

Aletris farinosa L.

Aletris Rhizome and Root (True Unicorn)

Rhizoma et Radix Aletridis

Liliaceae (alt. Nartheciaceae)

Aletris, more commonly known as true unicorn or star grass, was predominantly used by Eclectic physicians and Thomsonian practitioners as a digestive tonic and specifically as a uterine tonic. Aletris is sometimes substituted for false unicorn root (*Chamaelirium luteum* syn. *Helonias dioica*). Medicinally, the two plants are not used interchangeably and can be confused in trade due to the use of the common names false unicorn and true unicorn. There is also an economic disparity between the two botanicals; false unicorn is much more expensive and also environmentally sensitive, making adulteration with aletris more likely. The two plants can be readily distinguished microscopically.

A. Rhizome

Surface view: Epidermis of polygonal cells; glandular trichomes with uniseriate stalk and unicellular ovoid head.

Transverse section: Wavy epidermis with glandular trichomes located in the concavities; epidermal cells with wavy radial walls; wide cortex consists of spherical, thin-walled parenchyma with embedded leaf traces having spirally thickened vessels appearing in longitudinal view; partially sclerified endodermal cells; leptocentric vascular bundles are more numerous near the endodermis than toward the center and are irregularly arranged, often seen in longitudinal view; vessels are heavily thickened, pitted, up to 15 μm diameter; numerous acicular raphide bundles throughout, 30–50 μm long, almost square-shaped.

Starch: Mostly simple, subspherical granules are small, up to 8 μm diameter.

B. Scale Leaves of the Rhizome

Surface view: Epidermis of elongated rectangular or subacute cells; stomata are absent; underlying cells are similarly shaped; idioblasts containing acicular raphide bundles are abundant.

Transverse section: Slightly thickened epidermal cells with stomata absent; spherical, thin-walled mesophyll cells; palisade layer is absent; collateral bundles of varying size, with large ones surrounded by fiber sheaths.

C. Root

Surface view: Epidermis of polygonal cells.

Transverse section: Epidermis of polygonal cells; hypodermis of small, thick-walled, almost square cells, one or two cell layers thick; cortex of large spherical cells; cortex and tissue to the exterior of it peel off easily and are missing in many samples; conspicuous endodermis, ~50 μm thick, consists of dark orange or brown, radially elongated cells that are rectangular with heavily thickened and concentrically stratified walls; pericycle of small thick-walled cells; central stele is polyarch, with generally nine or more phloem and xylem poles, small phloem poles directly inside pericycle; vessels are up to 30 μm diameter; parenchyma between vessels is completely replaced by fibers; starch is absent.

Powder: Fragments of orange-brown fibers of root endodermis; parenchyma of rhizome with numerous acicular raphide bundles; leaf traces; starch.

