



# 化学及相关学科 信息资源概述

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# 主要内容

- 化学及相关学科文献信息源的特点
- 常用专业信息源概览
- 信息资源的合理选择
- 获取全文
- 了解本学科领域高影响力期刊



## 1. 化学及相关学科文献信息源的特点

## ①记录内容包含大量化学特有信息

### ➡题录信息（基本同其他学科信息资源）

标题、责任者、来源、文摘……

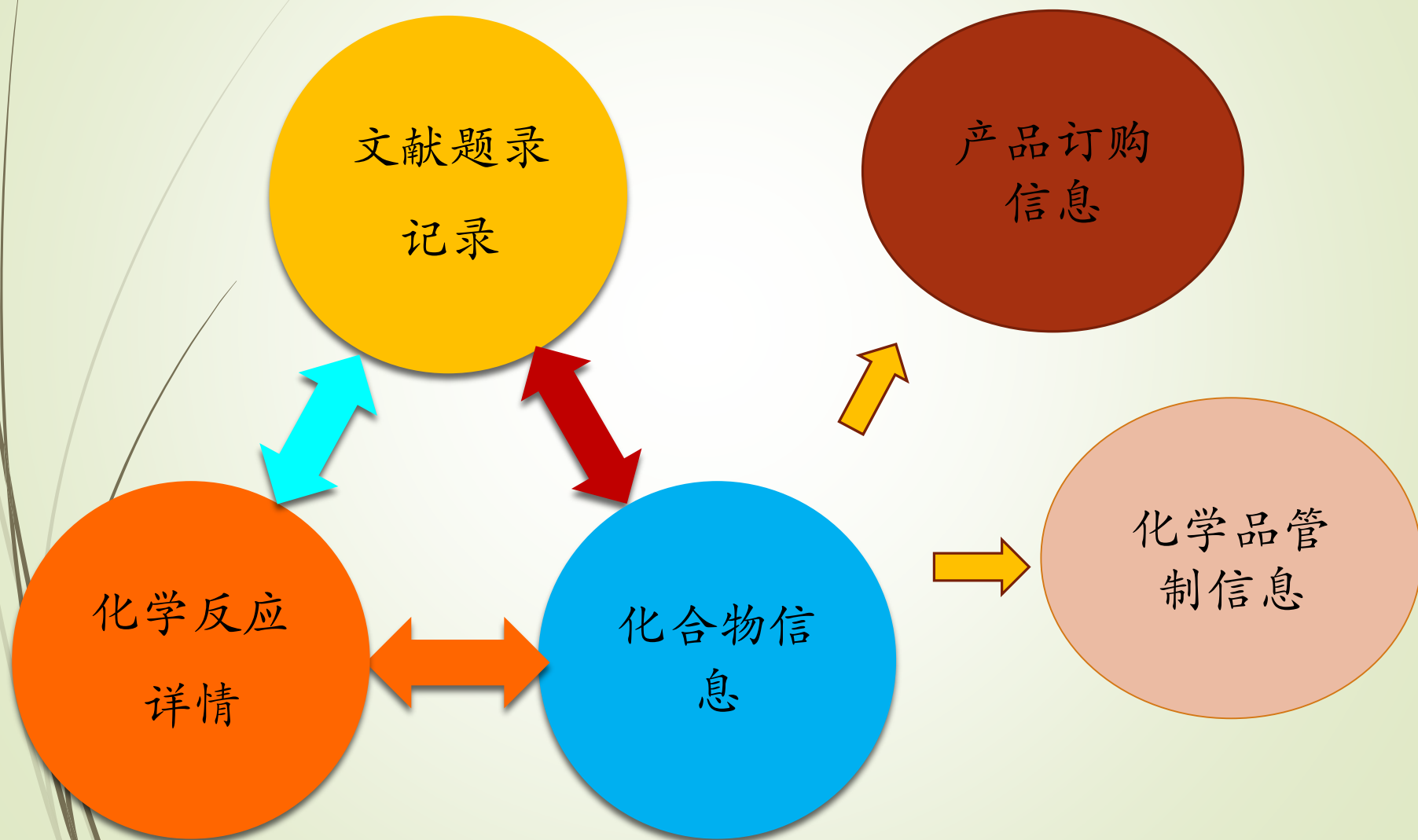
### ➡反应信息

反应式（步骤、条件、中间体、产率……）、反应条件……

### ➡化合物信息

结构式、名称（系统命名、商品名、俗名、药品名……）、代码（CASRN……）、物理、化学、药理学、生物性质、商业信息及化学品管制信息

## ②文献信息、化合物、反应之间无缝链接



## ②文献信息、化合物、反应之间无缝链接 (SciFinder应用实例)

The screenshot displays the SciFinder web interface. At the top, there are navigation links for 'Explore References', 'Explore Substances', and 'Explore Reactions'. Below these, a user is logged in as 'Jia Lin' with a 'Sign Out' option. A search bar shows the query 'preparation of melamine' with 224 references found. Two buttons, 'Get Substances' and 'Get Reactions', are circled in red. The main content area lists four references, each with a checkbox, title, authors, source, and a set of action buttons (Substances, Reactions, Citings, Full Text, Link, Comments, Tags).

Welcome Jia Lin | Sign Out

Add KMP Alert Research Topic "preparation of melamine" > references (224)

References **Get Substances** **Get Reactions** Get Related Tools Send to SciPlanner

224 References 0 Selected Save Print Export

Select All Deselect All Sort by: Accession Number Answers per Page [20] 1 2 3 4 5 6 ... 12 Display:

