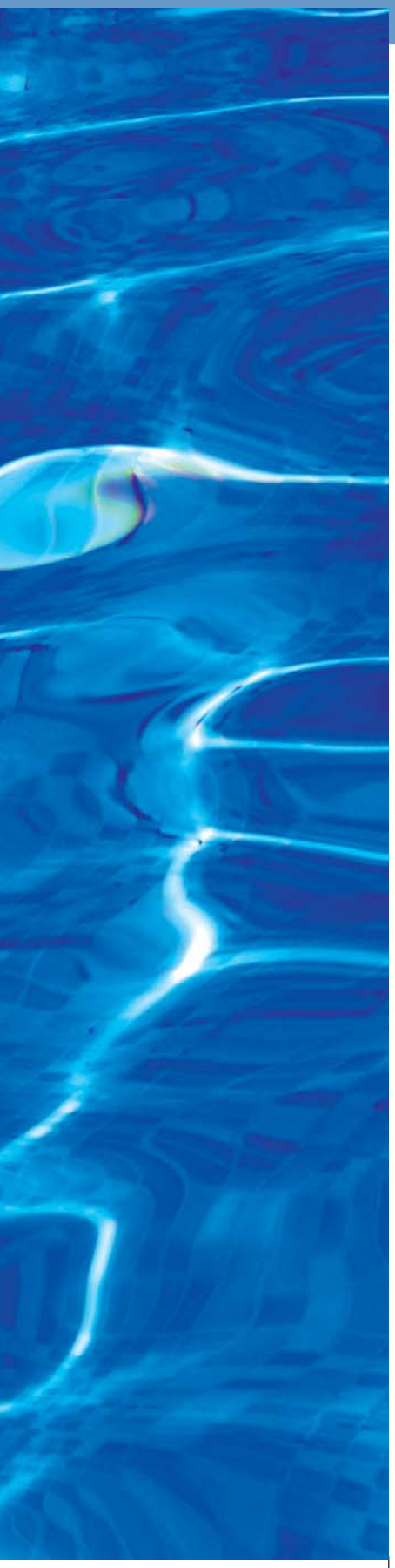

DOLPHIN

User Guide

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Introducing the DOLPHIN database

DOLPHIN, the **D**atabase **O**f Al**L PH**armaceutical **IN**ventions, is an Internet database that covers all patent documents with relevance to the pharmaceutical industry. **DOLPHIN** was conceived and built by Thomson Current Patents using indexing from Current Drugs' **I**nvestigational **D**rugs **d**ata**b**ase (ID*db*³).

DOLPHIN includes not only therapeutic patents, but also patents in areas such as packaging, drug delivery devices, as well as biotechnology inventions with no direct therapeutic application. Moreover, **DOLPHIN** consolidates the family and legal status information from INPADOC; hence, it contains family information for seventy countries and legal status information for more than twenty countries, with more than 3 million drug patent records from the 1960s onwards.

A unique indexing policy, which allows highly specific searching and analysis of patents with relevance to particular drugs or companies, makes **DOLPHIN** an invaluable tool for gathering competitor intelligence in the pharmaceutical industry and to discover the latest trends and directions in pharmaceutical and biotechnological Research and Development.

DOLPHIN offers patent expiry date information for granted patents from more than 40 countries. These are generated from powerful, country-specific algorithms on the basis of filing and publication dates. **DOLPHIN** also offers comprehensive coverage of European SPCs and US extensions. Japanese patent extension information will be gradually added from 2005 onward.

Whilst every effort is made to provide expiry dates as accurately as possible we cannot guarantee accuracy for the entire dataset. We strongly recommend the consultation of a qualified patent attorney in the respective countries to confirm expiry dates if they are of critical importance for your business. Furthermore, consult the HELP section of **DOLPHIN** for information of timeliness and coverage of patent extension data for specific countries.

It should be noted that there are often discrepancies in the interpretation of expiry dates by one or two days. These are based on the fact that an expiry date can either be defined as the last date of a patent being in force or the first date of a patent being expired. In addition to that, in some countries, the patent term includes the anniversary of the date on which a patent was filed or granted, in other countries, this "last day" is already excluded from the patent term. After reviewing our own sources for expiry date information and finding them highly inconsistent with respect to these matters, we cannot guarantee a consistent approach to these issues in our dataset. Again, we strongly recommend the consultation of a qualified patent attorney to identify the correct expiry dates of all patents of critical importance to you.

Purpose of the DOLPHIN database

DOLPHIN covers all patent documents related to pharmaceutical Research and Development - it is primarily designed for use in competitive intelligence, though it can also be useful to supplement prior art searches, for example through coverage of patent expiry dates and to evaluate the patent position of drugs.

DOLPHIN can help you to answer such questions as:

- Which companies are interested in this drug?
- What research is being carried out on this drug?
- Which areas is this company currently researching?
- Who are the research partners of this company or academic organization?

DOLPHIN also allows you to search for a single patent and check its relevance to companies and drugs.

When you search for a drug in **DOLPHIN**, you will not retrieve every patent document that mentions a particular drug, but only those that appear to reveal a real interest in the drug. This means that you will always retrieve fewer patent records using **DOLPHIN** than with, for example, Chemical Abstracts with its less restrictive indexing policy.

DOLPHIN allows the generation of a multitude of charts, tables and other graphic displays to gain an at a glance overview for patenting and research activity of particular topics. Many of them have a time component. Time-related analysis in **DOLPHIN** is usually based on the earliest priority date of a patent record. This is in line with the purposes of **DOLPHIN**, which are primarily targeted at providing R&D and competitive intelligence information. To identify the time when research was conducted, the earliest priority date is far more meaningful than the publication date.

Content of the DOLPHIN database

Source

DOLPHIN is based on INPADOC, an international patent database produced by the European Patent Office. It includes information about patent documents issued by more than 60 patenting authorities and legal status information for more than 20 authorities. For up-to-date details on INPADOC coverage, please see the INPADOC homepage at http://www.european-patent-office.org/inpadoc/index.htm.

INPADOC coverage dates from the 1960s, and approximately 95% of all patent documents published worldwide are included. Of these, only the patent documents with relevance to the pharmaceutical and biotechnological industries appear in **DOLPHIN**.

Skilled patent analysts merge INPADOC patent data with carefully researched intelligence on drug discovery and development. Licensing and litigation are closely followed, so that current intellectual property rights can be determined.

Coverage

DOLPHIN contains bibliographic data, plus information concerning patent families, legal status, drugs, companies associated with a patent (e.g. licensees, opponents, inventor affiliations) and other contextual data.

Patents are chosen for inclusion based on their relevance to pharmaceutical discovery and development activity, according to certain selection criteria. Patents falling outside these criteria are not included in the database.

The criteria for inclusion of a patent publication in **DOLPHIN** are the same as those applied to the **Current Patents Gazette** service, which covers all pharmaceutically relevant patent documents published by the World Intellectual Property Organisation (WIPO), European Patent Office (EPO), United States Patent and Trademark Office, and the United Kingdom Patent Office. All newly published patents that qualify for inclusion in the **Gazette** will automatically qualify for inclusion in **DOLPHIN**.

Gazette	Subject coverage	DOLPHIN pre-1999 backfile
A61K	Medicinal preparations	A61K
A61L027	Materials for coating prostheses	
A61L028	Materials for colostomy devices	
A61L029	Materials for coating catheters	
A61L031	Materials for coating surgical articles	
A61L033	Antithrombogenic treatment of surgical articles	
A61M	Devices for introducing media into/onto the body	
A61N	Electrotherapy	
A61P	Therapy (indexing)	
C07C	Acyclic or carbocyclic compounds	C07C-049...
C07D	Heterocyclic compounds	C07D
C07F	Natural products	C07F
C07G	Organic compounds of unknown constitution	
C07H	Nucleic acids	C07H
C07J	Steroids	C07J
C07K	Peptides	C07K
C12N	Micro-organisms or enzymes	C12N
C12P	Fermentation or enzyme-using processes	C12P
C12Q	Microbiological control	
G01N	Measurement/diagnosis	

The **DOLPHIN** pre-1999 backfile of records has been extracted using a smaller set of IPC codes, depicted on the right of the table, compared to the broader coverage shown on the left for the Gazette and for **DOLPHIN** records from 2000 onwards.

Current Patents Gazette covers approximately 500 patents per week. These patents are identified using IPC codes, supplemented by keyword, company name and generic applicant name searches to locate unusually-classified documents.

All patents are intellectually reviewed and those that are found to be irrelevant for the pharmaceutical industry are removed.

DOLPHIN includes biotechnology techniques and applications, combinatorial chemistry and drug screening methods, diagnostics, drug delivery and medical devices.

De-selection is based on IPC, applicant and textual indicators and ensures that items such as cosmetics and toiletries, agrochemicals, petrochemicals, polymers, liquid crystals, foods and beverages and general analytical techniques are not included.

Value added data, in particular indexing and abstracting is provided for publications fromthe aforementioned patent offices, but usually only for one patent publication per patent family. For patent families that do not include family members from those offices, only bibliographic details are given but, in some cases, index terms are assigned also.

DOLPHIN covers patents and patent applications as far as back as the 1960s. However, added-value content is not provided systematically for older patents. The following table illustrates the type of content that is offered for certain time periods (based on date of first publication). Note that enhanced abstracts and chemical structures are only offered for a subset of patents (those explicitly claiming specific therapeutic applications for the invention). Also, added value content is not systematically provided for patent families that do not include WO, EP, US or GB patents.

Time Period	Bibliographic & Family Data	Enhanced Abstracts	Comments	Drug Indexing
1960s, 70s and 80s	Yes	No	Only for a few selected publications	No (exceptions see above)
1991-1998	Yes	Yes	Only for a few selected publications	No (exceptions see above)
1999	Yes	Yes	Yes	No (exceptions see above)
Jan – Nov 2000	Yes	Yes	Yes	Yes
Dec 2000 – present	Only for WO, US and EP applications. Publications from other patent offices are currently being added.	Only for WO, US and EP applications	Only for WO, US and EP applications	Only for WO, US and EP applications

Systematic drug indexing is applied to patents published from 2000 onwards. Please consult the HELP section of **DOLPHIN** for up to date information on timeliness of our data.

However, we are in the process of comprehensively and systematically indexing the backfile for actual and projected top selling drugs and for all newly launched drugs from 2002 onwards, based on the **S**trategic **D**rugs **d**ata**b**ase content (SD*db*). Currently about 140 drugs have been comprehensively indexed, and this includes the backfile.

A list of drugs that have been fully and partially researched can be accessed from the drop down list on the Drug Search screen.

The **DOLPHIN** database is updated regularly, at the weekend, following the publication of the PCT patents (Patent Cooperation Treaty, WO or "world" patents) each Thursday.

Licensing Agreements

Starting with the description of a licensing agreement, **DOLPHIN** analysts check the corresponding drug record (if one exists) in the **I**nvestigational **D**rugs **d**ata**b**ase (ID*db*[3]). Company web sites and annual reports filed at the US Securities and Exchange Commission (10-K) are also useful sources of information for inclusion in **DOLPHIN**.

Indexing

DOLPHIN contains several levels of indexing. Indexing assigned by **P**atents **F**ast **A**lerts (PFA), appears at the top of a patent record under the headings Action, Indication and Technology. The controlled language used in this section can be searched by browsing the index fields on the Text Search screen.

Value added indexing is assigned by **DOLPHIN** analysts who link patents to drugs, companies and patent classes.

- **Drugs** – 12 Associations, including product, process, formulation and delivery device (see Appendix 1 Glossary, Drug Association field). Drug Associations can be searched, either alone or in combination, using the checkboxes on the Drug Search screen.
- **Companies** – 14 Associations, including owner, assignee, licensee and challenger (see Appendix 1 Glossary, Company Association field). Company Associations can be searched, either alone or in combination, using the checkboxes on the Company Search screen.
- **Patent Classes** – Including combination, use, enabling technology and screening (see Appendix 1 Glossary, Class) **.**

DOLPHIN transforms patent data from information to intelligence, therefore drug links are made only to drugs in which the applicant is really interested in the context of the invention, rather than to all the drugs claimed in the patent (see Appendix 2; Links between drugs and patent records).

The indexing information is obtained from sources such as press releases, company web sites and from annual reports filed at the US Securities and Exchange Commission (10-K). Often these sources do not directly quote the affected patent; these patents are intellectually identified by **DOLPHIN** patent analysts.

Patent Families

Patent families in **DOLPHIN** are created by an iterative process from the priorities claimed by one patent document – the "Primary Patent". In this way, a family is assembled through priority links, and can be viewed by clicking on the "Equivalents" tab of a patent record.

Preferably, the Primary Patent is a PCT application, but the **DOLPHIN** ranking order is set up so that, if there is no PCT application, the Primary Patent is a European patent/application, or a US patent/application, or a British patent/application and so on, in that order. If there is more than one patent from the selected country, the document with the earliest filing date is named as Primary Patent. Other patent publications in the same family are referred to in **DOLPHIN** as "Secondary Patents".

With each primary patent record, two sets of priorities are displayed: Primary priorities are priorities claimed by the primary patent itself, whereas Secondary priorities are claimed by family members but not by the primary patent.

Non-Convention equivalents are assigned to families by intellectual comparison of the subject matter.

Two Primary Patents cannot have a common priority application, but it is possible to have Primary Patents with family members in common, i.e. they are linked by secondary priorities, in which case they are cross-referenced automatically as "Related Records". These Related records are indexed automatically and can be viewed using the "Related Records" tab on the patent record screen.

Any intellectual matches based on subject matter are mentioned in the Comments field.

The "Referenced by Comment" tab allows two-way navigation between citing and cited patent records. This differs from conventional patent citation searching in that the cited references are from the **Gazette** and are often very recent, which can never be the case with examiners citations.

Most of the **DOLPHIN** content data appears in the Primary Patent record and, unless otherwise stated in the Comment field, applies to all other family members too.

Getting Help

If you want more information about **DOLPHIN** or you need help with using the site:

- On the login screen, in the About Dolphin section – click Help
- On the Welcome screen/homepage, at the top right corner of the screen – click HELP! , or click Contact us under More Information
- On all other screens within the site, at the top right corner of the screen – click the HELP button

If you have any questions about **DOLPHIN** or require any assistance in your search, simply send an email to **TS.support.emea@thomson.com** and we will respond to your enquiry as soon as possible.

Logging on to the DOLPHIN database

You can search **DOLPHIN** via Internet Explorer or Netscape.

The **DOLPHIN** login screen is reached using the following internet address or URL (meaning Uniform Resource Locator):

http://www.cp-dolphin.com/

To access **DOLPHIN** from the login screen, enter your **User name** and **Password** in the boxes provided, and then click on **LOG IN**.

You can bookmark the **DOLPHIN** URL for future use, at which point a **DOLPHIN** icon will appear in your favorites folder; this can be dragged and placed on your toolbar for easier access.

Or you can make **DOLPHIN** your home page, as follows...

If you are using Internet Explorer:

- Click on **Tools**, **Internet Options**, insert the **DOLPHIN** URL/internet address into the address field, and then click on **OK**.

If you are using Netscape:

- Click on **Edit**, **Preferences**, insert the **DOLPHIN** URL/internet address into the location field, and then click on **OK**.

Because your search parameters for **DOLPHIN** are stored in association with your user name and password, sharing your user name with other people can cause confusion and is not recommended.

Type your username and password here:

Username: _____

Password: _____

The **DOLPHIN** database uses a wide variety of graphs and charts to make its data accessible visually. To be able to view the charts successfully you must have the latest version of Flash Player installed on your machine. To download the free Macromedia Flash Player, do either of the following:

- Go to the Macromedia home page at http://www.macromedia.com, and in the Shortcuts section, click on Download Flash Player.
- Enter the full URL as an internet address into your web browser, exactly as shown below: http://www.macromedia.com/shockwave/download/download.cgi?P1_Prod_Version=ShockwaveFlash

Some information provided on the **DOLPHIN** site is provided as PDF (Portable Document Format), for viewing and printing; this requires the free Adobe Acrobat Reader, which can be downloaded from the Adobe website, at http://www.adobe.com/products/acrobat/readstep2.html.

Patent Records in DOLPHIN

A typical **DOLPHIN** patent record is shown below. Records like this are used to generate the detailed Drug and Company reports; from the various graphical outputs, you can hyperlink back to the original patent data.

Home > Record (Reload)

EP-480717 Merck Frosst Canada & Co

Unsaturated hydroxyalkylquinoline acids as leukotriene antagonists.

Publication Date	15-APR-92	Get available document
Last Updated	22-JAN-04	Get legal statu
Original Title	Unsaturated hydroxyalkylquinoline acids as leukotriene antagonists.	Sho linke
Indication	Allergy; Inflammation; Asthma	
Action	LT antagonist; LTB4 antagonist; Leukotriene synthesis inhibitor	

Joint comment for patents: EP-00480716; EP-480717

Novel leukotriene antagonists for the treatment of inflammatory disorders. This is a continuation of earlier filings in the same area, such as EP468785. In addition to the SPCs granted on this European patent, family member US5565473 has been granted an extension of 430 days, expiring 3 February 2012 and a pediatric extension, extending market exclusivity further by 6 months has also been granted.
Last updated:

Novelty

Unsaturated hydroxyalkylquinoline acids which are said to be leukotriene antagonists and inhibitors of leukotriene biosynthesis, are disclosed. Quinoline acids may be useful for treating conditions such as angina, cerebral spasm and hepatitis.

Biology

Leukotriene antagonism was evaluated in LTD4 receptor binding studies undertaken on g.p. lung membranes (in vitro) and in vivo in guinea pigs. A PMN leukocyte LTB4 assay was also undertaken. In vivo leukotriene antagonism and leukotriene biosynthesis inhibition were assessed using asthmatic rats and pulmonary mechanics tests. However, no data are provided.

Chemistry

The syntheses of the compounds are described in fifteen reaction schemes.Preparatory details are included for thirty-nine compounds. A further one hundred and sixty-seven examples are given. All compounds were prepared by conventional methods. Comments: The LT antagonists disclosed in this widely filed application are closely related to those claimed in Merck- Frosst's EP-480716-A (CPL:AG3180) and EP-480705-A (CPL:AG3181). These applications, in turn, follow on from LT-antagonists recently disclosed in EP-468785-A (CPL:CVS288) and EP-468789-A (CPL:CVS289).

Structure

R & D Context | Classifications | Referenced by comment | Priorities | Equivalents | Show All

R&D context

Product	montelukast	Product
Companies(2)	Merck Frosst Canada & Co [Merck & Co Inc]	Patent Assignee/Owner
	Schering-Plough Corp	Licensee for development and marketing
Original Assignee	MERCK FROSST CANADA INC.	
Inventors (6)	Belley Michel L Leger Serge Roy Patrick Xiang Yi Bin Labelle Marc Guay Daniel	
Expiry dates	BE 10-Oct-2011 DE 10-Oct-2011 DK 10-Oct-2011 ES 10-Oct-2011 GR 10-Oct-2011 IT 10-Oct-2011 LI 10-Oct-2011 GB 24-Aug-2012 SPC NL 24-Aug-2012 SPC SE 24-Aug-2012 SPC AT 25-Aug-2012 SPC FR 25-Aug-2012 SPC LU 25-Aug-2012 SPC CH 29-Jun-2013 SPC	

Referenced by comment

Liu, Lu, Wei; Wang, Yuan; Marrugo, Herika; Harper, Sylvain; Quan, David, D.
C.; Zhou, Zhihong (Nancy); Bydlinski, Gregory
WO-03066582 - 14-Aug-2003 (06-Feb-2002)
Process for the preparation of 1- (mercaptomethyl)- cyclopropaneacetic acid
Delmar Chemicals Inc (Patent Assignee/Owner)

International Classifications (33)

C07D 215/18 (15)	C07D 401/12 (2)	C07D 215/38 (1)	C07D 405/08 (1)
A61K 31/47 (12)	A61K 31/44 (2)	C07D 215/36 (1)	C07D 215/06 (1)
C07D / (5)	/ (1)	C07D 215/24 (1)	C07D 215/04 (1)
C07D 215/12 (4)	C07D 405/02 (1)	C07D 215/22 (1)	C07C 205/00 (1)
C07D 215/14 (3)	C07D 401/14 (1)	C07D 409/12 (1)	A61K 45:00 (1)
C07D 215/16 (3)	C07D 401/08 (1)	C07D 409/02 (1)	A01N 43/54 (1)
A01N 43/42 (2)	C07D 401/02 (1)	C07D 405/14 (1)	A61K 31/54 (1)
C07D 215/00 (2)	C07D 215/48 (1)	C07D 405/12 (1)	A01N 43/58 (1)
A61K / (2)			

US Classifications (21)

514/313 (2)	514/232.5 (1)	546/174 (1)	514/247 (1)
514/314 (2)	514/924 (1)	546/172 (1)	514/253 (1)
514/222.2 (1)	546/167 (1)	546/171 (1)	514/256 (1)
514/224.2 (1)	546/176 (1)	546/162 (1)	514/257 (1)
514/228.8 (1)	546/175 (1)	514/826 (1)	514/311 (1)
514/230.5 (1)			

Priorities

Primary Priorities (2)	US596887	12-OCT-1990
	US741888	08-AUG-1991
Secondary Priorities (9)	BR1100383	30-APR-1997
	CA596887	12-OCT-1990
	CA741888	08-AUG-1991
	IL99726	15-FEB-1996
	NO923099	07-AUG-1992
	US774414	10-OCT-1991
	US392592	23-FEB-1995
	US598758	08-FEB-1996
	YU1647	11-OCT-1991
Application	EP91309306	10-OCT-1991

Equivalents (51)

AT-00165088	E	15-MAY-1998	esp@cenet
AU-08579491	A1	16-APR-1992	esp@cenet
AU-00639610	B2	29-JUL-1993	esp@cenet
BR-01100383	A3	25-JUL-[illegible]	esp@cenet
CA-02053209	[illegible]	13-[illegible]-1993	esp@cenet
CA-020[illegible]	A0	01-FEB-1996	
CH-[illegible]0086	B	04-NOV-1996	esp@cenet
DE-00180096	C	12-FEB-1997	esp@cenet
NO-00180716	B	24-FEB-1997	esp@cenet
NO-00180716	C	04-JUN-1997	esp@cenet
NZ-00240194	A	28-MAR-1995	esp@cenet
PT-00099213	A	30-SEP-1992	esp@cenet
PT-00099213	B	29-JAN-1999	esp@cenet
SI-09111647	A	31-DEC-1997	esp@cenet

- Click **Get available documents** to access patent family members as full documents via the Thomson Patent Store.
- Click **Get Legal Status** to access INPADOC legal status data for the patent record.
- Click **Show linked** to access related records, including citing patents and patent records with joint comments.
- Joint comments refer to very closely related records, as shown.
- Hypertext links are included in the comment (and referenced by comment tab).
- Product links, including the parent company, and drug association (or role).
- Company links, including the company association.
- Original Assignee (as opposed to linked company). This field contains the assignee name as it appeared on the printed specification (as opposed to the standardized intellectually company links provided in the companies field).
- Expiry dates (including Supplementary Protection Certificates – SPCs, term extensions). Expiry dates are presented for granted records only. Data is further broken down by country for EP records (as EP patents can expire in different countries on different dates). See the section "Introducing the DOLPHIN" database for more information on the way in which the expiry dates are generated.
- Related records tab (not shown) list primary patents with family members in common with this patent, i.e. that are linked by secondary priorities.
- Referenced by comment tab complements the hypertext links in the comment section to allow two-way navigation between citing and cited patent records.
- International and US Classifications - all classes of the family (with number of occurrences) are displayed for primary patents, whereas only specific classes are displayed for secondary patents.
- Priorities tab (two sets of priorities are displayed: primary priorities are claimed by the primary patent itself; secondary priorities are claimed by family members other than the primary patent).
- Equivalents – a family of equivalents is created iteratively from the priorities claimed by a single patent, the **primary patent**. Full text links to esp@cenet and/or Thomson Patent Store are included for family members.
- Compounds with direct relevance to an IDdb drug record appear as hypertext links to the ID*db*[3] drug record for those with access.
- Click **Show All** to see the content of all tabs at a time. This is particular useful to print a full record.

