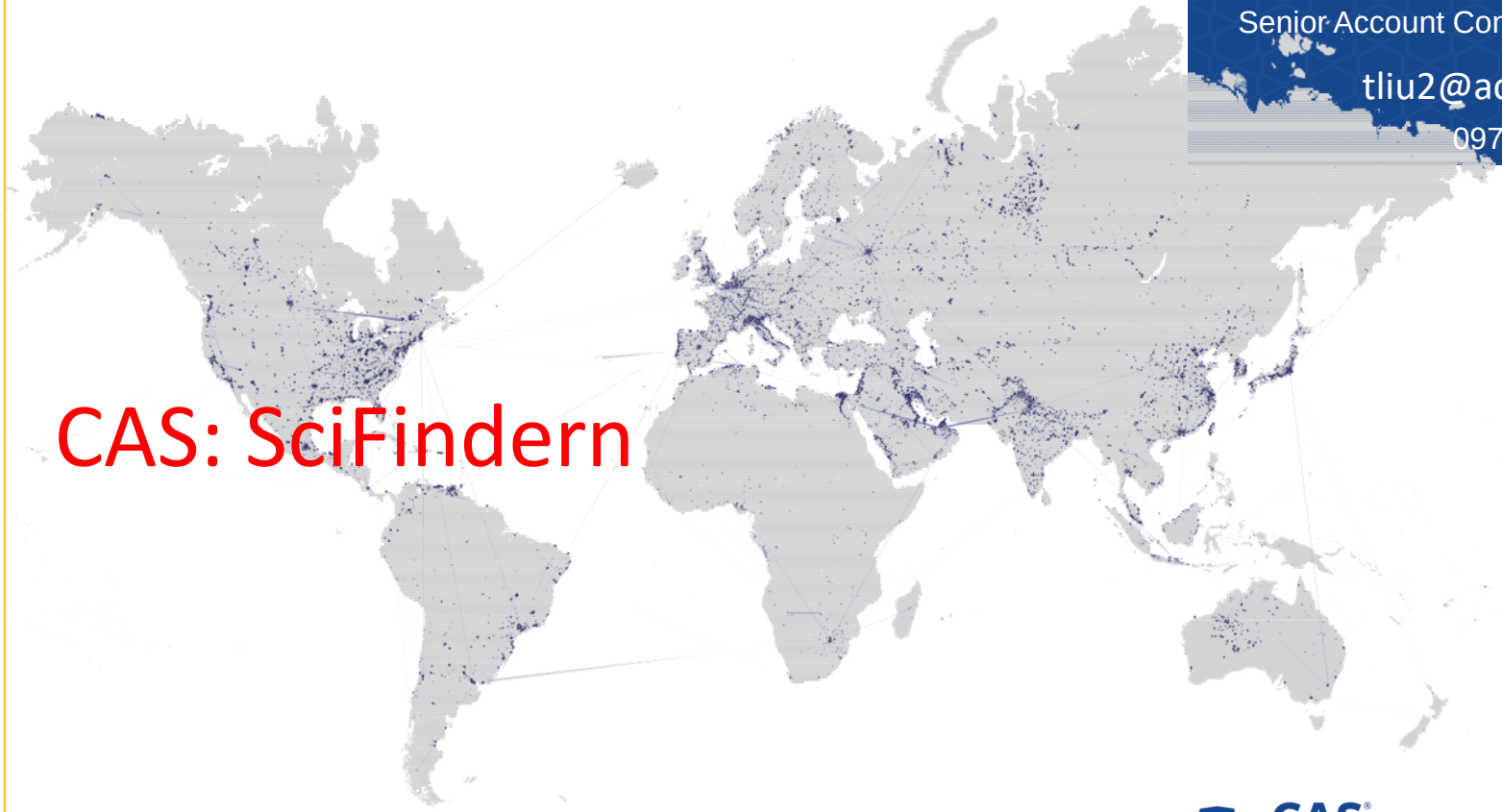
Chuan-Che Liu Ph.D.
Senior Account Consultant
tliu2@acs-i.org
0975765358

CAS: SciFindern



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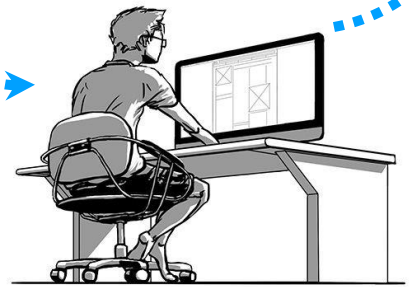

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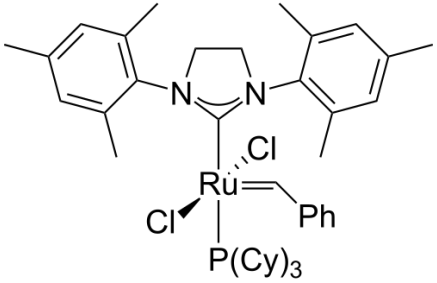
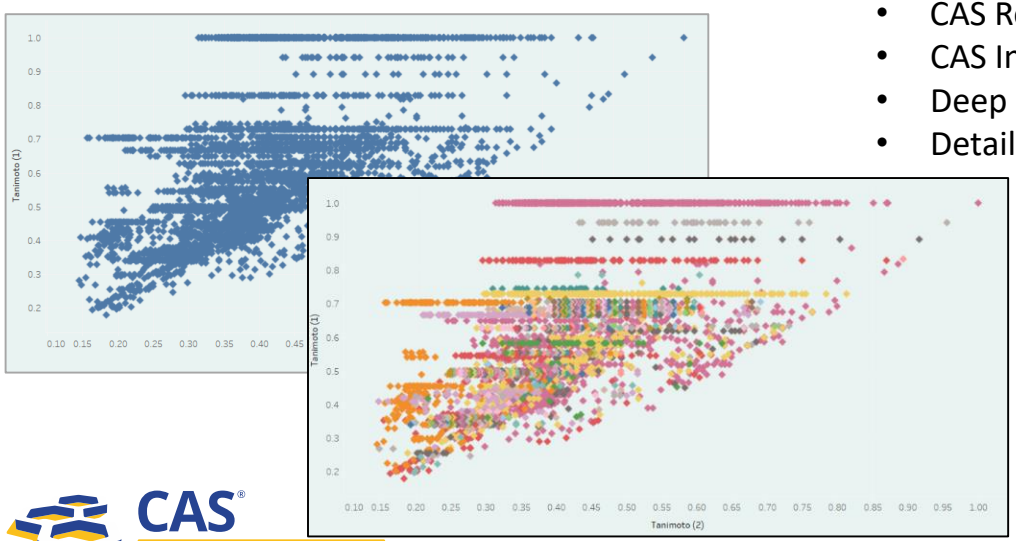
Leveraging CAS domain skill and information customers can extract more value from their existing technology. In this example, a materials company needed a polymer/monomer assessment related to Grubbs II Catalyst.



Grubbs II Catalyst



CAS was able to provide

- CAS Registry Landscape Analysis
- CAS Indexing extraction
- Deep monomer and polymer analysis
- Detailed reports with recommendations

CASRN...	# of m...	poly oc...	Mo...	smiles	C=C
498668	2.542	1.99	102		1
77736	3.047	3.106	87		2
100425	2.859	2.281	67		1
21635905	3.075	1.755	53		1
931884	2.16	2.68	52		1

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Better Data > More Data > Clever Algorithms

Challenge

CAS Approach

Results

High quality CAS data increases prediction accuracy by more than 30%

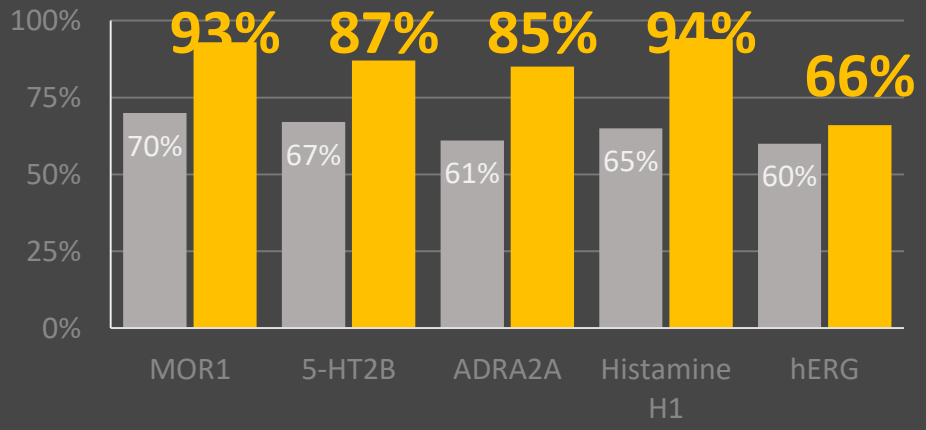
MENU

CHALLENGE: A recently published paper classified almost 10,000 chemical entities on predicted biological activity to five different targets using Morgan fingerprints and an "off the shelf" support vector machine learning algorithm

OUR APPROACH: Substitute Morgan fingerprints with CAS proprietary fingerprints to measure the impact on prediction accuracy when data is improved

RESULTS:

The classification accuracy increased by more than 30% when using high quality CAS data

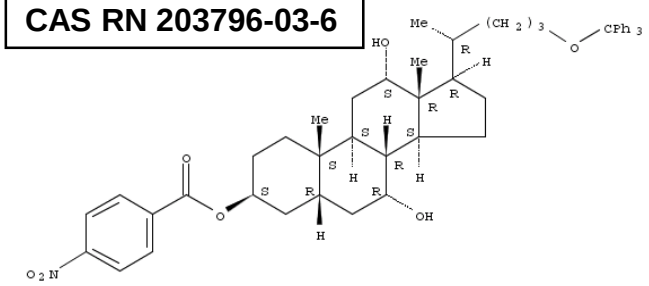


https://www.pnas.org/content/116/9/3373

CAS scientists find the chemistry, and save you time!

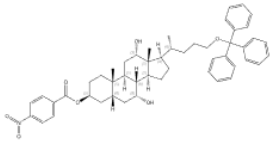
Compound 34: Diisopropyl azodicarboxylate (DIAD) (1.20 mL, 6.08 mmol) was added to triphenylphosphine (1.60 g, 6.08 mmol) in THF (100 mL) at 0 °C. and was stirred for half an hour during which time the yellow solution became a paste. Compound 14 (2.58 g, 4.06 mmol) and p-nitrobenzoic acid (0.81 g, 4.87 mmol) were dissolved in THF (50 mL) and added to the paste. The resulted mixture was stirred at ambient temperature overnight. Water (100 mL) was added and the mixture was made slightly basic by adding $NaHCO_3$ solution followed by extraction with EtOAc (3x50 mL). The combined extracts were washed with brine once and dried over anhydrous Na_2SO_4. The desired product (2.72 g, 85% yield) was obtained as white powder after SiO_2 chromatography (Et_2O/hexanes 1:2). m.p. 207-209 °C.; IR (KBr) 3434, 3056, 2940, 2868, 1722, 1608, 1529,1489, 1448, 1345 cm^{-1} ; ^1H NMR ($CDCl_3$, 300 MHz) δ 8.30-8.26 (m, 2 H), 8.21-8.16 (m, 2 H), 7.46-7.42 (m, 6 H), 7.31-7.18 (m, 9 H)5.33 (bs, 1 H), 4.02 (bs, 1 H), 3.90 (bs, 1 H), 3.09-2.97 (m, 2 H), 2.68 (td, J=14.95, 2.56 Hz, 1 H), 2.29-2.19 (m, 1 H), 2.07-1.06 (series of multiplets, 24 H), 1.01 (s, 3 H), 0.98 (d, J=6.6 Hz, 3 H), 0.70 (s, 3 H); ^{13}C NMR ($CDCl_3$, 75 MHz) δ 164.21, 150.56, 144.70, 136.79, 130.77, 64.22, 47.79, 46.79, 42.1 28.74, 27.71, 26.85, 26.3 (thioglycerol+Na^+ matrix

CAS RN 203796-03-6



Absolute stereochemistry.

203796-03-6



Absolute stereochemistry shown

$C_{50}H_{59}NO_7$

Cholane-3,7,12-triol, 24-(tripheny lmethoxy)-, 3-(4-nitrobenzoate), (3β, 5β,7α,12α)-

Role: Reactant, Synthetic Preparation, Reactant or Reagent, Preparation

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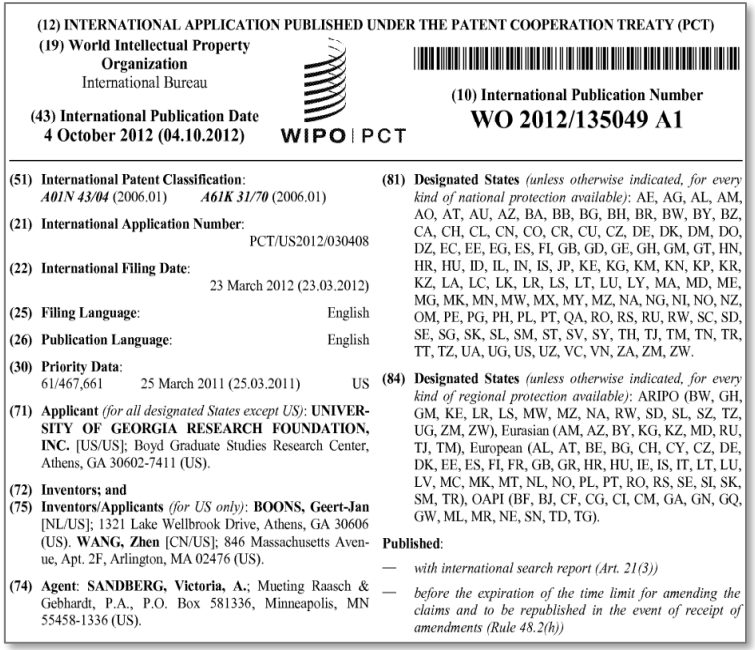

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(71) Applicant *(for all designated States except US)*: **UNIVERSITY OF GEORGIA RESEARCH FOUNDATION, INC.** [US/US]; Boyd Graduate Studies Research Center, Athens, GA 30602-7411 (US).

