

Practical Suggestions for Patent Searches

Asean Workshop on Compulsory Licensing
to Increase Access to Antiretrovirals (ARVs)
and Diagnostic Reagents

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Where to start?

- Depends on resources you have available - the existing knowledge of the particular drug; whether you have already identified a patent for that drug in another country; available resources like private commercial patent databases.
- Also whether your national patent office has a functional online searchable patent database; a user friendly patent office journal which publishes applications; or a patent office which can identify patents for you.
- If none of the above is available, the following steps may be useful to at least help identify whether a patent for a particular drug has been filed in your country:

Step 1

- A useful starting point is the U.S FDA Orange book:
<http://www.fda.gov/cder/ob/default.htm>
- The above link provides 5 available search options:
 1. Search by active ingredient
 2. Search by applicant holder
 3. Search by proprietary name
 4. Search by application number
 5. Search by patent

Step 2

- If you are looking for a particular drug, unless you know the brand name (“proprietary name”), option 1 “Search by active ingredient” (“AI”) is the most useful.
- Enter the AI in the given box e.g Tenofovir and it will list the following key information:

Application No: 021752

Active Ingredient: Emtricitabine; Tenofovir Disoproxil Fumarate

Proprietary name: Truvada

Applicant: Gilead

Application No: 021356

Active Ingredient: Tenofovir Disoproxil Fumarate

Proprietary name: Viread

Applicant: Gilead

Step 3

- Taking Tenofovir Disoproxil Fumarate (TDF) as the relevant drug to be searched, by clicking on the link for “Application No.” you will be forwarded to the next page which provides the link:

Patent and Exclusivity Info for this product: [View](#)

- Click on “View” and you will be forwarded to a page which lists the relevant U.S Patent Nos. relating to TDF.

Step 4

- The patent information for TDF will list 4 U.S Patent Nos. :

1. 5922695

2. 5935946

3. 5977089

4. 6043230

- Once you have these numbers in hand, visit the U.S Patent Office (“USPTO) website link below for a basic search facility:

<http://patft1.uspto.gov/netahtml/PTO/search-bool.html>

Step 5

- The USPTO search facility has two search fields, “Term 1” and “Term 2”. In “Term 1” insert any of the above patent nos. e.g 5935946. For “Field 1” leave the option as “All fields”. Then press “search”.
- The search will bring up the U.S Patent No. 5935946, Titled “Nucleotide analog composition and synthesis method” and show Gilead as the Assignee (the Applicant). The abstract will help to decipher what the patent is for - in this case TDF (or you can review the specification in full):

The invention provides a composition comprising bis(POC)PMPA and fumaric acid (1:1). The composition is useful as an intermediate for the preparation of antiviral compounds, or is useful for administration to patients for antiviral therapy or prophylaxis. The composition is particularly useful when administered orally. The invention also provides methods to make PMPA and intermediates in PMPA synthesis. Embodiments include lithium t-butoxide, 9-(2-hydroxypropyl) adenine and diethyl p-toluenesulfonylmethoxyphosphonate in an organic solvent such as DMF. The reaction results in diethyl PMPA preparations containing an improved by-product profile compared to diethyl PMPA made by prior methods.

Step 6

- Now that the U.S Patent for TDF has been identified, you have a lead for finding related international patent applications.
- A very useful and free resource to start with is the European Patent Office website which provides the user 3 different types of search options - “Quick Search”, “Advanced Search” and “Number Search” :

http://ep.espacenet.com/search97cgi/s97_cgi.exe?Action=FormGen&Template=ep/EN/home.hts

- As you have a U.S Patent No. to search against, the “Number Search” offers the quickest and easiest option.

Step 6

Espacenet - "Number Search"

1. For the database option, select "worldwide".
2. For the number, insert US5935946
3. Tick the box "Including family"

Search

patent database in which you wish to search:

Database:	Worldwide		
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Number

For an application, accession, publication or priority number with country code prefix

Publication number:		WO03075629	
	<input checked="" type="checkbox"/> Including family 		

SEARCH

Step 7

The next page will reveal the “family” of applications which relate to US Patent No. 5935946 *[extract]*:

- 25 Nucleotide analog composition and synthesis method
Publication info: HK1029793 A1 - 2003-06-20

- 27 Nucleotide analog composition and synthesis method
Publication info: ID24701 A - 2000-08-03

- 28 A process for preparation of fumarate salt of 9-Ä2-(r)-
bis(isopropoxycarbonyl)oxyÜmethoxyÜphosphinoylÜmethoxyÜpropyl
Ü-adenine
Publication info: IN190780 A1 - 2003-08-23

- 38 Nucleotide analog composition and synthesis method
Publication info: WO9905150 A1 - 1999-02-04

***In total the search will reveal 43 “family members” for US Patent No. 5935946 including patents in China, Indonesia, India, Taiwan and the Patent Cooperation Treaty (PCT)application.**

Step 8

- As Espacenet will not list all the countries where TDF has been applied for (due to information usually not being available), the next best option is to review the PCT application, which starts with the abbreviation 'WO'. In this case click on WO 9905150 and click the option "original document".
- The downloaded document will show the PCT application, which lists all the "designated states" (in country code) where the application has been filed.

Step 9

WO9905150 designates the following countries:

AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CU, CZ, DE, DK, EE, ES, FI, GB, GE, GH, GM, HR, HU, ID, IL, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, UA, UG, US, UZ, VN, YU, ZW.

African Regional Intellectual Property Org. (ARIPO) (GH, GM, KE, LS, MW, SD, SZ, UG, ZW)

Eurasian Patent Organization (EAPO) (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM)

European Patent Office (EPO) (AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE)

African Intellectual Property Organization (OAPI) (BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG).

Step 10

- From the above list of countries you will be able to identify if an application has been filed in your country.
- However, as all countries are not a contracting party to the PCT (e.g Malaysia and Thailand), it is very possible that an 'individual' application has been filed and which may not be available on espacenet (or other electronic databases).
- This will mean having to review publications from your patent office journal or building a relationship with the patent office to assist you in finding the same (often patent offices have internal databases for their own use which have not yet been made public). Alternatively a suitable private commercial database may be helpful, although they may also be missing country information.

Other Free Useful Resources for Searching

- 'Patentscope' WIPO PCT patent search facility:

<http://www.wipo.int/pctdb/en/>

- 'Freepatentsonline', useful for searching U.S and EP patents and downloading complete PDF versions of a patent, including diagrams of the structure of compounds and compositions:

<http://www.freepatentsonline.com/search.html>

- 'Patentmatic', useful for downloading complete PDF versions of U.S, EP, WO and Japanese patents:

<http://www.patentmatic.com/welcome.php>

Private Commercial Patent Databases

- 'Delphion' - <http://www.delphion.com/>
- 'Derwent World Patents Index ("DWPI")' - a comprehensive database of enhanced patent information in the world. covers more than 13 million inventions from over 40 different international patent-issuing authorities:
<http://www.delphion.com/products/research/products-derwentcollection>
- 'Micropatent' - over 50 million records from 71 countries/authorities:
<http://www.micropat.com/static/index.htm>

Other Useful Resource

- European Patent Office - 'Epoline':
<http://www.epoline.org/portal/public>