- ☐ 1. **Preparation of melamine-formaldehyde microspheres and microcapsules based on poly(glutamic acid) by template method**  
By Zhang, Ying; Yan, Shi-Feng; Rao, Shui-Qin; Zheng, Yan-Zhen; Yin, Jing-Bo; Chen, Xue-Si  
From Gaodeng Xuexiao Huaxue Xuebao (2011), 32(10), 2447-2452. Language: Chinese, Database: CAPLUS  
[Substances](#) [Reactions](#) [~0 Citings](#) [Full Text](#) [Link](#) [0 Comments](#) [0 Tags](#)
- ☐ 2. **Preparation of melamine/formaldehyde resin-coated melamine phosphate flame retardant microcapsules**  
By Wang, Zhengzhou; Xu, Shuo  
From Faming Zhuanli Shenqing (2011), CN 102229712 A 20111102. Language: Chinese, Database: CAPLUS  
[Substances](#) [Reactions](#) [~0 Citings](#) [Full Text](#) [Link](#) [0 Comments](#) [0 Tags](#)
- ☐ 3. **Energy- and cost-saving melamine production system based on gas-phase quenching method**  
By Tang, Yin; Yuan, Zhongwu; Gong, Yuande; Yin, Mingda; Yang, Xiuzhen; Chen, Duanyang; Yi, Jianglin; Lei, Lin; Liu, Chaohui; Li, Xuchu; et al  
From Shiyong Xinxing Zhuanli Shuomingshu (2011), CN 201971766 U 20110914. Language: Chinese, Database: CAPLUS  
[Substances](#) [Reactions](#) [~0 Citings](#) [Full Text](#) [Link](#) [0 Comments](#) [0 Tags](#)
- ☐ 4. **Preparation of melamine cyanurate flame retardant with rod-like crystal form**  
By Niu, Minbu; Bao, Jinyuan; Xiao, Xuewen; Dai, Changlin  
From Faming Zhuanli Shenqing (2011), CN 102174213 A 20110907. Language: Chinese, Database: CAPLUS  
[Substances](#) [Reactions](#) [~0 Citings](#) [Full Text](#) [Link](#) [0 Comments](#) [0 Tags](#)

## ②文献信息、化合物、反应之间无缝链接 (SciFinder应用实例)

SciFinder®

Welcome Jia Lin | Sign Out

[Add KMP Alert](#) [Chemical Structure exact with limiters](#) > **substances (31)**

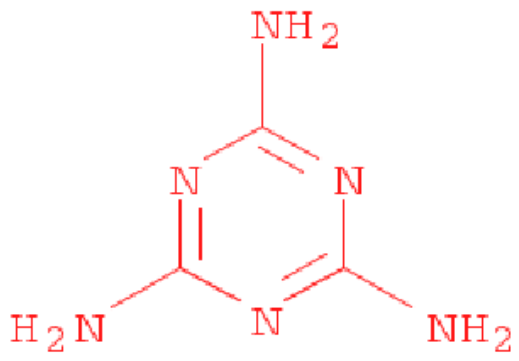
**Substances** [Get References](#) [Get Reactions](#) [Tools](#) [NEW Send to SciPlanner](#)

31 Substances 0 Selected [Save](#) [Print](#) [Export](#)

[Select All](#) [Deselect All](#) | Sort by: [CAS Registry Number](#) [↓](#) [Answers per Page \[50\]](#)

View: [■](#) [■](#) [■](#) [■](#)

☐ 1. **Substance Detail**  
**1260170-50-0**



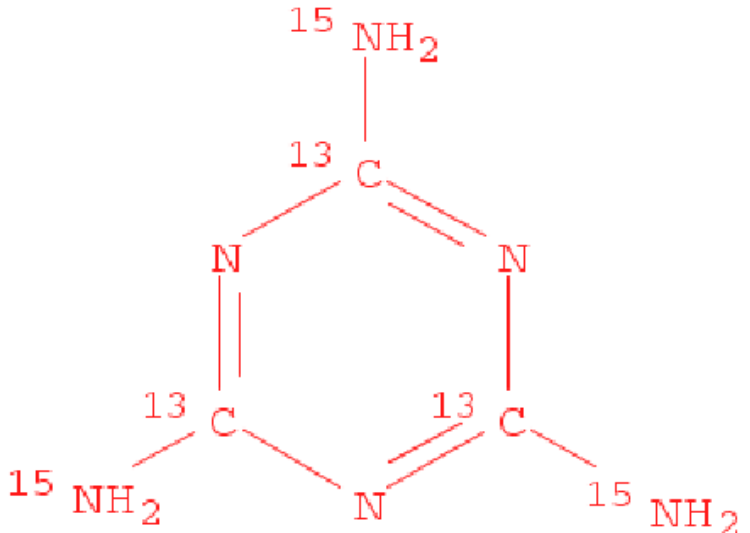
Chemical structure of 1,3,5-triazine (a s-triazine derivative) is shown. The structure consists of a six-membered ring with alternating nitrogen (N) and carbon (C) atoms. Each carbon atom is bonded to an amino group (NH<sub>2</sub>). The structure is labeled with the molecular formula C<sub>3</sub>H<sub>6</sub>N<sub>6</sub>.

**C<sub>3</sub> H<sub>6</sub> N<sub>6</sub>**

[~1 References](#)

[Reactions](#)

☐ 2. **Substance Detail**  
**1246816-14-7**



Chemical structure of 1,3,5-triazine-2,4,6-triamine (a s-triazine derivative) is shown. The structure consists of a six-membered ring with alternating nitrogen (N) and carbon (C) atoms. Each carbon atom is bonded to an amino group (NH<sub>2</sub>). The structure is labeled with the molecular formula C<sub>3</sub>H<sub>6</sub>N<sub>6</sub>.

**C<sub>3</sub> H<sub>6</sub> N<sub>6</sub>**

[~1 References](#)

[Reactions](#)

## ②文献信息、化合物、反应之间无缝链接 (SciFinder应用实例)

SciFinder®

Welcome Jia Lin | Sign Out

Research Topic "Photocyanation of aromatic com..." > references (15) > get reactions (27)

Reactions **Get References** Tools Send to SciPlanner

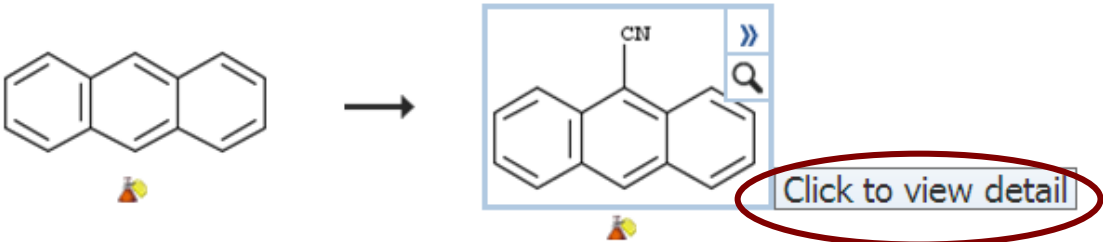
27 Reactions 0 Selected Save Print Export

NEW Group by: No Grouping Sort by: Accession Number Answers per Page [15] 1 2

Select All Deselect All Display:

☐ 1. View Reaction Detail [Link](#)

