

# Patenti - osnove & Pretraživanje stanja tehnike - patenti

mr.sc. Gordana Turkalj

12/02/2018

1



## Sažetak

- **Patenti – definicije, patentibilnost, trajanje & produljenje**
- **Patentna prijava - struktura**
- **Patentni sustav – postupak, koraci, rokovi**
  
- **Pretraživanje stanja tehnike – patenti:**
  - **Zašto? Što? Gdje?**
  
- **Praktični zadatci – primjeri**

12/02/2018

Copyright by G. Turkalj

2

## Što je to patent?

- **Isključivo pravo** priznato za izum koji se odnosi na proizvod, postupak ili primjenu i nudi **novi i inventivno rješenje nekog tehničkog problema**
- pravna zaštita izuma **u državi** za koju je priznat kroz vrijeme od **20 godina**
- Kompenzacija za potpuno razotkrivanje izuma ⇒ **patentna prijava se objavljuje 18 mjeseci nakon podnošenja**



"We'd better patent this, so the homo sapiens can't steal it from us, like they did with the fire."

## Tko dodjeljuje patent?

- Nacionalni **patentni ured** svake države (**teritorijalno pravo**) nakon ispitivanja **patentibilnosti**
  - ~~Ne postoji "svjetski patent" / "world patent"~~
- U RH: Državni zavod za intelektualno vlasništvo (DZIV)

## Posebnosti trajanja patenta za lijekove i medicinske proizvode

- **Specifičnosti farmaceutske industrije :**
  - dugo traju klinička ispitivanja**
- **patentna prijava za aktivnu supstancu (spoj) se podnosi vrlo rano tijekom postupka razvoja lijeka (*in vitro* potvrda aktivnosti je dovoljna)**
- **12-14 godina vijeka trajanja patenta protekne do stavljanja lijeka na tržište**
  - => bitno kraći vijek trajanja patentne zaštite (monopola na tržištu) u odnosu na druge industrije nedostatan za pokrivanje ulaganja**

## Posebnosti trajanja patenta za lijekove i medicinske proizvode

**Svjedodžba o dodatnoj zaštiti za lijekove i proizvode za zaštitu bilja = engl. Supplementary Protection Certificate (SPC)**

- **SPC postoji u svim zemljama članicama EU, AU, JP itd.**
- **u HR na snazi od datuma pristupa EU**
- **u SAD ekvivalent => Hatch - Waxman Patent Term Extensions**

**Nositelj patenta treba podnijeti zahtjev za Svjedodžbu u roku 6 mjeseci od izdavanja dozvole za stavljanje proizvoda u promet (MA) ili u roku 6 mjeseci od datuma dodjele patenta, ukoliko je patent dodijeljen kasnije, tj. nakon ishođenja MA.**

## Posebnosti trajanja patenta za lijekove i medicinske proizvode

### Vrijeme trajanja Svjedodžbe / SPC

- SPC = (datum 1. MA – datum podnošenja pat. prijave) – 5 godina temeljnog patenta
- Stupa na snagu odmah nakon isteka trajanja temeljnog patenta i traje onoliki vremenski period koliko je proteklo od datuma podnošenja prijave temeljnog patenta do dana izdavanja prvog odobrenja za stavljanje proizvoda u promet u Zajednici (EU), umanjen za pet godina
- maksimum je 5 godina (cilj: 15 godina zaštite post-MA)

12/02/2018

Copyright by G. Turkalj

7

## Posebnosti trajanja patentne zaštite za lijekove, medicinske i pedijatrijske proizvode

SPC = (datum 1. MA – datum podnošenja pat. prijave – 5 godina temeljnog patenta)

### Primjeri:

Datum Podnošenja	1 EEA MA	Proteklo vrijeme	manje 5 god	SPC trajanje
1/1/00	1/1/04	4 god	-1 god	nema SPC
1/7/98	1/1/04	5 god 6mj	6 mj	6 mj
1/7/93	1/1/04	10 god 6mj	5 god 6 mj	5 god
1/1/87	1/1/04	17 god	12 god	5 god

12/02/2018

Copyright by G. Turkalj

8

## Posebnosti trajanja patenta za lijekove i medicinske proizvode

- Kako bi se potaknuo razvoj/testiranje lijekova za djecu: US i EP uveli 'Paediatric Exclusivity' => moguće ishoditi **dodatnih 6 mjeseci zaštite**
- u EU iza isteka SPC stupa na snagu (znači predhodno mora postojati SPC).
- u US može se produljiti bilo patent bilo postojeći Regulatory Data Protection, tj. ne mora postojati SPC
- Kako bi ishodili pedijatrijski ekskluzivitet treba ispoštovati sktrog set pravila i priložiti dokaze o provođenju testiranja u skladu s usuglašenim planom pedijatrijskog ispitivanja

## Paket rezultata kliničkih istraživanja Data Exclusivity (DE) ≠ IV nezvan za patent

- Klinička istraživanja = najskuplja faza razvoja, oduzima nekoliko godina i iznimno skupa!
- Rezultat te investicije je paket **podataka o sigurnosti i učinkovitosti (safety & efficacy data)** koji se predaje regulatornim vlastima koje donose odluku o dozvoli stavljanja proizvoda na tržište.
- Generičke kompanije : **bitno sličan/ekvivalentan lijek (essentially similar/equivalent)** ne trebaju ponoviti klinička istraživanja nego se oslanjaju na podatke originatora uz dokaze o bioekvivalenciji.

Hrvatska:	Agencija za lijekove i medicinske proizvode - HALMED
EU:	European Medicines Evaluation Agency - EMEA
SAD:	Food and Drug Administration Center – FDA

## Paket rezultata kliničkih istraživanja Data Exclusivity (DE) ≠ IV nevezan za patent

- Ti podatci su vrijedni = oblik intelektualnog vlasništva
- Oblik IV- a koji mora biti zaštićen prema Čl. 39.3 WTO TRIPS-a.
- **DE** dodatni oblik zaštite za inovativne farmaceutske kompanije / originatore **dok je na snazi regulatorne vlasti ne mogu čak niti zaprimiti prijavu za ishođenje odobrenja za stavljanje lijeka u promet generičke kompanije.**
- DE postoji u svim zemljama EU (Uredba 2001/83/EZ)

## Paket rezultata kliničkih istraživanja Data Exclusivity (DE) ≠ IV nevezan za patent

- Uredba 2004/27/EZ produljen na 10 godina prema formuli:  
MA + 8god (DE) + 2god (ME) +1god (nova indikacija)

MA = dozvola za stavljanje u promet

DE = data exclusivity

ME = tržišni ekskluzivitet

- Nakon što je RH postala punopravna članica EU usvojena je formula za DE: 8+2+1god (prije je bilo 6 godina)

## Patentibilnost: Što je patentibilno?

- Uvjeti patentibilnosti izuma:
  - mora imati **TEHNIČKI KARAKTER**, tj. biti rješenje tehničkog problema
  - mora biti **NOV** (novelty)
  - mora biti **INVENTIVAN** (inventive / non-obvious subject matter)
  - mora biti industrijski **UPOTREBLJIV** (industrially applicable / useful)

## Patentibilnost: Što nije patentibilno?

- A) IZUMI koji se **NE SMATRAJU IZUMIMA**
- B) IZUMI koji su **IZUZETI OD PATENTIBILNOSTI**

## Patentibilnost: Što nije patentibilno?

### A) IZUMI koji se **NE SMATRAJU IZUMIMA**

- otkrića, znanstvene teorije i matematičke metode,
- estetske tvorevine,
- pravila, upute i metode za izvođenje umnih aktivnosti, igara ili za obavljanje poslova,
- prikazivanje informacija i
- računalni programi.

## Patentibilnost: Što nije patentibilno?

### B) IZUMI koji su **IZUZETI OD PATENTIBILNOSTI**

- **izumi životinjskih i biljnih vrsta i bitno bioloških postupaka** za dobivanje biljaka ili životinja, **osim izuma nebioloških i mikrobioloških postupaka i proizvoda dobivenih tim postupcima;**
- **Ijudsko tijelo**, razni stupnjevi njegovog oblikovanja i razvoja ili **jednostavno otkriće** jednog od njegovih elemenata, **uključujući odsječak ili djelomični odsječak gena**. Izum koji se odnosi na **element izoliran iz ljudskog tijela ili proizveden tehničkim postupkom uključujući odsječak ili djelomični odsječak gena može biti patentibilan** iako je strukturom jednak strukturi **prirodnog elementa**. ***Industrijska primjenljivost odsječka ili djelomičnog odsječka gena mora biti razotkrivena u prijavi patenta, kako je izvorno podnesena;***



## Patentibilnost: Što nije patentibilno?

### B) IZUMI koji su **IZUZETI OD PATENTIBILNOSTI**

- izumi koji se odnose na **dijagnostičke ili kirurške postupke ili postupke liječenja koji se primjenjuju neposredno na ljudskom ili životinjskom tijelu**, osim **proizvoda**, posebno **tvori i smjesa koje se primjenjuju u navedenim postupcima**

## Patentibilnost: Što nije patentibilno?

### B) IZUMI koji su **IZUZETI OD PATENTIBILNOSTI**

Neće se smatrati patentibilnima **izumi čije bi komercijalno iskorištavanje bilo protivno javnom poretku ili moralu:**

- postupci kloniranja ljudskih bića,
- postupci za modificiranje genetičkog identiteta zametne loze ljudskih bića,
- uporaba ljudskih embrija u industrijske ili komercijalne svrhe i
- postupci za modificiranje genetičkog identiteta životinja koji bi vjerojatno uzrokovali njihovu patnju bez ikakve bitne medicinske koristi za čovjeka ili životinju, kao i životinje koje su rezultat takvih postupaka.”

## Što se ne može patentirati?

### B) IZUMI koji su IZUZETI OD PATENTIBILNOSTI



#### **Primjeri & Sudska praksa EPO & CJEU: BRÜSTLE Case**

**komercijalno iskorištavanje protivno javnom poretku ili moralu** - korištenje ljudskog embrija u komercijalne svrhe

- **DE19756864, podnesen 19.12.1997, prof BRÜSTLE OLIVER DR [DE]** : postupak dobivanja neuronalnih stanica iz embrionalnih matičnih stanica (ES) sisavca ...