How to access DOLPHIN Records

DOLPHIN can be searched in five different ways:

- Quick Search (including Patent Number Search)
- Drug search
- Text search
- Company search
- Dolphin Drug search

To begin searching, simply click on the appropriate part of the navigation bar, which is located in the left-hand column of all screens.

1 Quick Search

The easiest way to search for a specific drug, patent or company in **DOLPHIN** is using Quick Search.

The Quick Search facility is located at the top of the navigation bar on all screens. Quick Search also provides you with direct access to the hierarchical indexing trees for the Action, Indication and Technology fields.

Searching

To use Quick Search, simply type in the term you want to find, select Patent, Drug, Company, Indication, Action or Technology from the drop down menu, according to the nature of your search, and then click on the Search button to initiate the search.

Example: Quick Search for the drug 'aripiprazole'

1. Type the compound name 'aripiprazole' in the Quick Search box.
2. Select "Drug" from the Quick Search drop down menu.
3. Click on the Search button.

Note: for more detailed drug searching please refer to the Drug Search section.

Example: Quick Search for the company 'Amgen'

1 Type the company name 'Amgen' in the Quick Search box.

2 Select "Company" from the Quick Search drop down menu.

3 Click on the Search button.

Note: for more detailed company searching please refer to the Company Search section.

Example: Quick Search for the patent 'JP1009975'

1 Type the patent number 'JP1009975' in the Quick Search box.

2 Select "Patent" from the Quick Search drop down menu.

3 Click on the Search button.

Searching by patent number, you can retrieve single patent records from over 70 patent issuing authorities.

DOLPHIN has inbuilt flexibility of accepted patent number formats: There is no need to include the patent status code (all publications that are based on the same application are grouped together in the **DOLPHIN** record), you can include hyphens (e.g. EP-425235) or leading zeros (e.g. EP0425235) or may omit them, and country codes are not case specific – typing in upper case, lower case or mixed case produces exactly the same result.

Left and right truncation is automatically applied to Quick Search terms.

If there are any ambiguities in the searched number, you will see a list of all records that match the search string. You can then select one or more patent records to view. This feature practically eliminates the need to include status codes in your search.

Publication numbers of PCT documents published in 2000 or later can be searched using two or four digit years or with 5- as well as 6-digit serial numbers (after the year component).

Once you have found the record for a Secondary Patent in **DOLPHIN** (see definition in Appendix 1 Glossary or in "Content of the **DOLPHIN** database"; page 6) you can link from this record to the corresponding Primary Patent record(s).

To open multiple windows, right click on a patent number hyperlink, or use Ctrl-N. This enables you to compare two or more patent records on the same screen.

Use the Quick Search indexing lookup feature for Indication, Action or Technology, to take full advantage of the hierarchical indexing systems for these fields.

Example: Quick Search for Indication is 'renal'

1 Type the indication 'renal' in the Quick Search box.

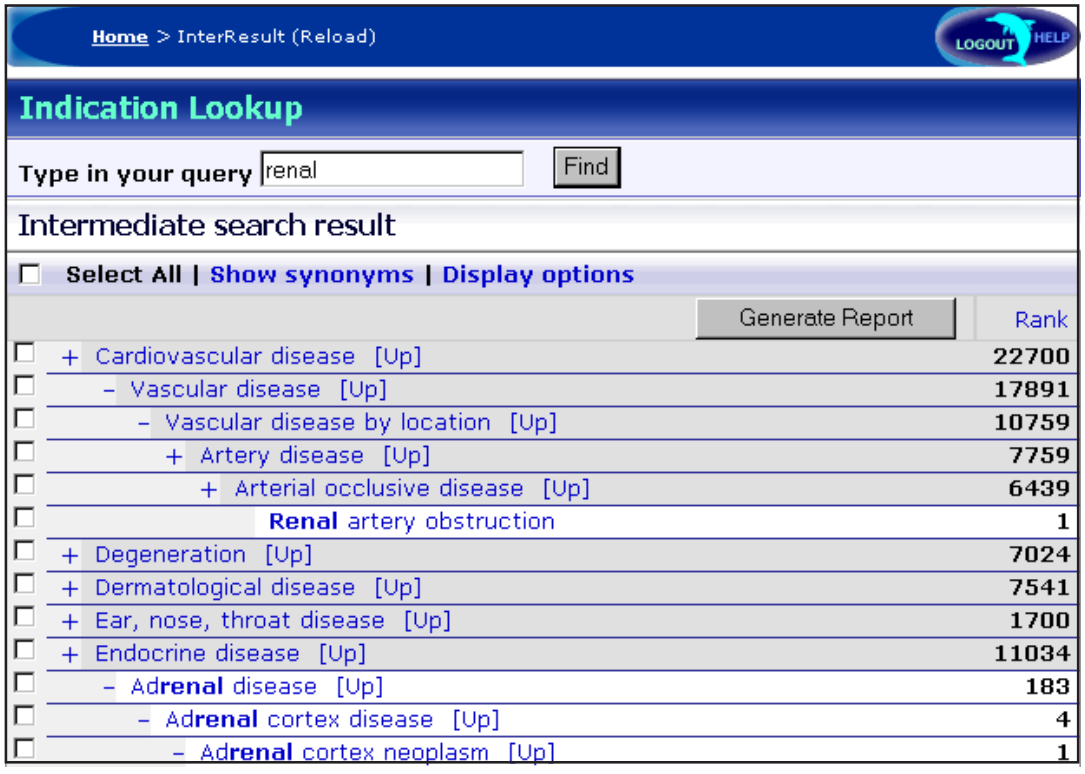
2 Select "Indication" from the Quick Search drop down menu.

3 Click on the Search button.

When you perform a Quick Search lookup of this kind, an Intermediate screen is generated showing the relevant parts of the hierarchy.

Quick Search Intermediate Result

Quick Search [Indication] Intermediate Result Screen



On the intermediate search result screen, your original search query appears (and can be modified) at the top of the screen. All indication entries matching your original search are displayed in the tree navigator, with expandable ("+"), collapsible ("-") nodes.

Click on an entry to see the **DOLPHIN** indication report or choose one or more entries using the checkboxes and then click Generate Report.

Use the "[Up]" links to limit the tree display to a specific indication and its sub-terms. Note that you should always use the "Show all" link, as opposed to the "Back" button of your browser, to revert to the complete index tree.

From the Indication intermediate result screen, you can select one or more entries to generate your indication report, then simply wait a few moments while it is prepared.

All index terms matching your original search (which can be modified at the top of the screen) are displayed and you can further navigate the tree by opening (click on "+") and closing (click on "-") the various nodes. Click on a term to see all patent records indexed with that term, or conduct a search for a combination of terms, by selecting several of the checkboxes and then clicking on the Generate Report button. Use the "[Up]" links to limit the tree display to a specific area of interest, "Cardiovascular disease" for example from the results of a search for the indication "renal".

Use the "Select All" option to select every term instead of clicking on each individual term, choose to Show or Hide synonyms, Expand or Collapse all nodes (tree branches) and select one or more Display options for the generation of the report that forms the result of your query.

The number of patents indexed with each term, including sub terms, is listed in the Rank column. For Indication, Action and Technology trees, the number of patent records assigned to the parent term (or node) includes all the sub-terms listed below it.

2 Drug Search

See *Appendix* 2 for detailed editorial policy on the links between drugs and patent records in **DOLPHIN**.

Use **Drug Search** to produce a comprehensive report for a selected drug. Drug Search allows you to pull together all the patents relating to the drug you are interested in, to analyze them and present them in clear tabular and graphical format. Many of the charts are interactive, i.e. you can click on elements within them to find more information. This is impossible to show in the illustrations below, so the best way to see it is to try out a search on **DOLPHIN**.

A patent record in **DOLPHIN** is linked to drugs and compounds on the basis of intellectual matching of the patent to known research areas for the patent applicant. If the link is not clear, a possible association is entered by the **DOLPHIN** analyst in the Comment field so that it will be retrieved in a text search. Drugs and compounds that can be indexed by **DOLPHIN** include all ID*db*^{3} records (including research projects at early stages, drug screening and other platform technologies, novel formulations and formulation technologies etc.) as well as all compounds covered by the Merck Index. It is not uncommon for an ID*db*^{3} record to be associated with a large number of patents.

Drug names in **DOLPHIN** are derived from one of the following:

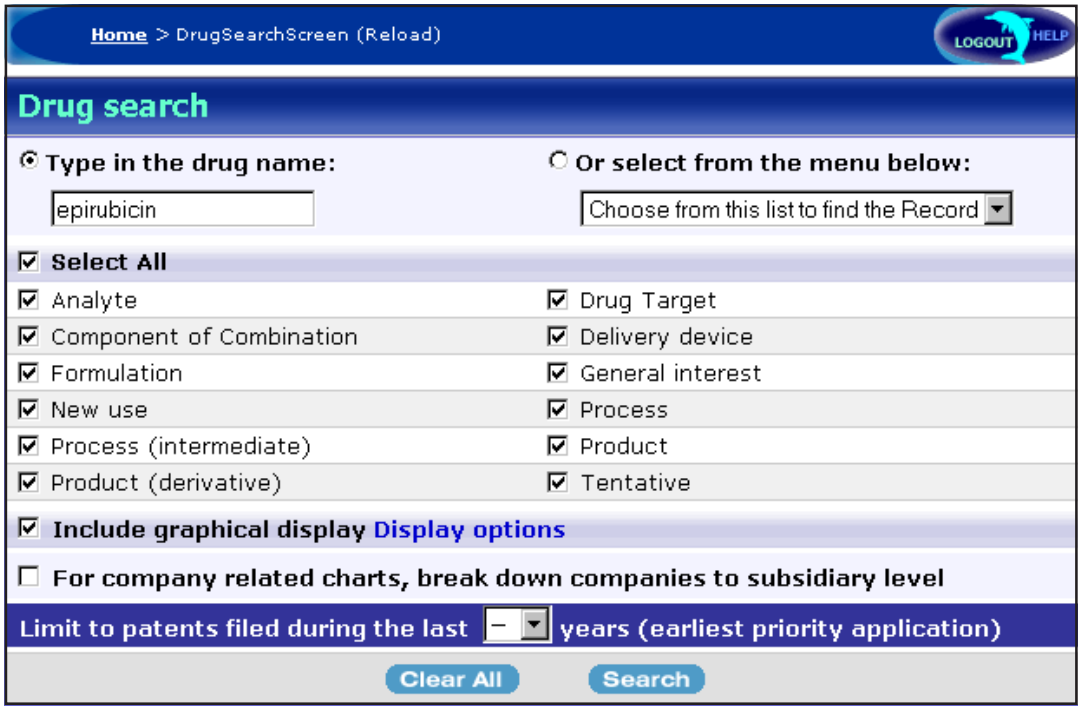
- **I**nvestigational **D**rugs **d**ata**b**ase (ID*db*^{3}) name
- Merck Index name. A Merck Index subheading may be used in preference to the compound name if it is more precise than the main heading, for example for stereoisomers.
- **I**nternational **n**on-proprietary **n**ame (INN)
- **U**nited **S**tates **A**pproved **N**ame (USAN)

When you carry out a Drug Search, you can use all its synonyms and CAS numbers that are in ID*db*^{3} as search terms (cf. Text Search which does not include synonyms).

The only available name for older drugs is the main name listed in the Merck Index.

Searching

The Drug Search Screen



On the drug search screen, enter the name of the drug you are interested in, or choose from the drop down list of drugs with fully researched DOLPHIN reports. Note that your search is not limited to the drugs in the drop down list. The list merely helps you to distinguished fully researched drugs from those where there may be gaps in pre-2000 indexing. Note that you can also use the "OR" operator in the drug name box to include patents linked to more than one drug in your result set, eg "atorvastatin OR amlodipine".

Left and right truncation are automatically applied to a search term. If you specify one drug name and there are several variants within **DOLPHIN**, you will see a list from which you can:

- select one drug, to obtain an individual drug report
- using "SELECT_ALL" in the drug name box generates a list of all drugs in **DOLPHIN**.
- using "SELECT_ALL" with a particular role, e.g. checking only the "New use" box, generates a list of all drugs with that particular role, for example all new uses of the drug.

Use the check boxes to restrict your search to one or more types of claims (e.g. Product, Formulation, Process) or limit the results to patents filed within a certain time period.

Uncheck (clear) "Include graphical display" to suppress the graphical display and speed up your search.

The search can also be limited by time period.

On the Drug Search screen do either of the following:

- Enter the name of the drug you are interested in into the drug name box
- Choose a drug from the drop down list of drugs with fully researched **DOLPHIN** reports

Drug Search is always performed as a substring search, therefore no truncation is necessary.

DOLPHIN allows you to search for drug classes if they have a common name fragment. A good example of this is the fragment 'coxib', which is a common suffix for a number of COX-2 inhibitors. A drug search in **DOLPHIN** using this fragment brings up a list of 8 different drugs.

Use the Boolean operator OR to combine or juxtapose two or more drugs without common name fragments, for example "pril OR sartan".

You can select one or more Display options for report generation. On the "Display options for drug report" pop up screen, use the Show and Hide description links to see more details of each available option. If you have opted to include graphical displays, you can either display all charts at the same time on one page or can display charts in tab style. The latter gives you very fast access to the individual charts, since you don't need to wait for all the charts to download first before seeing them.

The Display options pop up screen also allows you to specify your preferred display at the time of your search or to permanently save your preferences as your new default settings. To do this, check "Make this my default settings" and then click on Save. Reset restores the options selected to the currently saved default values.

On the main Drug Search screen, you can also choose to break down the display of companies to their subsidiary level. Your selection affects the company-sensitive charts and report elements of the drug report. Depending on your choice, a parent company and its subsidiaries are either considered as single entity or as different companies and broken down as such. You should make the selection which is most applicable to the specific query on which your **DOLPHIN** search is based.

Limit your search to patents filed within a certain time period using the drop down list at the bottom of the screen. This is related to first priority date and always includes records back to the 1st of January of the current year minus the year back value.

You can use "SELECT_ALL" as a search string to find all drugs indexed with the selected drug associations; however, if you do choose to do this, we strongly advise that you limit the number of boxes you have checked.

Finally, click on Search to search **DOLPHIN** for matching drugs. Your search results will be listed on the Intermediate search result screen.

Drug Search Intermediate Result

Drug Search Intermediate Result Screen

On the intermediate search result screen, your original search query appears (and can be modified) at the top of the screen. All drug entries matching your original search are displayed in the tree navigator, with expandable ("+"), collapsible ("-") nodes. The "higher" level represents all patents that reveal an interest of the applicant in the particular compound. The "lower" level entries corresponds to IDdb records, which in turn represent specific, independent development projects for a compound.

Click on an entry to see the **DOLPHIN** drug report or choose one or more entries using the checkboxes and then click Generate Report.

Use the "[Up]" links to limit the tree display to a specific drug and its sub-terms.

From the Drug Intermediate result screen, you can select one or more drug entries to generate your drug report, then simply wait a few moments while it is prepared.

All drug entries matching your original search (which can be modified at the top of the screen) are displayed and you can further navigate the tree by opening (click on "+") and closing (click on "-") the various nodes. Click on any individual entry to see the drug report for that particular item, or choose one or more drug entries to view, by selecting several of the checkboxes and then clicking on the Generate Report button. Use the "[Up]" links to limit the tree display to a specific drug of interest, "doxorubicin" for example from the results of a search for the drug name "rubicin".

The higher level nodes of the hierarchy include all patents that in some way cover the drug (according to the selective **DOLPHIN** criteria). Subordinated to these, you can find specific commercial research projects that are currently conducted with this drug/compound. These are based on records of the Investigational Drugs Database (ID*db*[3]). This presentation of information allows you either to review the R&D activities for a compound in its entirety or to selectively explore the patent position of distinct, significant commercial developments.

Use the "Select All" option to select every term instead of clicking on each individual term, choose to Show or Hide synonyms, Expand or Collapse all nodes (tree branches) and select one or more Display options for report generation.

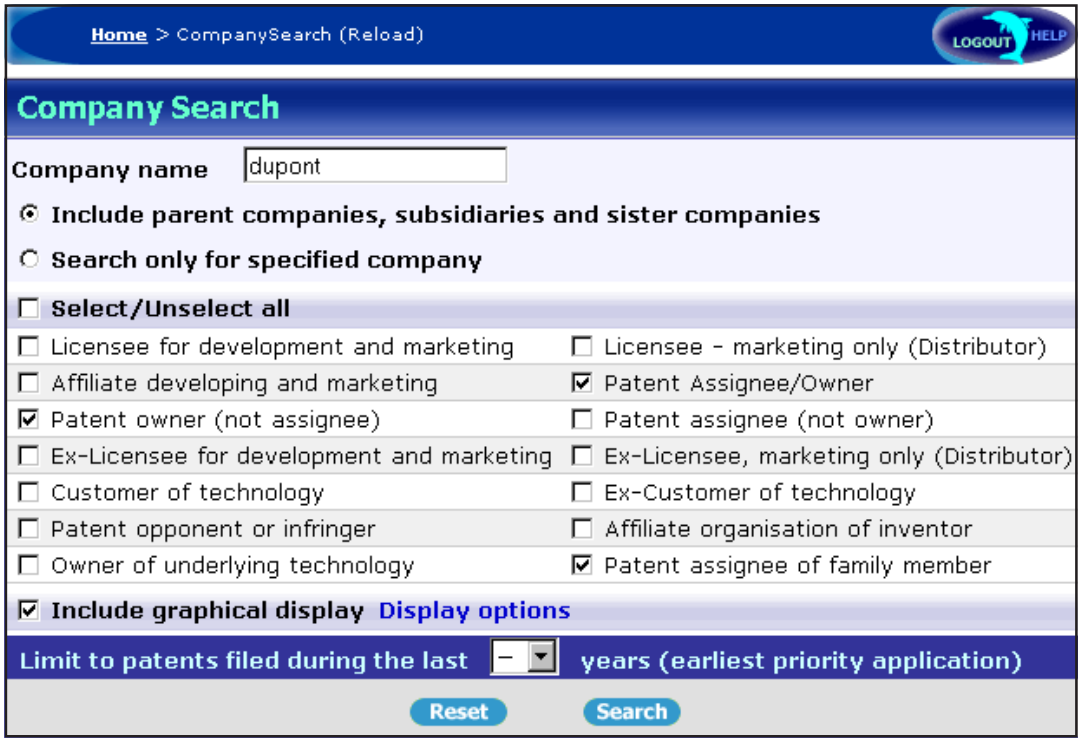
The number of patents indexed with each term, including sub terms as well, is listed in the Rank column. As with the Quick Search options, Indication, Action, and Technology, for the Drug Search tree, the number of patent records assigned to the parent term (or node) includes all the sub-terms listed below it.

3 Company Search

Use **Company Search** to produce a comprehensive tabular and graphical report for a company by collecting together all the patent records relating to that company.

Searching

The Company Search Screen



Enter a company name in the text boxprovided on the company screen.

There are also check boxes to indicate the type of involvement that a company has with a particular patent. [See Appendix 1 Glossary for more detailed definitions].

Company indexing is partially based on circumstantial evidence, for instance from news items, company announcements, press releases and annual reports.

Use the radio option buttons to select whether or not to include parent companies, sister companies and subsidiaries. If you specify one company name and there are several variants within **DOLPHIN**, you will see a list from which you can:

- select one company, to obtain an individual company report
- select several companies, to obtain a combined report
- using "SELECT_ALL" in the company name box generates a list of all companies in **DOLPHIN**.
- using "SELECT_ALL" with a particular role, e.g. checking only the "Patent opponent or infringer" box, generates a list of all companies with that particular role, for example where some opposition or infringement is occurring.

Uncheck (clear) "Include graphical display" to suppress the graphical display and speed up your search.

The search can also be limited by time period.

On the Company Search screen:

- Enter the name of the company you are interested in into the company name box.

Company Search is always performed as a substring search, therefore no truncation is necessary.

DOLPHIN allows you to search for companies using a short name fragment, which can be useful if you are unsure of a precise company name, or you can use just one word from the company name, such as "roche" or "pfizer".

Use the Boolean operator OR to "merge" two company portfolios with no common name fragment, for example "aventis OR sanofi" allows the viewing of the combined patent portfolio for these two companies. This is especially useful to evaluate the impact of mergers and acquisitions.

By default, Company Search includes parent companies, sister companies and subsidiaries; however, you can choose to restrict your search to a specified company only. With the company specific search, each individual company is considered as an entity and the company report is specific for one company (though you can also still "merge" two or more companies using the Boolean operator OR).

You can select one or more Display options for report generation. On the "Display options for company report" pop up screen, use the Show and Hide description links to see more details of each available option. If you have opted to include graphical displays, you can either display all charts at the same time on one page or can display charts in tab style. The latter gives you very fast access to the individual charts, since you don't need to wait for all the charts to download first before seeing them.

The Display options pop up screen also allows you to specify your preferred display at the time of your search or to permanently save your preferences as your new default settings. To do this, check "Make this my default settings" and then click on Save. Reset restores the options selected to the currently saved default values.