2 Steps Hover over any structure for more options.



▼ Overview

Steps/Stages	Notes
1.1	Reactants: 1, Steps: 2, Stages: 2, Most stages in any one step: 1
2.1	
	<b>References</b>
	Photochemical reactions of aromatic compounds. Part 34. Direct photocyanation of arenes with sodium cyanide in the presence of electron acceptors <a href="#">Full Text</a> By Yasuda, Masahide et al From Journal of the Chemical Society, Perkin Transactions 1: Organic and Bio-Organic Chemistry (1972-1999). (3), 745-50, 1981

## ②文献信息、化合物、反应之间无缝链接 (Reaxys应用实例)

**REAXYS®**

Workflow of the Week #6  
Reaction transformation-benzamides to benzamidines

Anonymous user (166.111.123.182)

Query Results Synthesis Plans History Report My Alerts My Settings Help Register Login

Reaxys PubChem eMolecules

Query 2 substances 121 reactions

Create Alert

Open Analysis View

121 reactions out of 221 citations

Filter by:

- Sub-structure
- Yield
- Record Type
- Reagent/Catalyst
- Solvent
- Reaction Type
- No. of Steps
- Product Availability
- Reactant Availability
- Availability in other DBs
- Document Type
- Authors
- Patent Assignee

Reactions Citations

go to Page 1 of 14

Sort by Reaxys-Ranking

Limit to Exclude Output Print Zoom in Zoom out Hide

Yield Conditions References

1

N#N + NC(=O)N#N → NC1=NC=NC(N)=N1

Synthesize Synthesize Synthesize

Rx-ID: 25330306  
Find similar reactions

93%

With potassium hydroxide in water; dimethyl sulfoxide

Show Experimental Procedure

**Suddeutsche Kalkstickstoff-Werke Aktiengesellschaft**  
**Patent: US4069383 A1, 1978 ;**

Title/Abstract Full Text Show Details

## ②文献信息、化合物、反应之间无缝链接 (Reaxys应用实例)

Query Results Synthesis Plans History Report My Alerts My Settings Help Register Login

Reaxys PubChem eMolecules

Query 1 substances 121 reactions 1 citations  
No structure

Create Alert

Open Analysis View

1 citations out of 5 reactions and 4 substances

Filter by:

- Document Type
- Authors
- Patent Assignee
- Journal Title
- Publication Year
- Yield
- Record Type
- Reagent/Catalyst
- Solvent
- Reaction Type
- No. of Steps

Citations Reactions Substances (Grid) Substances (Table)

Limit to Exclude Output Print Zoom in Zoom out Hide Sort by Publication Year

	Title of the Document	Authors	Year	Source	Times cited
<input type="checkbox"/> 1	Method of preparing melamine from cyanamide and/or dicyandiamide	Suddeutsche Kalkstickstoff-Werke Aktiengesellschaft	1978	<b>Patent:</b> US4069383 A1, 1978 ; <b>Patent Family:</b> US4069383 A1; <b>Full Text</b>	

▼ Title/Abstract  
▼ Front page Information  
▼ Show All Reactions (5)  
▼ Show All Substances (4)

Show 9 results per page 1 citations out of 5 reactions and 4 substances go to Page 1 of 1

### ③丰富实用的检索途径、检索字段和检索限定

- 书目信息（基本同其他学科信息资源）  
主题、人名、来源……
- 反应信息  
反应式（完整/部分）、反应条件、产率、  
反应步骤……
- 化合物信息  
结构式、名称、代码、物理化学性质

不同数据库有各自不同的检索字段，检索时可辅以多种限定条件

### ③丰富实用的检索途径、检索字段和检索限定



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Saved Searches ▾

SciPlanner

#### REFERENCES

Research Topic  
Author Name  
Company Name  
Document Identifier  
Journal  
Patent  
Tags

#### SUBSTANCES

Chemical Structure  
Markush  
Molecular Formula  
Property  
Substance Identifier

#### REACTIONS

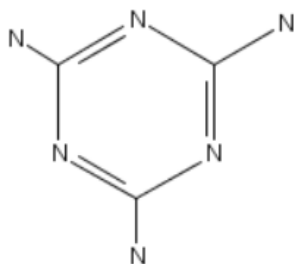
Reaction Structure

#### SUBSTANCES: CHEMICAL STRUCTURE ?

Structure Editor:

Java

Non-Java



Click image to change structure or view detail.

Import CXF

Search

Search Type:

- ☐ Exact Structure  
☒ Substructure  
☐ Similarity

☐ Show precision analysis

#### SAVED ANSWER SETS ?

Cefradine

C78H138N16O16

10 residuals with MW  
between 1550-1560

markush search for YHJ

references about 1332-77-0  
103-76-4

h1n1 influenza epidemic

The effect of antibiotic  
residues on dairy product

regioselective

zhanglf-SFS

concept of human  
immunodeficiency virus

Autosaved Reference Set

View All | Import

### ③丰富实用的检索途径、检索字段和检索限定

Characteristics	<input type="checkbox"/> Single component
	<input type="checkbox"/> Commercially available
	<input type="checkbox"/> Included in references
Classes	<input type="checkbox"/> Alloys
	<input type="checkbox"/> Coordination compounds
	<input type="checkbox"/> Incompletely defined
	<input type="checkbox"/> Mixtures
	<input type="checkbox"/> Polymers
	<input type="checkbox"/> Organics, and others not listed
Studies	<input type="checkbox"/> Analytical
	<input type="checkbox"/> Biological
	<input type="checkbox"/> Preparation
	<input type="checkbox"/> Reactant or reagent