1. Non-tumorigenic cell composition **obtained from mammalian embryonic stem cells** containing a) at least 85% isolated neural precursor cells with the ability to differentiate into neuronal or glial cells, and b) no more than 15% primitive embryonic and non-neural cells, obtainable by the steps of (a) proliferation of ES cells, (b) cultivation of the ES cells from step (a) into neural precursor cells, (c) proliferation of the neural precursor cells in growth factor-containing serum-free medium, (d) proliferation of the neural precursor cells from step (c) in another growth factor-containing serum-free medium and isolation of the purified neural precursor cells and (e) proliferation of the neural precursor cells from step (d) in another growth factor-containing serum-free medium and isolation of the purified precursor cells with the ability to differentiate into neuronal or glial cells, wherein the growth factor-containing, serum-free medium in step (d) comprises bFGF and EGF, and wherein the growth factor-containing, serum-free medium in step (e) comprises bFGF and PDGF.

## Što se ne može patentirati?

### B) IZUMI koji su IZUZETI OD PATENTIBILNOSTI



#### **Primjeri & Sudska praksa EPO & CJEU: BRÜSTLE Case**

**komercijalno iskorištavanje protivno javnom poretku ili moralu** - korištenje ljudskog embrija u komercijalne svrhe

- **DE19756864, podnesen 19.12.1997, prof BRÜSTLE OLIVER DR [DE]** : postupak dobivanja neuronalnih stanica iz embrionalnih matičnih stanica (ES) sisavca ...
- Dodjeljen patent 1999. god.
- **2004. Greenpeace** podnio zahtjev za poništaj patenta (German Federal Court of Justice (Bundesgerichtshof, BGH) jer se protivi javnom poretku i moralu
- **2009. BGH uputio pitanja CJEU (Court of Justice EU) vezano uz tumačenje \*Direktive 98/44/EC**

\*Direktiva regulira pravnu zaštitu izuma u području biotehnologije

## Što se ne može patentirati?

### B) IZUMI koji su IZUZETI OD PATENTIBILNOSTI



CJEU razmatra slijedeća pitanja:

- značenje i opseg termina "embrio"?
- značenje i opseg "industrijske i komercijalne upotrebe"?
- do koje mjere se izuzeće za upotrebu humanog embrija u industrijske i komercijalne svrhe može primjenjivati?

- 2011 CJEU C-34/10 Odluka

"The exclusion from patentability concerning the use of human embryos for industrial or commercial purposes.... **also covers the use of human embryos for purposes of scientific research** only use for therapeutic or diagnostic purposes which are applied to the human embryo and **are useful to it being patentable**".

"...where the **technical teaching** which is the subject matter of the patent application **requires the prior destruction of human embryos** or their use as a base material, **whatever the stage** at which that takes place and **even if the description of the technical teaching claimed does not refer to the use of human embryos**."

## Što se ne može patentirati?

### B) IZUMI koji su IZUZETI OD PATENTIBILNOSTI

-paralelni EP1040185 B1, podnesen 18.12.1998., dodijeljen 22.02.2006.

EP1040185 B1

1. Non-tumorigenic cell composition **obtained from mammalian embryonic stem cells** containing a) at least 85% isolated neural precursor cells with the ability to differentiate into neuronal or glial cells, and b) no more than 15% primitive embryonic and non-neural cells, obtainable by the steps of (a) proliferation of ES cells, (b) cultivation of the ES cells from step (a) into neural precursor cells, (c) proliferation of the neural precursor cells in growth factor-containing serum-free medium, (d) proliferation of the neural precursor cells from step (c) in another growth factor-containing serum-free medium and isolation of the purified neural precursor cells and (e) proliferation of the neural precursor cells from step (d) in another growth factor-containing serum-free medium and isolation of the purified precursor cells with the ability to differentiate into neuronal or glial cells, wherein the growth factor-containing, serum-free medium in step (d) comprises bFGF and EGF, and wherein the growth factor-containing, serum-free medium in step (e) comprises bFGF and PDGF, **with the proviso that the method does not include the destruction of human embryos**.
- 2006. Geron Corporation (US) podnio zahtjev za opoziciju
  - 2013. EPO OD donio odluku o poništenju patenta,
  - žalba pokrenuta, BA odluka T1808/13 ... postupak vraćen na EPO OD
  - 01.02.2018. donesena odluka EPO OD => patent ostao na snazi u suženom obliku

## Što se ne može patentirati?

### B) IZUMI koji su IZUZETI OD PATENTIBILNOSTI

- 01.02.2018. konačno donesena odluka EPO OD => **patent EP1040185 B1 ostao na snazi u suženom obliku** (podnesen 18.12.1998., dodijeljen 22.02.2006.)

1. Non-tumorigenic cell composition **obtained from mammalian embryonic stem cells**, containing

- a) at least 85% isolated neural precursor cells with the ability to differentiate into neuronal or glial cells, and
- b) no more than 15% primitive embryonic and non-neural cells, obtainable by the steps of
  - (a) proliferation of ES cells,
  - (b) cultivation of the ES cells from step (a) into neural precursor cells,
  - (c) proliferation of the neural precursor cells in growth factor-containing serum-free medium,
  - (d) proliferation of the neural precursor cells from step (c) in another growth factor-containing serum-free medium and isolation of the purified neural precursor cells and
  - (e) proliferation of the neural precursor cells from step (d) in another growth factor-containing serum-free medium and isolation of the purified precursor cells with the ability to differentiate into neuronal or glial cells,

**wherein** the growth factor-containing, serum-free medium in step (d) comprises bFGF and EGF, and wherein the growth factor-containing, serum-free medium in step (e) comprises bFGF and PDGF, **with the proviso that the method does not include the destruction of human embryos.**

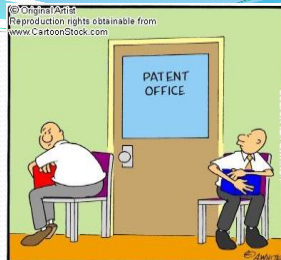
## Patentibilnost: Što je patentibilno?

- Uvjeti patentibilnosti izuma:
  - mora imati **TEHNIČKI KARAKTER**, tj. biti rješenje tehničkog problema
  - mora biti **NOV** (novelty)
  - mora biti **INVENTIVAN** (inventive / non-obvious subject matter)
  - mora biti industrijski **UPOTREBLJIV** (industrially applicable / useful)

## Patentibilnost: NOVOST IZUMA

- Sve što je na bilo koji način poznato prije datuma podnošenja patentne prijave zovemo "**stanje tehnike**"
  - bilo gdje u svijetu na bilo kojem jeziku,
  - u pisanom obliku (znanstveni članak, poster, knjiga, web,...) ili
  - predavanje / prezentacija, ili
  - upotreba, ili...bilo koji drugi način
- **Novost = apsolutna**

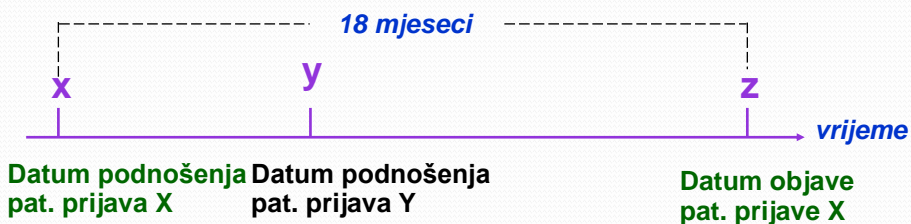
## Novost izuma



- **ZLATNO PRAVILO:** ⇒ ne razotkrivati izum trećoj strani, ne diskutirati o izumu prije nego je podnesena patentna prijava!
  - ⇒ Objava znanstvenog članka ili razotkrivanje izuma na kongresu prije nego je podnesena patentna prijava ⇒ **PATENT ZA IZUM NIJE PRAVOVALJAN**

## Novost izuma => apsolutna!

- Relevantne su i sve patentne prijave koje imaju raniji datum podnošenja, ali nisu još objavljene u državi u kojoj tražite zaštitu = apsolutna novost!



Patentna prijava X je **stanje tehnike** za pat. prijavu Y

## Patentibilnost: INVENTIVNOST IZUMA

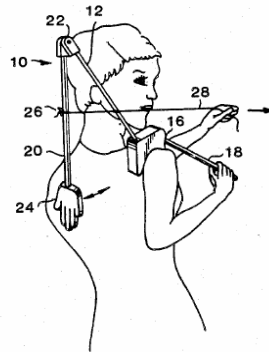
- Izum je inventivan ukoliko ima inventivnu razinu, tj. ukoliko nije očigledan
- Očigledan u odnosu na što?
  - sve što je objavljeno bilo gdje u svijetu na bilo kojem jeziku prije datuma podnošenja patentne prijave
  - reference se mogu gledati pojedinačno, ali i kombinirati => dva dokumenta
- Očigledan kome?
  - Stručnjaku u području (engl. 'Person Skilled in the Art' (PSA))

## Patentibilnost: UPOTREBLJIVOST IZUMA

- Ako se predmet izuma može proizvesti ili upotrijebiti u bilo kojoj grani industrije uključujući poljoprivredu
- *in vitro* dokaz aktivnosti dovoljan....

### US Patent 4,608,967

1. A self-congratulatory apparatus having a simulated human hand carried on a pivoting arm suspended from a shoulder supported member. The hand is manually swingable into and out of contact with the user's back to give an amusing or an important pat-on-the-back.



## Primjeri: Što se (ne)može patentirati?

a) Otkriće supstance X u prirodi ?

# Tehnički učinak

= otkriće

ALI praktična uporaba supstance X ????

npr. supstanca X pokazuje antibakterijsku aktivnost ?

✓ tehnički učinak ⇒ može biti patentibilno

b) Otkriće mikroorganizma MX u prirodi ?

≠ Tehnički učinak?

= otkriće

ALI praktična uporaba ????

- npr. mikroorganizam MX proizvodi supstancu X

- supstanca X pokazuje antibakterijsku aktivnost

✓ tehnički učinak ⇒ može biti patentibilno

## Primjeri: Što se (ne)može patentirati?

c) Otkriće gena G u prirodi?

≠ Tehnički učinak

otkriće

ALI praktična uporaba gena G u terapiji bolesti Z ????

✓ tehnički učinak ⇒ može biti patentibilno

Što je sve patentibilno?

- gen G (u EP i HR, ali ne u US (US Supreme Court Decision 2013 Myriad Genetics: human genes cannot be patented in US because DNA is product of nature, i.e. nothing new has been created...))