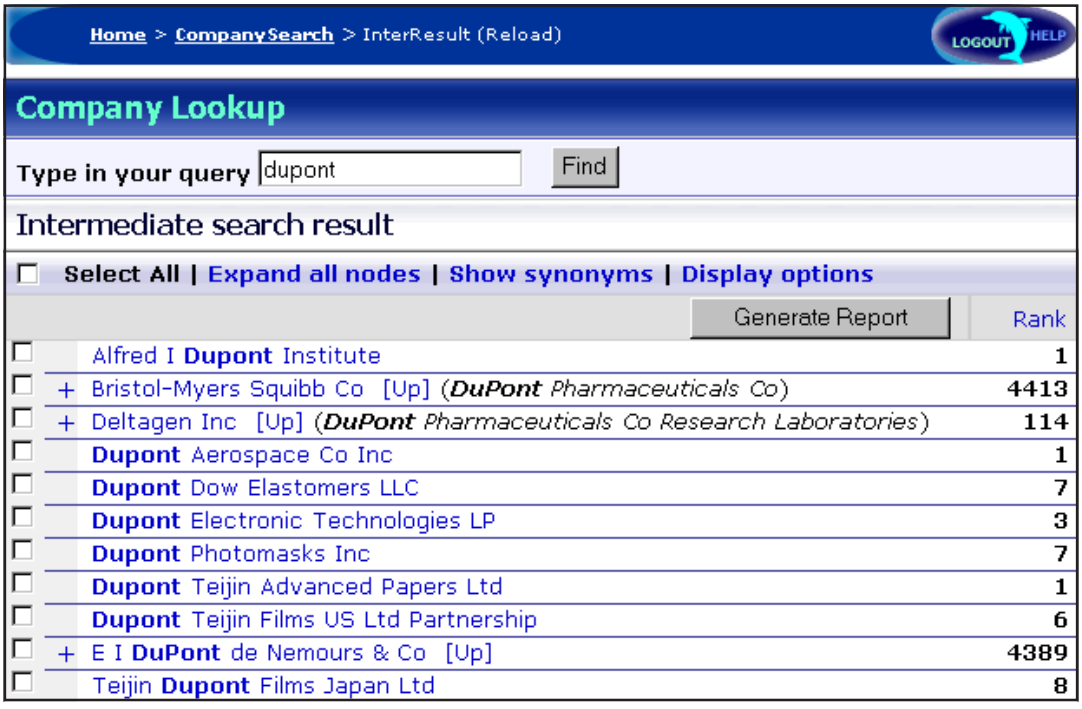
Limit your search to patents filed within a certain time period using the drop down list at the bottom of the screen. This is related to first priority date and always includes records back to the 1st of January of the current year minus the year back value.

You can use "SELECT_ALL" as a search string to find all companies indexed with the selected company associations; however, if you do choose to do this, we strongly advise that you limit the number of boxes you have checked.

Finally, click on Search to search **DOLPHIN** for matching companies. Your search results will be listed on the Intermediate search result screen.

Company Search Intermediate Result

Company Search Intermediate Result Screen



On the intermediate search result screen, your original search query appears (and can be modified) at the top of the screen. All drug entries matching your original search are displayed in the tree navigator, with expandable ("+"), collapsible ("-") nodes.

Click on an entry to see the **DOLPHIN** company report or choose one or more entries using the checkboxes and then click Generate Report.

Use the "[Up]" links to limit the tree display to a specific company and its subsidiaries.

From the Company Intermediate result screen, you can select one or more company entries to generate your company report, then simply wait a few moments while it is prepared.

All company entries matching your original search (which can be modified at the top of the screen) are displayed and you can further navigate the tree by opening (click on "+") and closing (click on "-") the various nodes. Click on any individual entry to see the company report for that particular item, or choose one or more company entries to view, by selecting several of the checkboxes and then clicking on the Generate Report button. Use the "[Up]" links to limit the tree display to a specific company of interest, "AstraZeneca plc" for example from the results of a search for the company name "Merck".

Use the "Select All" option to select every term instead of clicking on each individual term, choose to Show or Hide synonyms, Expand or Collapse all nodes (tree branches) and select one or more Display options for report generation.

If the search term occurs only in the name of a subsidiary company, then the name of the subsidiary appears in brackets next to the parent company name on the search results page. The list of all subsidiaries of a parent company can be obtained by expanding the parent company tree.

Subsidiaries appear shaded in grey within the nodes of the tree, except where a subsidiary contains the company name or fragment that was searched for, in which case the entry is highlighted in white.

If you choose to include "parent companies" in the search screen (which is the default option), then subsidiary companies in the result screen do not have check boxes next to them. Simply select the parent company you are interested in to retrieve all the patents from the parent company and all of its subsidiaries.

The number of patents indexed with each term, including sub-terms as well, is listed in the Rank column. The numbers correspond to the patents assigned to each specific company whether it is a parent, a subsidiary or a sister company. This is different to the trees generated from the Quick Search options, Indication, Action, and Technology, and Drug Search, since for the Company Search the number of patent records assigned to each parent term (or node) does not include the numbers for all of the sub-terms below it.

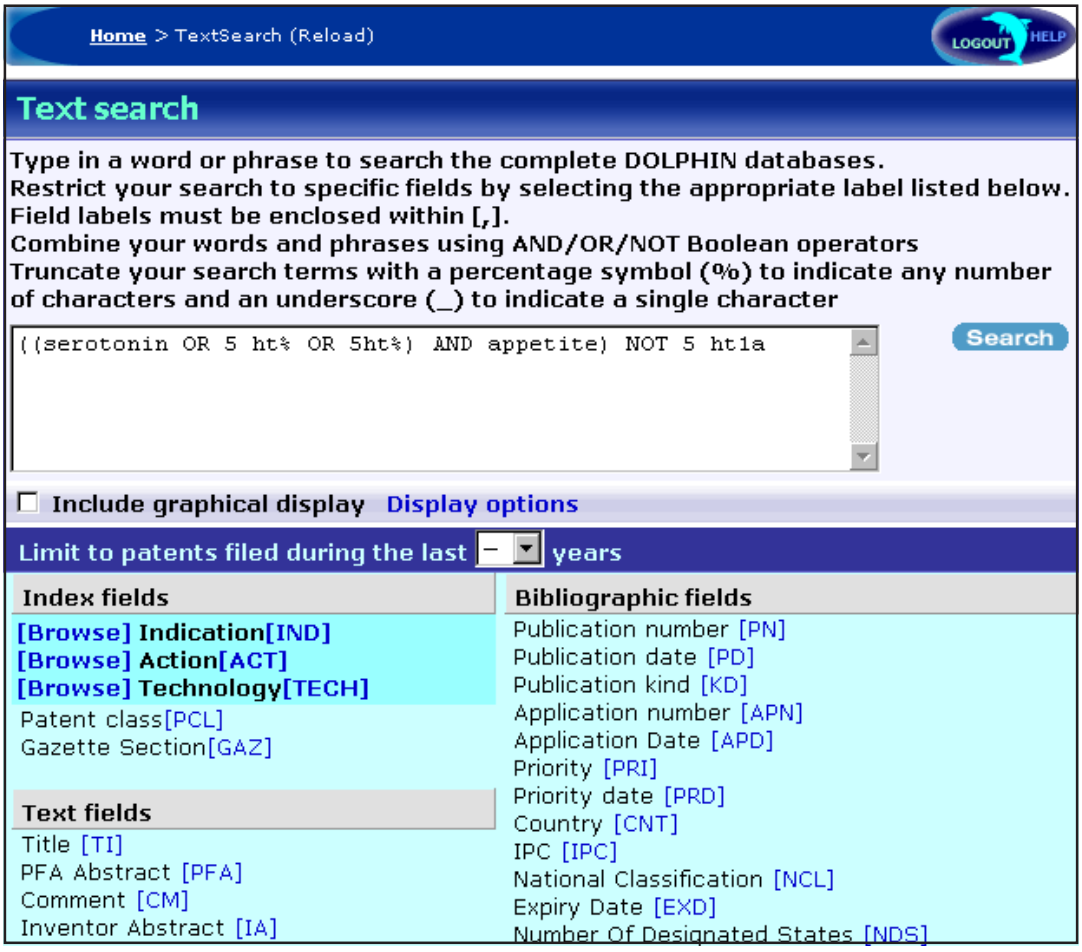
4 Text search

Use **Text Search** to enter words and phrases using conventional Boolean operators (AND, OR, NOT). e.g. neoplasm AND (metalloprotease OR TNF synthesis)

Text Search searches for query terms in all the text in **DOLPHIN** records.

Searching

The Text Search Screen



Type in a word or phrase to search the complete **DOLPHIN** databases.

Restrict your search to specific fields by selecting the corresponding field label.

Check (select) "Include graphical display" to obtain a set of graphs relating to the patents that your search has retrieved, and choose those that you would like to include in your report.

Display Options.

The search can also be limited by time period.

On the Text Search screen:

- Enter a word or phrase to search the entire text of the **DOLPHIN** database.

When you carry out a text search in **DOLPHIN**, you will not automatically retrieve all the ID*db*[3] synonyms (cf. drug search which does include the synonyms). Note that it is editorial policy to refer to drugs by their **I**nternational **n**on-proprietary **n**ame (INN) in text fields.

However, if a new drug name is approved, previous references to the drug in the text (for example in the form of a research code) are not always systematically updated. However, synonyms are added to all formal drug and compound links in **DOLPHIN** as they become publicly available.

You can also use the text search engine to search for drug and company names, and can still take advantage of the **DOLPHIN** analytical tools and graphical display. To do this, select "Include graphical display" and choose your "Display options" for text search from the pop up screen. It is worth noting, however, that text search offers fewer display options than either drug search or company search, so to generate a comprehensive tabular and graphical report for a company or a drug, you may of prefer to use Drug Search or Company Search instead.

Including graphical display options can be useful, since this will help you to understand the information visually and enables you to follow hypertext links back to the original patent records.

Truncation & Wildcard operators

Words can be truncated using the percentage symbol (%). **DOLPHIN** also accepts the wildcard operator, underscore (_).

Use the percentage symbol (%) after a word to truncate it, indicating any number of additional characters may be present. In this way, you can include all words with a common root or ending, e.g. hiv%.

Care needs to be taken when constructing queries using Text Search – search terms are inserted at the cursor position wherever that is, and you should remember that search terms must be combined using Boolean logic operators into a meaningful query, otherwise you may experience unexpected results.

Boolean logic operators

DOLPHIN supports the standard Boolean operators, AND, OR, NOT. If there is no operator between two words, they are considered as a phrase (i.e. one has to follow the other in the record).

The default precedence for operators, that is the priority order in which they are processed within a query statement, is AND (processed first), followed by OR (processed next), followed by NOT (processed last). Use parentheses (brackets ( )) to override the default order of processing. Parts of a query that are enclosed in brackets are processed first.

AND, the logical combination operator retrieves records containing both of the words it separates. Meaning: "all of these words" or "must contain the words".

e.g. serotonin AND appetite
(Patents relating to appetite suppression with serotonin modulators)

This search retrieves all records that contain both the word "serotonin" and the word "appetite". It does not retrieve any records with only "serotonin" or only "appetite". The *more* search terms or concepts you combine in a search using AND logic, the *fewer* records are retrieved.

OR, the logical alternative operator retrieves records containing either of the words it separates (this includes records containing both words). Meaning: "any of these words", "can contain the words" or "should contain the words".

e.g. serotonin OR 5ht
(Patents relating to serotonin or its synonym, 5HT)

This search retrieves all records that contain at least one of the words "serotonin" or "5ht". Here we are searching the terms "serotonin" and also "5ht", since records containing either of these terms might be relevant. The *more* search terms or concepts you combine in a search using OR logic, the *more* records are retrieved.

NOT, the logical negation operator retrieves records containing only one of the terms (the first) it separates. Meaning: "must not contain the words" or "should not contain the words".

e.g. 5ht% NOT 5ht1a
(Patents relating to the synonym of serotonin, 5HT, but excluding the 5HT1a receptor subtype)

This search retrieves all records that contain the stem or root word "5ht" (since truncation (%) is applied to the term), but excludes any records that contain the word 5ht1a. You should bear in mind that NOT logic excludes records from your search results. Be careful when you use NOT; the term you do want may be present in an important way in records that also contain the word you wish to avoid.

The following example illustrates the use of full Boolean logic with parenthetical nesting to override the default operator precedence:

((serotonin OR 5 ht% OR 5ht%) AND appetite) NOT 5 ht1a
(Patents relating to appetite suppression with serotonin modulators, expanded also including the synonym of serotonin, 5-HT, but excluding modulators of the 5 HT1a receptor subtype)

Where parenthetical nesting is applied, the query statements are processed from the innermost bracketed query elements first to the outermost elements last.

Field names

Search terms can be restricted to specific fields by adding a suffix code to the term, for example diabetes [IND]. To limit a search term to a specific field:

- type the field name code in directly as a suffix to the search term (enclosed in square [] brackets).
  e.g. hiv% [IND] AND (vaccine [ACT] OR antiviral [ACT])

- or click onto a suffix in the field list below the text box, after you have entered your search term.
  e.g. Indication [IND], Patent Class [PCL]

The field code is inserted at the cursor position.

DOLPHIN Text Search also provides the ability for you to include an entire hierarchical branch from the Indication, Action or Technology trees, which appear listed under the Index Fields section. To do this, first click on "[Browse]" to access the hierarchical tree navigator. Next, type in your query for example "renal" in the Indication Lookup and then click on Find. You can then transfer an entire branch of the tree, including all its sub-terms and their synonyms, or select

individual terms by using the checkboxes beside each item and then clicking on "Include tree structure". Finally, you can modify your search on the Text Search screen, for example by combining the search query with other terms or other branches from a different indexing tree.

Browsing the index fields, you can make sure that your search strategy contains the controlled language and all the synonyms, different versions of the same term, that the records are indexed with, to retrieve all the records you are interested in.

Note that the numbers in the Rank column of the indexing trees relate to the formal indexing of records, whereas text search actually searches the entire text, therefore you may experience discrepancies in the results. To limit your search to index terms, you should use either the corresponding Quick Search lookup or apply the individual field codes instead.

Formats of dates and numbers

Dates may be searched in the format:

YYYYMMDD

Where YYYY is the Y2K compliant 4-digit year, MM is the 2-digit month and DD the 2-digit day. Dates can be truncated using the percentage symbol (%).

e.g. 1994% [PRD]
(Patents with 1994 Priority date)

Date range functionality is limited, but can be achieved to some extent.

e.g. …AND 199410% [PRD] OR 199411% [PRD] OR 199412% [PRD] OR 1995% [PRD] OR 1996% [PRD]
(Patents with Priority dates in the last quarter of 1994, or in 1995, or in 1996)

Patent numbers can also be searched.

e.g. WO0076576 [PN]
(Patent with the Publication number shown)

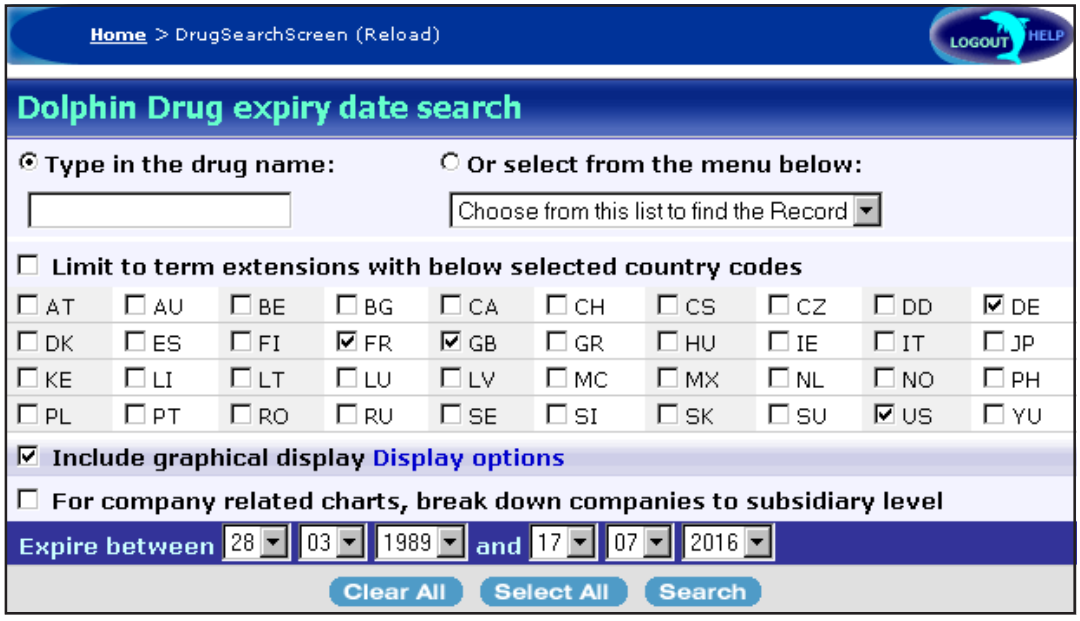
This searches not only the patent number as such but also finds entries in the Related records, referenced by comment fields, etc. If you want to retrieve one specific record, identified by number, you may prefer to perform a Patent Number Search using Quick Search with the Patent option selected.

5 Dolphin Drug expiry date search

Use the **Dolphin Drug** search to search expiry dates (including Supplementary Protection Certificates - SPCs, term extensions), in order to identify when particular drugs come off patent in specific countries.

Searching

The Dolphin Drug Expiry Date Search Screen



Type in a drug name or select from the menu. Preferred mode of access is using the menu item "SELECT_ALL" or searching with name fragments, e.g. 'coxib'.

Restrict your search to specific countries by selecting the corresponding country codes.

Check (select) "Include graphical display" to obtain a set of graphs relating to the patents that your search has retrieved, and choose Display options.

The search can also be limited to expiries between two specific dates.

On the Dolphin Drug expiry date search screen, do either of the following:

- Enter the name of the drug you are interested in into the drug name box
- Choose a drug from the drop down list of drugs for which patent expiries have been carefully verified, or choose the "SELECT_ALL" option

Although you can search for a specific drug, in most cases the "SELECT_ALL" option from the drop down menu would be the preferred mode of access, or searching with name fragments, e.g. 'coxib', which is a common suffix for a number of COX-2 inhibitors.

Using "SELECT_ALL" returns all drugs where product patents expire within the range of dates you have selected.

On the search screen, you can specify a date range for expiries and can select specific countries to search using the country code checkboxes. You can also choose to limit the selected countries to term extensions only by checking the "Limit to term extensions" option.

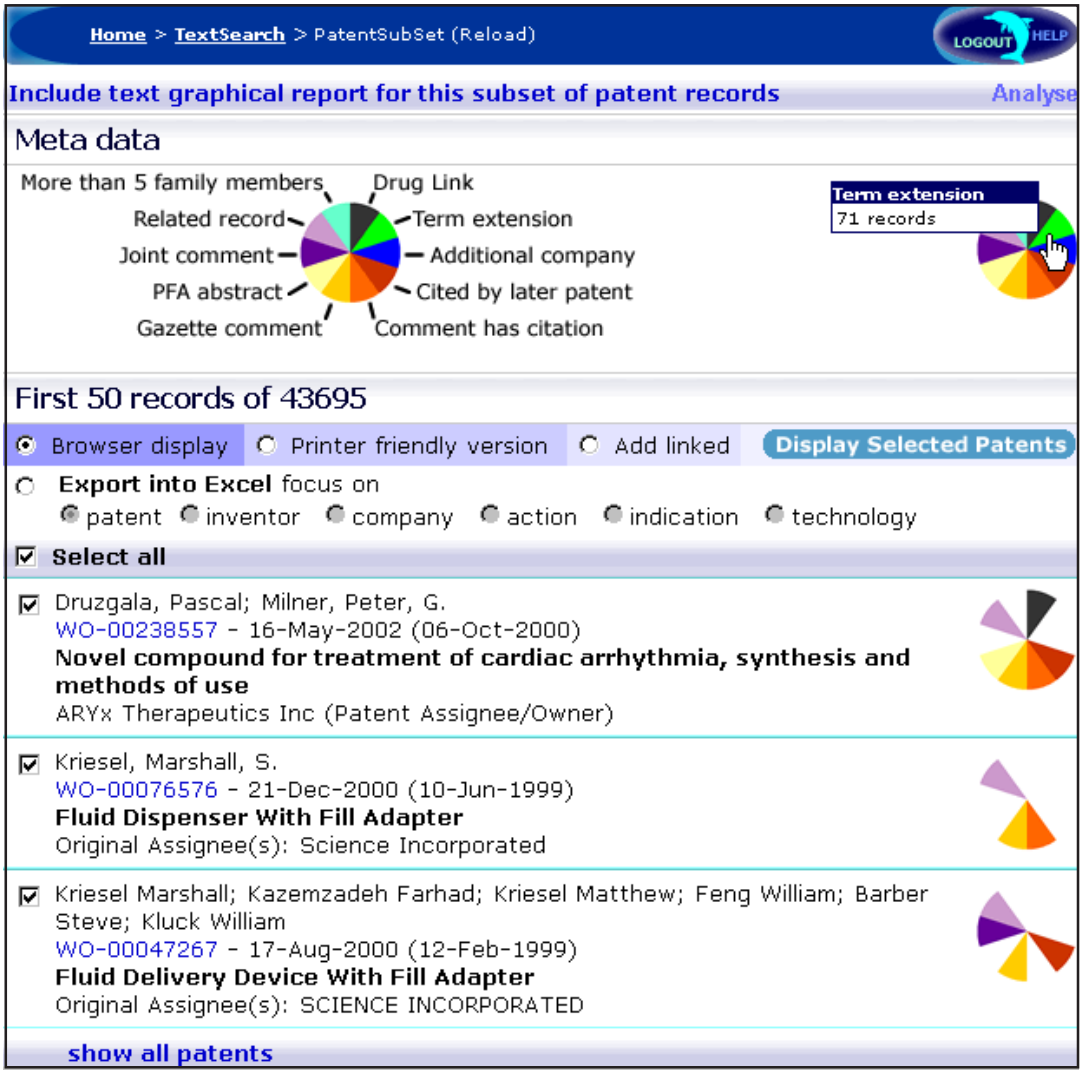
When searching for expiries within a specified date range, you may well encounter results that fall outside the range - these are the family members of records inside the range. This is especially so for US patents, where there are often plenty of patents in the same family and the one inside the date range may not actually be that important. Including all the patents from a family in this way gives a better overview, though it may occasionally be confusing.

You can select one or more Display options for report generation. On the "Display options for dolphin drug report" pop up screen, use the Show and Hide description links to see more details of each available option. If you have opted to include graphical displays, you can either display all charts at the same time in one page or can display charts in tab style. The latter gives you very fast access to the individual charts, since you don't need to wait for all the charts to download first before seeing them.

The Display options pop up screen also allows you to specify your preferred display at the time of your search or to permanently save your preferences as your new default settings. To do this, check "Make this my default settings" and then click on Save. Reset restores the options selected to the currently saved default values.

The hit list

The Hit List



The key at the top of the patents list shows what each segment relates to.

Mouse over this Meta data fingerprint to see the number of records in each segment; click on a segment to filter the patents list.

Fingerprints are a convenient way to scan the Hit list and identify patents of interest.

Use the check boxes to select patent records of interest; click "Display Selected Patents" to browse the records in full record view or to export them into a spreadsheet in printer friendly format (depending on the selected mode).

Click on a patent number link to access an individual patent record directly.

Click "Printer friendly version" to format patent records for printing.

Click "Export into Excel" to save results offline, and choose a key field to focus on.

Check "Select all" to include all records on the current page.

Click "Show all patents" to display all of the records in the results list on a single page; otherwise 50 records are displayed per page.

Click "Display Selected Patents" to browse the selected patents in full record view.