化合物限定

Solvents	<a href="#">Select Solvents</a>												
Non-participating Functional Groups	<a href="#">Select Groups</a>												
Number of Steps	<input type="text"/> Examples: 1, 1-3, 1-, -3												
Classifications	<table><tr><td><input type="checkbox"/> Biotransformation</td><td><input type="checkbox"/> Non-catalyzed</td></tr><tr><td><input type="checkbox"/> Catalyzed</td><td><input type="checkbox"/> Photochemical</td></tr><tr><td><input type="checkbox"/> Chemoselective</td><td><input type="checkbox"/> Radiochemical</td></tr><tr><td><input type="checkbox"/> Combinatorial</td><td><input type="checkbox"/> Regioselective</td></tr><tr><td><input type="checkbox"/> Electrochemical</td><td><input type="checkbox"/> Stereoselective</td></tr><tr><td><input type="checkbox"/> Gas-phase</td><td></td></tr></table>	<input type="checkbox"/> Biotransformation	<input type="checkbox"/> Non-catalyzed	<input type="checkbox"/> Catalyzed	<input type="checkbox"/> Photochemical	<input type="checkbox"/> Chemoselective	<input type="checkbox"/> Radiochemical	<input type="checkbox"/> Combinatorial	<input type="checkbox"/> Regioselective	<input type="checkbox"/> Electrochemical	<input type="checkbox"/> Stereoselective	<input type="checkbox"/> Gas-phase	
<input type="checkbox"/> Biotransformation	<input type="checkbox"/> Non-catalyzed												
<input type="checkbox"/> Catalyzed	<input type="checkbox"/> Photochemical												
<input type="checkbox"/> Chemoselective	<input type="checkbox"/> Radiochemical												
<input type="checkbox"/> Combinatorial	<input type="checkbox"/> Regioselective												
<input type="checkbox"/> Electrochemical	<input type="checkbox"/> Stereoselective												
<input type="checkbox"/> Gas-phase													
Sources	<p><input checked="" type="radio"/> Any source</p> <p><input type="radio"/> Patents only</p> <p><input type="radio"/> Sources other than patents</p>												
Publication Years	<input type="text"/> Examples: 1995, 1995-1999, 1995-, -1995												

化学反应限定



## 2. 常用专业信息源概览

## 常用专业信息源

- **SciFinder**——可检索研究进展及化学反应和化合物信息
- **Reaxys**——包含丰富的数值、事实等化学信息
- **DII之Chemicals**——专利信息数据库
- **ACS Publications/RSC Publishing**——两大化学学会的电子出版物
- **Knovel-[Chemistry & Chemical Engineering](#)**——交互式参考工具
- 更多?  
推荐使用“清华大学学术信息资源门户”、“电子去期刊导航系统”
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- .....



# SciFINDER<sup>®</sup>

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## A CAS SOLUTION

SciFinder<sup>®</sup> is a research discovery application that provides unlimited access to the world's most comprehensive and authoritative source of references, substances and reactions in chemistry and related sciences.

SciFinder offers a one-stop shop experience with flexible search and discover options based on user input and workflow. You can search for substances, reactions, and patent and journal references anytime, anywhere.

- Make better, more confident decisions knowing that you have access to the largest collection of substances, reactions, and patent and journal references produced, compiled, and updated daily by CAS scientists around the world.
- Save time with an array of powerful tools to search, filter, analyze and plan that allow you to quickly find the most relevant answers to your research questions.

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- ➡ ACS-Chemical Abstracts Service出版发行的基于网络的信息检索系统
- ➡ 及时报道最新研究动态，丰富的化学反应、化合物信息，商业信息，药品管制信息.....，可用题录信息、结构式、反应信息、化合物性质检索
- ➡ 需要注册个人账号（须用.....tsinghua.edu.cn邮箱，且在校园网内，参见  
<http://www.lib.tsinghua.edu.cn/database/scifinder.htm>）
- ➡ 访问入口：<https://scifinder.cas.org>



## 统一平台上的多个数据库

- ➡ **CAPLUS** (reference)
- ➡ **MEDLINE** (reference)
- ➡ **REGISTRY** (substance)
- ➡ **CASREACT** (reaction)
- ➡ **CHEMLIST** (regulated chemicals)
- ➡ **MARPAT** (patents by Markush structure)

## 检索模式和检索途径

根据已有线索和检索目的选择模式和途径

检索模式	检索途径	对象数据库	记录内容
References (查找文献)	Research Topic	CAplus MEDLINE	<ul style="list-style-type: none"> <li>●文献标题</li> <li>●著者、编者、发明人</li> <li>●机构名称、专利受让人</li> <li>●出版年</li> <li>●来源、出版物名称、出版时间、出版者、卷、期、页码、CODEN 码和 ISSN</li> <li>●专利标识, 包括专利授权、申请、优先权、以及专利族信息</li> <li>●文摘</li> <li>●索引标题及补充术语</li> <li>●引文</li> <li>●原文中涉及的化合物、序列和反应</li> </ul>
	Author Name		
	Company Name		
	Document Identifier		
	Journal		
	Patent		
	Tags		

检索模式	检索途径	对象数据库	记录内容
Substances (查化合物)	Chemical Structure	REGISTRY	<ul style="list-style-type: none"> <li>● 化学名称</li> <li>● CAS 登记号</li> <li>● 分子式</li> <li>● 结构图示</li> <li>● 序列信息, 包括 GenBank<sup>®</sup> 和专利文献中的注解</li> <li>● 数据性质, 包括光谱谱图</li> <li>● 商业来源信息</li> <li>● 化学品管制信息</li> <li>● 编者注解</li> <li>● 涉及对象化合物的文献信息</li> <li>● 对象化合物参与的化学反应信息</li> </ul>
	Molecular Formula		
	Markush		
	Property		
	Identifier		
Reactions (查反应)	Reaction Structure	CASREACT	<ul style="list-style-type: none"> <li>● 反应图示, 包括反应物、产物、试剂、催化剂、溶剂、以及反应步骤</li> <li>● 涉及对象反应的文献信息</li> <li>● 参与反应的所有化合物信息, 包括化学品管制信息、商业来源信息等</li> </ul>

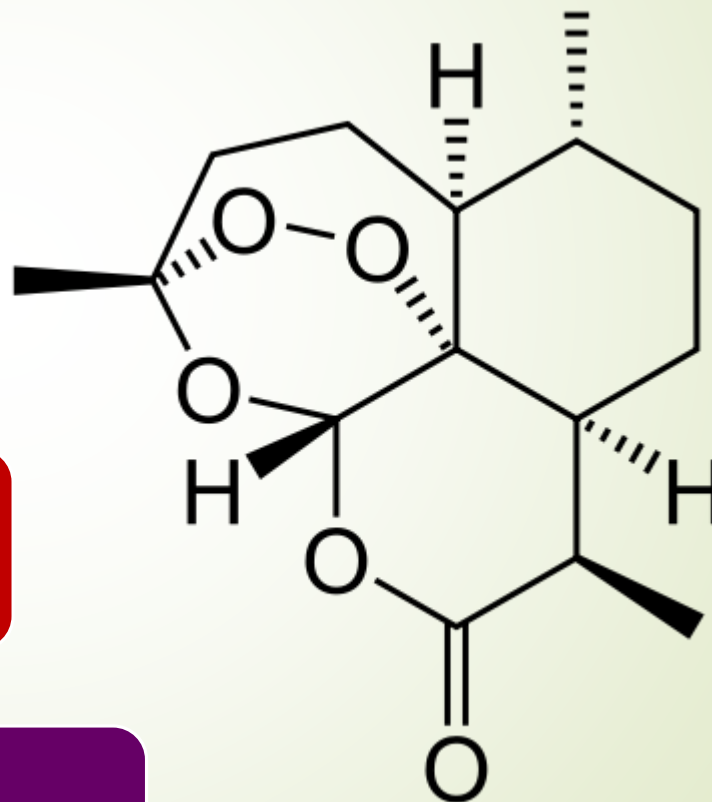
# 检索实例

2015生理或医学诺奖

屠呦呦

青蒿素

疟疾



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[Saved Searches](#)
[SciPlanner](#)
[Save](#)
[Print](#)
[Export](#)

