

Pharmaceutical Substances

Syntheses • Patents • Applications

Approved APIs in focus

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Pharmaceutical Substances is a one-stop source of information relating to the industrial synthesis and commercial applications of every licensed drug of significance. It provides ready access to syntheses, patents, and applications for more than 2,750 active pharmaceutical ingredients (APIs).

Professors Axel Kleemann, Jürgen Engel, Bernhard Kutscher, and Dr. Dietmar Reichert present highly evaluated information collected from all the relevant literature and commercial patent data.

For more than 30 years, Pharmaceutical Substances has been a standard reference in the chemical and pharmaceutical industry.

The screenshot shows the Thieme Pharmaceutical Substances website. At the top, there is a navigation bar with 'Query', 'Results', and 'About' links. Below this is a main content area with a search bar labeled 'Search for term' and a 'Search' button. To the right of the search bar is a 'Search for structure/reaction' section with a chemical structure editor. A blue callout box points to these search features, stating: 'Text- and structure search. The structure editor requires no plug-ins and allows the upload of Molfiles and CDX-Files.' On the right side of the page, there is a 'News' section with several articles, including 'Pharmaceutical Substances 4.8 is online!' and 'Introducing Thieme's new discovery tool SynOne!'. At the bottom right, there is a 'CONTACT AND SUPPORT' section with contact information.

Essential for research in the pharmaceutical industry

- Full synthetic route for the industrial manufacture of each drug elucidated from the patent literature
- Unique source of reactions that perform on an industrial scale
- Overview of the pharmaceutical industry from a synthetic chemist's perspective
- Insights into a therapeutic area and chemically related substances

Essential for business development in the API industry

- First determination of the market size and competition for an API – essential for development of new and generic pharmaceuticals
- Source of markets for synthesis intermediates, ingredients and enzymes
- Patent information including approval date and expiration
- Comprehensive coverage of older APIs and substances approved worldwide
- Merger and acquisition tracking ensuring that vendor information is up-to-date in a rapidly changing industry

Essential for teaching in medicinal and pharmaceutical chemistry

- Capability to search for marketed drugs relating to a structure or reaction
- A rapid overview of a therapeutic area or chemically related substances
- Industrial synthetic routes discerned from complex patent descriptions
- Insights into industrial processes and toxicity issues
- Commercial information such as trade names and vendors/manufacturers for six world markets
- Concise records ideal for hand-outs and quick reference

All you need to know about pharmaceutical compounds at a glance!

Factual data

- International Nonproprietary Names (INN)
- Synonyms
- Chemical name (IUPAC chemical substance naming convention)
- Anatomical Therapeutic Chemical (ATC) Codes
- Major uses
- CAS and EINECS numbers
- Molecular formula (Hill System Order), weight and acute toxicity

Access to other drugs of this substance class

If enzymes, microorganisms, or plant or animal tissues are involved in a synthesis, they are also listed here and are linked to other syntheses in which they are involved.

Synthetic route(s) used for industrial large-scale production

Great care is taken by the authors to ascertain the synthetic route(s) used for industrial large-scale production of the drugs listed in Pharmaceutical Substances.

A detailed description of the preparation of each substance is provided, including the synthesis of intermediates. In many cases, different synthetic routes are described, especially for the most economically important drugs.

Intermediates

All substances referenced in the synthetic pathways are listed by their CAS number, molecular formula, and chemical and CAS index names to allow efficient searching for sources of supply.

As all entries are text and structure searchable, this unique listing is also an essential tool for suppliers to find uses for their products and contract manufacturing organizations to find cooperation partners.

Key Intermediates are highlighted with a blue background color.

Trade names and vendors

For the six most important markets trade names and the names of companies that produce and market the product are given.

Years of introduction are added in those cases where they differ from the date the original patent was granted.

A trade name displayed with wfm (withdrawn from market) beside it indicates that the pharmaceutical substance is no longer available on the market through this company under this trade name.

Formulations

The most important pharmaceutical dosage forms are provided to enable the user to assess the order of magnitude a compound is needed in and thus helping to estimate its commercial value.

Thieme Pharmaceutical Substances

Query Results About

2626 Results

Sort by Title

- > Atovaquone
- > Atoracium besilate
- > Atropine
- > Atropine methontrate
- > Auranofin**
- > Avibadam
- > Avobinib
- > Azacosterol
- > Azacostrol
- > Azacetonol
- > Azapetine
- > Azapropazone
- > Azatadine
- > Azathioprine
- > Azelaic acid
- > Azelastine
- > Azelnidipine
- > Azidamfenicol
- > Azilsartan Medoxomil

Auranofin

ATC: M01CB03
Use: rheumatoid arthritis therapeutic
Chemical name: (2,3,4,6-tetra-O-acetyl-1-thio-β-D-glucopyranosato-5)-(triethylphosphine)gold
Formula: C₂₂H₃₄AuO₉P₃S
MW: 676.52 g/mol
CAS-RN: 34031-32-6
EINECS: 251-801-9
LD₅₀: 310 mg/kg (M, p.o.); 265 mg/kg (R, p.o.)