(72) Inventors; and
(75) Inventors/Applicants *(for US only)*: **BOONS, Geert-Jan** [NL/US]; 1321 Lake Wellbrook Drive, Athens, GA 30606 (US). **WANG, Zhen** [CN/US]; 846 Massachusetts Avenue, Apt. 2F, Arlington, MA 02476 (US).

(74) Agent: **SANDBERG, Victoria, A.**; Mueting Raasch & Gebhardt, P.A., P.O. Box 581336, Minneapolis, MN 55458-1336 (US).

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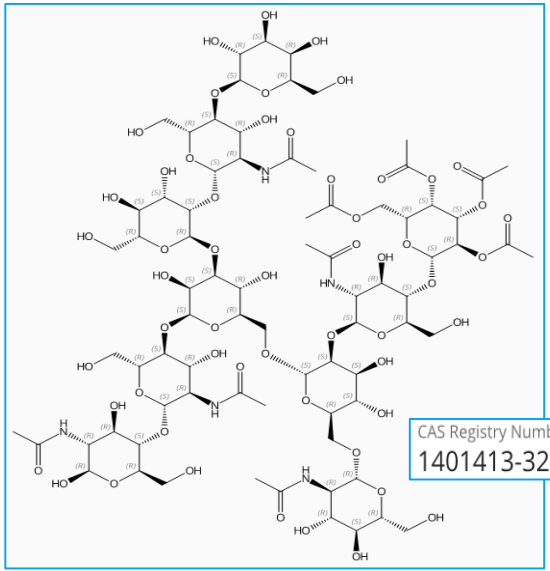

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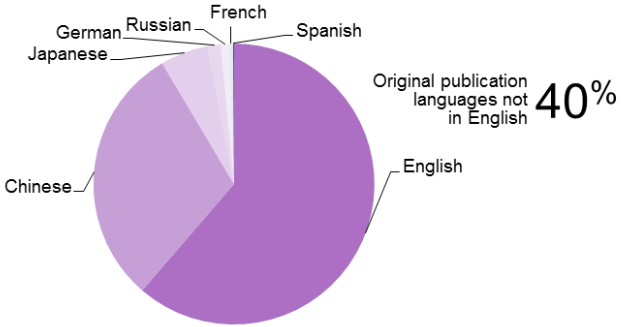
Yet the amount of available chemical information available to support that work is staggering

- It's growing at an accelerated rate
- Its complexity is on the rise, especially in patents
- It's more global in nature then ever



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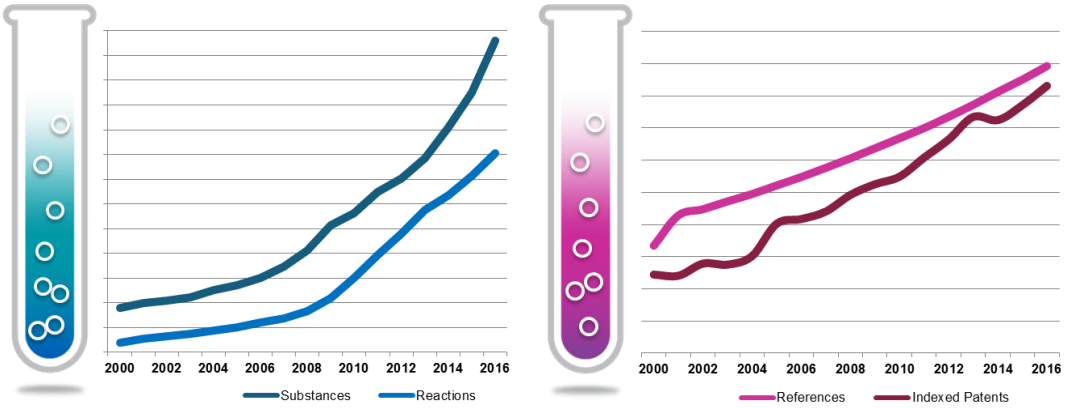

Source: Research, Nature(2016): Nature Salary and job satisfaction survey

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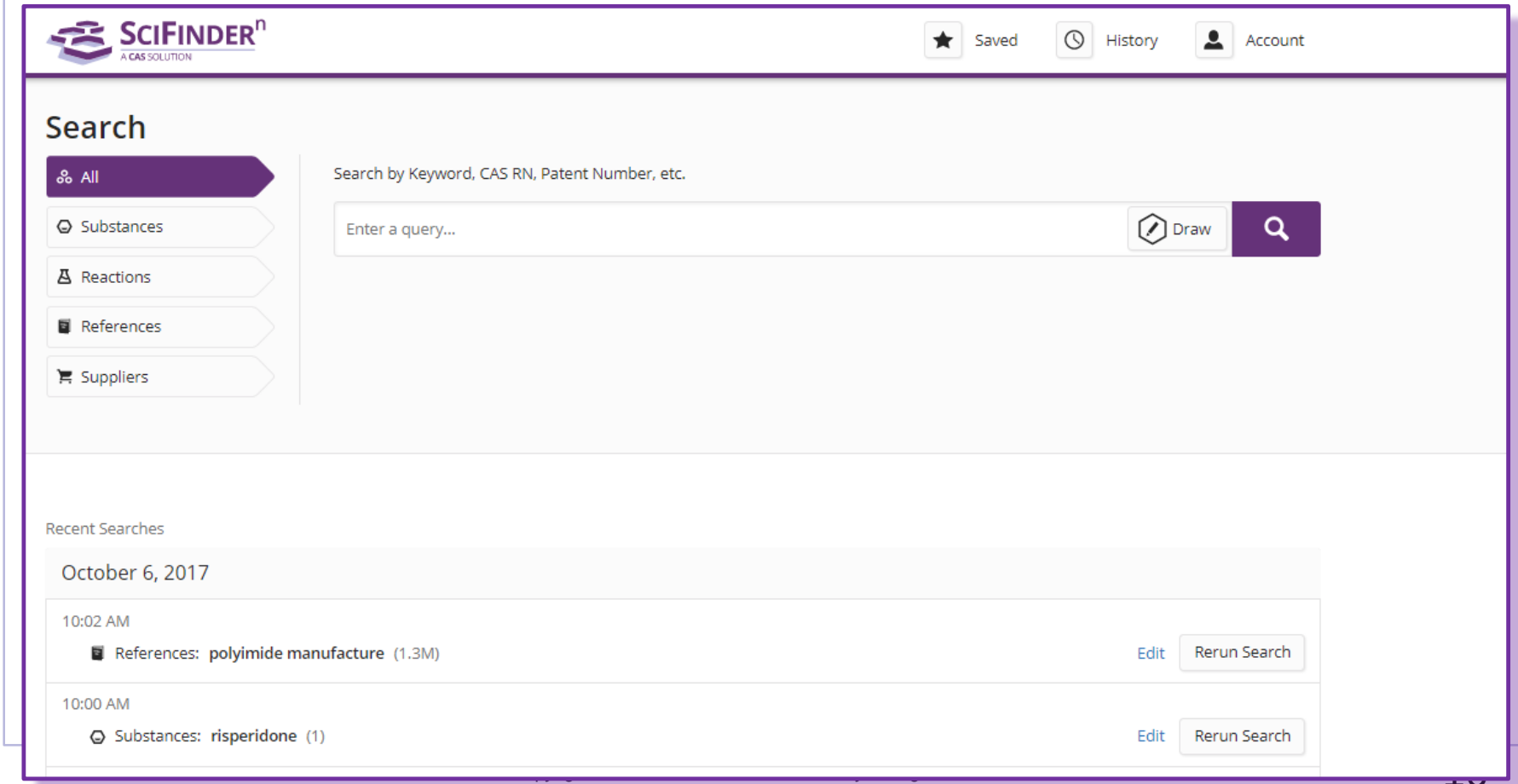

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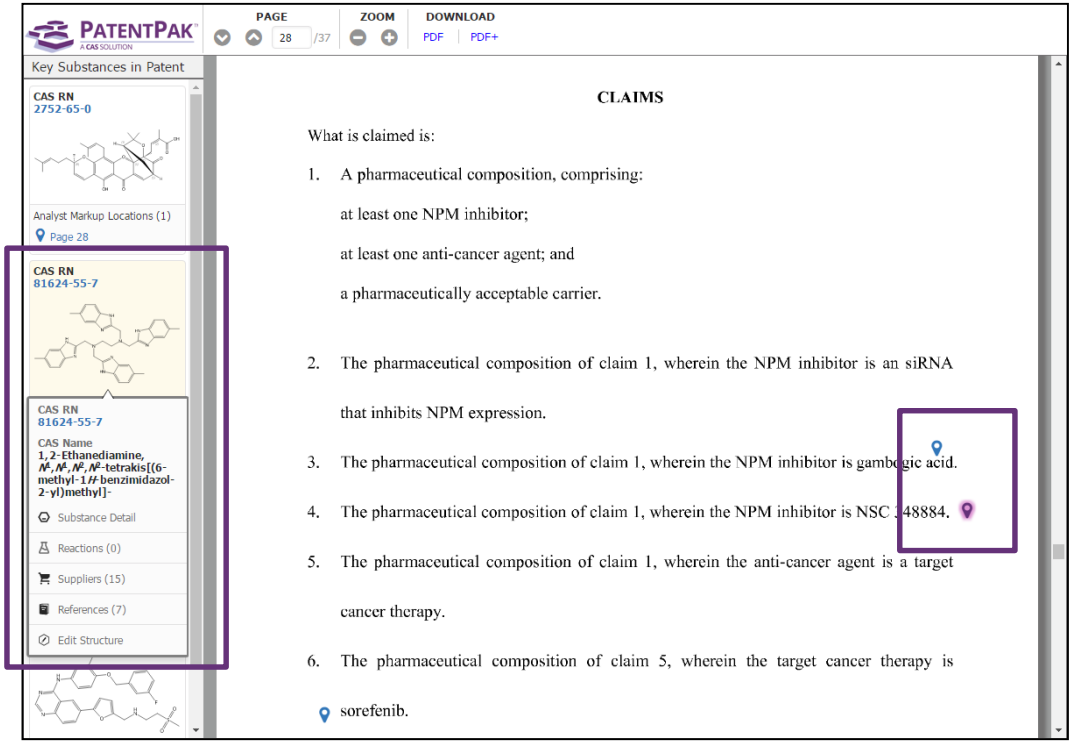
Patent chemistry is fully annotated with structures, nomenclature and more!



Important chemistry locations are identified by CAS expert scientists

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Export of marked up patents includes a summary of the key substances in a patent

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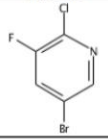
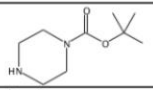
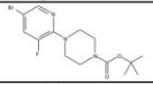
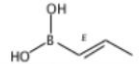
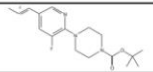
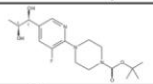
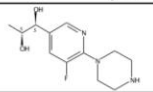
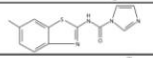
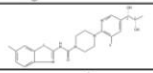
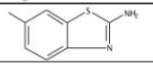
Key Substances in Patent

Mark	Page #	CAS RN	Name	Structure
101	p.151	831203-13-5	Pyridine, 5-bromo-2-chloro-3-fluoro-	
102	p.151	57260-71-6	1-Piperazinecarboxylic acid, 1,1-dimethylethyl ester	
103	p.151	1289048-68-5	1-Piperazinecarboxylic acid, 4-(5-bromo-3-fluoro-2-pyridinyl)-, 1,1-dimethylethyl ester	
104	p.151	7547-97-9	Boronic acid, *B*-(1*E*)-1-propen-1-yl-	
105	p.151	1416788-07-2	1-Piperazinecarboxylic acid, 4-[3-fluoro-5-(1*E*)-1-propen-1-yl-2-pyridinyl]-, 1,1-dimethylethyl ester	
106	p.151	1416788-08-3	1-Piperazinecarboxylic acid, 4-[5-[(1*S*,2*S*)-1,2-dihydroxypropyl]-3-fluoro-2-pyridinyl]-, 1,1-dimethylethyl ester	
107	p.151	1416788-09-4	1,2-Propanediol, 1-[5-fluoro-6-(1-piperazinyl)-3-pyridinyl]-, (1*S*,2*S*)-	
108	p.151	833491-50-2	1*H*-Imidazole-1-carboxamide, *N*-(6-methyl-2-benzothiazolyl)-	
121	p.151	1416788-16-3	1-Piperazinecarboxamide, 4-[5-[(1*S*,2*S*)-1,2-dihydroxypropyl]-3-fluoro-2-pyridinyl]-*N*-(6-methyl-2-benzothiazolyl)-	
109	p.153	2536-91-6	2-Benzothiazolamine, 6-methyl-	

