

Chimaphila umbellata* (L.)*W. P. C. Barton****Pipsissewa Leaf and Stem***Folium Chimaphilae**Pyrolaceae*

Also known as princess pine, pipsissewa is used in Western herbal tradition as a urinary antiseptic. It is native to the Pacific Northwest and, although not commonly used in herbal supplements, is commonly used by Western herbalists and naturopathic physicians. To date, no adulterants have been reported for pipsissewa.

A. Leaf

Surface view: Upper epidermal cells with heavily striated cuticle and sinuous anticlinal walls, their wavy character enhanced by local thickenings on convex portions of the walls, stomata absent; lower epidermal cells smaller, less sinuous in outline, anomocytic stomata abundant (~30 μm long); trichomes are absent throughout.

Transverse section: Bifacial; epidermal cells compressed under a very thick cuticle; palisade cells in one to three layers; spongy mesophyll has large intercellular spaces, cluster crystals of calcium oxalate ~20 μm diameter, and occasional idioblasts filled with reddish brown tannins.

B. Stem

Surface view: Epidermis of rectangular to square, somewhat papillose cells covered by a thick striated cuticle.

Transverse section: Epidermis with thick cuticle; outer cortex of lamellar collenchyma; endodermis is present; phloem and xylem occur in a continuous ring; xylem consists of vessels and numerous fibers; cluster crystals of calcium oxalate up to 60 μm diameter occur in the pith, and up to 40 μm diameter in the cortex; idioblasts containing reddish brown tannins are frequent in all tissues.

Powder: Fragments of leaf and stem epidermis, some with anomocytic stomata; elongated palisade cells and aerenchyma of the spongy mesophyll; fibers and vessels from the stem; cluster crystals of calcium oxalate.