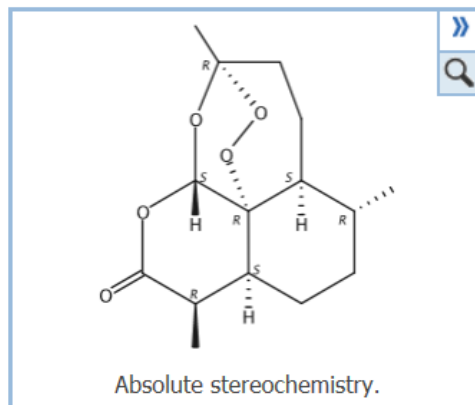
Substance Identifier "qinghaosu" > substances (1)

**SUBSTANCES**
[Get References](#)
[Get Reactions](#)
[Get Commercial Sources](#)
[Tools](#)
[Create Keep Me Posted Alert](#)
[Send to SciPlanner](#)
[Analyze](#)
[Refine](#)

Sort by: [CAS Registry Number](#)
[Display Options](#)
☐ 0 of 1 Substance Selected

☐ 1. **63968-64-9**

~4094 ~165


[Quick View](#)
**C<sub>15</sub> H<sub>22</sub> O<sub>5</sub>**

3,12-Epoxy-12H-pyrano[4,3-f]-1,2-benzodioxepin-10(3H)-one, octahydro-3,6,9-trimethyl-, (3R,5aS,6R,8aS,9R,12S,12aR)-

► **Key Physical Properties**

[Regulatory Information](#)

[Spectra](#)

[Experimental Properties](#)

[Show More](#)

Substance Identifier "qinghaosu" > substances (1) > get references (5767)

## REFERENCES

Get Substances Get Reactions Get Related Citations Tools

Create Keep Me Posted Alert Send to SciPlanner

Analyze Refine Categorize

Sort by: Accession Number

Display Options

0 of 5767 References Selected

Page: 1 of 58

Analyze by:

Author Name   
 Author Name  
 CAS Registry Number  
 CA Section Title  
 Company-Organization  
 Database  
 Document Type  
 Index Term  
 CA Concept Heading  
 Journal Name  
 Language  
 Publication Year  
 Supplementary Terms

Nosten Francois 43

Robert Anne 43

O'Neill Paul M 41

Tang Kexuan 41

Show More

- 1. Effect of artemisinin on the proliferation of human hepatoma cell line HepG2**  
 Quick View Other Sources  
 By Huang, Junling; Li, Guangzhi; Huang, Zansong; Yin, Yixia; Zhou, Xihan; Qin, Yueqiu  
 From Chongqing Yixue (2015), 44(1), 21-23. | Language: Chinese, Database: CAPLUS
- 2. Solid pharmaceutical dosage forms**  
 Quick View PatentPak   
 By Deodhar, Unmesh; Zhang, Lei; Babu, Sreehari  
 From PCT Int. Appl. (2015), WO 2015140709 A1 20150924. | Language: English, Database: CAPLUS
- 3. One kind of decoquinat econazole nitrate nanometer preparation, its preparation method and application.**  
 Quick View PatentPak   
 By Wang, Hongxing; Chen, Xueqing; Fan, Yinzhou; Qin, Limei; Xu, Wanwan; Qin, Li; Zhao, Siting; Chen, Xiaoping  
 From Faming Zhuanli Shenqing (2015), CN 104906044 A 20150916. | Language: Chinese, Database: CAPLUS
- 4. Uses of artemisinin and derivatives thereof in manufacture of medicaments for prevention and treatment of vascular diseases in ophthalmology and pharmaceutical compositions**  
 Quick View PatentPak   
 By Gao, Qianying; Zong, Yao  
 From Faming Zhuanli Shenqing (2015), CN 104906084 A 20150916. | Language: Chinese, Database: CAPLUS
- 5. A combination of new screening assays for prioritization of transmission-blocking antimalarials reveals distinct dynamics of marketed and experimental drugs**  
 Quick View Other Sources  
 By Bolscher, J. M.; Koolen, K. M. J.; van Gemert, G. J.; van de Vegte-Bolmer, M. G.; Bousema, T.; Leroy, D.; Sauerwein, R. W.; Dechering, K. J.  
 From Journal of Antimicrobial Chemotherapy (2015), 70(5), 1357-1366. | Language: English, Database: CAPLUS

Explore ▾

Saved Searches ▾

SciPlanner

Save

Print




Export

⚠ 1,674 references with the Database MEDLINE are displayed



[Keep Analysis](#)

[Clear Analysis](#)

Substance Identifier "qinghaosu " > substances (1) > **get references (5767)**
**REFERENCES** ?