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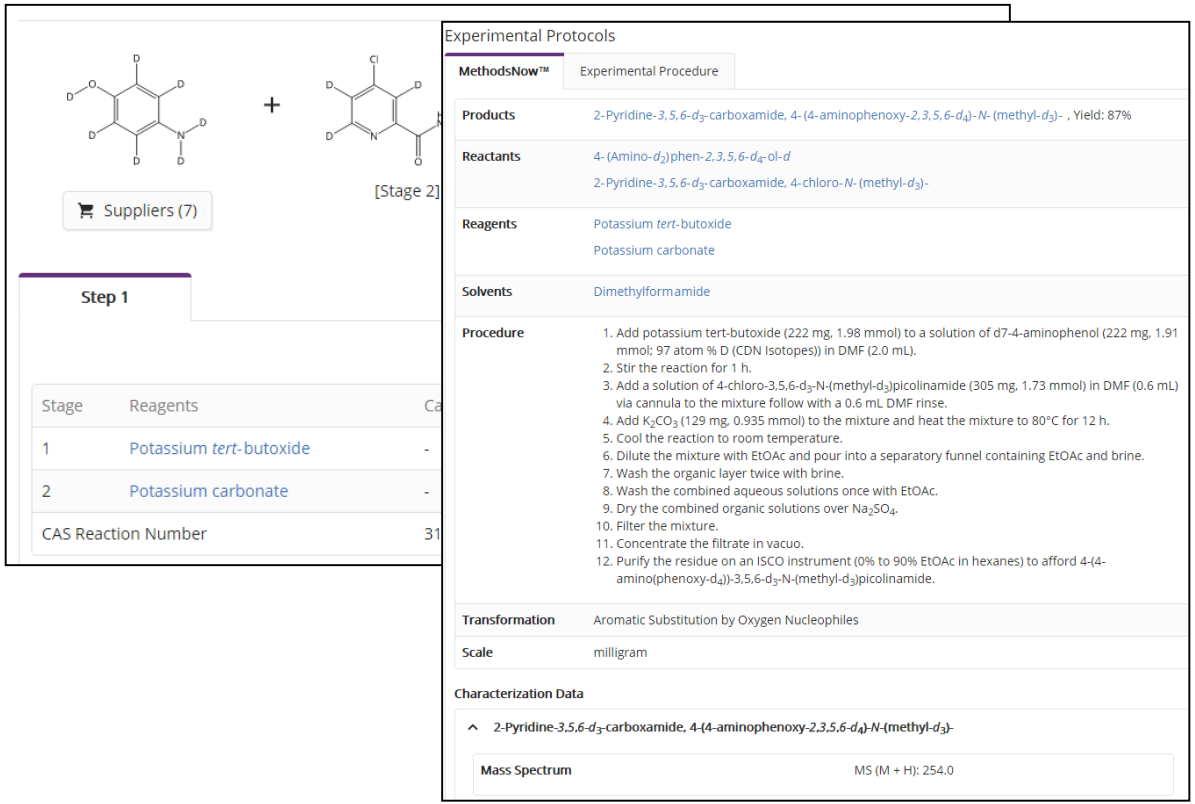
Go right to the lab with step-by-step synthetic procedures extracted and summarized from the literature



Key chemical components of the reaction are identified with links to additional information

Go directly to the lab with step-by-step instructions

Additional useful information is included

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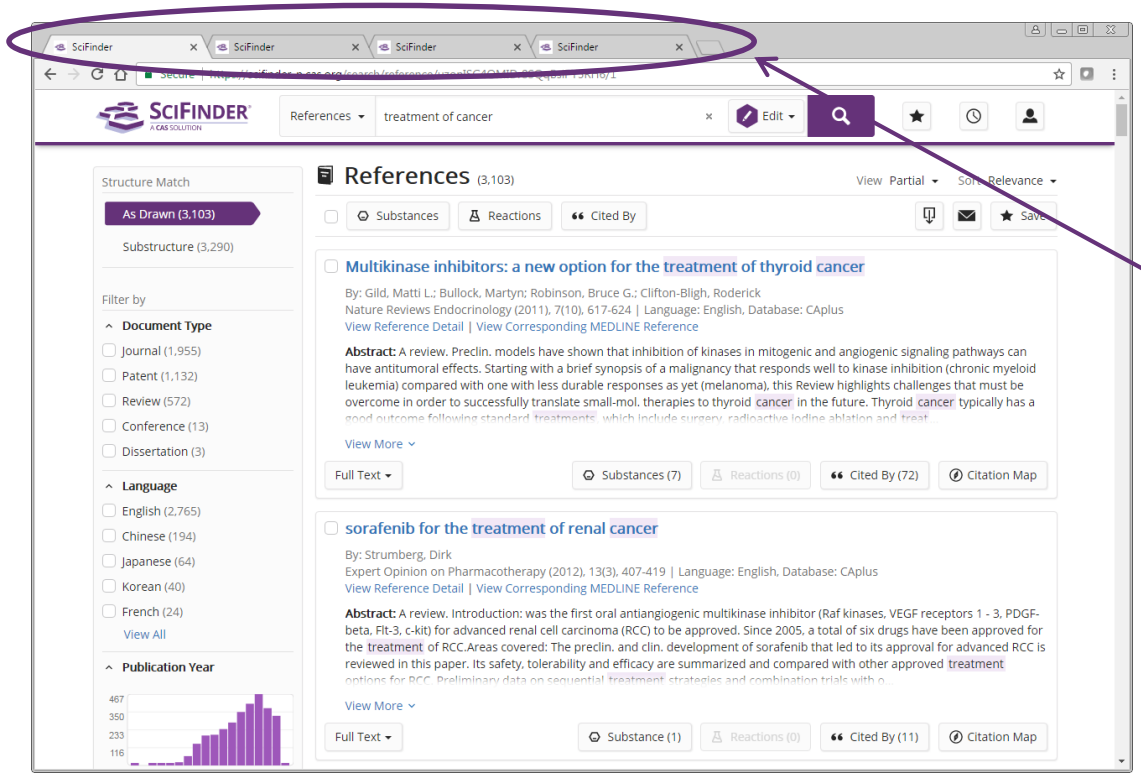

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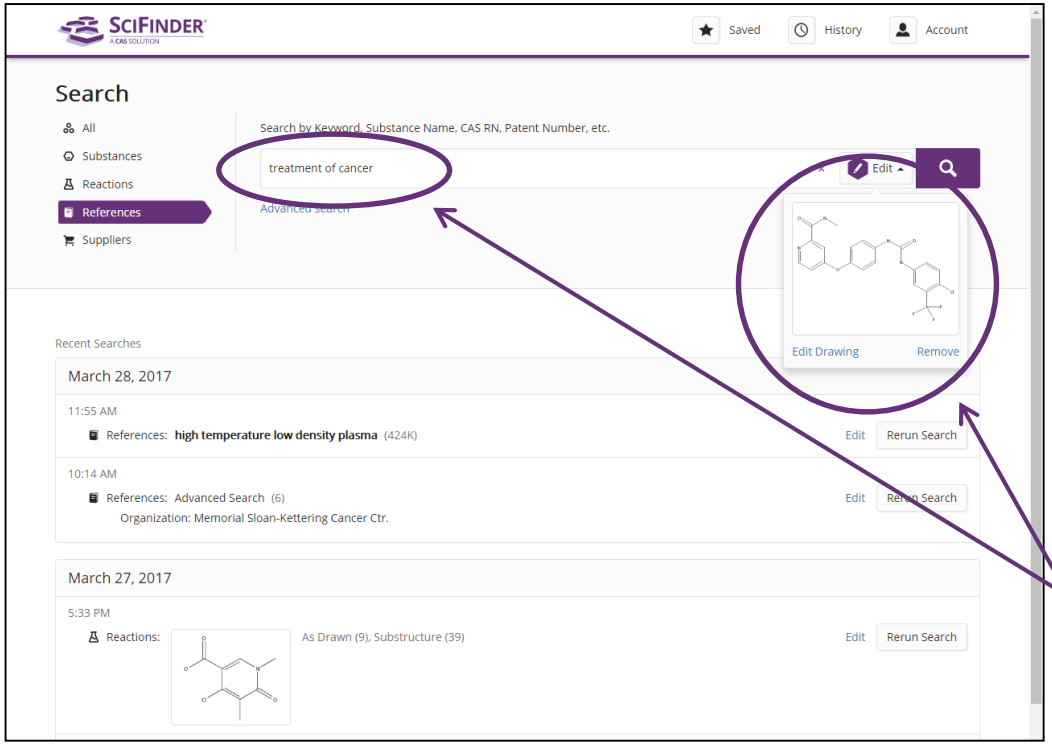

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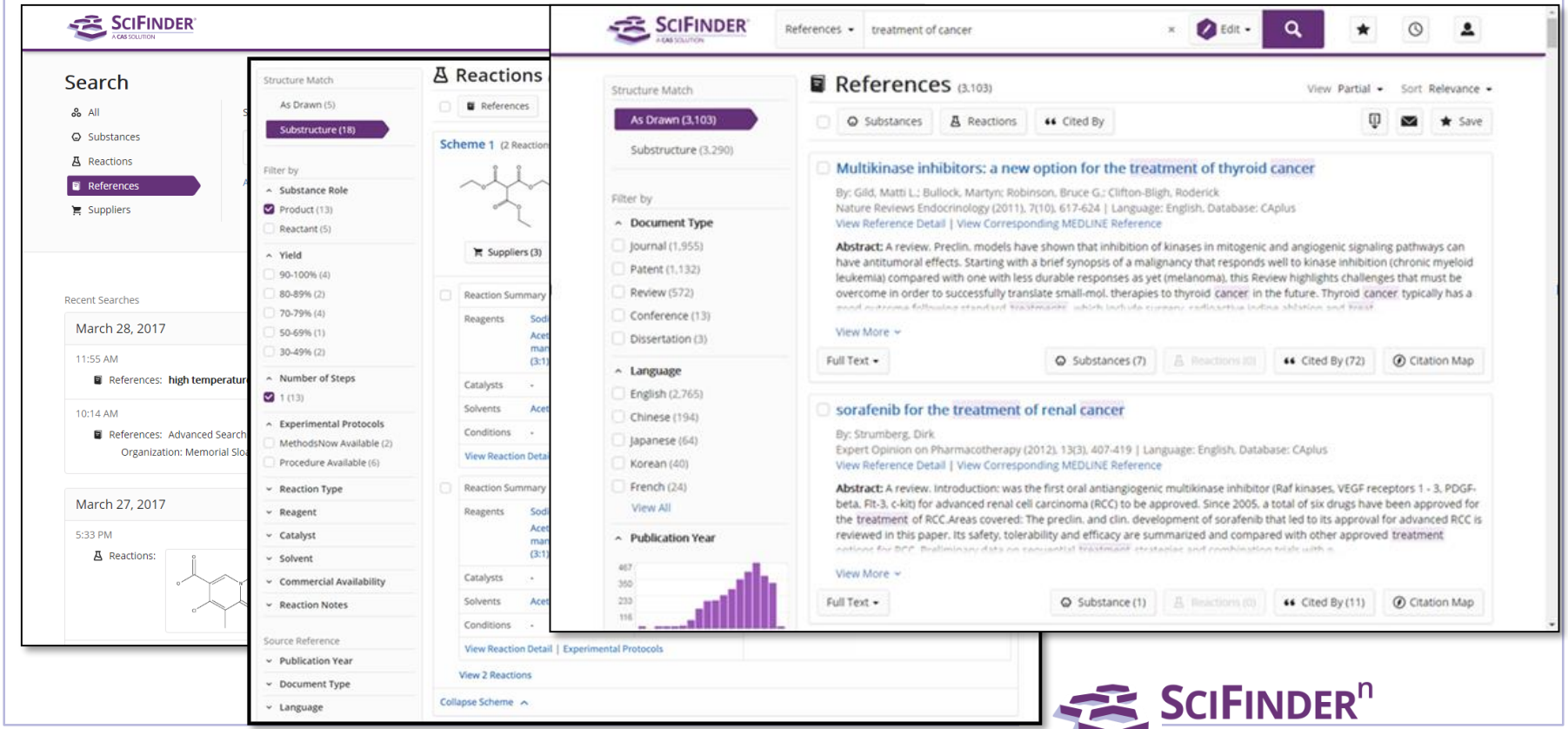

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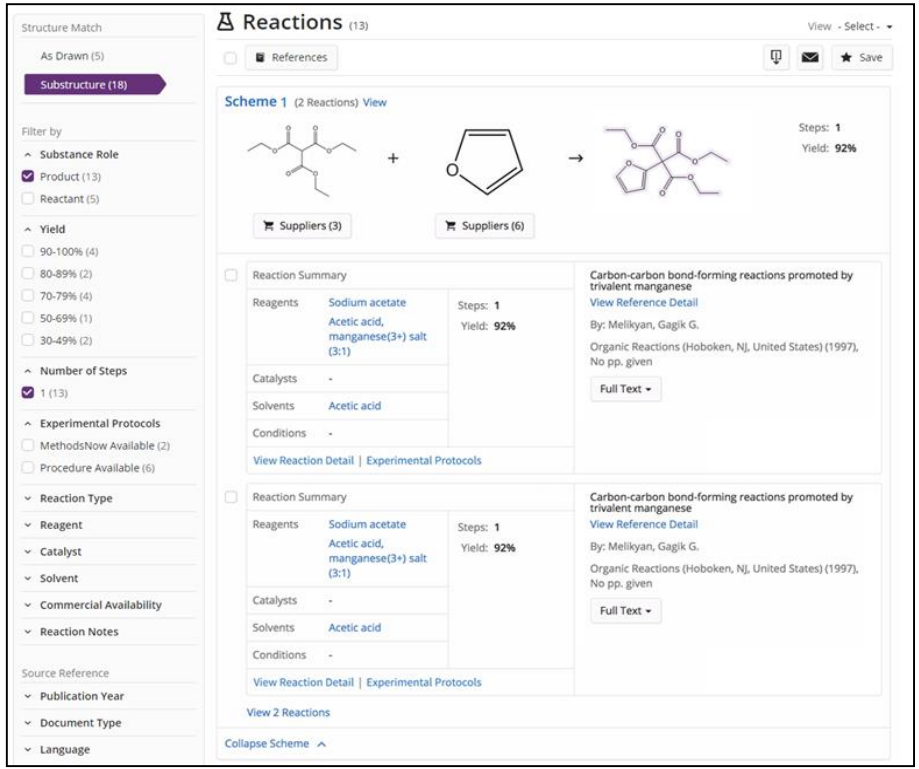

