CAS SciFinder Discovery Platform (Academic)

全面高效获取科技信息

杜德鑫

ddu@acs-i.org

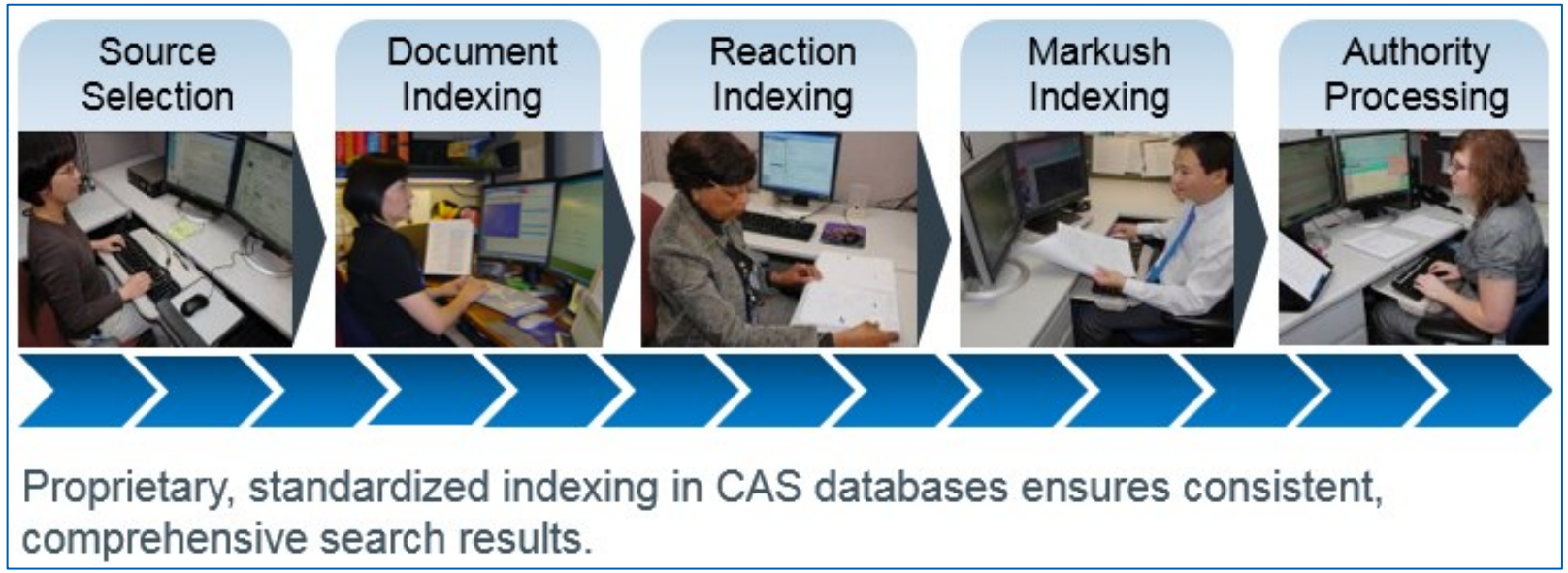
美国化学文摘社 (CAS) 北京代表处

CAS
A division of the
American Chemical Society

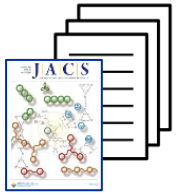
大纲

- CAS 与 CAS SciFinder Discovery Platform (Academic) 简介
- 科研信息的高效查阅
  - 如何拓展文献调研?
  - 如何调研某类物质?
  - 如何调研反应信息?
  - 怎么查、怎么选具体的实验方案?
- 常见问题

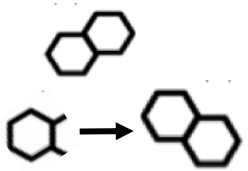
CAS 科学家智力标引

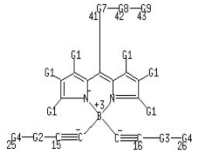


Data pre-repository



1990
Smith, M.
anthracene





Androst-4-en-3-one, 17-hydroxy-17-methyl-, (17β)-

CAS 科学家利用人类智慧对公开内容进行揭示，使相关信息更容易被挖掘

CAS
A division of the American Chemical Society

CAS 具有最全面的学科连接内容合集

Over
50K
scientific journals and documents

Over
279
million substances

Over
50
languages translated

109
patent offices worldwide

CAS
A division of the American Chemical Society

CAS SciFinder Discovery Platform 涵盖的工作流程解决方案

CAS SciFinder^{n}

新一代的权威科学研究工具，是化学及相关学科智能研究平台，提供全球全面、可靠的化学及相关学科研究信息和分析工具

CAS Formulus

专业的配方数据库， 助力配方研究科学家快速评估配方、寻找可替代供应商和探索监管信息

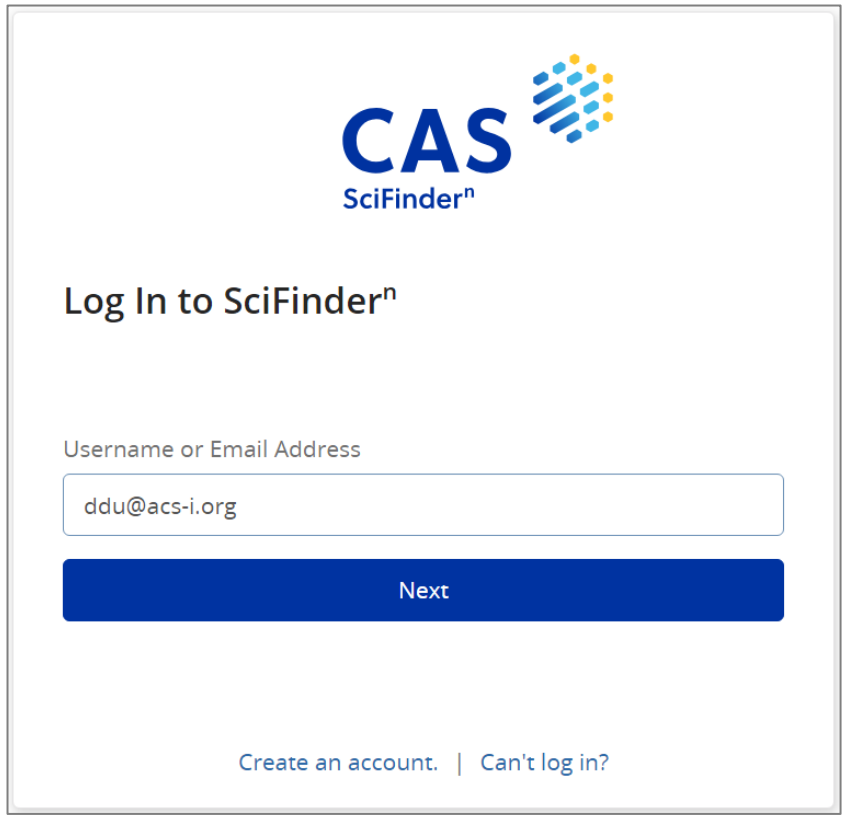
CAS Analytical Methods

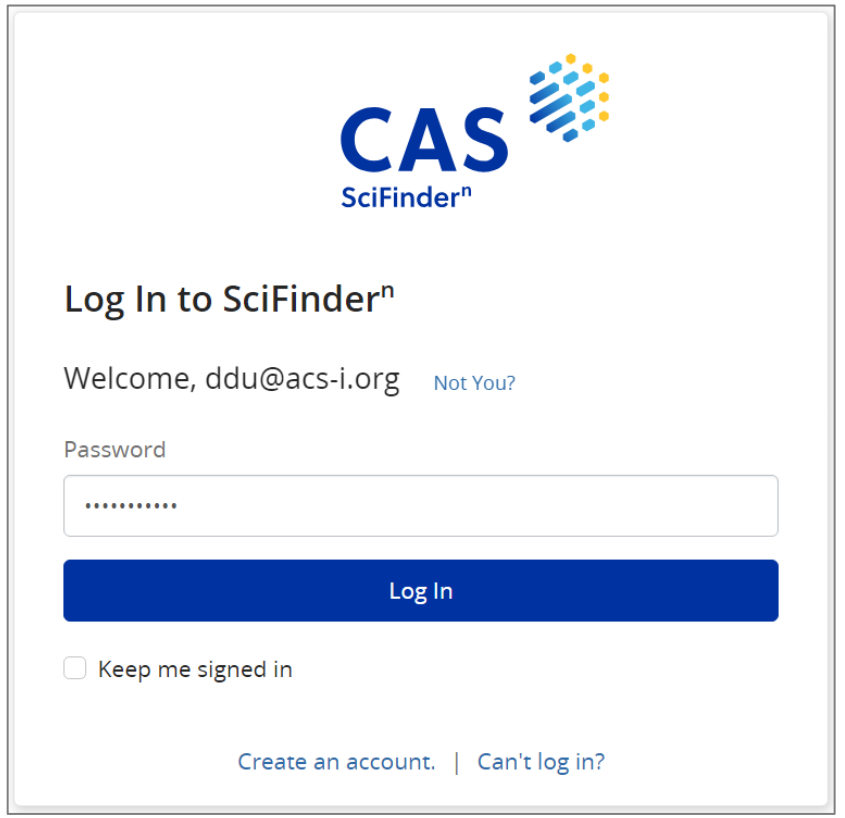
独特的分析方法详情数据库，有助于分析科学家快速获取详尽的分析方法信息、直接用于实验，并启发新方法的建立

CAS
A division of the American Chemical Society

CAS SciFinder^{n} 登录

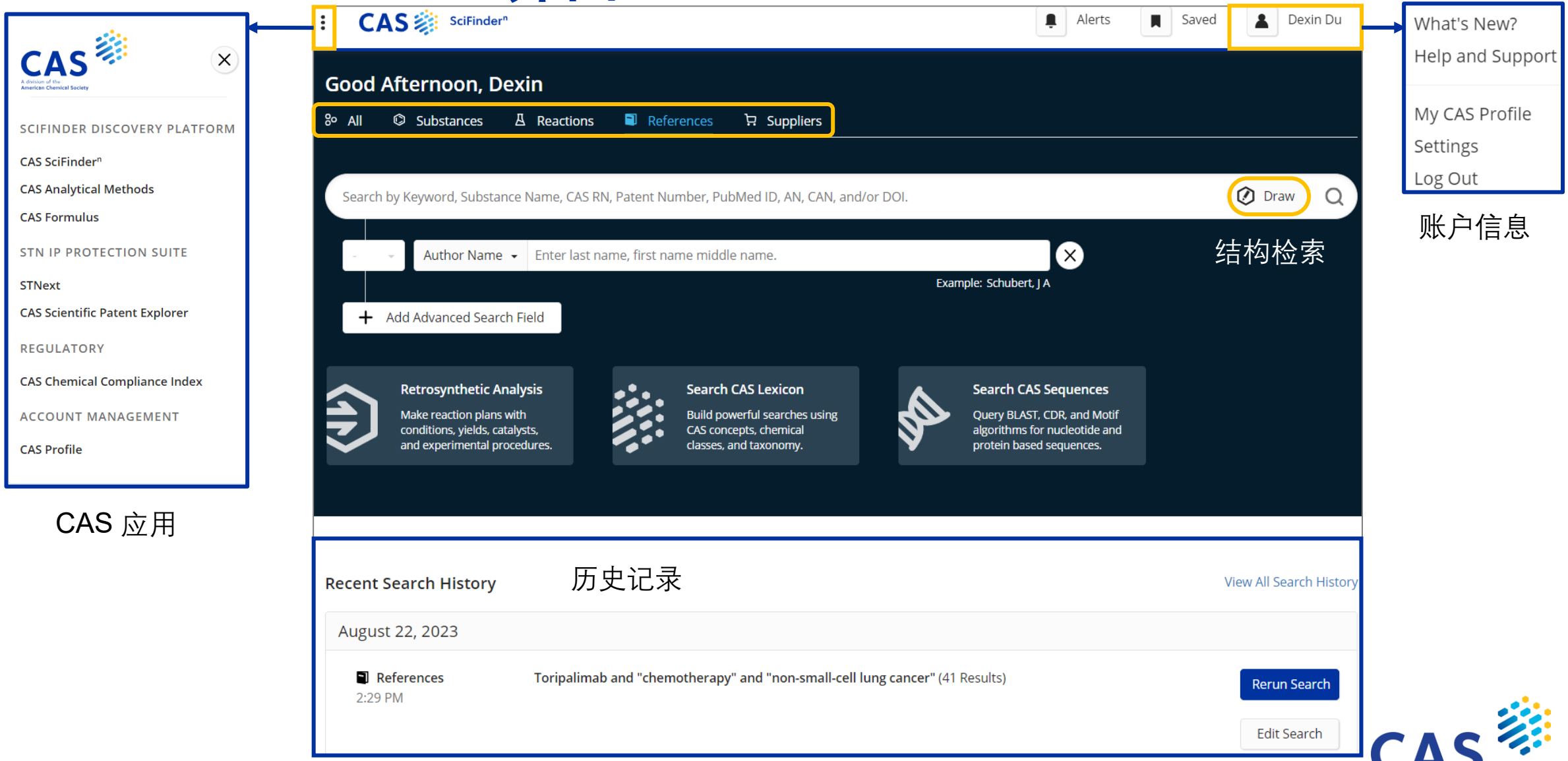
https://scifinder-n.cas.org





CAS
A division of the American Chemical Society

CAS SciFinder^n 主界面



大纲

- CAS 与 CAS SciFinder Discovery Platform (Academic) 简介
- 科研信息的高效查阅
  - **如何拓展文献调研?**
  - 如何调研某类物质?
  - 如何调研反应信息?
  - 怎么查、怎么选具体的实验方案?
- 常见问题

CAS
A division of the American Chemical Society

如何拓展文献检索?

- 主题词怎么选择？如何构建?
- 研究某结构相关的文献?
- 如何筛选文献？追踪最新进展?
- 关注某篇文献的被引文献和引文——引文地图

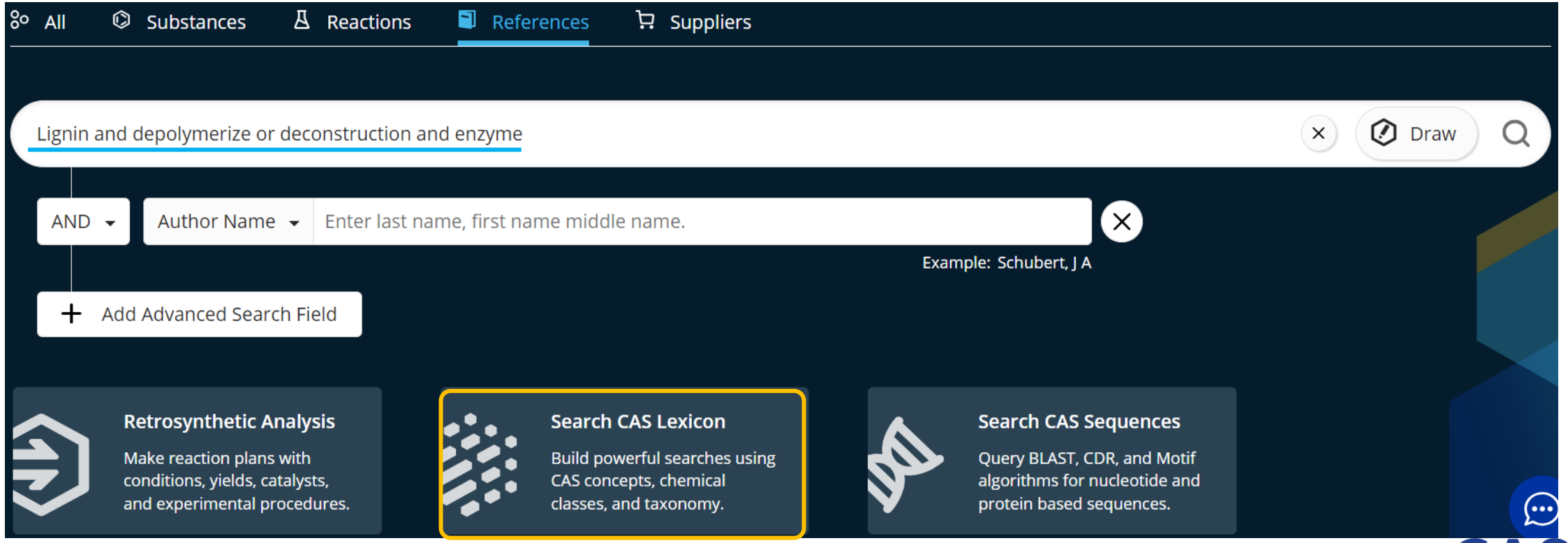
检索目标课题研究文献

主题词、物质名称、CAS 登记号、专利号、PubMed ID、文献号、DOI 号

CAS
A division of the American Chemical Society

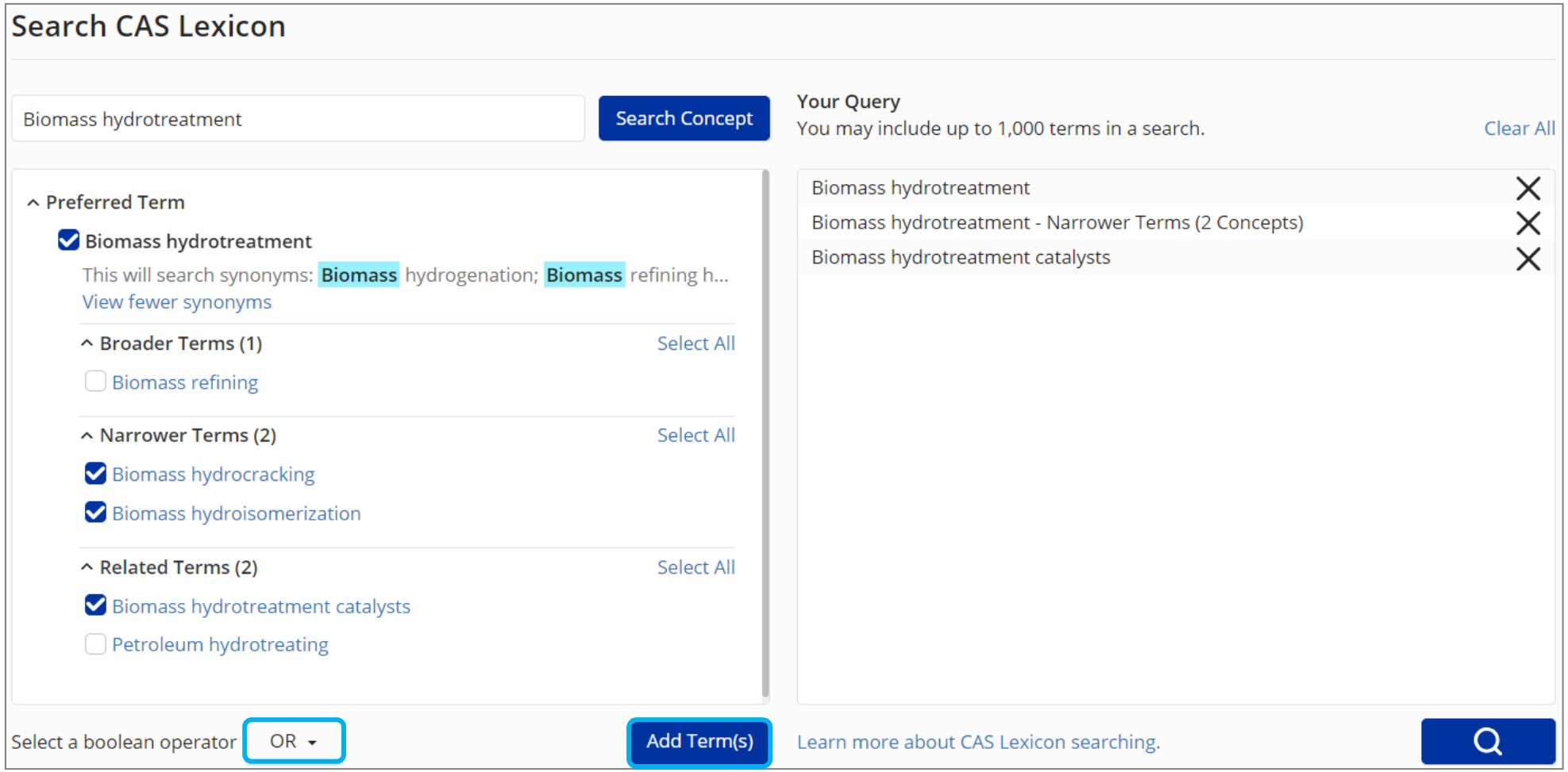
利用布尔逻辑运算符 & 通配符精准检索相关文献

- 支持布尔逻辑运算符 (or/and/not)，默认运算顺序 or > and > not
- “ ” 不允许词形变化，但可出现单数或复数； ( ) 优先运算，括号中表达式还可以和其他术语交互
- 支持通配符 * 或 ?, * 代表 0 或多个字符，？代表 0 或 1 个字符



CAS
A division of the American Chemical Society

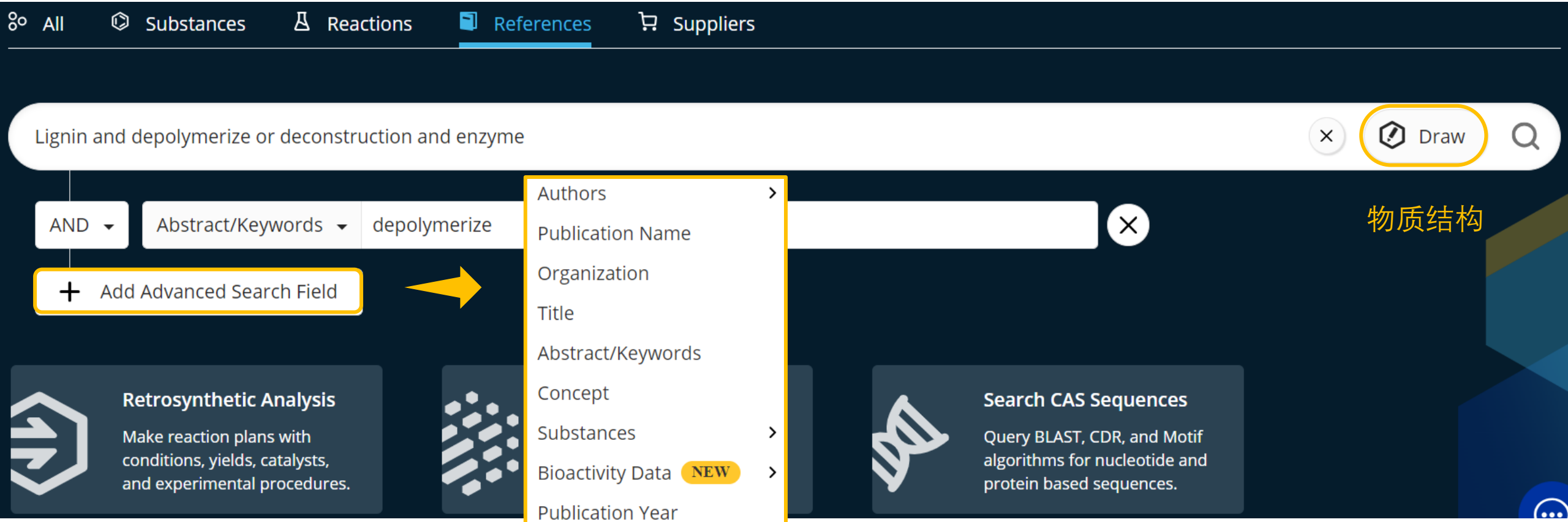
CAS Lexicon 词库检索近义词和相关技术术语



- Preferred Terms
- Broader Terms
- Narrower Terms
- Related Terms

CAS
A division of the American Chemical Society

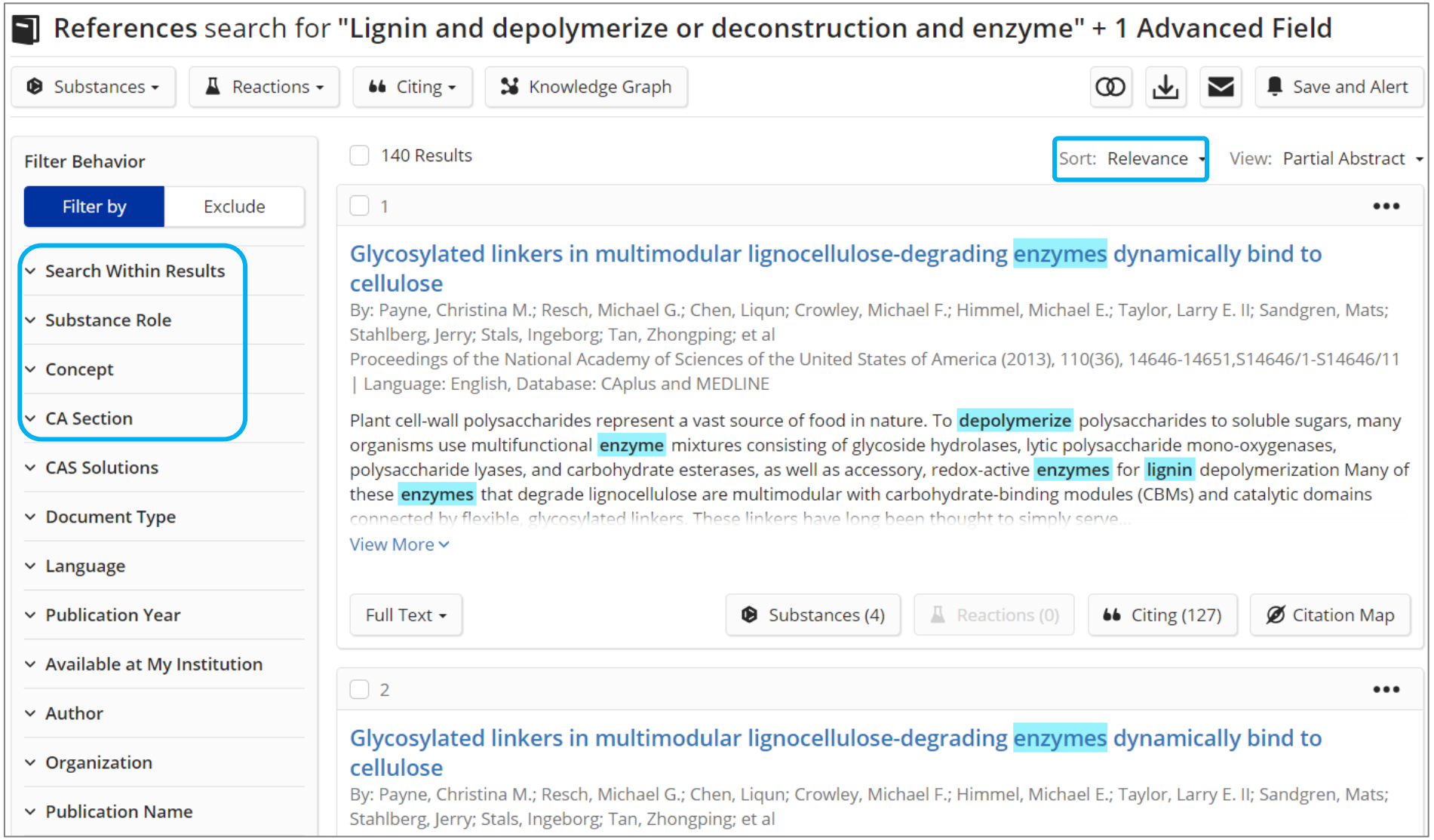
根据作者/出版物/研究机构/物质结构检索相关文献



自定义高级检索项

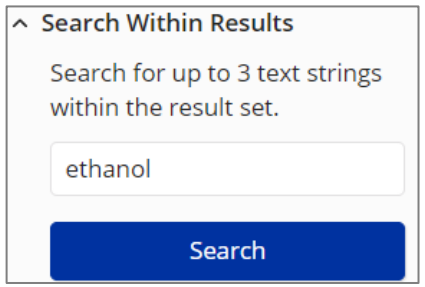
CAS
A division of the American Chemical Society

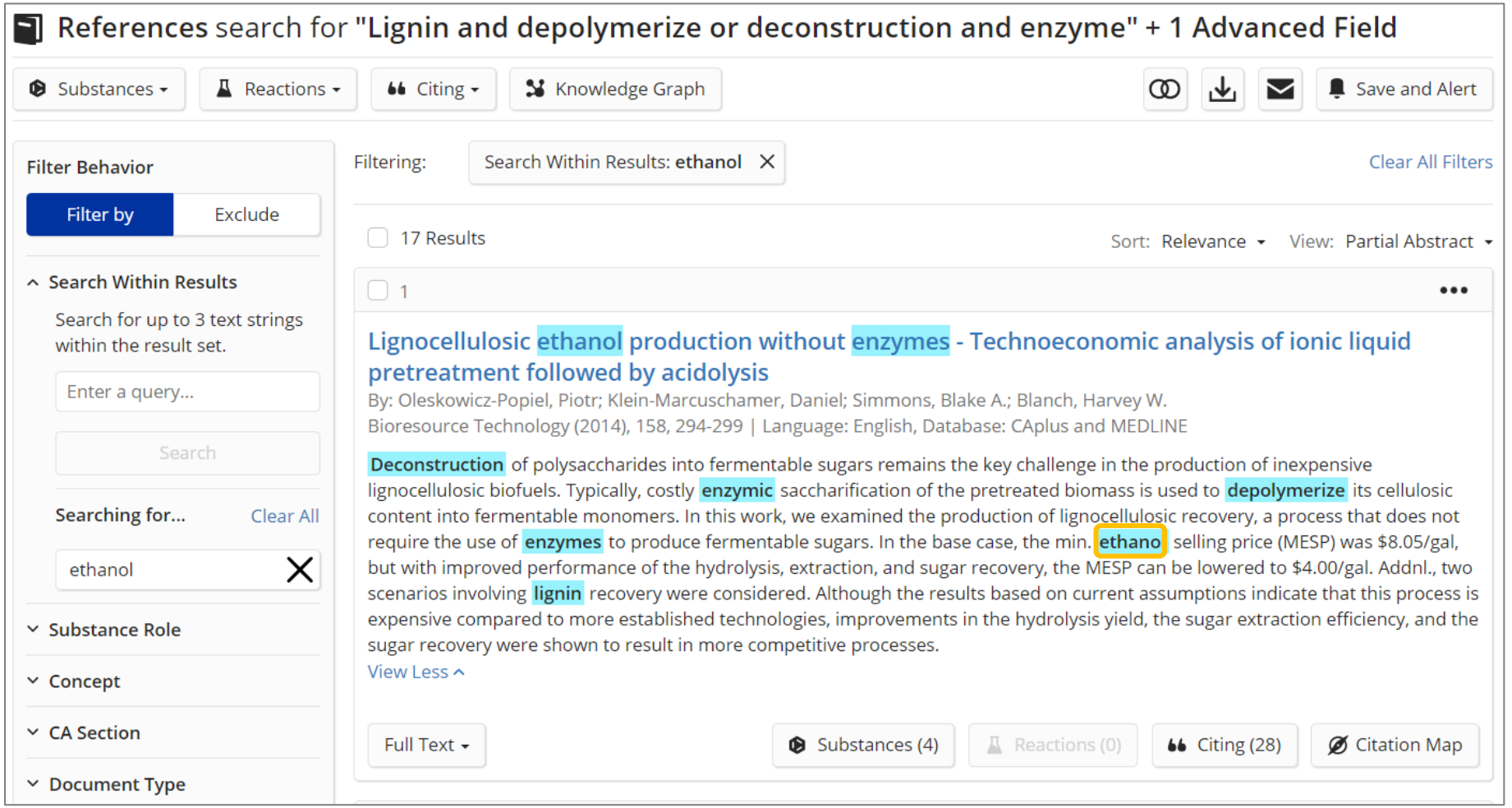
检索结果分析与筛选



CAS
A division of the American Chemical Society

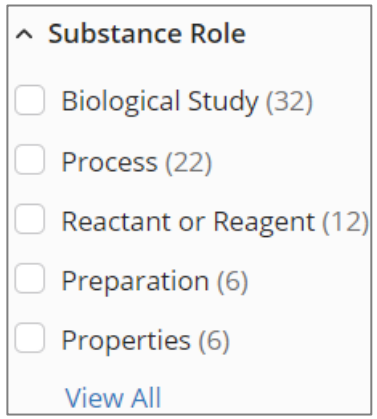
结果集二次检索研究内容：Search Within Results

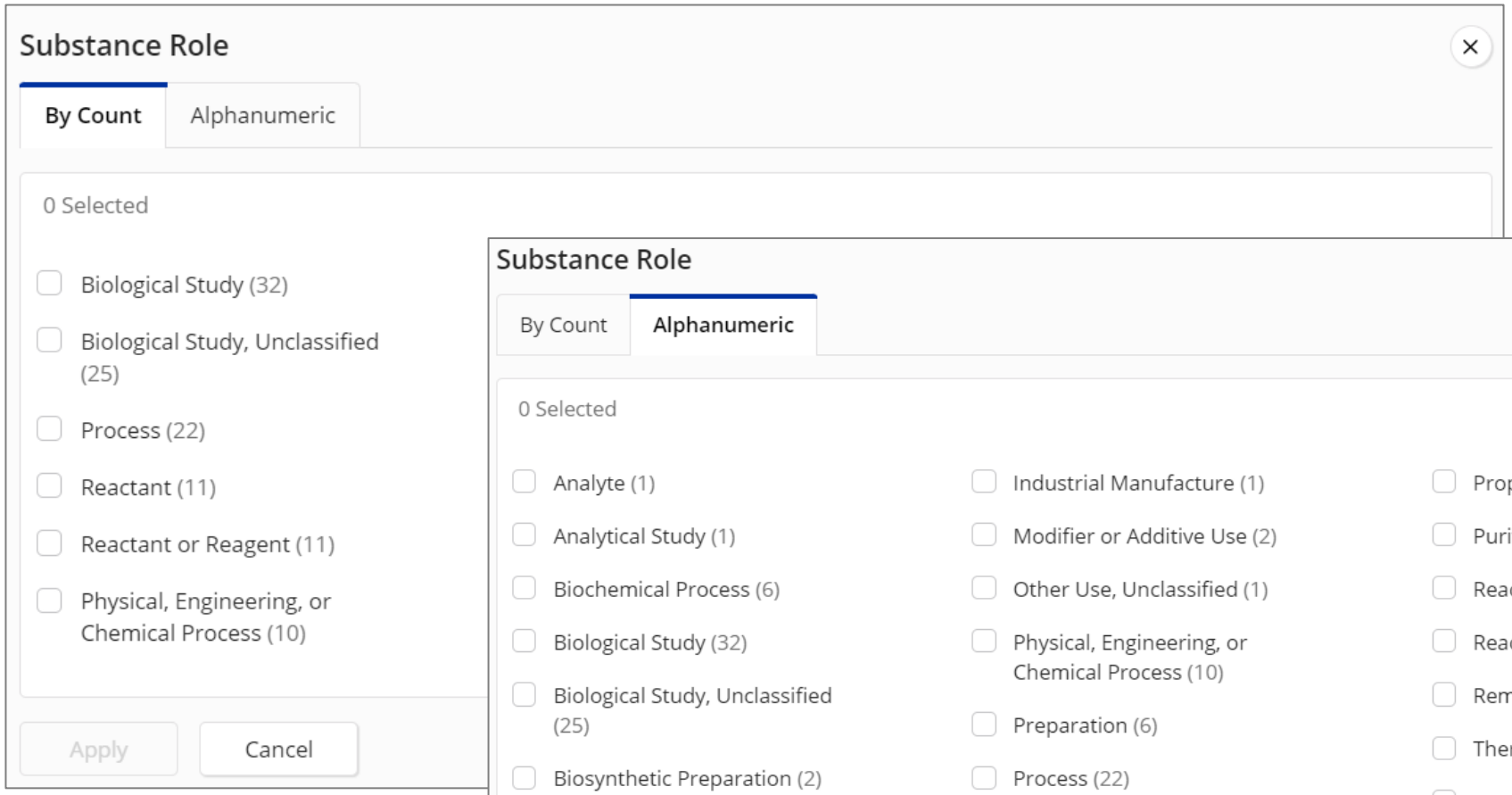




CAS
A division of the American Chemical Society

物质角色筛选文献：Substance Role





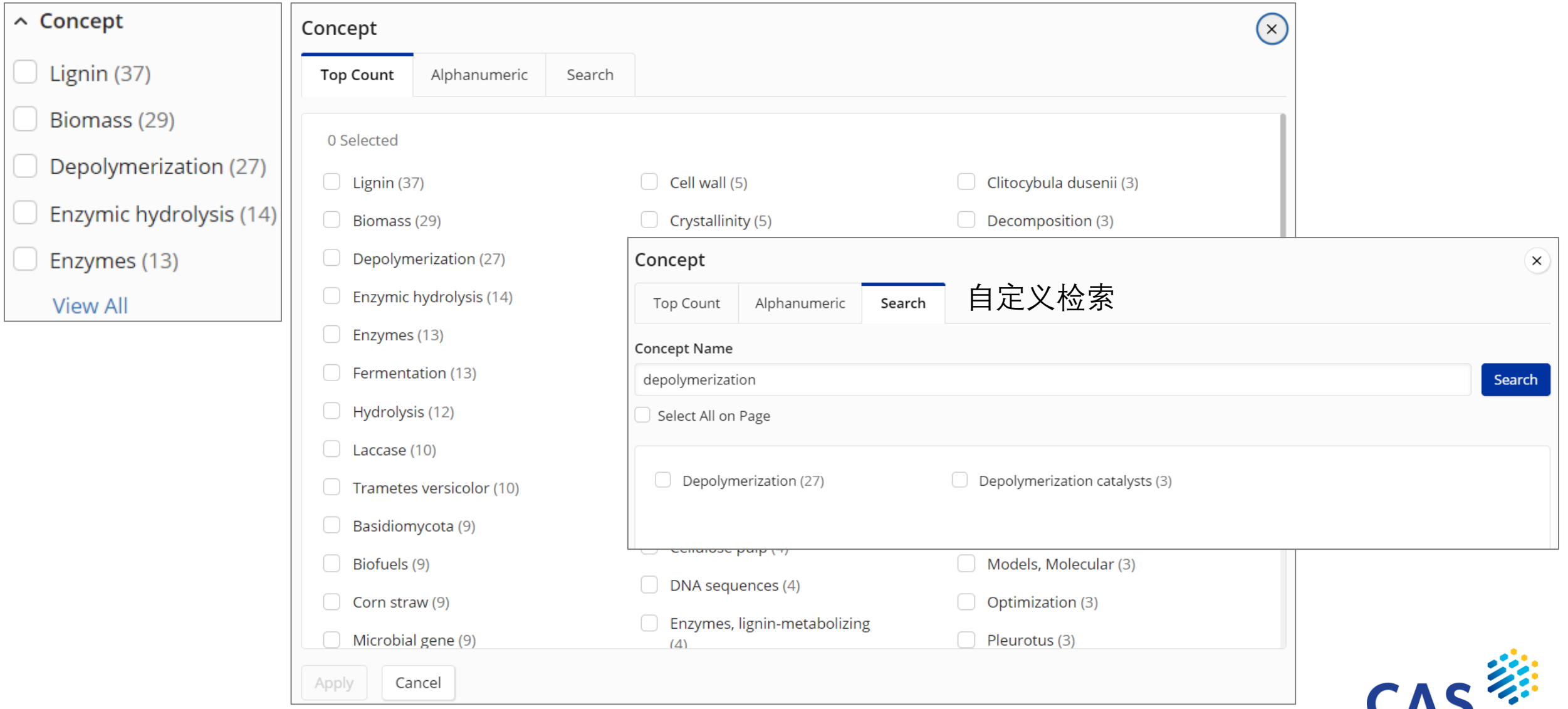
排序:

文献数量

字母顺序

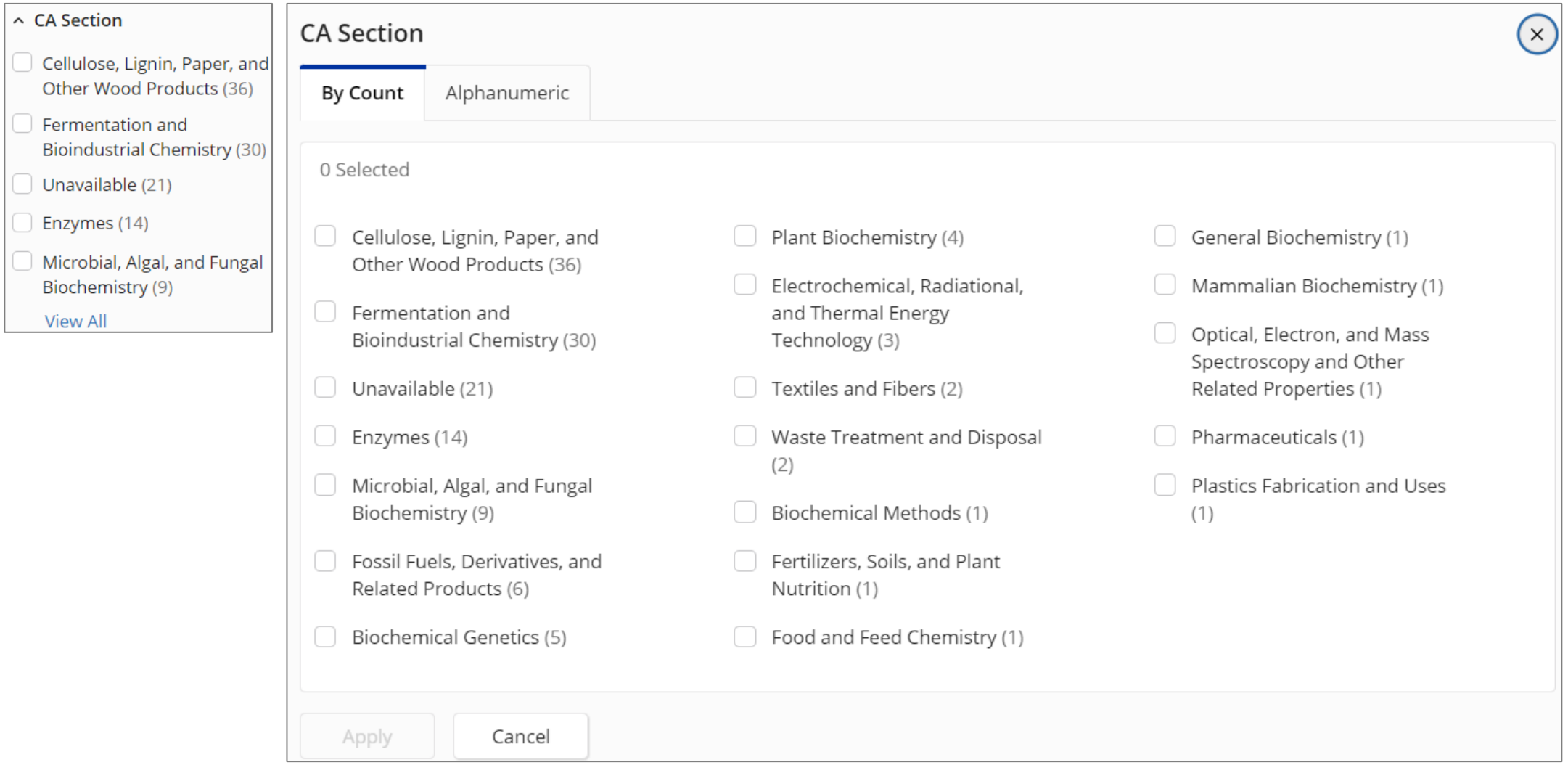
CAS
A division of the American Chemical Society

确定文献核心研究内容：Concept



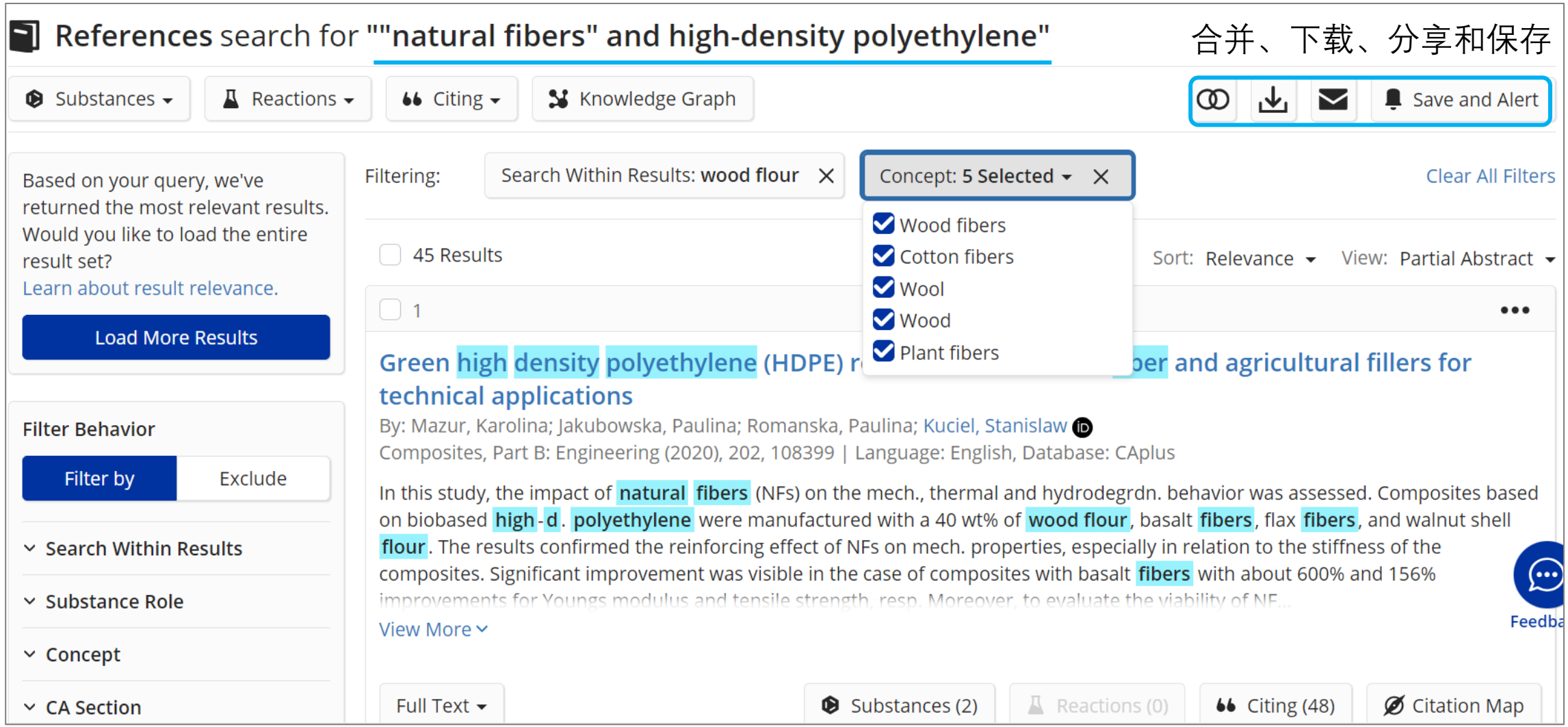
CAS
A division of the American Chemical Society

筛选不同研究领域文献：CA Section



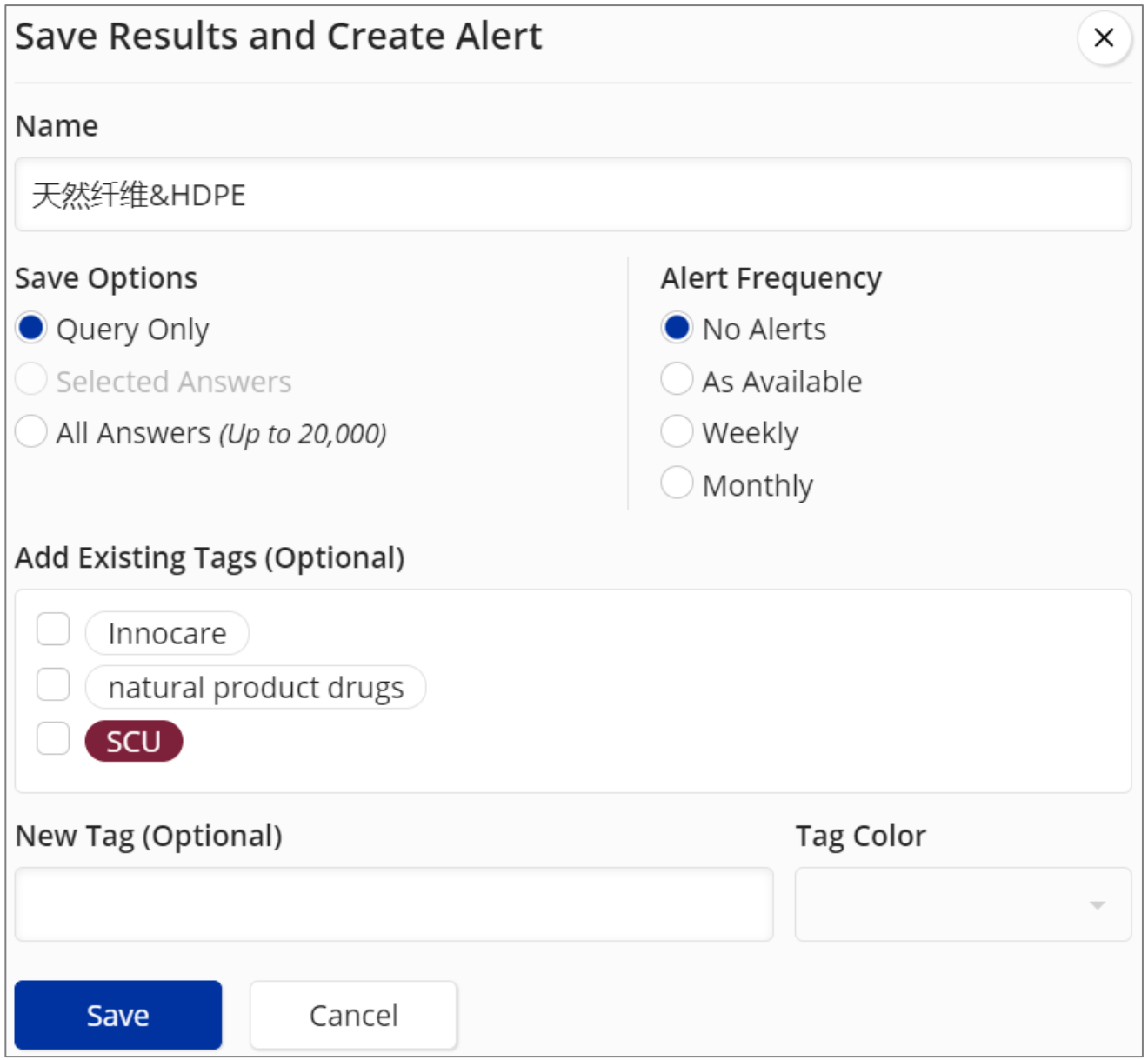
CAS
A division of the American Chemical Society

文献结果集管理



CAS
A division of the American Chemical Society

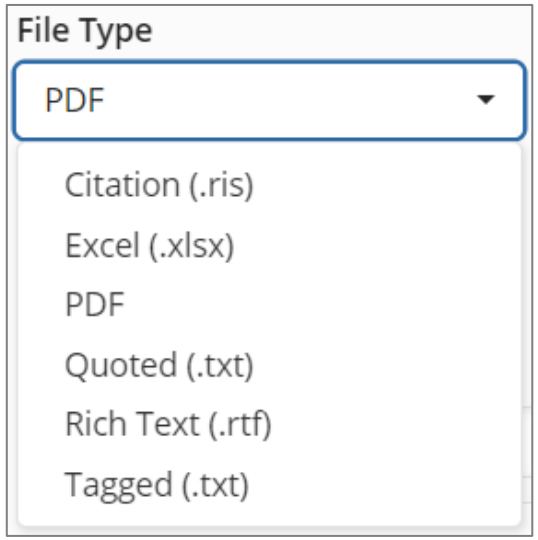
保存和提醒

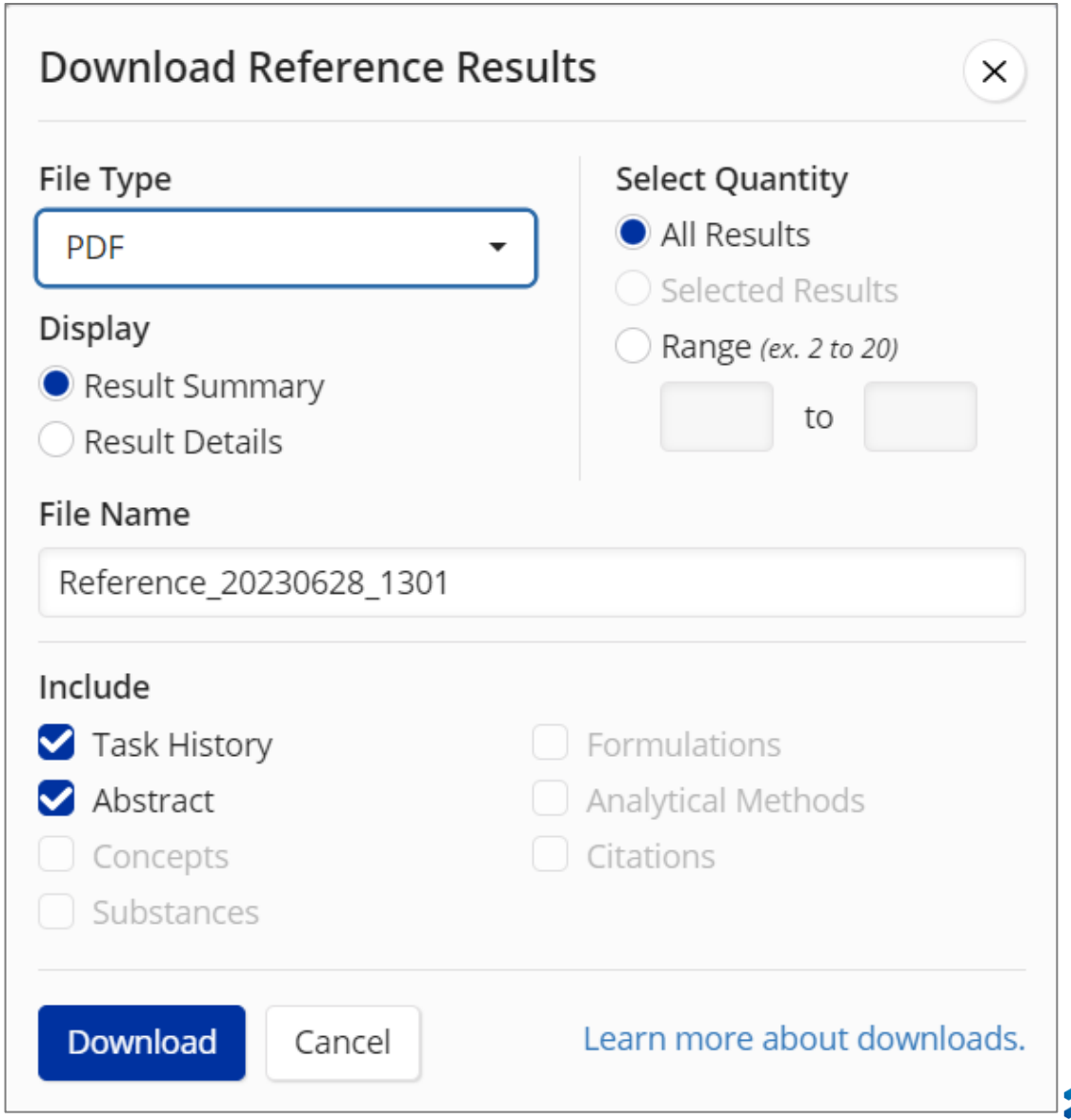


- 结果保存
- 自定义提醒频率
- 标签分类

CAS
A division of the American Chemical Society

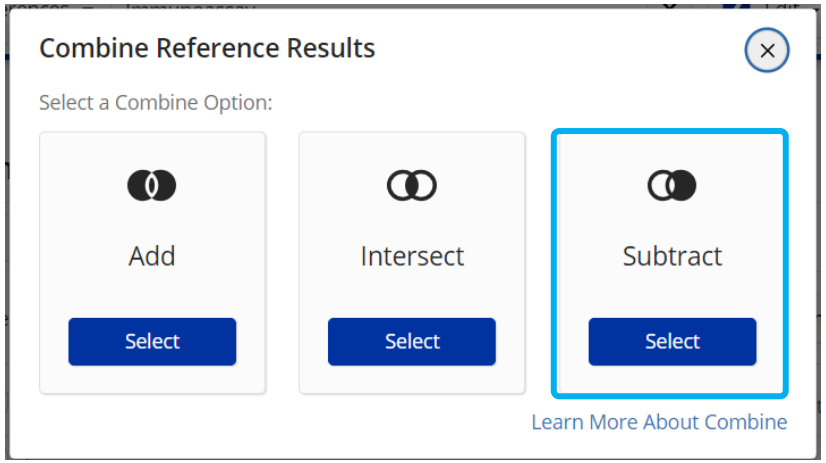
下载



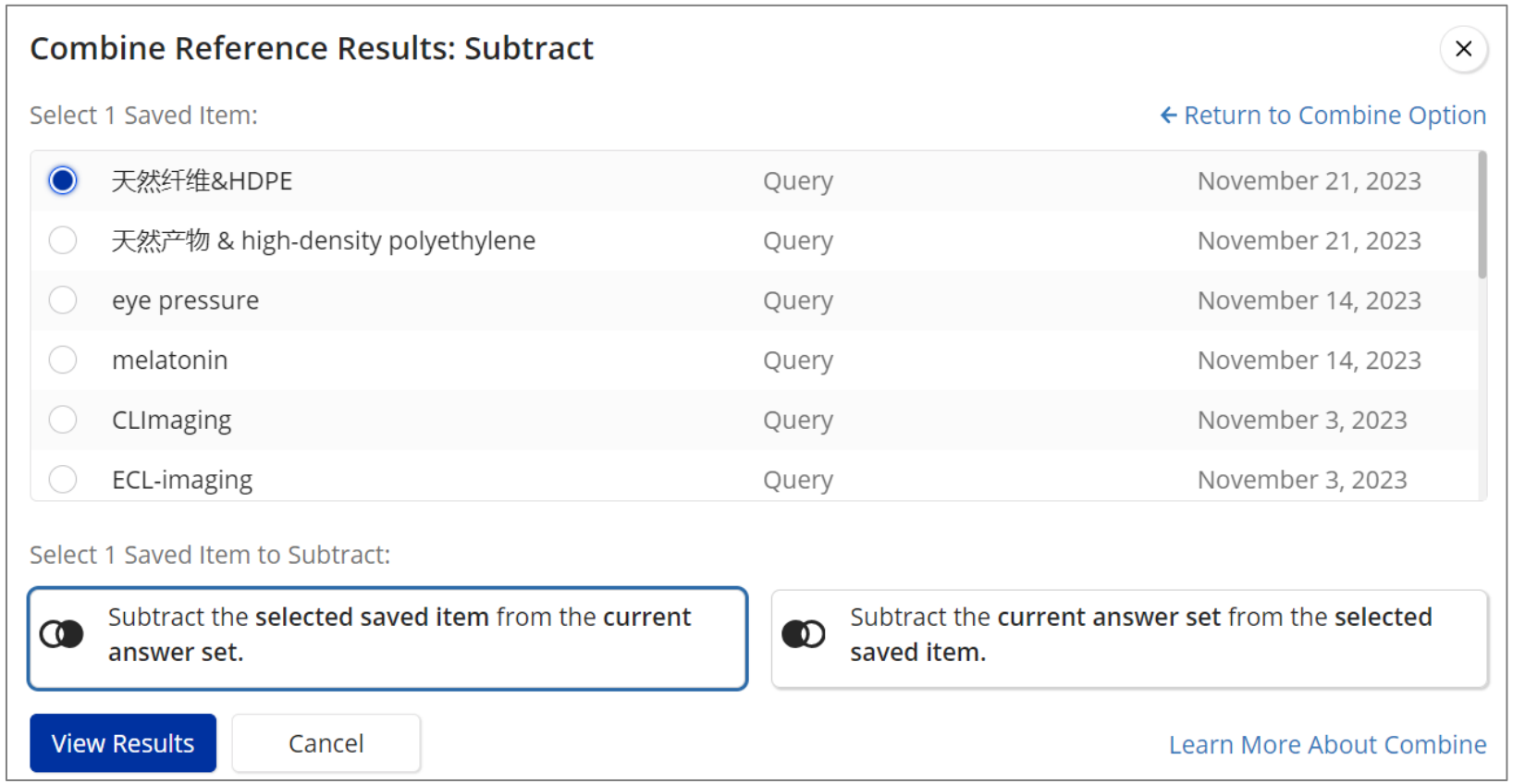


CAS
A division of the American Chemical Society

合并



- 并集
- 交集
- 差集



CAS
A division of the American Chemical Society

查看目标文献详情

Green high density polyethylene (HDPE) reinforced with basalt fiber and agricultural fillers for technical applications

Substances (2) | Reactions (0) | Citing (48) | Citation Map | Save

JOURNAL

Source

Composites, Part B: Engineering
Volume: 202
Pages: 108399
Journal
2020
DOI: 10.1016/j.compositesb.2020.108399

CODEN: CPBEFF
ISSN: 1359-8368

Database Information

AN: 2021:621898
CAN: 174:734786
CAplus

Company/Organization

Institute of Materials Engineering, Faculty of Materials Science and Physics
Cracow University of Technology
Krakow 31-155
Poland

By: Mazur, Karolina; Jakubowska, Paulina; Romanska, Paulina; Kuciel, Stanislaw

In this study, the impact of natural fibers (NFs) on the mech., thermal and hydrodegrdn. behavior was assessed. Composites based on biobased high-d. polyethylene were manufactured with a 40 wt% of wood flour, basalt fibers, flax fibers, and walnut shell flour. The results confirmed the reinforcing effect of NFs on mech. properties, especially in relation to the stiffness of the composites. Significant improvement was visible in the case of composites with basalt fibers with about 600% and 156% improvements for Youngs modulus and tensile strength, resp. Moreover, to evaluate the viability of NFs as reinforcements, water absorption and its influence on mech. properties were investigated. Unmodified polymer and composites with basalt fibers showed similar relationships - low water absorption. Composites reinforced with lignocellulosic fibers exhibited high water uptake and progressive deterioration of properties over time.

Keywords: green HDPE basalt fiber agricultural filler composite stiffness application

View Source | Full Text

相似文献

Similar References NEW — Get Similar References

- Mechanical properties of bio-based epoxy composites reinforced with hybrid-interlayer ramie and recycled carbon fibres — Open Journal of Composite Materials (2020), 10(4), 118-133 | Language: English, Database: CAplus
- A Sustainable Polymer Composite from Recycled Polypropylene Filled with Shrimp Shell Waste — Polymer-Plastics Technology and Engineering (2014), 53(2), 167-172 | Language: English, Database: CAplus
- Mechanical properties and water absorption of fiber-reinforced polypropylene composites prepared by bagasse and beech... — Journal of Applied Polymer Science (2009), 114(1), 653-657 | Language: English, Database: CAplus

Concepts — CAS 科学家提供的核心研究点

- Absorption — Modifier: of water
- Bending strength
- Charpy impact strength
- Crystallinity
- Crystallization temperature
- Elongation at break
- Flax fibers
- Flexibility
- Flexural modulus
- Flours and Meals, walnut — Modifier: Rehofix UNG 300
- Fusion enthalpy
- Hydrolytic polymer biodegradation
- Melting point
- Microstructure
- Natural fibers
- Polymer fracture-surface morphology
- Stiffness
- Stress-strain relationship
- Surface roughness
- Synthetic fibers, basalt — Role: Modifier or Additive Use
- Synthetic polymeric fibers, lignocellulosic — Role: Modifier or Additive Use
- Tensile strength
- Walnut, flour and meal — Modifier: Rehofix UNG 300
- Wood fibers

Substances — 重点研究物质

Substances (2)

9002-88-4

$(C_2H_4)_x$
Polyethylene

Role: Polymer in Formulation, Properties, Uses
Notes: SHC 7260

2072054-87-4

Image Not Available

Unspecified
Rehofix UNG 300

Role: Modifier or Additive Use, Uses
Notes: Rehofix UNG 300

物质角色

查看专利详情

Continuous fiber composite reinforced synthetic wood elements

Substances (3) | Reactions (0) | Citing (5) | Citation Map | Save

PATENT

Patent Number
US20040048055

Publication Date
2004-03-11

Application Number
US2002-242187

Application Date
2002-09-11

Kind Code
A1

Assignee
Unknown

Source
United States
CODEN: USXXCO

Database Information
AN: 2004:203395
CAN: 140:236798
CAplus

By: Branca, Alfonso

The synthetic wood structural member comprises a synthetic wood body containing a synthetic polymer and having a longitudinal axis, such as wood fiber-filled recycled polyethylene; and ≥1 least one continuous fiber composite reinforcing rod element (such as glass fiber-reinforced recycled polyethylene) positioned within the synthetic wood body to increase the stiffness of the synthetic wood structural member, wherein the continuous fiber composite reinforcing rod element has a longi longitudinal axis of the synthetic wood structural member.

Keywords: synthetic wood element continuous fiber composite reinforced; recycled polyethylene gla

PatentPak Viewer | Get Prior Art Analysis | Full Text

Patent Family

Patent	Language	Kind Code	PatentPak Options	Publication Date	Applicatio
US20040048055	English	A1	PDF | PDF+ | Viewer	2004-03-11	US2002-24
US20070237940	English	A1		2007-10-11	US2007-81

Priority Application

Priority Application Number	Application Date
US2002-242187	2002-09-11

IPC Data

Patent	Class	Patent Family Classification Codes
US20040048055	IPCI	B32B 0027/04 A
US20070237940	IPCI	B32B 0027/04

Concepts

Substances

Substances (3)

9002-88-4

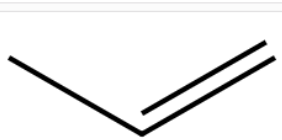
$(C_2H_4)_x$
Polyethylene

PatentPak

Role: Polymer in Formulation, Technical or Engineered Material Use, Uses

Notes: recycled

9003-07-0



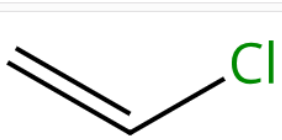
$(C_3H_6)_x$
1-Propene, homopolymer

PatentPak

Role: Polymer in Formulation, Technical or Engineered Material Use, Uses

Notes: (un)recycled

9002-86-2

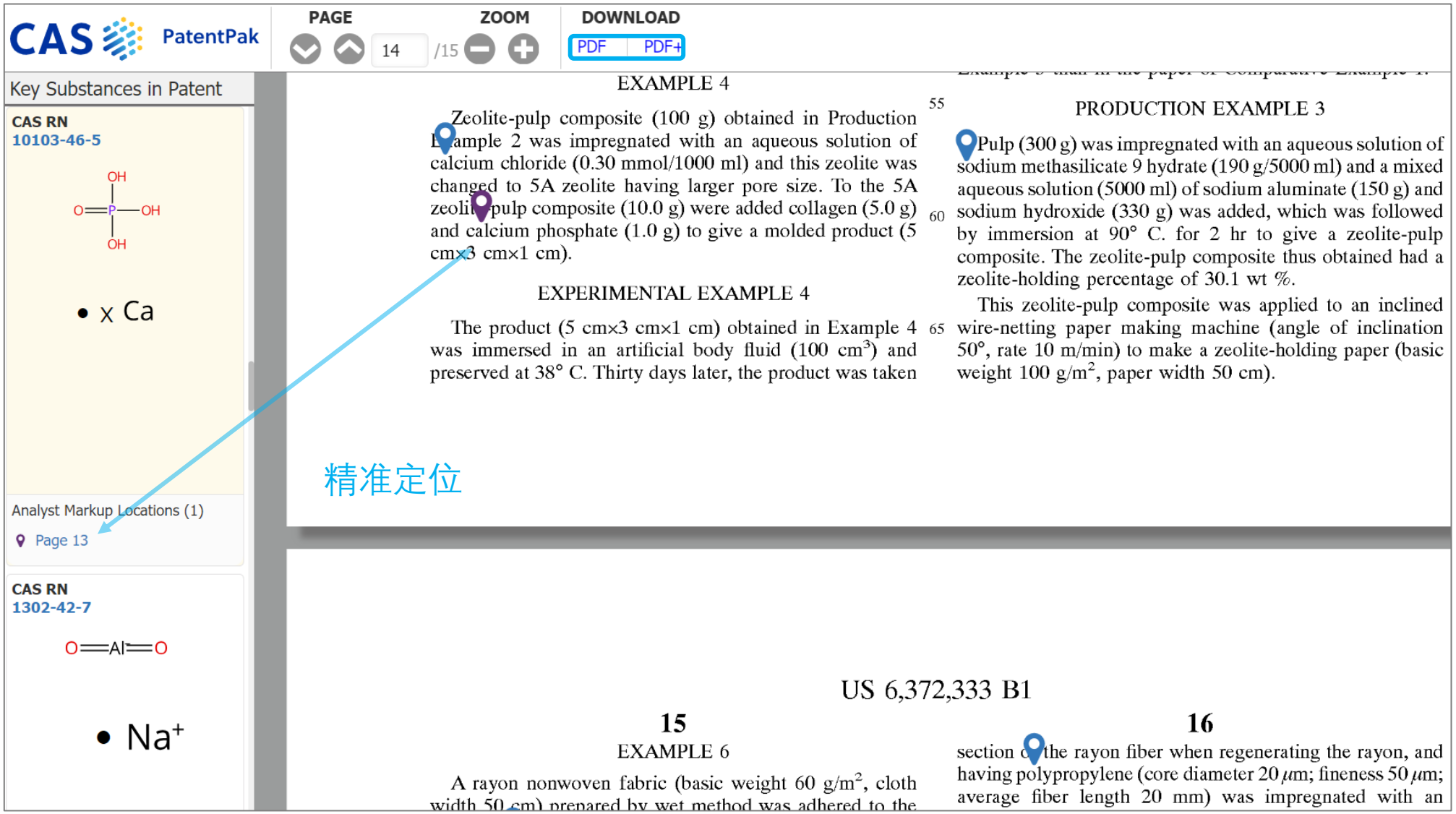


$(C_2H_3Cl)_x$
Ethene, chloro-, homopolymer

PatentPak

Role: Polymer in Formulation, Technical or Engineered Material Use, Uses

PatentPak Viewer 高效阅读专利



CAS
A division of the American Chemical Society

小结

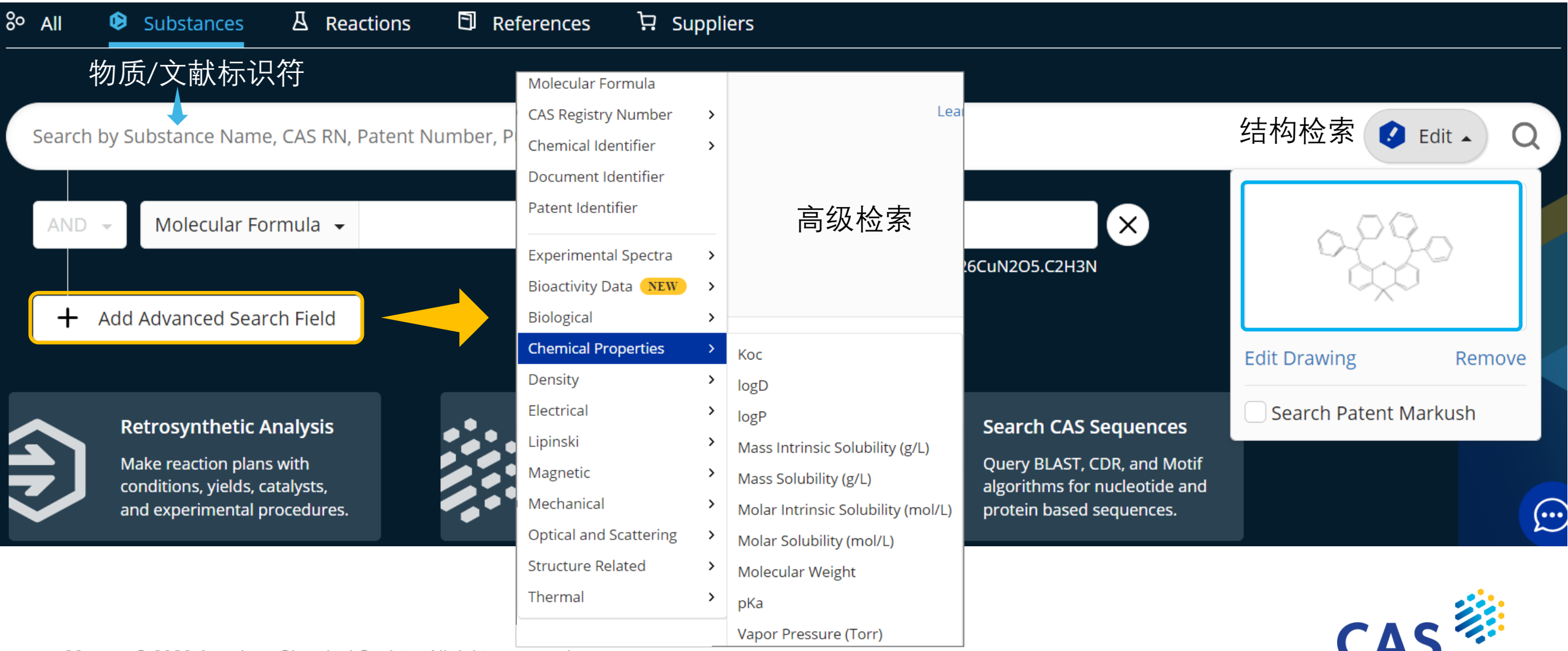
1. 检索词的构建：使用布尔逻辑算符及通配符连接主题词，CAS Lexicon 丰富选词
2. 利用高级检索选项以及文本与结构联合进行自定义组合检索
3. 通过聚类筛选工具快速获得目标文献
4. 利用引文地图拓展检索
5. 使用 PatentPak 高效阅读专利

如何调研某类物质?

