Introduction to USP

Robert Shimahara
Director of Sales – North, South, and Central Americas
U.S. Pharmacopeial Convention
To improve global health through public standards and related programs that help ensure the quality, safety, and benefit of medicines and foods.
Lyman Spalding surveyed physicians nationwide between 1817 and 1819.

Spalding and 10 fellow physicians met in the U.S. Capitol January 1–7, 1820 and the groundwork was laid for establishing the first *Pharmacopeia of the United States of America*. 
USP’s Global Locations

- **USP Europe/Middle East/Africa**
  - Basel (Switzerland)

- **USP – China**
  - Shanghai (China)

- **USP – India**
  - Private Limited
  - Hyderabad (India)

- **USP – Brazil**
  - São Paulo (Brazil)

- **USP Global Headquarters**
  - Rockville, Maryland (USA)
1938 Federal Food, Drug and Cosmetic Act: 
*USP* and *NF* standards enforceable by FDA 
—“official compendium”
Unless FDA has designated an official nonproprietary name for a drug (including biologics) by notice and comment rulemaking under FD&C Act section 508, then the compendial/USP name will apply.

USP's authority to develop official nonproprietary names is identified in section 502(e) of the FD&C Act.
To avoid being deemed adulterated, a drug with a name recognized in *USP-NF* must also comply with compendial standards for strength, quality, and purity, unless labeled to show all respects in which the drug differs (FDCA 501(b); 21 CFR 299.5(c)).

In addition, to avoid being deemed misbranded, drugs recognized in *USP-NF must also be packaged and labeled in compliance with compendial standards (FDCA 502(g)).

*General Notices 2.30 Legal Recognition*
USP’s Relationship to FDA

- **USP: Private Not-For-Profit Organization**
  - Compendial standards: development and revision
  - Public standards: identity, strength, quality, purity, packaging, and labeling

- **FDA: Government Agency**
  - Enforcement
  - Safety, efficacy; NDA, ANDA, BLA (private license) approvals for marketing, manufacturing processes, etc.

**USP is the only Non-Governmental Pharmacopeia in the World!**
More than 1,000 volunteers

- USP Convention—Over 440 members
- Board of Trustees—13 elected voting members
- Council of Experts—23 elected Expert Committee chairs
- Expert Committees—347 elected Expert Committee members (some also serve on Expert Panels)
- Expert Panels—392 appointed experts (this number does not include Expert Committee members serving on Expert Panels)
- Government Liaisons—114 experts
USP Organizational Structure

**Convention Members**
Policy Body
Meets every five years
Elects Board, COE Chairs and Adopts Resolutions

**Board of Trustees**
Strategic, Fiduciary Body

**Council of Experts**
Expert Committees
Scientific Body
Approve contents of the *USP–NF*, Food Chemicals Codex, other USP Compendia

**USP Staff 850+**
Supports volunteers, Operations, Public Support
Academic Institutions and Associations Thereof
Health Practitioner Professional and Scientific Associations
Manufacturer, Trade, and Affiliated Associations
Governmental Bodies, Divisions, or Associations Thereof
Non-Governmental Standards Setting and Conformity Assessment Bodies
Consumer and Other Organizations Representing the Public Interest
Total 446

The USP Convention Composition

- Consumer and Other Organizations Representing the Public Interest
- Non-Governmental Standards Setting and Conformity Assessment Bodies
- Governmental Bodies, Divisions, or Associations Thereof
- Manufacturer, Trade, and Affiliated Associations
- Health Practitioner Professional and Scientific Associations
- Academic Institutions and Associations Thereof

Global Expertise  |  Trusted Standards  |  Improved Health
USP is a self-supporting, private, non-profit organization.

Operating revenue is generated through sale of Reference Standards and publications.

Public, legally enforceable standards are established in an open system.

The standards are approved by elected volunteers (Expert Committee members).