 **Get Substances**
 **Get Reactions**
 **Get Related Citations** ▾

 **Tools** ▾

 **Create Keep Me Posted Alert**
 **Send to SciPlanner**

Analyze

Refine

Categorize

Sort by: Accession Number ▾

[Display Options](#)
☐ ▾ 0 of 5767 References Selected

⏮ ⏪ Page: 1 of 17 ⏩ ⏭

☐ 4094. **A Case of Complicated Falciparum Malaria with Treatment Failure to Artemisinin Combination Therapy**
 [Quick View](#)  [Other Sources](#)

By Malhotra Rakhi; Mutreja Deepti

From The Journal of the Association of Physicians of India (2014), 62(9), 861-3. | Language: English, Database: MEDLINE

☐ 4095. **Malaria and HIV: which interactions?**
 [Quick View](#)  [Other Sources](#)

By Schruppf D; Calmy A; Chappuis F

From Revue medicale suisse (2015), 11(473), 1033-7. | Language: French, Database: MEDLINE

☐ 4096. **Plasmodium falciparum genetic crosses in a humanized mouse model**
 [Quick View](#)  [Other Sources](#)

By Vaughan Ashley M; Camargo Nelly; Fishbaugher Matthew; Pinapati Richard S; Checkley Lisa A; Hutyra Carolyn A; Ferdig Michael T; Cheeseman Ian H; Nair Shalini; Anderson Timothy J C; et al

From Nature methods (2015), 12(7), 631-3. | Language: English, Database: MEDLINE

☐ 4097. **Applying green chemistry to the photochemical route to artemisinin**
 [Quick View](#)  [Other Sources](#)

By Amara Zacharias; Bellamy Jessica F B; Horvath Raphael; Miller Samuel J; Poliakoff Martyn; Beeby Andrew; Burgard Andreas; Rossen Kai; George Michael W

From Nature chemistry (2015), 7(6), 489-95. | Language: English, Database: MEDLINE

☐ 4098. **Polymorphisms in the K13-propeller gene in artemisinin-susceptible Plasmodium falciparum parasites from Bougoula-Hameau and Bandiagara, Mali**
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By Guzman Amador; Kane Amintou; Adams Matthew; Efebe Balogun; Meira Andre; Walker Harriet; Chou Guilhem; Prince Them; Mahendran A; Sile

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By Lin, Y. C.; Tu, Y. Y.; Shen, C. H.

From Journal of Materials Science: Materials in Electronics (2013), 24(2), 514-519. | Language: English, Database: CAPLUS

This study employed a Mo-5 % Na thin film on a soda-lime glass substrate as the bottom layers of a Mo back contact using a sputtering process to achieve large area Cu(In,Ga)Se<sub>2</sub> (CIGS) cells application and uniform distribution. Our results demonstrate that increasing the ratio of Mo-5 % Na to Mo film thickness (R %) from 0 to 11 % enhanced the crystallinity of the deposited bi-layer Mo film, thereby increasing surface roughness and slightly reducing resistivity. Following selenization, optimal CIGS cryst. characteristics appeared when R % = 8 % (sodium content = 1.57 at.%), such that seconda...

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By Li, W.; Mei, X.; Tu, Y. Y.

From Mini-Reviews in Medicinal Chemistry (2012), 12(2), 120-126. | Language: English, Database: CAPLUS

A review. The biol. activities and mechanisms of tea polyphenols and their polymers have been attractive issues in cancer research. The inhibition of tea polyphenols on cancer cells decreased cell proliferation and increased apoptosis. Tremendous evidences have shown that tea polyphenols suppress tumor promotion by inhibiting enzyme activities and blocking signal transduction pathways. Specifically, the mitogen activated protein kinases (MAPK) pathways have been implicated as an important target mol. for cancer prevention and therapy. The purpose of this review is to discuss the relatio...

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By Wu, Y. Y.; Ding, L.; Xia, H. L.; Tu, Y. Y.

From African Journal of Biotechnology (2010), 9(40), 6748-6754. | Language: English, Database: CAPLUS

Fuzhuan brick-tea, a fungal-fermented tea, is commonly consumed in northwest China; in places such as Sinkiang and Tibet and is thought to be

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By Liu, Jing-Ming; Ni, Mu-Yun; Fan, Ju-Fen; **Tu, You-You**; Wu, Zhao-Hua; Wu, Yu-Lin; Chou, Wei-Shan  
From Huaxue Xuebao (1979), 37(2), 129-43. | Language: Chinese, Database: CAPLUS

Arteannuin (I), along with the known arteannuin B (II), were isolated from Artemisia annua and the mol. structure of I detd. on the basis of its IR, NMR, and mass spectra and by chem. correlations.

☐ 3. **Studies on the constituents of Artemisia annua L. (author's transl)**[Quick View](#) [Other Sources](#)

By **Tu Y Y**; Ni M Y; Zhong Y R; Li L N; Cui S L; Zhang M Q; Wang X Z; Liang X T  
From Yao xue xue bao = Acta pharmaceutica Sinica (1981), 16(5), 366-70. | Language: Chinese, Database: MEDLINE

☐ 5. **Chemical constituents in Artemisia annua L. and the derivatives of artemisinin**[Quick View](#) [Other Sources](#)

By **Tu, You-You**; Ni, Mu-Yun; Chung, Yu-Yung; Li, Lan-Na  
From Zhongyao Tongbao (1981), 6(2), 31. | Language: Chinese, Database: CAPLUS


A new compd., artemisininic acid (I) [80286-58-4], was isolated from the medicinal plant A. annua, and its structure detd. by IR, NMR and mass spectra. A. annua Also contained artemisinin [63968-64-9], borneol acetate [76-49-3], 1,8-cineole [470-82-6], benzyl isovalerate [103-38-8], β-farnesene [18794-84-8] and other compds. Artemisinin showed antimalarial activity. Structure-activity relation studies of its derivs. indicated that the peroxide group was the functional group.

☐ 13. **Isolation and identification of the lipophilic constituents from Artemisia anomala S. Moore**[Quick View](#) [Other Sources](#)

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By Tsutsumi, Kazuhiro

From Jpn. Kokai Tokkyo Koho (2009), JP 2009225930 A 20091008. Language: Japanese, Database: CAPLUS

[Machine Translation of Descriptors]. The mask which carries out inactivation of inactivation of the **bird influenza virus**, the cat, the dog, and the human Calicivirus and inactivation of the Norovirus is provided. It wears in the face part, and it is the mask which carries out inactivation of inactivation of the at least **bird influenza virus**, the cat, the dog, and the human Calicivirus, and inactivation of the Norovirus, and the mask base material 2 formed with the cellulose nonwoven fabric is equipped. The water ext. of graft cellulose with which the sulfonic group or the amino group was b...

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### ☐ 2. Development of a diagnostic test system on the basis of sandwich ELISA for the detection of avian influenza A virus

By Zhemaeva, L. V.; Kozlov, A. Yu.; Yamnikova, S. S.; Kal'nov, S. L.; Verkhovskii, O. A.; Aliper, T. I.