- 快速检索聚合物或无机化合物?
- 利用谱图数值确认产物或杂质?从属性值出发，调研某类材料?
- 检索完整分子结构?通式结构?或含有某些片段的物质?
- 如何确认结构新颖性?
- 如何查找相似的序列?

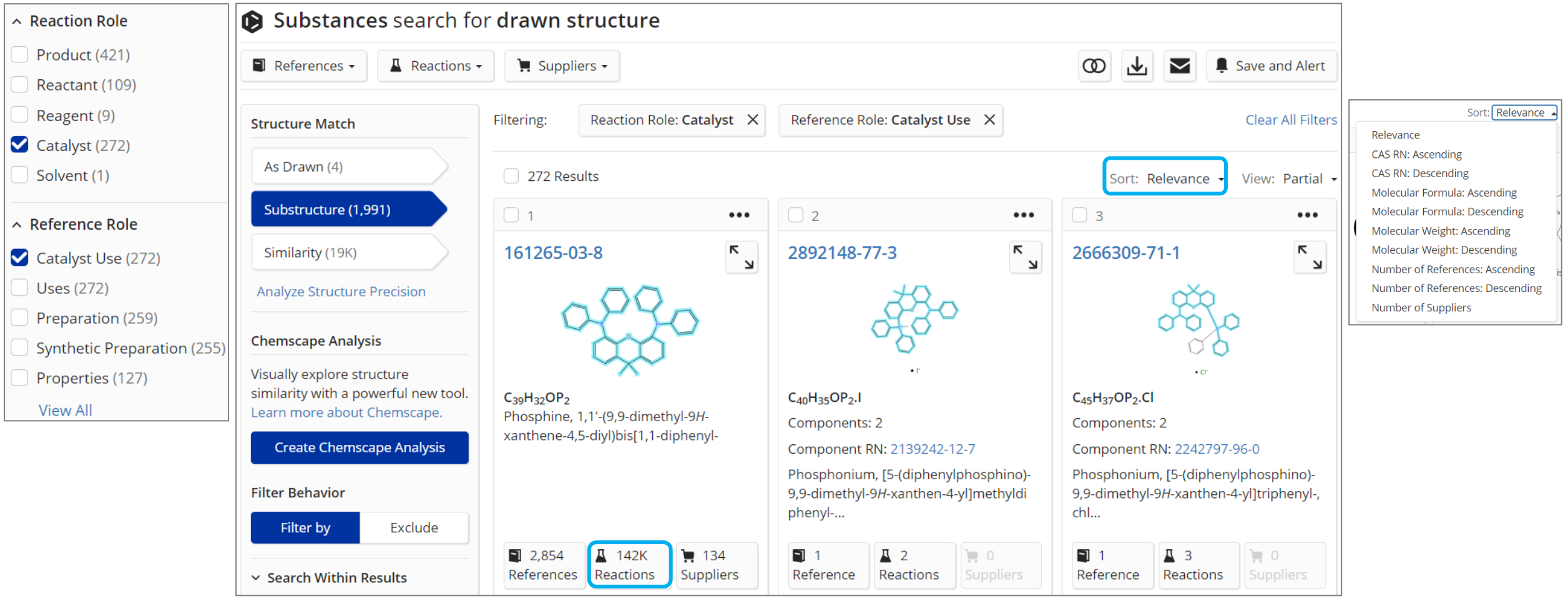
CAS
A division of the
American Chemical Society

检索实验所需物质



CAS
A division of the American Chemical Society

筛选可用作催化剂的物质



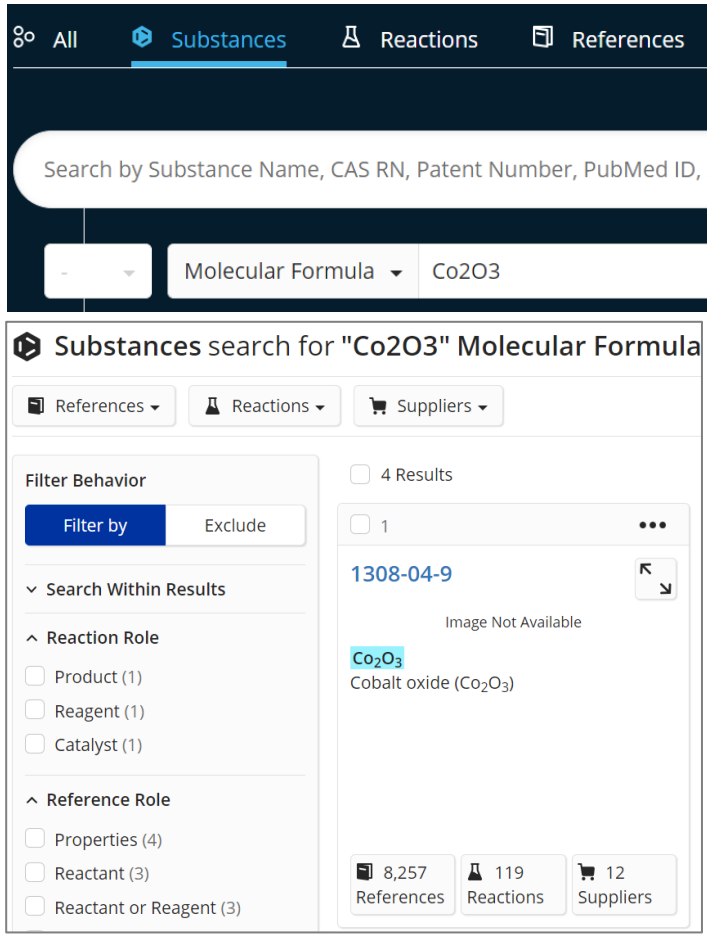
CAS
A division of the American Chemical Society

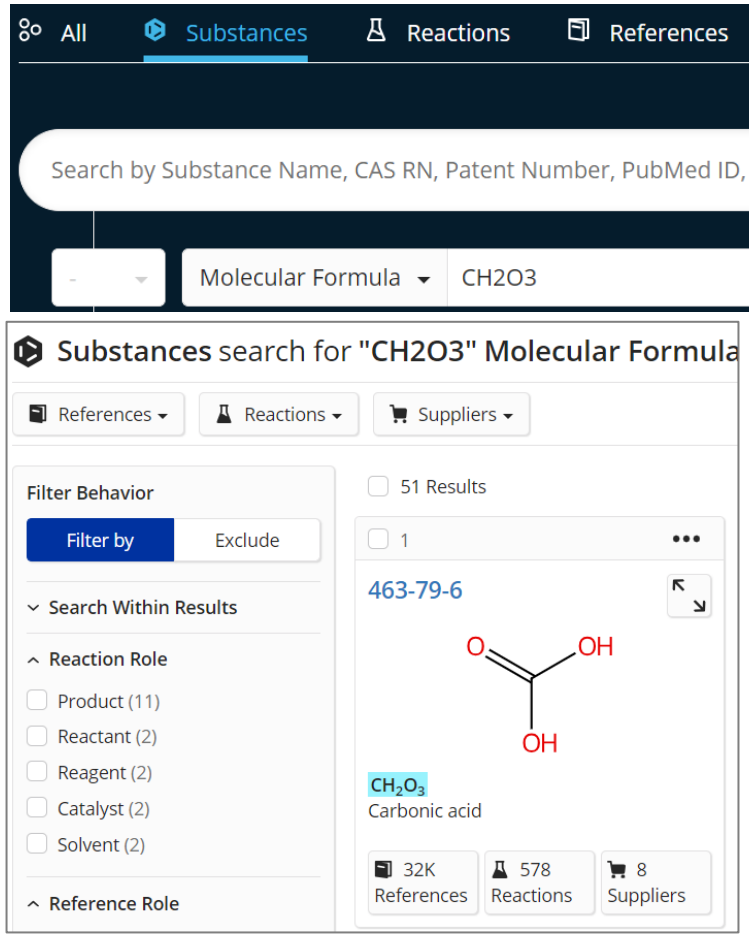
分子式检索物质

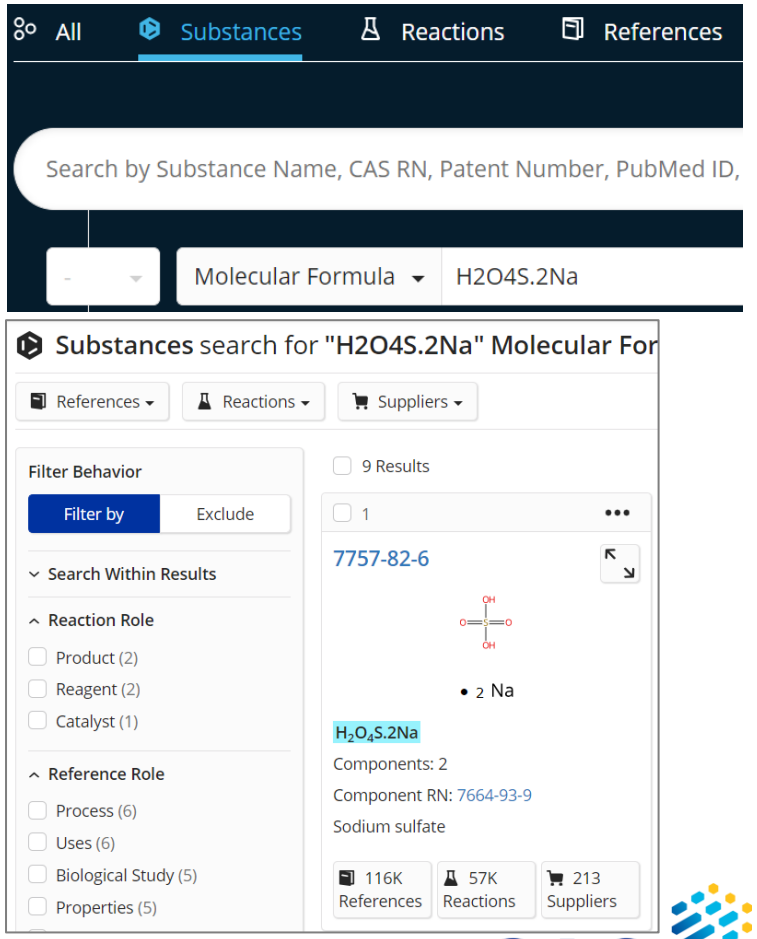
不含碳元素，按元素符号首字母顺序书写

含碳元素，碳排第一位，氢排第二位，其他元素符号按首字母顺序书写

金属离子和阴离子间用点•隔开，补充和阳离子等同个数的氢原子

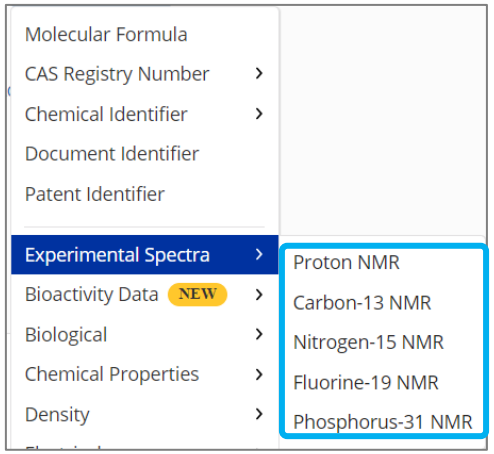


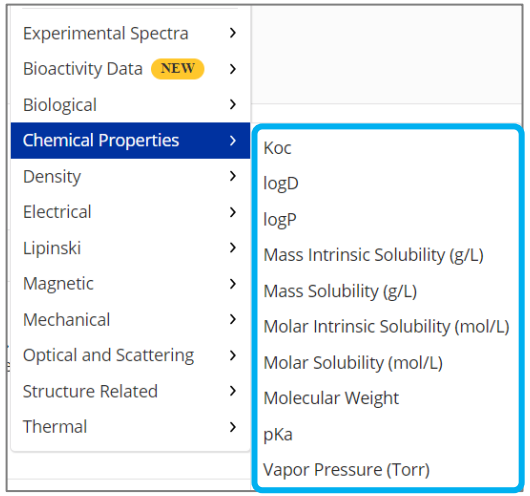




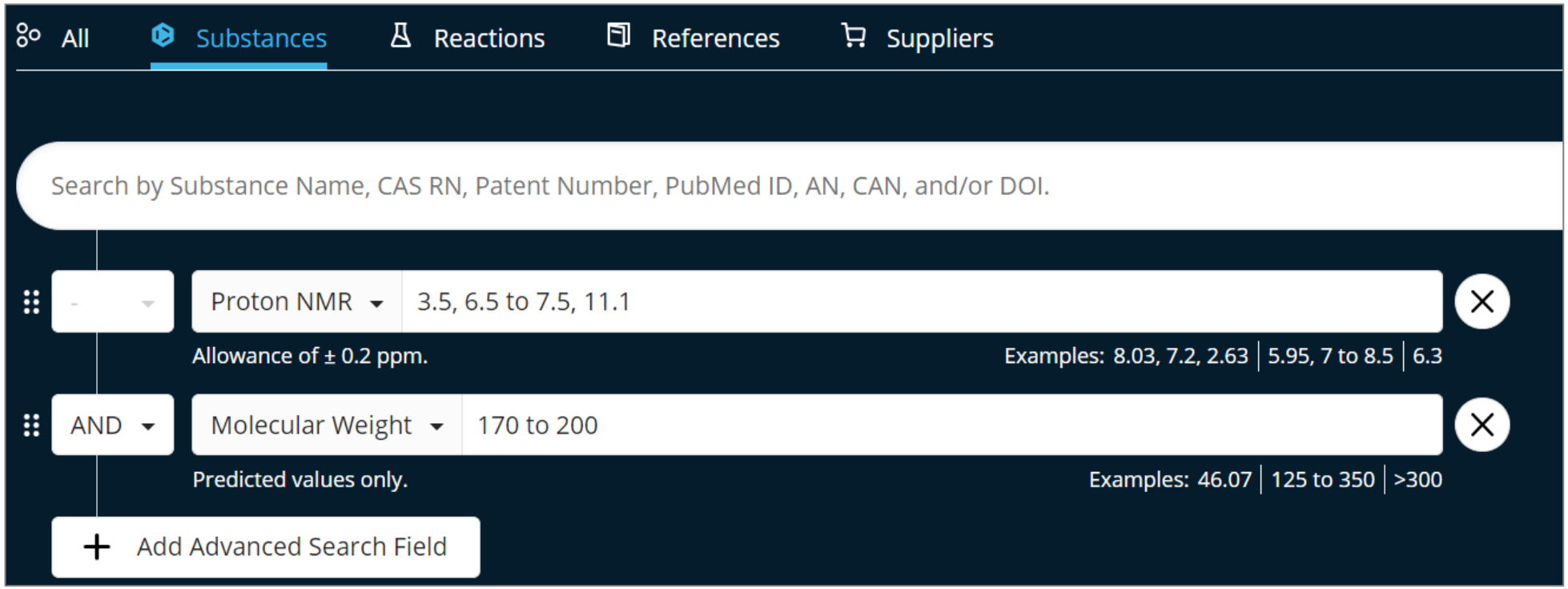
CAS
A division of the American Chemical Society

谱图和分子量联合检索物质





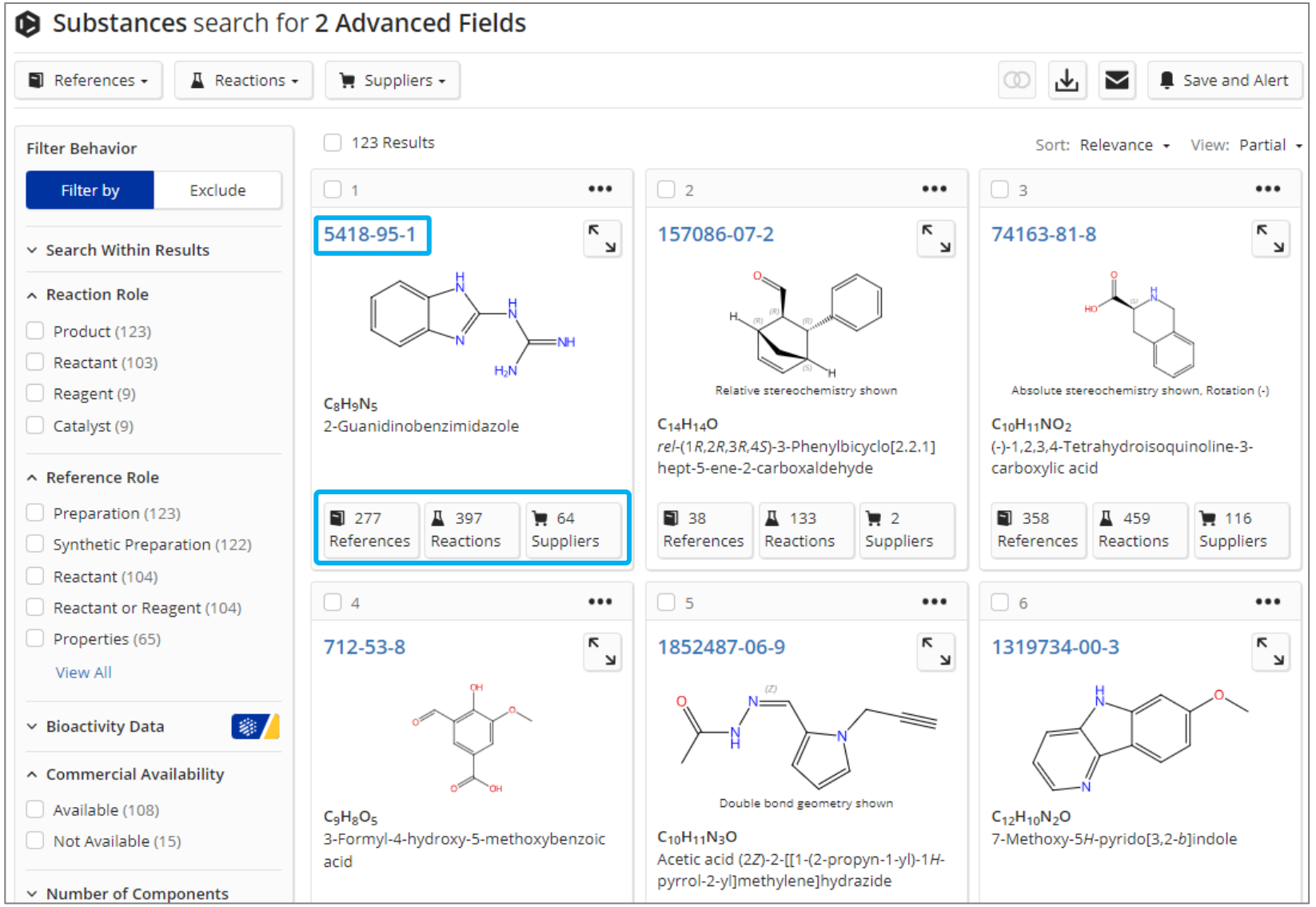
- H 谱化学位移：3.5, 6.5 至 7.5, 11.1
- 分子量：170 至 200



- 从小到大的顺序输入检索信息
- 英文模式下输入逗号和空格

CAS
A division of the American Chemical Society

谱图和分子量联合检索物质



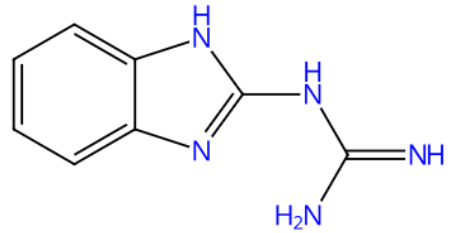
- 点击 CAS 登记号查看物质详情
- 查看物质相关的文献、反应和供应商信息

CAS
A division of the American Chemical Society

查看物质详情

CAS Registry Number: 5418-95-1

References (277) | Reactions (397) | Suppliers (64) | Save



$C_8H_9N_5$

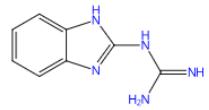
Guanidine, *N*-1*H*-benzimidazol-2-yl- (ACI)

Key Physical Properties	Value	Condition
Molecular Weight	175.19	-
Melting Point (Experimental)	245 °C (decomp)	-
Boiling Point (Predicted)	392.7±25.0 °C	Press: 760 Torr
Density (Predicted)	1.56±0.1 g/cm^3	Temp: 20 °C; Press: 760 Torr
pKa (Predicted)	13.67±0.30	Most Basic Temp: 25 °C

Experimental Properties | Spectra

Proton NMR Spectrum for 5418-95-1

5418-95-1



$C_8H_9N_5$

CAS Name
2-Guanidinobenzimidazole

Conditions

Working Frequency
300 MHz

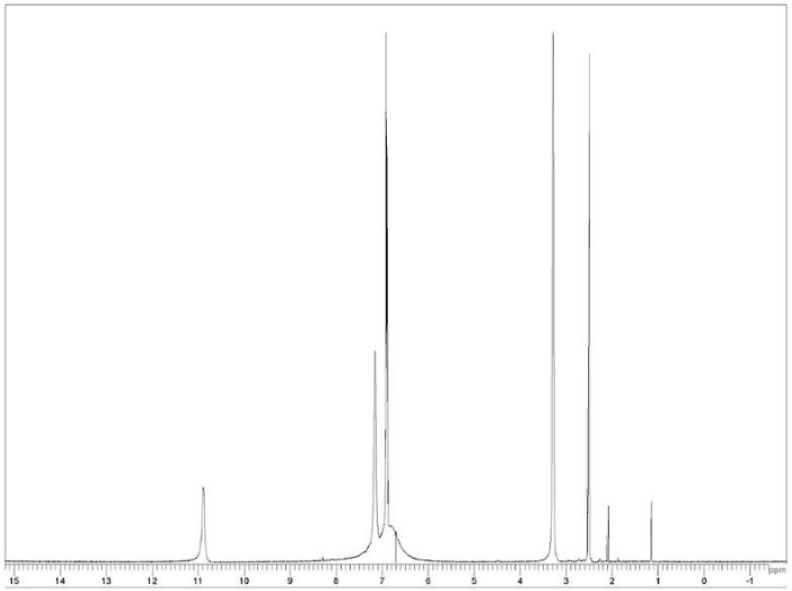
Solvent
DMSO-d_6 (2206-27-1)

Temperature
24 °C

Spectrum Summary

Spectrum ID
ASI_6014117

Source
Spectral data were obtained from John Wiley & Sons, Inc.



Experimental Spectra

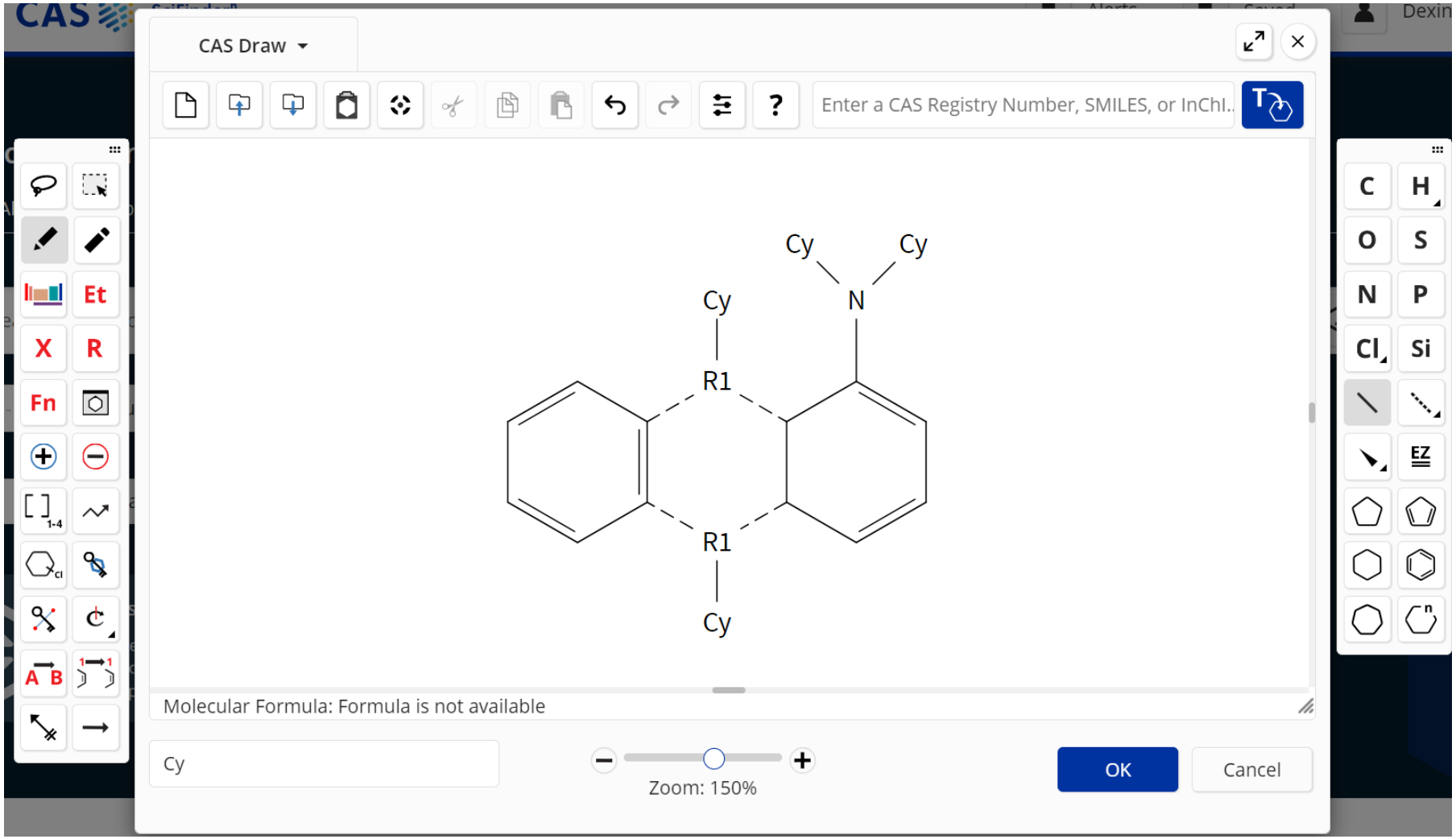
^{1}H NMR	^{13}C NMR	IR	Mass	Raman

	Source
View Proton NMR Spectrum	(1) WSS
View Proton NMR Spectrum	(1) WSS
View Proton NMR Spectrum	(2) ENAMINE

CAS
A division of the American Chemical Society

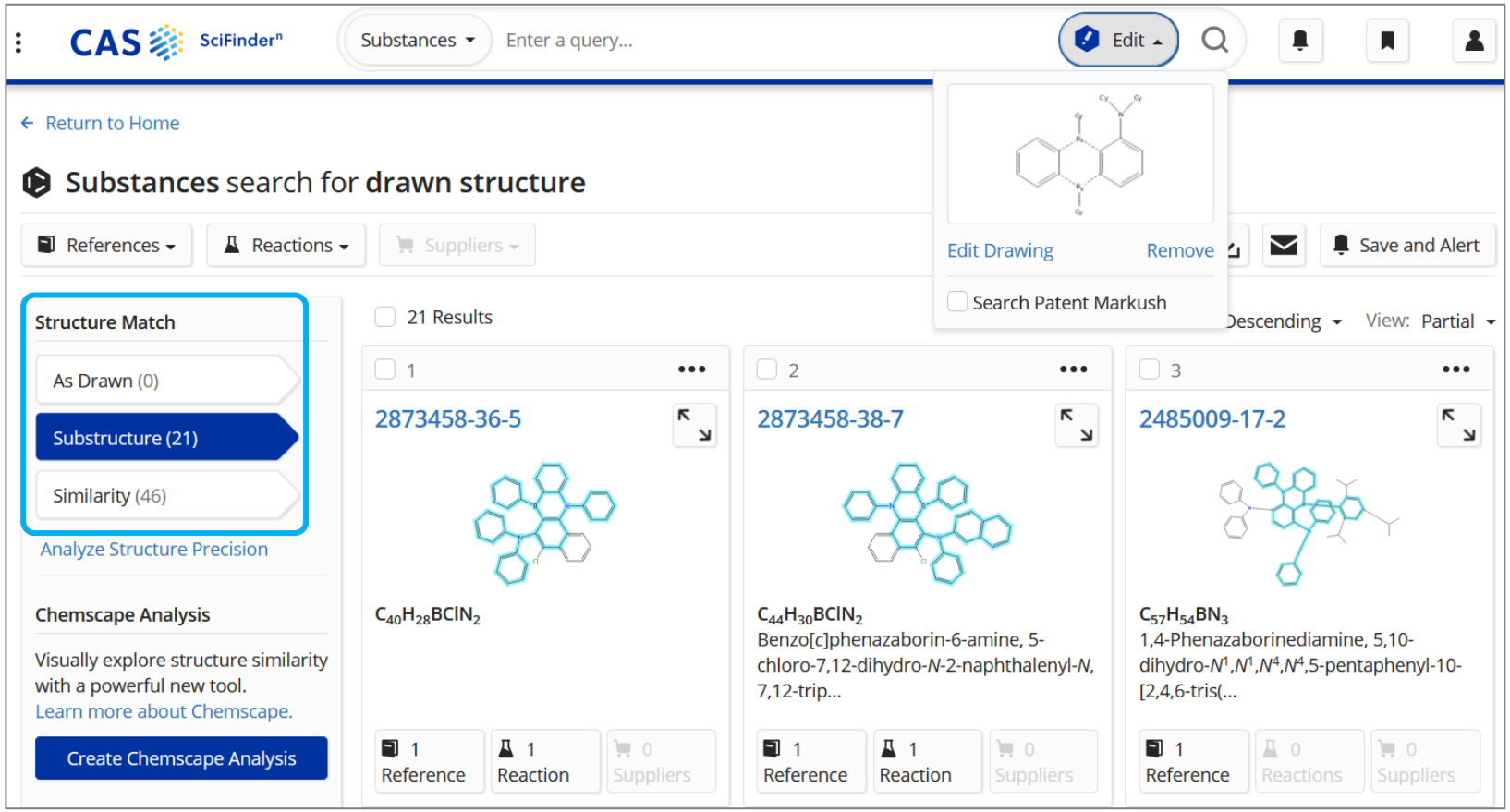
利用结构信息检索物质

- 可变基团
- 自定义基团
- 片段结构
- 重复工具
- 取代位点可变
- 反应角色标记
- 锁定工具



CAS
A division of the American Chemical Society

检索结果集：Structure Match

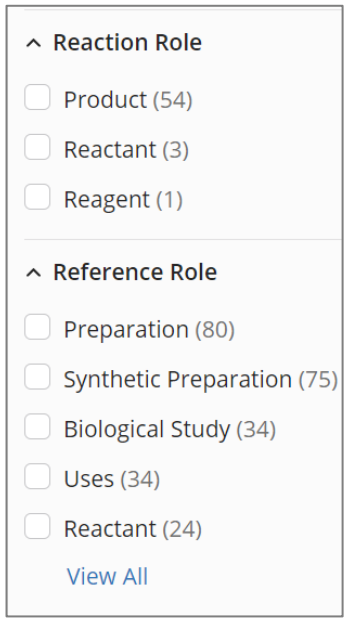


- As Drawn：绘制结构中可出现 R 基团和可变基团。绘制结构中价态未达饱和的原子只能接氢，环系（如有）不能与其他的环稠合或成桥环。
- Substructure：包括 As Drawn 的检索结果，另外价态未达饱和的原子可以连接氢以外的其他原子，环系（如有）可以与其他环稠合或成桥环。
- Similarity：获得片段或整体结构与被检索结构相似的物质，母体结构可以被取代和改变。

