
**Traditional Chinese medicine —
Angelica sinensis root**

Médecine traditionnelle chinoise — Racine d'Angélique chinoise

**iTeh STANDARD PREVIEW
(standards.iteh.ai)**

[ISO 22584:2019](https://standards.iteh.ai/catalog/standards/sist/9b2578bd-4db8-4574-b3eb-a6524ee06e80/iso-22584-2019)

[https://standards.iteh.ai/catalog/standards/sist/9b2578bd-4db8-4574-
b3eb-a6524ee06e80/iso-22584-2019](https://standards.iteh.ai/catalog/standards/sist/9b2578bd-4db8-4574-b3eb-a6524ee06e80/iso-22584-2019)



iTeh STANDARD PREVIEW
(standards.iteh.ai)

ISO 22584:2019

<https://standards.iteh.ai/catalog/standards/sist/9b2578bd-4db8-4574-b3eb-a6524ee06e80/iso-22584-2019>



COPYRIGHT PROTECTED DOCUMENT

© ISO 2019

All rights reserved. Unless otherwise specified, or required in the context of its implementation, no part of this publication may be reproduced or utilized otherwise in any form or by any means, electronic or mechanical, including photocopying, or posting on the internet or an intranet, without prior written permission. Permission can be requested from either ISO at the address below or ISO's member body in the country of the requester.

ISO copyright office
CP 401 • Ch. de Blandonnet 8
CH-1214 Vernier, Geneva
Phone: +41 22 749 01 11
Fax: +41 22 749 09 47
Email: copyright@iso.org
Website: www.iso.org

Published in Switzerland

Contents

	Page
Foreword.....	iv
Introduction.....	v
1 Scope	1
2 Normative references	1
3 Terms and definitions	1
4 Description	2
5 Requirements	2
5.1 General characteristics.....	2
5.2 Morphological features of <i>Angelica sinensis</i> root.....	2
5.3 Identification of <i>Angelica sinensis</i> root.....	3
5.4 Moisture.....	3
5.5 Total ash.....	3
5.6 Acid-insoluble ash.....	3
5.7 Extractives.....	3
5.8 Content of marker compound.....	3
5.9 Heavy metal.....	3
5.10 Pesticide residues.....	4
6 Sampling	4
7 Test methods	4
7.1 Macroscopic identification.....	4
7.2 TLC identification.....	4
7.3 Determination of moisture content.....	4
7.4 Determination of total ash.....	4
7.5 Determination of acid-insoluble ash.....	4
7.6 Determination of extractives.....	4
7.7 Determination of ferulic acid.....	4
7.8 Determination of heavy metal.....	4
7.9 Determination of pesticide residues.....	4
8 Test report	4
9 Packaging, storage and transportation	5
10 Marking and labelling	5
Annex A (informative) TLC identification	6
Annex B (informative) Determination of extractives	9
Annex C (informative) Determination of ferulic acid	10
Annex D (informative) Reference values of <i>Angelica sinensis</i> root in different national and regional standards	12
Bibliography	13

Foreword

ISO (the International Organization for Standardization) is a worldwide federation of national standards bodies (ISO member bodies). The work of preparing International Standards is normally carried out through ISO technical committees. Each member body interested in a subject for which a technical committee has been established has the right to be represented on that committee. International organizations, governmental and non-governmental, in liaison with ISO, also take part in the work. ISO collaborates closely with the International Electrotechnical Commission (IEC) on all matters of electrotechnical standardization.

The procedures used to develop this document and those intended for its further maintenance are described in the ISO/IEC Directives, Part 1. In particular, the different approval criteria needed for the different types of ISO documents should be noted. This document was drafted in accordance with the editorial rules of the ISO/IEC Directives, Part 2 (see www.iso.org/directives).

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. ISO shall not be held responsible for identifying any or all such patent rights. Details of any patent rights identified during the development of the document will be in the Introduction and/or on the ISO list of patent declarations received (see www.iso.org/patents).

Any trade name used in this document is information given for the convenience of users and does not constitute an endorsement.

For an explanation of the voluntary nature of standards, the meaning of ISO specific terms and expressions related to conformity assessment, as well as information about ISO's adherence to the World Trade Organization (WTO) principles in the Technical Barriers to Trade (TBT) see www.iso.org/iso/foreword.html.

This document was prepared by Technical Committee ISO/TC 249, *Traditional Chinese medicine*.

Any feedback or questions on this document should be directed to the user's national standards body. A complete listing of these bodies can be found at www.iso.org/members.html.