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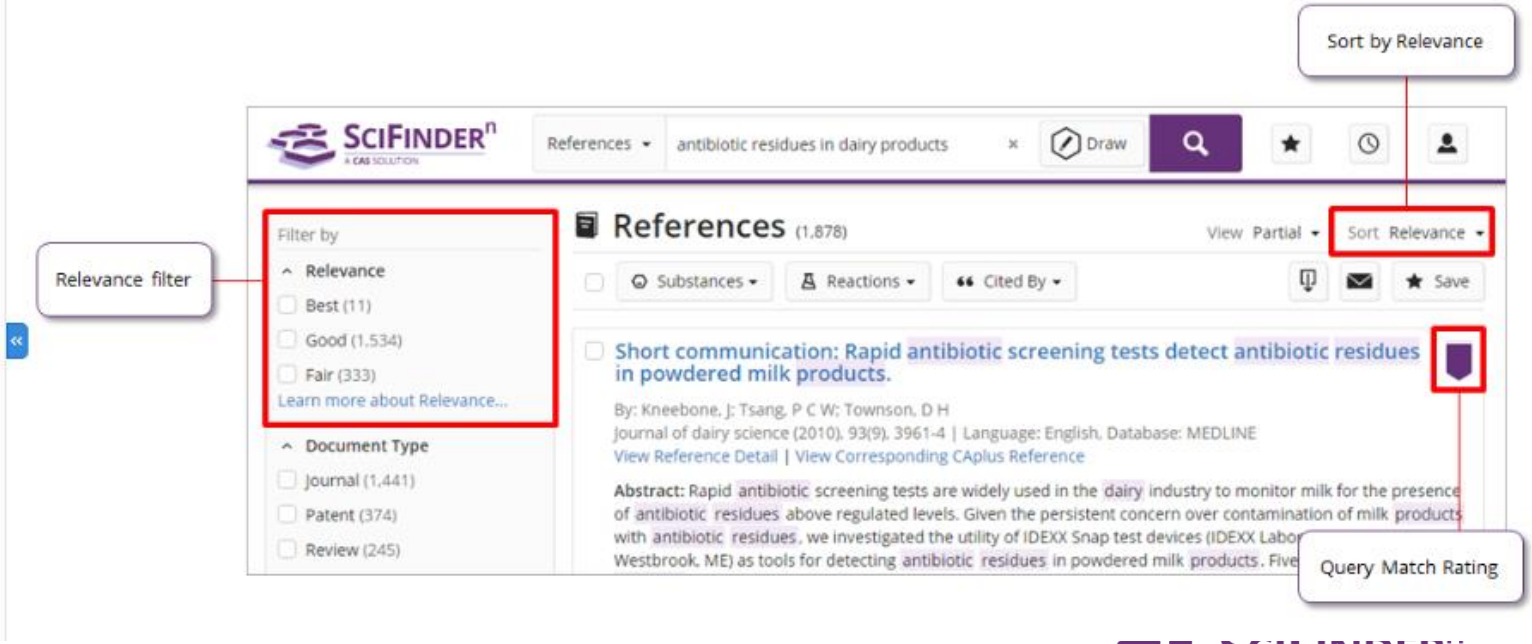

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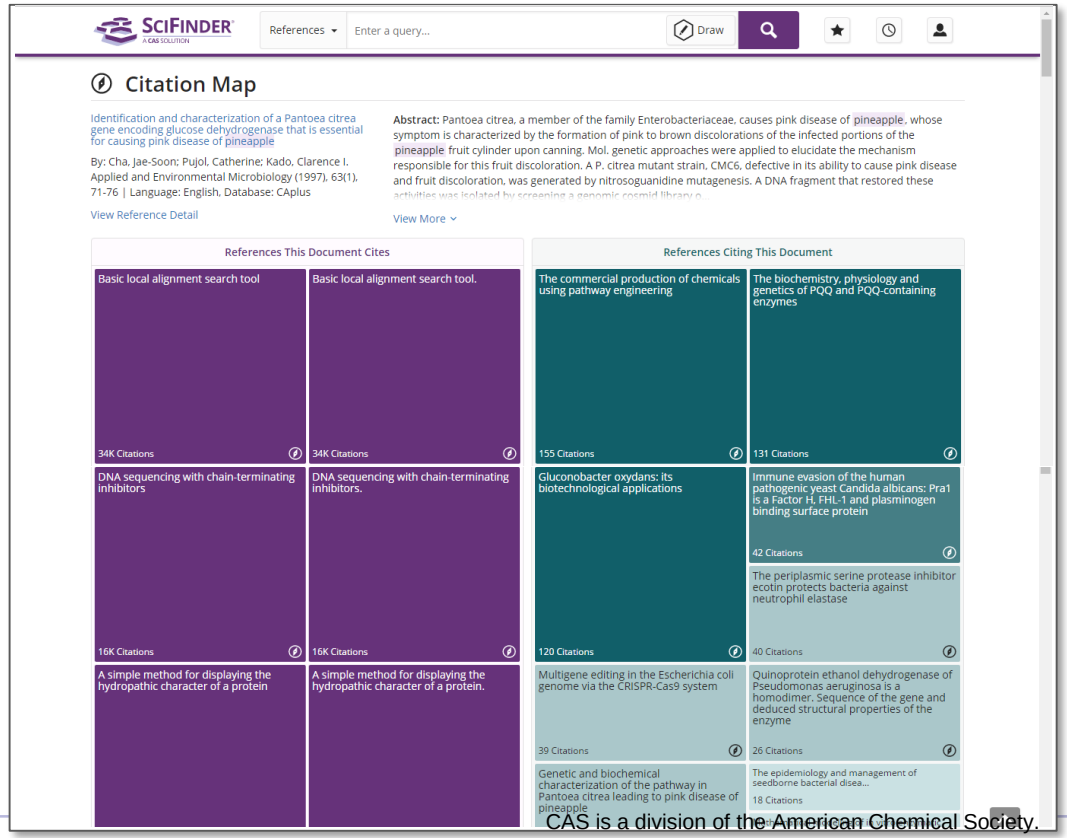

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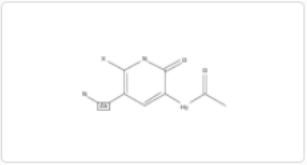
- Suppliers

Search by Substance Name, CAS RN, Patent Number, etc.

Enter a query...

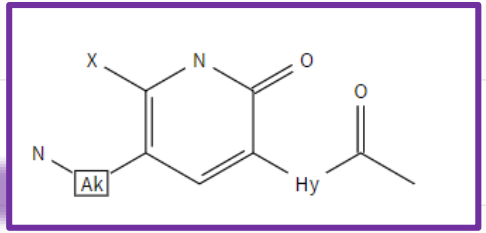
Edit

Advanced search for Molecular Formula



Edit Drawing Remove

Search Patent Markush



Recent Searches

October 16, 2017

1:20 PM

All:

Edit Rerun Search

Searching by Substances - Markush

SciFinder^n A CAS SOLUTION

Substances ▾ | Enter a query... | Edit ▾ | Search | ★ | 🕘 | 👤

Patent Markush Match

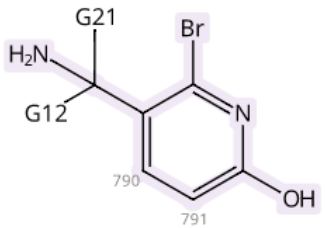
- As Drawn (23)
- Substructure (104)

Patent Markush (23)

References ▾ | ✉ | ★ Save

WO2016180536

View Reference Detail



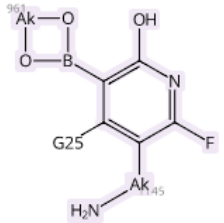
Patent claim 1

PATENTPAK ▾ | Full Text ▾

Patent	Language	Kind Code	PatentPak Options
WO2016180536	English	A1	PDF | PDF+ | Viewer

WO2015140572

View Reference Detail



Patent claim 15

PATENTPAK ▾ | Full Text ▾

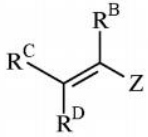
961: alkylene <containing 1 or more C> (opt. substd. by G22)

1145: carbon chain <containing 1-20 C, 0 or more double bonds, 0 or more triple bonds> (opt. substd. by G34)

Searching by Substances - Markush

15. A process according to any one of the preceding claims wherein the organoboron compound is a compound of formula (II) or (III):

$(R^A)_x$—Ar–Z (II)



(III)

;

wherein:

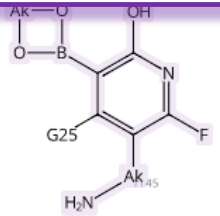
Ar is an aryl ring or a heteroaryl ring;

each R^A group is the same or different and is a group selected from substituted or unsubstituted $C_{1\text{-}20}$ alkyl, substituted or unsubstituted $C_{2\text{-}20}$ alkenyl, substituted or unsubstituted $C_{2\text{-}20}$ alkynyl, substituted or unsubstituted $C_{3\text{-}20}$ cycloalkyl, substituted or unsubstituted heterocyclyl, substituted or unsubstituted aryl, substituted or unsubstituted heteroaryl, cyano, amino, $C_{1\text{-}10}$ alkylamino, di($C_{1\text{-}10}$)alkylamino, arylamino, diarylamino, arylalkylamino, amido, acylamido, hydroxy, halo, carboxy, ester, acyl, acyloxy, $C_{1\text{-}20}$ alkoxy, aryloxy, haloalkyl, sulfonic acid, thiol, $C_{1\text{-}10}$ alkylthio, arylthio, sulfonyl, phosphoric acid, phosphate ester, phosphonic acid and phosphonate ester, wherein two or more R^A groups may be bonded together to form one or more rings;

R^B, R^C, and R^D are each independently selected from H, substituted or unsubstituted $C_{1\text{-}20}$ alkyl, substituted or unsubstituted $C_{2\text{-}20}$ alkenyl, substituted or unsubstituted $C_{2\text{-}20}$ alkynyl, substituted or unsubstituted $C_{3\text{-}20}$ cycloalkyl, substituted or unsubstituted heterocyclyl, substituted or unsubstituted aryl, substituted or unsubstituted heteroaryl, cyano, amino, $C_{1\text{-}10}$ alkylamino, di($C_{1\text{-}10}$)alkylamino, arylamino, diarylamino, arylalkylamino, amido, acylamido, hydroxy, halo, carboxy, ester, acyl, acyloxy, $C_{1\text{-}20}$ alkoxy, aryloxy, haloalkyl, sulfonic acid, thiol, $C_{1\text{-}10}$ alkylthio, arylthio, sulfonyl, phosphoric acid, phosphate ester, phosphonic acid and phosphonate ester, wherein two or more of R^B, R^C, and R^D may be bonded together to form one or more rings;

Z is group selected from a boronic ester group, a boronic acid group, a borate group or a trifluoroborate group; and

x is an integer from 0 to 5.



961: alkylene

1145: carbon bonds> (opt.

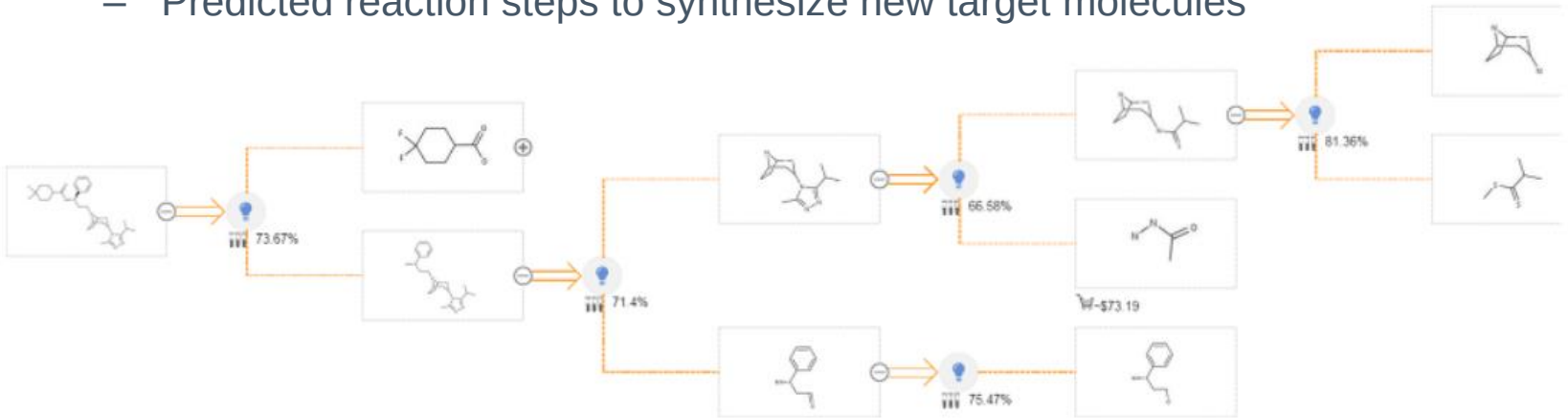
Edit

Save

Full Text

SciFinder^{n} will deliver new predictive synthesis planning capabilities via integration of enhanced ChemPlanner

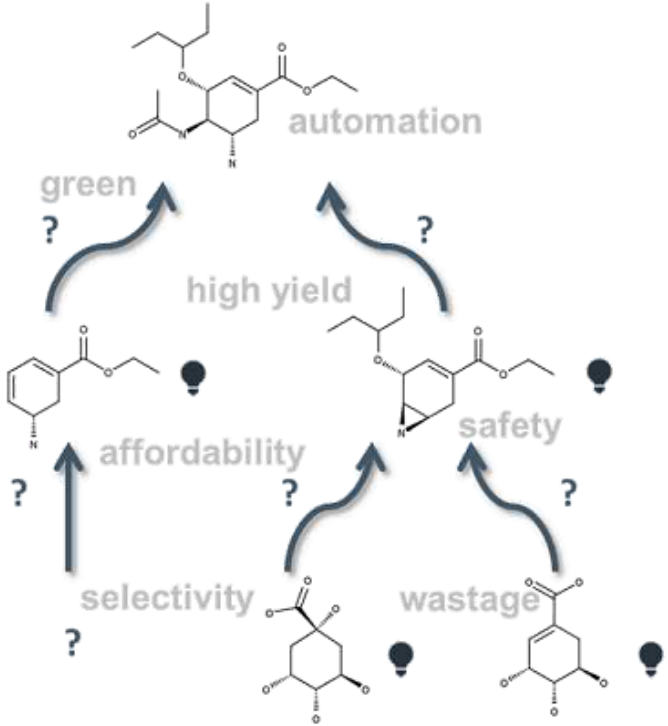
- Predictive synthetic planning helps researchers overcome challenging synthesis problems faster and optimize known processes
  - Suggests alternative synthetic strategies to known compounds
  - Predicted reaction steps to synthesize new target molecules



SciFinder^{n}
A CAS SOLUTION

Synthesis Planning with Reaction/Substance Searching

- Non-linear thought process
- Based on knowledge, intuition and experience
- Knowledge gaps are filled using the literature
- The traditional mining tools are helpful in finding similar molecules and precedents to synthetic steps, but they are not designed to take the broad perspective of the full synthesis, or to offer novelty



SciFinder^n
A CAS SOLUTION

SciFinder^n A CAS SOLUTION

Reactions | Enter a query... | Edit | Search

Retrosynthesis Search Options

Powered by ChemPlanner®

Synthetic Depth

Synthetic Depth restricts the number of steps allowed in the suggested routes. Learn more.