- formulacija

- upotreba gena G za terapiju bolesti Z

## Primjeri: Što se (ne)može patentirati?

d) 1. Ortopedski uređaj za imobilizaciju slomljene kosti koji se sastoji od kružnog vanjskog dijela (A) formiranog tako da se..., od nazubljenog dijela (B) koji ulazi u...

Q: Da li je patentibilan ortopedski uređaj?

✓ patentabilni su: proteza, umjetni ud, ortopedski ulošci,...i postupak njihove izrade

- uzimanje otisaka nije kirurške naravi,

- izrađuju se van tijela

e) 1. Postupak tretiranja zglobova koji se sastoji od koraka:

(i) vezanja prve komponente anatomskog uređaja za gornju plohu zgloba,

(ii) vezanja druge komponente anatomskog uređaja za donju plohu,.....

≠ izuzet od patentibilnosti ⇒ metoda/postupak koja uključuje kirurški zahvat nije patentabilna!!!



## Primjeri: Što se (ne)može patentirati?

- f) 1. Upotreba spoja X za tretiranje svinja tijekom uzgoja u proizvodnji pršuta radi smanjenja postotka masnih stanica u mišićnom tkivu svinja.

Q: Da li je patentabilna upotreba spoja X?

≠ nije kirurška, medicinska niti dijagnostička metoda nego postupak poboljšanja kvalitete mesa! ⇒ patentabilno je!

- g) 1. Upotreba spoja X za pripravu kreme za njegu ruku.

Q: Da li je patentabilna upotreba spoja X?

≠ nije kirurška, medicinska niti dijagnostička metoda nego kozmetička primjena! ⇒ patentabilno je!

## Primjeri: Što se (ne)može patentirati?

Primjer patentnih zahtjeva:

- h) 1. Upotreba spoja X za liječenje dijabetesa.

Q: Da li je patentabilna upotreba spoja X?

isto kao da piše : "Postupak liječenja dijabetesa spojem X."

⇒ postupak liječenja dijabetesa u kojem se koristi spoj X, tj.

- patentni zahtjev koji se direktno odnosi na metodu liječenja u kojoj se pacijentu daje određena tvar ⇒ nije patentabilna

≠ izuzet od patentibilnosti

## Primjeri: Što se (ne)može patentirati?

i) Primjer patentnih zahtjeva: **Spoj X je od ranije poznat u stanju tehnike**

- npr. kao boja za zaštitu brodova od plijesni, a sad je pronađeno da djeluje na stanice raka!

Q: Da li je patentibilna medicinska upotreba spoja X?

1. Spoj X za upotrebu kao lijek. // 1. Spoj X za upotrebu u medicini.

*(Compound X for use as a medicament.*

✓ **PRVA MEDICINSKA  
UPOTREBA jer ranije nije  
korišten u medicinske svrhe**

## Primjeri: Što se (ne)može patentirati?

j) Primjer patentnih zahtjeva **Spoj X je od ranije poznat u stanju tehnike npr. u terapiji migrene, a sada je otkriveno anti-kancerogeno djelovanje.**

Q: Da li je patentibilna medicinska upotreba spoja X?

1. Spoj X za upotrebu u liječenju raka. /// 1. Spoj X koji se upotrebljava za liječenje raka.

*(Compound X for use in the treatment of cancer.)*

✓ **DRUGA I SVAKA SLIJEDEĆA MEDICINSKA UPOTREBA ⇒  
svrhom ograničen patentni zahtjev za proizvod (purpose limited  
product claim)**

- U ovom primjeru svrha = za liječenje raka

## Primjeri: Što se (ne)može patentirati?

- k) Primjer – vaš tim otkrije da je apliciranje kombinacije supstance A i antitijela B supresira rast stanica raka
- referenca 1 je znanstveni članak koji govori o tome da se supstanca A koristi u liječenju raka
  - referenca 2 je patentna prijava koja razotkriva upotrebu antitijela B u liječenju raka
- novost? DA / NE
  - inventivnost? DA / NE

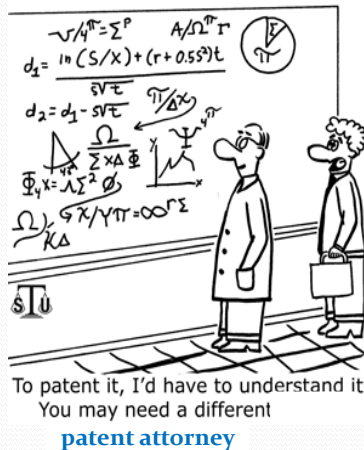
### Kako argumentirati inventivnost?

- ➔ kombinacija A i B daje **neočekivano bolji učinak** (višestruko bolje od  $2+2=4!!!$ ) => potrebno dokazati eksperimentalno
- ➔ dokumenti iz stanja tehnike govore upravo suprotno (the **prior art taught away** from the invention)

## Patentna prijava - struktura

Stu's Views

© Stu All Rights Reserved www.STUS.com





# Kako izgleda patentna prijava / patent :0) ?

12/02/2018

Copyright by G. Turkalj

39



# Kako izgleda patentna prijava?

- Objava 18 mjeseci od datuma podnošenja prioritetne prijave (WO07/123456 A; US20071234567 A; EP1234567 A)

- Naslov
- Opis izuma
- Primjeri
- Patentni zahtjevi
- Sažetak
- (Crteži / popis sekvenci)

Broj objave

Ime podnosioca

(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property Organization  
International Bureau

(43) International Publication Date  
7 October 2004 (07.10.2004)

(10) International Patent Classification  
A61K

(21) International Application Number  
PCT/US2003/007435

(22) International Filing Date  
10 March 2003 (10.03.2003)

(23) Filing Language  
English

(24) Publication Language  
English

(51) International Patent Classification  
A61K 31/00 (20060101) 13  
A61K 31/00 (20060101) 13

(52) Invention and  
Priority Claims  
This invention relates to the use of...  
LINDENBELLER, Susan, L., et al., Seattle, WA  
242nd Place SE, Bothell, WA 98021 (US)

(54) Title: METHODS, COMPOSITIONS AND KITS FOR THE DETECTION AND MONITORING OF LUNG CANCER

(57) Abstract: Compositions and methods for the diagnosis of lung cancer are disclosed. Such methods are useful to detect early...

**EUROPEAN PATENT APPLICATION**

Application number: **88307512.9** Int. Cl.<sup>5</sup>: **C07D 473/18 , A61K 31/52**  
Date of filing: **12.08.88**

Claims for the following Contracting States: GR + ES.

Priority: **15.08.87 GB 8719367**  
**05.11.87 GB 8725939**

Date of publication of application: **22.03.89 Bulletin 89/12**

Designated Contracting States: **AT BE CH DE ES FR GB GR IT LI LU NL SE**

Applicant: **THE WELLCOME FOUNDATION LIMITED**  
**183-193 Euston Road**  
**London NW1 2BP(GB)**

Inventor: **Krenitsky, Thomas Anthony**  
**106 Laurel Hill Road**  
**Chapel Hill North Carolina 27514(US)**  
Inventor: **Beauchamp, Lilla Marie**  
**3007 Wycliff Road**  
**Raleigh North Carolina 27607(US)**

Representative: **Garrett, Michael et al**  
**The Wellcome Research Laboratories Group**  
**Patents and Agreements Langley Court**  
**Beckenham Kent BR3 3BS(GB)**

**Therapeutic nucleosides.**

The present invention relates to certain amino acid esters of the purine nucleoside acyclovir, pharmaceutically acceptable salts thereof and their use in the treatment and prophylaxis of herpes virus infections. The invention also includes pharmaceutical formulations and processes for the preparation of such compounds.



**EUROPEAN PATENT SPECIFICATION**

Date of publication of patent specification: **04.01.95** Int. Cl.<sup>5</sup>: **C07D 473/18, A61K 31/52**  
Application number: **88307512.9**  
Date of filing: **12.08.88**

Divisional application 93120604.9 filed on 12/08/88.

The file contains technical information submitted after the application was filed and not included in this specification

**Therapeutic nucleosides.**

Priority: **15.08.87 GB 8719367**

Date of publication of application: **22.03.89 Bulletin 89/12**

Publication of the grant of the patent: **04.01.95 Bulletin 95/01**

Designated Contracting States: **AT BE CH DE ES FR GB GR IT LI LU NL SE**

References cited: **EP-A- 0 099 493**

Proprietor: **THE WELLCOME FOUNDATION LIMITED**  
**Unicorn House**  
**160 Euston Road**  
**London NW1 2BP (GB)**

Inventor: **Beauchamp, Lilla Marie**  
**3007 Wycliff Road**  
**Raleigh**  
**North Carolina 27607 (US)**

Representative: **McMunn, Watson Palmer et al**  
**The Wellcome Foundation Limited,**

(19) **United States**

(12) **Patent Application Publication**  
**Mercep et al.**

(10) **Pub. No.:** US 2004/0014685 A1  
(43) **Pub. Date:** Jan. 22, 2004

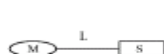
(54) **COMPOUNDS, COMPOSITIONS AND METHODS FOR TREATMENT OF INFLAMMATORY DISEASES AND CONDITIONS**

(57) **U.S. CL.** ..... 514/26; 514/175; 536/5; 540/102

(75) **Inventors:** **Mladen Mercep**, Zagreb (HR); **Milan Mestic**, Zagreb (HR); **Linda Tomaskovic**, Zagreb (HR); **Stribor Markovic**, Karlovac (HR); **Oresta Makaruha**, Zagreb (HR); **Visnja Poljak**, Zadar (HR)

(57) **ABSTRACT**

The present invention relates (a) to new compounds represented by Formula I:



wherein M represents a macrolide subunit (macrolide moiety) derived from macrolide possessing the property of accumulation in inflammatory cells, S represents a steroid subunit (steroid moiety) derived from steroid drug with anti-inflammatory activity and L represents a linker molecule linking M and S, (b) to their pharmacologically acceptable salts, prodrugs and solvates, (c) to processes and intermediates for their preparation, and (d) to their use in the treatment of inflammatory diseases and conditions in humans and animals. Such compounds inhibit many cytokines and immune mediators involved in immune responses which cause inflammation, allergy, or autoimmunity, including without limitation IL-1, 2, 4, 5, 6, 10, 12, GM-CSF, ICAM, and TNF- $\alpha$ . Importantly, anti-inflammatory steroids exert a direct anti-inflammatory effect through binding to the glucocorticosteroid receptor.