The hit list is the list of patents that is generated after a search is run in **DOLPHIN**. When performing a Drug Search or a Company Search, click on any individual entry from the search intermediate result screen to see the corresponding report for that particular item, or choose one or more entries to view using the checkboxes, and then click on the Generate Report button. On the corresponding report screen, choose the Patent List link from the display options listed at the top of the screen to display the 'hit list'. With Text Search, the hit list is displayed directly as a report of primary records, as soon as you click Search.

Meta data fingerprints appear to the right of each record on the results page. The fingerprint is divided into 10 different color segments, and a key at the top of the page shows what information each segment relates to.

Mouse over the meta data fingerprint to the right of the key to see the number of records in your results set for each segment. The fingerprints also offer a convenient way of scanning the hit list rapidly to identify patents of interest, for example records with a drug link will have a black segment next to them.

You can use the meta data fingerprints to filter the patents list by data type, for example clicking on the green segment of the fingerprint to the right of the key displays a list of all records that have a term extension from your original hit list. The resulting list can then be filtered again by selecting another segment from the fingerprint, for example clicking the blue segment then gives you all the records from your original search with a term extension and an additional company.

Use the fingerprints for each individual patent entry in a similar way - to generate a new list of data relating to that record, for example clicking on the red segment for a record displays a list of later patents in which this patent is cited.

Most of the meta data fingerprint segments indicate that the patent is somehow important, in one way or another; therefore, the fingerprints can be used to separate important documents from the less important ones. For example, more than 5 family members indicates that the patent is being actively pursued in several countries by the applicant (whereas many PCT applications, for example, never enter the national phase). Joint Gazette comments or citations suggest that the patent is part of a larger series of related filings by the applicant, again, suggesting that this is something more "serious", backed up with significant investments by the applicant. Additional company links also suggest that something is potentially "interesting", and so on.

The "Export into Excel" function allows the results to be saved offline so you can analyze data using your own methods. You can choose to focus on patent, inventor, company, action, indication or technology using the option buttons. Focus ensures that a separate row is created for each element of the entity that is focused on. For example, if you focus on inventor, a single row is created for each inventor of the filing, resulting, for example, in 5 rows for a patent with 5 inventors. Apart from the inventor field, the same corresponding patent details appear on each line, for example patent number, etc. This is designed to enable further analysis of the data in Excel, since analysis would otherwise be very difficult to perform on fields that contain lists of names, e.g. separated by semicolon, compared to one name per row.

The "Printer friendly version" option converts the hit list into a format suitable for printing. This is similar to the "Show all" function. You can also include linked documents into the Printer friendly display, so that your print-out is self-containing, not only showing your results but also records that are linked to from the results.

The "Add linked" option at the top of the patent list display adds some functionality from the printer friendly display to your results list. When you click on the "Display Selected Patents" button with this option selected, any records you have selected are added together with the list of all the records that are cited (linked to) from them, through the annotation, the "Referenced by comment" link, or as related patents. This functionality is designed to enable you to compile a list of a number of closely related patents with relative ease, and thereby to extend a list of relevant records with additional records that may be of interest. All of the records need to be selected for this function to work. If there are records on another page, then you can click the "Show all patents" link at the bottom of the page to display all of the records on a single page. Otherwise, choosing the "Select all" option selects only the first 50 patent records shown on the screen.

If you are interested in a number of records from the results page, you can select them using the check boxes to the left of each item. Click on "Display Selected Patents" to browse through the full record views of any patents you have selected, using the "Next" and "Previous" buttons to navigate. If you are interested only in a single patent, simply click on the Patent number link to access the full patent record directly. With the full patent record on display, you can also click on the "Get available documents" link to download the full patent application from the Thomson Patent Store in PDF format, or click on the "Get Legal Status" link for direct access to INPADOC legal status data for the record.

The records listed on the results page are sorted by first priority date, with the most recent priority date at the top and the oldest at the bottom. The sort order is therefore inverse or descending by first priority date.

For each patent record entry in the hit list, the patent number is accompanied by two dates; the first date after the patent number in each record is the publication date of the patent, whereas the date in brackets is the first priority date of the patent.

The "Analyze" function at the top right of the screen allows you to generate a graphical report from your results set. The initial chart breakdown shows the number of patents for any one of 19 fields that you can select from the "Focus" drop down list. Choose a start and end point for the list and click on Show chart to display the results. You can mouse over any of the individual chart elements, the color bars, to see the actual number of patent records the entry contains, or click through to generate a new results list from the corresponding data set. Use the Advanced option to perform additional breakdowns of other fields within the primary set. For example, if you click on "Advanced", and then choose "Year" as the primary breakdown and then Indication and Action as the secondary breakdown (remember to check the boxes for the years that you want to analyze) – you can see how actions and indications developed over the years. To explore the sub set results further, click on the corresponding bar.

The "Show all patents" link at the bottom of the screen displays all of the records on a single page, otherwise the first 50 patent records only are displayed on the page. Use "Show all patents" together with "Select all" to select all of the patent records in the current hit list at once.

The "Include text graphical report …" option at the top left of the Text Search patent subset screen generates a graphical report and gives you the same charts as you would get for a company report on the same patents set.

Analyzing and navigating

General

All time-related charts and analysis in **DOLPHIN** is done using the earliest or first priority date, rather than the publication date. The main reason for this is that in **DOLPHIN** we primarily want to demonstrate the level of "interest" of an applicant in a particular research area. As such, first priority is used since it much better reflects when the research was done than does the publication date. Also, since patents filed at the same time can take different amounts of time until they are published, the publication date is not really that meaningful, especially with regards to sort order.

Select patent subsets simply by clicking on table and chart elements – all elements of charts and tables are hypertext linked wherever applicable. Clicking on each graphical element or table cell returns the underlying records by generating a new report (with charts) from the subset. This new results set is then available for further analysis.

Where you display a report that includes graphs or charts, you have the option either to "Show all" charts at the same time or to access each chart individually through the "Tab style" panel. Using the Tab style display provides very fast access to the individual charts, since you don't need to wait for all charts to be loaded first before viewing them. Use the links on the panel to switch from one chart to another or use the "Show all" link on the panel to display all charts at once. You can specify your preferred display at the time of your search using the "Display options" pop up box and can also permanently save your preferences.

Patent spheres usage

The patent spheres are an attempt to visualize 3-dimensional data. For example, in the drug report, the spheres visualize data by companies, type of claims and priority date at the same time without resorting to difficult 3D graphics.

Moving your mouse over any of the items displayed down the right-hand side illuminates the spheres in different colors, where the colors correspond to the values displayed at the bottom of the chart. This allows quick and intuitive visualization of activity in a certain area. Checking a box next to an item effectively "freezes" the display so the corresponding spheres remain illuminated, even when the mouse pointer is moved away from that item.

The dates along the bottom axis allow you to gauge the comparative levels of patenting activity over time.

Move your mouse over a patent sphere to see more details, including the Patent number for the corresponding patent record, the company name, and any roles or associations that have been added. Click on a sphere to display the associated patent record in a new (secondary) browser window.

The Company Report

All of the charts and graphs in the Company Report are dynamic and interactive; you can rollover or click on elements within them to find out more information about the patents relating to each element. This is impossible to show in the illustrations below, so the best way to see it is to try out a search on **DOLPHIN** for yourself.

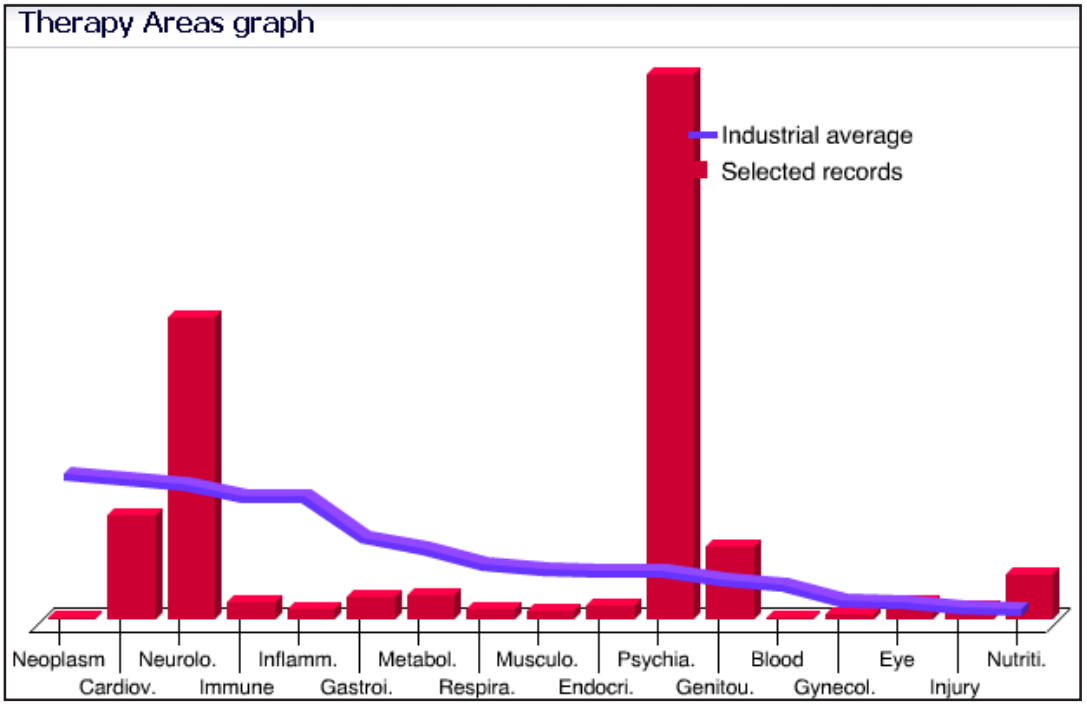
Overview

Criteria	H Lundbeck A/S	Industry Average
Total Number of Patents	256	39.1
Granted European patents as percentage of European filings	20	20.9

The **General Overview** of the company's patenting activity shows the total number of patents and the number of granted European patents as a percentage of European filings against the industry average. Granted European patents are defined based on a window of patents from between 7-12 years ago to avoid bias from recent filings that may still be pending. This also provides a useful indication of what proportion of a company's patent applications actually get granted, since if a patent is pending for 7 years or more, there is a good chance (though by no means a certainty) that it won't get granted.

A number of charts then go on to break down the data in various ways.

Therapy areas



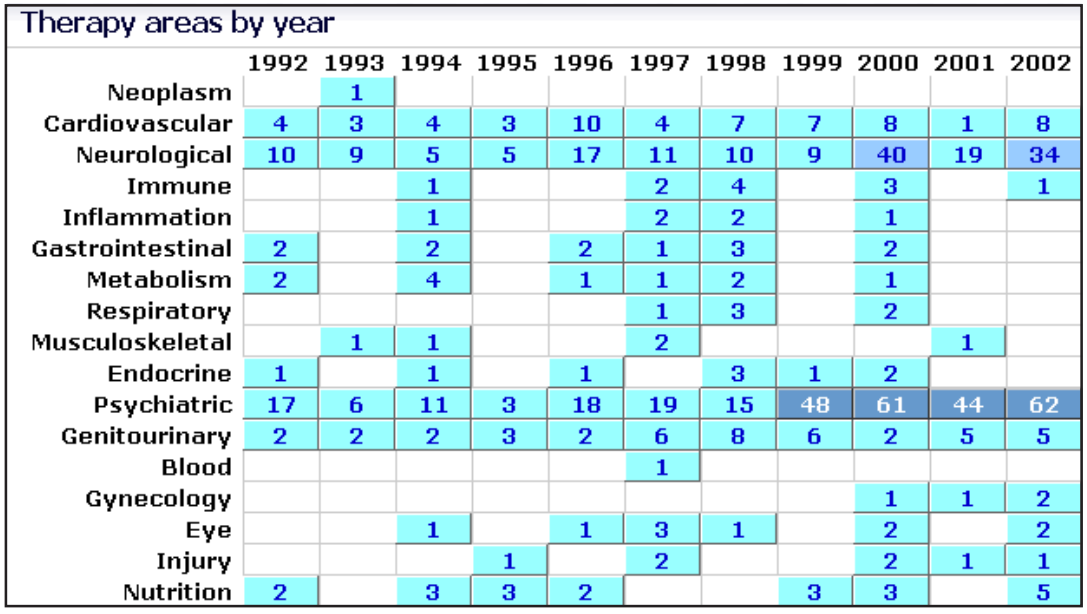
The Therapy Areas graph provides a general overview of the company's patenting activity across therapeutic areas versus the industry average (in purple).

Move your mouse pointer over a bar to see the precise number of patents for that particular area; click on a bar to view the corresponding patent subset as a patent list.

The **Therapy Areas graph** provides a general overview of the company's patenting activity across the various therapeutic areas versus the industrial average, which is shown in purple. Mouse over any of the bars to see the precise number of patents for that particular area; click on a bar to view the corresponding patent subset as a patent list, complete with Meta data fingerprints.

Note that the numbers used to generate this and the next chart (Therapy areas by year) are not based on the absolute number of patents in a particular therapy but on the number of indication terms from each therapy area that were linked to the company's patent applications. The reason for that lies in the fact that, especially for product patents, claims are often extremely wide and inclusive with regards to possible indications and usage for a drug. Patents may easily include indications from five, six or even more therapy areas in their claims. Giving such patents the same weight in each therapy area section would present a misleading picture whereas the chart becomes more accurate if a patent scores "one point" for each indication for a particular therapy area. Thus, a patent indexed with "Lung tumor, Prostate tumor, Leukemia,

Breast tumor, Ovary tumor, Neurodegenerative disease" would weigh five times more in the Neoplasm section than it does in the Neurology section and, given the detail of claimed indications, the applicant is likely to focus his future development in the area of cancer.



Therapy areas by year

	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002
Neoplasm		1									
Cardiovascular	4	3	4	3	10	4	7	7	8	1	8
Neurological	10	9	5	5	17	11	10	9	40	19	34
Immune			1			2	4		3		1
Inflammation			1			2	2		1		
Gastrointestinal	2		2		2	1	3		2		
Metabolism	2		4		1	1	2		1		
Respiratory						1	3		2		
Musculoskeletal		1	1			2				1	
Endocrine	1		1		1		3	1	2		
Psychiatric	17	6	11	3	18	19	15	48	61	44	62
Genitourinary	2	2	2	3	2	6	8	6	2	5	5
Blood						1					
Gynecology									1	1	2
Eye			1		1	3	1		2		2
Injury				1		2			2	1	1
Nutrition	2		3	3	2			3	3		5

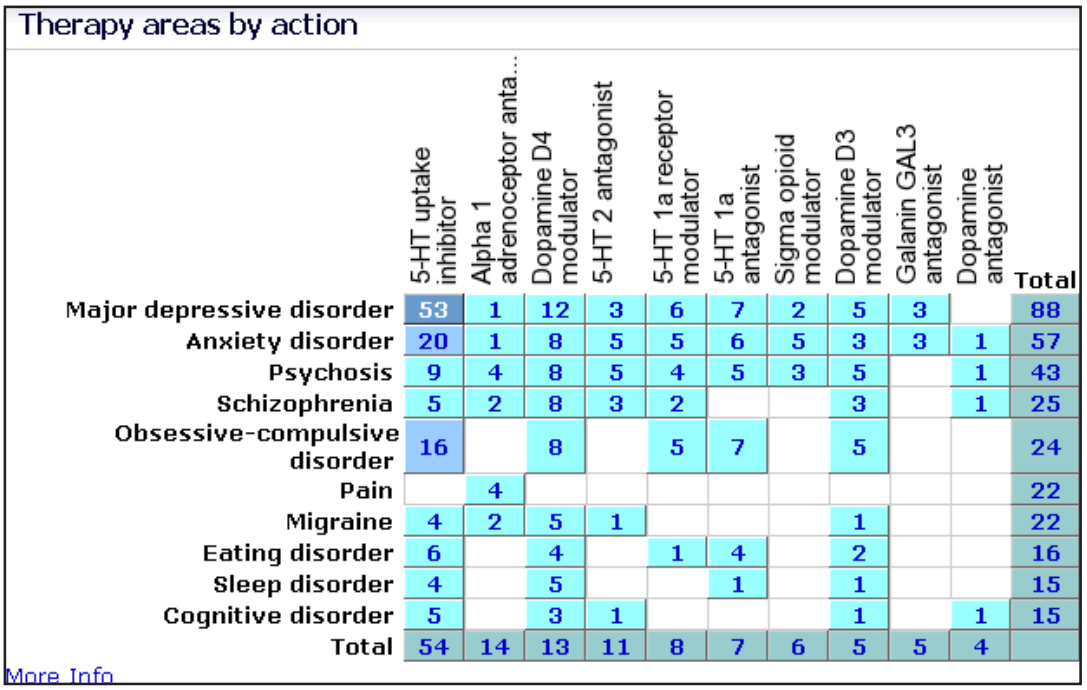
The Therapy Areas by Year matrix shows the number of times each therapy area has been indicated over time.

Move your mouse pointer over any of the cells containing numbers to reveal the corresponding number of patent records for the therapy area in that year.

For example, here 44 patent records have been indexed with 76 cardiovascular indications, suggesting these records are highly relevant to this therapy area.

Click on a number in a cell to view the corresponding patent subset as a patent list.

The **Therapy areas by year** matrix shows the number of times each therapeutic area is indicated over time. Each cell shows the number of index terms allocated to the patent records from this company from a given therapeutic area in a particular year. Mouse over a number in a cell to see the corresponding number of patent records for the therapeutic area in that year (that is, the actual number of patents the terms appear in), displayed in a popup box; click on a number in a cell to view the corresponding patent subset as a patent list, complete with Meta data fingerprints. Cells with the highest numbers of index terms are shaded darker so as to be easily distinguished. These cells contain records that are likely to be most relevant to the therapeutic area; where there are a large number of indexing terms relating to a small number of patents, this suggests that these records are very significant to this particular indication. Empty cells indicate that no index terms were assigned for the therapeutic area in that particular year.



Therapy areas by action

	5-HT uptake inhibitor	Alpha 1 adrenoceptor anta...	Dopamine D4 modulator	5-HT 2 antagonist	5-HT 1a receptor modulator	5-HT 1a antagonist	Sigma opioid modulator	Dopamine D3 modulator	Galanin GAL3 antagonist	Dopamine antagonist	Total
Major depressive disorder	53	1	12	3	6	7	2	5	3		88
Anxiety disorder	20	1	8	5	5	6	5	3	3	1	57
Psychosis	9	4	8	5	4	5	3	5		1	43
Schizophrenia	5	2	8	3	2			3		1	25
Obsessive-compulsive disorder	16		8		5	7		5			24
Pain		4									22
Migraine	4	2	5	1				1			22
Eating disorder	6		4		1	4		2			16
Sleep disorder	4		5			1		1			15
Cognitive disorder	5		3	1				1		1	15
Total	54	14	13	11	8	7	6	5	5	4	

More Info

The Therapy Areas by Action matrix gives a breakdown of indication/action for the top 10 therapy areas and the top 10 actions.

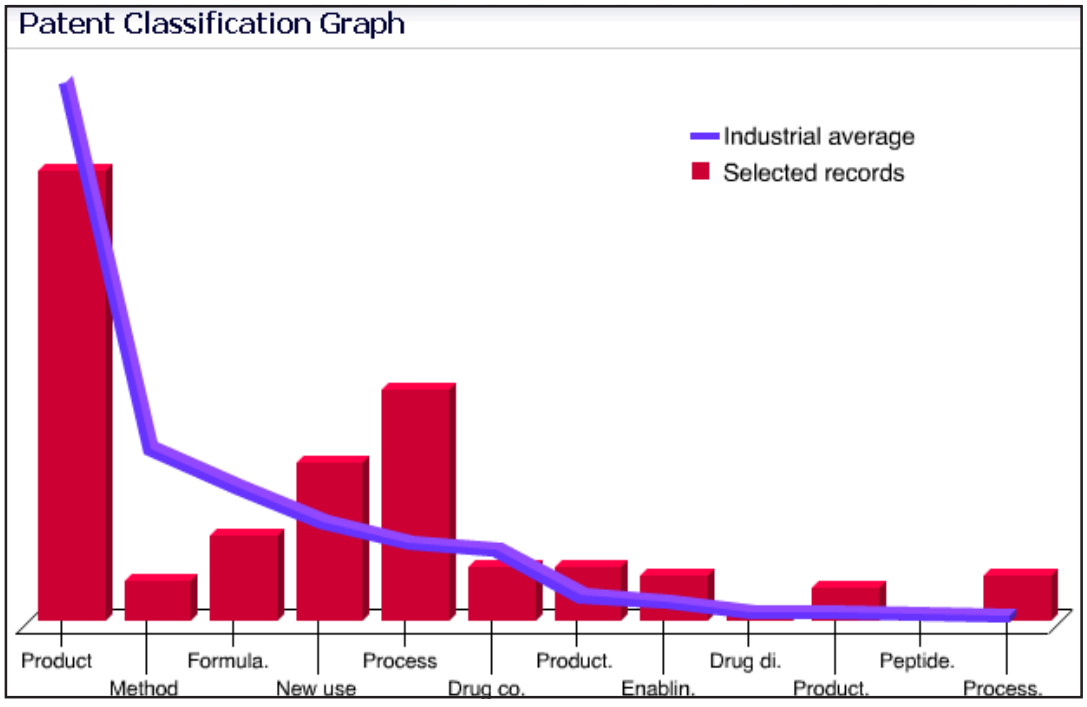
Cells show the number of index terms assigned to the patent records for a given combination of indication/ action.

Click on a number in a cell to view the corresponding patent subset as a patent list.

Click "More Info" to generate an additional matrix for the top 50 combinations of action/indications.

The **Therapy areas by action** matrix gives a breakdown of indication/action by calculating the intersections of the top 10 therapy areas and the top 10 actions. Each cell shows the number of index terms allocated to the patent records from this company from a given therapeutic area (indication) and a given action. The totals show the total number of records relative to each therapy area or action, e.g. the total number of records with indexing relating to inflammation. Click on a number in a cell to view the corresponding patent subset as a patent list, complete with Meta data fingerprints. Cells with the highest numbers of index terms are shaded darker so as to be easily distinguished. These cells indicate which particular areas of therapy by action are likely to be most relevant for this company. Empty cells indicate areas of therapy by action for which the company is not involved in. Click the "More Info" link to generate an additional matrix that calculates the top 50 action/indications combinations first and then selects the indications/actions accordingly. Using this option may highlight key action/indication's focus areas that do not appear in the top 10 areas. By reducing the number to below 50 the chart can be made more focused; by increasing it above 50 it can be made more comprehensive.