- 1
- 2
- (•) 3
- 4

Rules Supporting Predicted Reactions

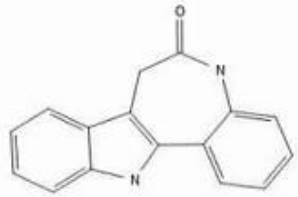
Rules that support predicted reactions are categorized based on the number of literature examples supporting them. Common rules are supported by many literature examples whereas Uncommon and Rare rules are supported by fewer. Your search speed could decrease by choosing Uncommon or Rare Rules. Learn more.

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

Break & Protect Bonds (Optional)

A bond selected to break will be broken in the first step of the plan. Bonds selected to protect will never be broken though their bond order may change. Learn more.

Break | Protect | Clear All Bond Selections



Retrosynthesize

SciFinder^n A CAS SOLUTION

SciFinder^n A CAS SOLUTION

Reactions | Enter a query... | Draw

Retrosynthesis

Powered by ChemPlanner®

Overview | Steps | Scoring

Save

Step Key

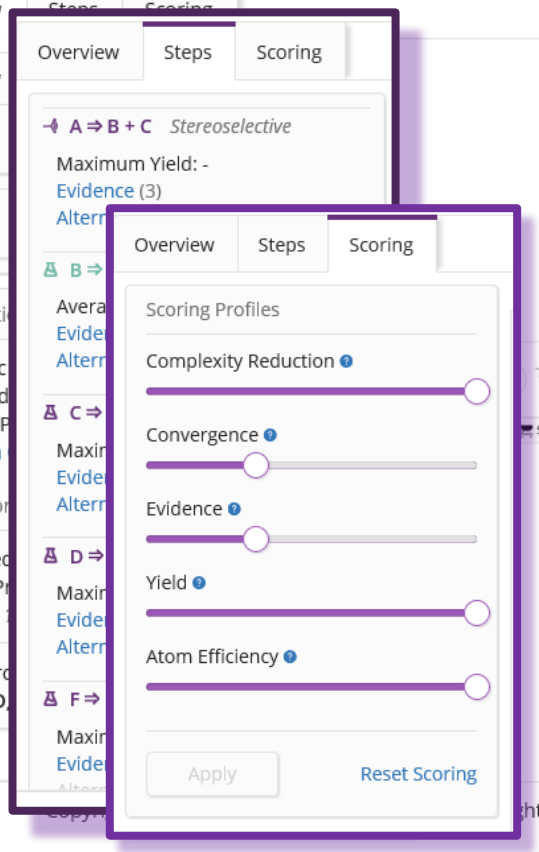
Plan Opti

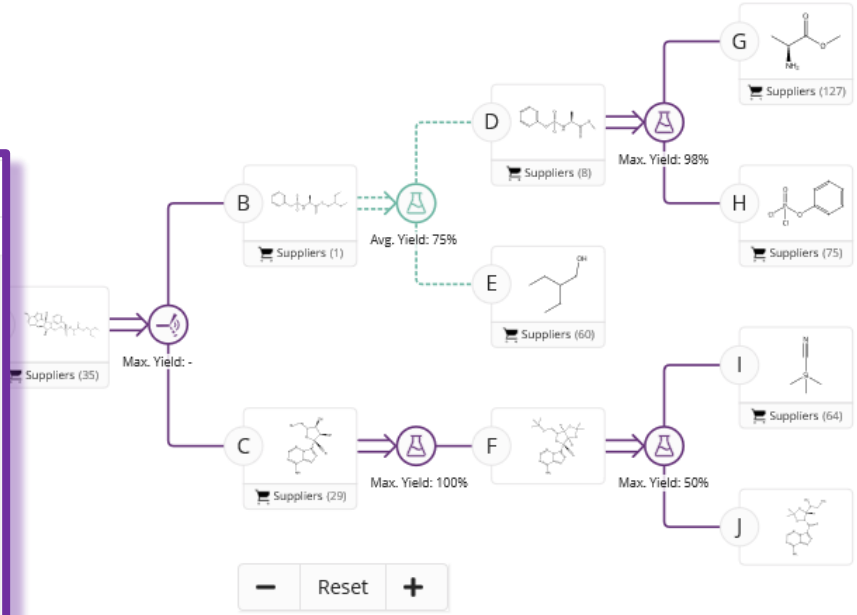
Synthetic
Predicted
Break & P
Edit Plan

Plan Infor

Estimated
Overall Pr
(USD per

Commerc
A, B, C, D,





Feedback

Help Contact Us Legal

NMR SPECTRA SEARCH

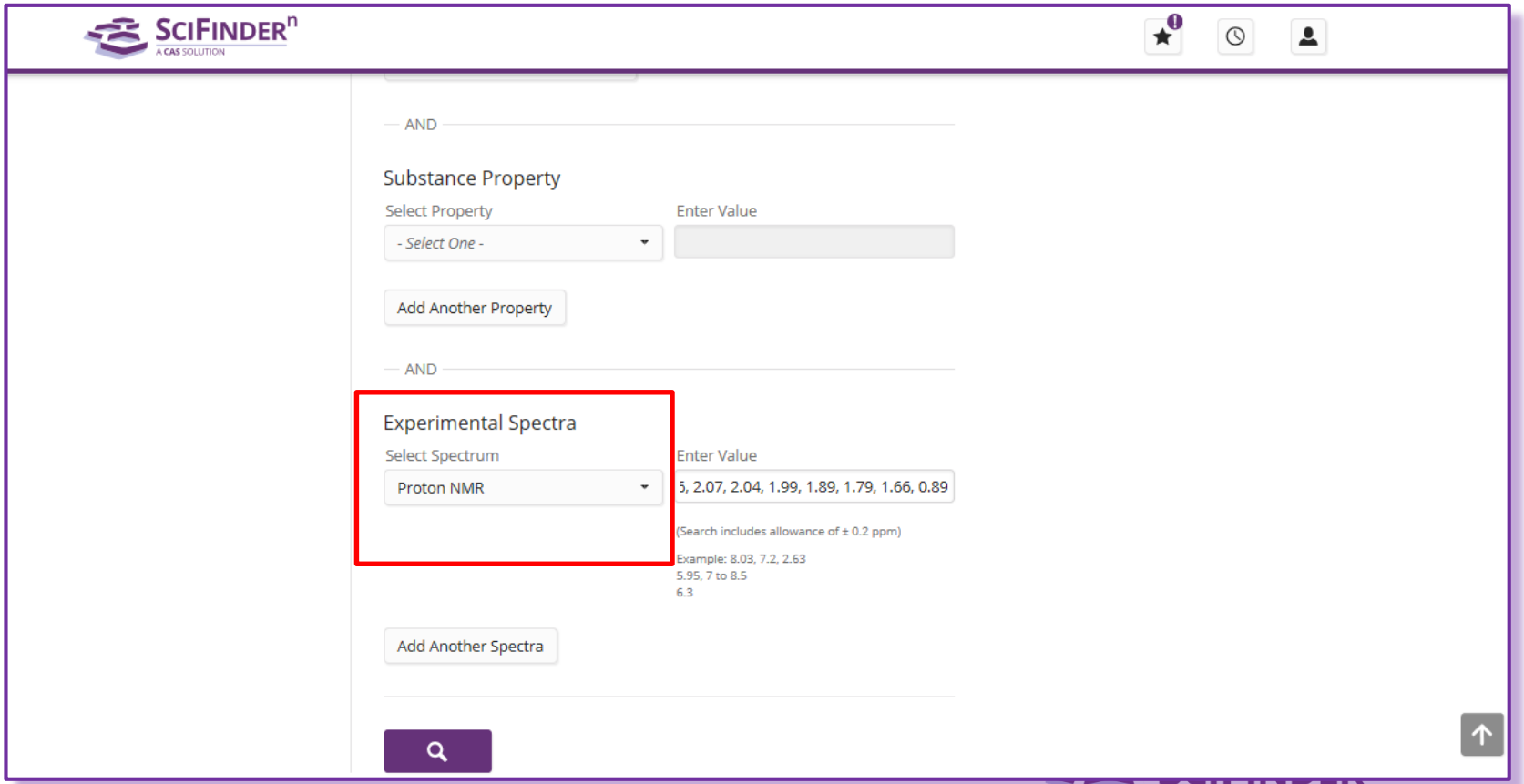
NMR peak → Molecular Weight→ Fragments structure → Identify Structure

(500 MHz): δ6.84 (br s, 1 H), 6.10 (br s, 1 H), 6.02 (s, 1 H), 5.15 (br s, 1 H), 5.05 (s, 1 H), 4.98 (m, 1 H), 4.50 (br d, 1 H, J = 11 Hz), 3.19 (t, 1 H, J = 12 Hz), 2.72 (dd, 1 H, J = 12, 4.5 Hz), 2.40 (dd, 1 H, J =14.5, 3.0 Hz), 2.36 (t, 1 H, 11 Hz), 2.07 (m, 1 H), 2.04 (s, 3 H), 1.99 (br s, 3 H), 1.89 (br s (OH), 1 H), 1.79 (br s, 3 H), 1.66 (m, 1 H), 0.89 (td, 1 H, J = 13.5, 3.5 Hz)

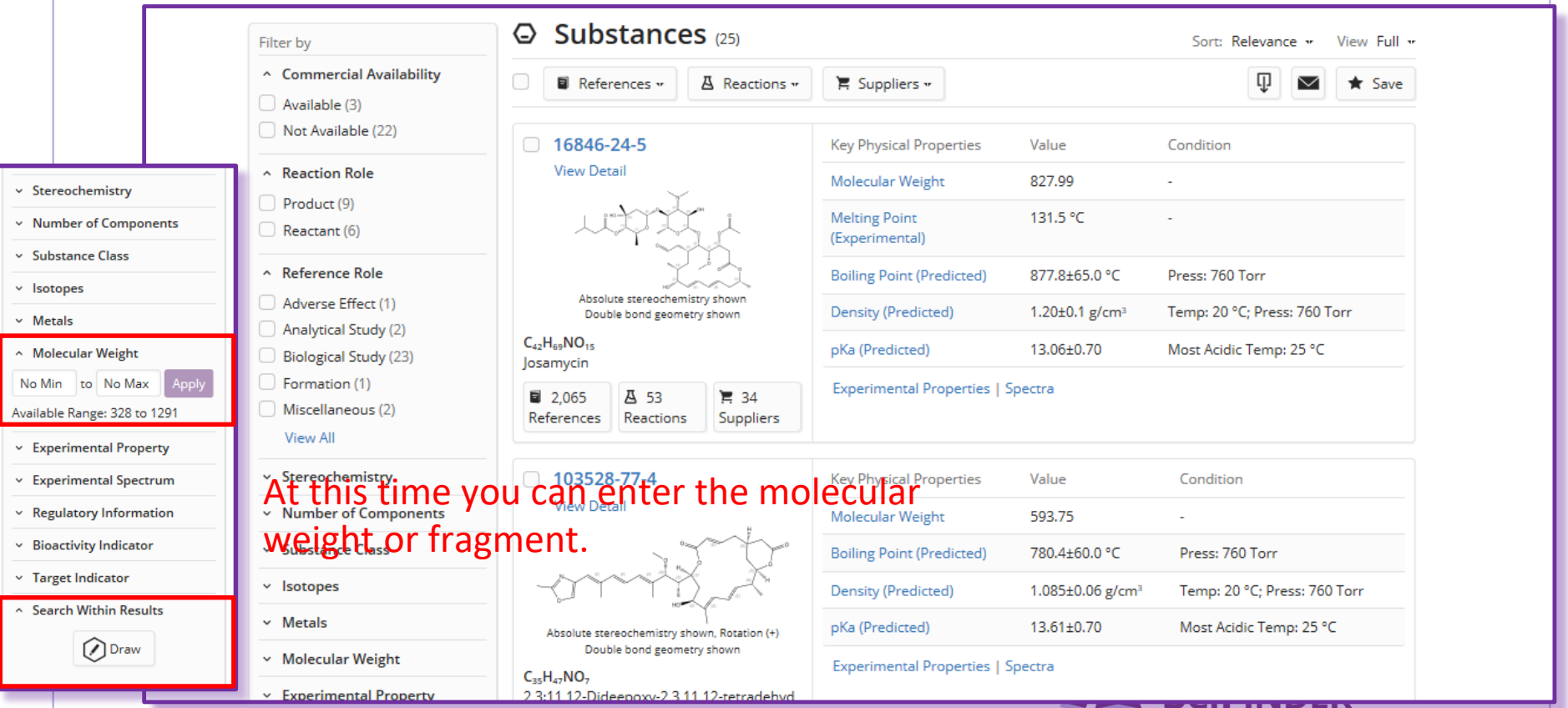
Removing the info in brackets you can search with:
6.84, 6.10, 6.02, 5.15, 5.05, 4.98, 4.50, 3.19, 2.72, 2.40, 2.36, 2.07, 2.04, 1.99, 1.89, 1.79, 1.66, 0.89

