Picrorhiza kurrooa Root and Rhizome

Proposed For Development Version 0.1

Picrorhiza kurrooa Root and Rhizome

DEFINITION
The article consists of the dried root and rhizome of Picrorhiza kurrooa Royle (Family Plantaginaceae). It meets the Acceptance criteria in the Assay.

SYNONYMS
The synonym status of the species names Picrorhiza kurrooa Royle and Picrorhiza kurroa Royle ex Benth. is unresolved at this time. Previously this species was placed in the family Scrophulariaceae.

POTENTIAL CONFOUNDBING MATERIALS
Picrorhiza scrophulariiflora Pennell

SELECTED COMMON NAMES
Chinese: 胡簧莲
English: Picrorhiza
Hindi: Kutki
Korean: 호황련
Sanskrit: Tiktā, Kavī, Sutiktaka
Tamil: Katuka rohini

CONSTITUENTS OF INTEREST
Iridoid glycoside: Picroside I and picroside II

IDENTIFICATION
• A. BOTANICAL CHARACTERISTICS
  Macroscopic
  Rhizome: 2.5–12.0 cm Long and 0.3–1.0 cm thick, subcylindrical, straight or slightly curved, externally grayish-brown, surface rough due to longitudinal wrinkles, circular scars of roots and bud scales and sometimes roots attached, tip ends in a growing bud surrounded by a tufted crown of leaves, in place cork exfoliates exposing dark cortex; fracture, short.
  Root: Thin, cylindrical, 5–10 cm long and 0.5–1.0 mm in diameter, straight or slightly curved with a few longitudinal wrinkles and dotted scars, mostly attached with rhizomes, dusty-grey, fracture short, inner surface black with whitish xylem.

  Microscopic
  Rhizome portion: 20–25 Layers of cork consisting of tangentially elongated, suberized cells; cork cambium 1-2 layers; cortex single-layered or absent, primary cortex persists in some cases, 1 or 2 small vascular bundles present in the cortex. Vascular bundles surrounded by fibrous bundle sheath. Secondary phloem composed of parenchyma cells and a few scattered fibers. Cambium 2-4 layered. Secondary xylem consists of vessels, tracheids, fibers, and parenchyma cells. Vessels vary in size and shape, have transverse oblique articulation; trasheids long, thick-walled, lignified, more or less cylindrical with blunt tapering ends. Starch grains abundant, 25–105 μm in diameter.
  Root portion: When young, shows 1-layered epidermis, some epidermal cells elongate forming unicellular hairs. Hypodermis single-layered. Cortex 8–14 layered, consisting of oval to polygonal, thick-walled parenchymatous cells. Primary stele, tetrarch to heptarch, enclosed by a single-layered pericycle and single-layered thick-walled cells of endodermis. Mature roots show 4-15 layers of cork, 1-2 layers of cork cambium. Vessels vary in size and shape, some cylindrical with tail-like, tapering ends; some drum shaped with perforation on end walls or lateral walls. Tracheids cylindrical with tapering pointed ends.

• B. THIN-LAYER CHROMATOGRAPHY

CALL FOR SUBMISSION OF VALIDATED INFORMATION

Additional information including validation data will be required to complete the development of the Identification. For requirements, please see under "Identification" and related sections of the guidelines document "Monographs in Herbal Medicines Compendium".
the Herbal Medicines Compendium” at http://hmc.usp.org/about/general-noticesguidelines [1].

Interested parties are encouraged to submit their proposals to complete the monograph.

ASSAY

• CONTENT OF CONSTITUENTS OF INTEREST

CALL FOR SUBMISSION OF VALIDATED INFORMATION

Additional information including validation data will be required to complete the development of the Assay. For requirements, please see under “Composition” and related sections of the guidelines document “Monographs in the Herbal Medicines Compendium” at http://hmc.usp.org/about/general-noticesguidelines [1].

Interested parties are encouraged to submit their proposals to complete the monograph.

CONTAMINANTS

• ELEMENTAL IMPURITIES—PROCEDURES <233>

Acceptance criteria

Arsenic: NMT 2.0 µg/g
Cadmium: NMT 0.5 µg/g
Lead: NMT 5.0 µg/g
Mercury: NMT 0.2 µg/g

• ARTICLES OF BOTANICAL ORIGIN, General Method for Pesticide Residues Analysis <561>: Meets the requirements

• MICROBIAL ENUMERATION TESTS <61>: The total aerobic bacterial count does not exceed 10⁷ cfu/g, the total combined molds and yeasts count does not exceed 10⁶ cfu/g, and the bile-tolerant Gram-negative bacteria does not exceed 10⁵ cfu/g.

• TESTS FOR SPECIFIED MICROORGANISMS <62>: Meets the requirements of the tests for the absence of Salmonella species and Escherichia coli

• ARTICLES OF BOTANICAL ORIGIN, Aflatoxins <561>: Meets the requirements

SPECIFIC TESTS

• ARTICLES OF BOTANICAL ORIGIN, Foreign Organic Matter <561>: NMT 2.0%

• ARTICLES OF BOTANICAL ORIGIN, Alcohol-Soluble Extractives, Method 1 <561>: NLT 10.0%

• ARTICLES OF BOTANICAL ORIGIN, Water-Soluble Extractives, Method 2 <561>: NLT 20.0%

• WATER DETERMINATION, Method III <921>: NMT 10.0%

• ARTICLES OF BOTANICAL ORIGIN, Total Ash <561>

  Analysis: 2.0 g of Picrorhiza kurrooa Root and Rhizome, finely powdered

  Acceptance criteria: NMT 7%

• ARTICLES OF BOTANICAL ORIGIN, Acid-Insoluble Ash <561>

  Analysis: 2.0 g of Picrorhiza kurrooa Root and Rhizome, finely powdered

  Acceptance criteria: NMT 1%

ADDITIONAL REQUIREMENTS

• PACKAGING AND STORAGE: Preserve in well-closed containers, protected from light and moisture, and store at room temperature.

• LABELING: The label states the Latin binomial and the part(s) of the plant contained in the article.

• USP REFERENCE STANDARDS <11>

  USP Picrorhiza kurrooa Root and Rhizome Dry Extract RS [to come]

  USP Picroside I RS [to come]

Source URL (modified on 2014/02/01 - 4:34pm): https://hmc.usp.org/monographs/picrorhiza-kurrooa-root-and-rhizome-0-1