Introduction

Angelica root is a traditional herbal remedy, derived from the dried root of *Angelica sinensis* (Oliv.) Diels, *Angelica acutiloba* (Sieb. et Zucc.) Kitagawa and *Angelica gigas* Nakai, of the Umbelliferae family, as recorded by the Chinese Pharmacopoeia, the Japanese Pharmacopoeia and the Korean Pharmacopoeia, respectively, and has a long medicinal history. *Angelica sinensis* is still one of the herbs most commonly used by traditional Chinese medicine practitioners in Asia, North America and Europe. It is commonly known as female ginseng, and widely used to invigorate blood circulation and replenish blood in treating women's reproductive problems, such as dysmenorrhea, amenorrhoea and menopause. It has also been used in over 20 countries for its significant effectiveness in the pharmaceutical and cosmetic fields.

The quality of *Angelica sinensis* root is crucial for efficacy and safety for consumers. Until now, there have been no unique requirements for *Angelica sinensis* root, although *Angelica sinensis* root has also been recorded by the American Herbal Pharmacopoeia, the European Pharmacopoeia, the British Pharmacopoeia and the Hong Kong Chinese Materia Medica Standards. It is therefore important to standardize the quality of *Angelica sinensis* root globally in order to benefit farmers, enterprises and companies involved in the planting, management and trade of *Angelica sinensis* root.

As national implementation may differ, national standards bodies are invited to modify the values given in [5.4](#), [5.5](#), [5.6](#), [5.7](#), [5.8](#), [5.9](#) and [5.10](#) in their national standards. Examples of national and regional values are given in [Annex D](#).

iTeh STANDARD PREVIEW (standards.iteh.ai)

[ISO 22584:2019](#)

<https://standards.iteh.ai/catalog/standards/sist/9b2578bd-4db8-4574-b3eb-a6524ee06e80/iso-22584-2019>

iTeh STANDARD PREVIEW
(standards.iteh.ai)

ISO 22584:2019

<https://standards.iteh.ai/catalog/standards/sist/9b2578bd-4db8-4574-b3eb-a6524ee06e80/iso-22584-2019>

Traditional Chinese medicine — *Angelica sinensis* root

1 Scope

This document specifies minimum requirements and test methods for *Angelica sinensis* root that is derived from *Angelica sinensis* (Oliv.) Diels.

It is applicable to *Angelica sinensis* root that is sold and used as a natural medicine in international trade, including Chinese materia medica (whole medicinal materials) and decoction pieces derived from this plant.

2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

ISO 1575, *Tea — Determination of total ash*

ISO 1577, *Tea — Determination of acid-insoluble ash*

ISO 18664, *Traditional Chinese Medicine — Determination of heavy metals in herbal medicines used in Traditional Chinese Medicine* (standards.iteh.ai)

ISO 20409, *Traditional Chinese medicine — Panax notoginseng root and rhizome* ISO 22584:2019

ISO 21371, *Traditional Chinese medicine — Labelling requirements of products intended for oral or topical use* b3eb-a6524ee06e80/iso-22584-2019

CAC/MRL01 *Maximum Residue Limits for Pesticides in Foods*

CODEX STAN 229, *Analysis of pesticide residues: Recommended methods*

World Health Organization 2011, *Quality control methods for herbal materials, General advice on sampling*

3 Terms and definitions

For the purposes of this document, the following terms and definitions apply.

ISO and IEC maintain terminological databases for use in standardization at the following addresses:

- ISO Online browsing platform: available at <https://www.iso.org/obp>
- IEC Electropedia: available at <http://www.electropedia.org/>

3.1

root

main underground part of a plant that can branch

3.2

root stock

top part of the dried main *root* (3.1), which is closest to the stem

3.3

total ash

residue obtained after incineration at 525 °C ± 25 °C

3.4

acid-insoluble ash

part of the *total ash* (3.3) remaining after treatment with hydrochloric acid

4 Description

Angelica sinensis root is shown in [Figure 1](#).



iTeH STANDARD PREVIEW
(standards.iteh.ai)

Key

A *Angelica sinensis* plant

B *Angelica sinensis* dried root

1 leaf

2 flowering branch

3 root stock

4 branching root

ISO 22584:2019
<https://standards.iteh.ai/catalog/standards/sist/9b2578bd-4db8-4574-b3eb-a6524ee06e80/iso-22584-2019>

Figure 1 — Structure of *Angelica sinensis* (Oliv.) Diels

5 Requirements

5.1 General characteristics

The following requirements shall be met before separating the bulk sample into test samples.

- Angelica sinensis* root shall be clean and free from foreign matter.
- The presence of living insects, mould and external contaminants which are visible to the naked eye shall not be permitted.

5.2 Morphological features of *Angelica sinensis* root

- The root is slightly cylindrical.
- The outer surface is yellowish brown to reddish brown with longitudinal wrinkles and transversely elongated lenticels.