SciFinder^n
A CAS SOLUTION

NMR peak → Molecular Weight→ Fragments Structure → Identify Structure

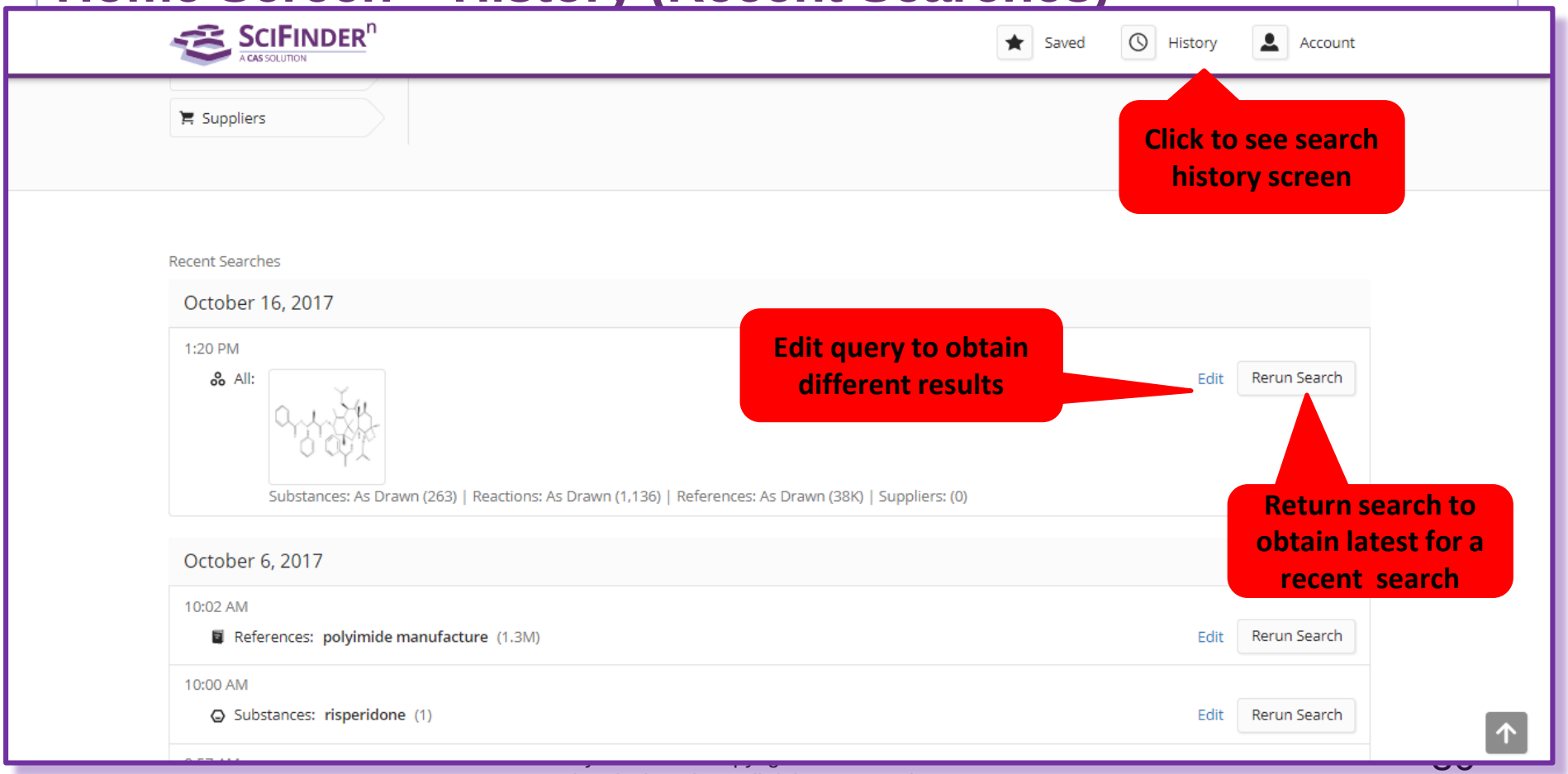


NMR peak → Molecular Weight→ Fragments Structure → Identify Structure



At this time you can enter the molecular weight or fragment.

Home Screen – History (Recent Searches)



Search History Screen

SciFinder^n A CAS SOLUTION

Substances ▾ | Enter a query... | Edit ▾

Delete search History

Filter by

Search Type

- All (58)
- Substances (81)
- Reactions (18)
- References (115)
- Suppliers (4)

Date

Start Date: mm/dd/yyyy to End Date: mm/dd/yyyy

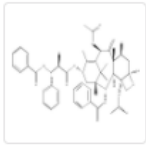
October, 2017

SU	MO	TU	WE	TH	FR	SA
1	2	3	4	5	6	7
8	9	10	11	12	13	14
15	16	17	18	19	20	21
22	23	24	25	26	27	28
29	30	31	1	2	3	4

Specified date range

Search History (276)

October 16, 2017

1:20 PM — All:  — Rerun Search

Substances: As Drawn (263) | Reactions: As Drawn (1,136) | References: As Drawn (38K) | Suppliers: (0)

Return search for new result

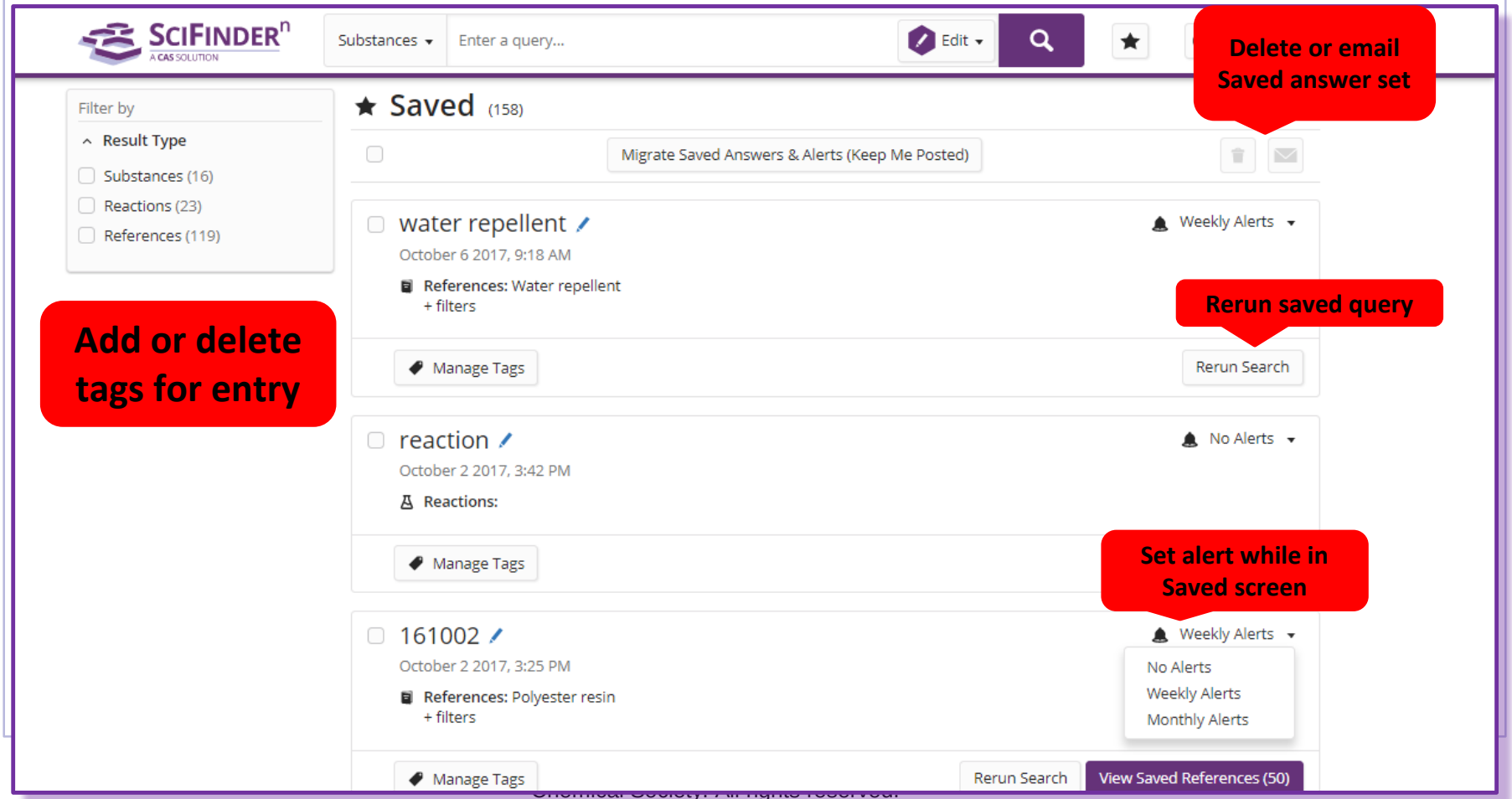
October 6, 2017

10:02 AM — References: **polyimide manufacture** (1.3M) — Rerun Search

10:00 AM — Substances: **risperidone** (1) — Rerun Search

9:57 AM — References: **Shape memory material** (6.8M) — Rerun Search

Saved Answer Screen



Chuan-Che Liu Ph.D.
Senior Account Consultant
tliu2@acs-i.org

SciFinderN 文獻查詢

CAS
A DIVISION OF THE
AMERICAN CHEMICAL SOCIETY

Find References

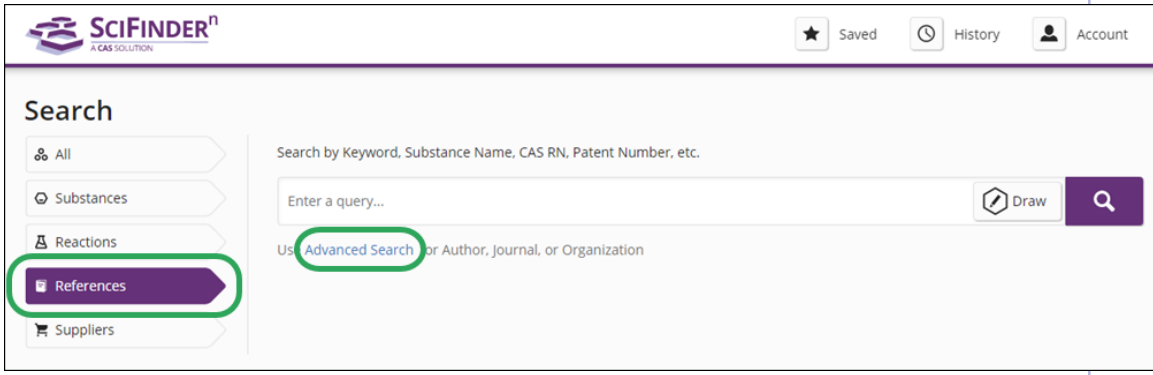
Find document references that match your query, which can be **search terms**, a **chemical structure**, or both:
•If you enter a search term **or** chemical structure query, SciFinder^n retrieves associated references, such as journal articles and patents.
•If you enter **both** a search term query and a structure query, the search results must match both criteria (queries are joined by the logical AND).

Find ADVANCED **References** by:
•**Author and Keywords**
•**A Specific Author**

Find **References Associated with a Company or Organization**

Find a **Reference Using Journal Information**

Find **Patent References** by:
•**Assignee**
•**Inventor**



SciFinder^n
A CAS SOLUTION

Find References Using Search Terms

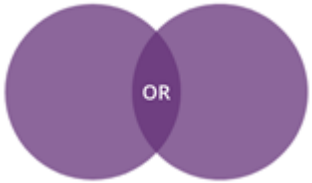
Search terms may be:

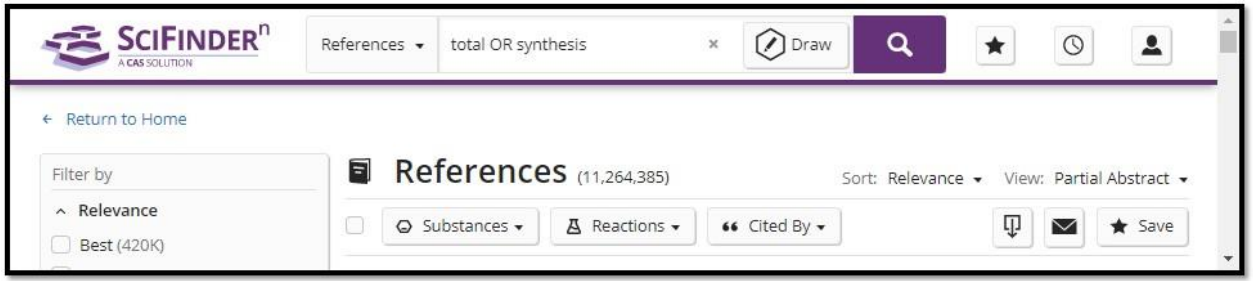
- **Research Topic/Keyword/Concept** (e.g., analgesics)
- **Substance Name** (e.g., ibuprofen)
- **CAS Registry Number** (with dashes, e.g., 51146-57-7)
- **Accession Number** (e.g., 1986:230471)
- **PubMed ID Number** (e.g., 15980585)
- **Digital Object Identifier (DOI)** (e.g., 10.1093/nar/gki470)
- **Patent Number** (no spaces, e.g., US4571400)
- **Patent Application Number** (with dash, e.g., US1984-682902)

SciFinder^n
A CAS SOLUTION

There are a total of five basic Boolean search operators:

- OR
  - The OR operator will provide results that contain either of the keywords
  - Will provide results that contain either of the terms
  - This is the default search when no operators are present in the search query
  - total OR synthesis





Examples:

- ("flavor" **or** "extract") and ("turmeric" **or** "curcumin")
- (flavor not dye) **or** extract
- 13463-67-7 **or** 7664-41-7

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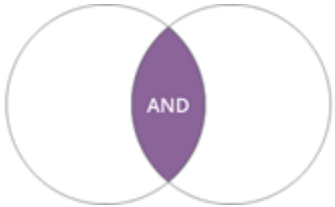
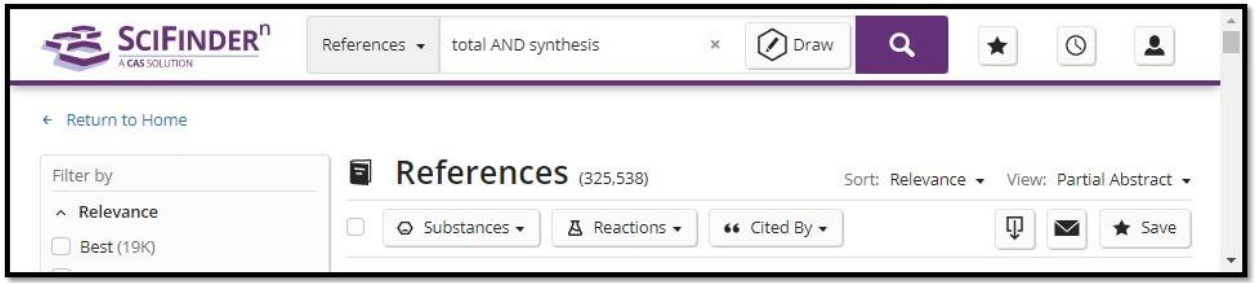
A CAS SOLUTION

