

***Atractylodes macrocephala* Koidz.**

Bai-zhu *Atractylodes* Rhizome

Rhizoma Atractylodis macrocephalae

Pinyin: Bai zhu

Asteraceae

Bai-zhu atractylodes is predominantly used in traditional Chinese herbalism—specifically, as a tonifier for the digestive system to improve digestion and assimilation. There are various species and forms of atractylodes. Some can easily be distinguished microscopically from each other, but others cannot be. Complete microscopic differentiation of the species in the English language is lacking.

Transverse section: Thin cork; a conspicuous layer of large, thick-walled, pitted, tangentially elongated sclereids occurs interior to the cork in the cortex; with increasing secondary growth, the cortex with sclereids moves into the cork and is peeled off, leaving old rhizomes free of sclereids; parenchymatous, very homogeneous secondary phloem; secondary xylem of vessels is arranged in narrow radial rows, frequently only one vessel wide, separated by broad medullary rays; vessels are surrounded by parenchyma cells or, toward the interior, pitted fibers; parenchymatous pith; large secretory cavities that may be spheroidal or slightly axially elongated, up to 350 μm diameter and containing reddish brown secretions, are found in all tissues interior to the cork; parenchyma cells throughout the rhizome contain small acicular crystals of calcium oxalate

that are 6–30 μm long, irregularly arranged, and often confined to one corner; starch is absent.

Longitudinal section: Scalariform or reticulate vessels.

Inulin: Present in all parenchyma cells. Boiling with chloral hydrate destroys inulin; after boiling for a short period, oily droplets may be present.

Powder: Parenchyma cells contain acicular crystals of calcium oxalate; fragments of cork possibly contain sclereids; sclereids surrounded by parenchyma may be present; scalariform or reticulate vessels, some with fibers attached; reddish brown secretory cavities; inulin.