Correspondence Address:  
**DARBY & DARBY P.C.**  
Post Office Box 5257  
New York, NY 10150-5257 (US)

(73) **Assignee:** **PLIVA Pharmaceutical Industry, Incorporated**

(21) **Appl. No.:** 10/615,716

(22) **Filed:** Jul. 8, 2003

**Related U.S. Application Data**

(60) **Provisional application No.** 60/394,670, filed on Jul. 8, 2002.

**Publication Classification**

(51) **Int. Cl.<sup>7</sup>** ..... A61K 31/7048; A61K 31/585; C07F 17/00

(12) **United States Patent**  
**Mercep et al.**

(10) **Patent No.:** US 7,091,187 B2  
(45) **Date of Patent:** \*Aug. 15, 2006

(54) **COMPOUNDS, COMPOSITIONS AND METHODS FOR TREATMENT OF INFLAMMATORY DISEASES AND CONDITIONS**

EP	0 895 999	2/1999
EP	0984019 A1	3/2000
EP	0984019	3/2000
GB	2 327 084	1/1999
WO	WO 94/13690	6/1992
WO	WO 92/13872	8/1992
WO	WO 92/13873	8/1992
WO	WO 94/14834	7/1994
WO	WO-97/41255	11/1997
WO	WO 98/56801	12/1998
WO	WO 99/51616	10/1999
WO	WO-99/64040	12/1999
WO	WO 00/42055	7/2000
WO	WO-00/64882	11/2000
WO	WO-02/055531	7/2002
WO	WO-03/070173 A2	8/2003
WO	WO-03/070174 A2	8/2003
WO	WO-03/070254	8/2003

(75) **Inventors:** **Mladen Mercep**, Zagreb (HR); **Milan Mestic**, Zagreb (HR); **Linda Tomaskovic**, Zagreb (HR); **Stribor Markovic**, Karlovac (HR); **Oresta Makaruha**, Zagreb (HR); **Visnja Poljak**, Zadar (HR)

(73) **Assignee:** **Pliva-Istrazivacki Institut D.o.o.**, Zagreb (HR)

(\*) **Notice:** Subject to any disclaimer, the term of this patent is extended or adjusted under 35 U.S.C. 154(b) by 0 days.

This patent is subject to a terminal disclaimer.

(21) **Appl. No.:** 10/615,716

(22) **Filed:** Jul. 8, 2003

(65) **Prior Publication Data**

US 2004/0014685 A1 Jan. 22, 2004

**Related U.S. Application Data**

(60) **Provisional application No.** 60/394,670, filed on Jul. 8, 2002.

**OTHER PUBLICATIONS**

Burnet et al., "Conjugates of biologically active compounds, methods for their preparation and use, formulation, and pharmaceutical applications thereof," U.S. Provisional Appl. No. 60/357,789, filed Feb. 15, 2002.

Brandt-Rauf et al., "Fluorescent Assay For Estimating the Binding of Erythromycin Derivatives to Ribosomes," *Antimicrobiol Agents and Chemotherapy*, American Society for Microbiology, Washington, D.C., 14(1):88-94, (1978).

Gladue R. P. et al., "In Vitro and In Vivo Uptake of Azithromycin (CP-62,993) by Phagocytic Cells: Possible Mechanism of Delivery and Release at Sites of Infection," *Antimicrob. Agents and Chemother.*, 33, 1989, 277-282.

## Struktura patentne prijave



- Pravni dokument
- Informira znanstvenu zajednicu i industriju o izumu
  - ⇒ moguća suradnja
  - ⇒ komercijalni interes
- Paziti da su svi izumitelji navedeni i da su svi potrebni ugovori sklopljeni prije podnošenja prijave patenta

## Struktura patentne prijave – PATENTNI ZAHTJEVI\*



- Definiraju sve aspekte izuma za koji se traži patentna zaštita
- Trebaju biti jasni, koncizni i poduprti opisom izuma (primjerima izvođenja)
- Različiti tipovi patentnih zahtjeva: spoj/proizvod, postupak sinteze, farmaceutski pripravak, upotreba, naprava (device), ...
- “peeled off” tijekom ispitivanja patentibilnosti ;0)

\* Numerirani paragrafi iza opisa izuma

## Područje zaštite patentom

- Zaštita koju pruža patent je ograničena i odnosi se samo na ono što smo precizno definirali **patentnim zahtjevima**
- Dodijeljen patent (granted) daje pravo samo na teritoriju države koja je to pravo priznala nakon provedbe postupka ispitivanja patentabilnosti izuma

## Patent kao vlasništvo

- Može se kao bilo koje drugo vlasništvo
  - U potpunosti prenijeti/prodati (assigne)
  - Dati dozvolu za korištenje / licencirati: jedina (solo), isključiva (ekskluzivna) i neisključiva, te cross licencing
- Nije automatski apsolutno pravo na iskorištavanje izuma
  - Ima li konkurencija relevantan patent – vrijeđamo li prava iz patenta treće strane?
  - Farmaceutska industrija** – za novi lijek mora ishoditi odobrenje regulatornih vlasti za stavljanje lijeka na tržište



## Postupak patentiranja

### ➤ nacionalni

- temeljem prioritete nacionalne prijave => u roku od 12 mjeseci od datuma podnošenja prioritete nacionalne prijave tražiti zaštitu i u drugim državama

### ➤ regionalni:

- isto kao da je prijava patenta istovremeno podnesena u svakoj od država članica regionalnog patenta
- patentna prijava se može odmah podnijeti direktno u regionalni ured ili u roku od 12 mjeseci i pozivati se na prioritet ranije nacionalne prijave patenta
- EPO (European Patent Office, 38 država članica + 2 ekstenzije)
- EA (Eurasian patent : 9 member states)
- ARIPO (African Regional Intellectual Property Organization)
- OAPI (Organisation Africaine de la Propriété Intellectuelle)

## Postupak patentiranja

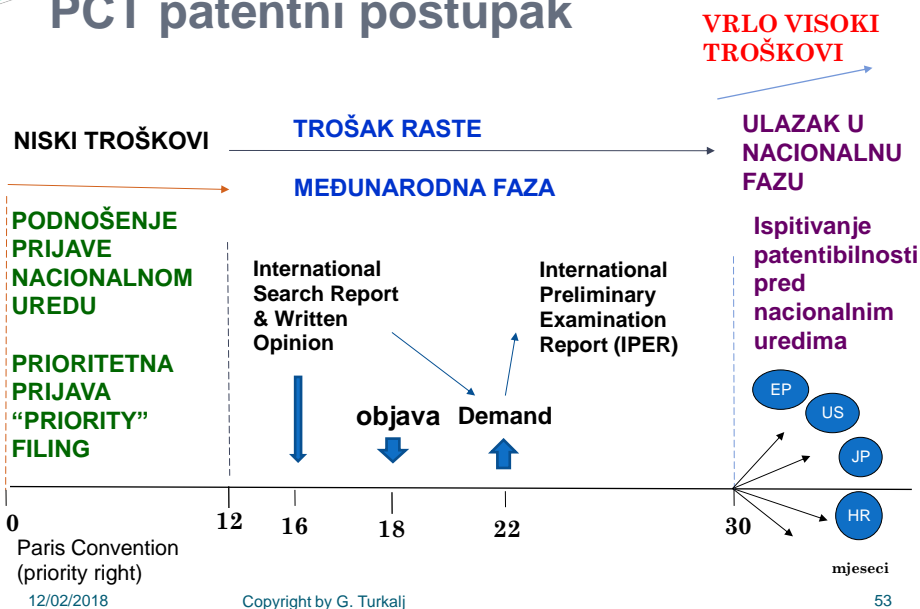
### ➤ International – Patent Cooperation Treaty (PCT):

#### *191 PCT member states*

- PCT prijava se može podnijeti pri nacionalnom / regionalnom patentnom uredu ili direktno u International Bureau (IB)
- isto kao da je prijava patenta istovremeno podnesena u svim zemljama članicama PCT
- patentna prijava se može odmah podnijeti direktno kao PCT prijava ili u roku od 12 mjeseci i pozivati se na prioritet ranije nacionalne prijave patenta
- dio patentnog postupka se provodi u tzv. međunarodnom postupku
- ALL patent se može jedino dodijeliti u nacionalnoj fazi, tj. patentni uredi svake od država odlučuje za sebe

~~Ne postoji  
"svjetski patent"~~

# PCT patentni postupak



## PCT Faza - trošak

### PCT prijava do 30 stranica

Filing fee: 1330 CHF +

Search fee (EPO) 1875 EUR+

Transmissal fee (DZIV) 200 HRKN

- Pravna osoba oko 22.000,00 HRKN
- Fizička osoba oko 16.000,00 HRKN

### DEMAND - Preliminary examination fees

2113 EUR (official fee + handling fee EPO)

+

Patentni zastupnik

## HR prijava patenta - trošak

### PODNOŠENJE PRIJAVE do 30 stranica i do 10 patentnih zahtjeva:

Upravna pristojba: \*100 HRKN

Naknada troška: \*\*1.200 HRKN

*Naknadom troškova obuhvaćene su i prve dvije godine održavanja kao i objava prijave u službenom glasilu DZIV-a.*

+

**Patentni zastupnik**

### ZAHTEJEV ZA ISPITIVANJE UVJETA ZA PRIZNANJE PATENTA

Upravna pristojba: \*100 HRKN

Naknada troška: \*3.900 HRKN

+

**Patentni zastupnik**

*\*Podnosioci prijave koji je ujedno i izumitelj sve označene pristojbe i naknade troškova u točkama 1. do 6. plaća u iznosima umanjenerima za 50%!*

*# Ako je tekst prijave dostavljen i u elektroničkom obliku (npr. na CD-ROM-u, DVD-u) naknada gore navedenih troškova podnošenja umanjuje se za 50%.*

## Pretraga stanja tehnike - patenti / patentne prijave

## Zašto tražiti patente/patentne prijave???

### ➤ Važan izvor informacija

- izbjeći dupliciranje
- procijeniti potencijalnu patentibilnost vlastitog izuma
- odrediti ključne trendove u specifičnom području tehnike
- pratiti aktivnosti konkurencije
- izbjeći povredu parava iz patenta treće strane
- koristiti tehnologiju iz patentnih prijava koje nikad nisu došle do faze dodjele, ili nisu na snazi u nekim zemljama, ili nisu više nigdje na snazi
- odrediti vrijednost određenog patenta
- licenciranje, partenrstvo, itd.