Substance Classes

- > Acetic acid esters (acetates), esters of carbohydrates
- > Carbohydrates, other derivatives
- > Gold compounds
- > Phosphines
- > Thioacetals

Synthesis Path

β-D-glucopyranose + 1. H₂C=O, CH₃COCl, 2. H₂O, CH₃COOH, 3. NH₃, 3. thiourea → S-(2,3,4,6-tetra-O-acetyl-β-D-glucopyranosyl)thiuronium bromide + HBr

Triethylphosphine-gold chloride + S-(2,3,4,6-tetra-O-acetyl-β-D-glucopyranosyl)thiuronium bromide → Auranofin

Substances Referenced in Synthesis Path

CAS-RN	Formula	Chemical Name	CAS Index Name
108-24-7	C ₄ H ₆ O ₂	acetic anhydride	Acetic acid, anhydride
15529-90-5	C ₁₈ H ₁₅ AuClP	chloro(triethylphosphine)gold	Gold, chloro(triethylphosphine)-
492-61-5	C ₆ H ₁₂ O ₆	β-D-glucopyranose	β-D-Glucopyranose
40591-65-9	C ₁₃ H ₁₃ N ₂ O ₃ S	S-(2,3,4,6-tetra-O-acetyl-β-D-glucopyranosyl)thiuronium bromide	β-D-Glucopyranose, 1-thio-, 2,3,4,6-tetraacetate 1-carbammdate, monohydrobromide
62-56-6	CH ₄ N ₂ S	thiourea	Thiourea

Trade Names

Country	Trade Name	Vendor	Annotation
F	Ridauran	Pierre Fabre	
GB	Ridaura	Astellas	
I	Ridaura	Smithkline Beecham	wfm
	Grelyse	AskaTakeda	
J	Ridaura	GlaxoSmithkline	
	Rizast	Sawahisamitsu	
USA	Ridaura	Smithkline Beecham ,1985	
	Ridauro	Prometheus	

Formulations

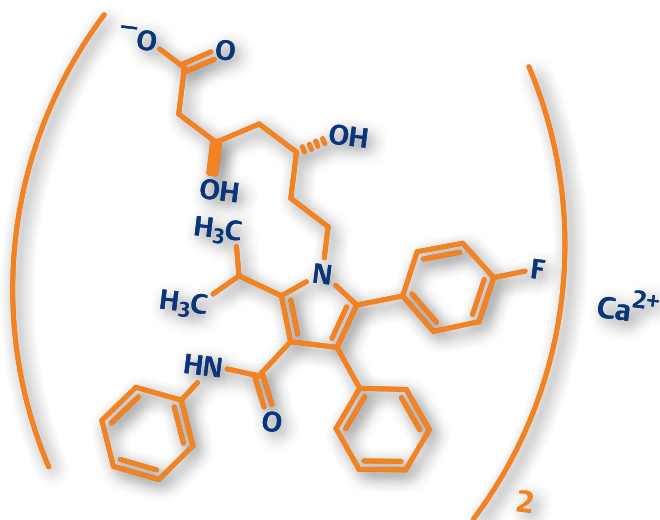
f. c. tabl. 3 mg; tabl. 3 mg

References

Sutton, B.M. et al.: J. Med. Chem. (JMC/MAR) 15, 1095 (1972).
US 3 635 945 (Smith Kline & French; 18.1.1972; prior. 28.10.1969).
DE 2 051 495 (Smith Kline & French; appl. 20.10.1970; USA-prior. 28.10.1969).
US 3 708 579 (Smith Kline & French; 2.1.1973; prior. 28.10.1969, 1.10.1971).
synthesis of S-(2,3,4,6-tetra-O-acetyl-β-D-glucopyranosyl)thiuronium bromide:
Bommer, W.A.; Kahn, J.R.: J. Am. Chem. Soc. (JACSAT) 73, 2241 (1951).
Horton, D.: Methods Carbohydr. Chem. (MCACAL) 3, 435 (1963).
DOS 2 215 653 (KochiShiroku; appl. 30.3.1972).

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“As a process research and development chemist, I appreciate the detailed reaction schemes which inform me on how every drug on the market can be made and the detailed references to not only the published literature but to patents.”

Dr. Trevor Laird,
formerly of Scientific Update LLP
and Editor of Organic Process
Research and Development.

How to get access

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ps.thieme.com

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System Requirements

- PC, Mac
- Supports all leading browsers (Internet Explorer 8 or higher, Safari for Mac, Firefox and Chrome)
- Online capable smartphone or tablet

Licensing Options

- Available to institutions through the internet
- Institutional access available as a site license
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