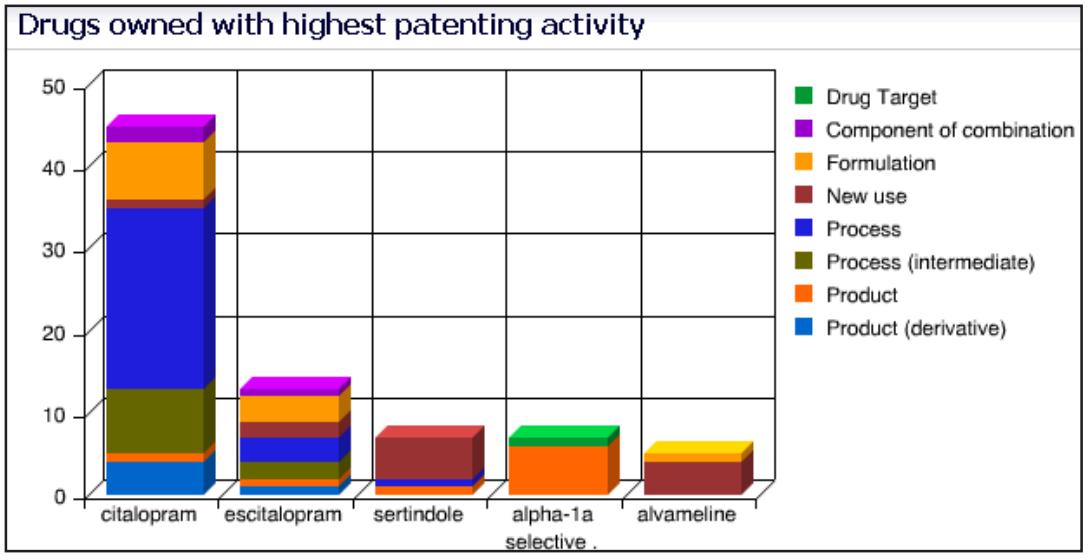
Patent classification



The Patent Classification graph provides an overview of the company's patenting activity by patent classes versus the industry average (in purple).

Move your mouse pointer over a bar to reveal the precise number of patents for that particular classification; click on a bar to view the corresponding patent subset as a patent list.

The **Patent Classification graph** provides an overview of the company's patenting activity in terms of the various patent classes (see Appendix 1 Glossary, Class) versus the industrial average, which is shown in purple. Mouse over any of the bars to see the precise number of patents for that particular patent classification; click on a bar to view the corresponding patent subset as a patent list, complete with Meta data fingerprints.

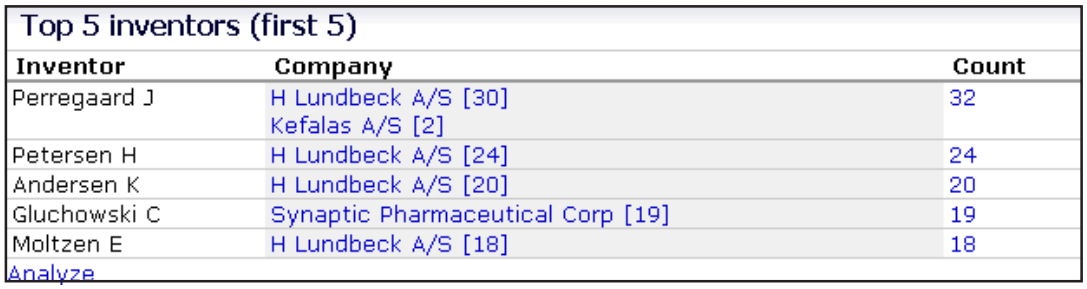


The Drugs owned with highest patenting activity chart shows the top 5 drugs owned by a company together with the types of patents filed.

Move your mouse pointer over a segment within a bar to reveal the precise number of patents for that segment; click on a segment to view the corresponding patent subset as a patent list.

Click on a drug name to display the patents list of all patents shown in each of the segments of the bar for that drug.

The **Drugs owned with highest patenting activity** chart shows the top 5 drugs owned by a company (i.e. where the company has the product patent), together with a breakdown for each drug by the type of patents filed (the drug association; see Appendix 1 Glossary, Drug Association field). The comparative heights of the bars give an indication of the overall patenting activity by the company for each drug, and the segments demonstrate the extent to which the drug is being developed in the various different areas. Mouse over each of the colored segments within a bar to see the precise number of patents for that particular area of development; click on a segment to view the corresponding patent subset as a patent list, complete with Meta data fingerprints. Click on a drug name to display a patents list of all patents shown in each of the segments of the bar for that drug.



Top 5 inventors (first 5)

Inventor	Company	Count
Perregaard J	H Lundbeck A/S [30] Kefalas A/S [2]	32
Petersen H	H Lundbeck A/S [24]	24
Andersen K	H Lundbeck A/S [20]	20
Gluchowski C	Synaptic Pharmaceutical Corp [19]	19
Moltzen E	H Lundbeck A/S [18]	18

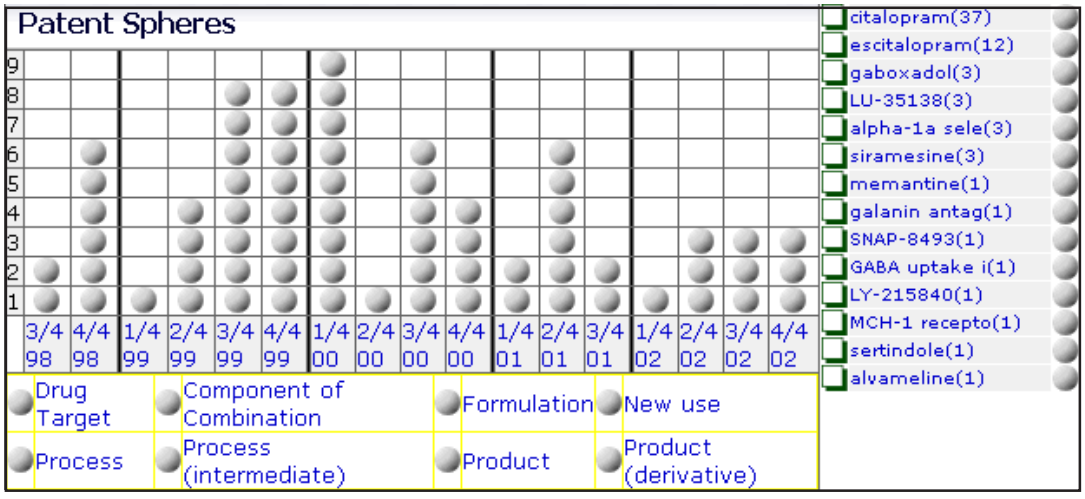
Analyze

The Top 5 inventors table shows the main inventors for the patents filed by a company.

Click on the company hyperlinks to view the corresponding patent subset as a patents list or click on a number entry under Count to see all patents by a specific inventor.

Click on Analyze to get inventor ranks on more specific sections and to get an at a glance overview of research areas of specific inventors.

The **Top 5 inventors** table shows the main inventors associated with patents filed from the company in a standardized format, by first initial and surname. Click on the company links to view the corresponding patent subset, or click the hyperlinked number under Count to see all patents by a specific inventor. Click on the Analyze link to get inventor ranks on more specific sections and to get an at a glance overview of research areas of specific inventors. The Inventor Summary chart shows a breakdown of the number of patents filed by each subsidiary, and in each therapy area. The second chart shows a list of the top ten inventors with their filings broken down into therapeutic area and patent class to give you an overview of the research of the inventor. The number of years back allows you to see when this inventor was most active in his/her research. Inventorship can provide a very useful guide to the progress of a project in a company's research program. Once an inventor becomes associated with a successful project, he or she will quite likely remain in that specialism for many years, retaining the same pharmacological or medical focus, even though chemical tactics may change out of all recognition. Inventor names are among the most powerful competitive intelligence tools available.

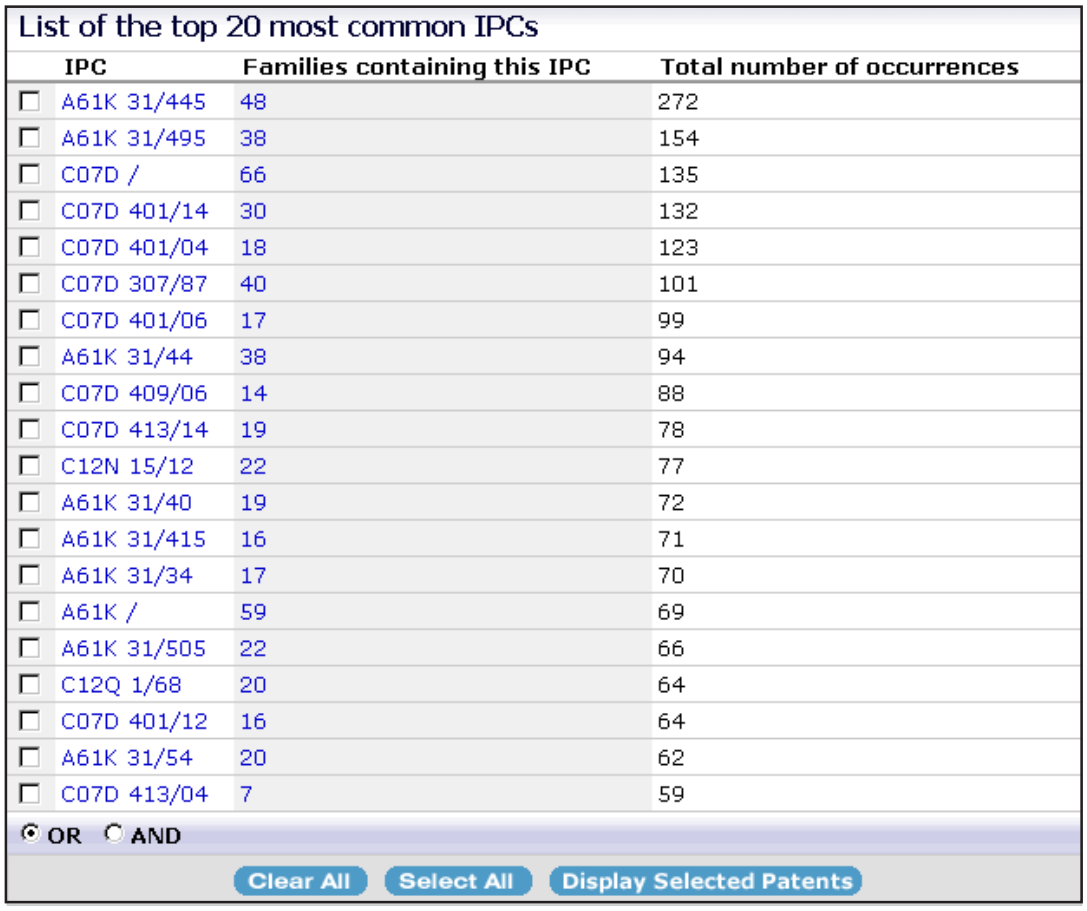


Move your mouse pointer over any chart element to reveal links for that element.

Move your mouse pointer over a drug name to reveal the various classes of patents filed for the drug over time. (check the box to freeze shading)

Each sphere represents a patent record; move your mouse pointer over a sphere to see details of the record; click on a sphere to view the corresponding patent record.

The **Patent spheres** chart is a dynamic and interactive visualization tool. Mouse over a patent sphere to see more details, including the Patent number for the corresponding patent record, the action and the company name that have been added. Click on a sphere to display the associated patent record in a new (secondary) browser window. Mouse over a drug name to reveal the various classes of patents filed for that drug by the company over time. Mouse over a patent class to reveal when the company has filed applications for the various drugs assigned to that class. Click on a drug name or patent class to view the corresponding patent subset as a patent list, complete with Meta data fingerprints. Click on a date in the time dimension to view the patent subset of all patents with the corresponding first priority date.



List of the top 20 most common IPCs

	IPC	Families containing this IPC	Total number of occurrences
☐	A61K 31/445	48	272
☐	A61K 31/495	38	154
☐	C07D /	66	135
☐	C07D 401/14	30	132
☐	C07D 401/04	18	123
☐	C07D 307/87	40	101
☐	C07D 401/06	17	99
☐	A61K 31/44	38	94
☐	C07D 409/06	14	88
☐	C07D 413/14	19	78
☐	C12N 15/12	22	77
☐	A61K 31/40	19	72
☐	A61K 31/415	16	71
☐	A61K 31/34	17	70
☐	A61K /	59	69
☐	A61K 31/505	22	66
☐	C12Q 1/68	20	64
☐	C07D 401/12	16	64
☐	A61K 31/54	20	62
☐	C07D 413/04	7	59

The Top 20 most common IPCs shows the number of patent families containing each IPC and the total number of occurrences within the families.

Click on an IPC code to view the WIPO definition.

Click on the number of families containing an IPC to view the corresponding patent subset as a patent list.

Select a subset of IPCs using the check boxes; click Display Selected Patents to view the corresponding patents list.

Combine any selected IPCs using Boolean AND/OR logic operators.

The **List of the top 20 most common IPCs** section lists the IPC, which places each invention in a hierarchical classification scheme according to its essential nature, the number of patent families (linked by common priority numbers) containing the IPC and the total number of occurrences within the families (how many times the IPC has been indexed in all of the patents from that company). Click on any of the IPCs listed to see a detailed WIPO definition (also available as PDF), or click the families containing the IPC to view the corresponding patent subset as a patent list, complete with Meta data fingerprints. Select multiple IPCs using the check boxes, or the "Select All" button. Combine the IPCs with Boolean OR/AND logic using the option buttons, and click on "Display Selected Patents" to view the combined patent subset as a patents list. Choosing the Boolean AND option generates a list of patent records containing *all* of the IPC codes selected, whereas choosing the Boolean OR option generates a list of patent records containing *at least one* of the IPC codes selected.

Drugs for which the company has filed patents other than the product patent

Drug name	Therapy areas	Drug Target	Component of Combination Formulation	General interest	New use	Process	Process (intermediate)	Product (derivative)	Filed within the last 4 years
citalopram(43)	Psychiatric; Neurological		2	7		1	22	8	4	10
escitalopram(12)	Psychiatric; Neurological		1	3		2	3	2	1	7
sertindole(6)	Psychiatric					5	1			1
siramesine(3)	Neurological; Psychiatric			1		1		1		2
LU-35138(3)	Psychiatric			1		1			1	3
galanin antagonists, Synaptic(2)	Neurological	2								
alpha2B-receptor therapeutics, Synaptic(1)	Metabolism	1								
MCH-1 receptor antagonists, Synaptic(1)	Psychiatric; Neurological	1								
SNAP-7915(1)	Endocrine; Genitourinary	1								
alpha-1a selective antagonists, Synaptic(1)	Endocrine; Genitourinary	1								
SNAP-8493(1)	Endocrine; Genitourinary	1								
SNAP-7600(1)	Endocrine; Genitourinary	1								
CGP-71683A(1)	Nutrition; Psychiatric	1			1					

The Drugs with patents other than the product patent matrix shows drugs where the company has filed patents in addition to the filed (or licensed) product patent.

Click on a number in a cell to view the corresponding patent subset as a patent list.

Click on a drug name to view all patents other than the product patent for that particular drug.

The **Drugs for which the company has filed patents other than the product patent** matrix shows drugs where the company has filed (or licensed) the product patent and has filed at least one other patent in addition to the product patent. The cells show the number of patents filed for a specific drug for each of the patent classes other than product. Click on a number in a cell to view the corresponding patent subset as a patent list, complete with Meta data fingerprints. Cells with the highest numbers of patents filed are shaded darker so as to be easily distinguished. These cells indicate where there is a strong interest in the development of particular drugs. Empty cells indicate patent classes that have not been applied to the drug. Key therapeutic areas are listed next to each drug. Click on a drug name to display a patents list of all patents other than the product patent.

Collaborations and Licensing

Company	Number of patents	Therapy Areas
Joint applications		
Merck & Co Inc	3	Genitourinary
Novartis AG	1	Cardiovascular; Psychiatric
Maxygen Inc	1	
Kenneth S Warren Laboratories	1	Neurological
In-Licensed		
Merz & Co GmbH	2	Neurological
Lexicon Genetics Inc	2	
Almirall Prodesfarma SA	1	Neurological
Eli Lilly & Co	1	
Max-Planck-Gesellschaft zur Foerderung der Wissenschaften EV	1	Neurological
Massachusetts Institute of Technology	1	
Individual	1	
Pharmexa A/S	1	Immune
Kenneth S Warren Laboratories	1	Neurological
Out-Licensed		
Johnson & Johnson	10	Genitourinary; Neurological
Forest Laboratories Inc	6	Psychiatric; Injury
Eli Lilly & Co	4	Psychiatric; Neurological
Bayer AG	1	Psychiatric
Bristol-Myers Squibb Co	1	Psychiatric
PN Gerolymatos SA	1	Psychiatric
Mochida Pharmaceutical Co Ltd	1	Psychiatric
Novartis AG	1	Nutrition; Psychiatric
Recordati SpA	1	Psychiatric

The Collaborations and licensing table shows the numbers of patents filed as joint applications, in-licensed and out-licensed by a company.

Click on a number in the table to view the corresponding patent subset as a patent list.

The **Collaborations and Licensing** section shows companies, and therapy areas and gives the number of patents filed as joint applications, in-licensed and out-licensed. Joint applications are patent applications that have been co-filed with another company, and so have 2 or more assignees. In-licensed refers to patents that have been licensed from another company; out-licensed refers to patents owned by the company that have been licensed to other companies. Click on a number to view the corresponding patent list. Therapy areas are generated automatically from the indication terms, rather than being intellectually assigned to individual licensing agreements, and so can occasionally be misleading.

Key product patents

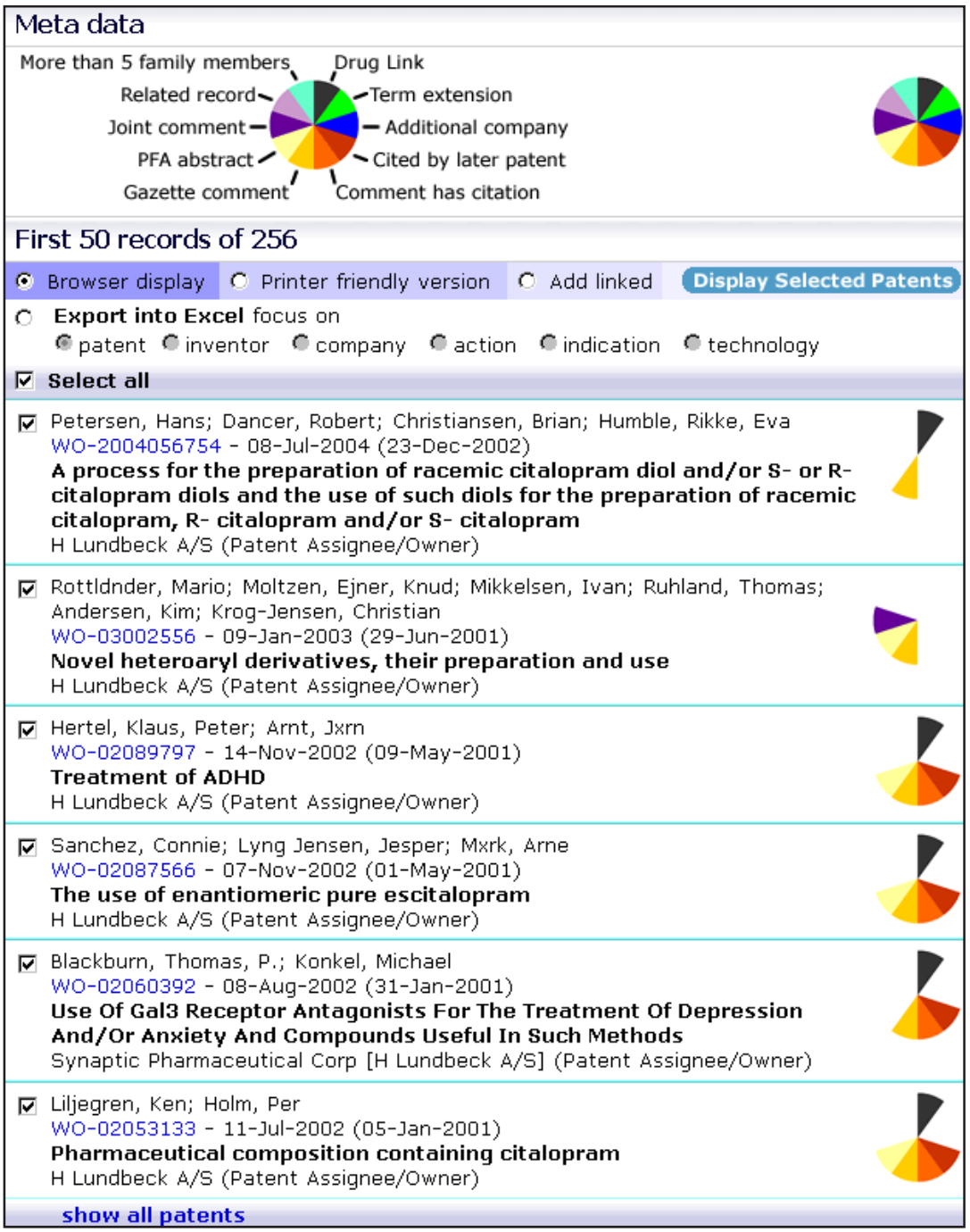
Drug name	Indication	Patent	Expiry dates EP	Expiry dates US
sertindole	Psychosis; Cardiovascular disease	EP-00200322	08-APR-01 - 17-MAR-11	01-APR-06
escitalopram	Hyperphosphatemia; Eating disorder; Panic disorder; Major depressive disorder	EP-00347066	14-JUN-04 - 20-APR-14	08-JUN-09
siramesine	Anxiety disorder	WO-09222554	12-JUN-12	09-SEP-14 - 28-FEB-17

The Key product patents table lists drugs that have generic names assigned, together with their associated granted European and United States product patents.

Expiry dates for EP and US patents are shown as date ranges since patent family member are also taken into consideration.

Click a patent link to view the corresponding patent record entry in full.

The **Key product patents** section shows drugs, their indication and US and EP expiry dates for the patent records shown. Click a patent link to display the associated patent record in full. The EP Expiry dates for the European patents (EPs) are shown as date ranges since patent family members, including national European filings, are taken into consideration. There may also be different expiry dates for different European countries, which are reflected in the range. US patents can also include different family members (with different expiry dates) within the patent family.



The report ends with the full record set from which the statistical analyses; the graphs, tables and charts are derived.

For a more detailed explanation of the Patents List and how to use it, see “The Hit List”; page ??.

The **Patent List** is the entire list of patents or the 'hit list', which is generated by **DOLPHIN** as part of the Company Report. This is effectively the full record set, upon which the graphical and statistical analyses are performed. Records are displayed sorted in descending order by first priority filing date; this date is shown in brackets for each entry, to the immediate right of the publication date. Initially, only the first 50 (most recent) records are displayed. To view the entire patent list, click on the "Show all patents" link at the bottom of the page.

When you view a patent subset by clicking on one of the graphs or tables, you can create a new company report based on this subset alone

You can look at a subset of records within a report (e.g. all the immune records), by clicking on one of the graphs or tables for the subset you want. This will generate a corresponding patents list of the records. You can then click on the "Include company graphical report for this subset…" link at the top of the list to generate a new company report based only on the subset of records you have chosen.

