Common soapwort

**BOTANY**

*Saponaria officinalis* L. A lively plant of between 0.30 and 0.60 metres in height, it has a prolific rhyzome of reddish brown colour and a large number of reddish stems which are straight, cylindrical and swollen at the knots where the leaves sprout in pairs. The leaves are glabrous, sesile, large, oval or lanceolate with 3 to 5 nerves and a pale green colour.

The large flowers are light pink in dense cymes with a tubulous calix of 5 teeth and have 5 petals with a barb. The ten stamens have two styles and the capsule is long and opens along 4 splits, giving a large number of brown seeds.

The plant blooms from May onwards and the rhyzomes and roots are the parts which are used.
Common Soapwort is found throughout the whole of Europe and abounds in the north of Spain in cool locations or in the courses of rivers.

**CHEMISTRY**

In its chemical composition we find water (5-10%), mineral salts (6-8%), glucides present in the form of sugars and a non-reducing substance, lactosin.

The active ingredients in soapwort are the triterpenic saponins (5%), formed by different triterpenic glycosides whose main sapogenin is quillaic acid, which gives the aglycon Gypsogenin through hydrolysis. The leaves of the plant are rich in vitamin C and contain flavonoid heterosides which are difficult to hydrolyse (C-flavonosids) as well as a considerable number of saponosides.

![Chemical Structure](image)

\[ R=H \text{ gipsogenina} \]

\[ R=\text{OH ácido quilágico} \]

**TRADITIONAL USES**

Common Soapwort was mentioned by Hypocrates as a drug with an emenagogic action. Its diuretic, depurative and expectorant properties have been well known since antiquity and its widespread therapeutical use was thanks to the Arab doctors who used it in therapies for leprosy, in cases of dermatosis and malignant ulcers.

Its therapeutical action is due to the presence of saponins, whose main pharmacological characteristics reduce blood pressure, increase cellular permeability, produce haemolysis and have frothing and emulsifying properties, which is why Common Soapwort has also been used as a detergent.
COSMETIC PROPERTIES

Anti-seborrhoea activity

It is due to the saponins content of common soapwort. Saponins have detergent or tensioactive properties because they contain both water-soluble and fat-soluble components. They consist of a fat-soluble nucleous, having either a steroid or triterpenoid structure, with one or more side chains of water-soluble carbohydrates (Cheeke PR, 2000).

Therefore, common soapwort extract is recommendable to formulate cosmetic products with regulatory activity on sebum secretions.

Anti-alopecia activity

Frequently, male alopecia is related with an excess of sebum in the scalp; that is logical if we have in mind the androgenic dependency of the sebaceous gland. Therefore, the reduction of the sebum secretions with tensoactive agents, such as saponins, is a way to fight against seborrhoeic alopecia (Lemmel Montoya J, 2006).

Thus, common soapwort extract is recommendable to formulate cosmetic products with anti-alopecia activity.

Anti-microbial activity

Experimental studies have demonstrated in vitro the fungicide activity of saponosids on both phytopathogens and Candida or dermatophytes. Such an action is doubtless the outcome of a reaction between a saponosid and membrane sterols of the micro-organism. Occasionally, in vitro anti-viral action has been observed for saponosids (Bruneton J., 2001).

Therefore, common soapwort extract is useful to formulate cosmetic products with purifying and antiseptic activity.

Anti-inflammatory activity

The anti-inflammatory activity of quillaic acid has not been studied previously and it has never been used to obtain potential anti-inflammatory derivatives. A series of quillaic acid derivatives were prepared and subjected to topical assays for the inhibition of inflammation induced by arachidonic acid or phorbol ester. Quillaic acid exhibited strong topical anti-inflammatory activity in both models. The structural
modifications performed and the biological results suggest that the aldehyde and carboxyl groups are relevant to the anti-inflammatory activity in these models (Rodriguez-Díaz, 2011).

Therefore, common soapwort extract is useful to formulate cosmetic products for sensitive or irritated skin and scalp.

**COSMETIC APPLICATIONS**

<table>
<thead>
<tr>
<th>ACTION</th>
<th>ACTIVE</th>
<th>COSMETIC APPLICATION</th>
</tr>
</thead>
<tbody>
<tr>
<td>Anti-seborrhoea</td>
<td>Saponins</td>
<td>Astringent Seboregulator</td>
</tr>
<tr>
<td>Anti-alopecia</td>
<td>Saponins</td>
<td>Hair care</td>
</tr>
<tr>
<td>Antimicrobial</td>
<td>Saponins</td>
<td>Purifying Antiseptic</td>
</tr>
<tr>
<td>Anti-inflammatory</td>
<td>Saponins</td>
<td>Irritated or sensitive skin or scalp</td>
</tr>
</tbody>
</table>

**RECOMMENDED DOSE**

The recommended dose is 1-3%.

**BIBLIOGRAPHY**