From Voprosy Virusologii (2009), 54(4), 45-49. Language: Russian, Database: CAPLUS

A panel of hybridomas producing monoclonal antibodies (MABs) to nucleocapsid protein (NP) of **avian influenza A virus** was obtained. On the basis of 2 MABs, the authors designed an antigen-bound ELISA (sandwich ELISA), in which NP3 MABs were used as antigen-bound antibodies and NP MABs conjugated with horse radish peroxidase as antigen detection antibodies. The specificity of the test system to **avian influenza virus** was detd. The developed test system was ascertained to specifically detect **influenza A virus** of all study subtypes and to yield no cross reactions with other tested **virus** pathogen...

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### ☐ 3. Phosphoantigen-expanded human $\gamma\delta$ T cells display potent cytotoxicity against monocyte derived macrophages infected with human and **avian influenza viruses**

By Qin, Gang; Mao, Huowei; Zhang, Jie; Qin, Si; Fan, Li; Yingqin, Chen; Ding, Lijun; Li, X. L.; Tan, B. L.; Li, C. M.; Li, C. M.

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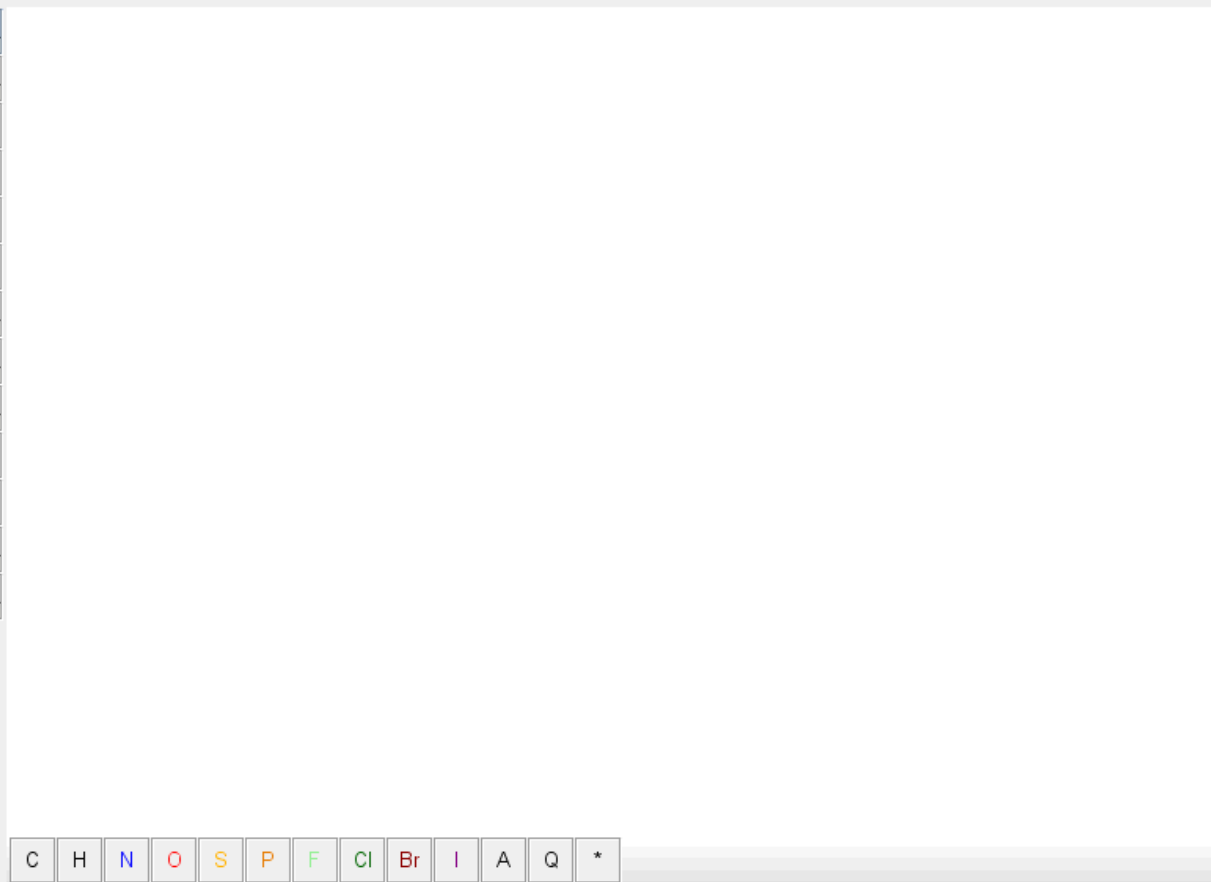
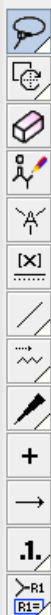
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*Example: ISOTOPE LABELLED*

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Formula:

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*Example: C<sub>17</sub> H<sub>16</sub> N<sub>8</sub> O<sub>5</sub> S<sub>5</sub> . C<sub>2</sub> H F<sub>3</sub> O<sub>2</sub>*

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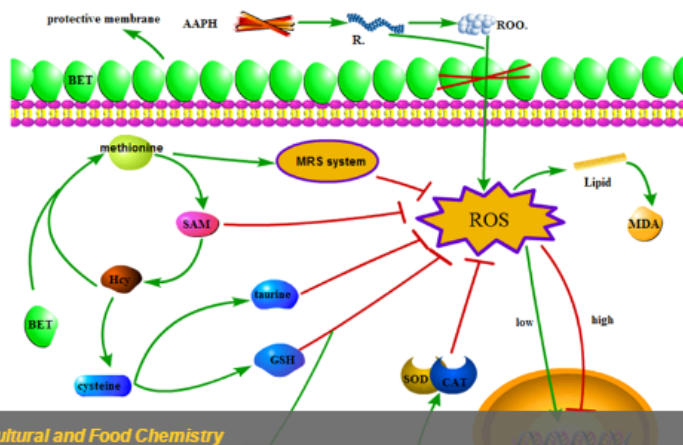
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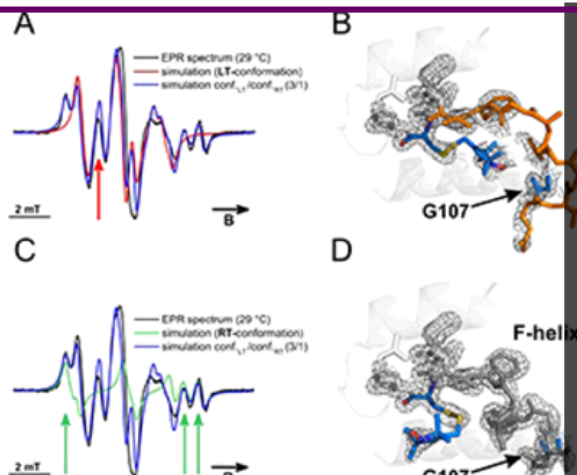
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Victor Malgras, Satoshi Tominaka, James W. Ryan, Joel Henzie, Toshiaki Takei, Koji Ohara, and Yusuke Yamauchi