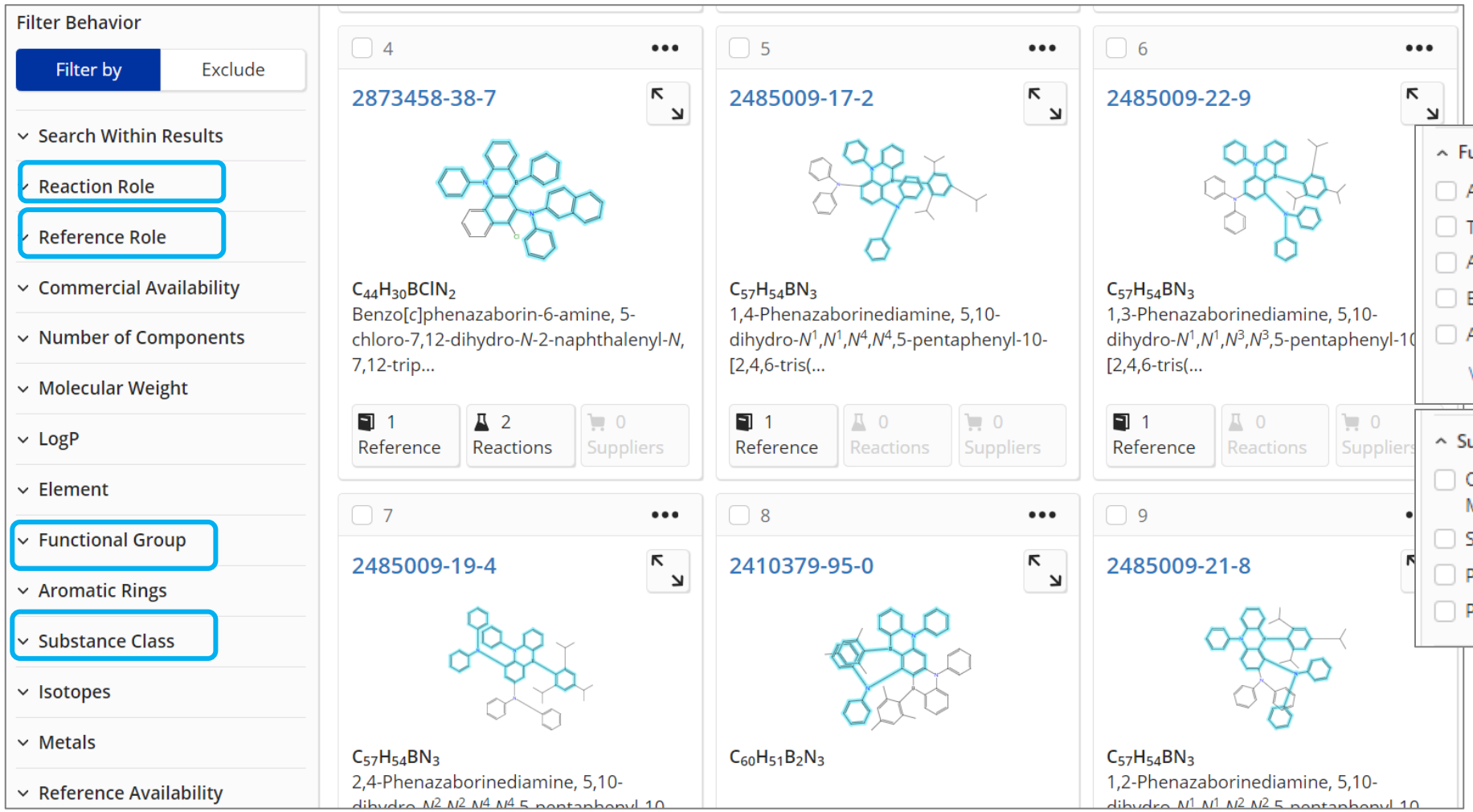
CAS
A division of the American Chemical Society

检索结果集筛选目标物质：Filter Behavior

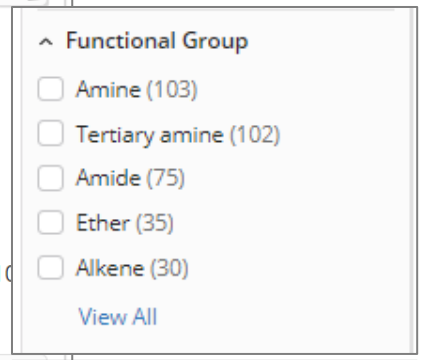
物质在反应中的角色

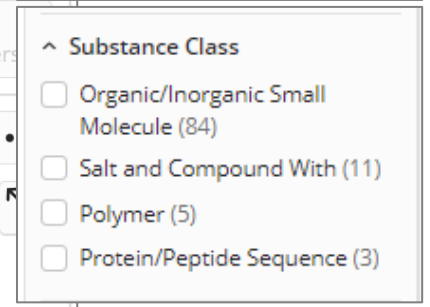


物质在文献中的研究角色



特定官能团





物质类别

CAS
A division of the American Chemical Society

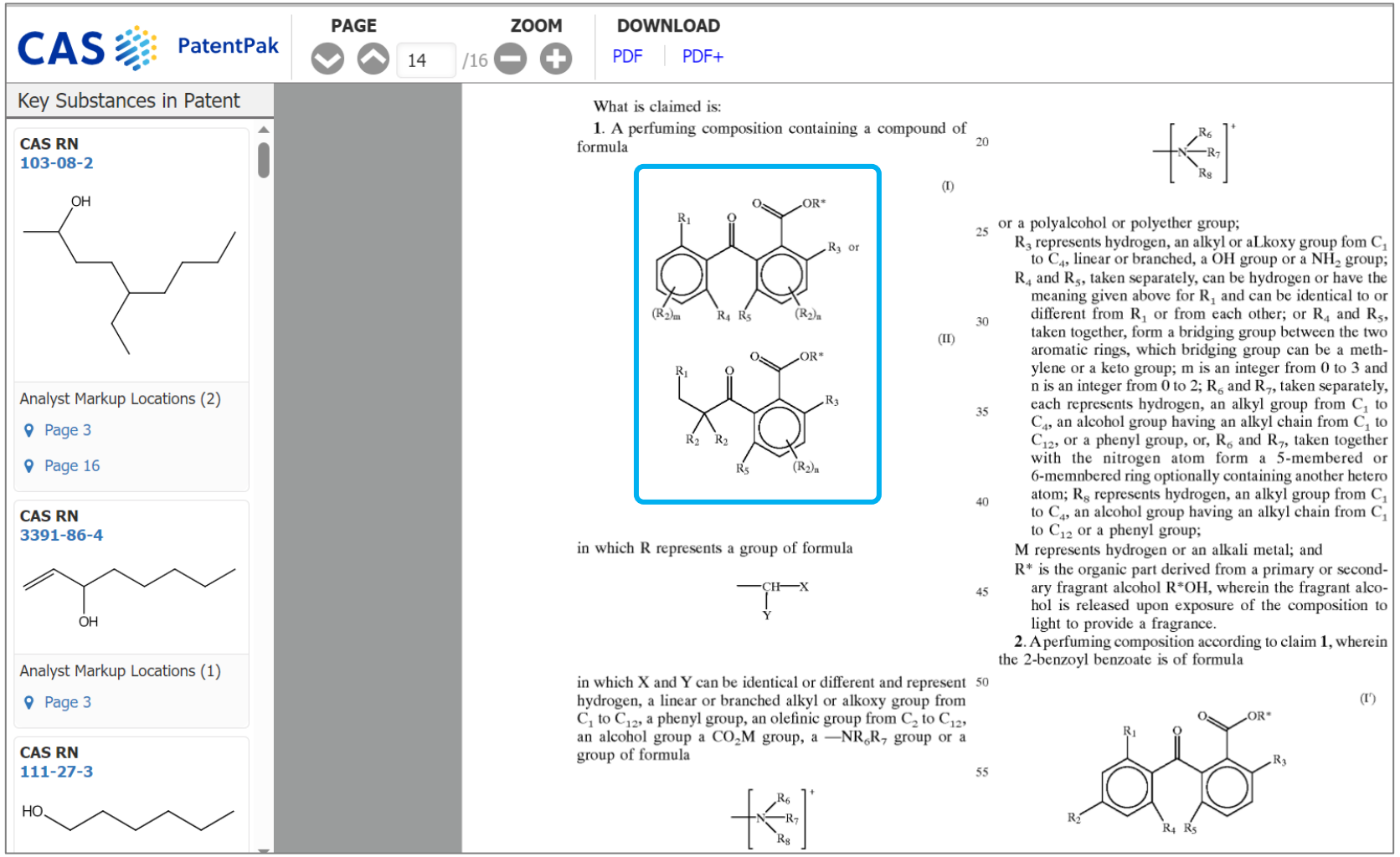
CAS Markush 检索实现结构查新

具体物质 (Specific Substance):

- 以具体化学结构陈述的特定物质，会被分配 CAS 登记号

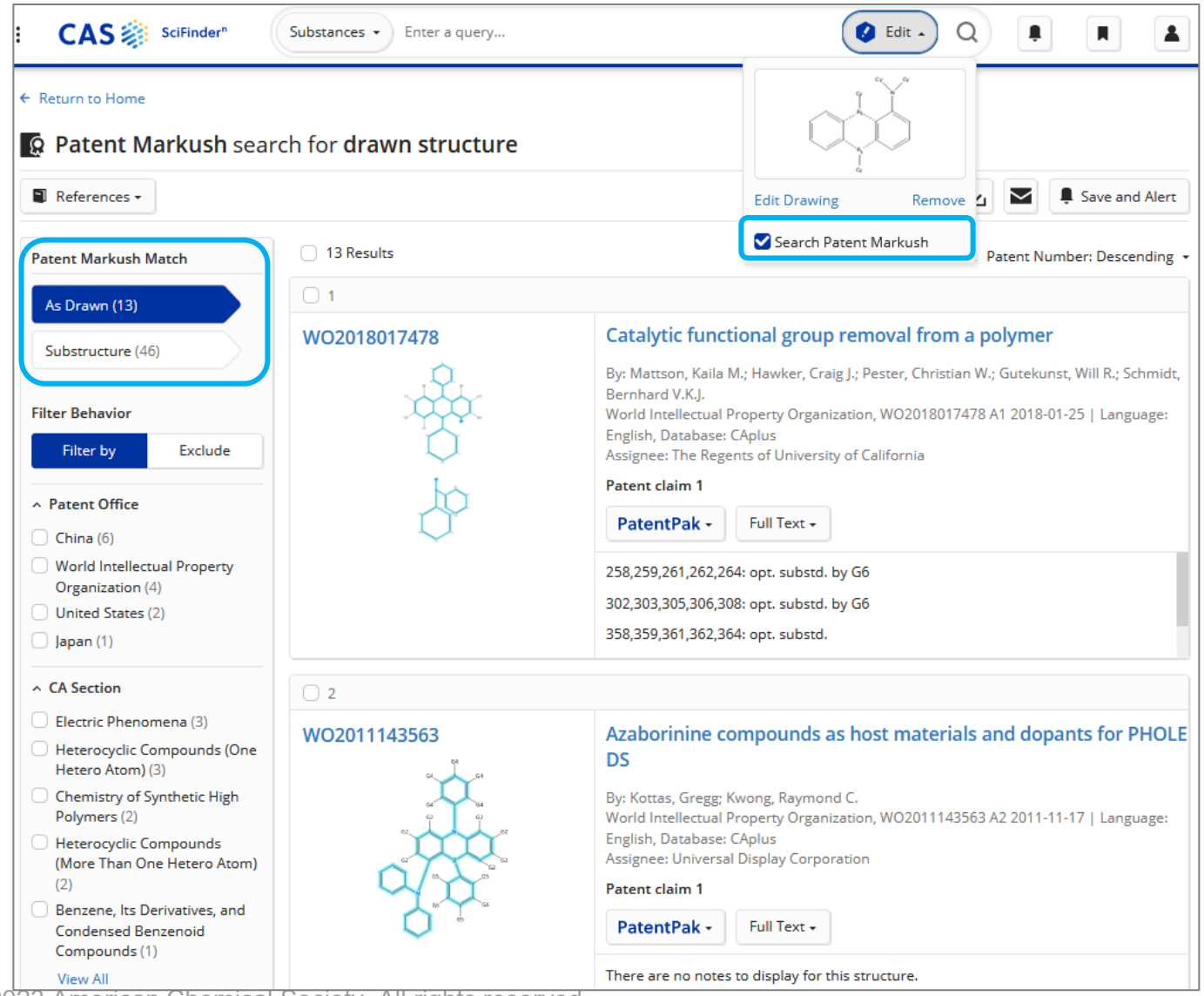
预测性物质 (Prophetic Substance)

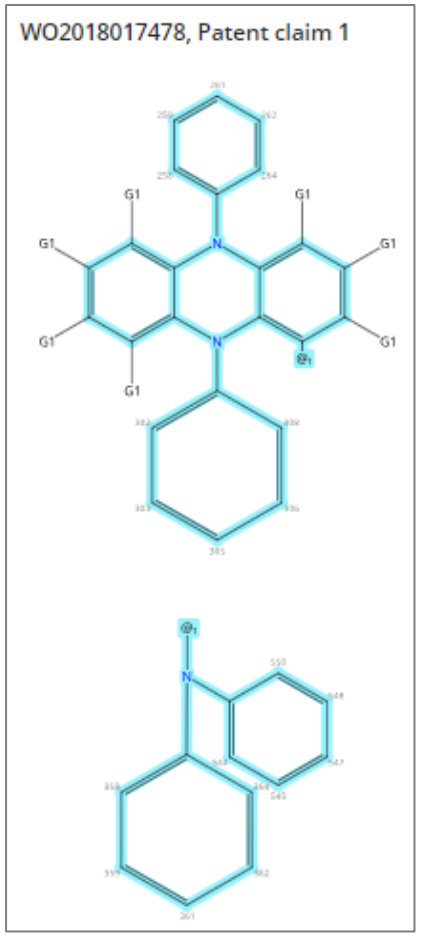
- 使用 Markush 结构陈述的预测物质，一个 Markush 可以陈述数千甚至更多的化学物质
- 被 Markush 结构包含，但未被实施或呈现在表格、权利要求书或说明书中的结构，则不会被分配 CAS 登记号
- Markush 检索能够检索到仅通过 Substance 可能检索不到的结构



CAS
A division of the American Chemical Society

完整的结构检索流程





CAS
A division of the American Chemical Society

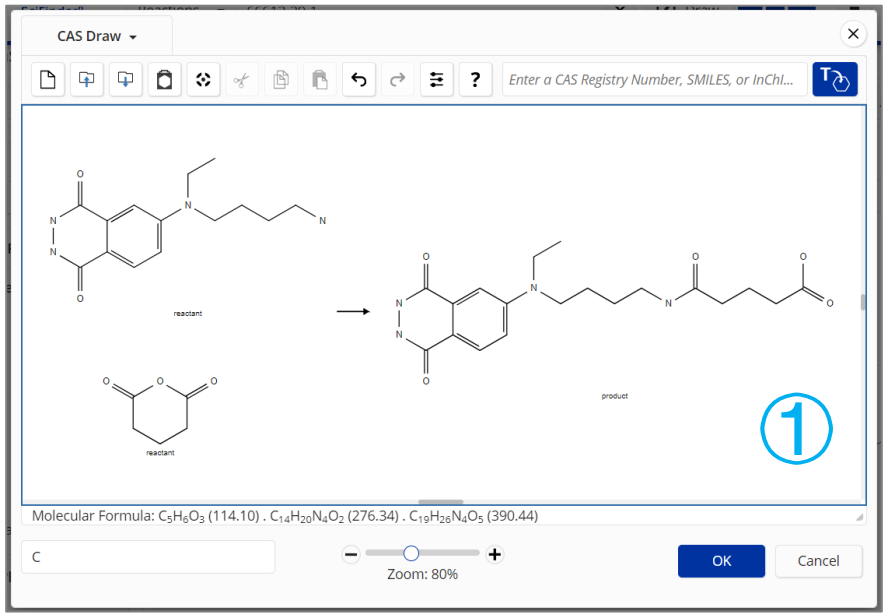
物质检索小结

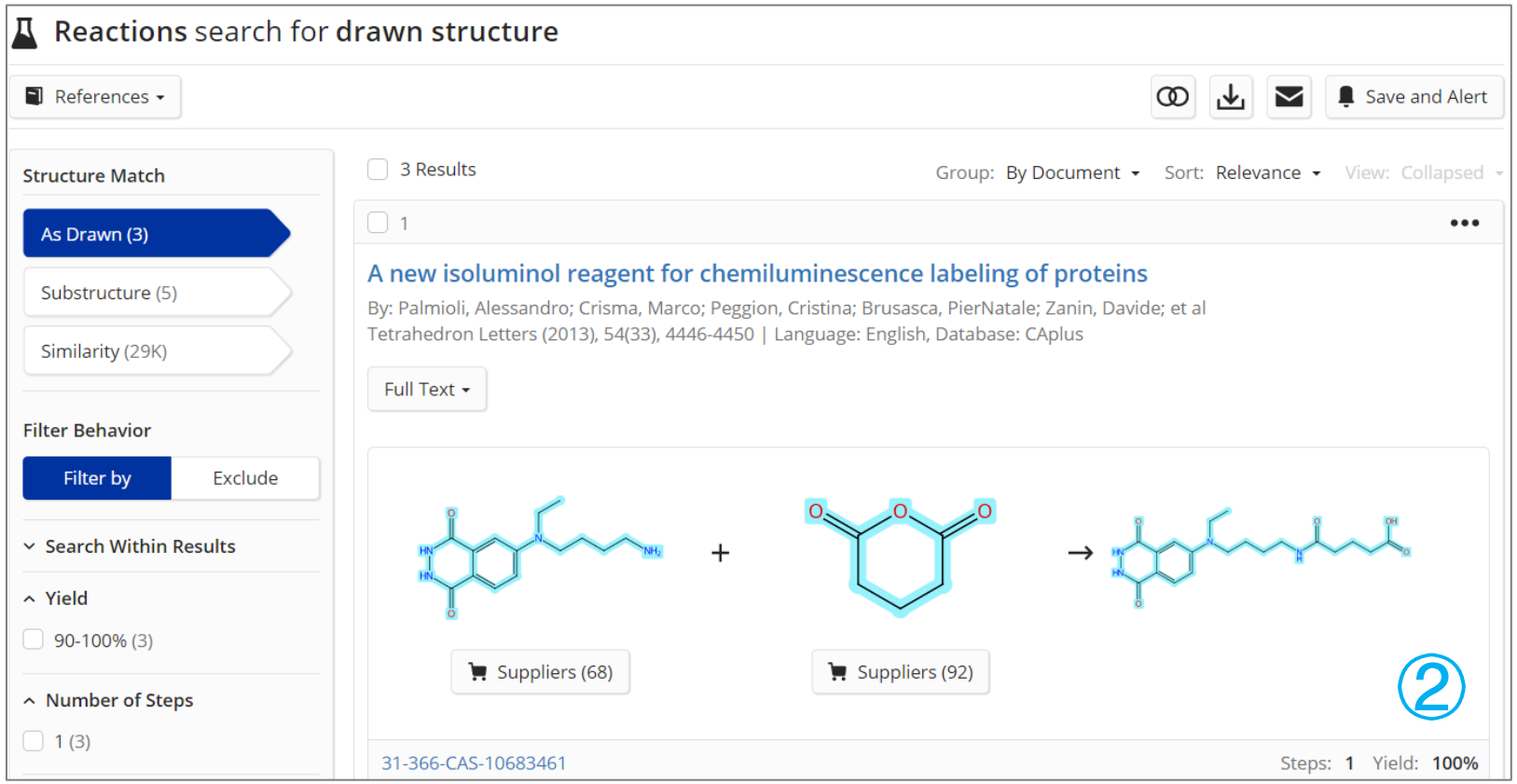
1. 物质检索方法：物质、文献标识符检索；分子式、物性参数、谱图数据检索；及结构式检索，充分利用结构绘制工具，合理扩大或限定结构检索范围
2. 正确理解 As Drawn、Substructure、Similarity检索结果集的意义和范围
3. 充分利用物质筛选项准确定位目标物质：Reaction Role、Reference Role等
4. 利用 CAS Markush 检索尽可能全面的获得结构的公开信息

3. 如何进行反应调研?

- 如何从我感兴趣的底物、产物或催化剂出发，找到关联的反应?
- 如何查找相似反应?
- 如何关注特定转化类型的反应?
- 如何在大量反应结果中，快速找到最想要的反应?
- 如何查找涉及机理研究的反应？或人名反应?
- 如何设计新化合物的逆合成路线?

反应检索

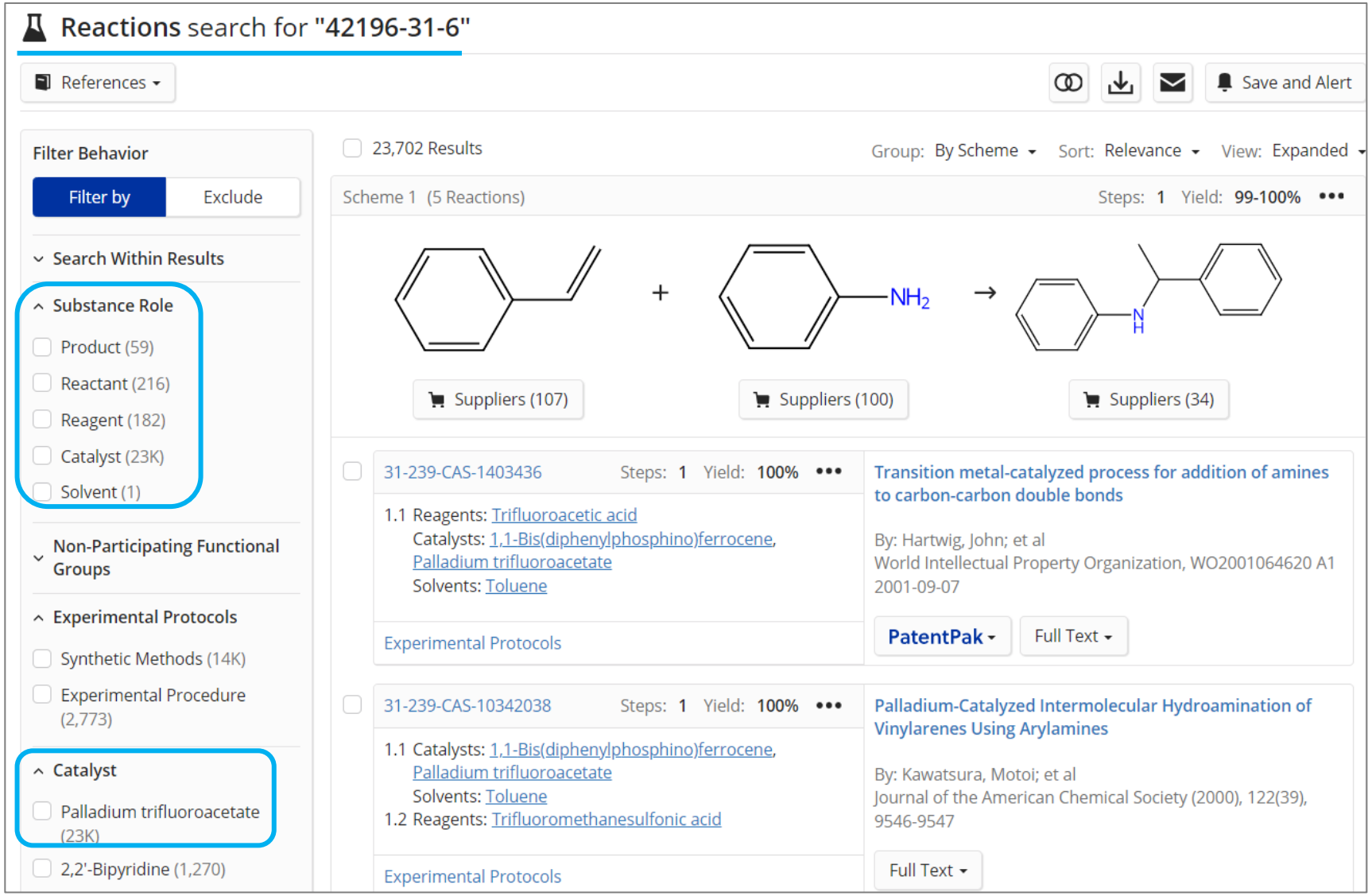




直接反应检索

CAS
A division of the American Chemical Society

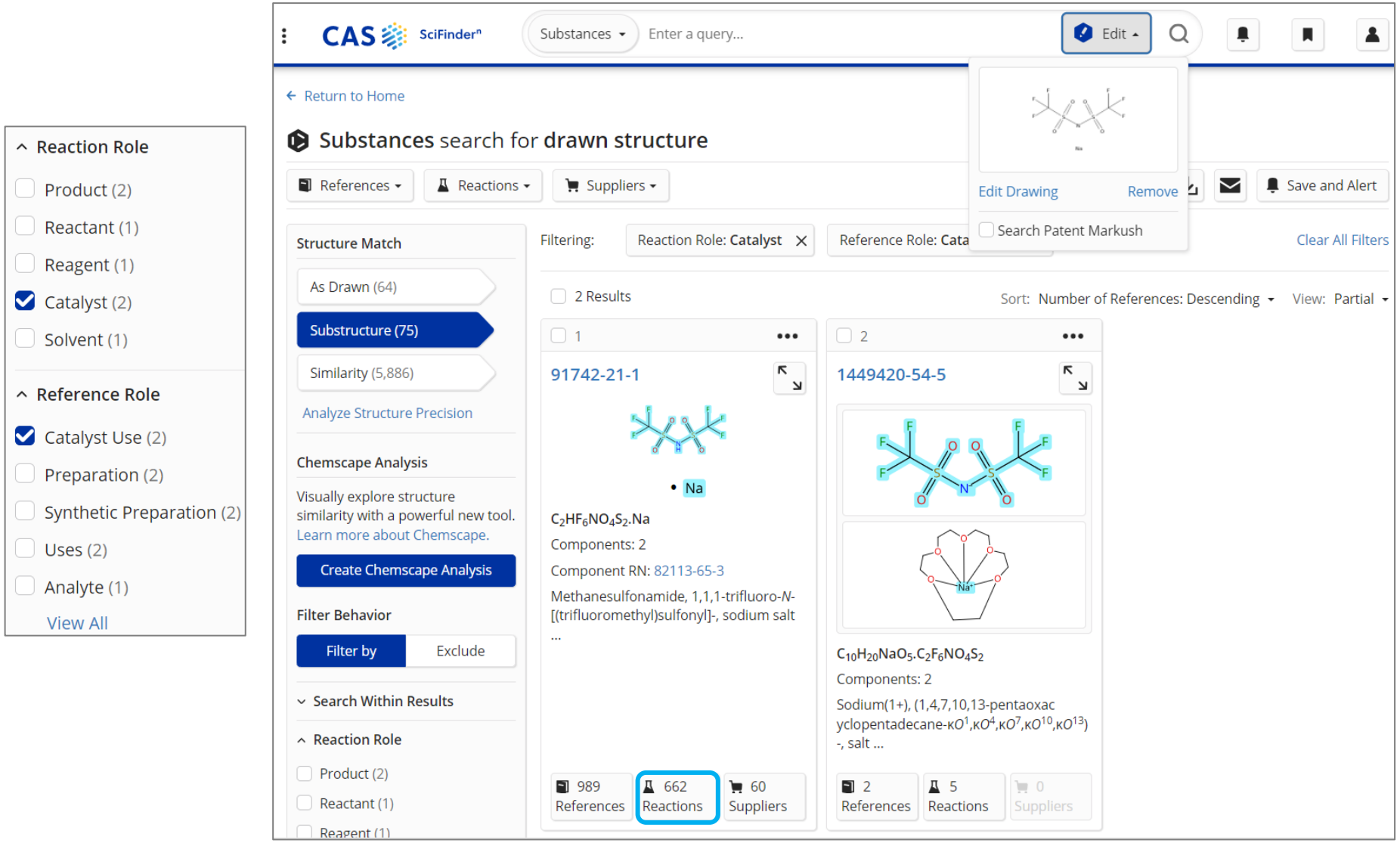
检索具体物质能够发生的反应



- Substance Role限定反应角色
- Catalyst 筛选催化剂

CAS
A division of the American Chemical Society

如何检索某种催化剂能够催化的反应?



CAS
A division of the American Chemical Society

查看某种催化剂能够催化的反应

Reactions for 91742-21-1

References ▾ | Save and Alert

Filter Behavior

Filter by | Exclude

Search Within Results

Substance Role

- Product (354)
- Reactant (69)
- Reagent (153)
- Catalyst (84)
- Solvent (2)

Non-Participating Functional Groups

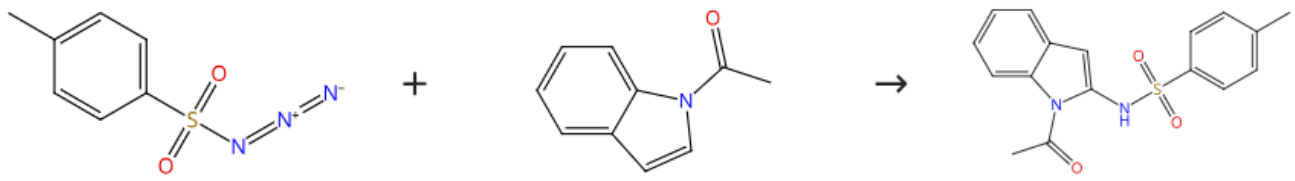
- Alkene (71)
- Halide (63)
- Alkyl halide (52)
- Acyclic alkene (46)
- Cyclic alkene (32)

Filtering: Substance Role: Catalyst ×

Clear All Filters

84 Results | Group: By Scheme ▾ | Sort: Relevance ▾ | View: Expanded ▾

Scheme 1 (1 Reaction) Steps: 1 Yield: 93% •••



Suppliers (44) | Suppliers (57)

31-080-CAS-19444697 Steps: 1 Yield: 93% •••

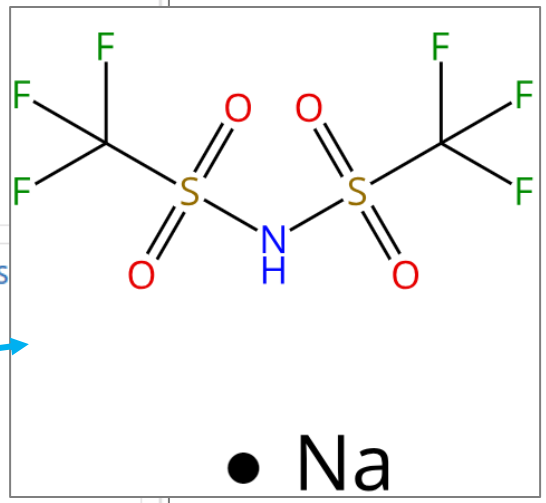
1.1 Catalysts:
Iridium, [(1,2,3,4,5-η)-1,2,3,4,5-pentamethyl-2,4-cyclopentadien-1-yl]bis(triflu...
Sodium bis(trifluoromethanesulfonyl)imide
Solvents: 1,2-Dichloroethane; 12 h, 40 °C

Delineating Physical Organic Parameters in Site-S H Functionalization of Indoles

By: Kim, Youyoung; et al
ACS Central Science (2018), 4(6), 768-775

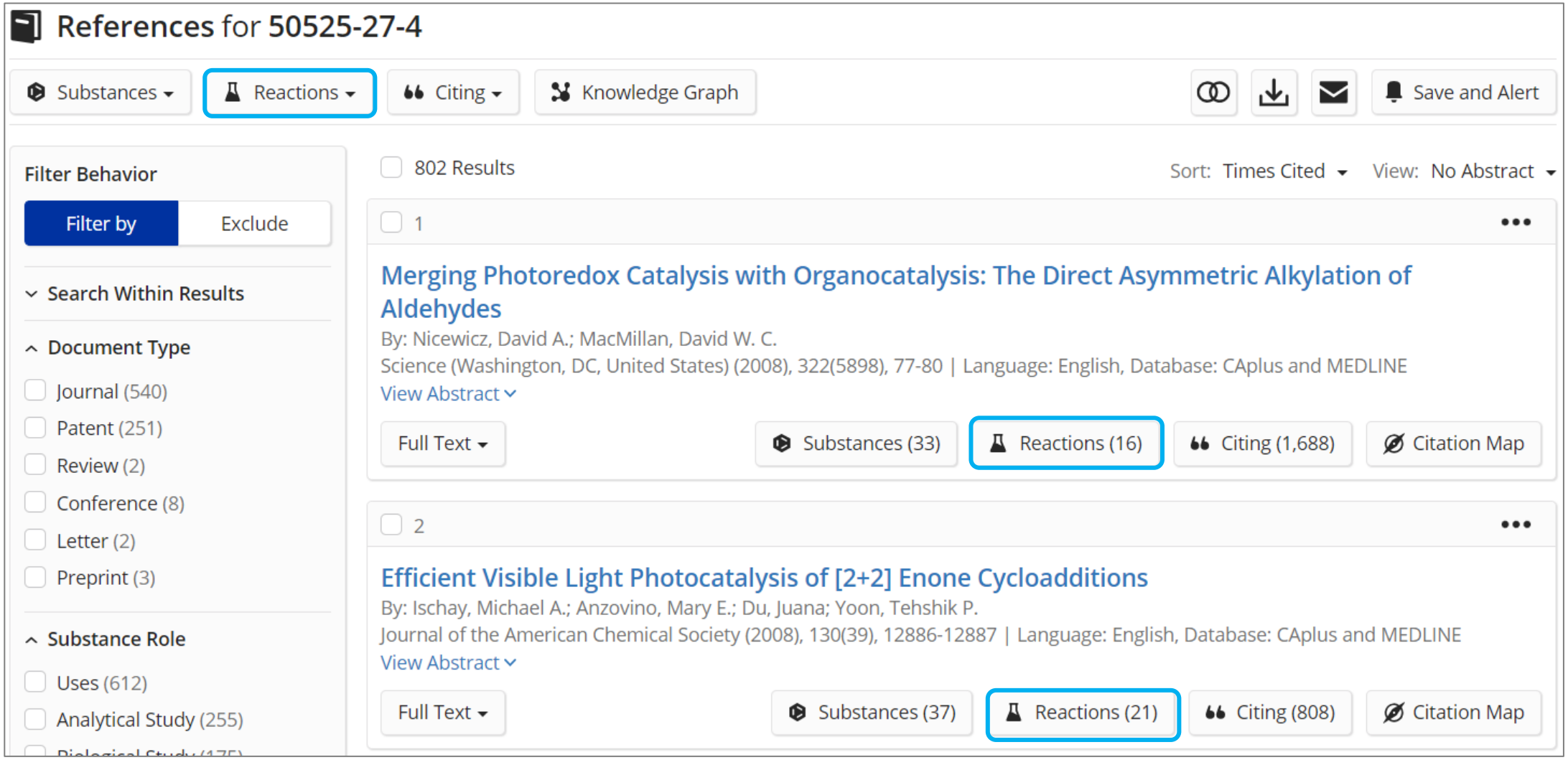
Full Text ▾

Collapse Scheme ^



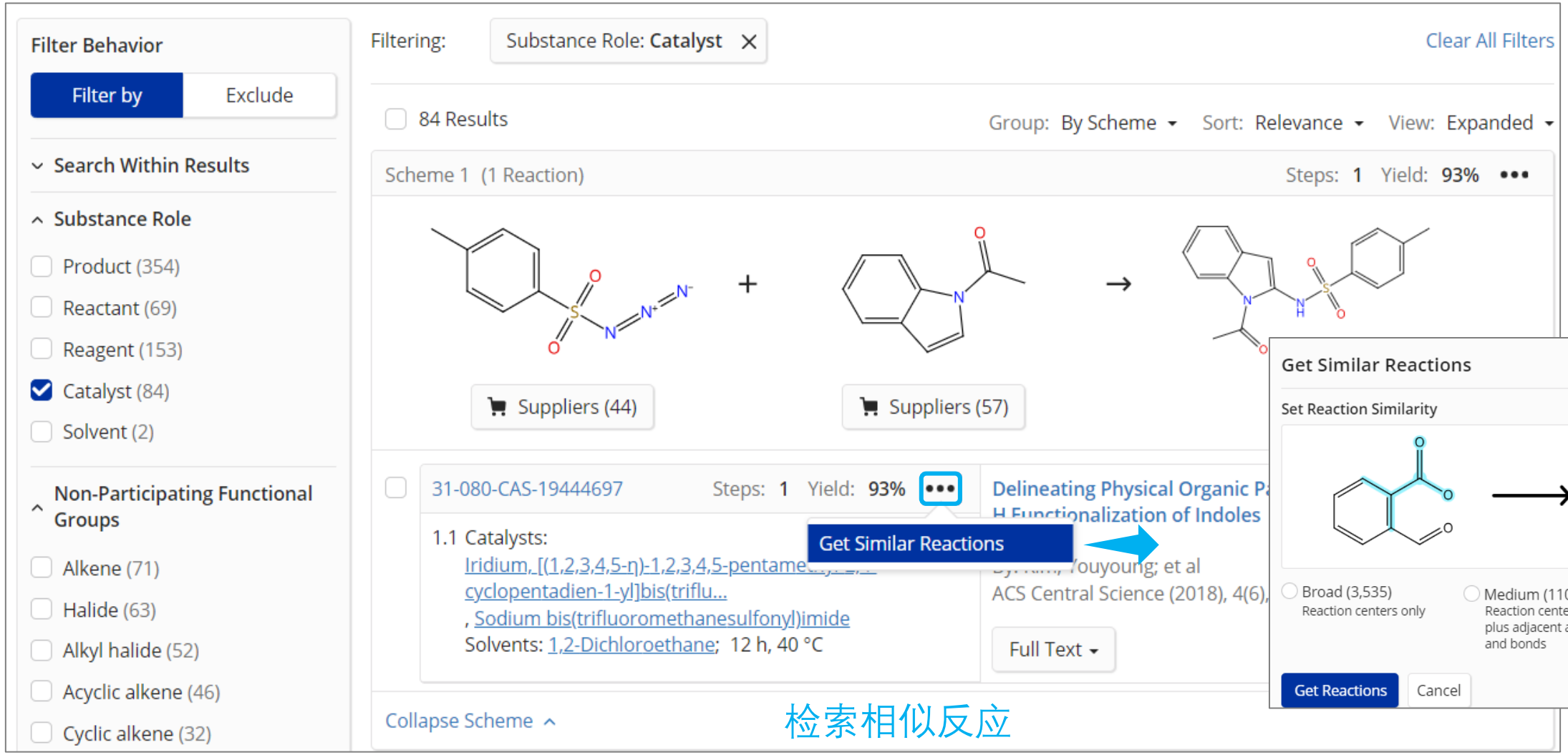
CAS
A division of the American Chemical Society

