Radix Ginseng

Definition

Radix Ginseng is the dried root of *Panax ginseng* C.A. Meyer (Araliaceae) (*1–5*).[1]

Synonyms

Panax schinseng Nees (*2*).

Other *Panax* species, including *P. quinquefolius* L. (American ginseng), *P. notoginseng* Burk. (San-chi ginseng), *P. pseudoginseng* Wall. ssp. *japonicus* Hara = *P. japonicus* C.A. Meyer (Japanese chikutsu ginseng) and *P. notoginseng* ssp. *himalaicus* (Himalayan ginseng) have also been referred to as "ginseng" and used medically (*6*, *7*). However, scientific documentation of these species is insufficient to justify the preparation of a monograph at this time.

Selected vernacular names

Chosen ninjin, ginseng, Ginsengwurzel, hakusan, hakushan, higeninjin, hongshen, hungseng, hungshen, hunseng, jenseng, jenshen, jinpi, kao-li-seng, korean ginseng, minjin, nhan sam, ninjin, ninzin, niuhuan, Oriental ginseng, otane ninjin, renshen, san-pi, shanshen, sheng-sai-seng, shenshaishanshen, shengshaishen, t'ang-seng, tyosenninzin, yakuyo ninjin, yakuyo ninzin, yeh-shan-seng, yuan-seng, yuanshen (*1*, *2*, *4–10*).

Description

A perennial herb with characteristic branched roots extending from the middle of the main root in the form of a human figure. Stem erect, simple, and not branching. Leaves verticillate, compound, digitate, leaflets 5, with the 3 terminal leaflets larger than the lateral ones, elliptical or slightly obovate, 4–15 cm long by 2–6.5 cm wide; apex acuminate; base cuneate; margin serrulate or finely bidentate. In general, 1 leaf in the first year with 1 leaflet added annually until the sixth year. Inflorescence a small terminal umbel, hemispherical in early summer. Flowers polygamous, pink. Calyx vaguely 5-toothed. Petals 5, stamens 5. Fruit a small berry, nearly drupaceous, and red when ripe in autumn (*8*).

[1] Steamed *Panax ginseng* root is listed in the Japanese pharmacopoeia as "Red Ginseng (Ginseng Radix Rubra)" (*2*).

Dosage forms

Crude plant material, capsules and tablets of powdered drugs, extracts, tonic drinks, wines, and lozenges. Store in a cool, dry place in well-sealed containers (*20*).

Medicinal uses

Uses supported by clinical data

Radix Ginseng is used as a prophylactic and restorative agent for enhancement of mental and physical capacities, in cases of weakness, exhaustion, tiredness, and loss of concentration, and during convalescence (*21–29*).

Uses described in pharmacopoeias and in traditional systems of medicine

Radix Ginseng has been used clinically in the treatment of diabetes (*1*), but further clinical studies are needed. The drug is also used in the treatment of impotence, prevention of hepatotoxicity, and gastrointestinal disorders such as gastritis and ulcers (*1, 7*).

Uses described in folk medicine, not supported by experimental or clinical data

Treatment of liver disease, coughs, fever, tuberculosis, rheumatism, vomiting of pregnancy, hypothermia, dyspnoea, and nervous disorders (*7*).

Pharmacology

Experimental pharmacology

The suggested mode of action of Radix Ginseng is twofold. First, the drug has an "adaptogenic" effect (*30*), which produces a non-specific increase in the body's own defences against exogenous stress factors and noxious chemicals (*31*). Secondly, the drug promotes an overall improvement in physical and mental performance (*30–33*).

Treatment of cultured mammalian cells, isolated organs, and animal models (primarily mice and rats) with Radix Ginseng before or during exposure to physical, chemical, or psychological stress increased the ability of the respective model systems to resist the damaging effects of various stressors (*31*). These results were demonstrated in cases of radiation poisoning (*34–36*), viral infection and tumour load (*37, 38*), alcohol or carbon tetrachloride poisoning (*39–41*), oxygen deprivation and hypobaric pressure (*42, 43*), light or temperature stress, emotional stress, and electrical shock or restricted movement (*44, 45, 46*). The mechanism by which the drug exerts its activity is most likely through the hypothalamus–pituitary–adrenal axis (*47–49*) and through its immunostimulant effect (*50*).

World Health Organization, 1997 (unpublished document WHO/FSF/FOS/97.7; available from Food Safety, WHO, 1211 Geneva 27, Switzerland).

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