

# Sarsaparilla

## Species (Family)

*Smilax* species (Liliaceae) including

(i) *Smilax aristolochiifolia* Mill.

(ii) *Smilax regelii* Killip & Morton

(iii) *Smilax ornata* Hook. f.

(iv) *Smilax febrifuga* Kunth

## Synonym(s)

Ecuadorian Sarsaparilla, Sarsa, Smilax

(i) Mexican Sarsaparilla

(ii) Honduras Sarsaparilla

(iii) Jamaican Sarsaparilla

(iv) Ecuadorian Sarsaparilla

## Part(s) Used

Rhizome, root

## Pharmacopoeial and Other Monographs

BHC 1992<sup>(G6)</sup>

BHP 1996<sup>(G9)</sup>

Martindale 32nd edition<sup>(G43)</sup>

PDR for Herbal Medicines 2nd edition<sup>(G36)</sup>

## Legal Category (Licensed Products)

GSL<sup>(G37)</sup>

## Constituents<sup>(G6,G22,G41,G48,G62,G64)</sup>

**Saponins** About 2%. Sarsapogenin (parigenin), smilagenin, diosgenin, tigogenin, asperagenin, laxogenin from various species,<sup>(1)</sup> sarsasaponin (parillin), smilasaponin (smilacin) and sarsaparilloside.

**Other constituents** Caffeoylshikimic acid, ferulic acid, shikimic acid, kaempferol, quercetin, phytoosterols (e.g.  $\beta$ -sitosterol, stigmasterol, pollinastanol), resin, starch, volatile oil (trace) and cetyl alcohol.

## Food Use

Sarsaparilla is listed by the Council of Europe as a natural source of food flavouring (category N4). This category indicates that the use of sarsaparilla as a flavouring agent is recognised but that there is insufficient information available to further classify it into

categories N1, N2 or N3.<sup>(G16)</sup> Sarsaparilla has been used as a vehicle and flavouring agent for medications,<sup>(G45)</sup> and is widely employed in the manufacture of non-alcoholic beverages.<sup>(G59)</sup> In the USA, sarsaparilla is permitted for food use.

## Herbal Use

Sarsaparilla is stated to possess antirheumatic, antiseptic and antipruritic properties. Traditionally, it has been used for psoriasis and other cutaneous conditions, chronic rheumatism, rheumatoid arthritis, as an adjunct to other treatments for leprosy, and specifically for psoriasis.<sup>(G6,G7,G8,G64)</sup>

## Dosage

*Dried root* 1–4 g or by decoction three times daily.<sup>(G6)</sup>

*Sarsaparilla Liquid Extract* (BP 1898) 8–15 mL (1 : 1 in 20% alcohol, 10% glycerol).

## Pharmacological Actions

### *In vitro* and animal studies

Anti-inflammatory<sup>(2)</sup> and hepatoprotective<sup>(3)</sup> effects have been shown in rats.

### Clinical studies

Improvement of appetite and digestion<sup>(4)</sup> as well as a diuretic<sup>(4,5)</sup> action have been reported. Limited clinical data utilising extracts indicate improvement in psoriasis;<sup>(6)</sup> the extract has also been used as an adjuvant for the treatment of leprosy.<sup>(7)</sup>

## Side-effects, Toxicity

None documented for sarsaparilla. Large doses of saponins are reported to cause gastrointestinal irritation resulting in diarrhoea and vomiting. Although haemolytic activity has been documented for the saponins,<sup>(G62)</sup> they are not harmful when taken by mouth and are only highly toxic if injected into the bloodstream.<sup>(G59)</sup>

### Contra-indications, Warnings

None documented for sarsaparilla. In view of the possible irritant nature of the saponin constituents, excessive ingestion should be avoided.

*Pregnancy and lactation* There are no known problems with the use of sarsaparilla during pregnancy and lactation. However, in view of the possible irritant nature of the saponin components, excessive ingestion should be avoided.

### Pharmaceutical Comment

Phytochemical studies on sarsaparilla have focused on the nature of the steroidal saponin constituents, with limited information available regarding additional constituents. No documented scientific evidence was found to justify the herbal uses. No toxicity data were located, although large doses may be irritant to the gastrointestinal mucosa and should, therefore, be avoided.

Sarsaparilla saponins have been used in the partial synthesis of cortisone and other steroids. Several related *Smilax* species native to China are used to treat various skin disorders.<sup>(G41)</sup>

### References

See also General References G6, G9, G11, G16, G22, G29, G31, G32, G36, G37, G41, G43, G48, G62 and G64.

- 1 Sharma SC *et al.* Über Saponine von *Smilax parvifolia* Wall. *Pharmazie* 1980; 35: 646.
- 2 Ageel AM *et al.* Experimental studies on anti-rheumatic crude drugs used in Saudi traditional medicine. *Drugs Exp Clin Res* 1989; 15: 369–372.
- 3 Rafatullah S *et al.* Hepatoprotective and safety evaluation studies on sarsaparilla. *Int J Pharmacog* 1991; 29: 296–301.
- 4 Harnischfeger G, Stolze H. *Smilax* species – Sarsaparille. In: *Bewahrte Pflanzendrogen in Wissenschaft und Medizin*. Bad Homburg/Melungen: Notamed Verlag., 1983: 216–225.
- 5 Hobbs C. Sarsaparilla – a literature review. *Herbalgram* 1988; 17: 1, 10–15.
- 6 Thermon FM. The treatment of psoriasis with a sarsaparilla compound. *N Engl J Med* 1942; 227: 128–133.
- 7 Rollier R. Treatment of lepromatous leprosy by a combination of DDS and sarsaparilla (*Smilax ornata*). *Int J Leprosy* 1959; 27: 328–340.