- AND
  - The AND operator combines two keywords in a search to get results that contain both of them
  - Will provide results that contain both terms anywhere in the document
  - total AND synthesis



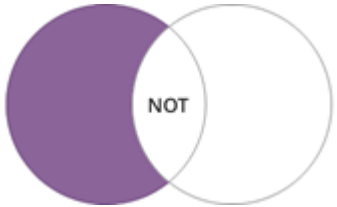


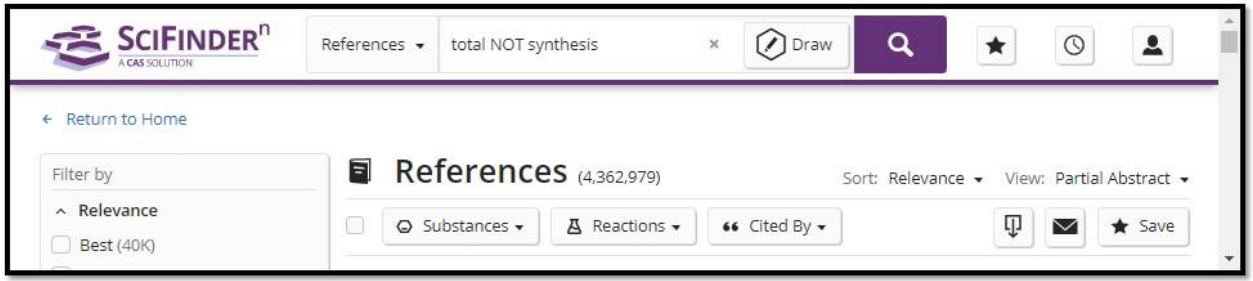
Examples:

- flavor **and** extract
- 3463-67-7 **and** 7664-41-7

SciFinder n
A CAS SOLUTION

- NOT
  - The NOT operator will eliminate keywords from the search
  - Will provide results that contain the term total but not the term synthesis
  - total NOT synthesis





Examples:

- electrolysis **not** haptens
- 1,5-Di-2-naphthalenyl-3-pentanone **not** Dibenzylideneacetone

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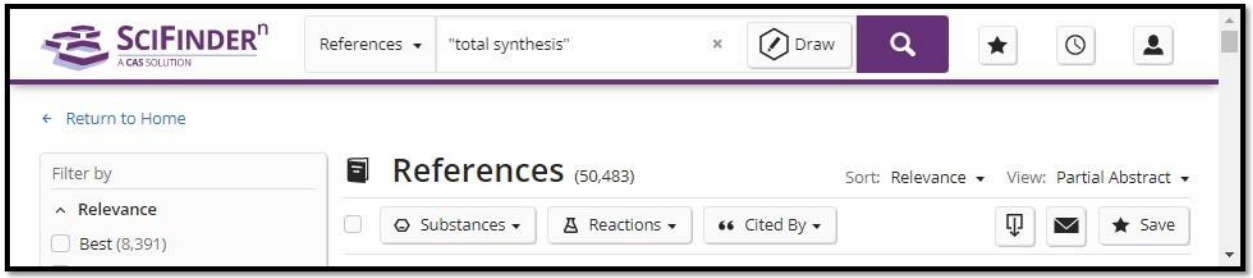
A CAS SOLUTION

- “”

  - Quotation marks means you are searching for a specific phrase
  - Will provide results that contain the exact phrase and will not return references with uses of these keywords on their own
  - “total synthesis”

"term"



Entering terms in **quotation marks** **creates a bound phrase that specifies an exact spelling** (plurals accepted, but no alternative spellings or synonyms) **and side-by-side relationship**.

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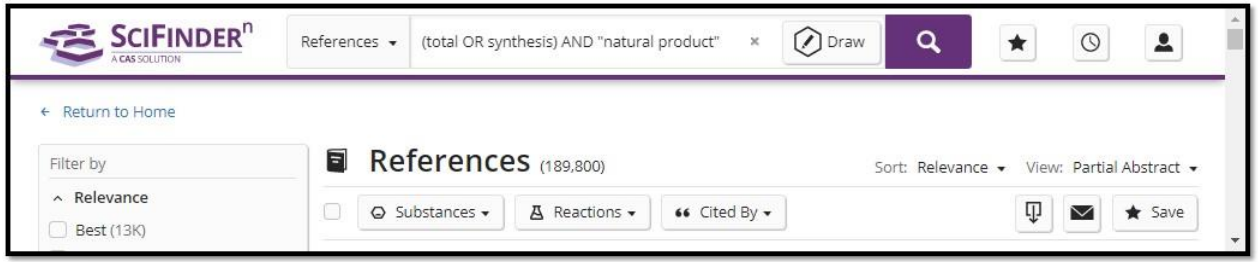
• ()

- Parentheses can be added to allow the user to combine Boolean operators
- (total OR synthesis) AND “natural product”



Entering terms and operators in **parentheses** **creates an expression that functions as a single unit** that interacts with other terms.

Examples:

- **(**extract not flavor**)** and **(**"turmeric" or "curcumin"**)**
- **((**turmeric or flavonoids**)** and immune cells**)** not inflammatory

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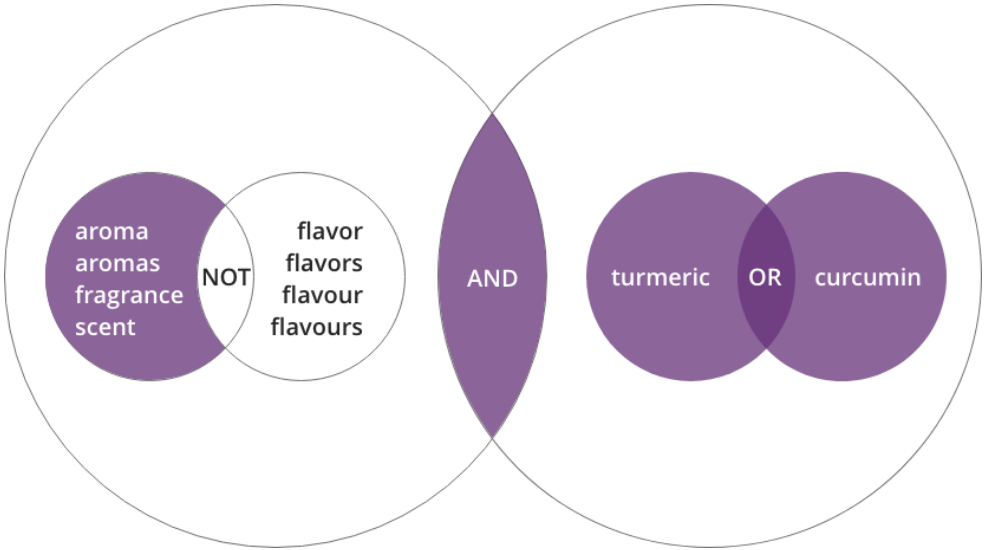
Boolean Modifier: ( )

Enclosing **terms and a Boolean operator within parentheses creates a Boolean expression that functions as a single unit/condition** that can interact with other terms, expressions, phrases, and operators.

Example: The query **(aroma not flavor) and ("turmeric" or "curcumin")** returns only results that **contain plurals/synonyms/alternate spellings of aroma, but not plurals/synonyms/alternate spellings of flavor and also contain turmeric, curcumin, or both**.



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Syntactic Reference Text Wildcard Searching * ?

This epic will allow users syntactically search references with wildcards.

Syntactic searching is limited to:

- Title
- Abstract
- Keywords
- Concept Modifiers

The following wildcard characters will be supported:

- * - Used to match 0 or more characters
- ? - Used to match 0 or 1 character

Wildcard characters can be used within a term (infix) or at the end of a term (terminal).

- Leading wildcard characters are not supported and will be ignored in a query.

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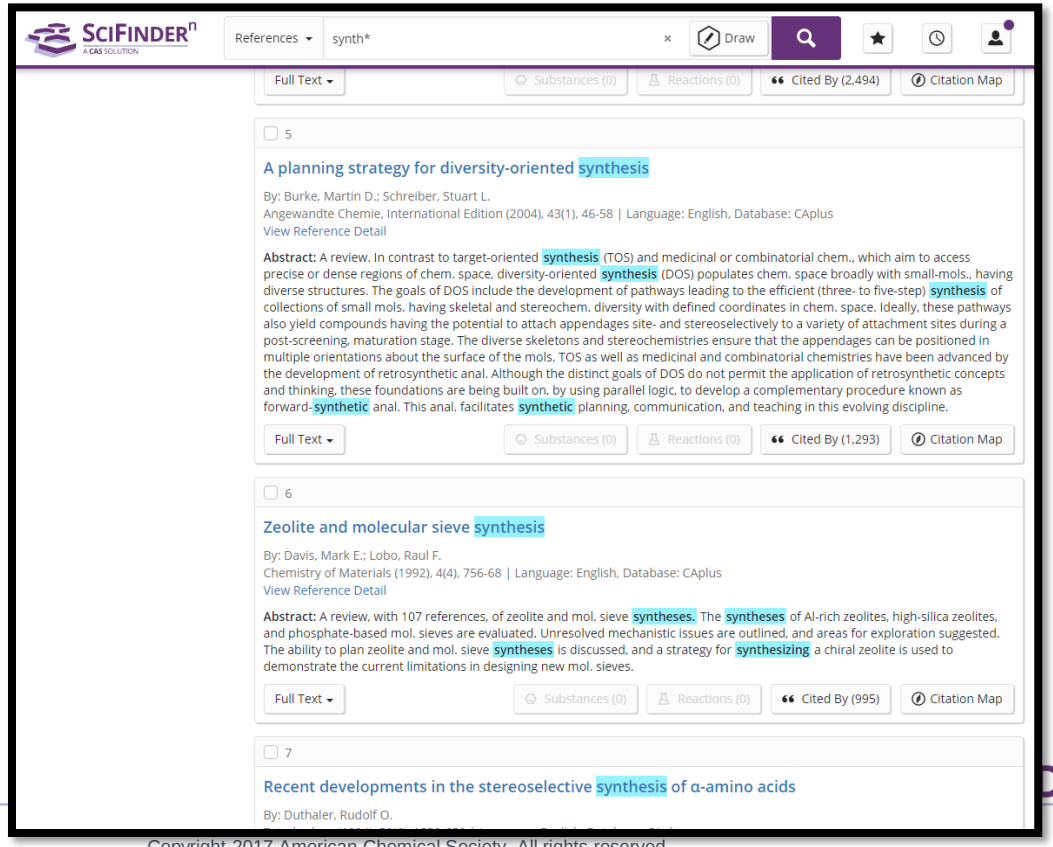
Examples

The query synth* will hit on terms such as

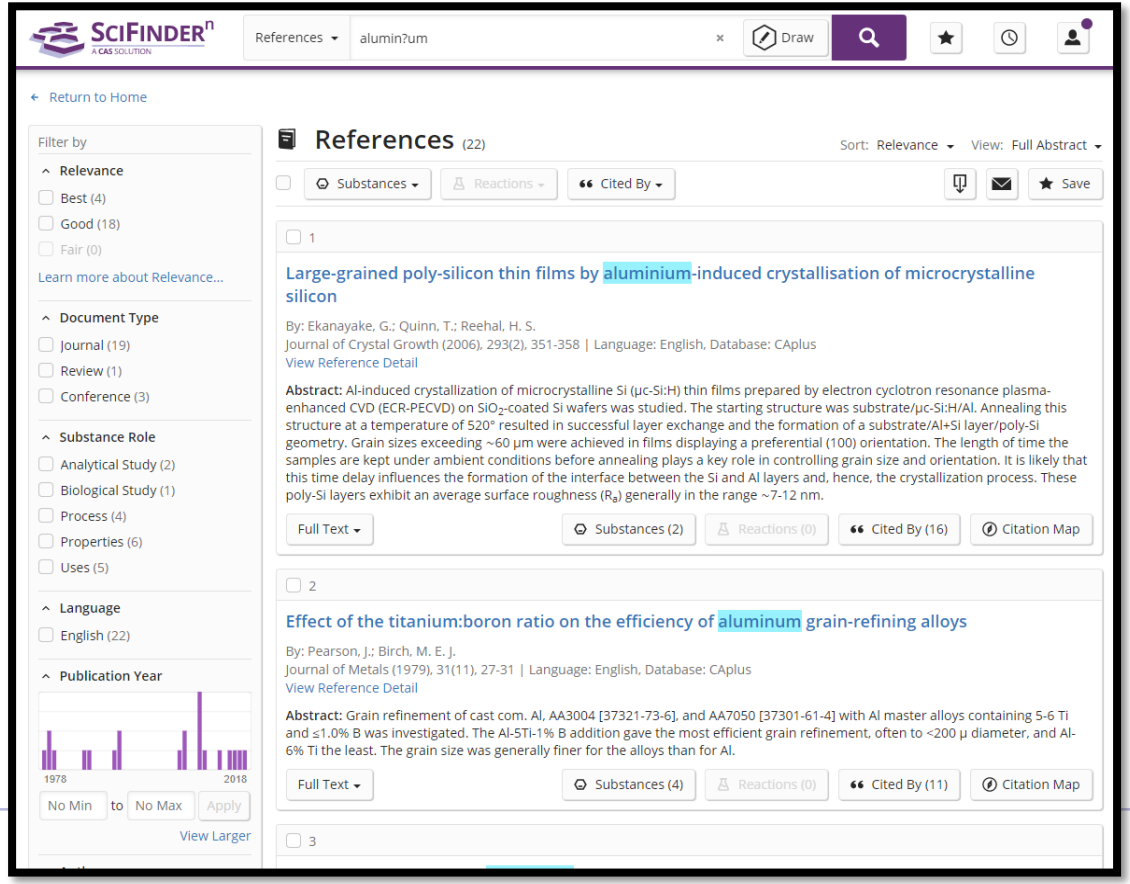
- Synthesis
- Syntheses
- Synthetic
- Synthesizing
- Etc.



