

Science of Synthesis

Quick Start Guide



Best methods. Best results.



Home

Navigation

Home: General information and news

Query: Search SoS

Results: Hitlist of search results

Full text: Descriptions of transformations with experimental procedures

Explore contents: Overview of all transformations by functional group

Start a search

Thieme Science of Synthesis

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MySoS

Welcome to SOS 4.0.1!

- New Interface and Product Design
- Enriched Text Search Functionality
- Enhanced Structure/Reaction Searching and Retrieval
- New Content: Special Topics and Updates

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Best methods. Best results.

Science of Synthesis is your online **synthetic methodology tool** for the most **reliable chemical transformations** available! It is the **ONLY** resource providing **full-text reviews** of organic and organometallic transformations as well as experimental procedures.

Written by chemists for chemists, SOS provides expert recommendations from over 1,750 contributors as well as unique insights into the scope and limitations of synthetic methods.

SOS helps you get up to speed on a chosen field of research quickly and is essential in helping you complete the design of your synthetic strategy. It helps you answer questions such as:

- What is the background and context to the field of research I am interested in?
- Which synthetic methodology is the most reliable and which experimental procedures could I use?
- Which experts work in this field and what is their opinion?

NEWS

New Science of Synthesis Website Launched!
We are delighted to have launched our new Science...
Read more...

C-1 Building Blocks in Organic Synthesis: Workbench Edition Out Now!
The two-volume set on C-1 Building Blocks in...
Read more...

Multicomponent Reactions: Workbench Edition Out Now!
The two volumes „Science of Synthesis...“
Read more...

Video Interview with Prof. Benjamin List about Asymmetric Organocatalysis
Benjamin List explains in an interview how the...
Read more...

Start here

Login to MySoS

Within Science of Synthesis you can register for a MySoS personal account. This allows you to save and load queries as well as manually revise search results and change your personal settings.

News

To start a search, please go to

sos.thieme.com

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- * Structure search with external drawing tool
 - Upload Molfile
 - Reset query
 - Full-text search
 - * Structure search with HTML5 Editor (non-Java)
- * Structure search available with
- ChemDraw
 - HTML5 Editor (no Java required) and combined with a text search.

How to do an advanced search

Enter prefixes for a search by:	Prefix:
SoS Volume Number	volume:
SoS Section Number	section:
SoS Page Number	page:
SOS Author	author:
Author cited in reference	ref-author:
Publication Year cited in reference	ref-year:
Journal	journal:
SoS Publication Year	year:
SoS Section Heading	title:
CAS Registry Number	cas-rn:
Name Reactions	namereaction:



Results

Thieme Science of Synthesis

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REFINE

FILTER BY:

- Reaction Product (3)
- Reaction Catalyst (1)
- Reaction Reactant (1)

FILTER BY MATCH TYPE:

- Substructure Match (4)

SORT BY HITLIST:

- By relevance
- By publication date

Update

FUNCTIONS

- Update hitlist
- Save hitlist
- Lead hitlist
- Select all hits
- Deselect all hits
- Reset all hits

Results (Articles Found Containing your Search Term, Structure or Reaction)

Page: 1 of 10

- 8.1.14.10 Method 10: Benzofuryllithium Compounds
Gribble, G. W., *Science of Synthesis*, (2006) 8, 388.
> Show Reaction > Show Full text > Show TOC > Show Single Step Reactions
- Cyclic Alkenes as Reaction Components
3.1.1.4.2.3.1 Reactions of 2,3-Dihydrofuran and 2,2-Dialkyl-2,3-dihydrofurans
Coffart, V.; Guay, P. J., *Science of Synthesis: Cross Coupling and Heck-Type Reactions*, (2012) 3, 321.
> Show Reaction > Show Full text > Show TOC > Show Single Step Reactions
- 3.6.13.1.3.3 Method 3: Cyclization-Homocoupling of 2-Alkynylphenols with (Diacetoxy)iodobenzene
Hopkinson, M. H.; Gouverneur, V., *Science of Synthesis Knowledge Updates*, (2011) 2, 118.
> Show Reaction > Show Full text > Show TOC > Show Single Step Reactions

Reaction Product

39 $\xrightarrow[Et_2O, r.t., overnight]{10 mol\% Hg(OAc)_2, PhI(OAc)_2 (5 equiv)}$ 40 37%

- 6.1.8.10.2 Variation 2: Preparation of Oligomeric Furans
Perlasamy, M.; Seenivasaperumal, M.; Sivakumar, S., *Science of Synthesis*, (2005) 6, 310.
> Show Reaction > Show Full text > Show TOC > Show Single Step Reactions

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Ranked search results

Navigate within hitlist pages

Show reaction scheme

Show full-text review

Show context of method

Show single-step reactions

Filter results

Sort hitlist

Save/load hitlist (only available if logged in to MySoS)

Select/deselect all hits

Reset all hits

Select/deselect a hit

Thieme Science of Synthesis

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Organometals ... Organometals ... Gold-Catal ... Gold-Catal ...

NAVIGATION
Hit 3 of 4
Previous / Next

3.6.13.1.3.3 Method 3: Cyclization-Homocoupling of 2-Alkynylphenols with (Diacetoxyiodo)benzene

DOI: 10.1055/sos-SD-103-00054

Hopkinson, M. N.; Gouverneur, V., *Science of Synthesis Knowledge Updates*, (2011) 2, 118.