Editorial policy on companies

DOLPHIN analysts will, in some cases, infer an association between a company and a patent from sources that do not explicitly state that this connection exists.

Some possible sources are:

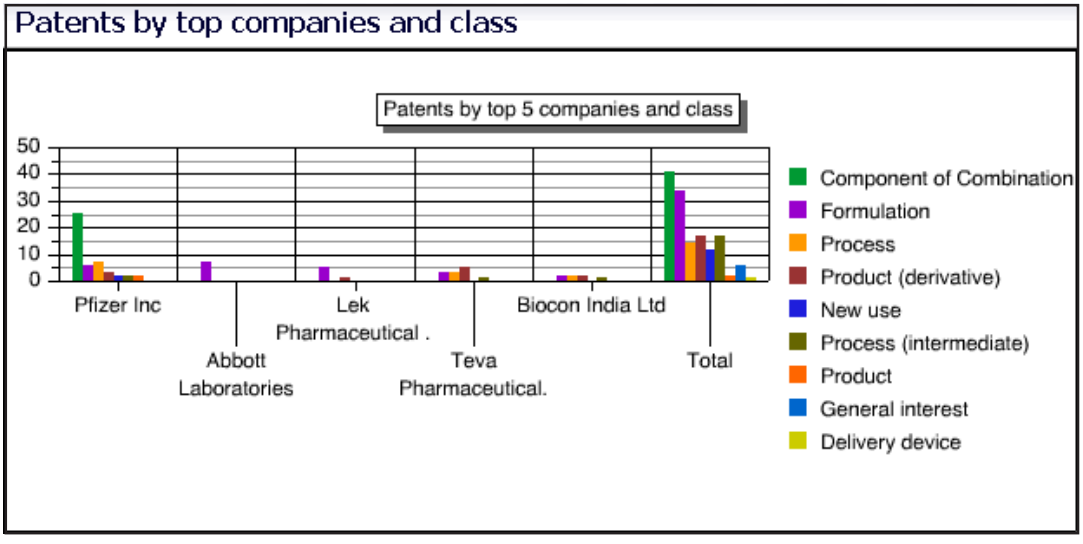
- reference number for an ID*db*[3] record
- Form 10-K name (US Securities & Exchange Commission)
- Journal reference
- INPADOC database record
- Press releases

Backfile licensing information retrieved from ID*db*[3] is processed and evaluated by **DOLPHIN** analysts. When a company takeover or merger occurs, patents from the original company or companies are linked by **DOLPHIN** analysts to the new parent company (in the case of a takeover) or to the newly formed company (in the case of a merger). However, there may be distinct parts of the new commercial group that still retain their existing intellectual property, which will remain linked to them in the database.

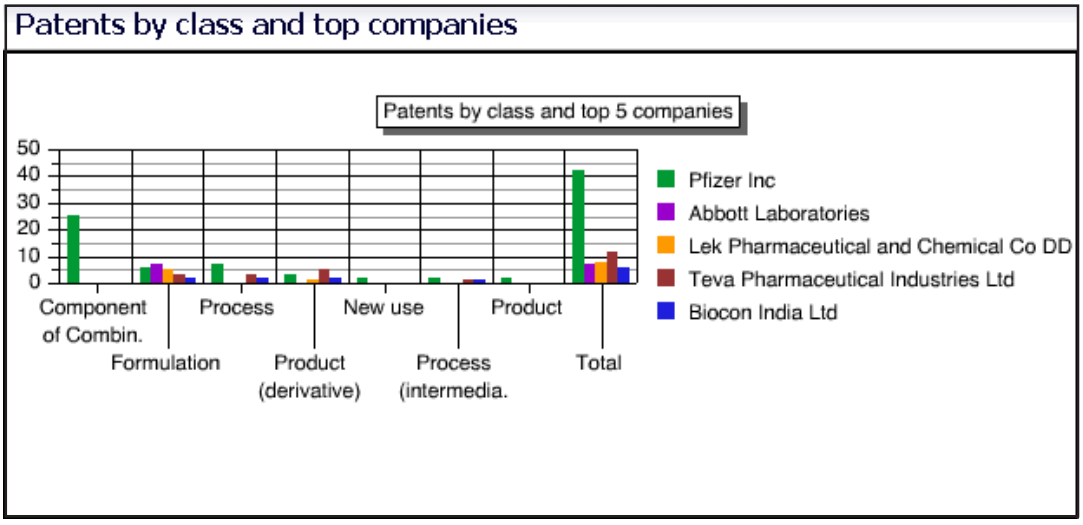
The Drug Report

All of the charts in the Drug Report are dynamic and interactive; you can rollover or click on elements within the charts to find out more information about the patents relating to each element.

The bar charts **Patents by top 5 companies and class** and **Patents by class and top 5 companies** depict the same information in alternative formats; one chart is the permutation of the other – one selects first by company then by class, the other vice versa.

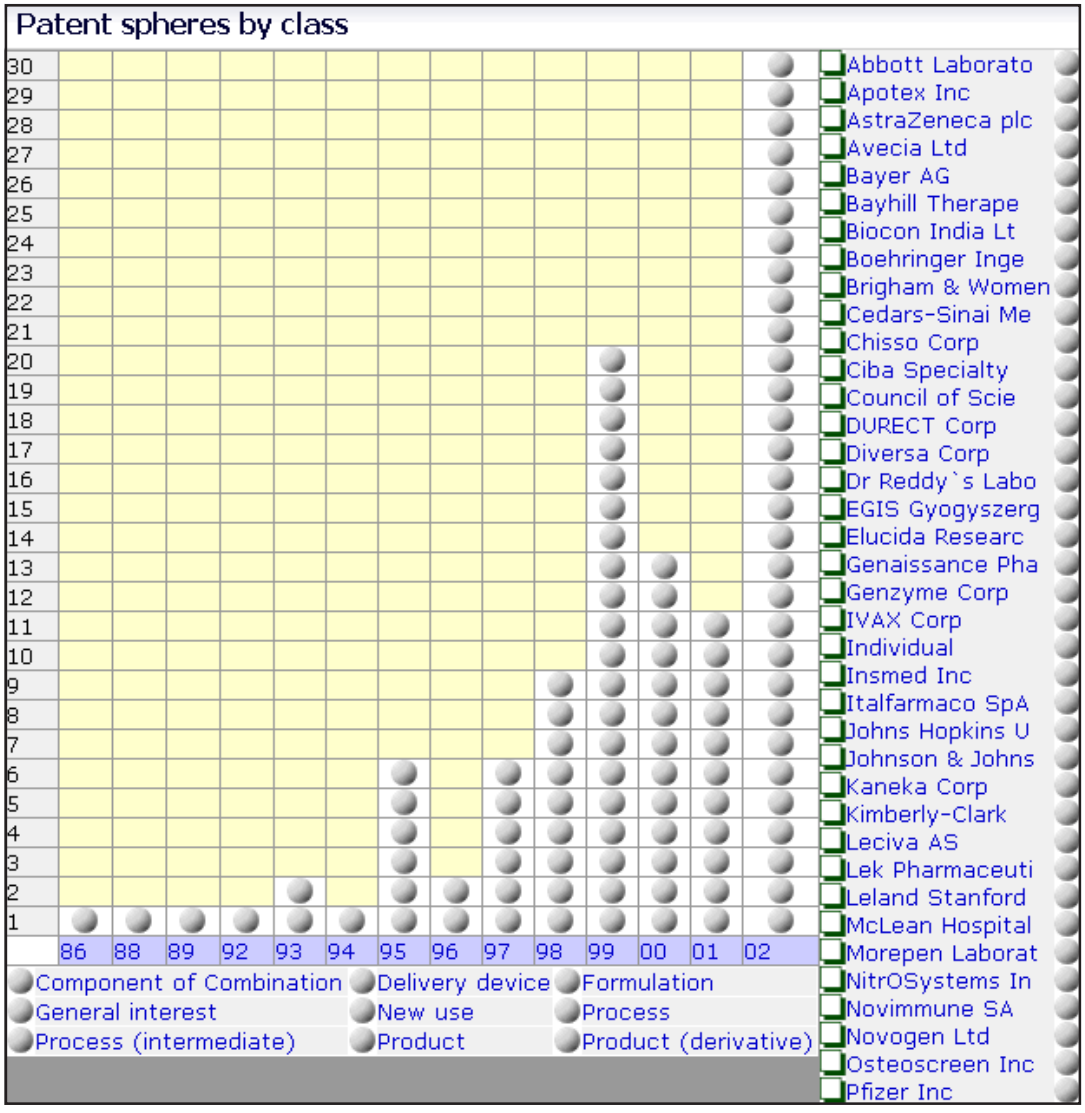


The first chart is sorted by class

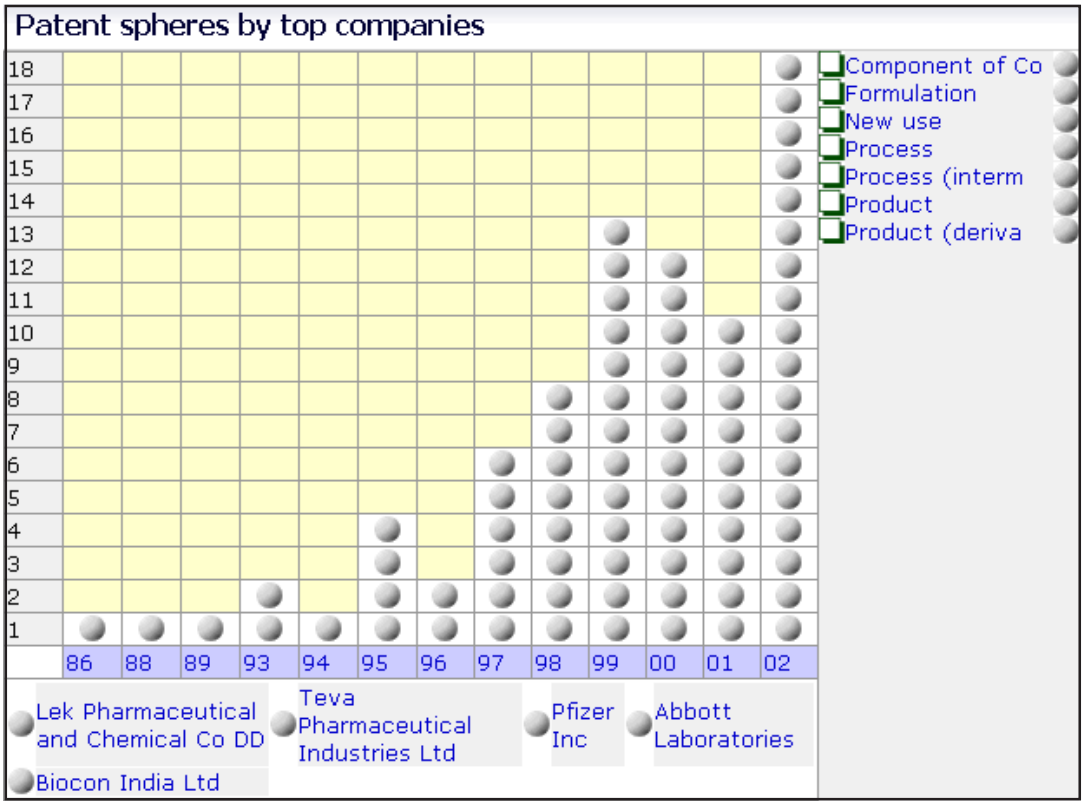


The second chart is sorted by company

Companies linked to the product patent are selected first, then it goes by number of patents. The totals sections on the right hand side of each chart are based on all records, not just the top 5 companies. For example, the total formulation bar in the "Patents by top companies and class" chart shows the total number of formulation patents for the drug filed from all companies, whereas the formulation bar for each of the top 5 companies shows only those patents filed by that particular company. Click on a bar to view the corresponding patent subset as a patent list, complete with Meta data fingerprints.



The first chart is sorted by class



The second chart is sorted by Company

Move your mouse pointer over any chart element to reveal links for that element.

Move your mouse pointer over a company name to reveal the various classes of patents filed for this drug over time. (check the box to freeze shading)

Each sphere represents a patent record; move your mouse pointer over a sphere to see details of the record; click on a sphere to view the corresponding patent record.

The **Patent spheres** chart is a dynamic and interactive visualization tool. In the Drug Report, the patent spheres charts supplement the information presented in the two bar charts above, but have an additional time dimension (the Priority Year) and contain all companies. Mouse over a patent sphere to see more details, including the Patent number for the corresponding patent record, and the company name and patent class that has been added. Click on a sphere to display the associated patent record in a new (secondary) browser window. Mouse over a company name to reveal the various classes of patents filed by that company for this particular drug over time. Mouse over a patent class to reveal the various companies that have filed patents for the drug, and which have been assigned to that class. Click on a company name or patent class to view the corresponding patent subset as a patent list, complete with Meta data fingerprints. Click on a date in the time dimension to view the patent subset of all patents with the corresponding first priority date.

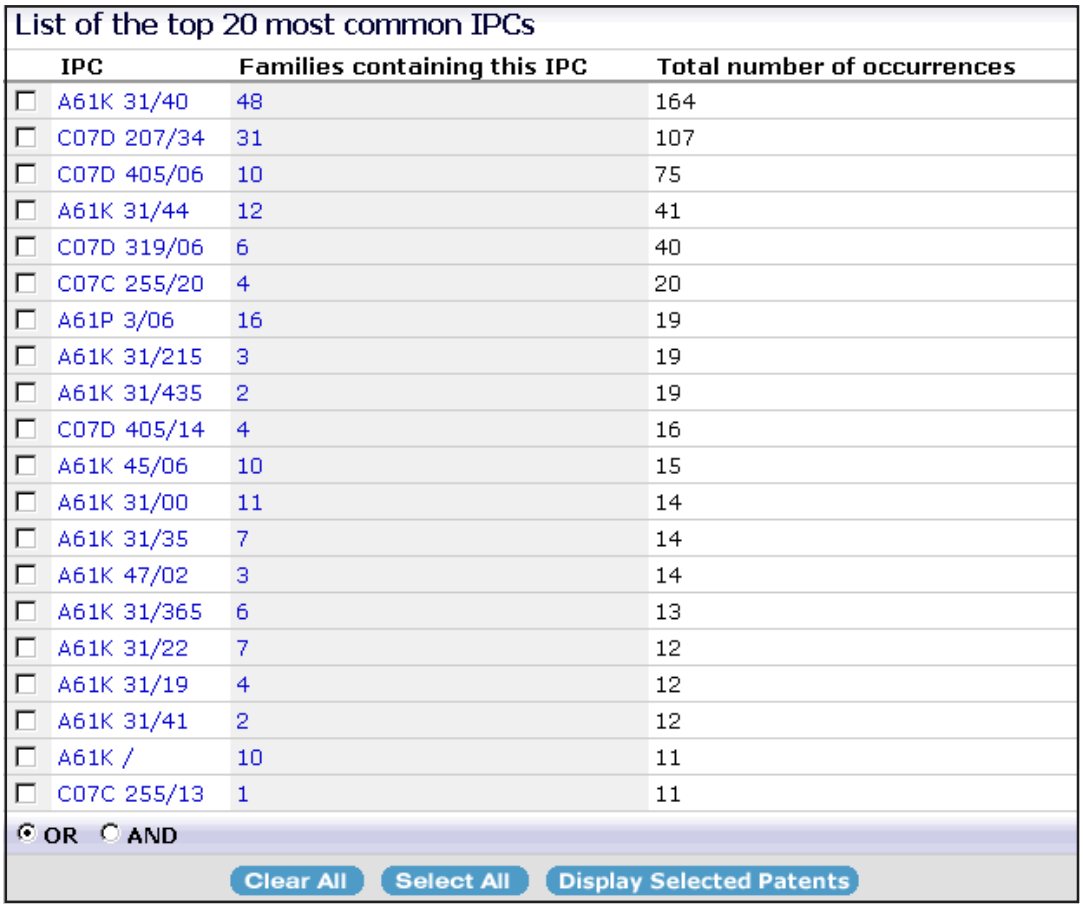
Top 5 inventors (first 20)		
Inventor	**Company**	**Count**
Roth B	Warner-Lambert Co [4]	4
Butler D	Warner-Lambert Co [4]	4
Newton R	Warner-Lambert Co [4]	4
Mathew J	Biocon India Ltd [3]	3
Nanninga T	Warner-Lambert Co [3]	3
Hamanaka E	Pfizer Products Inc [2] Pfizer Inc [1]	3
Bisgaier C	Warner-Lambert Co [3]	3
Day W	Pfizer Products Inc [2]	2
Law D	Abbott Laboratories [2]	2
Lee A	Pfizer Products Inc [2]	2
Pan Q	Abbott Laboratories [2]	2
Dain B	Not recognized [2]	2
Nagy K	EGIS Gyogyszergyar RT [2]	2
Chang G	Pfizer Products Inc [2]	2
Greff Z	EGIS Gyogyszergyar RT [2]	2
Ganesh S	Biocon India Ltd [2]	2
Bartha F	EGIS Gyogyszergyar RT [2]	2
Balazs L	EGIS Gyogyszergyar RT [2]	2
Tully W	Warner Lambert R&D Ireland Ltd [2]	2
Simig G	EGIS Gyogyszergyar RT [2]	2
Analyze		

The Top 5 inventors table shows the main inventors for the patents filed by a company.

Click on the company hyperlinks to view the corresponding patent subset as a patents list or click on a number entry under Count to see all patents by a specific inventor.

Click on Analyze to get inventor ranks on more specific sections and to get an at a glance overview of research areas of specific inventors.

The **Top 5 inventors** table shows the main inventors associated with patents filed by the companies associated with this particular drug, in a standardized format, by first initial and surname. Click on the company links to view the corresponding patent subset, or click the hyperlinked number under Count to see all patents by a specific inventor. Click on the Analyze link to get inventor ranks on more specific sections and to get an at a glance overview of research areas of specific inventors. The Inventor Summary chart shows a breakdown of the number of patents filed by each subsidiary, and in each therapy area. The second chart shows a list of the top 10 inventors with their filings broken down into therapeutic area and patent class to give you and overview of the research of the inventor. The number of years back allows you to see when this inventor was most active in his/her research. Inventorship can provide a very useful guide to the progress of a project in a company's research program. Once an inventor becomes associated with a successful project, he or she will quite likely remain in that specialism for many years, retaining the same pharmacological or medical focus, even though chemical tactics may change out of all recognition. Inventor names are among the most powerful competitive intelligence tools available.



List of the top 20 most common IPCs

	IPC	Families containing this IPC	Total number of occurrences
☐	A61K 31/40	48	164
☐	C07D 207/34	31	107
☐	C07D 405/06	10	75
☐	A61K 31/44	12	41
☐	C07D 319/06	6	40
☐	C07C 255/20	4	20
☐	A61P 3/06	16	19
☐	A61K 31/215	3	19
☐	A61K 31/435	2	19
☐	C07D 405/14	4	16
☐	A61K 45/06	10	15
☐	A61K 31/00	11	14
☐	A61K 31/35	7	14
☐	A61K 47/02	3	14
☐	A61K 31/365	6	13
☐	A61K 31/22	7	12
☐	A61K 31/19	4	12
☐	A61K 31/41	2	12
☐	A61K /	10	11
☐	C07C 255/13	1	11

◉ OR ○ AND

Clear All | Select All | Display Selected Patents

The Top 20 most common IPCs shows the number of patent families containing each IPC and the total number of occurrences within the families.

Click on an IPC code to view the WIPO definition.

Click on the number of families containing an IPC to view the corresponding patent subset as a patents list.

Select a subset of IPCs using the checkboxes; click Display Selected Patents to view the corresponding patents list.

Combine any selected IPCs using Boolean AND/OR logic operators.

The **List of the top 20 most common IPCs** section lists the IPC, which places each invention in a hierarchical classification scheme according to its essential nature, the number of patent families containing the IPC and the total number of occurrences within the families. Click on any of the IPCs listed to see a detailed WIPO definition (also available as PDF), or click the families containing the IPC to view the corresponding patent subset as a patent list, complete with Meta data fingerprints. Select multiple IPCs using the check boxes, or the "Select All" button. Combine the IPCs with Boolean OR/AND logic using the option buttons, and click on "Display Selected Patents" to view the combined patent subset as a patents list.

Use claims

Patent	Indication	Action	Associated companies
WO-2004024073	Sepsis; Radiation sickness; Respiratory distress syndrome	HMG CoA reductase inhibitor	University of Arkansas
WO-00232411	Diabetic nephropathy; Diabetic neuropathy; Atherosclerosis; Diabetic macroangiopathy; Diabetic retinopathy; Diabetic foot ulcer; Diabetic cataract	HMG CoA reductase inhibitor; Sorbitol dehydrogenase inhibitor	Pfizer Products Inc
WO-00224194	Eczema; Multiple sclerosis; Ocular disease; Psoriasis; Rheumatoid arthritis; Systemic lupus erythematosus; Uveitis; Insulin dependent diabetes; Crohns disease	IFN gamma antagonist	Novimmune SA
US-20020004521	Prostate hyperplasia	HMG CoA reductase inhibitor	
WO-00110437	Osteoarthritis; Osteoporosis; Arthritis; Breast tumor; Connective tissue disease	Collagenase modulator	St Louis University
EP-00409281	Atherosclerosis	HMG CoA reductase inhibitor	Warner-Lambert Co
EP-00247633	Hypercholesterolemia; Hyperlipidemia	HMG CoA reductase inhibitor	Warner-Lambert Co

Combination claims

Patent	Associated drugs	Indication	Action	Associated companies
WO-2004056395	atorvastatin; torcetrapib			Pfizer Products Inc
WO-00247683	atorvastatin; pantethine; taurine	Hyperlipidemia		Sankyo Co Ltd
US-20020058026	atorvastatin; cerivastatin; fluvastatin; lovastatin; pravastatin; simvastatin; ubiquinones			Individual
EP-00814080	atorvastatin	Fungal infection; Hypercholesterolemia; Atherosclerosis; Hypolipidemia	Squalene synthetase inhibitor	Pfizer Inc
WO-09716184	atorvastatin; avasimibe	Atherosclerosis	ACAT inhibitor; HMG CoA reductase inhibitor	Warner-Lambert Co
WO-09609827	atorvastatin; cholesterol absorption inhibitor, Pfizer; lovastatin	Hypercholesterolemia; Arteriosclerosis	HMG CoA reductase inhibitor; Squalene synthetase inhibitor	Pfizer Inc

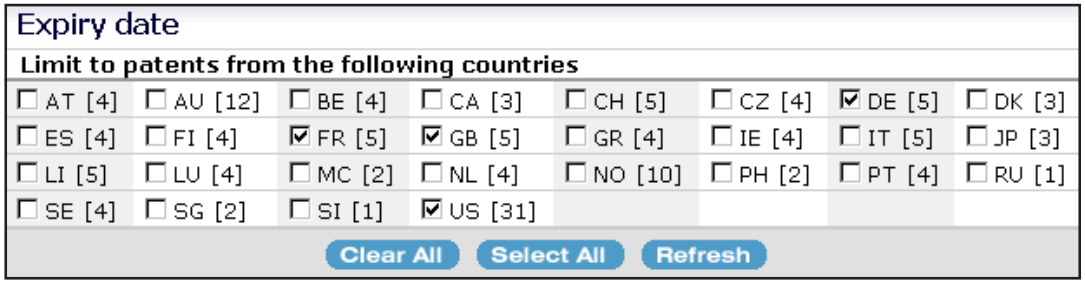
Clear All | Select All | Display Selected Patents

The Use claims and Combination claims tables lists patents and their claimed uses (indications), actions and associated companies; the combination claims additionally lists associated drugs.

