

hairs; furthermore, multicellular glandular hairs, epidermis with stomata, fragments of palisade tissue, rosette aggregates of calcium oxalate, and starch grains. Fiber is thick-walled, with somewhat distinct pits; unicellular hair shows small point-like protrusions on the surface; palisade tissue consisting of circular parenchyma cells in surface view, each cell containing one rosette aggregate of calcium oxalate which is about 20 μm in diameter. Starch grains consisting of simple grains but rarely of 2-compound grains, ovoid to spherical, 5 – 30 μm in diameter, with distinct hilum.

Identification Boil 0.1 g of Powdered Geranium Herb with 10 mL of water, filter, and to the filtrate add 1 drop of iron (III) chloride TS: a dark blue color develops.

Purity Foreign matter—Under a microscope, Powdered Geranium Herb reveals no stone cells.

Total ash Not more than 10.0%.

Acid-insoluble ash Not more than 1.5%.

Extract content Dilute ethanol-soluble extract: not less than 15.0%.

Ginger

Zingiberis Rhizoma

シヨウキヨウ

Ginger is the rhizome of *Zingiber officinale* Roscoe (*Zingiberaceae*).

Description Irregularly compressed and often branched massive rhizome or a part of it; the branched parts are slightly curved ovoid or oblong-ovoid, 2 – 4 cm in length, and 1 – 2 cm in diameter; external surface grayish white to light grayish brown, and often with white powder; fractured surface is somewhat fibrous, powdery, light yellowish brown; under a magnifying glass, a transverse section reveals cortex and stele distinctly divided; vascular bundles and secretes scattered all over the surface as small dark brown dots. Odor, characteristic; taste, extremely pungent.

Identification To 2 g of pulverized Ginger add 5 mL of acetone, shake for 3 minutes, filter, and use the filtrate as the sample solution. Separately, dissolve 1 mg of [6]-gingerol for thin-layer chromatography in 1 mL of acetone, and use this solution as the standard solution. Perform the test with these solutions as directed under the Thin-layer Chromatography. Spot 10 μL of the sample solution on a plate of silica gel for thin-layer chromatography. Develop the plate with a mixture of hexane, acetone and acetic acid (100) (10:7:1) to a distance of about 10 cm, and air-dry the plate. Spray evenly the plate with 2,4-dinitrophenylhydrazine TS, and heat at 105°C for 10 minutes: one of the spots from the sample solution and a brown spot from the standard solution shows the same color tone and *R_f* value.

Total ash Not more than 8.0%

Powdered Ginger

Zingiberis Rhizoma Pulveratum

シヨウキヨウ末

Powdered Ginger is the powder of Ginger.

Description Powdered Ginger occurs as a light grayish brown to light grayish yellow powder. It has a characteristic odor and an extremely pungent taste.

Under a microscope, Powdered Ginger reveals mainly starch grains and parenchyma cells containing them; also, parenchyma cells containing yellow-brown to dark brown resinous substances or single crystals of calcium oxalate; fragments of fibers with distinct pits; fragments of spiral, ring and reticulate vessels, and rarely fragments of cork tissue; starch grains composed of simple, compound or half-compound grains, spherical, ovoid or globular, with abaxial hilum, usually 20 – 30 μm in long axis.

Identification To 2 g of Powdered Ginger add 5 mL of acetone, shake for 3 minutes, filter, and use the filtrate as the sample solution. Separately, dissolve 1 mg of [6]-gingerol for thin-layer chromatography in 1 mL of acetone, and use this solution as the standard solution. Perform the test with these solutions as directed under the Thin-layer Chromatography. Spot 10 μL of the sample solution on a plate of silica gel for thin-layer chromatography. Develop the plate with a mixture of hexane, acetone and acetic acid (100) (10:7:1) to a distance of about 10 cm, and air-dry the plate. Spray evenly the plate with 2,4-dinitrophenylhydrazine TS, and heat at 105°C for 10 minutes: one of the spots from the sample solution and a brown spot from the standard solution shows the same color tone and *R_f* value.

Purity Foreign matter—Under a microscope, Powdered Ginger does not show stone cells, lignified parenchyma cells and other foreign matter.

Total ash Not more than 8.0%.

Containers and storage Containers—Tight containers.

Ginseng

Ginseng Radix

ニンジン

Ginseng is the root of *Panax ginseng* C. A. Meyer (*Panax schinseng* Nees) (*Araliaceae*), from which rootlets have been removed, or the root has been quickly passed through hot water.

Description Thin and long cylindrical to fusiform root, often branching 2 to 5 lateral roots from the middle; 5 – 20 cm in length, main root 0.5 – 3 cm in diameter; externally light yellow-brown to light grayish brown, with longitudinal wrinkles and scars of rootlets; sometimes crown somewhat constricted and with short remains of rhizome; fractured surface practically flat, light yellow-brown in color, and brown