## Gdje pronaći patentne informacije???

- Ne postoji baza s kompletnom kolekcijom patenata/prijava objavljenih u svim zemljama svijeta
- =>> treba gledati u više baza
- **Nacionalni/regionalni patentni uredi** : besplatni pristup objavljenim patentnim prijavama/ patentima ,
  - **Croatian SIPO // DZIV** (Državni zavod za intelektualno vlasništvo):

<http://www.dziv.hr/hr/e-usluge/pretrazivanje-baza-podataka/patent/>

## Gdje pronaći patentne informacije???

- **Google Patents** : <https://patents.google.com/>
  - Patentne prijave / patenti: WO, EP, US, DE, GB, KR, FR, CA, CN, ES, RU, NL, FI, DK, LU, BE
  - Patenti na drugim jezicima se automatski prevode putem google translate na engleski jezik ⇒ **možete raditi pretragu koristeći ključne riječi (keywords) SAMO na engleskom jeziku!**
  - Ako odaberete "Include non-patent literature", pretražuje i članke na Google Scholar
- **EPO – free online** : [http://worldwide.espacenet.com/?locale=en\\_EP](http://worldwide.espacenet.com/?locale=en_EP)
  - free online access to more than 100 million patent documents worldwide from 1836 up to today
- **WIPO - PATENTSCOPE®** search service:  
<http://patentscope.wipo.int/search/en/search.jsf>
  - 64 million patent documents including 3.1 million published PCT apps
  - including & their related documents & patent collections from national and regional offices

12/02/2018

Copyright by G. Turkalj

59

## Gdje pronaći patentne informacije???

- **FDA Information - US Food and Drug Administration**  
<http://www.accessdata.fda.gov/scripts/cder/ob/default.cfm>
  - Information about drug that has been approved by FDA on the basis of safety and efficacy data is published in the **“Orange Book”** (book of *Approved Drug Products with Therapeutic Equivalence Evaluations* )
- **Commercial providers:**
  - list of patent service providers at:  
<http://www.piug.org/vendors>
  - commercial value-added services on a fee-paying basis (chemical structures and reactions or biological sequences)

12/02/2018

Copyright by G. Turkalj

60

## Primjeri ⇒ traženje patentnih informacija

## Primjeri – traženje patentnih informacija

### *A Clinical Disaster in France in January 2016*

... a clinic in Rennes was testing what the media are referring to as " a **cannabis**-based **pain** killer", but something has clearly gone terribly wrong. Several people are hospitalized in critical condition, with one said to be in a coma.

...A man has died and five others have been hospitalized in France, after taking part in a clinical trial for a new **painkiller** developed by **Portuguese pharmaceutical company BIAL**

•Compound: **BIA 10-2474** in Phase I for "neurological and psychiatric pathologies" is **FAAH inhibitor**

## Select Key Words:

•Company name: BIAL - Portela & C<sup>a</sup>, S.A. / MediBIAL / BIALport / InterBIAL / BIAL-Aristegui / BIAL OTC

⇒ **BIAL**

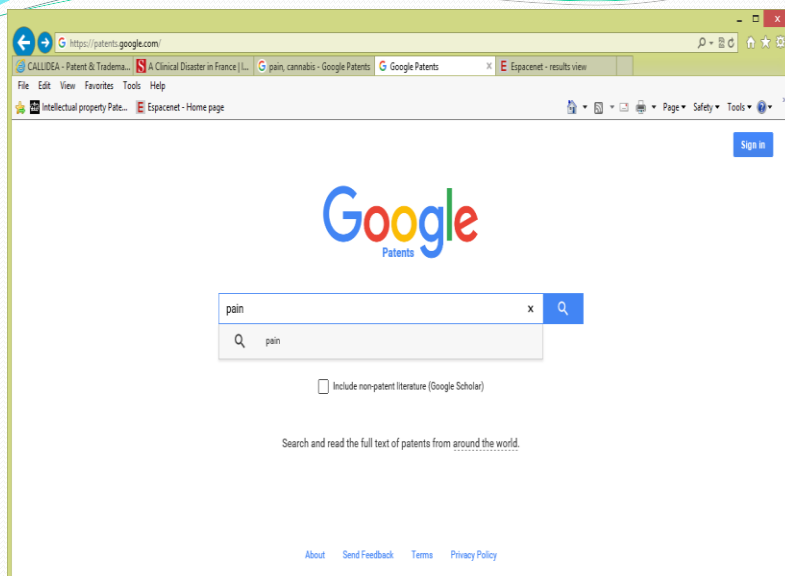
•Painkiller // Pain relief

⇒ **PAIN**

•For further narrowing, if needed :

- drug blocking of an enzyme called fatty acid amide hydrolase (FAAH inhibitor)
- cannabinoid receptors

## Search Examples – Workshop: Example 1A : Bial compound at Google Patents



## Search Examples – Workshop 1A : Bial compound at Google Patents

The screenshot shows a Google Patents search for the term "pain". The search results are sorted by relevance. The top result is "A61K31/00 Medicinal preparations containing organic active ingredients" with a sub-title "Method and compositions utilizing capsaicin as an external analgesic A...". The assignee is "Grant US4997853A • Joel E. Bernstein • Galenpharma, Inc.". A blue arrow points to the search bar. Another blue arrow points to the "+ Assignee" button in the search fields section.

12/02/2018

Copyright by G. Turkalj

65

## Search Examples – Workshop: Example 1A: Bial compound at Google Patents

This screenshot is similar to the previous one, but with the search field "+ Assignee" populated with "Bial". A dropdown menu is visible, listing several assignees: "Bial Industrie S.P.A.", "Bialletti Ind Spa", "Bial-Portela & CA, S.A.", "Jadwiga Malgorzata Bialek", and "Meir Bialer". A blue arrow points to the "Bial-Portela & CA, S.A." option in the dropdown.

12/02/2018

Copyright by G. Turkalj

66



## Search Examples – Workshop: Example 1A : Bial compound at Google Patents

The screenshot shows a Google Patents search for the term "pain". The search results are filtered by relevance and classification, showing 10 results per page. The top result is WO2010074588A2, titled "Heterocyclic compounds containing both one or more hetero rings having oxygen atoms as the only ring hetero atoms, and one or more rings having nitrogen as the only ring hetero atom". This result is highlighted with a blue arrow. Below the main result, there are several other entries, including "1,3-Diazoles having oxo groups directly attached to the heterocyclic ring, e.g. phenytoin" and "5-o-substituted 3-n-phenyl-1,3,4-oxadiazolones for medical use". On the right side, there is a bar chart titled "Top 1000 results by filing date" and a table titled "Relative count of top 5 values" showing the distribution of assignees, inventors, and CPCs for the top 5 results.

Assignees	Inventors	CPCs
BIAL - PORTELA & Co. S.A.		12.1%
Sanofi		12.1%
BIAL - PORTELA & Co. S.A.		6%
BIAL - PORTELA & Co. S.A.		6%
BIAL - PORTELA & Co. S.A.		6%

12/02/2018

Copyright by G. Turkalj

67

## Search Examples – Workshop: Example 1A : Bial compound at Google Patents

The screenshot shows a Google Patents search for the specific patent "WO2010074588 A2 at Google". The search results are filtered by relevance and classification, showing 10 results per page. The top result is WO2010074588A2, titled "Pharmaceutical compounds". This result is highlighted with a blue arrow. Below the main result, there are several other entries, including "1,3-Diazoles having oxo groups directly attached to the heterocyclic ring, e.g. phenytoin" and "5-o-substituted 3-n-phenyl-1,3,4-oxadiazolones for medical use". On the right side, there is a detailed view of the patent, including the abstract, classifications, and a list of inventors and assignees.

**WO2010074588A2**  
WO Application

**Abstract**  
The invention relates to compounds and compositions for inhibiting the enzyme fatty acid amide hydrolase (FAAH), the use of the compounds in therapy and, in particular, for treating or preventing conditions whose development or symptoms are linked to substrates of the FAAH enzyme, and methods of treatment or prevention using the compounds and compositions.

**Classifications**  
C07D401/12 Heterocyclic compounds containing two or more hetero rings, having nitrogen atoms as the only ring hetero atoms, at least one ring being a six-membered ring with only one nitrogen atom containing two hetero rings linked by a chain containing hetero atoms as chain links  
View 15 more classifications

**Application number:** PCT/PT2009/000080  
**Other languages:** French  
**Other versions:** WO2010074588A8 (application), WO2010074588A3 (application)  
**Inventor:** Laszlo Erno Kias, David Alexander Learmonth, Carla Patricia Da Costa Pereira Rosa, DE NORONHA Rita GUSMÃO, Pedro Nuno Leal Palma, DA SILVA Patricio Manuel Vieira Araujo SOARES, Alexander Beltaev  
**Original Assignee:** BIAL - PORTELA & Co. S.A.  
**Priority date:** 2008-12-24  
**Filing date:** 2009-12-23  
**Publication date:** 2010-07-01

12/02/2018

Copyright by G. Turkalj

68

## Search Examples – Workshop: Example 1A : Bial compound at Google

**WO2010074588 A2 at Google**

SEARCH TERMS: pain X + Synonym

SEARCH FIELDS: BialPortela & CA, S.A. X

**Description**

**PHARMACEUTICAL COMPOUNDS**

The present invention relates to compounds and their uses, and in particular to compounds and their therapeutic use in the treatment or prevention of conditions having an association with substrates, such as the neurotransmitter anandamide, which are broken down by the fatty acid amide hydrolase (FAAH) enzyme.

FAAH enzyme breaks down fatty acid amides such as anandamide (N-arachidonyl ethanolamine), N-oleylethanolamine, IV-palmitoylethanolamine and oleamide. Anandamide, also known as N-arachidonyl ethanolamine or AEA, is an endogenous cannabinoid neurotransmitter found in animal and human organs, especially in the brain. It has also been found that anandamide binds to the vanilloid receptor. Anandamide is degraded by the fatty acid amide hydrolase (FAAH) enzyme to ethanolamine and arachidonic acid. Accordingly, inhibitors of FAAH lead to elevated anandamide levels.