查看文献中的重要反应



CAS
A division of the American Chemical Society

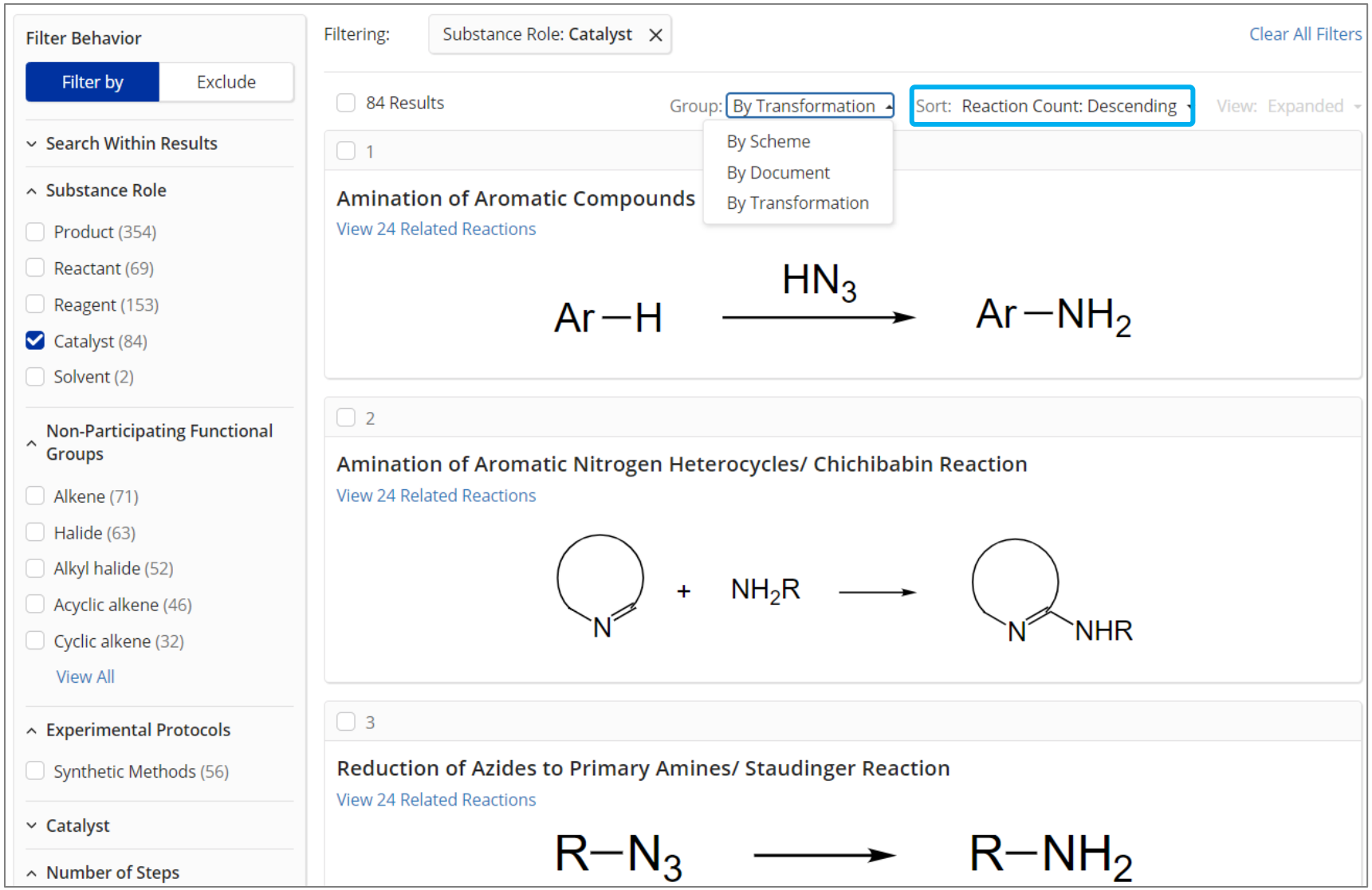
查看相似反应

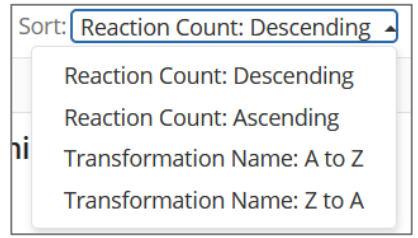


检索相似反应

CAS
A division of the American Chemical Society

催化剂可以催化的反应类型

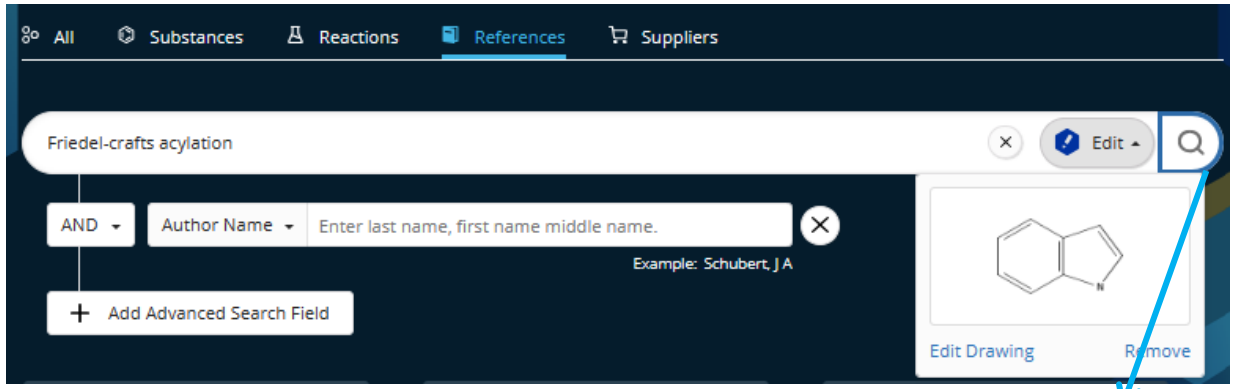


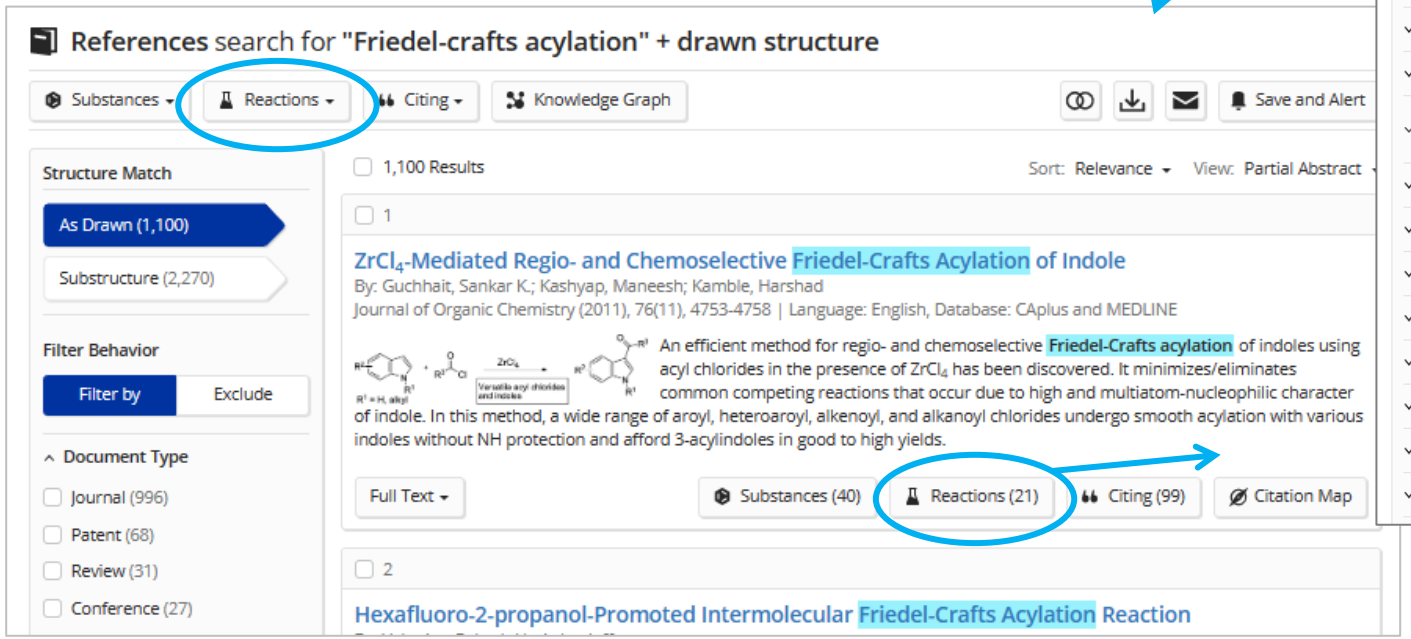


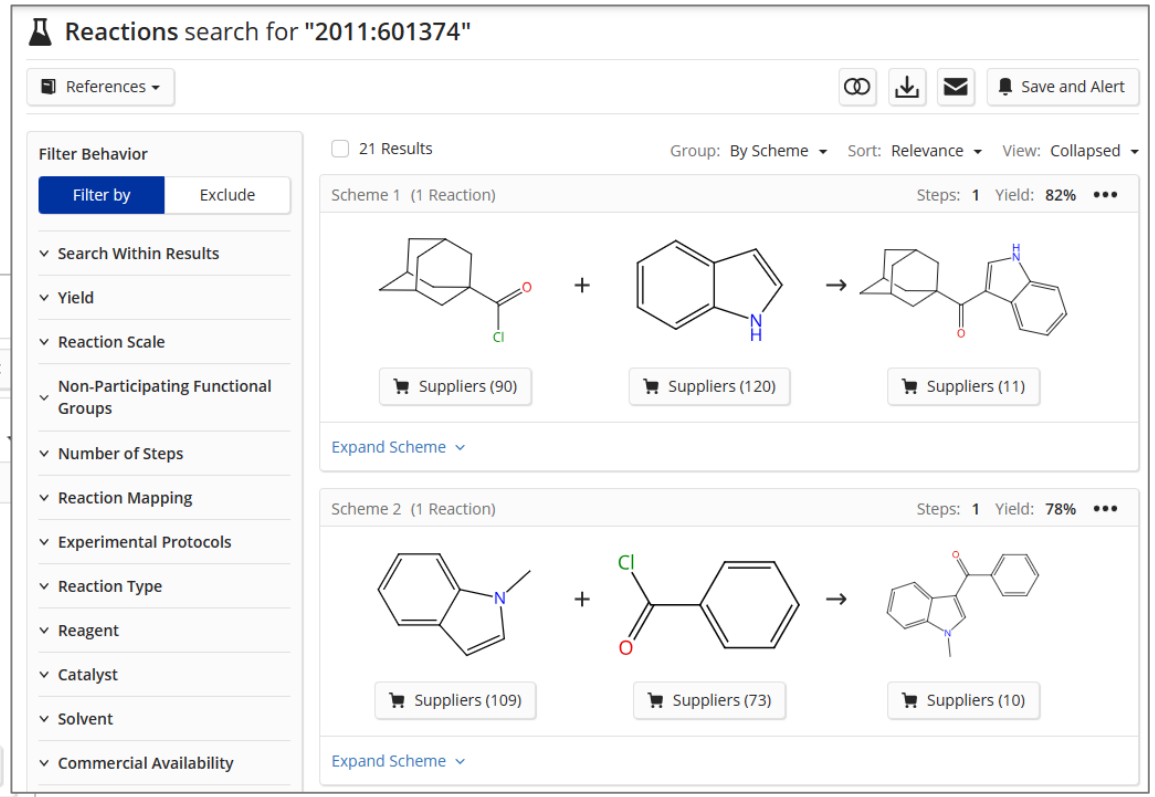
CAS
A division of the American Chemical Society

关注反应的机理研究或人名反应?

结构与关键词联用检索

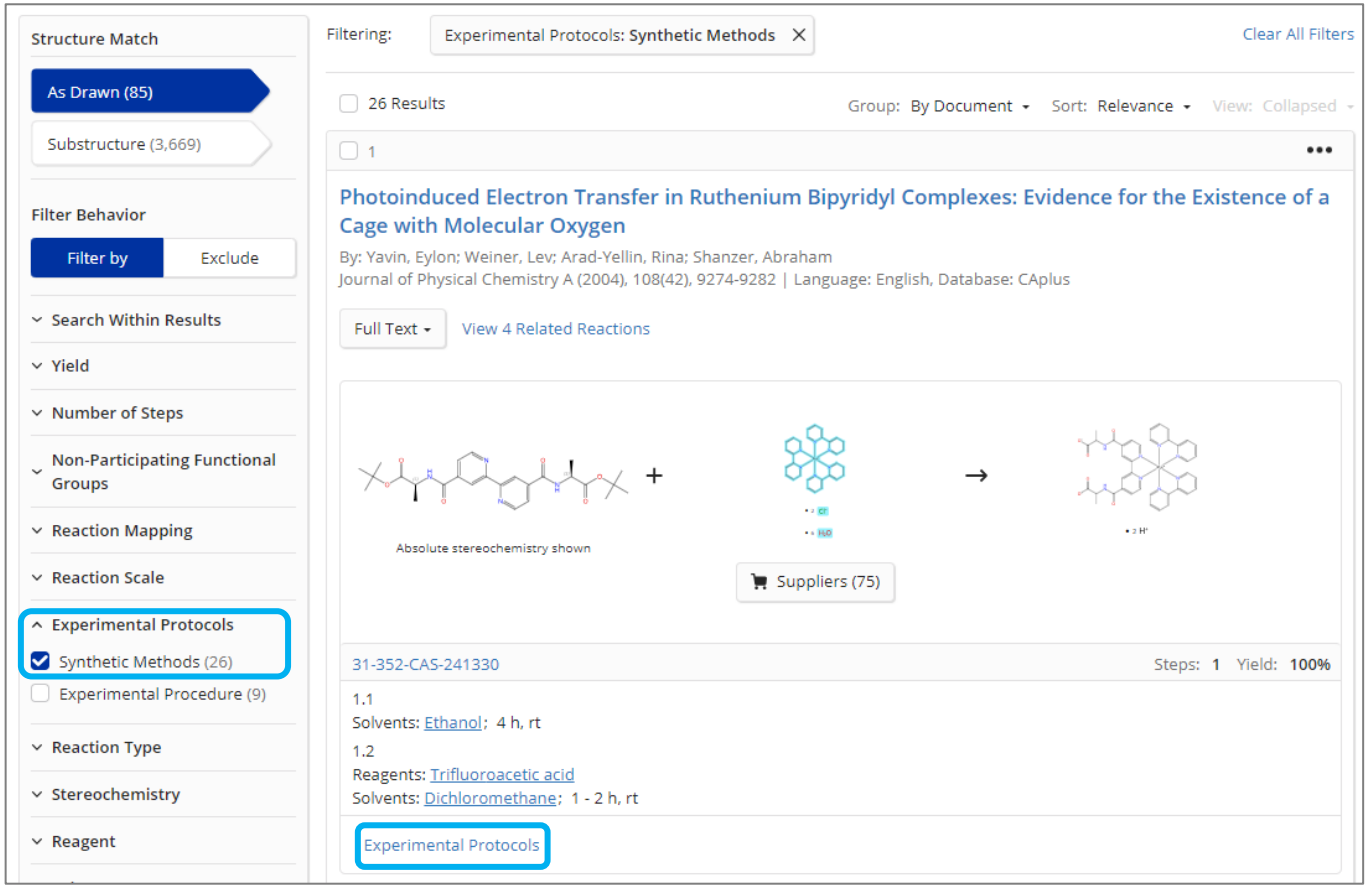


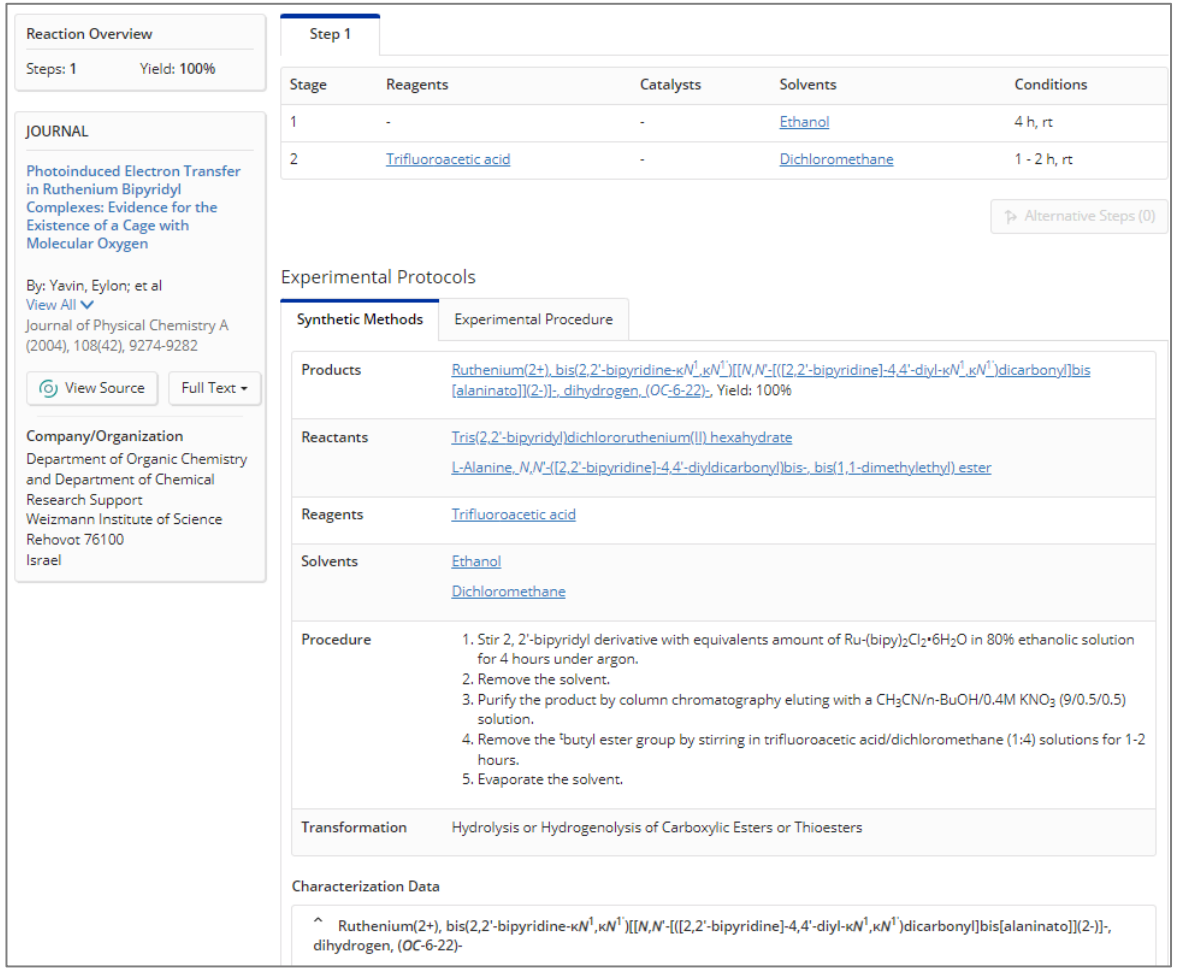




CAS
A division of the American Chemical Society

便捷查看详细反应操作

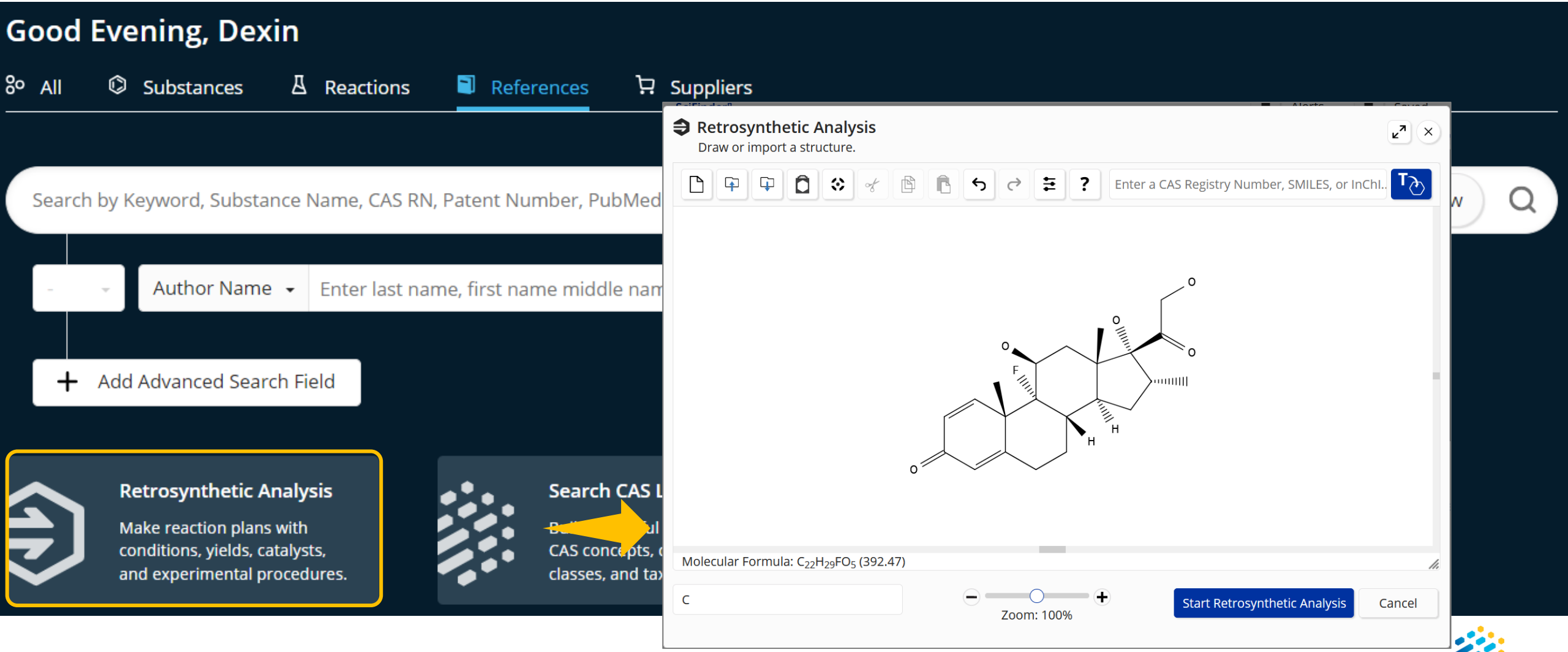




无需浏览原文即可获取详细的实验信息

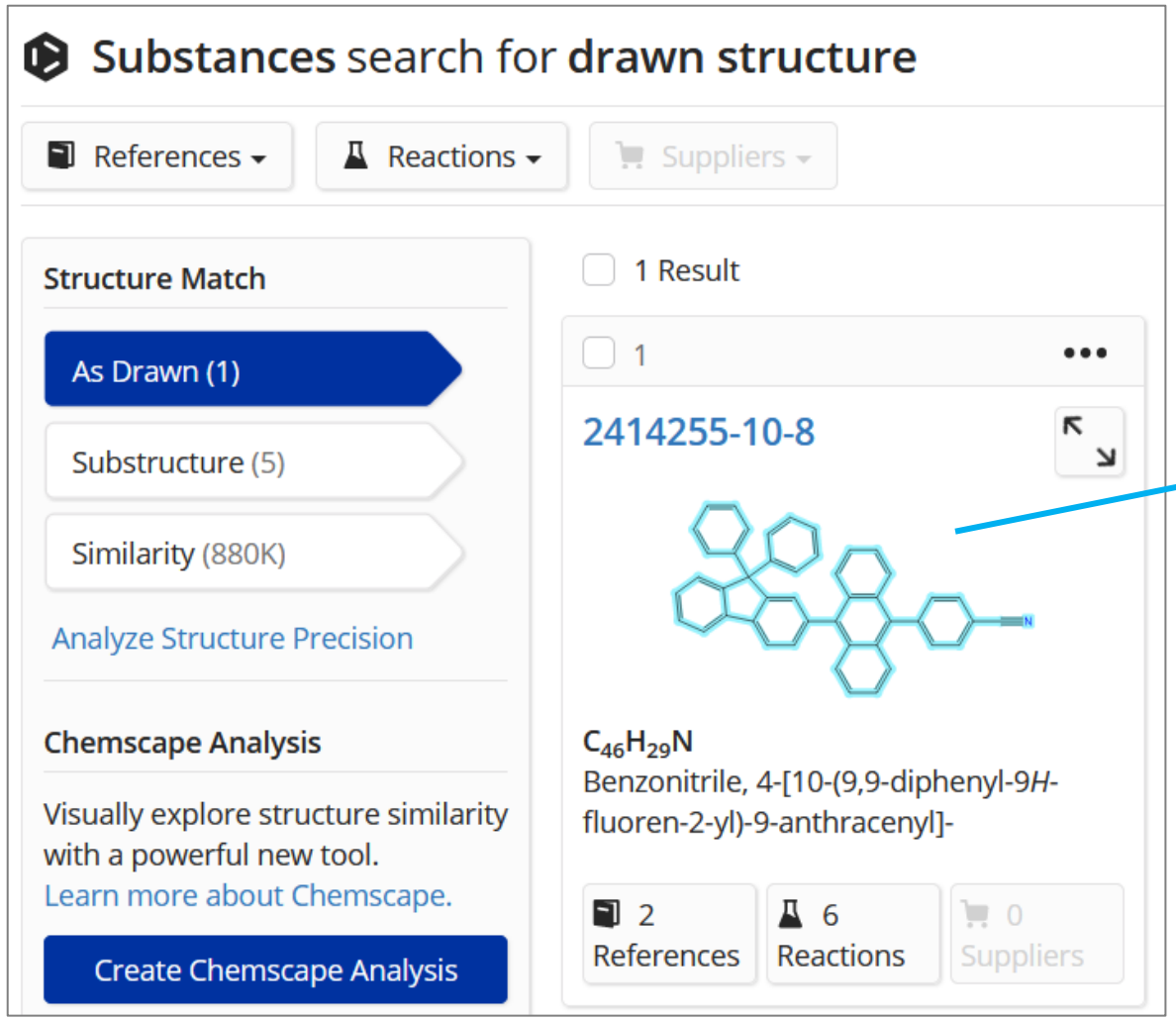
CAS
A division of the American Chemical Society

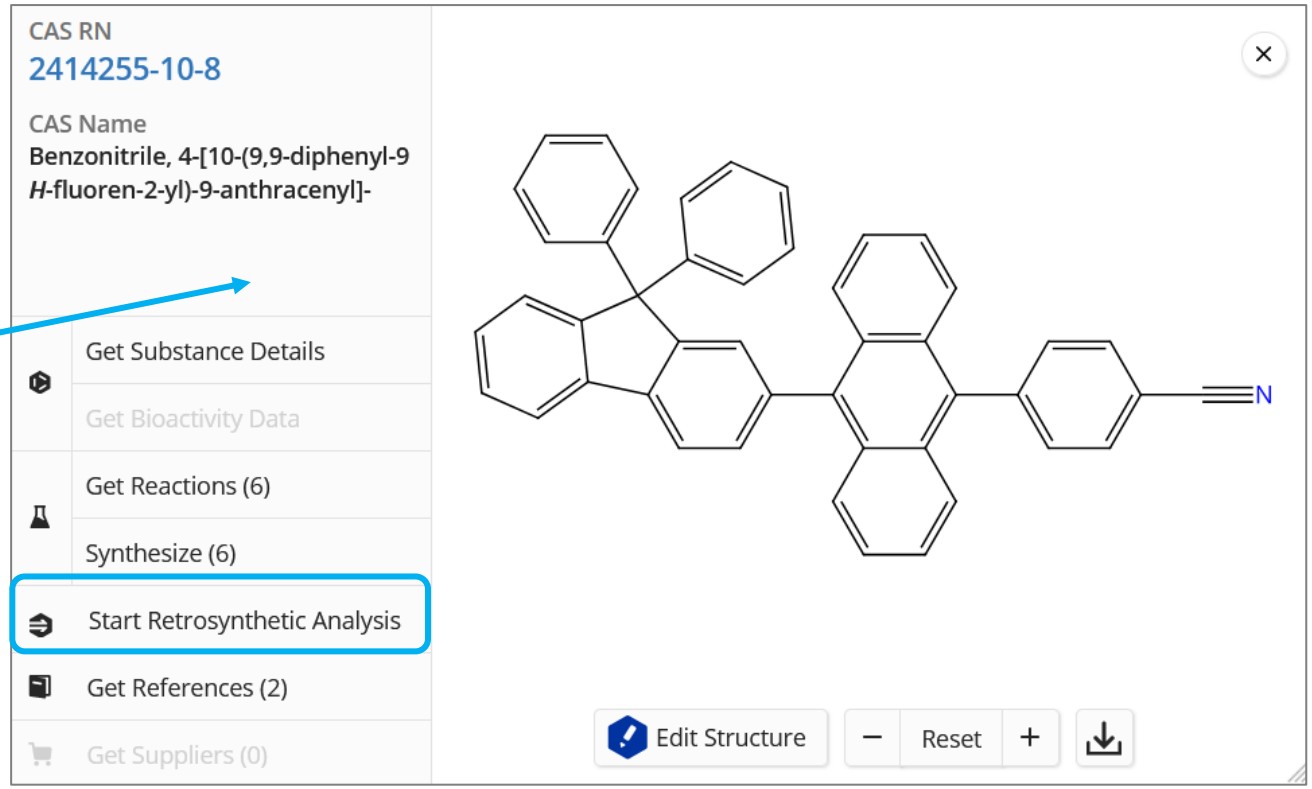
逆合成反应路线设计



CAS
A division of the American Chemical Society

逆合成反应路线设计





- 先进行物质检索
- 点击目标化合物，弹出物质菜单
- 点击 Start Retrosynthetic Analysis

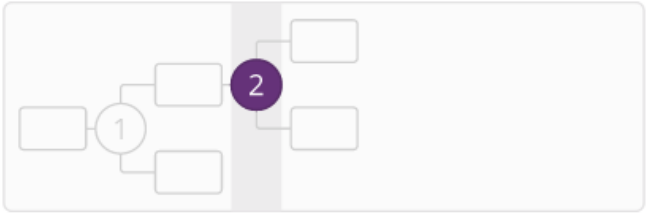
预设路线参数

Retrosynthesis Plan Options for 2414255-10-8

Powered by ChemPlanner®

Select Synthetic Depth 合成深度 Learn more.

- 1
- 2
- 3
- 4



Set Rules Supporting Predicted Reactions Learn more.

反应规则是否常见

- Common
- Uncommon *(includes Common Rules)*
- Rare *(includes Common and Uncommon Rules)*

Set Starting Materials Cost Limit Learn more.

1000 起始原料费用 USD/mol

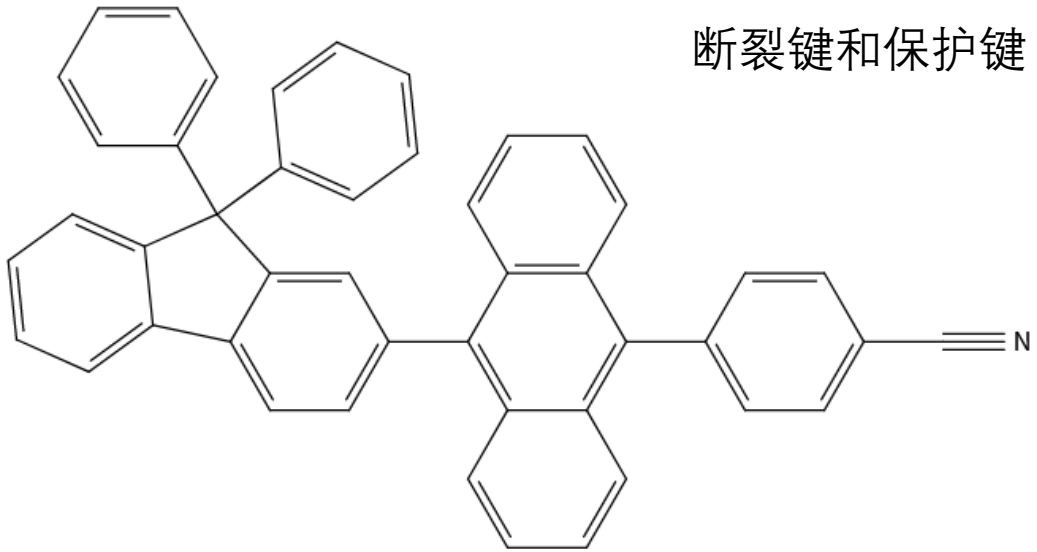
Email me when my plan is complete

Create Retrosynthesis Plan

Break and Protect Bonds Learn more.