Industry and FDA collaborate with USP on Reference Standard characterization and other compendial issues.
Questions
USP Revision Process
<table>
<thead>
<tr>
<th>Type of Article</th>
<th>Inclusion Criteria</th>
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<tbody>
<tr>
<td>Therapeutics (drug substances,</td>
<td><strong>USP</strong>: approved by US FDA</td>
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<td>drug products, biologics)</td>
<td><strong>Pending</strong>: submitted/intend to submit for FDA approval</td>
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<td></td>
<td>‘Non-US’: approved by stringent regulatory authority for treatment of neglected,</td>
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<td>infectious disease; Prequalified by WHO</td>
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<td>Excipients</td>
<td><strong>NF</strong>: listed on FDA’s Inactive Ingredients Database; FDA’s Approved Drug Products</td>
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<td>with Therapeutic Equivalence Evaluations (OB)</td>
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<tr>
<td>Dietary Supplements</td>
<td><strong>DSC</strong>: Listed by FDA as an ODI or NDI (Old or New Dietary Ingredient);</td>
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<td></td>
<td>Marketed in the USA</td>
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<tr>
<td>Food Ingredients</td>
<td><strong>FCC</strong>: Flavors: FEMA GRAS status</td>
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<td></td>
<td>Non-Flavors: direct food additives on FDA’s EAFUS or GRAS notices lists</td>
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<tr>
<td></td>
<td>Non-US: permitted for use in food by any regulatory authority where FCC is recognized</td>
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USP–NF Revision Process

Submission is received/development initiated

Scientific Liaison performs technical review and drafts the monograph

Proposal is published for 90-day public review and comment period

Scientific Liaison reviews and submits comments to Expert Committee

Significant comments

Expert Committee ballots

Not Approved
Approved

Monograph is published in compendium (USP–NF, FCC) or on Web site (Pending, Non-U.S.); commentary generated
For admission into USP–NF, the industry sponsor verifies that its substance/product is approved by FDA.

Monograph submission ideally includes

- Proposed tests, limits, and validation (according to <1225>)
  - Identification test(s)
  - Impurity test(s)
  - Potency/assay test (preferably stability-indicating)
  - Performance test(s) for dosage form monograph submissions
- Packaging, storage, and labeling requirements
- Reference Standard commitments
  - Statement on suitability for use of any existing USP Reference Standards
  - Commitment to provide candidate materials for new USP standards
Submission to USP Must Include

- Reasonable justification
- Adequate supporting methods, specifications, and data
- Details found at www.usp.org/USPNF/submitMonograph/
Many USP monographs need to be updated to modern analytical methodologies

Organoleptic tests, TLC impurity tests, etc.

See website for details
www.usp.org/USPNF/submitMonograph/improveMon.html
Impacted by

- Review/evaluation of public comments
- Obtaining additional information
- Publishing responses
- Testing in USP’s Applied Compendial Research Laboratories
The Rules and Procedures of USP's Council of Experts specify processes that can be used to make revisions to the USP–NF official more quickly than through USP's standard revision process.

Three types of Accelerated Revisions:
- Revision Bulletins
- Interim Revision Announcements (IRAs)
- Errata
Revision Bulletins

- USP's most expedited revisions

- Supersede standards published in the USP–NF and its Supplements (print and online versions)

- Posted on bi-monthly basis at end of each month

- Posts on the USP website indicates its official date and the date that it will be incorporated into an official publication
Interim Revision Announcements (IRAs)

- Published on the website as proposed IRAs
- Open to a 90-day notice and comment period
- Approval by the relevant USP Expert Committee
- IRAs are posted as official text on the website, and are incorporated into the next available official publication (USP–NF or Supplement)
Errata

- Text erroneously published in the USP–NF or its Supplements that does not accurately reflect the intended requirements as approved by the Council of Experts

- Posted on the last Friday of every other month and are official on the first day of the following month

- Sortable, searchable, cumulative list

Errata
Notification Icons

Acarbose
(ay kar bose).

C\textsubscript{29}H\textsubscript{43}NO\textsubscript{18} 645.60

D-Glucose, O-4,6-dideoxy-4-[(1S,1R,3R)-4-nitro-3-(3-oxo-1-cyclopentene-1-yl)phosphoryl]d-xylopyranose [56180-87-3].

- Acarbose is produced by certain strains of Escherichia coli. C\textsubscript{29}H\textsubscript{43}NO\textsubscript{18}, calculated on the anhydrous basis, is equivalent to 645.6 g.

