-inflammatory models [38]
Anticancer potential	Traditionally used against abdominal lumps, ascites, and chronic diseases; promising anticancer and apoptotic activity shown in the same genus.	Cytotoxicity studies on multiple cancer cell lines (e.g., DLD1, MCF-7, HeLa) followed by a clonogenic assay [39]
Antimicrobial Activity	Traditionally used for skin diseases, venereal diseases, syphilis, parasitic infections, and wounds; notable antibacterial activity reported in the same genus.	Agar Well Diffusion for susceptibility (ZOI) and Broth Microdilution for determining Minimum Inhibitory Concentration (MIC) across antibacterial, antifungal, and antiparasitic assays [40,41]
Antidiabetic Activity	Traditionally used for diabetes and urinary disorders; strong antidiabetic activity shown in <i>S. anacardium</i> L.f.	In vitro and in vivo antidiabetic studies [42]
Toxicity & Safety Profile	Traditionally used only after purification (Shodhana) due to potential toxicity; related species show both therapeutic and toxic effects depending on processing	Acute, sub-chronic toxicity, genotoxicity, and comparative Shodhana studies [33]

6. Conclusions

Semecarpus coriaceus Thwaites is an endemic plant in Sri Lanka. Although it is considered toxic, it has long been used in Sri Lankan traditional medicine and Ayurvedic systems, where it has been used for various ailments. Scientific studies on other species within the *Semecarpus* genus have identified significant anti-inflammatory, antioxidant, antibacterial, and anticancer activities. The present review highlights traditional uses of *Semecarpus coriaceus* Thwaites and its possible value as a source of new phytomedicines, based on ethnobotanical knowledge and evidence from related species. However, systematic and scientific research on this specific plant is needed to ensure its safe and effective use. This review is expected to encourage the discovery of new therapeutic uses and connect traditional Sri Lankan knowledge with modern pharmacology.

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List of Abbreviations

ABTS—2,2'-Azino-bis(3-ethylbenzothiazoline-6-sulfonic acid); COX—Cyclooxygenase; DPPH—2,2-Diphenyl-1-picrylhydrazyl; EAC—Ehrlich Ascites Carcinoma; EC₅₀—Half-maximal effective concentration; HPLC—High-Performance Liquid Chromatography; HPTLC—High-Performance Thin-Layer Chromatography; IC₅₀—Half-maximal inhibitory concentration; ICH—International Council for Harmonisation; LC-MS—Liquid Chromatography-Mass Spectrometry; LD₅₀—Median Lethal Dose, LDH—Lactate Dehydrogenase; LDL—Low-Density Lipoprotein; MIC—Minimum Inhibitory Concentration; MTT—3-(4,5-Dimethylthiazol-2-yl)-2,5-diphenyltetrazolium bromide; NMR—Nuclear Magnetic Resonance; NSAIDs—Non-Steroidal Anti-Inflammatory Drugs; PPE—Personal Protective Equipment; S.—Semecarpus; SGOT—Serum Glutamic-Oxaloacetic Transaminase; SGPT—Serum Glutamic-Pyruvic Transaminase; SOD—Superoxide Dismutase; SRB—Sulforhodamine B; TC—Total Cholesterol; TG—Triglycerides; ZOI—Zone of Inhibition;

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