WIPO's Chemical Search Function

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Empowering Ideas

Towards the end of 2016 the World Intellectual Property Office (WIPO) launched its first ever chemical structure search function. We asked Emma Koncewicz, who has extensive experience in patenting bio technology inventions.

How does it work?

A user can upload, draw or convert a name/identifier to a chemical structure. This enables the user to find documents containing the chemical structure in both drawings and text of any patent /patent application with the defined remit.

Why is there a need for this?

Patent research is often difficult and time consuming, but is useful as a risk minimisation exercise; although, it can never be considered to completely reduce the risk to zero (see figure 1). Any research should therefore be balanced to provide an acceptable level of risk within an acceptable price point (blue area under curve).

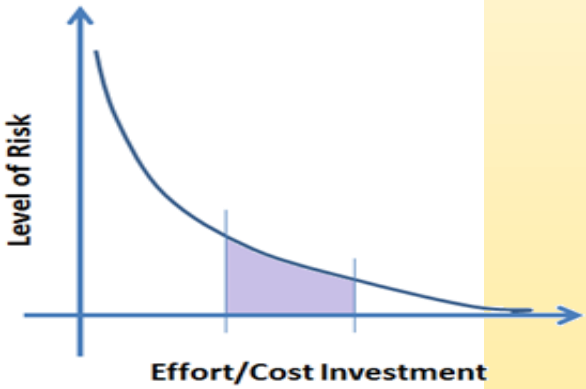

Figure 1: *Risk vs Benefit in Patent Research*

Established chemistry-based naming conventions are not always applied uniformly, making chemistry-based information searching all the harder. Ultimately a professional chemistry patent researcher or, at the very least, paid access to more specialised databases has generally been a necessity. Both options are very costly. As such, effective chemistry-based searches are largely inaccessible to those with minimal budget.

So what's the big deal?

More intuitive functionality that is free to use, makes such search capabilities available to a wider audience of potential users. This enables individuals and start-ups operating within the chemical space to more readily explore new chemistry based inventions within the confines of their limited budget; closing the chemical search capability gap.

What is the penetrative power of WIPOs chemical structure search feature?

WIPO gave a few examples to demonstrate the strength of this newly added capability, summarised in the graph below. In ~two thirds of cases a chemical structure search would identify approximately three times more documents than relying on a text-based search alone.