Anandamide is a neurotransmitter in the endocannabinoid system and stimulates the cannabinoid receptors. Cannabinoid receptors, such as CB1 and CB2, are G protein-coupled receptors. CB1 is found mainly in the central nervous system whereas CB2 is found mainly in peripheral tissue. The endocannabinoid system has been implicated in a growing number of physiological functions, both in the central and peripheral nervous systems and in peripheral organs. Modulation of the activity of the endocannabinoid system has been shown to have a potentially therapeutic effect on a wide range of disparate diseases and pathological conditions. Therefore, the endocannabinoid system, and the FAAH enzyme in

**Claims (1)**

1. A compound having Formula I or Formula II:

**Chemical Structures:**

Formula I: R1-N(R2)-C(=O)-N(R3)-R4

Formula II: R5-N(R6)-C(=O)-N(R7)-R8

Formula I Formula II wherein:  
R1 and R2 can each be independently selected from H, C<sub>1-30</sub> alkyl, C<sub>6-10</sub> alkoxy, aryl, heteroaryl, partially or fully saturated heterocyclyl, C<sub>3-10</sub> cycloalkyl, aryl C<sub>3-6</sub> alkyl, heteroaryl C<sub>6-10</sub> alkyl, heterocyclyl C<sub>6-10</sub> alkyl, C<sub>3-10</sub> cycloalkyl C<sub>6-10</sub> alkyl, R<sub>9</sub>, halogen, OH, OR<sub>9</sub>, OCO-R<sub>9</sub>, SH, SR<sub>9</sub>, SCOR<sub>9</sub>, NH<sub>2</sub>, NH-R<sub>9</sub>, NHSO<sub>2</sub>NH<sub>2</sub>, NHSO<sub>2</sub>R<sub>9</sub>, NR<sub>9</sub>COR<sub>9</sub>, NHCOR<sub>9</sub>, NR<sub>9</sub>SR<sub>9</sub>, COR<sub>9</sub>, CSR<sub>9</sub>, CN, COOH, COOR<sub>9</sub>, CO<sub>2</sub>H, CONHOH, CONH-R<sub>9</sub>, CONH-OR<sub>9</sub>, SO-R<sub>9</sub>, SO<sub>2</sub>-R<sub>9</sub>, SO<sub>2</sub>-NH<sub>2</sub>, CONR<sub>9</sub>SR<sub>9</sub>, SO<sub>2</sub>NR<sub>9</sub>SR<sub>9</sub>, where R<sub>9</sub>

12/02/2018

Copyright by G. Turkalj

69

## Search Examples – Workshop: Example 1A: Bial compound at Google Patents

**Also Published As**

Publication number	Publication date	Type
CN102333586A	2012-01-25	Application
WO2010074588A8	2011-10-05	Application
WO2010074588A3	2011-05-19	Application
JP2012513990A	2012-06-21	Application
KR20110130388A	2011-12-05	Application
US20120065911A1	2012-03-15	Application
CA2747344A1	2010-07-01	Application
RU2554510C2	2015-06-20	Grant
JP5481756A02	2015-01-21	Grant
RU2011125416A	2013-01-27	Application
EP2382012A2	2011-11-02	Application
US935082B2	2016-05-31	Grant
JP2013071622A	2015-04-16	Application
CN102333588B	2016-01-20	Grant
CN105399731A	2016-03-16	Application

12/02/2018

Copyright by G. Turkalj

70

## Search Examples – Workshop: Example 1B: Bial compound at Espacenet

http://worldwide.espacenet.com/advancedSearch?locale=en\_EP

Espacenet Patent search

Deutsch English Français Contact Change country

← About Espacenet Other EPO online services

Search Result list My patents list (0) Query history Settings Help

Smart search  
Advanced search  
Classification search

Quick help

Enter your search terms - CTRL-ENTER expands the field you are in

Enter keywords in English

Title:

Title or abstract:

Enter numbers with or without country code

Publication number:

Application number:

12/02/2018

Copyright by G. Turkalj

71

## Search Examples – Workshop: Example 1B: Bial compound at Espacenet

http://worldwide.espacenet.com/advancedSearch?locale=en\_EP

Espacenet - Bibliographic data

Application number:

Priority number:

Enter one or more dates or date ranges

Publication date:

Enter name of one or more persons/organisations

Applicant(s):

Inventor(s):

Enter one or more classification symbols

CPC:

IPC:

Clear Search

12/02/2018

Copyright by G. Turkalj

72

## Search Examples – Workshop: Example 1B: Bial compound at Espacenet

12 results found in the Worldwide database for: pain in the site or abstract AND bial as the applicant

Sort by: Publication date | Sort order: Descending

**1. UREA COMPOUNDS AND THEIR USE AS ENZYME INHIBITORS**

Inventor:	Applicant:	CPC:	IPC:	Publication info:	Priority date:
COCHA CARLA PATRICIA DA SILVA (PT)	PORTIELA & CA S A (PT)	A61K31/55 A61P25/00 A61K47/58	A61K31/55 A61K47/52 A61K47/56	US201701581 (A1) 2017-04-13	2012-02-24

**2. ORAL DOSAGE FORM CONTAINING LUCABAZEPINE ACETATE**

Inventor:	Applicant:	CPC:	IPC:	Publication info:	Priority date:
TEOFILO CARDOSO DE VASCONCELOS RICARDO JORGE DOS SANTOS LIMA (PT)	PORTIELA & CA S A (PT)	A61K31/55 A61P25/00 A61K47/58	A61K31/55 A61K47/52 A61K47/56	JP201704233 (W) 2017-01-19	2007-10-26

**3. ESILICABAZEPINE ACETATE AND METHODS OF USE**

Inventor:	Applicant:	CPC:	IPC:	Publication info:	Priority date:
YIEBRA ARAUJO SOARES DA SILVA PATRICIO MANUEL DE ALMEIDA JOSE LUIS (PT)	PORTIELA & CA S A (PT)	A61K31/55 A61P25/00 A61K47/58	A61K31/55 A61P25/00 A61K47/58	JP201604331 (A) 2016-04-07	2015-11-25

**4. USE OF 5-HYDROXY-1-AZEPINE-5-CARBOXYAMIDE DERIVATIVES IN THE TREATMENT OF NEUROPATHIC PAIN AND NEUROLOGICAL DISORDERS**

Inventor:	Applicant:	CPC:	IPC:	Publication info:	Priority date:
YIEBRA ARAUJO SOARES DA SILVA PATRICIO MANUEL (PT)	PORTIELA & CA S A (PT)	A61K31/55 A61P25/00 A61K47/58	A61K31/55 A61K47/52 A61K47/58	US201513910 (A1) 2015-11-25	2008-02-14

12/02/2018

Copyright by G. Turkalj

73

## Search Examples – Workshop: Example 1B: Bial compound at Espacenet

**10. GRANULATES COMPRISING ESILICABAZEPINE ACETATE**

Inventor:	Applicant:	CPC:	IPC:	Publication info:	Priority date:
YIEBRA ARAUJO SOARES DA SILVA PATRICIO MANUEL DOS SANTOS LIMA RICARDO JORGE (PT)	PORTIELA & CA S A (PT)	A61K31/55 A61K31/52 A61K47/58	A61K31/55 A61K31/52 A61K47/58	US201402252 (A1) 2014-10-09	2014-10-09

**11. ESILICABAZEPINE ACETATE AND USE METHOD**

Inventor:	Applicant:	CPC:	IPC:	Publication info:	Priority date:
YIEBRA ARAUJO SOARES DA SILVA PATRICIO MANUEL DE ALMEIDA JOSE LUIS (PT)	PORTIELA & CA S A (PT)	A61K31/55 A61P25/00 A61K47/58	A61K31/55 A61P25/00 A61K47/58	JP2013027876 (A) 2013-11-29	2013-05-29

**12. GRANULATES COMPRISING ESILICABAZEPINE ACETATE**

Inventor:	Applicant:	CPC:	IPC:	Publication info:	Priority date:
VASCONCELOS TEOFILO CARDOSO DE (PT) LIMA RICARDO JORGE DOS SANTOS (PT)	PORTIELA & CA S A (PT)	A61K31/55 A61K47/58	A61K31/55 A61K47/58	MX2013007491 (A) 2013-01-31	2010-12-31

**13. MIDAZOLE COMPOUNDS FOR USE AS ENZYME INHIBITORS**

Inventor:	Applicant:	CPC:	IPC:	Publication info:	Priority date:
KRESI LINDO ERNO LEARNONTH DAVID ALEXANDER (PT)	PORTIELA & CA S A (PT)	G01N33/12 G01N33/35 A61K31/55	A61K31/33 A61P30/00 C07C23/396	NZ201401119 (A) 2014-10-25	2008-12-24

**14. USE OF 5-HYDROXY-1-AZEPINE-5-CARBOXYAMIDE DERIVATIVES IN THE TREATMENT OF NEUROPATHIC PAIN AND NEUROLOGICAL DISORDERS**

Inventor:	Applicant:	CPC:	IPC:	Publication info:	Priority date:
YIEBRA ARAUJO SOARES DA SILVA PATRICIO MANUEL (PT)	PORTIELA & CA S A (PT)	A61K31/55 A61P25/00	A61K31/55 A61P25/00	US201319276 (A1) 2013-01-29	2008-02-14

**15. Esilicabazepine acetate and use**

Inventor:	Applicant:	CPC:	IPC:	Publication info:	Priority date:
YIEBRA ARAUJO SOARES DA SILVA PATRICIO MANUEL (PT) DE ALMEIDA JOSE LUIS (PT)	PORTIELA & CA S A (PT)	A61K31/55	A61K31/55 A61P25/00	EP2380275 (A1) 2011-05-26 EP2380275 (B1) 2016-05-26	2005-05-06

**Corresponds to WO2010074588**

12/02/2018

Copyright by G. Turkalj

74

### Search Examples – Workshop: Example 1B: Bial compound at Espacenet

**Corresponds to WO2010074588**

**Abstract of NZ93418 (A)**  
 Translate this text into [ ]  
 [ Select language ] [ Patent Translate ] powered by PDF and Google

ABSTRACT - 593418 The disclosure relates to azole derivative compounds represented by structural formula shown herein and compositions thereof, wherein the variables are as defined in the specification. These compounds are suitable for treating the enzyme beta and amino hydrolase (FAAH), and are useful for treating or preventing condition or disorder whose development or symptoms are linked to substrate of the FAAH-enzyme, wherein the condition or disorder is selected from appetite regulation, obesity, metabolic disorders, cachexia, anorexia, [ ] information, neurotoxicity, neurodegeneration, stroke, multiple sclerosis, spinal cord injury, Parkinson's disease, amyotrophic lateral sclerosis, Huntington's disease, Olanzapine or Trastuzumab resistance, bipolar dysregulation, headache, amyotrophic lateral sclerosis, Alzheimer's disease, depression, anxiety, autism, schizophrenia, depression, bipolar dysregulation, Huntington's disease, Olanzapine or Trastuzumab resistance, [ ] amyotrophic lateral sclerosis, Huntington's disease, Olanzapine or Trastuzumab resistance, [ ]