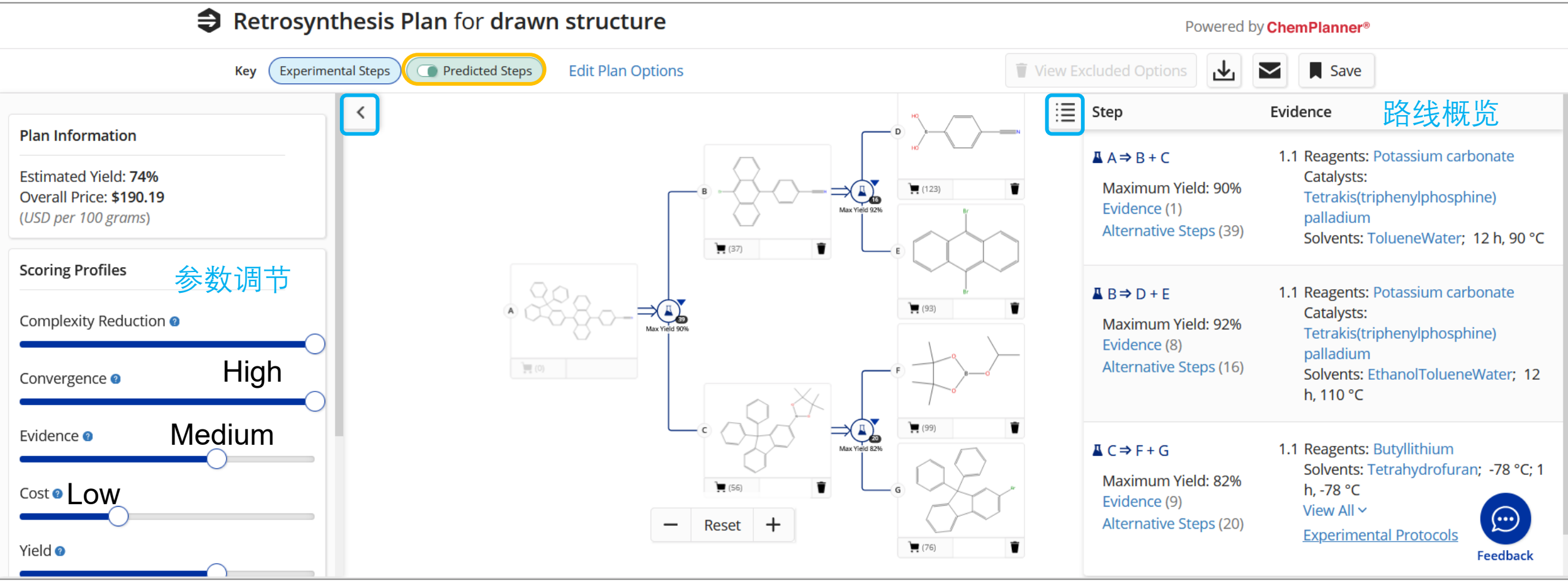
Break Bond | Protect Bond | Clear All Bond Selections

断裂键和保护键

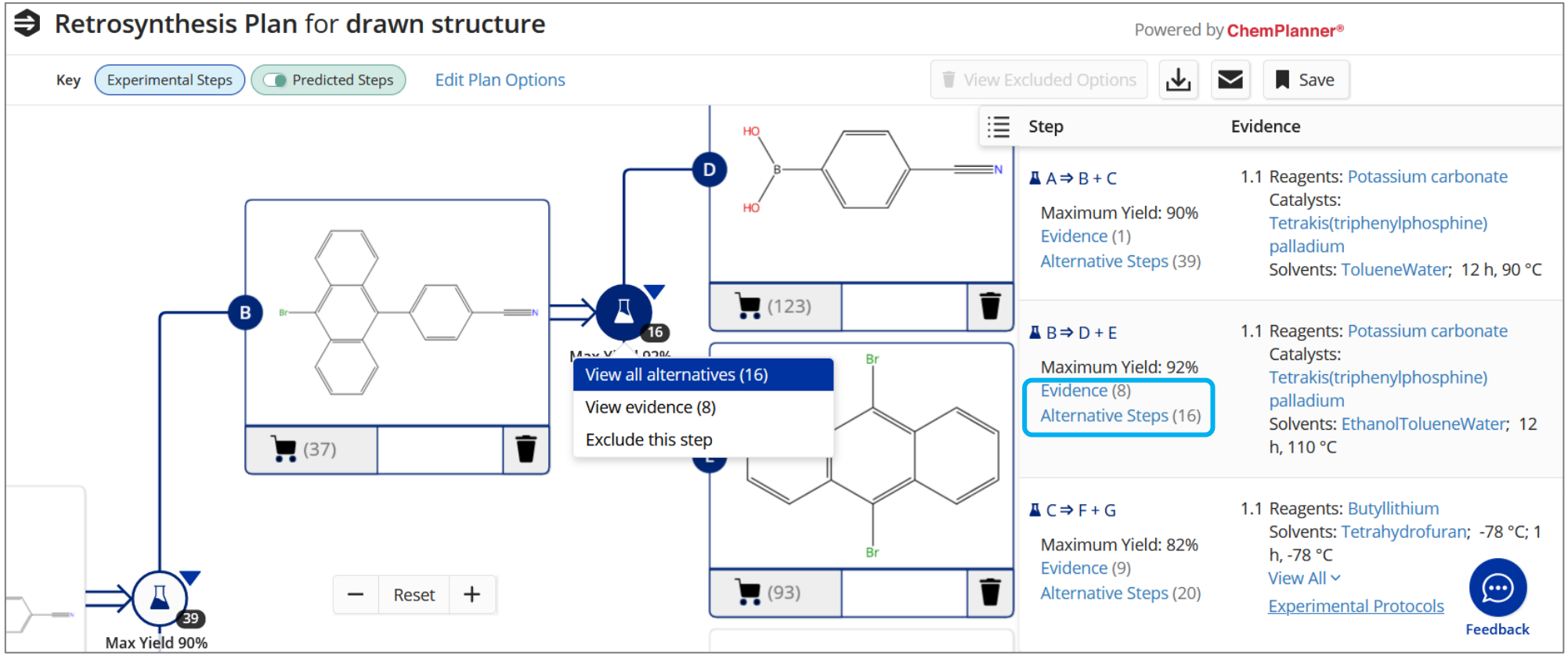


CAS
A division of the American Chemical Society

路线概览和参数调节



路线详情



View All Alternatives

查看所有替代路线

View Evidence

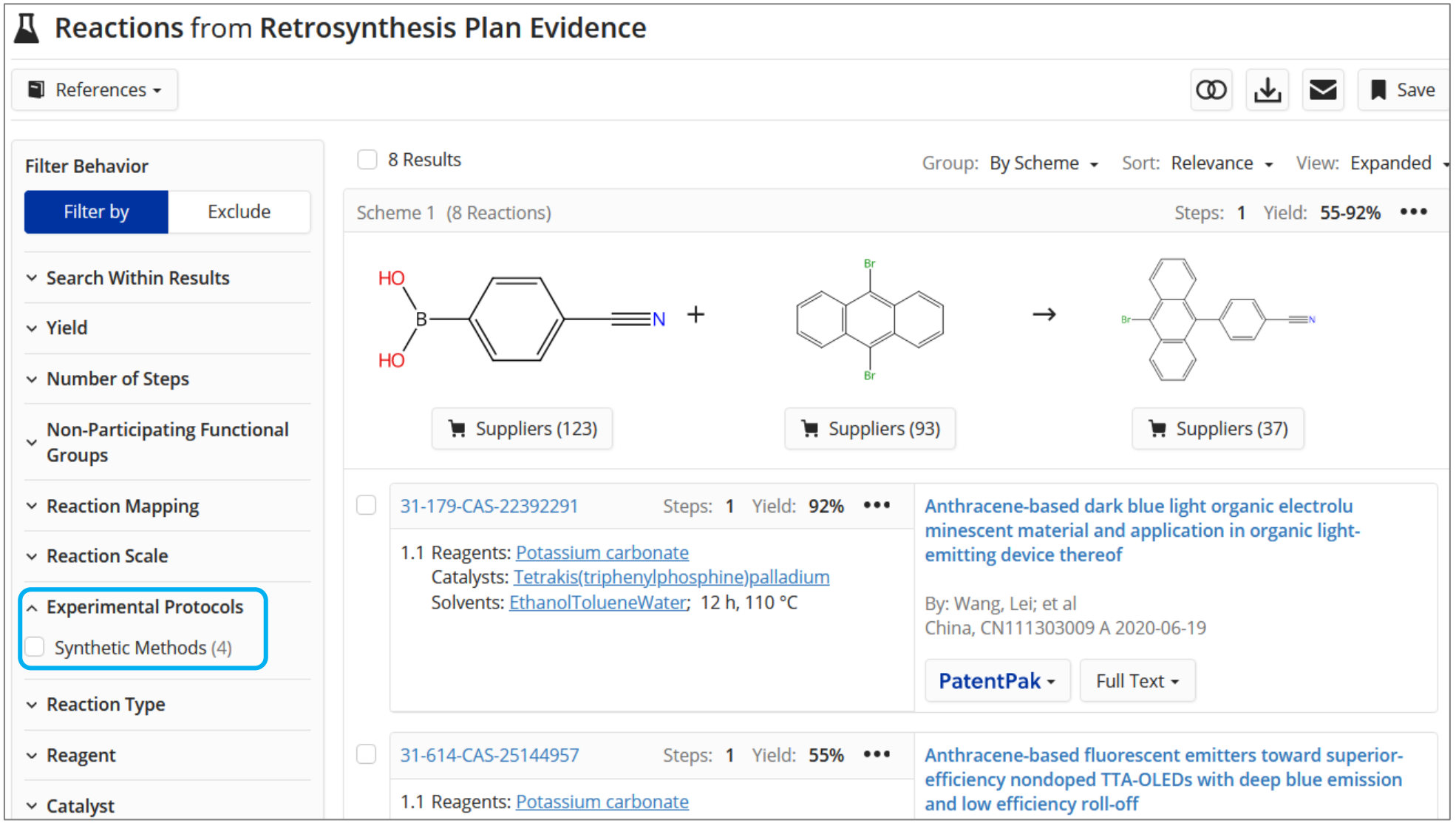
查看某步路线的支持报道

Exclude This Step

删除不感兴趣的步骤

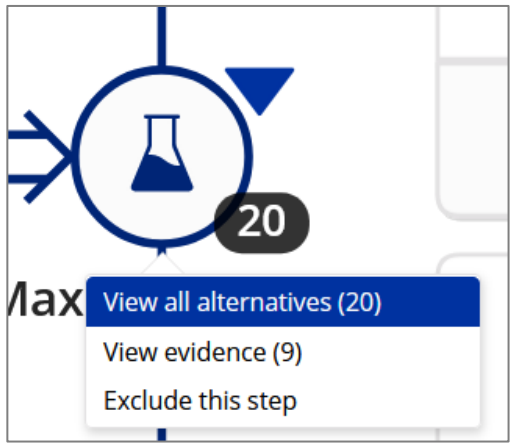
CAS
A division of the American Chemical Society

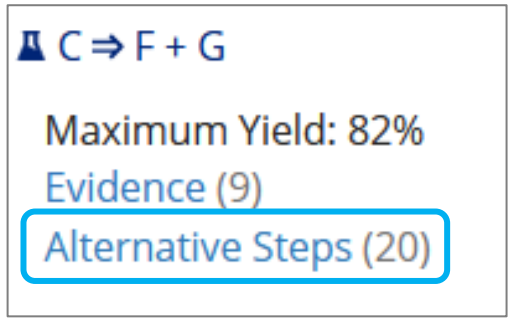
查看逆合成反应路线中的实验报道

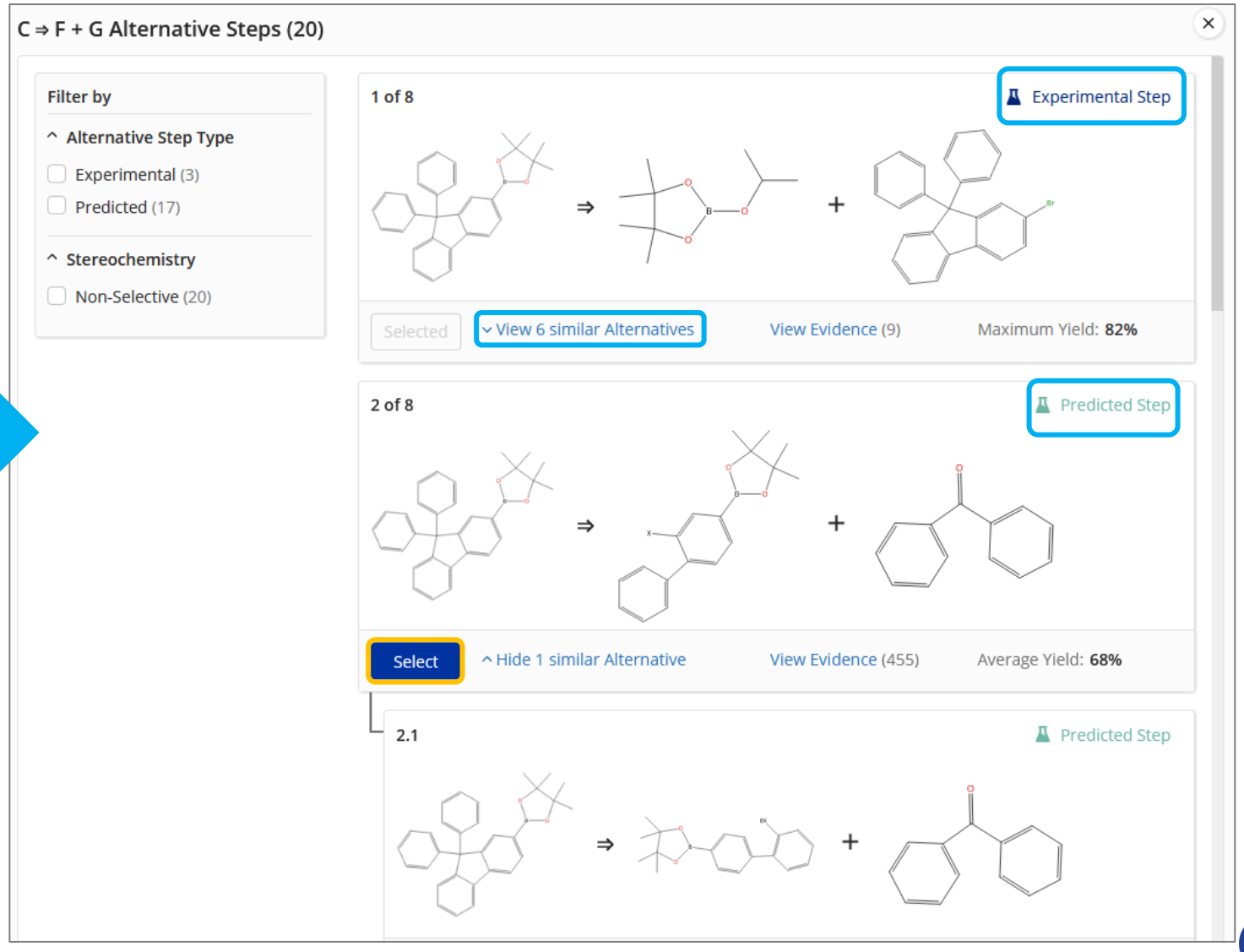


CAS
A division of the American Chemical Society

选择替代路线

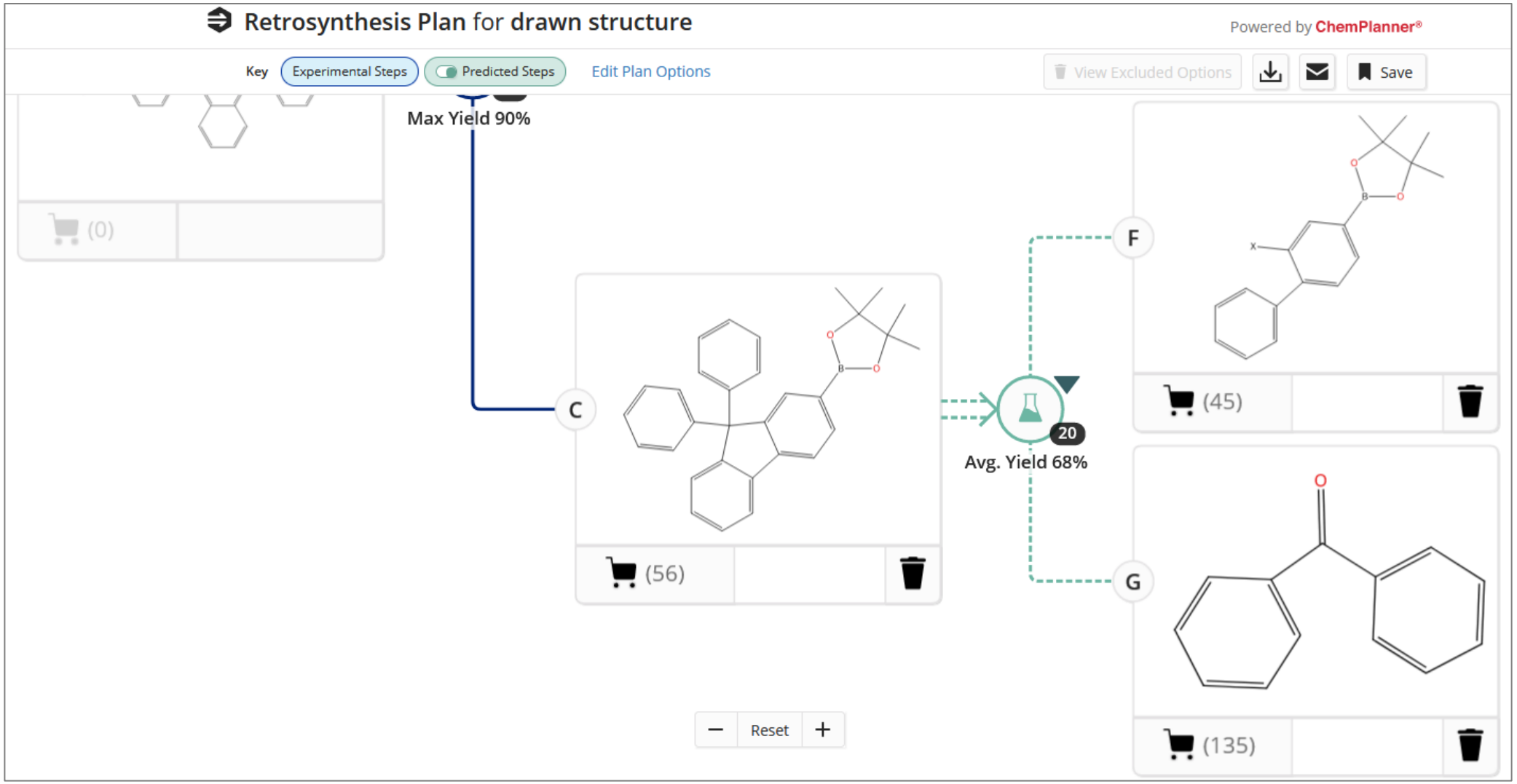






CAS
A division of the American Chemical Society

新的逆合成反应路线



CAS
A division of the American Chemical Society

反应检索小结

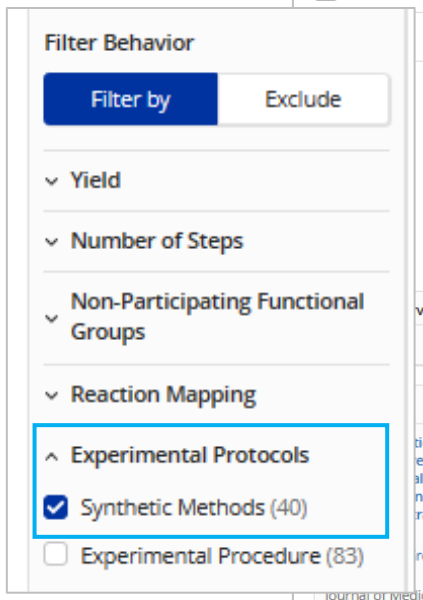
1. 反应检索方法：通过物质标识符、文献标识符、结构式进行反应检索
2. 反应结果集筛选精炼：
   - Non-Participating Functional Groups 确定不参与反应的官能团
   - Search Within Results 在结果集中进行二次筛选
3. 反应详情：Experimental Protocols 获取 CAS 科学家增值标引的反应详情
4. Retrosynthesis 支持化合物的反应路线预测（未知和已知化合物）
5. 反应路线参数的预先设定与调节
6. 查看反应路线详情和文献支持，自定义选择替代路线或删除不感兴趣的路线

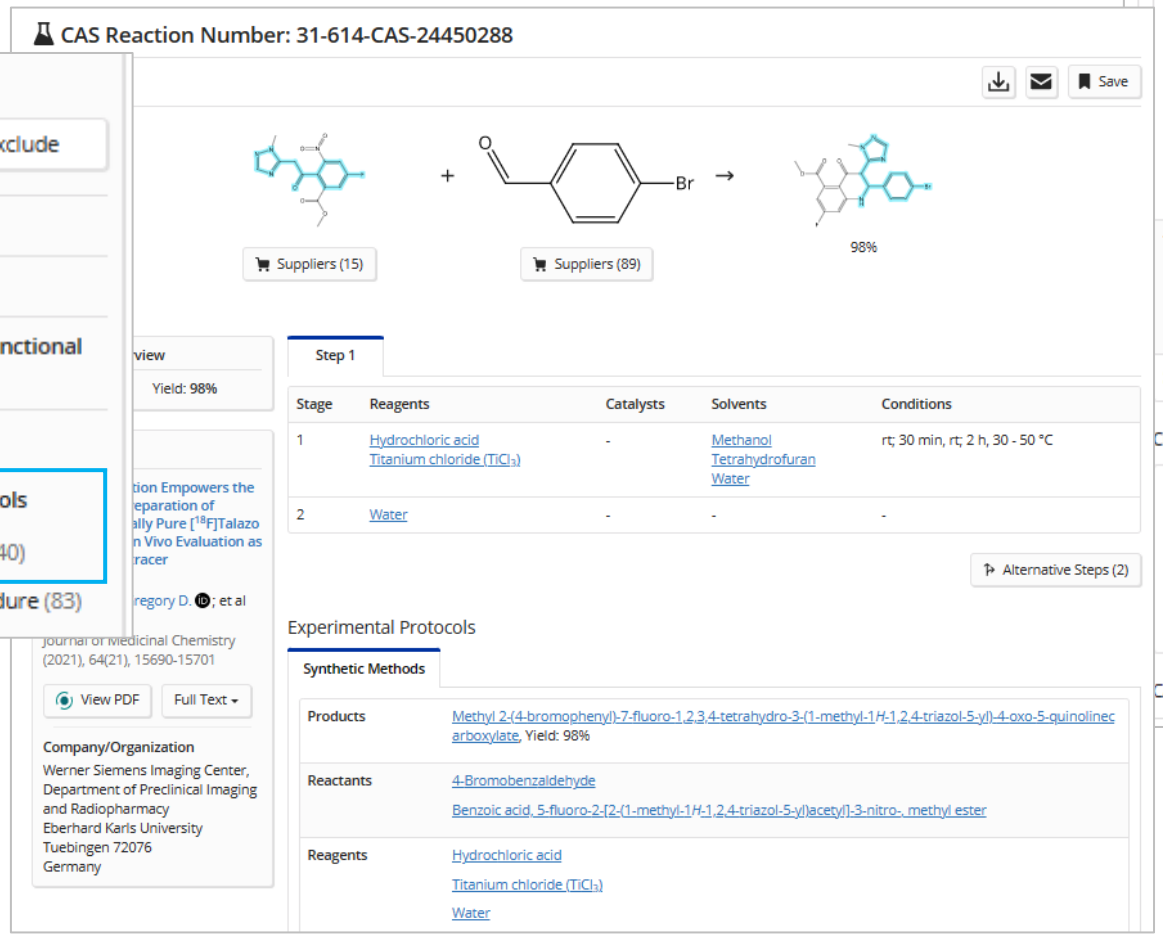
具体的实验方案怎么查、怎么选?

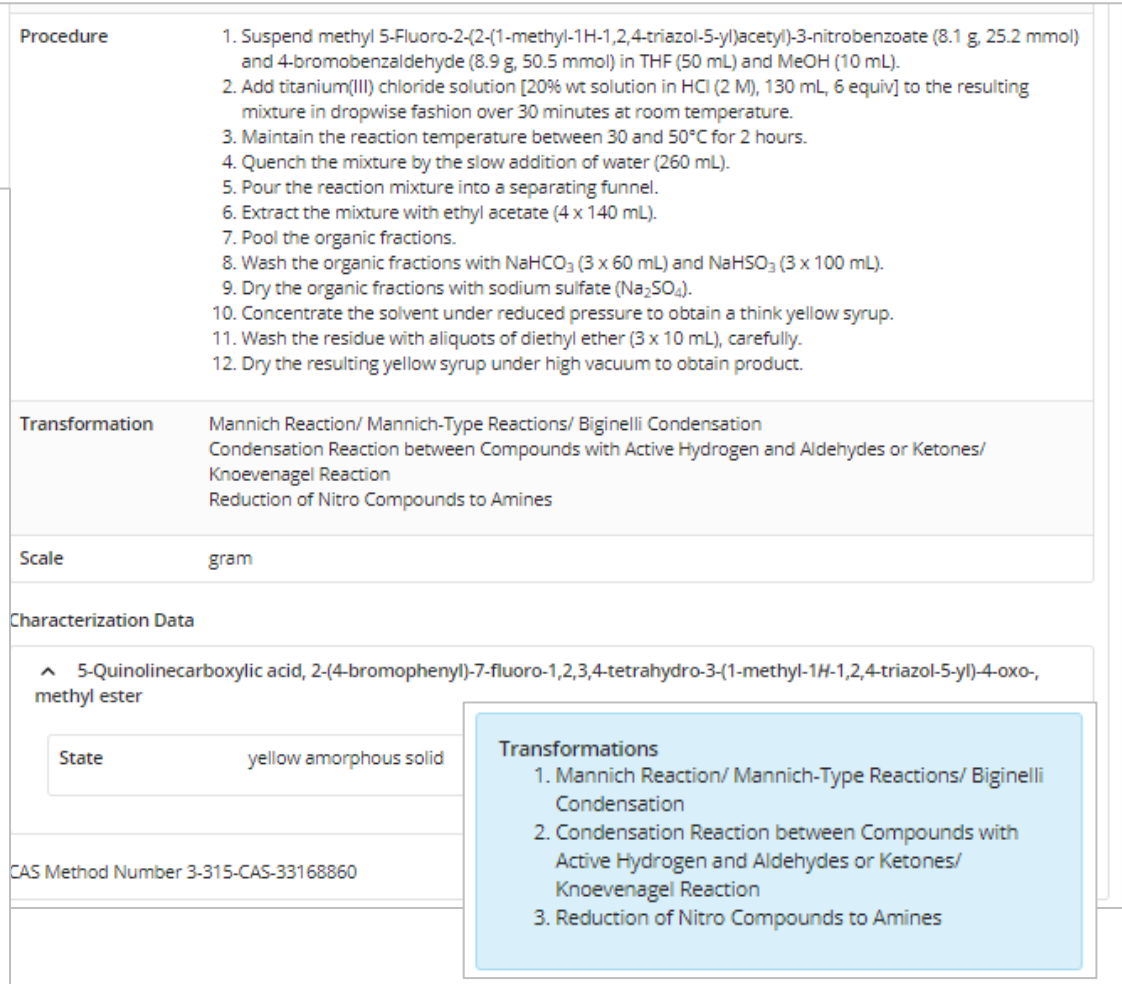
- 如何获取获得具体的实验操作和表征数据等信息?
- 能一键获取从原文中提取的分析操作和数据详情吗?
- 如何对多种分析方法进行充分评估?
- 我研究的物质有什么具体的配方应用?
- 专利配方的组成和制备工艺是什么? 如何进行实验评估?

直观的合成实验详情 Synthetic Methods™

- CAS 科学家标引的合成详情
- 节省阅读全文的时间，高效获得所需的合成实验信息







CAS
A division of the American Chemical Society

CAS 分析实验方法详情

- CAS 科学家标引的分析实验详情
- 无需下载全文，高效获得所需的分析实验信息

Analysis of Vanadium in Stainless steel by Electrochemical extraction

CAS MN: 1-119-CAS-286328

Method Category: Element Detection
Technique: Electrothermal atomic absorption spectroscopy; Decomposition; Electrochemical extraction

Materials	Role	Image	CAS RN
Vanadium	analyte	View Structure	7440-62-2
Stainless steel	matrix		12597-68-1
Al_2O_3 cutting wheel	material		
SiC grinding paper	material		
0.05 µm pore size polycarbonate filter	material		
Standard calomel reference electrode	material		
Platinum ring counter electrode	material		
Hollow cathode lamps	material		
Electrodeless discharge lamp	material		
THGA graphite tubes	material		
Nitric acid	reagent	View Structure	7697-37-2
Hydrofluoric acid	reagent	View Structure	7664-39-3
Acetylacetone	reagent	View Structure	123-54-6
Chromium	reagent	View Structure	7440-47-3
Methanol	reagent	View Structure	67-56-1
Tetramethylammonium chloride	reagent	View Structure	75-57-0

实验原料

Source

Determination of alloying and impurity elements from matrix and inclusions from a process sample of a double stabilized stainless steel

Sipola, Teija; Alatarvas, Tuomas; Fabritius, Timo; Peramaki, Paavo

ISIJ International (2016), 56 (8), 1445 - 1451. Iron and Steel Institute of Japan

CODEN: IINTEY | ISSN: 09151559 | DOI: 10.2355/isijinternational.isijint-2016-071

Full Text | View in CAS SciFinder

Abstract

文献来源

Equipment Used

Cutting machine, Secotom-10, Struers

Ultrasonic cleaning unit, P 30 H, Elmasonic

Grinding machine, Labopol-6, Struers

Potentiostat, SP-150, BioLogic

Vacuum pump, BUSCHI

Graphite furnace atomic absorption spectrometer, AAnalyst 600, PerkinElmer

Autosampler, AS-800, PerkinElmer

分析仪器

Conditions

Instrument

internal gas flow rate: 250 mL/min (non-atomization), 0 mL/min (atomization); current: 15 mA; wavelength: 318.4 nm; slit width: 0.7 nm; injection volume: 10 µL

分析条件

Instructions

Preparation of stainless steel process samples

1. Cut stainless steel pieces from a corner piece of different slabs using a Struers Secotom-10 cutting machine with an Al_2O_3 cutting wheel.
2. Grind and polish the steel samples using a Struers Labopol-6 grinding machine with SiC grinding paper to a size of approximately 15 x 10 x 5 mm.
3. Clean the sample from grinding paper traces using an Elmasonic P 30 H ultrasonic cleaning unit (frequency 37 kHz, room temperature).
4. Clean all glassware in an acid bath, rinse with ultrapure water and methanol sequentially.

Electrolytic extraction of stainless steel using 10% acetylacetone

1. Perform electrolytic extraction on a BioLogic SP-150 potentiostat.
2. Use 10% acetylacetone (10 v/v% acetylacetone, 1 w/v% tetramethylammonium chloride and methanol) as the electrolyte.
3. Use the sample as the working electrode and set the potential to 0.150 V vs. the standard calomel electrode (SCE).
4. Suspend the sample in the electrolyte in a platinum basket and use a platinum ring as a counter electrode.
5. Filter the electrolyte through a 0.05 µm pore size polycarbonate filter with the help of a BUSCHI vacuum pump.
6. Expose the sample to ultrasound in methanol and filter the methanol with the electrolyte.

Decomposition of inclusions

1. Dry the polycarbonate filter containing the extracted inclusions overnight in a desiccator.
2. Place the dry filter in a PTFE container with 5 mL concentrated nitric acid and 2 mL HF and close gently.
3. Perform decomposition for 30 minutes at 120 °C (393.15 K).
4. Cool the containers to room temperature, remove the filter and dilute to the volume with water.
5. Prepare a blank sample similarly by filtering a fresh electrolyte through a polycarbonate filter.

Quantification of inclusions using graphite furnace atomic absorption spectrometry (GFAAS) with Cr as a matrix modifier

1. Perform GFAAS on a PerkinElmer AAnalyst 600 graphite furnace atomic absorption spectrometer equipped with an AS-800 autosampler and PerkinElmer THGA graphite tubes (standard platform B0504033).
2. Use a hollow cathode lamp (HCL) as the radiation source.
3. Use the following furnace program: ramp for 10 s to 110 °C, hold for 30 s; ramp for 10 s to 140 °C, hold for 30 s; ramp for 10 s to 1300 °C, hold for 20 s; perform atomization at 2400 °C for 6 s; ramp for 1 s to 2500 °C and hold for 5 s.
4. Set the instrument parameters as follows: internal gas flow rate: 250 mL/min (non-atomization), 0 mL/min (atomization); current: 15 mA; wavelength: 318.4 nm; slit width: 0.7 nm.
5. Add 0.05 µg Cr as a matrix modifier.
6. Inject 10 µL of the sample and perform measurements.

操作步骤

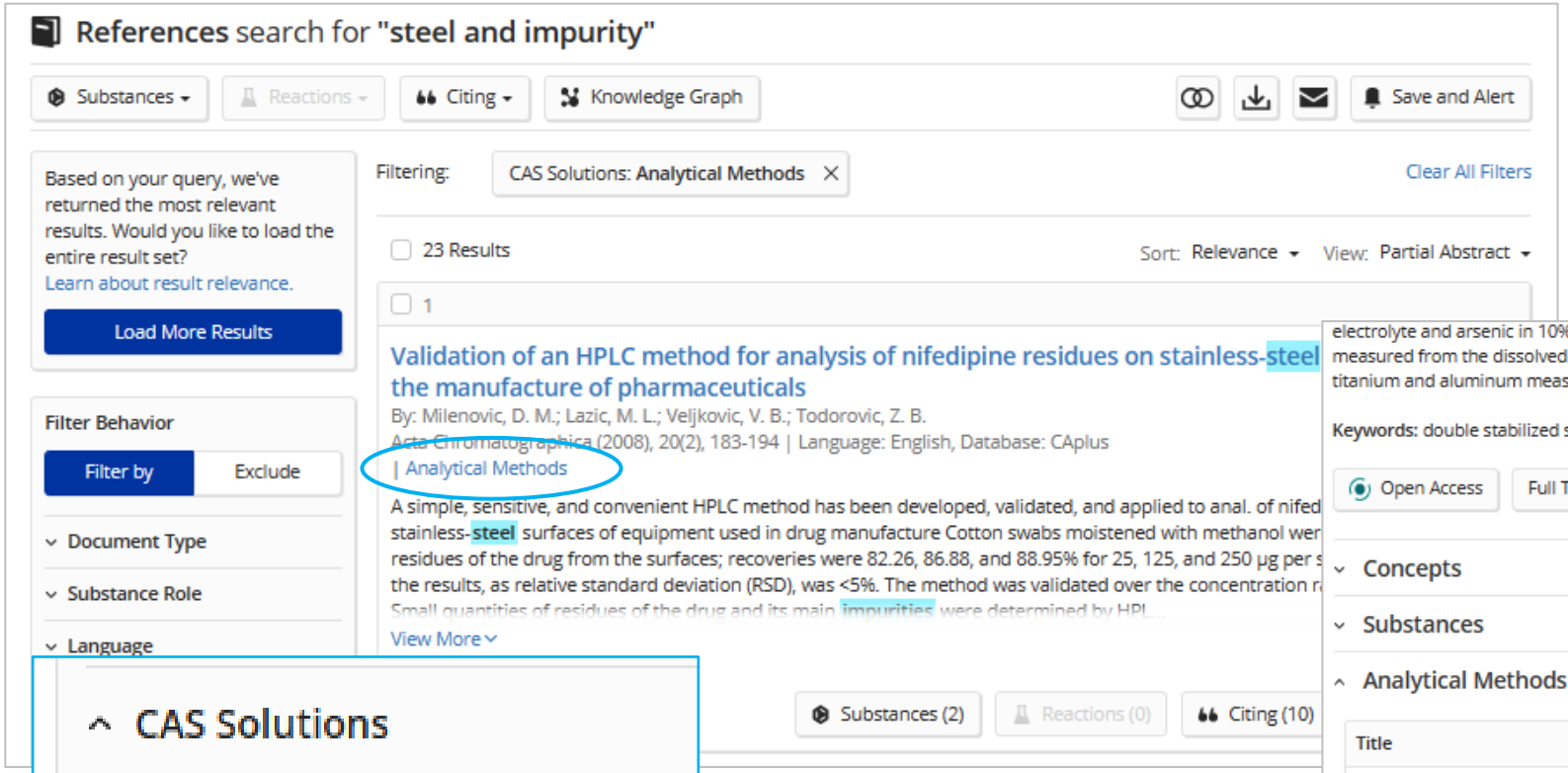
Validation

Linearity Range	0-400 µg/L
Concentration	< 1 µg

数据有效性

关注文献关联的分析实验方法?

