Panax quinquefolius L.

American Ginseng Root

Radix Panacis quinquefolii

Pinyin: Xi yang shen

Araliaceae

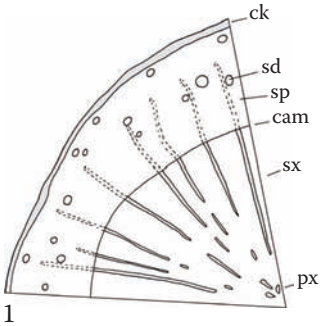
American ginseng has been a staple of North American herbalism for several hundred years. It was traditionally used by Native American tribes throughout the very broad growing range of the plant. Among the Cherokee, it was among the most highly regarded of medicinal plants. Economically, it has been an internationally traded commodity since the days of Daniel Boone. The majority of wild-harvested and cultivated American ginseng is exported to Asia, where it is as highly regarded as, and sometimes more highly regarded than, Asian *Panax ginseng*. There are three primary forms: wild, grown in woods, and cultivated. Microscopically, the tissues of these forms are identical. For a comparison of the microscopy of American ginseng, tienchi ginseng (*Panax pseudo ginseng*), and Asian ginseng (*P. ginseng*), see the entry for Asian ginseng.

Transverse section: Thin cork is composed of thin-walled, regularly arranged parenchyma cells; thin phelloderm consists of tangentially elongated, slightly thickened cells; inside the phelloderm is a layer of parenchyma with no medullary rays; secondary phloem of narrow gray zones, indicating sieve cells and companion cells, separated by broad medullary rays of large roundish parenchyma cells; secretory ducts up to 80 µm diameter, frequently filled with orange oil droplets or yellow-brown secretions, are scattered in the cortex and secondary phloem; secondary xylem of narrow strands of vessels separated by broad medullary rays; vessels are up to 50 µm diameter; primary xylem of small vessels occurs in the center of the root; calcium oxalate cluster crystals (up to 50 µm diameter) or, occasionally, prisms are present in parenchyma of all tissues except cork and phelloderm; fibers and sclereids are lacking throughout.

Longitudinal section: Vessels with reticulate or scalariform wall thickening.

Starch: Abundant in all parenchyma cells; simple or compound granules in aggregates of two to four granules; individual granules are roundish or slightly angular in outline, up to 15 µm diameter; larger granules have a central hilum or slit.

Powder: Fragments of cork in surface view; parenchyma cells, some with yellow-brown secretions or calcium oxalate cluster crystals; occasional calcium oxalate prisms; secretory ducts in longitudinal section are filled with orange-brown secretions; vessels have reticulate or scalariform wall thickenings; starch.



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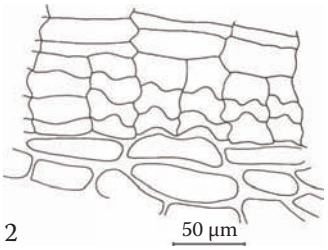

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