Searching SciFinder

1. What subjects and publication types are included in the database?

   Chemical Abstracts covers all areas in chemistry and related fields – in other words – anything that might be of interest to a chemist. Chemical Abstracts indexes more than 10,000 journals from all over the world in many different languages, patents from 63 patent authorities, conference proceedings, technical reports, books, dissertations, reviews, meeting abstracts, and preprints.

   MEDLINE covers all areas in medicine and related fields. MEDLINE indexes more than 5,600 journals. No other publication type is indexed unless it appears in a journal that MEDLINE indexes.

2. What are the coverage dates?

   Chemical Abstracts is 1907 to the present.
   MEDLINE is 1946 to the present.

3. What Boolean or Proximity operators are used by the database?

   AND  Use a preposition between key concepts.
       Example: aspirin under blood
       (Concepts were present anywhere in the reference.)
   OR   Use parentheses after a concept to indicate synonyms.
       Example: blood (hemoglobin, plasma)
   NEAR Use a preposition between key concepts
       (Concepts closely associated with one another.)

4. If truncation is allowed then what symbols are used?

   None. SciFinder automatically truncates if the key concepts are nouns.

5. If wildcards are allowed then what symbols are used?

   None.

6. How do you search for a phrase?

   SciFinder will determine if key concepts are part of a phrase.

7. Is it possible to group words from the same concept?

   aspirin (tylenol, advil) of headache

8. Any unique features?

   CAS Registry Numbers to search for a compound.
   Analyze/Refine to narrow search results
   Can search for citing references – this is a form of a cited reference search.
EXPLORE – References – Research Topic

1. Circle the key concepts in the following sentence:
   
   *What is the effect of aspirin on blood clotting?*

2. The **Research Topic** option is the default search when you first login. Type the sentence from #1 into the search box.

   a. How many key concepts does SciFinder identify? _______________

   b. Write the key concepts identified by SciFinder.

   1. ___________________________  2. ___________________________

   **Observation:**
   The system determined that the words *What is the effect of & on* were not important for the search, i.e. they were stop words. As a result, the system ignored them.

3. Click the **Research Topic "What is the effect of aspirin ..."** link to go back.

   Type *aspirin on blood clotting*

   a. How many key concepts does SciFinder identify? _______________

   b. Write the number of references for the topic candidates.

   …as entered____________________________

   Both concepts closely associated_______  First concept only _________

   Both concepts anywhere_______________  Second concept only _________

4. Type *aspirin AND blood clotting*

   a. How many key concepts does SciFinder identify? _______________

   b. Write the number of references for the topic candidates.

   …as entered____________________________

   Both of the concepts_____________________  First concept only _________

   Either concept_________________________  Second concept only _________

   c. What is different between the lists in #3b and #4b?
Rule 1: Use Prepositions between key concepts.
The system interprets a preposition as the Boolean AND. Separate your key
concepts with prepositions – across, around, below, beside, by, down, in, inside,
into, of, on, through, upon, with, etc. Don’t use AND.

5. Pick any preposition to see how it works between the 2 concepts aspirin  blood clotting
   a. Are these numbers the same as got for #3?
      Yes  or  No  (If No, then go to #5b. If Yes, then go to #6)

   b. Write the number of references for each topic candidate.
      Both concepts closely associated__________  First concept only__________
      Both concepts anywhere__________________  Second concept only________

6. Click the check box for the blood clotting candidate and then Get References. Scan the
   first 10 results on the search results page (don’t click on anything). Write down
   any bold words or any highlighted words.

The system is “smart.” It automatically identifies synonyms for you. However, you
can make the system “smarter.”

Rule 2: Use Nouns for key concepts. When possible, use nouns for key concepts
(this helps the system with automatic truncation and finding synonyms)

Example: use original rather than originally
         use cell clone rather than cell cloning

7. Type aspirin over blood clot.

   a. Are these numbers the same as got for #3?
      Yes  or  No  (If No, then go to #7b. If Yes, then go to #8)

   b. Write the number of references for each topic candidate.
      Both concepts closely associated__________  First concept only__________
      Both concepts anywhere__________________  Second concept only________
8. Compare the results of the “closely associated” concepts from #3 with #7.

Which gives you the larger answer set? #3 or #7

**What is meant:** “Closely associated” concepts appear in the same field, e.g. title, abstract, descriptor, etc. and in any order. The “closely associated” answer is either the first or second topic candidate in the list of candidates. If you select only one candidate then I would advise you to select the “closely associated” candidate.

Wikipedia mentions four synonyms for Aspirin. Let’s make sure SciFinder is including at least two of those synonyms in the search – 2-acetoxybenzoic acid, acetylsalicylate

**Rule 3: Using synonyms.** Use parentheses to force the system to include synonyms. If you have more than one synonym then separate them with a comma.

*Example:* poultry (chicken, turkey) under Christmas dinner

9. Type aspirin (2-acetoxybenzoic acid, acetylsalicylate) in blood clot

a. Write the number of references for candidates 1, 2, 9, & 13.

<table>
<thead>
<tr>
<th>First Candidate</th>
<th>Ninth Candidate</th>
</tr>
</thead>
<tbody>
<tr>
<td>(key concepts closely associated)</td>
<td>(first concept only)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Second Candidate</th>
<th>Thirteenth Candidate</th>
</tr>
</thead>
<tbody>
<tr>
<td>(key concepts anywhere)</td>
<td>(second concept only)</td>
</tr>
</tbody>
</table>

10. Compare the “closely associated” results in questions

#3     #7     #9

a. For a thorough literature search pick the strategy that gives the most results. Circle the set number above that has the most results.