- c) The root stock is known as "Angelica head" (or *guitou*). The main root is known as "Angelica body" (or *guishen*). The branching root is known as "Angelica tails " (or *guiwei*). The entire root is known as "entire Angelica" (or *quangui*).
- d) The root stock is 15 mm to 40 mm in diameter, annulated with obtuse and rounded apex or with purple or yellowish green remains of stems and leaf sheaths.
- e) The main root is thick and short with numerous branching roots in the lower part. The upper portion of the branching root is thick, while the lower portion of the branching root is thin and mostly twisted with a few rootlet scars.
- f) The texture is flexible.
- g) The fracture is yellowish white or pale yellowish brown with numerous brown-spotted secretory cavities in the thick bark. The wood is paler in colour than the bark with radial lines. The cambium ring is yellowish brown.
- h) The core of the root stock contains a pith and a cavity.
- i) The odour is strongly aromatic; the taste is sweet, pungent and slightly bitter.

5.3 Identification of *Angelica sinensis* root

The identification of *Angelica sinensis* root by a thin-layer chromatogram (TLC) shall present spots or bands with the same colour and positions corresponding to those of reference solutions.

iTeh STANDARD PREVIEW

5.4 Moisture

(standards.iteh.ai)

The mass fraction of moisture should not be more than 15,0 %.

5.5 Total ash

ISO 22584:2019
<https://standards.iteh.ai/catalog/standards/sist/9b2578bd-4db8-4574-b3eb-a6524ee06e80/iso-22584-2019>

The mass fraction of total ash should not be more than 7,0 %.

5.6 Acid-insoluble ash

The mass fraction of acid-insoluble ash should not be more than 2,0 %.

5.7 Extractives

The mass fraction of 70 % ethanol-soluble extractives should not be less than 40,0 %.

5.8 Content of marker compound

The content of marker compound shall be determined. For example, ferulic acid shall be determined taking into account relevant national or regional pharmacopoeias, legislation and norms.

The mass fraction of ferulic acid (C₁₀H₁₀O₄) should not be less than 0,050 %.

5.9 Heavy metal

The content of heavy metals such as arsenic, mercury, lead and cadmium shall be determined.

The limit value should take into account the requirements of the regulatory bodies of the destination country or region. If there is none, the limit value of a national or regional pharmacopoeia listed in ISO 18664 shall be chosen.

5.10 Pesticide residues

The content of pesticide residues such as benzex, dichloro-diphenyl-trichloroethane (DDT) and quintozene shall be determined.

6 Sampling

Sampling of *Angelica sinensis* root shall be carried out according to the World Health Organization's *Quality control methods for herbal materials, General advice on sampling*.

7 Test methods

7.1 Macroscopic identification

Samples not less than 500 g are taken from each batch randomly and observed with the naked eye.

7.2 TLC identification

See [Annex A](#) for additional information.

7.3 Determination of moisture content

The testing method specified in ISO 20409 applies.

7.4 Determination of total ash (standards.iteh.ai)

The testing method specified in ISO 1575 applies.

7.5 Determination of acid-insoluble ash

The testing method specified in ISO 1577 applies.

7.6 Determination of extractives

See [Annex B](#) for additional information.

7.7 Determination of ferulic acid

See [Annex C](#) for additional information.

7.8 Determination of heavy metal

The testing method specified in ISO 18664 applies.

7.9 Determination of pesticide residues

The testing methods specified in CODEX STAN 229 and CAC/MRL01 apply.

8 Test report

For each test method, the test report shall specify the following:

- a) all information necessary for the complete identification of the sample;
- b) a reference to this document, for example "determined in accordance with ISO 22584:2019";

- c) the sampling method used;
- d) the test method(s) used;
- e) the test result(s) obtained;
- f) all operational details not specified in this document, or regarded as optional, together with details of any incidents which may have influenced the test result(s);
- g) any unusual features (anomalies) observed during the test;
- h) the date of the test.

9 Packaging, storage and transportation

Packaging shall not transmit any odour or flavour to the product and shall not contain substances which may damage the product or constitute a health risk.

Angelica sinensis root should be preserved in a cool and dry place, and protected from light, pollution, moisture, moths and foreign substances during storage and long-distance delivery.

10 Marking and labelling

The method specified in ISO 21371 shall apply. The following items shall be marked or labelled on the packages:

- a) product name and plant scientific name;
- b) all quality features indicated in [Clause 5](#);
- c) country and province/state of the products;
- d) date of production, batch number and expiry date of the products;
- e) storage and transportation method;
- f) items required by the regulatory body of the destination country.