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## Observation of Quantum Confinement in Monodisperse Methylammonium Lead Halide Perovskite Nanocrystals in Mesoporous Silica

Victor Malgras,<sup>†</sup> Satoshi Tominaka,<sup>‡</sup> James W. Ryan,<sup>‡</sup> Joel Henzie,<sup>‡</sup> Tomoyuki Yamauchi,<sup>†\*</sup>

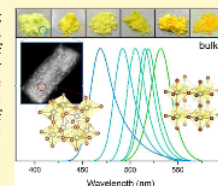
<sup>†</sup>World Premier International (WPI) Research Center for Materials Nanoarchitectonics, National Institute of Advanced Industrial Science and Technology (AIST), 1-1 Namiki, Tsukuba, Ibaraki 305-0044, Japan

<sup>‡</sup>International Center for Young Scientists (ICYS), National Institute for Materials Science, 1-1-1 Higashi, Tsukuba, Ibaraki 305-0044, Japan

<sup>\*</sup>Research and Utilization Division, Japan Synchrotron Radiation Research Institute, 1-1-1 Kouto, Sayo-cho, Sayo-gun, Hyogo 679-5198, Japan

### Supporting Information

**ABSTRACT:** Hybrid organic–inorganic metal halide perovskites have fascinating electronic properties and have already been implemented in various devices. Although the behavior of bulk metal halide perovskites has been widely studied, the properties of perovskite nanocrystals are less well-understood because synthesizing them is still very challenging, in part because of stability. Here we demonstrate a simple and versatile method to grow monodisperse  $\text{CH}_3\text{NH}_3\text{PbBr}_{1-x}\text{I}_x$  perovskite nanocrystals inside mesoporous silica templates. The size of the nanocrystal is governed by the pore size of the templates (3.3, 3.7, 4.2, 6.2, and 7.1 nm). In-depth structural analysis shows that the nanocrystals maintain the perovskite crystal structure, but it is slightly distorted. Quantum confinement was observed by tuning the size of the particles via the template. This approach provides an additional route to tune the optical bandgap of the nanocrystal. The level of quantum confinement was modeled taking into account the dimensions of the rod-shaped nanocrystals and their close packing inside the channels of the template. Photoluminescence measurements on  $\text{CH}_3\text{NH}_3\text{PbBr}$  clearly show a shift from green to blue as the pore size is decreased. Synthesizing perovskite nanostructures in templates improves their stability and enables tunable electronic properties via quantum confinement. These structures may be useful as reference materials for comparison with other perovskites, or as functional materials in all solid-state light-emitting diodes.



### INTRODUCTION

Hybrid organic–inorganic metal halide perovskites exhibit unusual electronic, optical, and crystallographic properties enabling high mobilities<sup>1,2</sup> and long diffusion lengths.<sup>3,4</sup> They are promising candidates for photovoltaic applications and have rapidly achieved outstanding performances.<sup>5–9</sup> The chemical structure obeys the  $\text{AMX}_3$  stoichiometry, where A is the organic cation, M is the metal cation (e.g.,  $\text{Pb}^{2+}$ ,  $\text{Sn}^{2+}$ ), and X is the halide anion (e.g.,  $\text{Cl}^-$ ,  $\text{Br}^-$ ,  $\text{I}^-$ ). The optical bandgap can be tuned by selecting the appropriate A and X components: methylammonium and bromide lead to wider bandgaps than

their size or surface chemistry is useful for various light-emitting applications (e.g., LEDs, lasers). In addition, quantum confinement offers a different angle from which the electronic properties can be studied and manipulated. Many semiconductor nanocrystals display interesting behavior when their radius is less than the exciton Bohr radius, such as bandgap expansion, increased Coulombic attraction of the paired charges, energy level quantization, and slower electron–phonon relaxation.<sup>10–13</sup>

Research on  $\text{CH}_3\text{NH}_3\text{PbX}_3$  nanocrystals has been primarily limited to colloidal nanoplatelets,<sup>14–19</sup> and nanoparticles,<sup>20–25</sup> through core-shell or seedling methods, as well as

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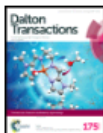
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
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All: 101 Rule of 5: 35

Items 1 - 20 of 101 Page 1 of 6 Next

☐ 1: CID: 7955 Related Structures, BioAssays, BioSystems, Literature, Other Links

 **MELAMINE**; Cyanurotriamide; Cyanurotriamine ...  
IUPAC: 1,3,5-triazine-2,4,6-triamine  
MW: 126.119940 g/mol | MF: C<sub>3</sub>H<sub>6</sub>N<sub>6</sub>  
Tested in BioAssays: All: 19, Active: 2; BioActivity Analysis

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
Selected Compounds Compound Count

**BioActivity Experiments**


BioAssays, Active	8
BioAssays, Tested	23
Protein 3D Structures	2
Reduced (Cu+) Peptidylglycine	1
Alpha-Hydroxylating...	

**BioMedical Annotation**

[http://www.ncbi.nlm.nih.gov/guide/chemicals-bioassays/#databases\\_](http://www.ncbi.nlm.nih.gov/guide/chemicals-bioassays/#databases_)

 **Cymel 481 resin**; Methylated melamine, formaldehyde polymer; Formaldehyde, melamine polymer, methylated ...  
IUPAC: formaldehyde; 1,3,5-triazine-2,4,6-triamine  
MW: 156.145920 g/mol | MF: C<sub>4</sub>H<sub>8</sub>N<sub>6</sub>O

☐ 3: CID: 70549 Related Structures, BioAssays

 **Cilag**; Glazamine M; Resloom HP ...  
IUPAC: [[4,6-bis(hydroxymethylamino)-1,3,5-triazin-2-yl]amino]methanol  
MW: 216.197880 g/mol | MF: C<sub>6</sub>H<sub>12</sub>N<sub>6</sub>O<sub>3</sub>

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1992	20	20	20	20	20
1993	25	25	25	25	25
1994	30	30	30	30	30
1995	40	40	40	40	40
1996	50	50	50	50	50
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