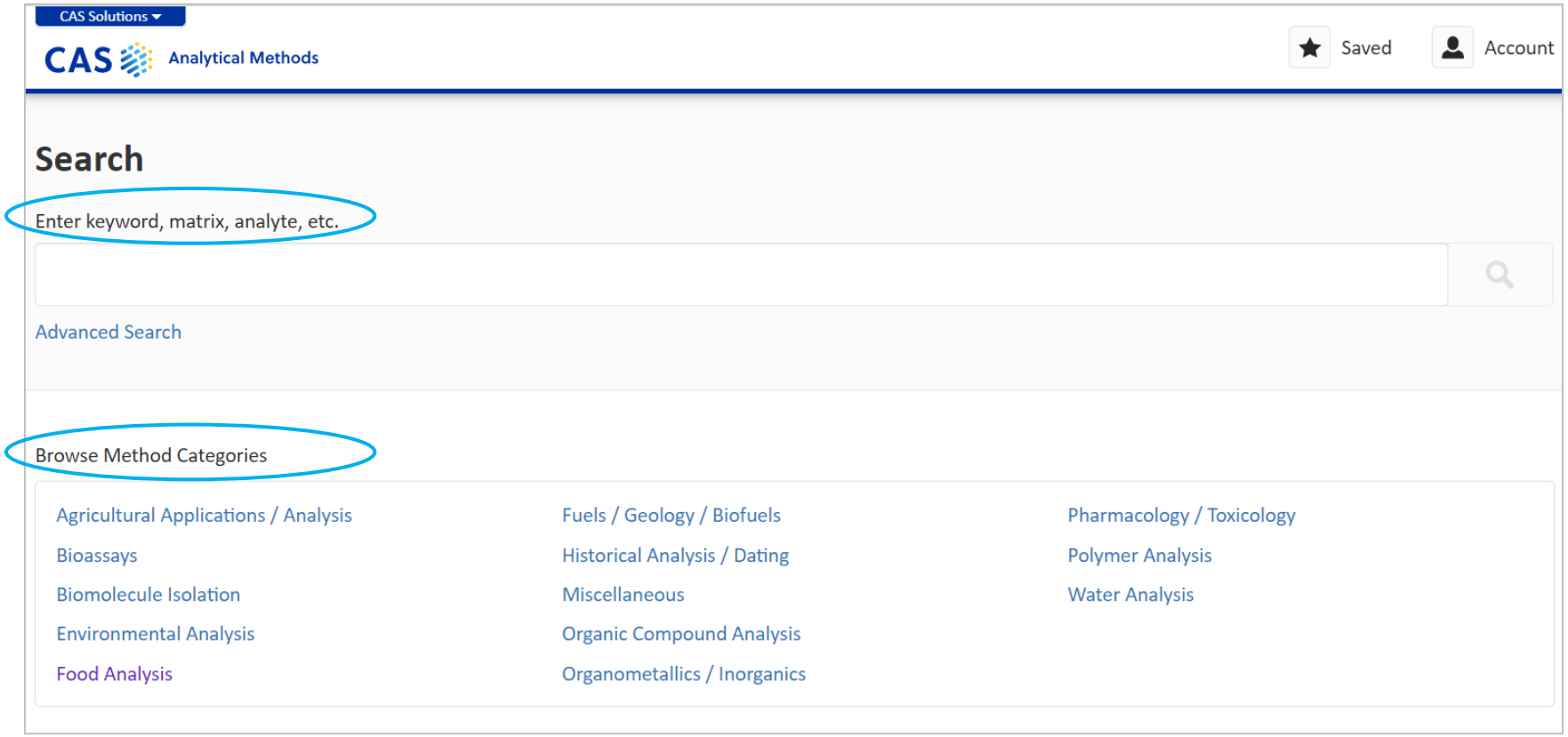
方法一：文献结果集页面点击 CAS Solutions中的 Analytical Methods获得有具体分析实验方法的文献，从文献详情页中链接至分析实验方法



CAS
A division of the American Chemical Society

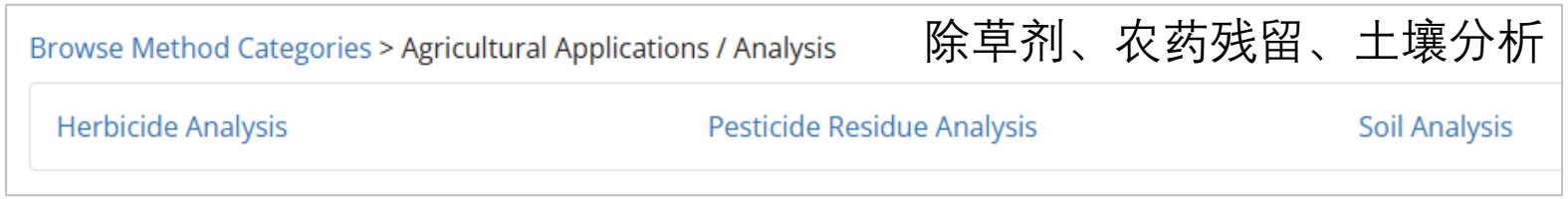
直接检索感兴趣的分析实验方法

方法二：登录 https://methods.cas.org 进行主题检索或分类浏览



方法分类: 13大类，45小类

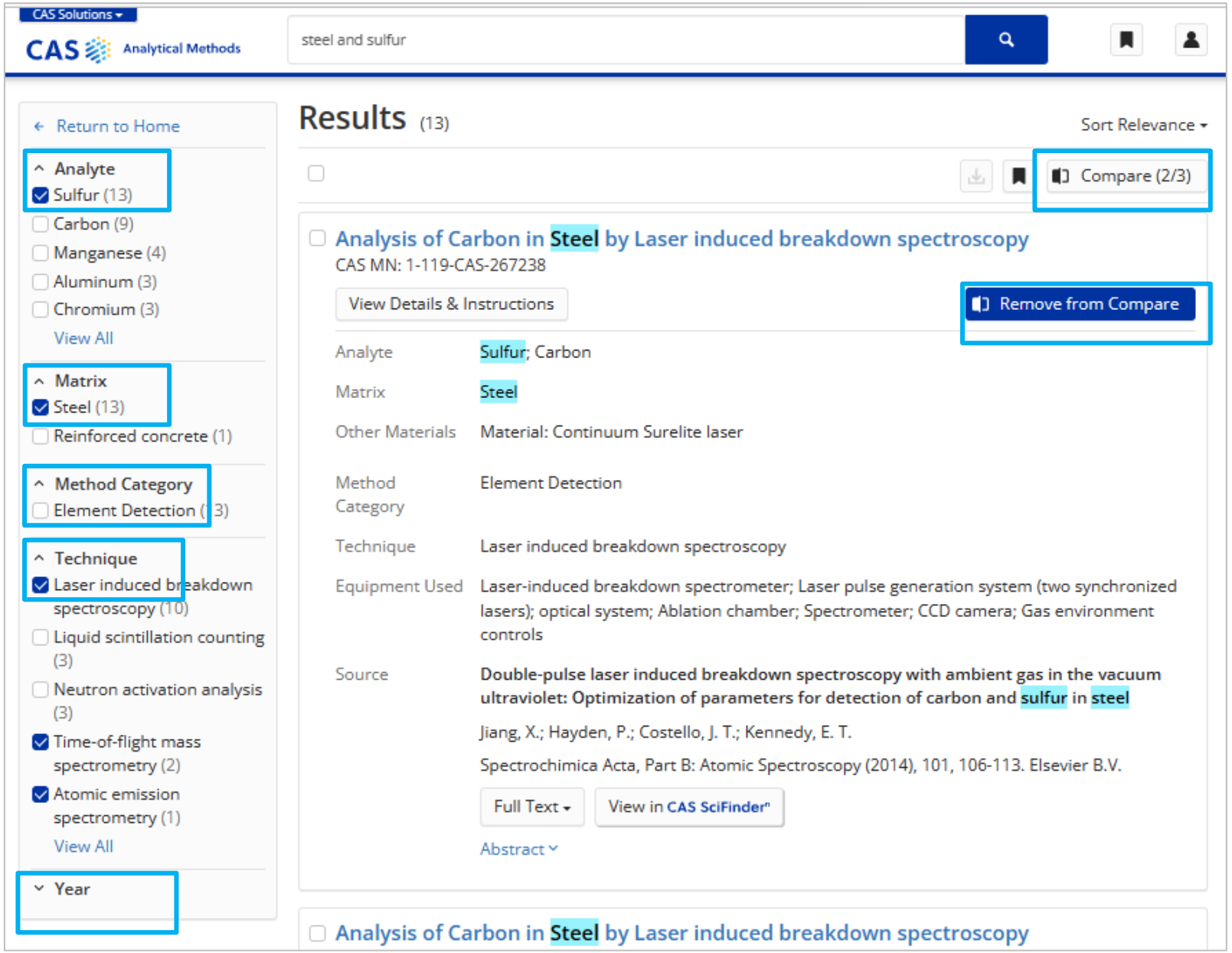
农业应用、生物鉴定、生物分子分离、环境、食品、考古、有机物、药学、毒理学等



除草剂、农药残留、土壤分析

CAS
A division of the American Chemical Society

如何选择合适的分析方法?



- 分析目标物
- 介质
- 方法类别
- 分析技术
- 发表年份

CAS
A division of the American Chemical Society

如何选择合适的分析实验方法?

Compare Methods

Expand All | Collapse All

	1	2
Title	**Analysis of Carbon in Steel by Laser induced breakdown spectroscopy**	**Analysis of Silver in Steel by Glow discharge mass spectrometry**
CAS Method Number	1-119-CAS-267238	1-119-CAS-101987
Method Category	Element Detection	Element Detection
Technique	Laser induced breakdown spectroscopy	Time-of-flight mass spectrometry; Glow discharge mass spectrometry
Analyte	Sulfur; Carbon	Titanium; Chromium; Antimony; Magnesium; Lead; Silicon; Cobalt; Sulfur; Niobium; Tin; Nickel; Manganese; Vanadium; Boron; Molybdenum; Phosphorus; Silver; Tungsten; Copper; View All
Matrix	Steel	Steel
Other Materials	Continuum Surelite laser	Grimm-type chamber (with a 4 mm diameter anode and a 2.5 mm inner diameter flow tube)
Equipment Used	Laser-induced breakdown spectrometer; Laser pulse generation system (two synchronized lasers); optical system; Ablation chamber; Spectrometer, VM-521, Acton View All	Orthogonal time-of-flight mass spectrometer, Tofwerk, Thun, Switzerland; Dry pump, Triscroll 300, Varian Inc., Pal Alto, USA; Radio frequency glow discharge orthogonal time View All

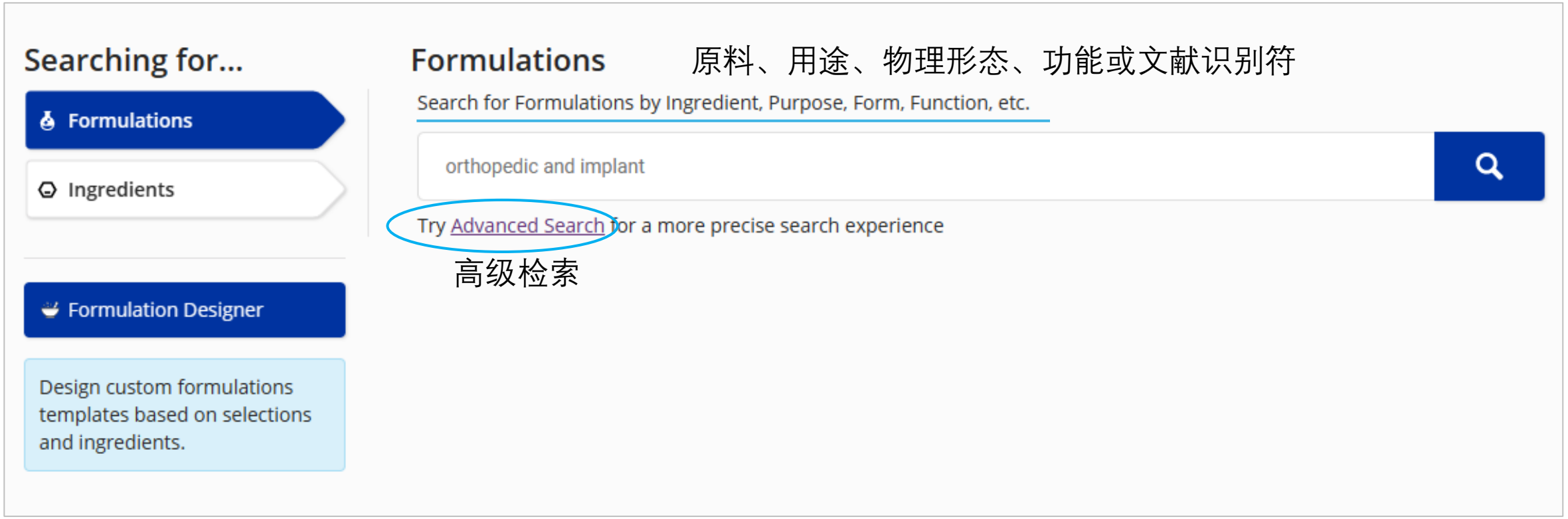
Source	**Double-pulse laser induced breakdown spectroscopy with ambient gas in the vacuum ultraviolet: Optimization of parameters for detection of carbon and sulfur in steel** View All	**A comparison of non-pulsed radiofrequency and pulsed radiofrequency glow discharge orthogonal time-of-flight mass spectrometry for analytical purposes** View All
Method	**Laser-induced breakdown spectroscopic analysis using nitrogen as ambient gas in double pulse mode** 1. Perform the analysis using LIBS setup containing the View All	**Glow discharge orthogonal time-of-flight mass spectrometry in pulsed mode** 1. Collect the NIST 1262b certified reference steel. View All
Limit of Detection	2.9 ppm, Carbon, 1.5 ppm, Sulfur	0.3 µg/g, Boron, 0.2 µg/g, Magnesium, 0.3 µg/g, Aluminum, 1.9 µg/g, Silicon, 1.6 µg/g, Phosphorus, 1.0 µg/g, Sulfur, 2.3 µg/g, Titanium, 1.1 µg/g, Vanadium, 1.0 µg/g, Chromium, 5.5 View All
Precision		12% (RSD, reproducibility), Boron, 28% (RSD, reproducibility), Magnesium, 2% (RSD, reproducibility), Aluminum, 6% (RSD, reproducibility), Silicon, 5% (RSD, View All
Sensitivity		6 - 165 cps/(µg/g)

Method	**Laser-induced breakdown spectroscopic analysis using nitrogen as ambient gas in double pulse mode** 1. Perform the analysis using LIBS setup containing the laser pulse generation system (two synchronized lasers), the optical system (lenses, mirrors, polarizer and half-wave plate), an ablation chamber, spectrometer, detection system (CCD camera and computer) and finally the gas environment controls (needle valve, gauge, pressure meters). 2. Use the Q-switched Nd:YAG lasers to create the plasmas in double-pulse mode by Continuum Surelite (model III-10), operating at the fundamental wavelength of 1.06 µm with a pulse width of 6 ± 1 ns and maximum output energy of 800 mJ. 3. Operate the laser at a repetition rate of 10 Hz.. 4. Insert the optical combination of a half-wave plate and a polarizer into the Surelite laser beam to vary the pulse energy incident on the sample. 5. Focus the approximately 10-mm-diameter beams produced by Surelite laser onto the steel samples by plano-convex lenses of 125 mm and 150 mm focal	**Glow discharge orthogonal time-of-flight mass spectrometry in pulsed mode** 1. Collect the NIST 1262b certified reference steel. 2. Determine the performance of the pulsed RFGD-TOFMS. 3. The radiofrequency glow discharge orthogonal time-of-flight mass spectrometer (RFGD-TOFMS) includes a RFGD bay unit (RF generator, matching box, RF connector, refrigerator disc and sample mounting system with a pneumatic piston to press the sample against the source) (GD Profiler HR instrument (Horiba Jobin Yvon, Longjumeau, France)). 4. Use the GD source of a copper-based modified Grimm-type chamber with a 4 mm diameter anode and a 2.5 mm inner diameter flow tube (EMPA, Switzerland). 5. Extract the ions originating from the source at pressure of 800 Pa through a sampler of 500 µm diameter and a 1 mm diameter skimmer. 6. The following interface region includes electrostatic focusing and deflecting components and couples the

详细的分析实验方法对比

研究课题在产品中的应用？配方的检索与设计

方法一：登 https://formulus.cas.org 输入检索式



- 制药、化妆品、食品、农化、油墨、涂料等多领域中的配方
- 工艺、成分、目标成分的常见配伍成分、设计配方、探索合规要求等

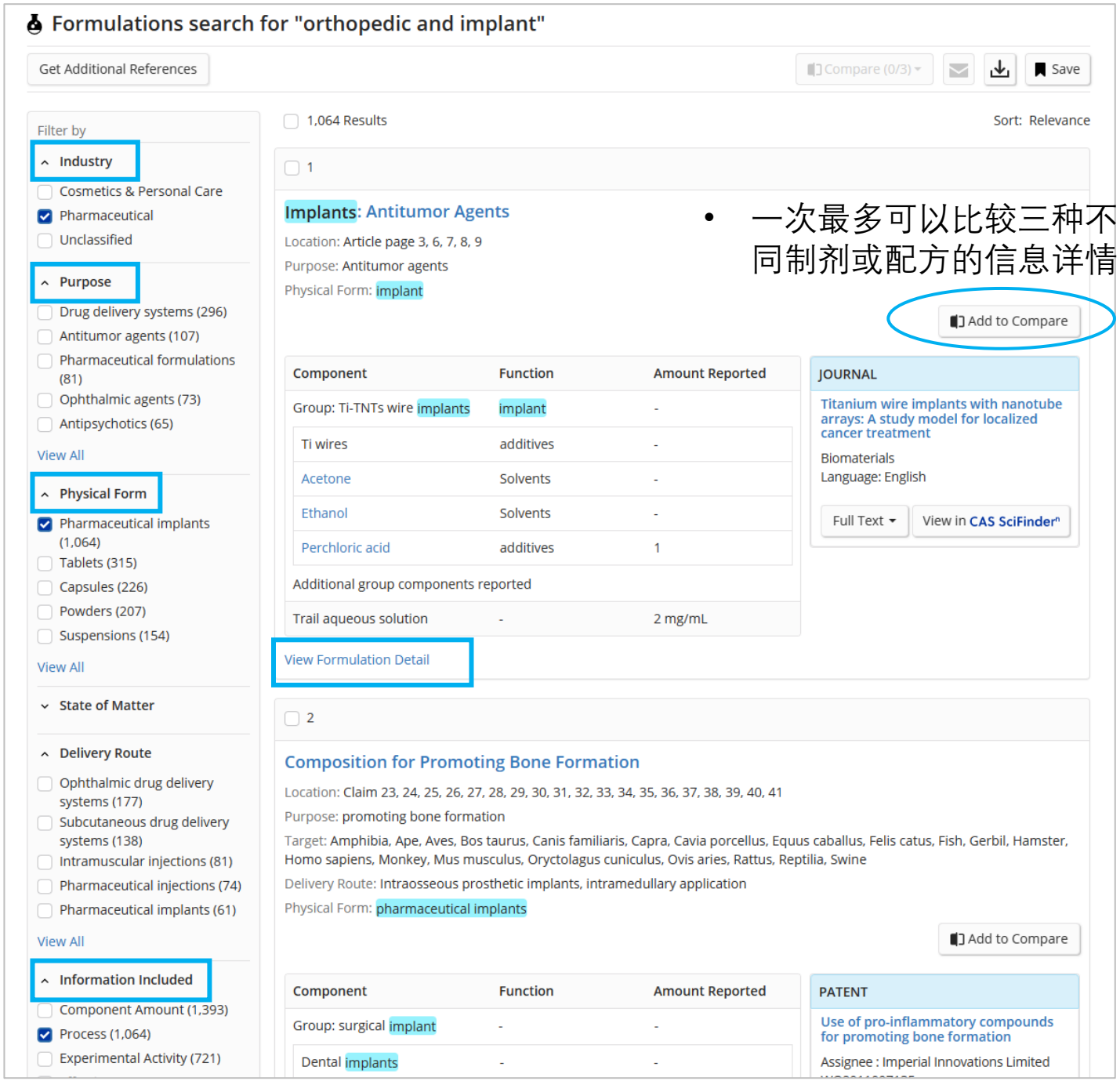
CAS
A division of the American Chemical Society

配方结果集

- 利用聚类项精简结果:

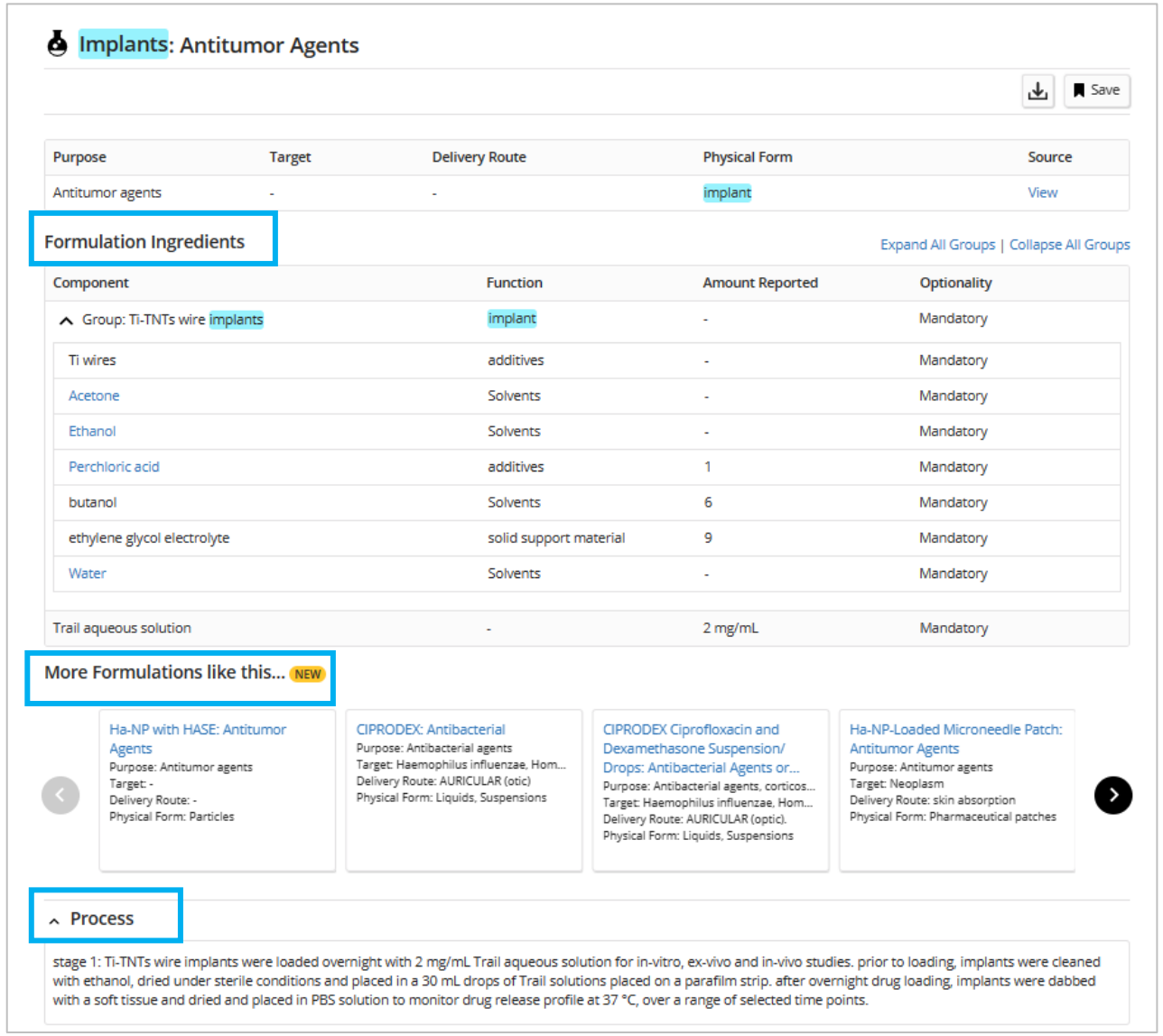
行业、配方/制剂用途、物理形式、物质状态、递送方式、涵盖信息、文献类型、发表机构、发表年份

- 可查看制剂或配方成分，功能及用量
- 可查看原料详情
- 支持对比选中的制剂或配方
- 支持查看或下载专利全文
- 可查看制剂或配方详情



- 一次最多可以比较三种不同制剂或配方的信息详情

配方的制备？实验评估？



Implants: Antitumor Agents

Save

Purpose	Target	Delivery Route	Physical Form	Source
Antitumor agents	-	-	implant	View

Formulation Ingredients

Expand All Groups | Collapse All Groups

Component	Function	Amount Reported	Optionality
Group: Ti-TNTs wire implants	implant	-	Mandatory
Ti wires	additives	-	Mandatory
Acetone	Solvents	-	Mandatory
Ethanol	Solvents	-	Mandatory
Perchloric acid	additives	1	Mandatory
butanol	Solvents	6	Mandatory
ethylene glycol electrolyte	solid support material	9	Mandatory
Water	Solvents	-	Mandatory
Trail aqueous solution	-	2 mg/mL	Mandatory

More Formulations like this... NEW

- Ha-NP with HASE: Antitumor Agents — Purpose: Antitumor agents; Target: -; Delivery Route: -; Physical Form: Particles
- CIPRODEX: Antibacterial — Purpose: Antibacterial agents; Target: Haemophilus influenzae, Hom...; Delivery Route: AURICULAR (otic); Physical Form: Liquids, Suspensions
- CIPRODEX Ciprofloxacin and Dexamethasone Suspension/ Drops: Antibacterial Agents or... — Purpose: Antibacterial agents, corticos...; Target: Haemophilus influenzae, Hom...; Delivery Route: AURICULAR (optic); Physical Form: Liquids, Suspensions
- Ha-NP-Loaded Microneedle Patch: Antitumor Agents — Purpose: Antitumor agents; Target: Neoplasm; Delivery Route: skin absorption; Physical Form: Pharmaceutical patches

Process

stage 1: Ti-TNTs wire implants were loaded overnight with 2 mg/mL Trail aqueous solution for in-vitro, ex-vivo and in-vivo studies. prior to loading, implants were cleaned with ethanol, dried under sterile conditions and placed in a 30 mL drops of Trail solutions placed on a parafilm strip. after overnight drug loading, implants were dabbed with a soft tissue and dried and placed in PBS solution to monitor drug release profile at 37 °C, over a range of selected time points.

- 制剂或配方原料
- 相似的制剂或配方
- 制备工艺
- 制剂或配方实验评估
- 专利来源

Experimental Activity

Descriptor	Notes	Details
Ex-vivo study	-	no caspase-3 activity was observed for PBS-TNTs samples
cell death	-	highest cell death was observed in Trail-TNTs
drug release	-	45 %
in-vitro cytotoxicity	-	luciferase activity confirmed 100% cell death in Trail-TNTs
loading amount	-	12.63 µg

Source Journal

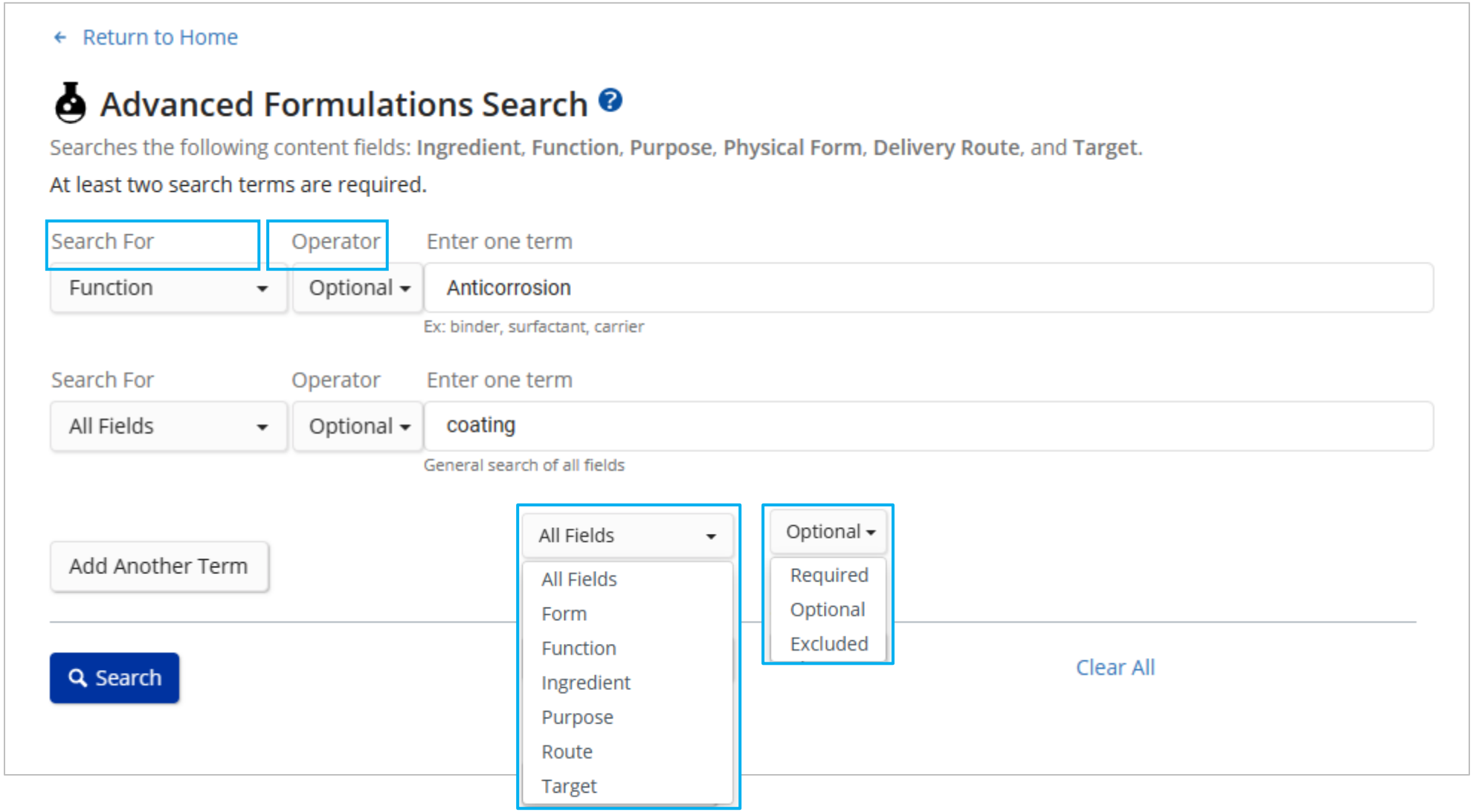
Titanium wire implants with nanotube arrays: A study model for localized cancer treatment

Biomaterials
Language: English
Location: **Article page 3, 6, 7, 8, 9**

Full Text | View in CAS SciFinder

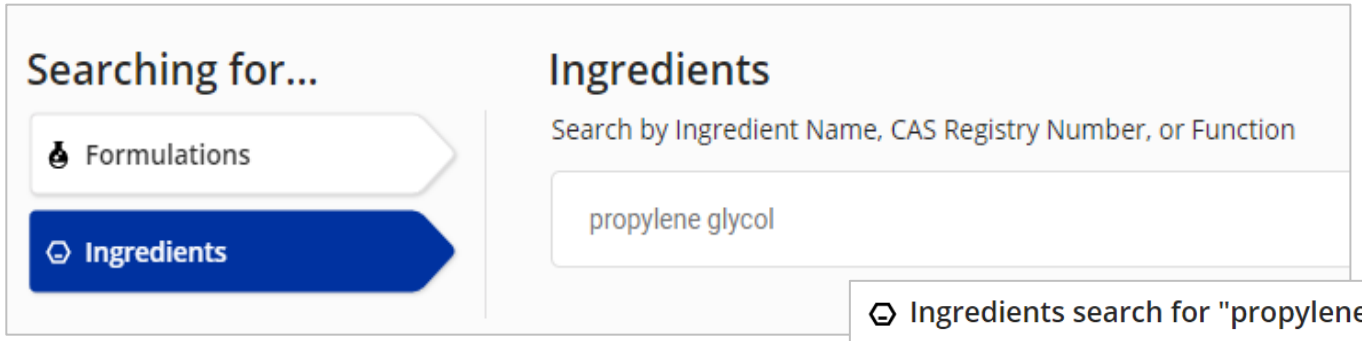
CAS
A division of the American Chemical Society

高级检索



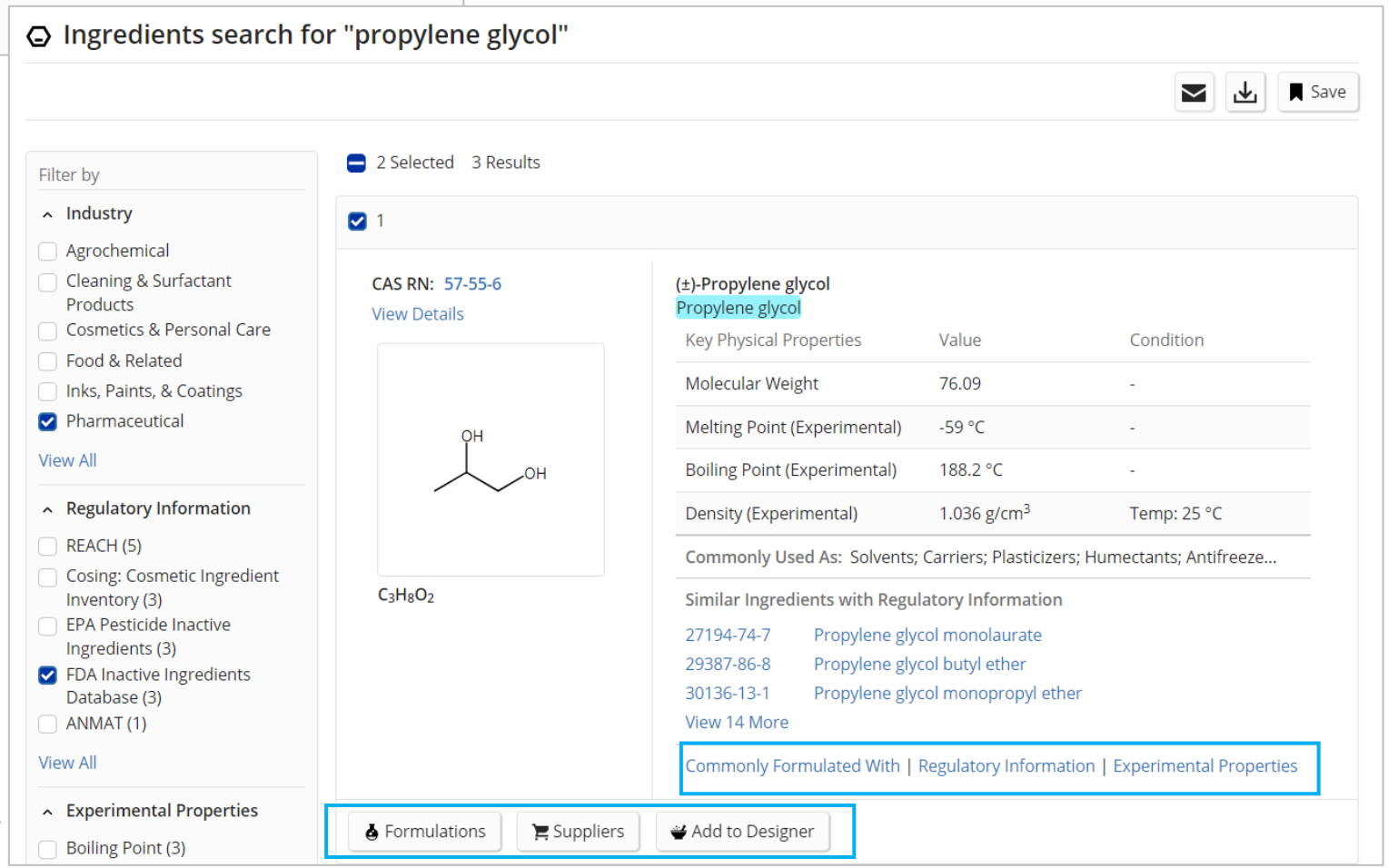
CAS
A division of the American Chemical Society