A similar gold(III)-catalyzed cascade cyclization-homocoupling protocol can be applied in the synthesis of 3,3'-bifurofurans directly from 2-alkynylphenols (Scheme 17).^[69] In this case, (diacetoxyiodo)benzene is the most successful oxidant, delivering the dimer **40** in 37% yield from phenol **39** when used with tetrachloroauric acid in diethyl ether. The low isolated yield of the reaction can be attributed to competitive oxidation of the starting material to quinone derivatives by (diacetoxyiodo)benzene.

Scheme 17 Synthesis of a 3,3'-Bifurofuran from a 2-Alkynylphenol^[69]

2,2'-Diphenyl-3,3'-bifurofuran (40); Typical Procedure:^[69]

H[AuCl₄] (17.5 mg, 0.05 mmol, 10 mol%) was placed in a predried 20-mL vial equipped with a stirrer bar. Et₂O (10 mL) was added and the mixture was stirred at rt for 5 min. 2-Alkynylphenol **39** (100 mg, 0.5 mmol, 1 equiv) was added, followed, after 5 min, by PhI(OAc)₂ (848 mg, 2.6 mmol, 5 equiv). The mixture was stirred at rt overnight and then filtered and concentrated. The crude product was purified by flash column chromatography (silica gel) or preparative TLC.

References

[69] Auzias, M. G.; Neuburger, M.; Wegner, H. A., *Synlett*, (2010), 2443.

Print page or chapter

Cite this article

Navigation within book

Navigation within hitlist

Show context of method in breadcrumb navigation

References

If available: Related information in the archive

Thieme Science of Synthesis

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FUNCTIONS Collapse tree

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 - Vol. 2: Compounds of Groups 7-3 (Mn, Cr, V, Ti, Sc, La, Ac, ...)
 - Vol. 3: Compounds of Groups 12 and 11 (Zn, Cd, Hg, Cu, Ag, Au)
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 - Organometallic Complexes of Cadmium
 - Organometallic Complexes of Mercury
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 - Organometallic Complexes of Gold
 - Unsubstituted Alkylgold(I) and Alkylgold(III) Compounds
 - Organogold Compounds with Substituted Alkyl Ligands
 - Organogold Compounds with Ylide Ligands
 - Organogold Compounds with Alkynyl Ligands
 - Organogold Compounds with Alkynyl Ligands
 - Alkylgold Compounds
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 - Carbene Complexes of Gold
 - Alkene and Alkyne π -Complexes of Gold(I)
 - Carbon in Gold Clusters
 - Organometallic Complexes of Gold (Update 1, 2011)
 - Organometallic Complexes of Gold (Update 2, 2011)
 - Organometallic Complexes of Gold (Update 3, 2011)
 - Gold-Catalyzed Coupling Reactions
 - Oxidative Coupling with Gold(III) as a Stoichiometric Oxidant
 - Gold-Catalyzed Cross Coupling with Substrates as Oxidants
 - Gold-Catalyzed Oxidative Homocoupling with External Oxidants
 - Homocoupling of Nonactivated Arenes Using (Diacetoxyl)benzene
 - Synthesis of Dicoumarins via Cyclization-Homocoupling Using tert-BuMg Hydroperoxide
 - Cyclization-Homocoupling of 2-Alkynylphenols with (Diacetoxyl)benzene
 - Homocoupling of Propargyl Acetates Using Selectfluor
 - Homocoupling from Stoichiometric Organogold(I) Complexes Using Electrophilic Fluorinating Reagents
 - Gold-Catalyzed Oxidative Cross Coupling with External Oxidants
 - Organometallic Complexes of Gold (Update 1, 2012)
 - Organometallic Complexes of Gold (Update 2, 2012)
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 - Stereoselective Synthesis
 - Water in Organic Synthesis
- Electronic Backfile
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 - Houben-Weyl

Special topics

- Asymmetric Organocatalysis
- Cross-Coupling and Heck-Type Reactions
- Multicomponent Reactions
- Stereoselective Synthesis
- Water in Organic Synthesis
- and further topics

Archive (these methods have been updated)

Houben-Weyl methods

Logical organization of content

Download chapter as PDF

Compound class introduction

Method within the context of a chapter

Science of Synthesis provides a critical review of synthetic methodology developed to-date in the fields of organic and organometallic chemistry.

Features include

- Selection of molecular transformations by world-renowned experts with elaboration on scope and limitations
- Full-text descriptions of synthetic methods with practical experimental procedures immediately applicable in the lab
- Community of over 1,750 experts involved in the review and updating of methods
- Logical organization of the synthetic methods for each functional group
- Intuitive search functions to allow rapid lead generation and route optimization

Why use Science of Synthesis?

Science of Synthesis is essential in helping you complete the design of your synthetic strategy after you have collected together relevant citations, patent and property information. It helps you answer questions such as:

- **What is the best synthetic strategy to use?**
- **Which experts work in this field?**
- **What is the background and context to the field of research I am interested in?**
- **Which experimental procedures should I use?**
- **What should I avoid based on the experience of other chemists working in the field?**

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System Requirements

Internet connection, up-to-date version of any standard browser and hardware, Adobe Reader.

For details see www.thieme-chemistry.com.

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