12/02/2018

Copyright by G. Turkalj

75

### Search Examples – Workshop: Example 1B: Bial compound at Espacenet

**Review in html format**

**Download as pdf**

**Original document: WO2010074588 (A2) — 2010-07-01**

**PHARMACEUTICAL COMPOUNDS**

(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)  
 (19) World Intellectual Property Organization  
 International Bureau

(43) International Publication Date  
 1 July 2010 (01.07.2010)

(10) International Publication Number  
**WO 2010/074588 A2**

(51) International Patent Classification: Not classified PT: Av. da Siderejia Nacional, 4547-457 S. Mamede de Gorosado (PT)  
 (74) Agents: ZONES, Nicholas Andrew et al., Withers & Rogers LLP, Goldings House, 2 Hays Lane, London, SE1 2HW (GB)

(21) International Application Number: PCT/PT2009/00080  
 (72) International Filing Date: 23 December 2009 (23.12.2009)  
 (45) Filing Language: English  
 (26) Publication Language: English

12/02/2018

Copyright by G. Turkalj

76

## Search Examples – Workshop: Example 1C: Bial compound at PATENTSCOPE

Access the PATENTSCOPE database

**Resources**

- Video tutorials
- WIPO Translate
- Data services
- External databases
- Webinars
- Frequently asked questions
- Forum

12/02/2018

Copyright by G. Turkalj

77

## Search Examples – Workshop: Example 1C: Bial compound at PATENTSCOPE

**Hit drop-down list for Field combination search**

Using PATENTSCOPE you can search 51 million patent documents including 2.8 million published international patent applications (PCT). Detailed coverage information can be found here (->)

Front Page [v] Office: All Search

PCT Publication 03/2016 (2016/0121) is now available. The next publication date is scheduled as follows: Gazette number 04/2016 (2016/0128). More

12/02/2018

Copyright by G. Turkalj

78

## Search Examples – Workshop: Example 1C: Bial compound at PATENTSCOPE

The screenshot shows the WIPO PATENTSCOPE search interface. The search criteria are as follows:

Field	Value
Front Page	
AND WIPO Publication Number	
AND Application Number	
AND Publication Date	
AND English Title	
AND English Abstract	
AND Applicant Name	Bial
AND International Class	
AND Inventor Name	
AND Office Code	
AND English Description	pain
AND English Claims	
AND Licensing availability	<input type="checkbox"/>
AND Inventor Name	Is Empty: <input checked="" type="radio"/> N/A <input type="radio"/> Yes <input type="radio"/> No

Language: English, Item: , Office: All, Specify:

60 results

Two blue arrows point to the search criteria for 'Bial' and 'pain'. A red text box on the right states: **60 hits retrieved for pain & Bial**

12/02/2018

Copyright by G. Turkalj

79

## Search Examples – Workshop: Example 1C: Bial compound at PATENTSCOPE

The screenshot shows the WIPO PATENTSCOPE search interface. The search criteria are as follows:

Field	Value
Front Page	
AND WIPO Publication Number	
AND Application Number	
AND Publication Date	
AND English Title	
AND English Abstract	
AND Applicant Name	Bial
AND International Class	
AND Inventor Name	
AND Office Code	
AND English Description	
AND English Claims	pain
AND Licensing availability	<input type="checkbox"/>
AND Inventor Name	Is Empty: <input checked="" type="radio"/> N/A <input type="radio"/> Yes <input type="radio"/> No

Language: English, Item: , Office: All, Specify:

34 results

Two blue arrows point to the search criteria for 'Bial' and 'pain'. A red text box on the right states: **When "pain" moved to claims just 34 hits retrieved**

12/02/2018

Copyright by G. Turkalj

80

## Search Examples – Workshop: Example 1C: Bial compound at PATENTSCOPE

12/02/2018

Copyright by G. Turkalj

81

## Primjeri pretraga – Workshop: Examples 1A-1C: ZAKLJUČAK

### ???? Relevantnost pretrage – više izvora

- Google Patents => 33 hitova
- Espacenet => 12 hitova
- Patentscope => 60 ili 34 hitova ovisno o tome koje polje(a) se pretražuje (opis/patentni zahtjevi u kombinaciji s prijavitelj)
  - description+applicant = 60 hits, vs
  - claims+applicant = 34 hist

⇒ **TREBA KOMBINIRATI REZULTAE PRETRAGE S VIŠE IZVORA : KOMPLETNOST PODATAKA!!!**

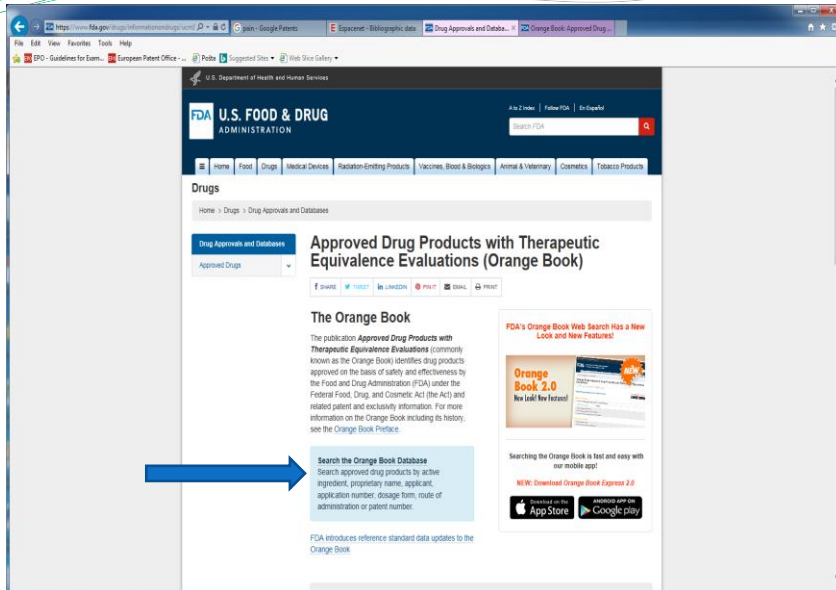
12/02/2018

Copyright by G. Turkalj

82



## Search Examples – Workshop: Example 2 – FDA web search & espacenet & PATENTSCOPE

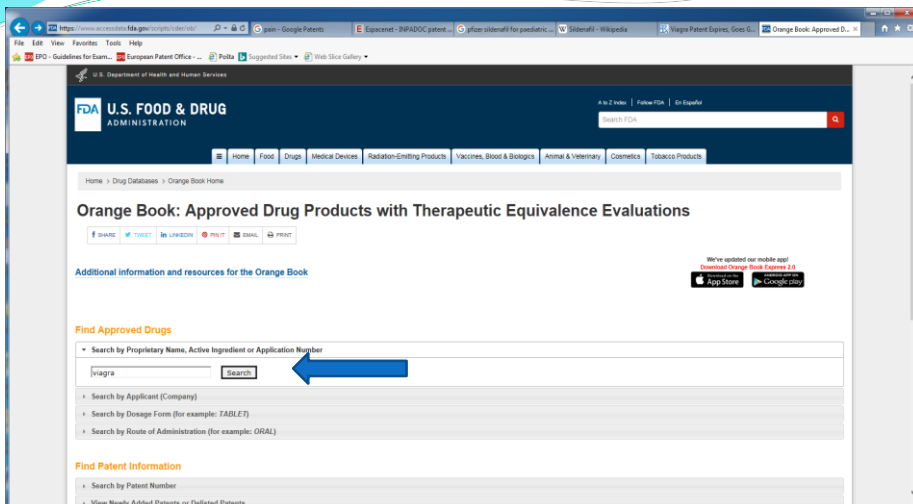


12/02/2018

Copyright by G. Turkalj

83

## Search Examples – Workshop: Example 2 – FDA web search & espacenet & PATENTSCOPE



12/02/2018

Copyright by G. Turkalj

84

The screenshot shows the FDA Orange Book search results for the proprietary name 'viagra'. The search returned 3 records. A blue arrow points to the first record, which is NDA 020895, a tablet formulation of Sildenafil Citrate. The table below shows the search results:

Drug Status	Active Ingredient	Proprietary Name	Appl No	Dosage Form	Route	Strength	TE Code	RLD	BS	Applicant Holder
RX	SILDENAFIL CITRATE	VIAGRA	N020895	TABLET	ORAL	EQ 25MG BASE		RLD		PFIZER IRELAND PHARMACEUTICALS
RX	SILDENAFIL CITRATE	VIAGRA	N020895	TABLET	ORAL	EQ 50MG BASE		RLD		PFIZER IRELAND PHARMACEUTICALS
RX	SILDENAFIL CITRATE	VIAGRA	N020895	TABLET	ORAL	EQ 100MG BASE		RLD	BS	PFIZER IRELAND PHARMACEUTICALS

12/02/2018

Copyright by G. Turkalj

85

The screenshot shows the product details for NDA 020895. A blue arrow points to the 'Marketing Status: Prescription' field. The details are as follows:

**Product Details for NDA 020895**

Expand all

VIAGRA (SILDENAFIL CITRATE)  
EQ 25MG BASE Marketing Status: Prescription

**Active Ingredient:** SILDENAFIL CITRATE  
**Proprietary Name:** VIAGRA  
**Dosage Form; Route of Administration:** TABLET; ORAL  
**Strength:** EQ 25MG BASE  
**Reference Listed Drug:** Yes  
**Reference Standard:** No  
**TE Code:**  
**Application Number:** N020895  
**Product Number:** 001  
**Approval Date:** Mar 27, 1998  
**Applicant Holder Full Name:** PFIZER IRELAND PHARMACEUTICALS  
**Marketing Status:** Prescription  
[Patent and Exclusivity Information](#)

VIAGRA (SILDENAFIL CITRATE)  
EQ 50MG BASE Marketing Status: Prescription

VIAGRA (SILDENAFIL CITRATE)  
EQ 100MG BASE Marketing Status: Prescription

12/02/2018

Copyright by G. Turkalj

86

**Orange Book: Approved Drug Products with Therapeutic Equivalence Evaluations**

Home | Back to Product Details

Additional Information about Patents

- Patent information is published on or after the submission date as defined in 21 CFR 314.53(d)(5).
- Patent listings published prior to August 18, 2003, only identify method-of-use claims. The listed patents may include drug substance and/or drug product claims that are not indicated in the listing.
- As of December 5, 2016, an NDA holder submitting information on a patent that claims both the drug substance and the drug product (and is eligible for listing on either basis) is required only to specify that it claims either the drug substance or the drug product. Orange Book users should not rely on an Orange Book patent listing, regardless of when first published, to determine the range of patent claims that may be asserted by an NDA holder or patent owner.

