

Atropa belladonna* L.*Belladonna Leaf*****Folium Belladonnae******Solanaceae***

Belladonna, commonly known as deadly nightshade, has been used medicinally for centuries. Although it is not generally found in herbal dietary supplements because of its potential for toxicity, it was historically highly regarded as among the most effective of herbal gastrointestinal antispasmodics (Weiss 1988). The crude botanical consists of the flowering ends of the twigs. Therefore pieces of stem and the highly characteristic seeds are present in most commercial lots. The seeds but not the stems are conspicuous in powdered material.

A. Leaf

Surface view: Lower and upper epidermis made up of cells with sinuous anticlinal walls and a conspicuously striated cuticle; anisocytic stomata ~25 μm long are more frequent on the lower surface; infrequent thin-walled covering trichomes are up to five cells long, with a conical tip; glandular trichomes of two types are frequent: long ~150 μm to >1 mm, with a uniseriate two- to four-celled

stalk and unicellular head, found predominantly on the lower epidermis; short, ~100 μm long, with a unicellular stalk and multicellular ovoid head found on both surfaces; numerous dark spots (bright in polarized light) indicate idioblasts containing calcium oxalate crystal sand; individual crystals are tetrahedric, ~2 μm across.

Transverse section: Bifacial; palisade parenchyma is usually a single layer; spongy mesophyll contains conspicuous crystal sand idioblasts; bicollateral vascular bundles.

B. Seed Testa

Surface view: Cells with very sinuous and thickened anticlinal walls.

Transverse section: Cells with horseshoe-shaped thickenings; the radial walls and inner tangential wall are irregularly thickened, but the outer tangential wall remains unthickened.

Powder: Fragments of leaf epidermis with cuticular striations, anisocytic stomata, and covering (infrequent) and glandular trichomes; idioblasts containing calcium oxalate crystal sand; occasional fragments of the testa and vessels.