Examples

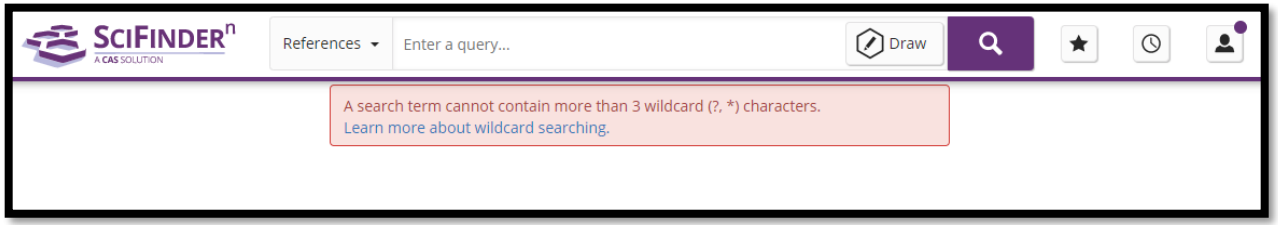
The query alumin?um will hit on terms such as

- Aluminum
- Aluminium
- Etc.



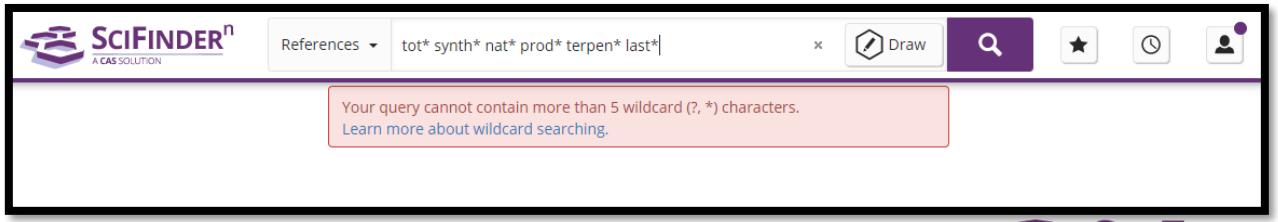
Exceptions:

- A term must have at least 3 non-wildcard characters for a wildcard to be searched
  - If a term has less than 3 non-wildcard characters, any wildcard terms will be searched literally.
- A search term cannot contain more than 3 wildcard characters
  - Currently, searchers will be provided with an error message for this scenario.



- In a subsequent build, terms with more than 1 wildcard character will be searched literally and the user will be provided with an informational message.

A search cannot contain more than 5 wildcard terms.



SciFinder
A CAS SOLUTION

Chuan-Che Liu Ph.D.
Senior Account Consultant
tliu2@acs-i.org

Substance Searching

CAS
A DIVISION OF THE
AMERICAN CHEMICAL SOCIETY

Find Substances by Name, Registry Number, or Document Identifier

Search terms may be:

- **CAS Registry Number** (with or without dashes, e.g., 51146-57-7, 51146577)

Note: Square brackets are accepted around RNs (e.g., [51146-57-7], but not single or double quotes.

- **Document Identifier:**
  - **Patent Number** (no spaces, e.g., US4571400)
  - **Accession Number** (e.g., 1986:230471)
  - **PubMed ID Number** (e.g., 15980585)
  - **CAS Accession Number (CAN):** document number in CA Plus (e.g.,148:486341)

SciFinder^n
A CAS SOLUTION

Find Substances by Name, Registry Number, or Document Identifier

Search terms may be:

- **Substance Name:**
  - **Example:** benoxaprofen
    Note: Wildcard searching using an **asterisk** only works for single-search-term, single-word substance name searches (e.g., benoxa*).
  - **Example:** methyl ethyl ketone
    Note: For an exact match, use **double quotes** around the substance name. Searching multiple word substance names without quotes also returns results matching part of the name. For example, searching the above example without double quotes returns methyl ethyl ketone, methyl, ethyl ketone, and ethyl.

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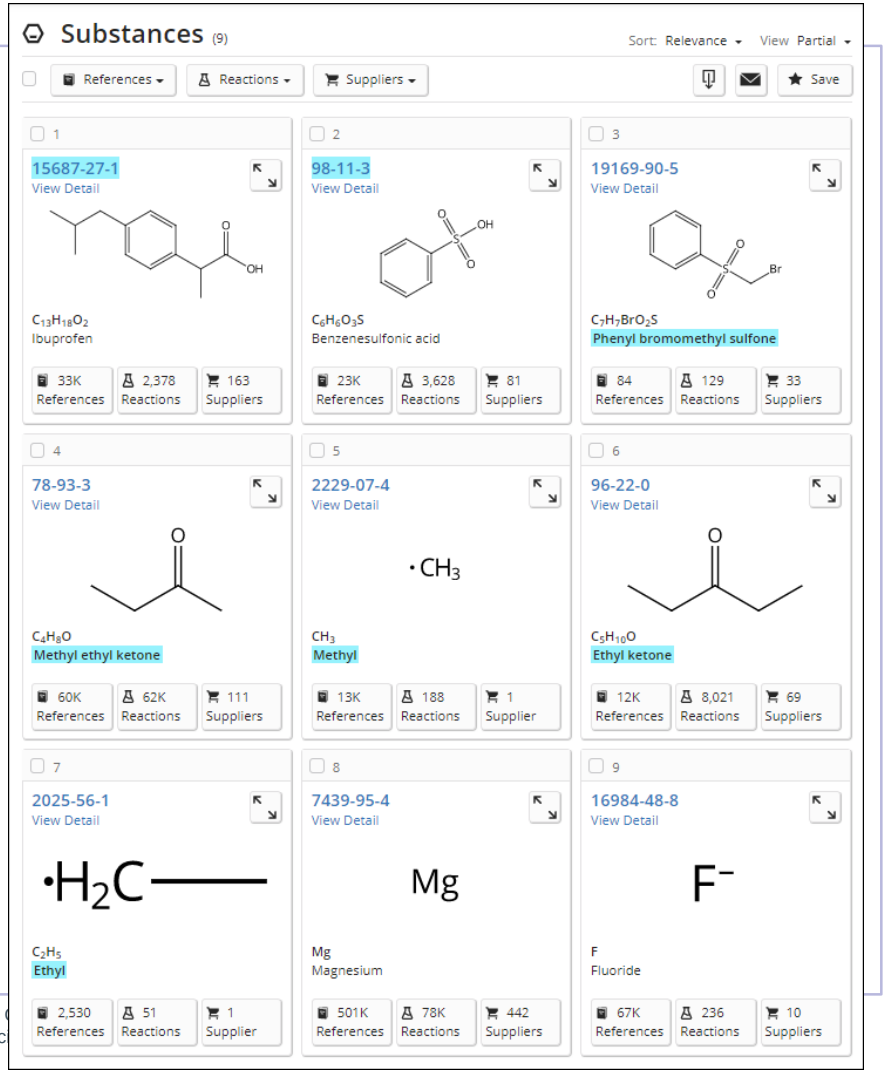
Find Substances Using Multiple Search Terms

You may search for substances using multiple substance names, CAS Registry Numbers (RNs), and document identifiers like patent, accession, and PubMed ID numbers.
For example, the query **methyl ethyl ketone 15687-27-1 "phenyl bromomethyl sulfone" 98113** returns the following results:

1.15687-27-1: CAS RN in the query.
2.98-11-3: CAS RN matched to 98113 in the query.
3.Phenyl bromomethyl sulfone: quoted substance name in the query.
4.Methyl ethyl ketone: substance name in query. Since the name does not appear in quotes, each word may be matched to a substance:

5. **Methyl**
6. **Ethyl ketone**
7. **Ethyl**

8.Mg: substance indexed in a MEDLINE reference with a PubMed ID matching 98133 in the query.
9.F: substance indexed in a MEDLINE reference with a PubMed ID matching 98133 in the query.



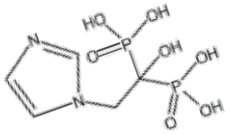
Wildcard searching for substance (Lactobacillus*)

【常見益生菌乳酸菌中英文名對照表 / 市售益生菌乳酸菌中英文名對照】

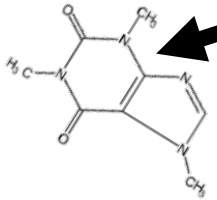
乳酸桿菌屬 Lactobacillus	簡稱	關於
嗜酸乳桿菌（Lactobacillus acidophilus）	A菌	如優格等發酵乳製品就含有豐富的嗜酸乳桿菌。這種益生菌能協助免疫系統保持腸道細菌的平衡。女性多攝食嗜酸乳桿菌有助於抑制白色念珠菌造成的陰道炎。嗜酸乳桿菌還能調節體內的膽固醇濃度，能在小腸中產生可對抗病原微生物的有益物質。
乾酪乳桿菌（Lactobacillus casei ）	C菌	相當耐酸，能有效地通過胃酸膽鹼的考驗，而有規模的進入腸道定殖。
約氏乳桿菌（Lactobacillus johnsonii ）	LJ菌	健康新生兒之消化道中分離純化，屬人體原生菌種。Salivarius意指“腺體型”最初是由人類腺體中被發現，是人體消化道中的原生菌種，亦是美國食品藥品監督管理局（FDA）表列安全菌種之一。
副乾酪乳桿菌（Lactobacillus paracasei ）	LP菌	耐胃酸及膽鹽，在腸道中定殖效果良好，能促進體內Th1細胞激素分泌，抑制Th2細胞所造成的敏感免疫反應，達到免疫系統平衡。對於異位性皮膚炎等過症狀可能有療效。
鼠李糖乳桿菌GG株（Lactobacillus rhamnosus GG）	LGG菌	是當前世界上研究最多的益生菌，也是首批被證實能夠在人體腸道存活並定殖的益生菌之一。可在血清中增加足夠的細胞間白素-10，降低引起局部性敏感免疫反應的細胞激素形成。能促進益菌生長、降低對乳品或食物的過敏、治療不明原因或急性腹瀉功能等。
洛德乳桿菌（Lactobacillus reuteri ）	R菌	是少數在成人與嬰兒體內皆可發現到的乳酸菌之一，可幫助寶寶腸道細胞的生長，促進益菌繁殖。

乳酸桿菌屬 Lactobacillus	簡稱	關於
發酵乳桿菌（Lactobacillus Fermentum）	LF菌	常見於發酵動物和植物材料，用作益生菌的商品化發酵乳桿菌菌株包括PCC， ME-3 和 CECT5716。

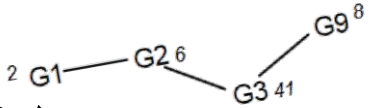
Patent documents are evaluated for specific and Markush structures



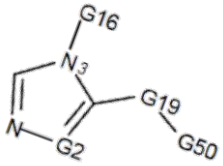
Specific Structures



Patent Document*



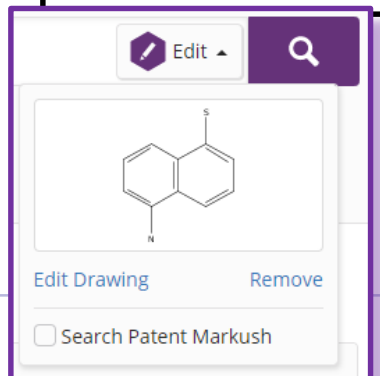
Markush Structures

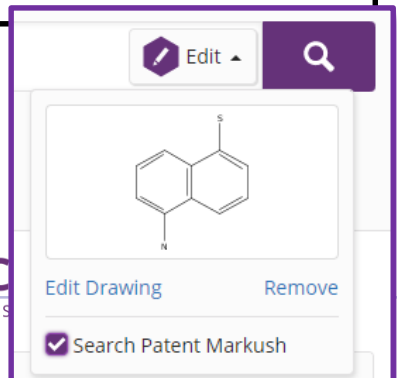


CAS REGISTRYSM
- Specific substances
- Structure-searchable

MARPAT
- Generic substances
- Structure-searchable

CAplusSM Record

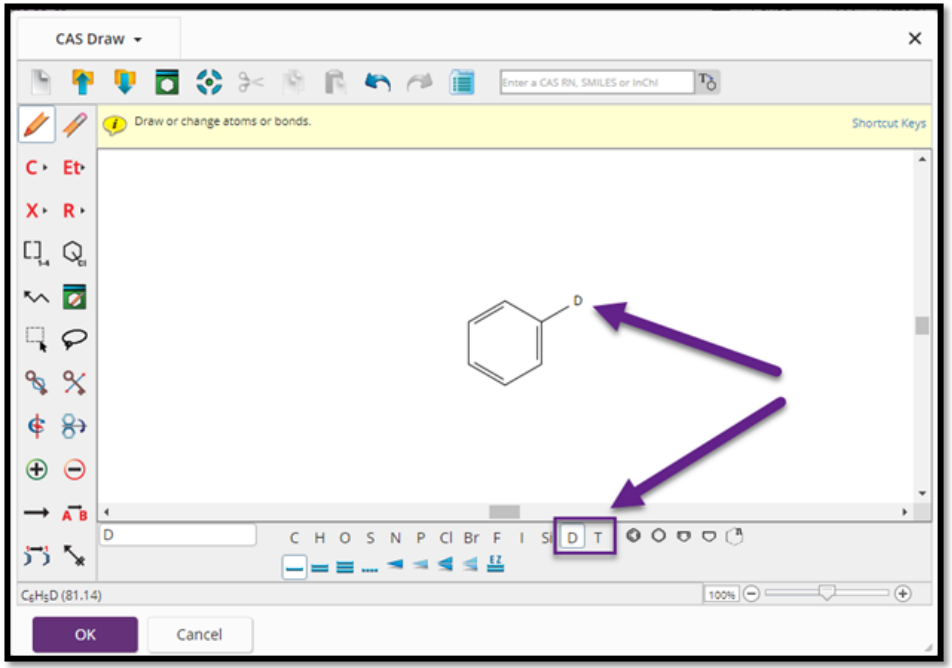




Enable Structure Searching with Deuterium and Tritium

Explicit structure searching of deuterium (D) and tritium (T) atomshas been enabled.

In CAS Draw, the D and T atoms are accessed via the bottom toolbar asshown in the screenshot below, and are selected and used in the editorthe same as any other atom.



Thank you!

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