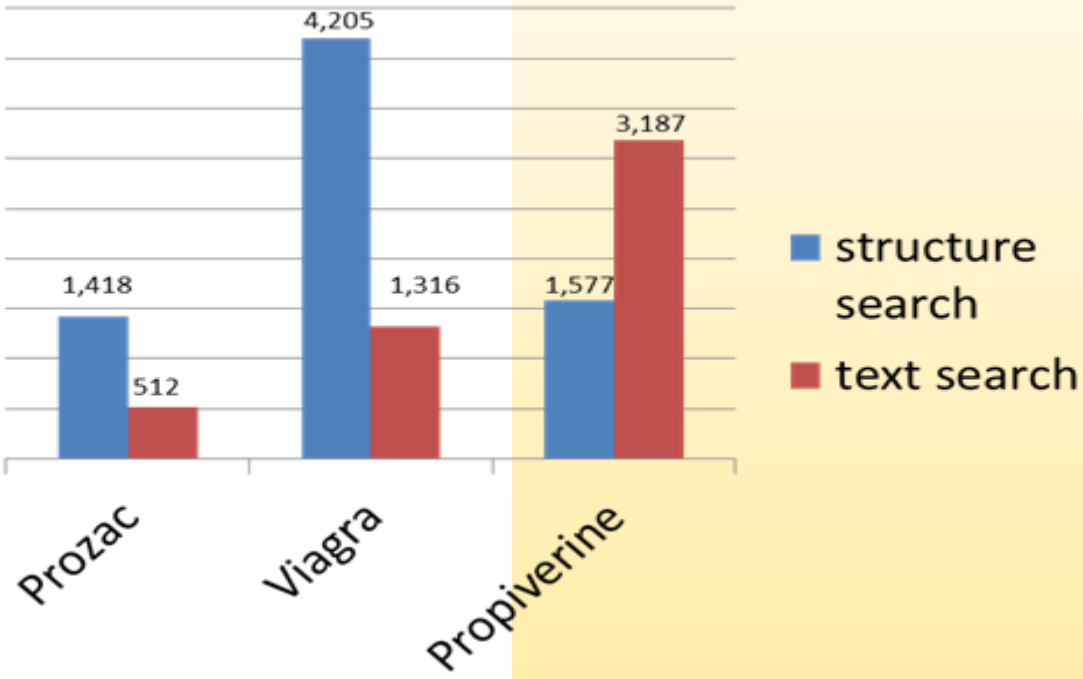

***Figure 2**: Compares the number of documents retrieved as a result of WIPOs chemical structure search versus WIPOs advanced text-based search capability.*

The chemistry structure search is not infallible though, and the last example (propiverine) serves as a warning not to rely solely on a compound structure search.

Why should I use it?

If you have an interest in chemical-based patent research and your budget does not allow for tens of thousands to throw at the problem then this is a great function to add to your tool-belt.

Is this the first of its kind?

This is not the first 'free' chemical structure search database with the capability of retrieving patent and patent application documents. For some years previous ChemSpider, supported by the Royal Society of Chemistry (RSC) in the UK, has offered such a function, albeit not without its own set of limitations. It does; however, appear to be the first chemical structure search function from an Intellectual Property Office.

Are small proteins searchable?

WIPO has indicated that only exact structures represented by an Inchi code are searchable.

In my experience as a chemistry patent searcher certain small proteins and peptides may occasionally be expressed as a chemical structure due to their size, but this is not always the case. It seems logical that any small protein or peptide expressed in such a way could, in theory, be capable of being found using WIPOs chemical structure search function, presuming of course that an exact structure is provided. That said it seems likely that not all content would be found in this way, thus any sophisticated search strategy would need to allow for this.

So how do the various databases compare?

The below table summarises just some of features of a handful of the chemical structure search platforms currently available. This list is not exhaustive.

Feature/Database	PatentScope	Chemspider	SciFinder	Common Chemistry	STN
Who?	WIPO; CAS; InfoChem	Royal Society of Chemistry (RSC)	CAS	Wikipedia; CAS	CAS
Cost	Free	Free	€€€	Free	€€€€
Account required	Yes	No	Yes	No	Yes
Markush Search?	No	Yes	Yes	No	Yes
Combination search: Structure + IPC/CPC	Yes	No	No	No	?
Small Proteins?	Within Reason	Within Reason	Within Reason	Within Reason	Within Reason
Remit: Patent/non-patent literature	Patents/ patent applications only	Patent and non-patent literature	Patent and non-patent literature	non-patent literature	Patent and non-patent literature
Data sources	PCT & US only*	>530 different sources	>50,000 scietific Journals; 10 mill+ patents	CAS data source ltd to general public interest	50,000 scietific Journals; 10 mill+ patents
Volume of compounds covered	Unknown	59 mill	130 mill +	7,900	130 mill +

** WIPO plan to expand the geographical coverage to other countries & languages with time.*

Will WIPO's chemical structure search replace all others?

As it currently stands, this seems unlikely. Functionality is still limited in comparison to alternatives available despite content cover anticipated to increase. As such, anyone using this free tool should bear in mind that certain information will still be missed.

However, such functionality is a bold and welcome development from WIPO that will surely benefit those who simply cannot afford the fee-based tools available.

What are the strengths and weaknesses?

A summary of our SWOT analysis is provided below. This is by no means exhaustive.

***Figure 3**: SWOT analysis of the newly introduced chemical structure searching capability*

To ensure continued success of this useful resource we encourage all those working directly or in-directly in the chemical innovation space to check this tool out.

How do I access and use this new tool?

This feature is only accessible to those with a Patentscope account, but setting up an account is straightforward and free.

WIPO has provided a useful help guide and their webinar on the functionalities of this tool is freely available online.

For queries on this or any other European Patent law or practice matters please contact us at Post@cruickshank.ie

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Information was correct as of date of publication, but may be subject to change.