Packaging and storage—Preserve in tight, light-resistant containers.

**USP Reference Standards**

- Acarbose Reference Standard
- Acarbose System Suitability Mixture Reference Standard

**Identification**

A: **Acrabose Adduct**.
B: The retention time of the acarbose peak in the chromatogram of the Assay preparation corresponds to that in the chromatogram of the Standard preparation, as obtained in the Assay.

**Specific Rotation:** (7818): between +168° and +163°.

Test solution: 10 mg per mL in water.

**pH:** (791): between 5.5 and 7.5, in a solution containing 50 mg per mL.

**Water, Method I:** (921): not more than 0.1%.

**Residue on Ignition:** (281): not more than 0.2% determined on 1.0 g.

**Heavy Metals, Method II:** (231): 0.002%.

**Chromatographic Purity**

- Mobile phase, System suitability solution, and Chromatographic system—Proceed as directed in the Assay.
- Test solution—Use the Assay preparation.

Diluted test solution—Transfer 1.0 mL of the Test solution to a 100-mL volumetric flask, dilute with water to volume, and mix.

Procedure—Separately inject equal volumes (about 10 μL) of the Test solution and the Diluted test solution into the chromatograph, record the chromatograms, and measure the peak responses. Calculate the percentage of each impurity in the portion of Acarbose taken by the formula.
USP website: Official Text

You are here: Home > USP-NF > Official Text

Revision Bulletins
IRAs
Errata

Accelerated Revision Process
Proposal Status/Commentary

USP-NF's Continuous Revision Process and Superseded Text

The United States Pharmacopeia-National Formulary (USP-NF) is continuously revised. Revisions are presented annually in the USP-NF, in twice-yearly Supplements, and as Accelerated Revisions on the USP website. USP uses its Accelerated Revision process to expedite revisions to the USP-NF. Accelerated Revisions include Revision Bulletins, Interim Revision Announcements (IRAs), and Errata.

Accelerated Revisions: Revision Bulletins, IRAs & Errata

- Revision Bulletins, USP's most expedited revisions, supersede standards published in the USP-NF and its Supplements (print and online versions). A Revision Bulletin posted on the USP website indicates its official date and the date that it will be incorporated into an official publication. View current Revision Bulletins.
- IRAs are proposed in PF for a 90-day public comment period. Once comments (if any) are reviewed and the IRA is approved by the appropriate Expert Committee, final IRAs are posted on the USP website. Like Revision Bulletins, IRAs supersede standards published in the print and online USP-NF and its Supplements. IRAs are incorporated into the next available official publication. View current IRAs.
- Errata are considered to be text erroneously published in the USP-NF or its Supplements that does not comply with the text intended to be published. View current Errata.

CONTACT INFORMATION

- Scientific & Technical Support
- Account Manager
- Customer Service
- All USP Contacts

Purchased USP-NF
Purchase USP Reference Standards
Log in to USP-NF Online
Access Medicines Compendium
Log in to Pharmacopeial Forum
Log in to Donor Submission Portal

RELATED RESOURCES

- Compendial Updates
- Compendial Tools
- Biotech & Biotechnology
- Healthcare Professionals/Pharmacy
- Legal Recognition
- Chromatographic Columns
- Pharmacopeial Education Courses
- Monthly Email Notice
- Sign Up for Newsletters & Updates
- USP Catalog

Global Expertise | Trusted Standards | Improved Health
Benefits of Participating in Standards-Setting Process

- Contribution to global public health, quality of foods & medicines
- Regulatory authorities enforce the standards (drugs & excipients)—the standards you help to establish
- U.S. tax law provides tax benefit to US-based donors
- USP’s Donor Recognition Program
  - Certificate of Appreciation
  - Public recognition (website, science meetings)
  - Complimentary registration to USP Workshops and/or Science Meetings
  - Complimentary subscriptions to the USP publications
  - Complimentary Reference Standards
  - Donor-specific progress reports
  - USP’s summary data package and a traceability statement after lot release
- Less expensive to follow the standard you create than one set by your competitors
Questions