**Scientific Name(s):** *Siraitia grosvenori* (Swingle) C. Jeffrey ex A.M. Lu and Zhi Y. Zhang. Family: Curcubitaceae Syn., *Thladiantha grosvenori* (Swingle) C. Jeffrey, *Momordicae grosvenori* (Swingle)

**Common Name(s):** Lo han guo, lo han kuo, luo han guo, lor hon kor, ge si wei ruo guo, ra kan ka, monk fruit, arhat fruit, momordica fruit, Momordicae grosvenori fructus, longevity fruit, magic fruit

**Uses**

In southern China, luo han guo is popularly considered a longevity aid and is used to balance heat buildup caused by internal conditions, life-forces, or external heat. It is used as an expectorant and antitussive to treat lung congestion, cough, other respiratory ailments, and sore throat. It also is used for constipation and chronic enteritis. Luo han guo is a low-caloric, low-glycemic food used as a sweetener in beverages and cooked food.

**Dosing**

No trials have been conducted to establish appropriate dosage. One half to 2 pieces (approximately 9 to 15 g) of the dried fruit is commonly used as a tea by simmering in boiling water.

**Contraindications**

Contraindications have not yet been identified.

**Pregnancy/Lactation**

Information regarding safety and efficacy in pregnancy and lactation is lacking.

**Interactions**

None well documented.

**Adverse Reactions**

None well documented.

**Toxicology**

No data available.

**Botany**

Luo han guo refers to the fruit of *S. grosvenori*, a perennial, dioecious, herbaceous climbing vine, 2 to 5 m in length. It is cultivated in southern China, mainly in the Guangxi, Guangdong, Guizhou, Hunan, and Jiangxi provinces, with most of the product
from the mountains of Guilin. The round, green fruit turns brown when dried and is covered with small hairs. This is a distinct plant from bitter melon, Momordica charantia

**History**

Luo han guo has been used for centuries in China and in Southeast Asia for its sweet flavor and medicinal properties. Historic writings record Song Dynasty monks brewing it as a medicinal beverage more than 800 years ago. The dried fruit has been used as an ingredient in soup or stew to prevent symptoms of long-term conditions or for ongoing treatment. It is used as a tea for immediate relief of discomfort.

**Chemistry**

Siomenoside I, neomogroside, and other terpene glycosides, collectively called mogrosides, have been isolated from *S. grosvenori*. The sweetness of this plant has been attributed to the mogrosides V and VI, in addition to glucose and fructose. Mogroside V (esgoside) is the most abundant. Concentrations of mogroside V vary in the range of 0.81% to 1.29% w/w, depending on the anatomical part of the fruit.

28-Norcucurbitacins isolated from *S. grosvenori* are the siraitic acids A, B, C, D, and E. The ribosome inactivating protein momorgrosvin also has been isolated and characterized.

**Uses and Pharmacology**

No human trials have been reported.

**Sweetener**

Fruits of luo han guo are intensely sweet, with the purified constituents estimated to be about 150 times sweeter than sucrose. There is potential for use as a noncaloric sweetener. The purified, sweet principle, mogroside V, is approved as a high-intensity sweetening agent in Japan.

Highly sweet cucurbitane glycosides from the fruits of luo han guo, and other plant extracts, were evaluated for sweetness using electrophysiological and behavioral testing in gerbils. Gerbils trained to avoid sucrose identified the extracts as being sweet through avoidance. Another study in gerbils showed that mogroside V stimulated the gustatory receptors and induced behavioral responses to the compound’s sweet taste.

**Hypoglycemic**

In addition to its natural sweetening characteristic, luo han guo has exhibited antihyperglycemic effects. In rats, crude extracts of *S. grosvenori* and the triterpene glycosides inhibited a rise in postprandial blood glucose levels when given orally 3 minutes prior to oral administration of maltose. The suggested antihyperglycemic effect was via the inhibition of maltase.
Antioxidant

S. grosvenori extract and the cucurbitane glycosides mogroside IV, mogroside V, 11-oxo-mogroside V, and siamenoside I inhibited copper-mediated, low-density lipoprotein and cell-mediated, low-density lipoprotein oxidation in a dose-dependent fashion, with 11-oxo-mogroside V as the most active component.

The antioxidant, free-radical scavenging activities of the extract and 11-oxo-mogroside V were less than those of vitamin E in the same in vivo study.

Antineoplastic

In vitro and animal studies suggest potential cancer chemopreventive activities of cucurbitane glycosides and related compounds from the fruit of luo han guo.

An ethanol extract of S. grosvenori was evaluated for its effect on Epstein-Barr virus-early antigen (EBV-EA) activation as a method of detecting chemoprotective activity. The extract inhibited activation of EBV-EA at a level similar to or greater than the activity of beta-carotene. In a similar study, 11-oxo-mogroside V and mogroside V showed strong inhibitory effects.

A 2-stage skin carcinogenesis model in mice ingesting mogroside V or 11-oxomogroside V showed delayed development and reduced numbers of papillomas at 10 and 15 weeks, respectively, compared with control group animals.

Inhibitory effects of mogroside V and 11-oxo-mogroside V on another skin carcinogenesis model in mice using peroxynitrite also showed a reduction in numbers of papillomas formed and delayed papilloma development.

Antihistaminic

The effect of luo han guo extract and its glycosides on allergic symptoms in mice were studied. No effect on skin scratching behavior or nasal rubbing was noted following single doses of 300 and 1,000 mg/kg, respectively, of the extract or the glycosides.

Repeated daily doses of 300 and 1,000 mg/kg/day between 2 and 4 weeks of the extract and the glycosides showed gradual inhibition of nasal rubbing and skin scratching.

Dosage

No trials have been conducted to establish appropriate dosage. One half to 2 pieces (approximately 9 to 15 g) of the dried fruit is commonly used as a tea after simmering in boiling water.

Pregnancy/Lactation

Information regarding safety and efficacy in pregnancy and lactation is lacking.
**Interactions**
No data available.

**Toxicology**
No data available.
Bibliography