Click a patent link to view the corresponding patent record entry in full.

Select a subset of patents using the checkboxes; click Display Selected Patents to view the corresponding patents list.

The **Use claims** and **Combination claims** section lists patents and their claimed uses, as exemplified by therapeutic area (indication) and action, and the associated companies; the combination claims additionally lists associated drugs. The use claims indication column provides an easy way of viewing new uses for the drug; the combination chart provides a quick and easy way to get an overview of what the drug is being combined with. Click a patent link to display the associated patent record in full. Select multiple entries from the tables using the check boxes, or the "Select All" button, and click on "Display Selected Patents" to view the combined patent subset as a patents list.



The Expiry date table lists patents and their expiry dates for DE, FR, GB and US.

Select a different combination of countries by selecting the check boxes for the corresponding country codes; then click on Refresh.

CC	Patent	Owner	Type	Estimated expiry date	Status type
For patents owned by the originator or licensees					
DE	EP-00247633	Warner-Lambert Co [Pfizer Inc]	Product	29-MAY-2007	
FR	EP-00247633	Warner-Lambert Co [Pfizer Inc]	Product	29-MAY-2007	
	US-05003080	Warner-Lambert Co [Pfizer Inc]	Process	26-MAR-2008	
DE	EP-00330172	Warner-Lambert Co [Pfizer Inc]	Process	22-FEB-2009	
FR	EP-00330172	Warner-Lambert Co [Pfizer Inc]	Process	22-FEB-2009	
GB	EP-00330172	Warner-Lambert Co [Pfizer Inc]	Process	22-FEB-2009	
	US-04681893	Warner-Lambert Co [Pfizer Inc]	Product	24-SEP-2009	US156
	US-05280126	Warner-Lambert Co [Pfizer Inc]	Process	18-JAN-2011	
GB	EP-00247633	Warner-Lambert Co [Pfizer Inc]	Product	06-NOV-2011	SPC
	US-06126971	Warner-Lambert Co [Pfizer Inc]	Formulation	19-JAN-2013	
	US-05807834	Pfizer Inc	Component of Combination	20-SEP-2014	

For patents from other applicants					
DE	EP-00579370	Chisso Corp	Process (intermediate)	03-JUN-2013	
FR	EP-00579370	Chisso Corp	Process (intermediate)	03-JUN-2013	
GB	EP-00579370	Chisso Corp	Process (intermediate)	03-JUN-2013	
	US-05449793	Chisso Corp	Process (intermediate)	04-JUN-2013	
	US-05329018	Chisso Corp	Process (intermediate)	04-JUN-2013	
	US-06001615	Zeneca Group plc [AstraZeneca plc]; Avecia Ltd	Process (intermediate)	23-DEC-2017	
	US-06087511	Warner-Lambert Co [Pfizer Inc]	Process	15-JAN-2018	

The 2 tables after the country selection grid show patent expiries for patents owned by the originator or licensees and for patents from other applicants.

Click a patent link to view the corresponding patent record entry in full.

Status type shows patent extensions, such as SPCs and Hatch-Waxman extensions (US article 156).

The **Expiry date** table is set up to list patents and their expiry dates for Germany, France, Great Britain and the United States. Select additional entries from the country selection table using the check boxes, or the "Select All" button, and click on "Refresh" to view the revised listing. The two tables generated below the country selection table show patent expiries for patents owned by the originator or licensees and expiry dates for patents from other applicants. These tables provide an easy way of assessing when certain aspects of patenting for a drug come off patent. Click a patent link to display the associated patent record in full; alternatively, to compare patents side-by-side, simply right-click on the patent number and choose "Open in New Window".

The entry in the Type field is specific to the primary patent and in some cases this can be misleading. This is because the primary patent, the one selected from the patent family - is preferably a WO (PCT) document; the indexing that is applied to this is inherited by the rest of the family members and therefore occasionally may not be so accurate for every record. Especially in the US it is common to "split" an invention that is covered by only one EP or WO patent over several US patents. The WO patent may be just a general product patent, for example, whereas you could index the US patents more specifically as "Formulation", "Process", etc.

The entry in the Status type field shows aberrations in the patent expiry dates from, the theoretical date (such as patent extensions or terminal disclaimers).

The report ends with the full record set from which the statistical analyses; the graphs, tables and charts are derived.

For a more detailed explanation of the Patents List and how to use it, see “The Hit List”; page ??.

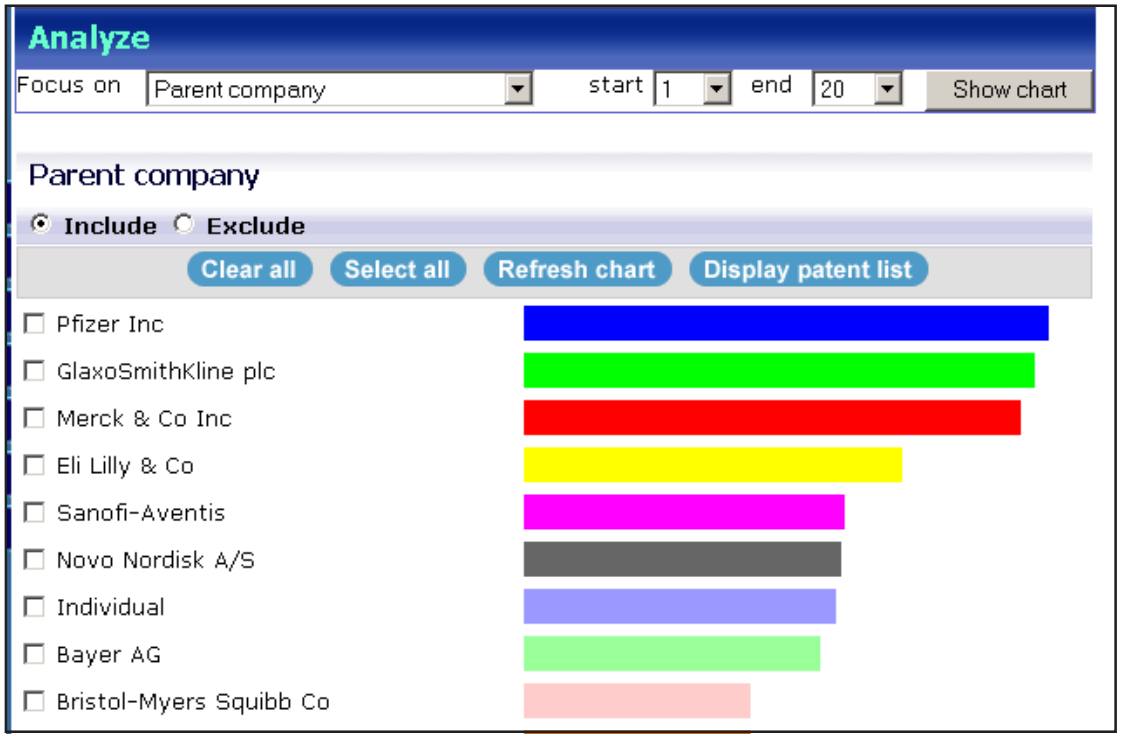
The **Patent List** is the entire list of patents or the 'hit list', which is generated by **DOLPHIN** as part of the Drug Report. This is effectively the full record set, upon which the graphical and statistical analyses are performed. Records are displayed sorted in descending order by first priority filing date; this date is shown in brackets for each entry, to the immediate right of the publication date. Initially, only the first 50 (most recent) records are displayed. To view the entire patent list, click on the "Show all patents" link at the bottom of the page.

When you view a patent subset, for example by choosing a selection of patents using the check boxes and then clicking on Display Selected Records, you can create a new drug report based on this subset alone.

You can look at a subset of patents within a report, for example by choosing a selection of patent records using the associated check boxes and then clicking on Display Selected Records, by clicking on one of the bars in the charts or by clicking on a company link or a class link or a first priority date in the time dimension of the patent spheres charts. Doing any of these will generate a corresponding patents list of records. You can the click on the "Include company graphical report for this subset..." link at the top of the list to generate a new drug report based only on the subset of records you have chosen.

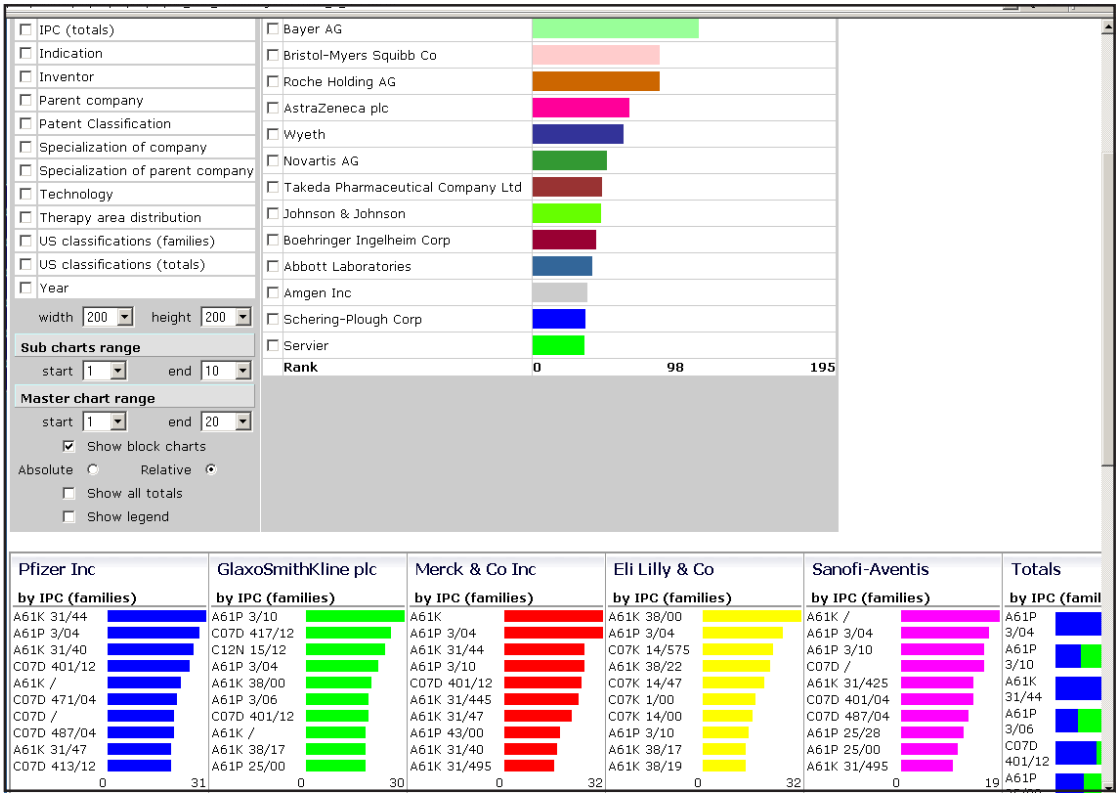
The Analyze Function

The "Analyze" function at the top right of the screen allows you to generate a graphical report from your results set. Initially, graphs and data are presented in a simple view; the chart breakdown shows the number of patents for any one of 19 fields that you can select from the "Focus" drop down list. Choose a start and end point for the list (corresponding to the highest and lowest ranked item that should be displayed) and click on Show chart to display the results.



Mouse over any of the individual chart elements, the color bars, to see the actual number of patent records the entry contains, or click through to generate a new results list from the corresponding data set. To combine the patent records underlying several distinct bars to a single list, check the boxes next to the captions each the bar. Use the radio buttons "Include" and "Exclude" to determine whether you want to include or exclude the bars that you have checked and click on "Display patent list". If you click on "Refresh chart" instead of "Display patent list", you get the same chart based only on the records that are linked to the entities you selected.

Use the Advanced option to perform additional breakdowns of other fields within the primary set. For example, if you click on "Advanced", and then choose "Parent company" as the primary breakdown and IPC as the secondary breakdown (remember to check the boxes for the parent companies that you want to analyze) - you can see how IPCs break down over individual companies. To explore the sub set results further, click on the corresponding bar to view the corresponding patent subset as a patent list, complete with Meta data fingerprints. Note that you cannot directly combine result lists for distinct bars in the Advanced option.

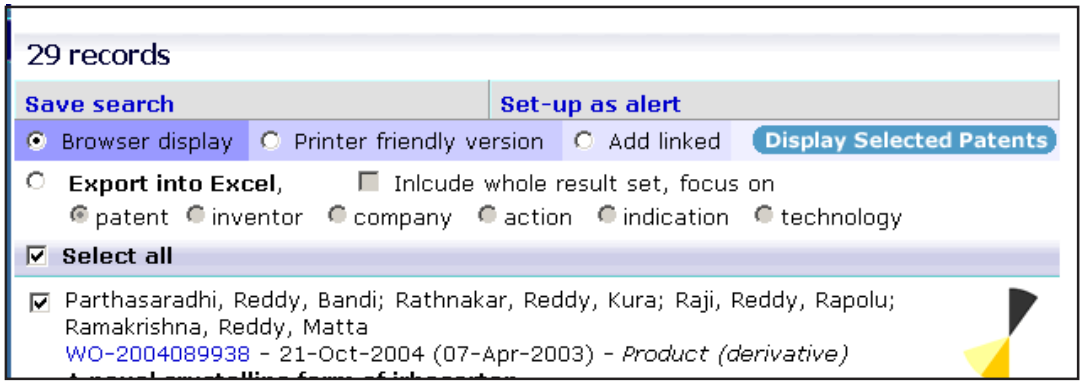


Focus on "Specialization of company" to get an idea of how "important" the search subject is for a company. The display with this option selected is not just a simple "percentage" of the company's patents, which are relevant to your search, but a more complex function that takes into account this percentage as well as the absolute number of patents. This ensures that the top of the list is not clogged up by obscure organizations with just one or two patents that happen to fall under the search criteria but something that's more intuitive to the question "which companies specialize in the area of my search?"

Saved searches and alerts

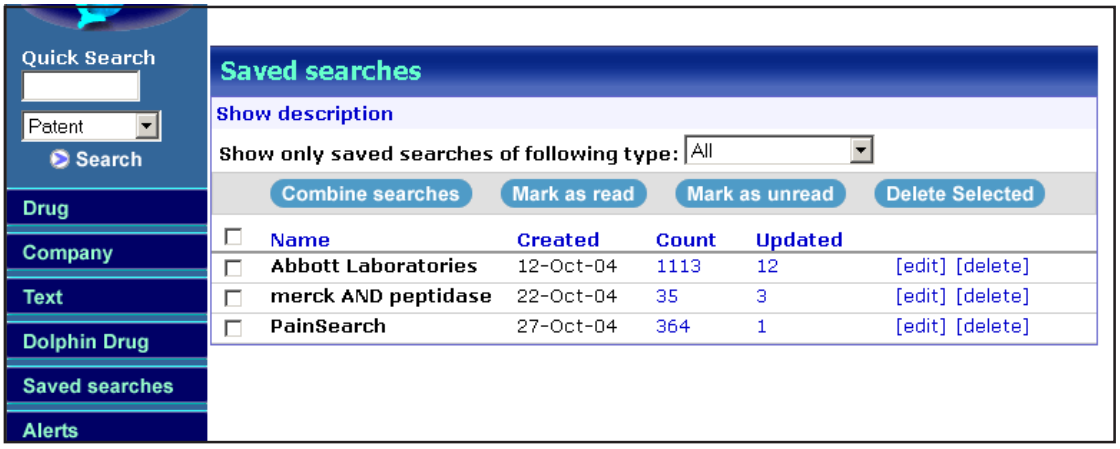
From each result list, regardless of how you got there, you have the ability to save your search or set up an alert. Saved searches save the actual result set whereas alerts store the query in order to alert you in the event of new/updated records or to retrieve results for the query at a later date.

Saved searches



You can find the links "Save searcg" and "Set up as alert" on top of each patent list generated in DOLPHIN. To save a search or create an alert, just click on the respective link. Clicking on "Save search" will save this specific list of patents and can be revisited at a later time. You are prompted by DOLPHIN to choose a name, date and description of your search. At this stage, you can either accept the suggestions of the system or overwrite them. The name and description are for your personal information, the values you enter do not have any functional effects. The date sets the limit to decide whether a record has been updated or not. On the Saved searches screen, you are able to view your saved searches, the number of patents included in each one and the number of records that have been updated since the date that you specified (you can also edit the date at a later stage). Note, however, that new records are not added to the set if they match the initial search query (this functionality is offered by Alerts, described further below).

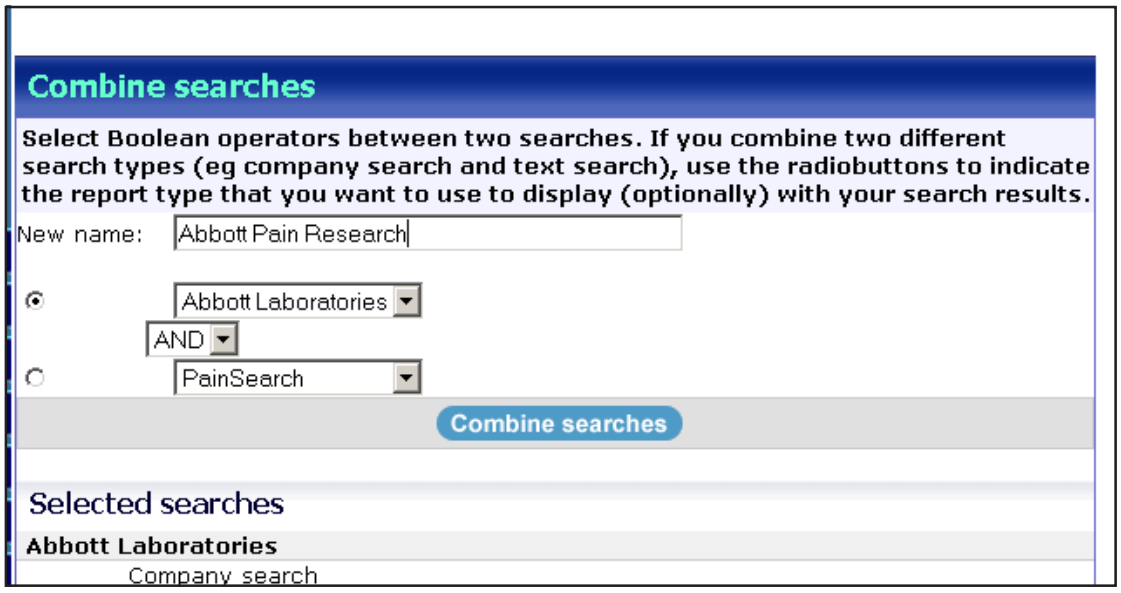
To view all your Saved searches and access the underlying records, click on the "Saved searches" link on the left-hand navigation panel. This lists all the searches you have stored in the system, the date when they were set up (which can be edited as described above), the number of records included in them and, of those, the number of records that were updated since the search was set up. Click on the respective numbers to view the underlying records.



Saved searches can be set up from any result list, regardless the of the steps performed to get there. The drop down list on top of your "Saved searches" list gives you the opportunity to filter saved searches by origin, such as drug search, company search etc. Choose "All" to view all your saved searches.

Saved searches are initially displayed in boldface. Check the box next to a search and use "Mark as read" to display it in normal typeface (or reverse this operation by clicking "Mark as unread"). This functionality allows you to quickly distinguish more important searches, or those that require further attention, from the rest. Use the "delete" link to delete a search or check the box next to several searches and click on "Delete selected" to delete several searches at once. Click the "edit" link to edit the search parameters. These can also be viewed for all searches at once by clicking on "Show description".

To combine saved searches (using AND/OR/NOT Boolean operators), check the boxes next to the search names you want to combine and click on "Combine searches". In the combine search panel, choose a name, select two searches that you want to combine and the Boolean operators you want to use for your combination. Finally, click on "Combine searches". The system takes you back to the "Saved searches" screen and your combined search is now included as additional search.



To delete saved searches, click on the "delete" link next to each search or check the boxes next to all the searches that you want to delete and click on "Delete selected". This will initially put your search(es) into the "Deleted items" folder, which can be accessed through the drop-down box on top of the search list. To delete a search permanently, access this folder and click on the "delete" link for the searches that you want to delete. To restore a deleted search, click on "restore".

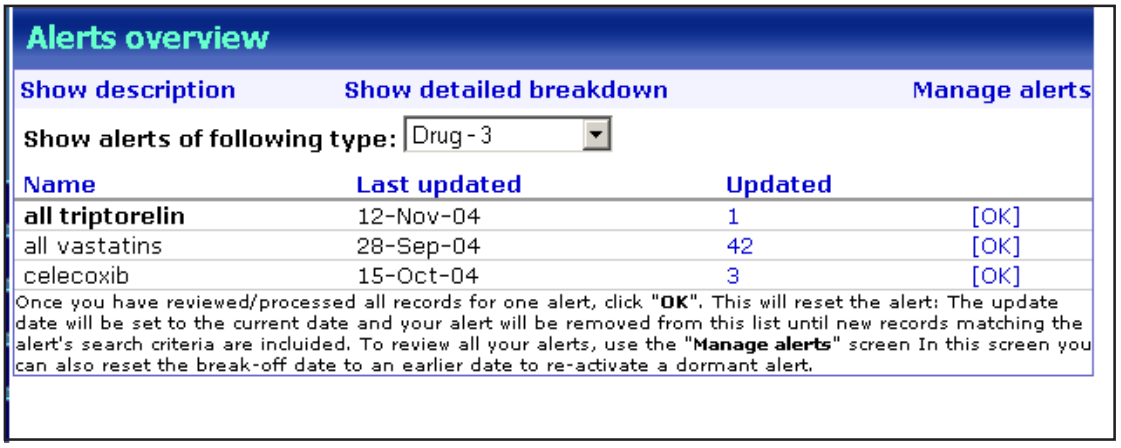
Alerts

As opposed to Saved searches, alerts are refreshed if new records that fit the search used to set up the alert (hereafter referred to as "underlying search") become available. An important attribute of each alert is the "Last updated" date (hereafter referred to as "Limitation date"). This date effectively distinguishes between old and new or updated records (i.e. records that the alert owner will be alerted about). Each record in an alert set can have one or more of the following attributes. Records are grouped by attribute in the "detailed breakdown" display on the "Manage alerts" screen:

- An "original record" is each record that matches the underlying search, regardless when it was entered or updated.
- An "updated" record is each record that was updated or added after the limitation date. This is regardless of the nature of the update (i.e. the updated field, or whether it was a major or a minor update) or whether the record only matched the underlying search after the update.