Because you have more than ~250 results this is the time to add another key concept. Click the “…closely associated…” candidate from #9 & then click Get References.

b. Refine (to the left of the results) → Research Topic → type transient ischemic attack  (A TIA is when blood flow stops to part of the brain for a brief period of time and is also called a mini-stroke.) How many results do you get? __________
EXPLORE – Substances – Molecular Formula

11. Write the molecular formula for F₃C-CH₂-OH (a.k.a. 2,2,2-trifluoro-ethanol) in the Hill format.

   **Helpful Hint:** Putting the formula into the Hill Format avoids searching problems.

12. How many structures have the same molecular formula as 2,2,2-trifluoro-ethanol?
    (Hint: see the heading at the top of the page for the path to the correct search option.)

SciFinder enables you to sort the results

13. In your results list from #12, find 75-89-8 click on each of the four links:

   1. <registry number> Detailed information about the compound including properties
      There are major two sections:
      1. Experimental Properties/Spectra – found in the literature
      2. Predicted Properties/Spectra – estimates calculated by using a software program. AVOID this data unless it isn’t found in the Experimental Properties section

   2. Paper Get references – Get (for all references) OR Limit results to:
      Preparation
      Spectral Properties
      Uses

13a. How many articles are about the preparation of the compound? ____________

            3. Single Beaker Find the compound in a reaction

            4. Beaker w/ price tag Find sellers of the compound

13b. How much does it cost to buy one kilogram at 99+% purity? ____________
EXPLORE – Substances – Substance Identifier

14. Search for aspirin

Circle how many of each kind of spectra you find (Hint 1: click <registry number>)

<table>
<thead>
<tr>
<th></th>
<th>Predicted Spectra</th>
<th>Experimental Spectra</th>
</tr>
</thead>
<tbody>
<tr>
<td>Carbon-13 NMR</td>
<td>0 1 2 3</td>
<td>0 1-7 8-14 15+</td>
</tr>
<tr>
<td>Hetero NMR</td>
<td>0 1 2 3</td>
<td>0 1-7 8-14 15+</td>
</tr>
<tr>
<td>IR Absorption</td>
<td>0 1 2 3</td>
<td>0 1-7 8-14 15+</td>
</tr>
<tr>
<td>Mass</td>
<td>0 1 2 3</td>
<td>0 1-7 8-14 15+</td>
</tr>
<tr>
<td>Proton NMR</td>
<td>0 1 2 3</td>
<td>0 1-7 8-14 15+</td>
</tr>
<tr>
<td>UV &amp; Visible Absorption</td>
<td>0 1 2 3</td>
<td>0 1-7 8-14 15+</td>
</tr>
</tbody>
</table>

15. Search for Octreotide

What the CAS Registry Number. ______________________

Write the amino acid sequence – 8 amino acids long ______________________

(Hint: click <registry number> – look for the Sequence Details heading).

EXPLORE References – Author Name

Authors, like compounds, can have many different forms of their name depending upon the requirements of the journal in which they are publishing and the policy of the database indexing their name. Most databases do not have one standard form of an author’s name so you must select all possible forms of the name.

Rule of Thumb: You must include all forms of the author’s name to be sure you have done a complete search.

16. Search for Frank J. Castellino

How many results do you get for each variation?

_____ Castellino   _____ Castellino, Francis
_____ Castellino, F  _____ Castellino, Francis J
_____ Castellino, F J  _____ Castellino, Frank J.
_____ Castellino, Francesca
17. Select all the forms of Frank J. Castellino listed in SciFinder  
   (You should have selected at least four variations.)  
   Click the Get References button. How many results do you get?

18. Click the Tools icon and select Remove Duplicates. How many results are left?

   What’s removed? The MEDLINE records duplicated in Chemical Abstracts.

   Analyze / Refine tabs (to the right of the results)  
   These are excellent tools to help you to modify your search results.

   When to use Refine:  
   a) When the starting answer set is larger than 1,000 (it is faster)  
   b) When you want to add another term to your search strategy  
   c) When you want to limit by a document type or by a database

   When to use Analyze:  
   a) For everything else

19. Use your results from #17. In which journal does Frank Castellino most frequently publish?

20. In which year did Castellino have the greatest number of publications?
Get Related

Beginning in 1999 CAS started indexing all the cited references found in articles, patents, proceedings, preprints, and books that it indexes.

There are two options with the Get Related Citations link.

Get Citing: What current articles cite an older article.
Get Cited: What older articles did this article cite in it’s bibliography.

21. Frank Castellino published one article in 1971. Find that article.
   (Analyze by: Publication Year – Show More – Sort by Natural Order).
   How many times has that article been cited?
   (Your answer should be between 10-25 articles.)

EXPLORE – References – Journal

22. What is the starting page of Sharon Hammes-Schiffer’s article in 2002 Biochemistry?

23. Victor K. La Mer wrote an article in volume 13 issue 1 of Chem. Rev. beginning on page 47. What is the title? (Hint: What are the elements of a journal citation?
   There is an extra piece of information in the question. Don’t include it.)

EXPLORE – References – Patent

   (Your answer should be between 50-100 articles.)