

***Actaea racemosa* L. syn.  
*Cimicifuga racemosa* (L.) Nutt.  
 Black Cohosh Rhizome and Root  
*Rhizoma et Radix Actaeae racemosae*  
*Ranunculaceae***

Black cohosh has a long history of use in Western herbalism. Traditionally, it was used for gynecological disorders and as an antirheumatic. In more modern times it has been additionally used for the treatment of menopausal symptoms, among other indications. Black cohosh may be adulterated with other North American cohoshes (*A. pachypoda* and *A. podocarpa* syn. *Cimicifuga americana*) and Asian species (*A. dahurica* and *A. foetida*). True *Actaea* species cannot be easily differentiated using standard light microscopy.

**A. Rhizome**

**Transverse section:** Dark brown epidermis; cortex of colorless parenchyma with thickened cell corners and small triangular intercellular spaces between most cells; vascular bundles are radially arranged around the large central pith and separated by broad medullary rays; phloem of tangentially elongated, compressed cells; occasional fibers and sclereids are embedded toward exterior of each phloem bundle; secondary xylem vessels are up to 60  $\mu\text{m}$  in diameter with bordered pits or reticulate thickening and associated with fibers; slightly thickened medullary ray cells, with frequent triangular or rectangular intercellular spaces.

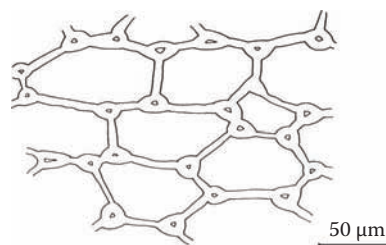
**B. Root**

**Transverse section:** Exodermis of dark brown papillose cells with thick striated outer walls; cortex of thick-walled parenchyma; well-defined endodermis; tetrarch stele with

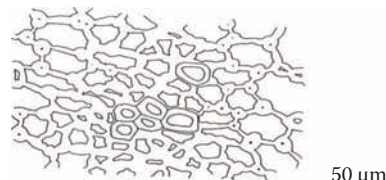
large areas of secondary xylem alternate with small areas of primary xylem; the parenchyma in the xylem tissue is completely replaced by fibers.

**Starch:** Abundant in rhizome and root; simple, spherical granules, up to 10  $\mu\text{m}$  diameter; compound aggregates of two or three granules occur rarely.

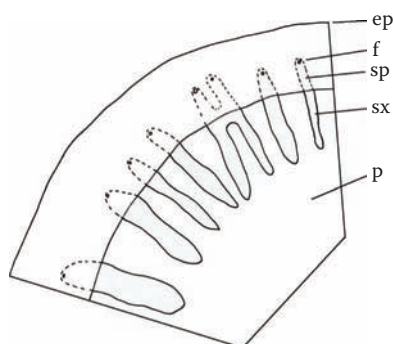
**Powder:** Fragments of xylem fibers and vessels with bordered pits or reticulate thickenings; phloem fibers and sclereids in longitudinal view; parenchyma cells; starch.



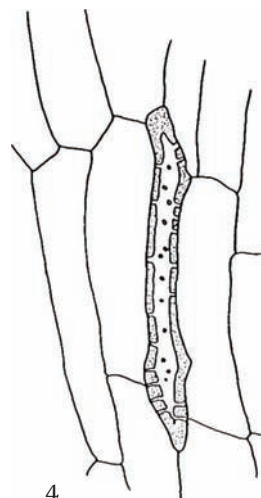
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