Venetron®

Apocynum venetum L.
RAFUMA
Scientific name : Apocynum venetum L.  
Family name : Apocynaceae  
Origin : Tarim Basin, Xinjiang Uighur Autonomous Region, China  

Widely used as food
The leaves have been used for tea in China since ancient times. In Japan, beverage containing Rafuma leaves, said to promote improvement in high blood pressure, has been designated as food for specified health use.

Listed in the Pharmacopoeia of the People’s Republic of China
Rafuma (or luubuma in Chinese) is listed in the Chinese Pharmacopoeia as a crude drug used for insomnia, hypertension and anorexia.

Specification of VENETRON® (Rafuma extract)
Contains not less than 4% of sum of Hyperoside and Isoquercitrin

Abundance of clinical data on VENETRON® by takiwa

Improvement of insomnia
Self-evaluation of sleep based on OSA Sleep questionnaire (Middle aged and Aged version)

![Graph showing improvement of insomnia](image)

- Ingestion at 50 mg/day led to significant improvement between groups in initiation and maintenance of sleep.

Objective evaluation of the quality of sleep based on electroencephalography

![Graph showing improvement of REM sleep duration](image)

- Ingestion at 50 mg/day led to significant improvement between groups in deep sleep.


Focusing ability / stress reduction
Evaluation of focusing ability based on the Uchida-Kraepelin test

![Graph showing improvement of focusing ability](image)

- Ingestion at 50 mg/day led to significant improvement between groups in focusing ability.

Evaluation of stress based on questionnaire

<table>
<thead>
<tr>
<th>Items</th>
<th>VENETRON®</th>
<th>Placebo</th>
<th>P value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nervous (last half)</td>
<td>-0.5±0.7</td>
<td>0.2±0.9</td>
<td>0.015</td>
</tr>
<tr>
<td>Restless (last half)</td>
<td>-0.5±0.9</td>
<td>0.3±1.2</td>
<td>0.038</td>
</tr>
<tr>
<td>Irritated (last half)</td>
<td>-0.6±1.1</td>
<td>0.1±0.7</td>
<td>0.038</td>
</tr>
</tbody>
</table>


Other data from humans
- Improvement of depressive symptoms (at 50 mg/day).
  (Increase of serotonin concentration in platelets and decrease of MHPG concentration, a marker for anxiety)
- Improvement of premenstrual syndrome (at 25-50 mg/day).

<table>
<thead>
<tr>
<th>Tests</th>
<th>Results</th>
<th>Reference</th>
</tr>
</thead>
<tbody>
<tr>
<td>Acute toxicity (Mice)</td>
<td>LD₅₀ ≥ 2,000 mg/kg</td>
<td>Liang et al., Japanese Pharmacology &amp; Therapeutics 46(1), 127-135, 2018.</td>
</tr>
<tr>
<td>Subacute toxicity (Rats)</td>
<td>NOAEL: ≥ 250 mg/kg/day (equivalent to 150 mg/day human)</td>
<td>Liang et al., Japanese Pharmacology &amp; Therapeutics 46(1), 127-135, 2018.</td>
</tr>
<tr>
<td>Human clinical trial</td>
<td>Ingested for 12 weeks • weeks 1-8: 50 mg/day • weeks 9-12: 150 mg/day No adverse event</td>
<td>Li-Yang Jinwei et al., Journal of Nutritional Food 12(3), 1-9, 2009.</td>
</tr>
</tbody>
</table>

**Mechanism**

**Interaction on GABAₐ Receptor**

VENETRON® reacts with the benzodiazepine binding site and thus expected to enhance the effect of GABA by increasing the affinity of GABA at the GABA binding site.

**Serotonin Increase**

VENETRON® is expected to improve sleep by increasing serotonin, which is a key compound for sleep, and thus synthesis of melatonin.

**Intellectual Property / Authentications**

- US <patent > US 6,737,085 B2 <patent-pending> 15/938 618
- Japan <patent> JP 4629933 <patent-pending> JP 2017-193127
- Self-affirmed GRAS certification
- KOSHER certified
- JIIHFS health food raw materials GMP certified

---

This document is for proposal use and risk of conflict with the Pharmaceutical and Medical Device Act may arise if used for sales promotions etc. Please handle with care.