检索原料

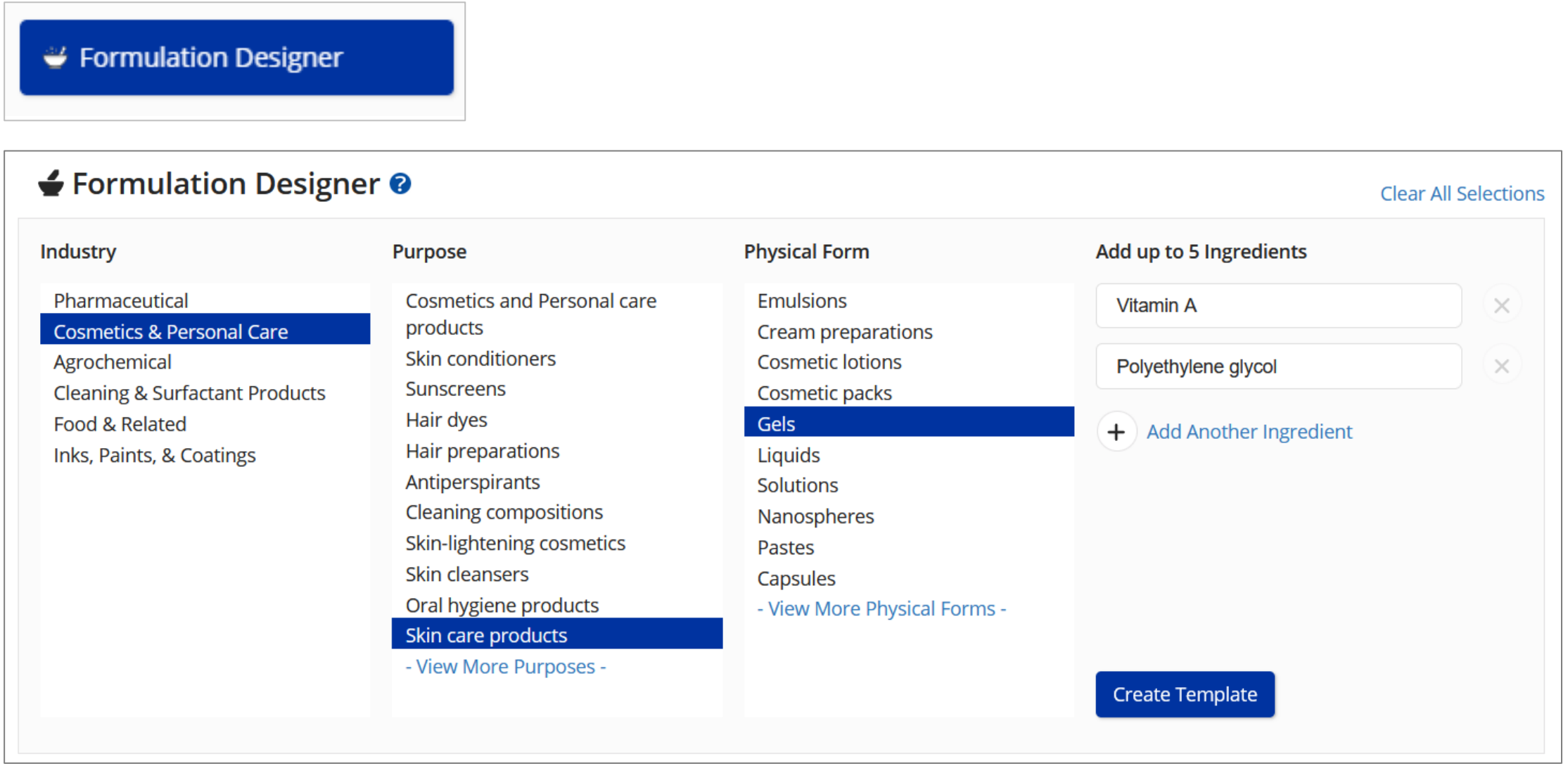


- 制剂或配方中，与该原料同时使用的其它配伍成分
- 管控信息及清单
- 实验属性

- 使用该原料的制剂或配方
- 原料供应商信息
- 可将原料添加至设计工具 Formulation Designer

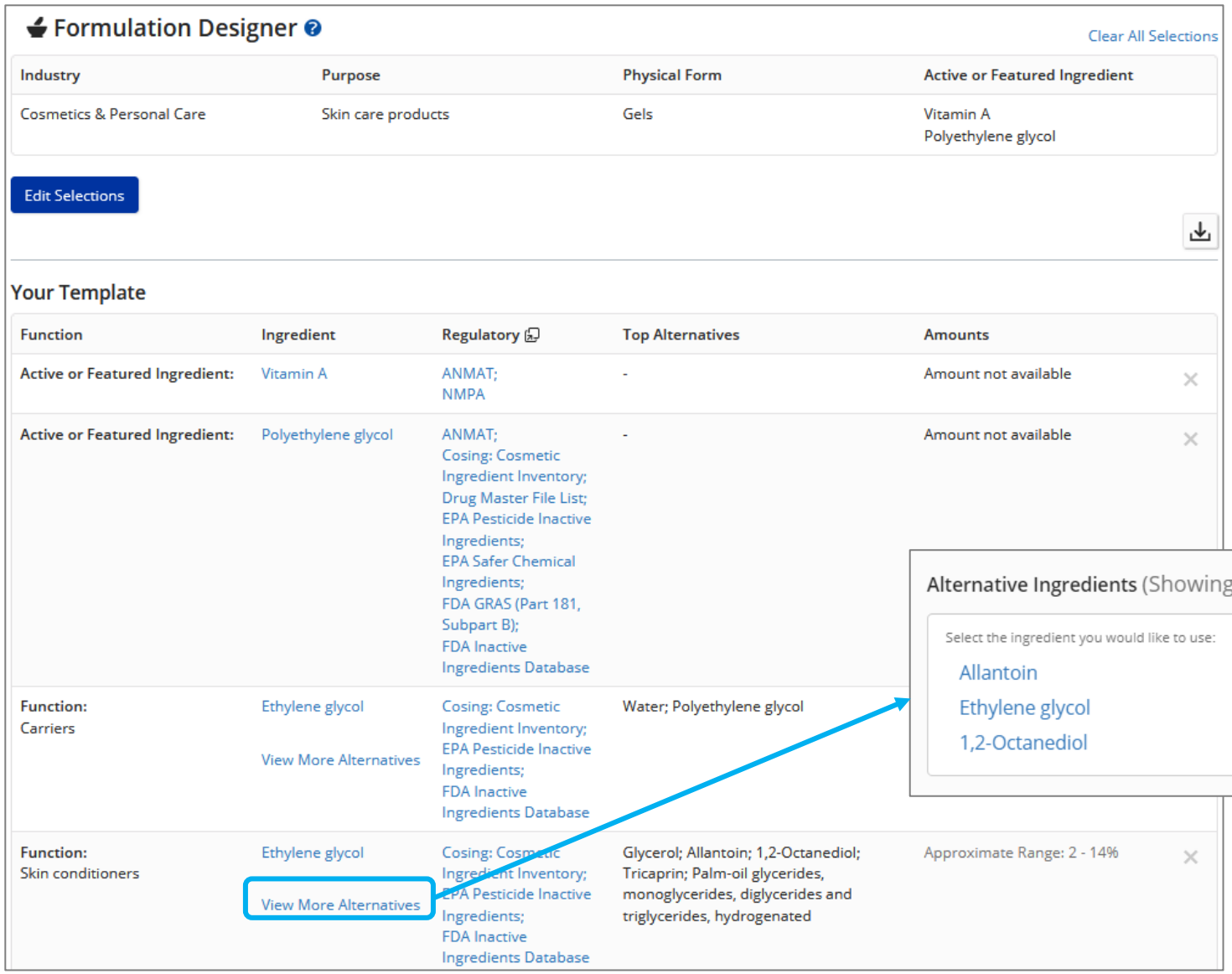


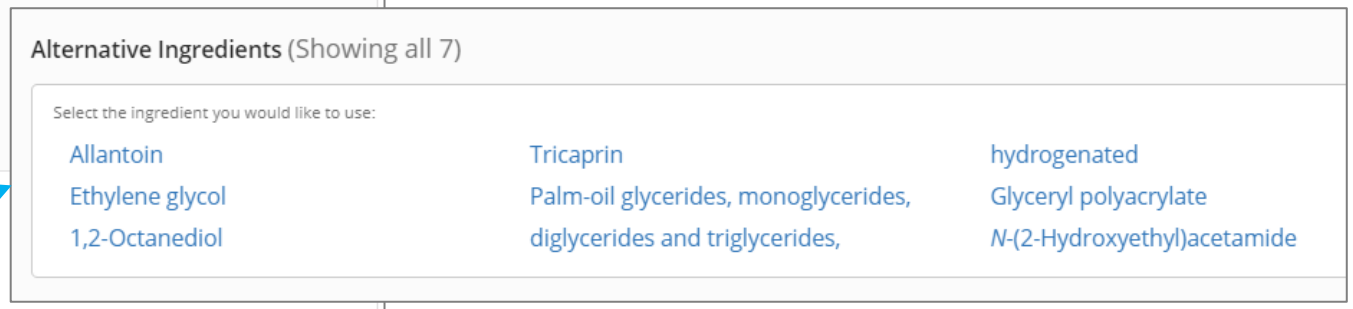
设计配方



CAS
A division of the American Chemical Society

设计配方



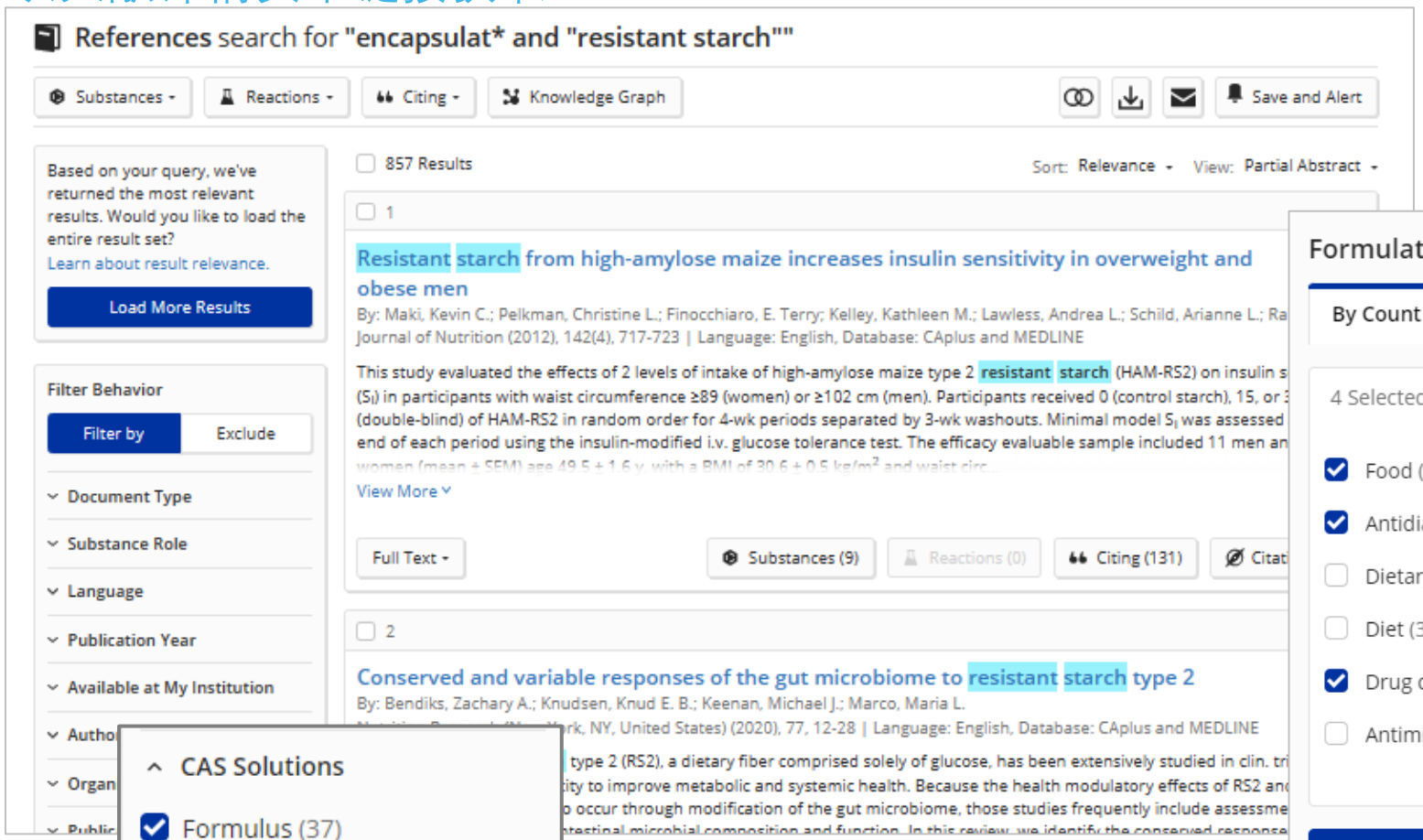


- 原料详情
- 原料管制信息
- 可替代的原料选项

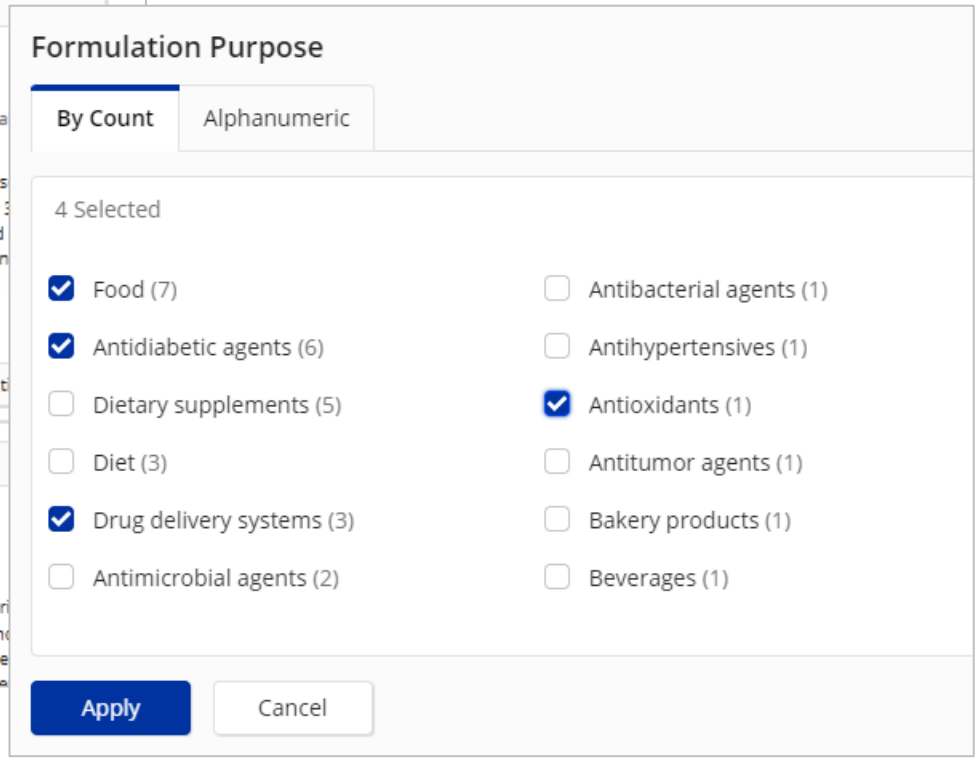
CAS
A division of the American Chemical Society

文献关联的配方

方法二：在文献结果集页面，点击CAS solutions中的 Formulus 获得有具体配方或制剂信息的文献，从文献详情页中链接获取



定位配方或制剂的功能目标



CAS
A division of the American Chemical Society

文献关联的配方

Resistant Starch Film-Coated Microparticles for an Oral Colon-Specific Polypeptide Delivery System and Its Release Behaviors

Substances (3) | Reactions (0) | Citing (42) | Citation Map | Save

JOURNAL

Source
Journal of Agricultural and Food Chemistry
Volume: 62
Issue: 16
Pages: 3599-3609
Journal; Evaluation Study; Article; Research Support, Non-U.S. Gov't
2014
DOI:
10.1021/jf500472b

CODEN: JAFCAU
E-ISSN: 1520-5118
ISSN-L: 0021-8561

Database Information
AN: 2014:519911
CAN: 160:534190
PubMed ID: 24684664
CAplus and MEDLINE

Company/Organization
Ministry of Education Engineering Research Centre of Starch and Protein Processing, Guangdong Province Key Laboratory for Green Processing of Natural Products and Product Safety
South China University of Technology
Guangzhou 510640
China

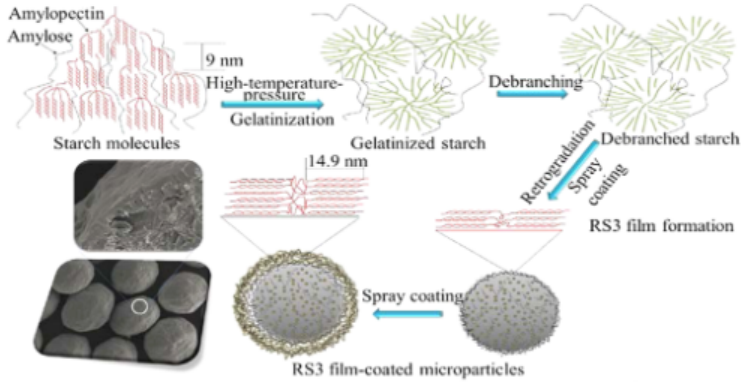
Publisher
American Chemical Society

Language
English

CAS Formulus®, the comprehensive formulations database and workflow solution, is now available for all SciFinder[n] users. View content from CAS Formulus® in this document. Learn more about Formulus®.

By: Situ, Wenbei; Chen, Ling; Wang, Xueyu; Li, Xiaoxi

For the delivery of bioactive components to the colon, an oral colon-specific controlled release system coated with a resistant starch-based film through aqueous dispersion coating process was developed. Starch was modified by a high-temperature-pressure reaction, enzymic debranching, and retrogradation, resulting in a dramatic increase in the resistibility against enzymic digestion (meaning the formation of resistant starch, specifically RS3). This increase could be associated with an increase in the relative crystallinity, a greater amount of starch mol. aggregation structure, and the formation of a compact mass fractal structure, resulting from the treatment. The microparticles coated with this RS3 film showed an excellent controlled release property. In streptozotocin (STZ)-induced type II diabetic rats, the RS3 film-coated insulin-loaded microparticles exhibited the ability to steadily decrease the plasma glucose level initially and then maintain the plasma glucose level within the normal range for total 14-22 h with different insulin dosages after oral administration; no glycopenia or glycemic fluctuation was observed Therefore, the potential of this new RS3 film-coated microparticle system has been demonstrated for the accurate delivery of bioactive polypeptides or protein to the colon.



Formation of the RS3 film coating layer and the RS3 film-coated microparticles

Keywords: starch film coated microparticle colon polypeptide delivery insulin

View PDF | Full Text

Expand All | Collapse All

Concepts

Concepts
MEDLINE® Medical Subject Headings
Substances
Formulations

Resistant Starch (RS 3)Film-Coated Microparticles: Drug Delivery Systems--Controlled Release Drug Delivery Systems

View CAS Formulus® Detail

Location: SI Page 3 Article Page 2 Figure 1S
Purpose: Drug delivery systems
Target: 5-aminosalicylic acid

Component 成分	Function 功能	Amount Reported 用量
Group: bioactive component-loaded microparticle core	model active agent	-
5-Aminosalicylic acid	-	20 %
Cellulose	additives	Ratio: 3
Starch	excipients	Ratio: 1
Group: RS3-based aqueous coating dispersion	coating materials	-

Resistant Starch (RS 3)Film-Coated Microparticles: Drug Delivery Systems--Controlled Release Drug Delivery Systems

View CAS Formulus® Detail

Location: SI Page 3 Article Page 2 Figure 1S
Purpose: Drug delivery systems
Target: 5-aminosalicylic acid

实验方案检索小结

1. 利用 Synthetic Methods™ 查看文献中合成方法详情
2. 利用 CAS Analytical Methods 进行主题检索或分类浏览获得分析方法，或通过文献查看关联的分析实验及数据详情
3. 利用 CAS Formulus 检索原料、配方/制剂，或通过文献结果集获得关联的配方/制剂信息；利用配方设计工具启发产品配方的开发

学习资源

ACS Chemistry for Life®

运用化学的力量改善人们的生活

订阅号

服务号

CAS SciFinderⁿ 学习中心

2023 CAS SciFinder Discovery Platform 论坛录课

日期	主题
3月1日	解锁CAS SciFinder Discovery Platform新功能
3月8日	巧用CAS SciFinder Discovery Platform文献检索快速进阶
3月15日	万物互联 | CAS SciFinder Discovery Platform物质检索更高效
3月22日	CAS SciFinder Discovery Platform反应检索，不止A to B
4月4日	不止化学: CAS SciFinder Discovery Platform序列检索技巧
4月12日	新手入门开题和文献综述？ 巧用CAS SciFinder Discovery Platform事半功倍
4月19日	实验进展太慢？ 巧用CAS SciFinder Discovery Platform寻找启发
5月10日	毕业季|CAS SciFinder Discovery Platform助力论文写作及答辩准备
5月24日	毕业季|巧用CAS SciFinder Discovery Platform 做足升学与择业准备

CAS
A division of the American Chemical Society

CAS SciFinder Discovery Platform 专题论坛时间表

2023 年 9 月 — 12 月

CAS SCIFINDER DISCOVERY PLATFORM专题论坛涵盖多个科学研究领域，为您带来全面的检索思路和丰富的检索技巧。

直播时间为周五14:00 - 15:00。点击论坛主题即可注册、观看直播。

9月15日 | 专利专题论坛

9月22日 | 生物制药专题论坛

10月13日 | 高分子材料专题论坛

10月27日 | 金属有机与无机化学专题论坛

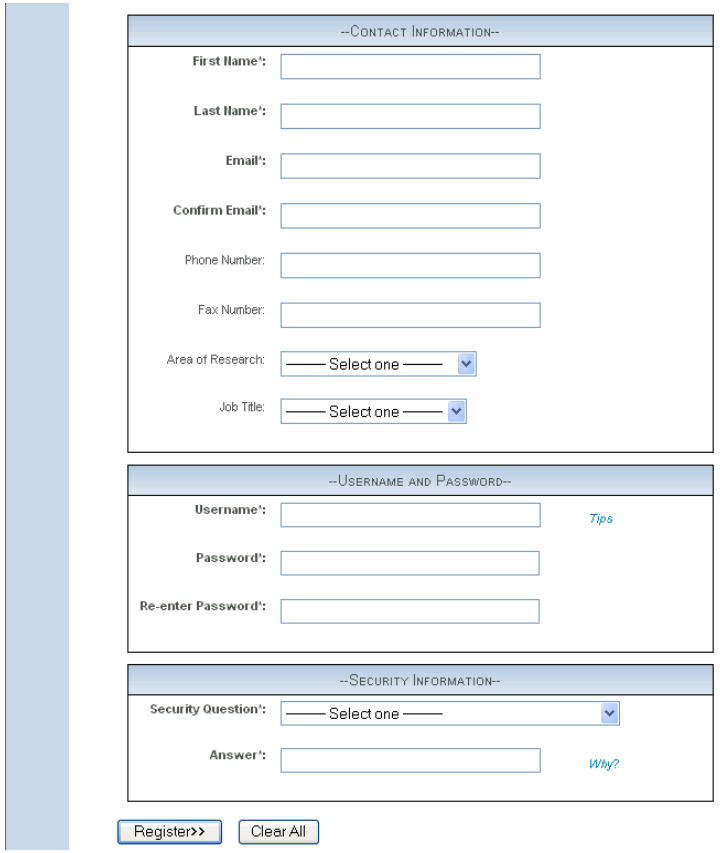
11月10日 | 食品与个人护理品专题论坛

11月24日 | 药物设计与合成专题论坛

12月8日 | 电子信息与能源材料专题论坛

CAS
A division of the American Chemical Society

如何获取 CAS SciFinder^n 账号（登录贵校图书馆网站，查看注册相关的链接和说明）



请注意：

1.必须输入真实姓名和学校邮箱

2.用户名必须是唯一的，且包含 5-15 个字符。它可以只包含字母或字母组合、数字和/或以下特殊字符：

- -（破折号）
- _（下划线）
- .（句点）
- @（表示“at”的符号）

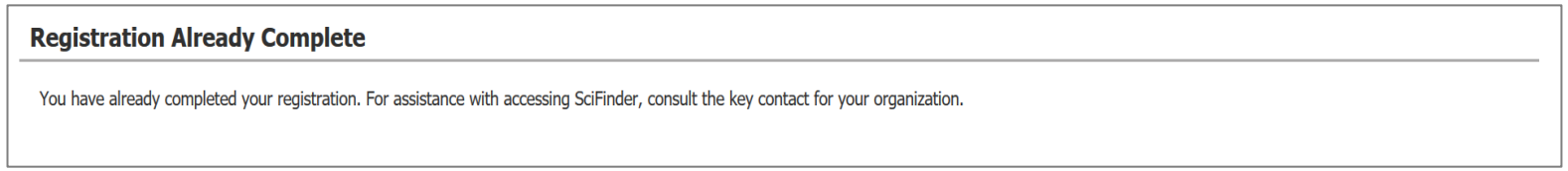
3.密码必须包含 7-15 个字符，并且至少包含三种以下字符：

- 字母
- 混合的大小写字母
- 数字
- 非字母数字的字符（例如 @、#、%、&、*）

例：abc@123

4.从下拉列表中选择一个密码提示问题并给出答案

单击 Register（注册）



点击激活链接后注册成功；之后直接点击 https://scifinder-n.cas.org 访问

CAS
A division of the American Chemical Society

CAS SciFinder^{n} 检索浏览器推荐

浏览器推荐：

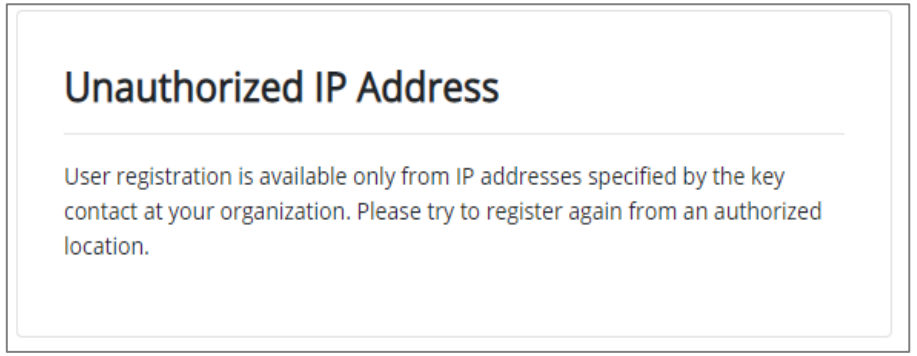
- Windows (7, 8.1, 10)：Chrome 60 及更高版本，Firefox 55 及更高版本，Firefox 52 (ESR)、Edge 15 及更高版本
- Mac OS X (10.11, 10.12, 10.13)：Safari 9.3 及更高版本，Chrome 60 及更高版本，Firefox 55 及更高版本，Firefox 52 (ESR)

不建议使用 360 浏览器，相关功能或插件会被自动拦截

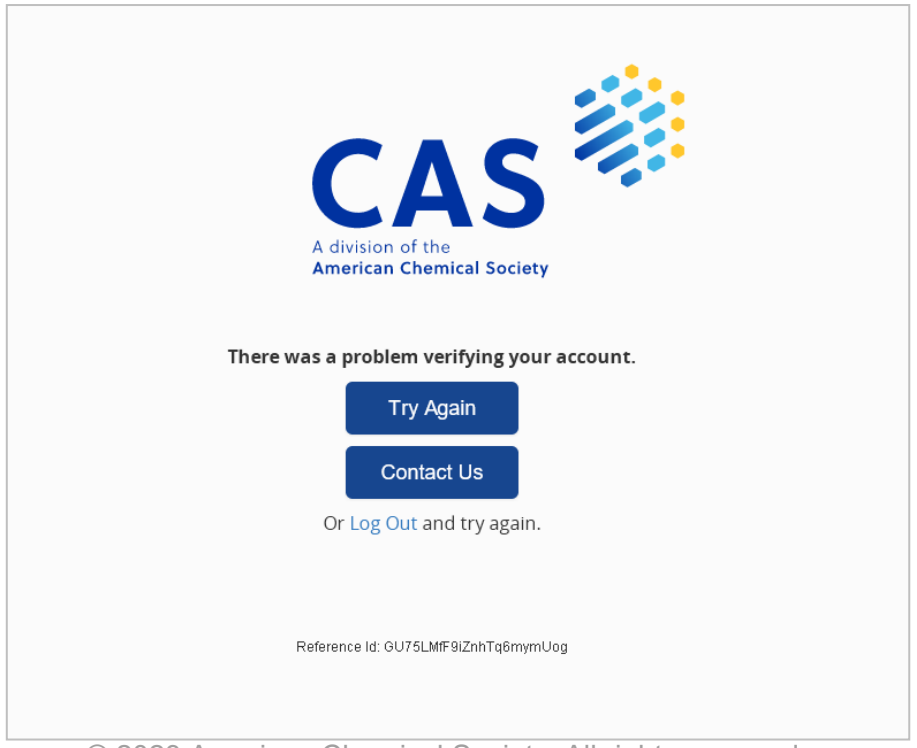
使用注意事项

- 一人注册一个账号
- 实名注册，请提供真实姓名信息（中文名用汉语拼音全拼）
- 不得过量下载 (https://www.cas.org/legal/infopolicy)
- 不得账号分享
- 不得将账号用于非学术研究

常见问题



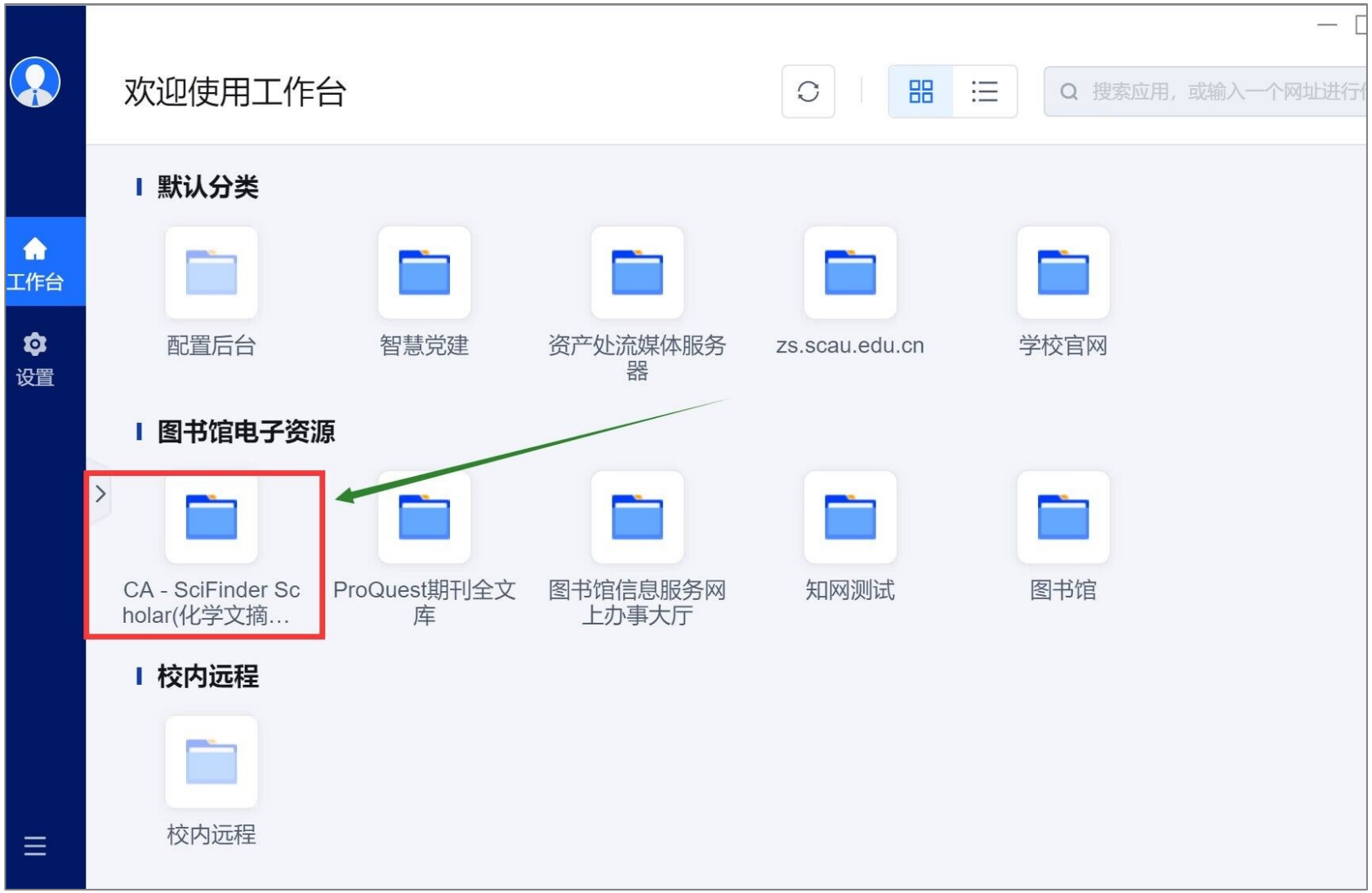
- 检查注册链接是否正确
- 确认连入校园网，且不是通过 VPN 连接
- 如果链接正确，且在校园内，请联系图书馆或 china@acs-i.org



- 确认账号密码是否正确
- 如果账号密码正确，请填写问题报告之后联系图书馆或 china@acs-i.org

CAS
A division of the
American Chemical Society

校外访问CAS SciFinder Discovery Platform



- 登录VPN客户端
- 工作台进入CAS SciFinder Discovery Platform

CAS
A division of the American Chemical Society

THANK YOU!

CAS
A division of the American Chemical Society

美国化学文摘社北京代表处
ACS International, Ltd. – Representing CAS
Unit 1010, Tower B, Raycom InfoTech Park
2 Kexueyuan Nanlu, Haidian District, Beijing, China
+86-10-6250 8026/7
cas.org

CAS
A division of the American Chemical Society