

Petasites frigidus (L.) Frigs

Arctic Butterbur Leaf

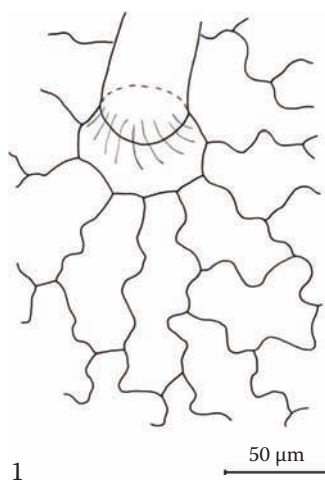
Folium Petasitidis

Asteraceae

Arctic butterbur, more commonly known as petasites or Western coltsfoot, is primarily used in Western herbal medicine for the treatment of migraine headaches, allergies, and urinary incontinence. *Petasites* contains potentially toxic pyrrolizidine alkaloids (PAs). Plants that contain PAs are prohibited from internal use in the European Union. *Petasites* is being cultivated to be low in or free of PAs. *Petasites* may also be mistakenly traded as American coltsfoot (*Tussilago farfara*). For the differentiation of these two species, see entry for *Tussilago*.

A. Leaf

Surface view: Upper epidermal cells are irregularly shaped to elongate with sinuous anticlinal walls; lower epidermis consists of cells with sinuous anticlinal walls, anomocytic stomata ~25–35 μm long, with the mesophyll aerenchyma showing through; cuticle is somewhat sinuously striated, mainly in the area of the veins and leaf margins; uniseriate covering trichomes of three types occur: (1) on both surfaces, predominantly along the veins, >1 mm long, consisting of up to 15 cells—may be biseriate at base, with a basal row of slightly thickened rectangular



cells and a few, elongated, thin-walled terminal cells; basal region often striated, ~80–100 μm in diameter, spanning two or more epidermal cells; (2) upper surface has a small basal cell, ~40–60 μm diameter, few rectangular or elongated, slightly thickened cells just above the base and several thin-walled, elongated terminal cells; (3) lower surface appears woolly due to the intertwined terminal cells of long (greater than several millimeters) covering trichomes having one to three thin-walled basal cells and one slightly thickened and extremely elongated terminal cell placed asymmetrically on the base; leaf margin with red teeth.

Transverse section: Bifacial; very short palisade cells in one or two layers; loose, spongy mesophyll with large intercellular spaces.

B. Petiole

Surface view: Epidermal cells are axially elongated with a striated cuticle; covering trichomes are similar to those on the leaf upper epidermis.

Transverse section: Epidermal cells with relief from striated cuticle and thickened inner tangential wall; broad layer of collenchyma; vascular bundles in two concentric rings; parenchyma with large intercellular spaces.

Powder: The characteristics that are predominant in the powder were not determined.