- A new record is each record that was added to DOLPHIN after the limitation date. New records are also included in the "updated" record set.
- A record where the index term was added (this only applies to company and drug-based searches) after the limitation date.

Furthermore, an Alert can be in either one of two states - active or inactive. Whenever DOLPHIN is updated, it is checked whether any new or updated records match the underlying search for an alert. Those alerts that are affected in this way immediately become active. They remain active until the user deactivates them (see below). This would usually happen if a user has reviewed or otherwise processed the new or updated records that are part of an active alert. An inactive alert becomes active again when DOLPHIN is updated and new or updated records match the underlying search.



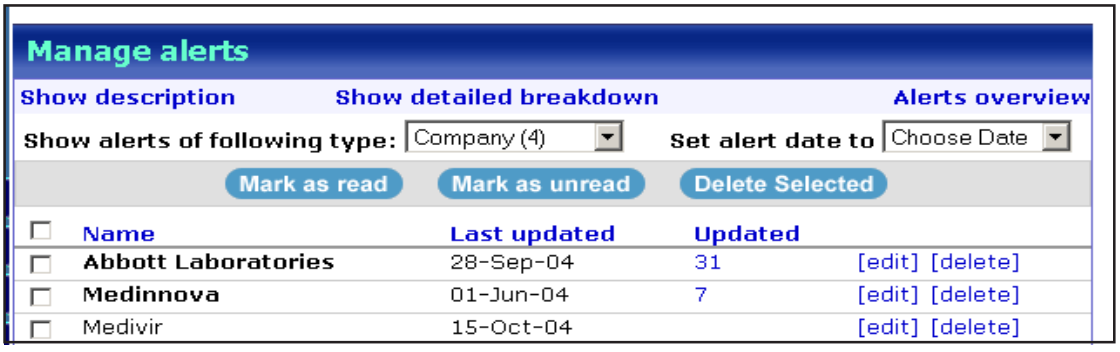
To access your alerts, click on the "Alerts" link on the navigation bar. In the initial alerts screen, only active alerts are displayed. For each alert, DOLPHIN lists the name, the limitation date and the number of updated records. From this screen you can either click on the number in the "Updated" column to view the updated records or you can click on "[OK]" to deactivate your alert. If you deactivate an alert, the limitation date is set to the current date (or, to be more precise, the update date of the most recently updated DOLPHIN record)

Similar to the "Saved searches" functionality, you have the ability to show more detailed descriptions of each alert by clicking on the "Show description" link and to filter your alerts by the type of search on which they were based (text, company etc) using the drop down box on the top of the screen.

Furthermore, you have the ability to view a detailed breakdown of your alerts, listing for each one the numbers of records having the four respective attributes listed above (original, updated, new and with added index term). You can also access a list of records with each attribute by clicking on the respective number.

Finally, you can manage your alerts by clicking on the respective link. This takes you to the "Manage alerts" screen where you can view all the alerts that you have set up, including inactive ones. Apart from the features already available on the standard Alerts screen, "Manage alerts" allows you to

- Change the limitation date of your alert. To do this, check the box next to the alert and select a date from the "Set alert date" drop down list on the top right corner of the screen. This will also activate your alert if it had been inactive at this stage (unless no records matching the alert have been added or updated since the new limitation date).



- "Mark as read / Mark as unread" simply sets the typeface of an alert description to bold or normal. It helps you to keep track of alerts that require further attention but does not correlated with the status of an alert (active or inactive).
- Edit the attributes of an alert (such as names/description) using the "[edit]" link. Note, however, that you cannot alter the definition of an alert's underlying search. You would have to set up a new alert in order to do this (and delete the old alert and/or change the limitation date of your new alert).
- Delete an alert by clicking on the "[delete]" link. Like for Saved searches, deleted alerts are stored in the "Deleted items" folder which is accessible through the drop down list on top of the "Manage alerts" screen. Here, you can either restore your alerts or delete them permanently.

DOLPHIN Case Studies

The following case studies are intended to give you an insight into the kinds of things that you can do with **DOLPHIN**. Please note that the results you will retrieve from the live database will obviously differ from those shown in the examples below, which were compiled at the time of print. Also, please bear in mind that these are merely suggestions on how to approach specific questions; depending on the exact nature and context of your query, different methods can be used, and should be explored. Our trained help desk staff will be happy to assist you to translate your query into an effective **DOLPHIN** search and analyze strategy.

1 Identification of heavily researched drug targets ("hot research areas")

Challenge: To identify the current most actively researched drug targets.

Solution: Retrieve all recently filed product patents and analyze them by pharmacological action of the molecules claimed. For each one of these molecular targets, display the key indications for which drugs for this target are used, key companies researching this target and find lead compounds that have already been identified.

Step-by-step:

Step 1- Retrieve all recently filed product patents.

1 On the **Text Search** screen, enter the following search query, exactly as shown: product [PCL] NOT (macromolecule [PCL] OR derivative [PCL])

Notes: "Product [PCL]" will retrieve all those records that claim novel compounds. The exclusion of "macromolecule" and "derivative" here is important to filter out macromolecules (especially gene sequences) and novel salts, stereoisomers, etc of known compounds. Patents claiming these entities are indexed as "Product (macromolecule)" and "Product (derivative)" in the *Patent Class (PCL)* field.

2 Limit your search to the patents filed during the last 3 years, using the drop down list below the search box.

3 [optional] You may want to include a graphical display. The example described here focuses primarily on the analysis of pharmacological actions, which is available via the "Analyze" feature, therefore "Include graphical display" is not necessary in this context. However, several charts that are available through this option may be useful for an in-depth analysis of this subject, such as different "Therapy areas" graphs and the IPC chart.

4 Click on "Search" to retrieve your results set.

Step 2- Analyze the most often filed molecular targets.

1 Click on the "Analyze" function at the top right of the patent subset screen to generate a graphical report from your results set.

2 Click on "Advanced" at the bottom of the Analyze screen to perform additional breakdowns of other fields within the primary set.

3 Select "Action" as the focus from the drop down list and then click on "Show Chart".

Notes: In this example, it is assumed that we want to focus on the exploration of molecular targets rather than broad unspecific pharmacological actions, such as "Immunostimulant" or "Vasodilator". With a general query like this, these high level terms are bound to appear at the top. Therefore, in the next step, we select those actions that describe a molecular activity to concentrate on them. The boundary between "high level" and "low level" molecular targets is blurred (e.g. "Amyloid protein deposition inhibitor"), so some of our selection is arbitrary.

4 In the chart that describes the occurrence of actions, check "5-HT uptake inhibitor", "PDE 4 Inhibitor", "Factor Xa antagonist", "Metalloprotease 13 inhibitor", "p38 MAP kinase inhibitor" and "Cyclooxygenase 2 inhibitor".

5 From the panel displaying secondary attributes to analyze, check "Drugs", "IPC (totals)", "Indication", "Parent company" and "Year". Select "20" as your end value. Now click on "Show chart".

You can now explore the secondary charts to gather more information about these mechanisms of action. For example, in the drug charts you will be able to spot some lead compounds that have been developed with the respective indications. IPC's (excluding A61P codes) are predominantly based on chemical properties. Here, you can see whether the developed compounds are chemically quite diverse (like in the case of the Factor Xa antagonists, where there are a few dominant classes). Clicking on each bar allows further exploration of each particular compound class. Likewise, you can see the distribution of indications and companies for each drug class. For example, MMP-13 inhibitors are almost exclusively patented by Pfizer, this drug target does not seem to be researched extensively by the industry as a whole, whereas many more companies feature Factor Xa antagonists or p38 MAP kinase inhibitors. Most importantly, you can click on each bar chart element to explore the patents in question further. This allows you to map out each segment in more detail and create further individual statistical analysis, or simply to look at the patent records in question.

2 Identification of key patent expiry dates for particular drugs in the United Kingdom.

Challenge: To identify key patent expiry dates of lovastatin and simvastatin in the United Kingdom that may affect the sales of Merck's branded products. In an extension to this search, focus in on the process patents in particular.

Solution: Conduct a drug search and display the expiry date table to generate the list.

Step-by-step:

Step 1- Conduct a search for the drugs

1 On the **Drug Search** screen enter the following search query, exactly as shown: simvastatin OR lovastatin

2 [optional] You can click the "Display options" link and limit the charts displayed in the drug report to the expiry date list, by selecting the "Expiry date" check box only.

Step 2- Display the relevant charts.

1 On the Intermediate Search result screen, select lovastatin and simvastatin using the check boxes.

Notes: As Merck is the originator of both these products, you may wish to make the search more focused by clicking on the "Expand all nodes" link and selecting lovastatin (*from originator*) and simvastatin (*from originator*), which will identify only the records that are relevant to Merck's product. If you want to keep the patents for each drug separate, you can instead right-click on each link in turn and choose "Open in New Window" from the context menu.

2 Click on "Generate Report" to generate the drug report for the two entries, lovastatin and simvastatin.

3 Display the "Expiry date" chart by selecting this link on the tab style panel.

4 Click "Clear All" in the Expiry date country selection table, then select just the "GB" check box, and click on "Refresh".

Step 3- Review the results.

Now you have an overview of Merck's patent expiries for statins in the UK. In the drug column you can see to which drug the patent pertains. Explore the links to the patent records to find out more about the actual claims of each patent.

Step 4- Focus on process patents in particular.

1 To limit your list to process patents, display the "Patents by top companies and class" chart, which usually appears at the top of the drug report (unless you have suppressed its display from the search screen using "Display options"). If you are displaying the report tab style, simply select the link on the tab style panel to display the chart.

2 In the right-most Totals section of the chart, click on the orange color bar, representing "Process" patents.

3 In the displayed patent list, click on "Include graphical report for this subset of patent records" to generate a new drug report for the subset only; this displays the expiry date chart for your further exploration, limited only to process patents.

3 Identification of collaborations, advanced research projects and opportunities in the area of ribozyme technology.

Challenge: To identify existing collaborations in the area of ribozyme technology, in particular focusing on those where a commercial application has been identified. In an extension to this search, find opportunities for licensing.

Solution: The "collaborations and licensing" chart from the company report is not available in the text search as this chart needs to be based on a company (which is not applicable to the text search results). Therefore, one has to filter a text search to records linked to two or more companies. It is obviously not possible to pinpoint those that are close to "commercial application" with high precision but they can be targeted to some extent by filtering those records with a drug link, which would mean in most cases that an ID*db*[3] record for the research exists, indicating a certain degree of commercial application.

Step-by-step:

Step 1- Identify the set of relevant records.

- On the Text Search screen enter the following search query, exactly as shown: ribozym%

  Notes: Here, the percentage symbol (%) is added after the common root "ribozym" to truncate it, indicating that any number of additional characters may be present. This enables you to search the term and all its variants.

Step 2- Filter the result to those records linked to two or more companies and to a drug record.

On the meta-data fingerprint in the top right-hand corner, click on the blue segment at "three o'clock" to filter your result set to those patents linked to two or more companies and then filter the resulting list further to those records with drug links by clicking on the black segment at "one o'clock". Now you can browse the result set and evaluate the retrieved information.

Step 3- Find out licensing opportunities by identifying companies that are focusing on this area and do not have any recorded licensing information in DOLPHIN.

While this is by no means a "fool proof" way of identifying licensing opportunities, it illustrates a quick way to identify a reasonably small set of companies that may be of interest in order to conduct further analysis.

1 Open **DOLPHIN** in two separate browser windows.

2 Conduct the "ribozym%" text search as above, but in both windows. Stop at the level of all initially retrieved records in one window (window A) and filter for collaborations (but not for drug links) in the other (window B).

3 In both windows, click on "Analyze". In the first window, select "Specialization of parent company". This will result in a chart where those companies that have a high interest in ribozymes (i.e. a high share of patents in this field compared to all their patents) come out on top.

4 In the second window, click on "Parent company" and select 1 to 100 as your start and end values. This simply gives you a breakdown of companies by number (i.e. companies that have a high number of ribozyme patents with links to other companies).

5 Look at the top companies in Window A and ignore those that score high in Window B. For example, Sirna, Immusol and Nexell are all companies with a high interest in ribozymes but they have already found collaborations, whereas City of Hope, Rigekl, ProtoGene or Agensys do not appear in Window B or appear only at the bottom of it. These are companies that are likely to be candidates for licensing their technologies. Click on the bar corresponding to each company in Window A and explore the individual records further to explore the technology and its usefulness to your needs in more detail.

Appendix 1 – Glossary of Important Terms for DOLPHIN

DOLPHIN families – Primary and Secondary Patents

Primary Patent	In **DOLPHIN**, this term refers to the patent document from which a patent family is generated using the claimed priorities for the Primary Patent. Preferably, the Primary Patent is a PCT application, but the **DOLPHIN** ranking order is set up so that, if there is none, a European patent/application is named as Primary Patent, or a US patent, or a British patent/application, in that order. If there is more than one from the selected country, the document with the earliest filing date is named as Primary Patent.
Secondary Patent	In **DOLPHIN**, this term refers to other patent publications in the same family as the Primary Patent.

Company Association Field

Company associations are used to describe the relationships a company may have with a patent, including those other than it being the assignee, for example this may be as a licensee or challenger. Only a limited number of values are allowed for this field:

Licensee	One company licenses an invention from another to develop it further and possibly to market it. Includes "Licensee for development and marketing" and "Licensee for marketing only (distributor)". This can be either in collaboration with the licensor or independently.
Ex-Licensee	When a licensing agreement has terminated. Includes "Ex-licensee for development and marketing" and "Ex-licensee for marketing only". [See "Licensee"]
Marketing	A company markets a product but does not do any development work.
Customer	A customer uses technology developed by another company, for example for drug screening. In contrast to the association "Licensee" the customer does not develop or market the technology itself but merely applies it as a means to an end. This term applies only if there is expected to be a close relationship between the two parties to the agreement. Note that the boundary between the term "customer" and the term "licensee" is blurred. It is strongly recommended to search with both associations to obtain comprehensive results.

Ex-Customer	When a customer agreement has terminated. [See "Customer"]
Owner	"Owner of the underlying technology", by default the assignee. If patent ownership changes formally, the new assignee is linked as "Patent Owner (not Assignee)" and the old assignee is linked as "Patent Assignee (not Owner)".
Challenger	A company opposing a patent, filing a lawsuit or applying for re-examination. Also includes companies accused or sued by the assignee for infringing the patent, or having an interference claim on the patent.
Affiliate	An institution to which the inventors are affiliated. If the institution is a commercial organization, and it is known to conduct research in the area in which the invention was made, "Owner" is used rather than "Affiliate".
Technology provider	An institution that has provided underlying technology to an invention. For example if novel compounds were identified by using a particular drug screening process, the company owning the patent to that screening process would be a "Technology provider" to patents claiming these new compounds.
Patent assignee of family member	This linked is used if a primary patent has a family member with an assignee which is not identical to its own assignee. This link is not applied, however, if both the assignee of the primary patent and of the family member are parent or sister companies of each other.
Inferred assignee	This company association has been specifically created for US patent applications. As the corporate assignee is commonly only filed once the patent is ready to be granted, this crucial piece of information is often missing for published applications. However, it is often possible to infer the assignee with high probability from previous applications of the same inventor team or other publicly available information. If this is the case, the respective organisations are linked to the patent as "Inferred assignee". Note, however, that this is unconfirmed information. If the certainty with which the patent assignee can be inferred is not very high, a note indicating the possible assignee is made in the comment, but no formal "Inferred assignee" link will be applied. If we have confirmation of an assignee of a US patent application (for example from US Patent Office data), it will be linked as "Patent assignee/owner", even if it does not appear on the front page of the published document. "Inferred assignee" links are also replaced with "Patent assignee/owner" links if the granted patent or a family member (with the respective assignee) is published.

Drug Association field

Drug associations are used to describe the way in which a patent refers to a drug. Only a limited number of values are allowed for this field:

Analyte	Patents disclosing an analytical method to determine the drug, including determining its concentration in the body or a body fluid.
Component of combination	Includes all instances where the invention is primarily concerned with the use of a drug in any combination with another drug, whether synergistic or not. This term is only used if the patent is primarily concerned with the drug combination. If a combination is only a minor aspect of the invention (i.e. one or several of the later claims are combination claims), the patent/drug link is not marked as Component of Combination.
Delivery device	This term is for non-consumable devices only. Delivery systems such as controlled-release tablets or suppositories would be defined as "Formulations".
Drug target	Used for receptors, enzymes etc which are claimed in the patent and which were used to identify a drug.
Formulation	All types of formulation of a drug, including those where the active compound is chemically modified (e.g. prodrugs or immunoconjugates). Only used for patents that are predominantly concerned with a particular formulation.
General interest	Drugs not directly covered by a patent but that are certainly of interest to someone looking for patents about the drug. Examples are patents claiming ways of overcoming resistance to a drug, or claims to the drug screening method. This term is also used for biotechnology applications where it can be difficult to decipher the relationship between a patent and its commercial application.
New use	Methods of using a drug, usually for a new indication.
Process	Used for patents predominantly concerned with the preparation of a drug.
Process (intermediate)	Used where the patent discloses a method for producing an intermediate without claiming a process for producing the drug itself.
Product	Usually the product patent is the first one to be associated with a drug. For drug combinations, the term "Product" is assigned to each patent claiming one of the components as well as to the patent claiming the combination.
Product (derivative)	Used for patents claiming novel salts, stereoisomers, crystal form and polymorphs. The term "derivative" is not used in a chemical sense, i.e. it does not cover analogues of a drug which are directly chemically modified. Note that patents claiming prodrugs of a drug are linked as "Formulation" to that drug.

Tentative	Used if there is a strong likelihood that a patent refers to a compound but the information available about that compound is not clear enough to make a decision. This is usually only applied to drugs at early development stages, when the structure of the drug is not publicly available.

Class

Describes the type of claims in a patent. Although there may be several different types of patent claim, one covers the essence of the invention and so only one type is selected by the **DOLPHIN** analyst. For instance, the term "Product" always implies "Process", "Use" and "Formulation".

"Class" refers to the patent as a whole, whereas "Drug association" describes the context in which a drug is featured in it. There is often a close relationship between the two.

These are the possible types of claim in **DOLPHIN**:

Product	Claim to novel small molecules with therapeutic activity. Does not include compounds that are used only as intermediates, or large molecules, novel salts, enantiomers, or modifications of previously known compounds.
Product (derivative)	Claim to novel salts, enantiomers, crystal form and polymorphs. The term "derivative" is not used in a chemical sense, i.e. it does not cover analogues of the drug which have been chemically modified.
Product (peptide, polynucleotide, antibody)	Claim to a product which is a large molecule. It also includes natural extracts where novel chemical compounds are not claimed.
Process	Ways of making a known compound. Also includes claims to novel intermediates for preparing known compounds.
Combination	Claims where the use of a drug combination is an essential part of the claim. It always implies that the two drugs have never been used together before, at least not for the indication claimed in the patent.
Use	Claim the new use of an existing compound, usually for a type of disease not previously treated with this drug.
Formulation	Claims formulations containing existing compounds.
Biotechnological therapy	Used for therapy approaches that are different from conventional drug therapy.
Drug delivery device	All devices for drug delivery that are not consumed together with the drug, e.g. transdermal patches, inhalers, implants.

Screening and Combinatorial

Used for patents relating to combinatorial chemistry methods, devices and drug screening methods.

Diagnostic, Analysis and Assay

Used for all analytical and diagnostic applications.

Enabling technology — Use for new techniques without a particular therapeutic application, e.g. new methods for generating monoclonal antibodies. Related to "Biotechnological therapy" but used where the technique has no direct therapeutic effect.

Nucleotide and gene technology

Includes all methods and techniques related to DNA, RNA, genes and oligo- or polysaccharides. Excludes protein expression, which is covered by "Peptide technology".

Peptide technology — All methods for protein engineering, folding, glycosylation, including expression of proteins.

Appendix 2 – Links between drugs and patent records in DOLPHIN

A drug/patent link is always made for:

- Patents having a real impact on the market exclusivity of the drug, or of a particular formulation, preparation method or indication of the drug.
- Patents dealing specifically with a drug, rather than with an entire class of drugs.
- Patents dealing with salts, stereoisomers or modifications of a drug.
- Patents describing biological experiments carried out using a drug, unless the drug is used as a reference substance.
- Patents describing the key aspect of a product.
- Patents describing the origin of a drug, such as a screening program or the cloning of a receptor.
- Patents dealing with other aspects of a drug, as long as these patents deal specifically or mainly with this drug, such as reduction of side effects, its use in combinations, method for testing the genetic susceptibility of a patient to the drug, or a method for the detection of the drug in the bloodstream.
- Patents mentioning a drug within a longer list of other drugs without particularly emphasizing the drug elsewhere, if it is known or if there is strong circumstantial evidence indicating that the assignee will develop the drug in the way disclosed in the patent.

A drug/patent link is not made for:

- Patents mentioning the drug within a long list of other drugs, for example "drugs for which the new formulation may be suitable include..." or " the new compounds can optionally be used in combination with ..."
- Patents using the drug as a reference compound in a biological experiment.
- Patents where the drug is only described as prior art.
- Patents describing the drug as starting material for synthesizing another compound (unless the new compound is merely a salt or enantiomer of the drug).

- Patents that emphasize the drug but where there are indications that the drug is only emphasized because it is the "standard" drug in its class and there is no reason to suggest that the applicant has a real interest in this particular drug as opposed to other drugs from the same class.
- Patents disclosing a new invention, and stating that this new invention can also be used in combination with other drugs.

If a number of drugs are specified in the patent, the **DOLPHIN** analyst will try to determine which of the drugs are really of interest to the applicant by applying the following criteria:

- A compound or a subset of compounds is claimed more specifically than the others.
- Drugs in which the applicant already has an interest, in particular his own drugs.
- Drugs for which biological experiments are described in the patent.
- Drugs that are in any way particularly emphasized within the patent.

Appendix 3 – The DOLPHIN Team

The **DOLPHIN** editorial team comprises a unique combination of people with differing talents and experience, facilitating a fresh approach to pharmaceutical patents. We have considerable industry experience and this enables us to take the effort out of your patent analysis and to provide you with the contextual intelligence you need.

To ensure a standard approach by all those involved in **DOLPHIN** patent analysis, regular meetings are held to discuss issues, to compare indexing decisions, to formulate policy about new editorial conventions, styles, formal categories of company associations, and drug associations.

People on the **DOLPHIN** team:

Peter Steele	Director, Current Awareness Team
Georg Richter	Senior Database Designer
Matthew Sparrowhawk	Database Manager
Otto Huber	Programmer
Judy Turner	Senior Patent Analyst
David Whitehead	Senior Patent Analyst
Gareth White	Senior Patent Analyst
James Shirvill	Patent Analyst
Satinder Jhangaria	Patent Analyst
Naomi McCormick	Patent Analyst
Nuria Vila-Bosch	Patent Analyst
Kahillyah Robinson	Patent Analyst
Dawn Goff	Patent Analyst