**Patent and Exclusivity for: N020895**

Product 001  
SILDENAFIL CITRATE (VIAGRA) TABLET EQ 25MG BASE

Product No.	Patent No.	Patent Expiration	Drug Substance Claim	Drug Product Claim	Patent Use Code	Deficit Requested
001	6469012	Oct 22, 2019			U-155	
001	6469012*PED	Apr 22, 2020				

**Exclusivity Data**

Product No.	Exclusivity Code	Exclusivity Expiration
There is no unexpired exclusivity for this product in the Orange Book database.		

Early in 2012, Pfizer was granted an additional six months of U.S. patent protection for Viagra, because the company is studying the effect of another one of its products containing Viagra's active ingredient, sildenafil, in children with pulmonary hypertension. With this latest development, Pfizer's patent for Viagra stands through April of 2020

12/02/2018

Copyright by G. Turkalj

87

**Espacenet Patent search**

Search Result list My patents list (0) Query history Settings Help

Smart search:  Smart search:  Siemens EP 2007

Advanced search:  Classification search:

**Access to Global Dossier and links to the European Patent Register and national registers**

The Espacenet interface displays Global Dossier icons and links to registers for certain authorities providing access to the Global Dossier and to register information, respectively. In order to avoid any ambiguity, access to Global Dossier and links to the registers have been separated. When you click on a Global Dossier icon, the behaviour is the same as in the European Patent Register. For links to a national register, the respective national (or EP) register window will open where linkages are available. For authorities where no link to a register is available, no link will be displayed. The Global Dossier link, when available, is displayed in the content area of the bibliographic view and in the INPADOC family view.

The Global Dossier service has now been extended to encompass further authorities participating in the WIPO CASE initiative. In addition to patent application documents, "file wrappers" from the world's five largest patent offices. It now also includes public dossiers from the Canadian Patent Office as well as PCT applications. The bibliographic and full text coverage tables have been improved to indicate changes in coverage. Refresh list sorting by publication date is now available.

For more details, please see the [release notes](#).

**Online products – need some answers?**

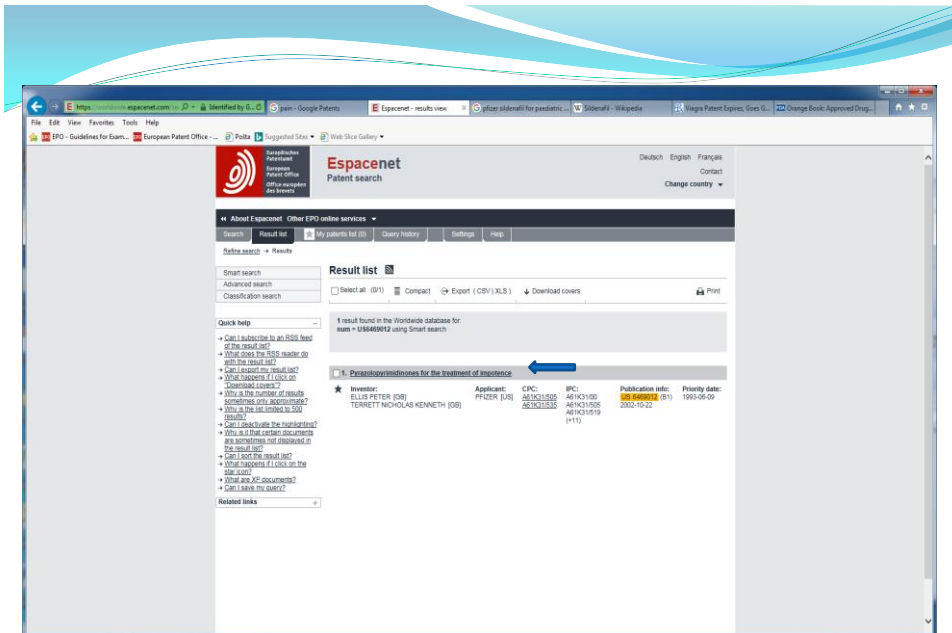
Use the [discussion forum](#) and get all the latest news and views about our online products. Read the register postings from the forum team, post your questions – and answer those of other users.

**Espacenet Intro**

12/02/2018

Copyright by G. Turkalj

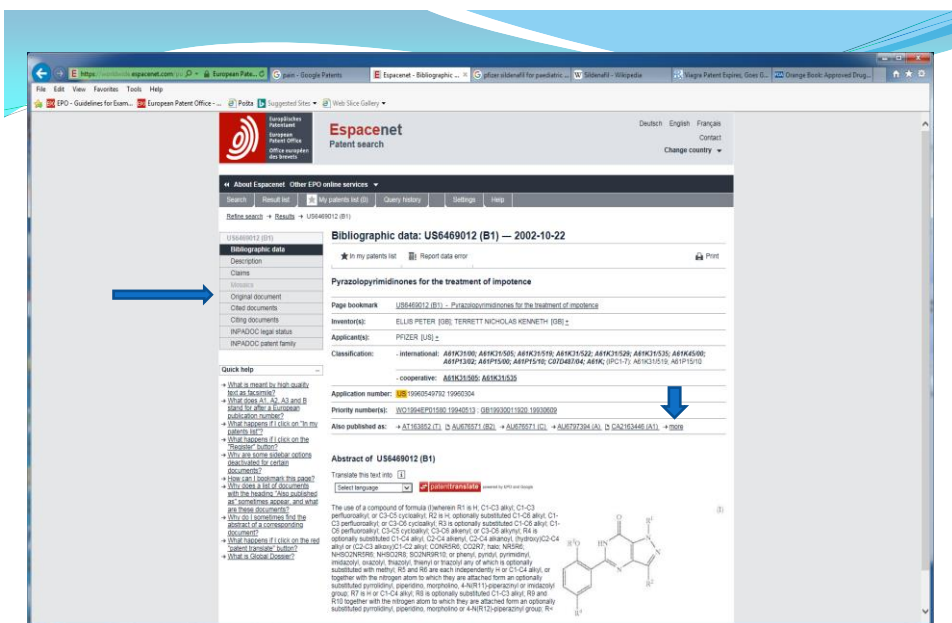
88



12/02/2018

Copyright by G. Turkalj

89



12/02/2018

Copyright by G. Turkalj

90

12/02/2018

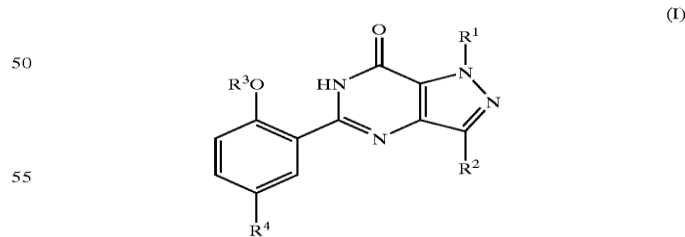
Copyright by G. Turkalj

91

## US6469012 B1 claims are directed to metoda of treatment erectile dysfunction

What is claimed is:

1. A method of treating erectile dysfunction in a male animal, comprising administering to a male animal in need of such treatment an effective amount of a compound of formula (I):



60 wherein:

$R^1$  is H;  $C_1-C_3$  alkyl;  $C_1-C_3$  perfluoroalkyl; or  $C_3-C_5$  cycloalkyl;

$R^2$  is H;  $C_1-C_6$  alkyl optionally substituted with  $C_3-C_6$  cycloalkyl;  $C_1-C_3$  perfluoroalkyl; or  $C_3-C_6$  cycloalkyl;

65  $R^3$  is  $C_1-C_6$  alkyl optionally substituted with  $C_3-C_6$  cycloalkyl;  $C_1-C_6$  perfluoroalkyl;  $C_3-C_5$  cycloalkyl;  $C_3-C_6$  alkenyl; or  $C_3-C_6$  alkynyl;

12/02/2018

Copyright by G. Turkalj

92

## Additional Search Examples – for individual exercising

The screenshot shows the Espacenet Advanced search page in Internet Explorer. The search criteria are as follows:

- Collection: Worldwide - collection of published applications from 90+ countries
- Title: plastic and bicycle
- Title or abstract: hair
- Title or abstract: azithromycin
- Publication number: WO2008014520
- Application number: DE19971031696

Annotations on the right side of the screenshot:

- Title or Abstract: **azithromycin,**
- Publication number: **EP,**
- Applicant: **Teva**

12/02/2018

Copyright by G. Turkalj

93

The screenshot shows the Espacenet Advanced search page in Internet Explorer. The search criteria are as follows:

- Collection: Worldwide - collection of published applications from 90+ countries
- Title: plastic and bicycle
- Title or abstract: hair
- Title or abstract: sildenafil and controlled release
- Publication number: WO2008014520
- Application number: DE19971031696

Annotations on the right side of the screenshot:

- Title or Abstract: **sildenafil and controlled release;**
- Publication number: **EP**

12/02/2018

Copyright by G. Turkalj

94

WIPO PATENTSCOPE

Search International and National Patent Collections

WORLD INTELLECTUAL PROPERTY ORGANIZATION

Search | Browse | Translate | Options | News | Login | Help

Home > IP Services > PATENTSCOPE

Simple Search

Using PATENTSCOPE you can search 30 million patent documents including 2.2 million published international patent applications (PCT). Detailed coverage information can be found here (->)

Front Page | verbanac | Office: All | Search

Join our webinar on machine translation tools on May 28 or 29 2013

Your opinion matters: please fill in our customer satisfaction survey on the PATENTSCOPE search service

12/02/2018 Copyright by G. Turkalj 95

## Simple Search

WIPO PATENTSCOPE

Search International and National Patent Collections

WORLD INTELLECTUAL PROPERTY ORGANIZATION

Search | Browse | Translate | Options | News | Login | Help

Home > IP Services > PATENTSCOPE

Field Combination

Front Page

AND WIPO Publication Number =

AND Application Number =

AND Publication Date =

AND English Title =

AND English Abstract =

AND Applicant Name =

AND International Class =

AND Inventor Name =

AND Office Code = wipo

AND English Description = sidanali and ritranali

AND English Claims =

AND Licensing availability =

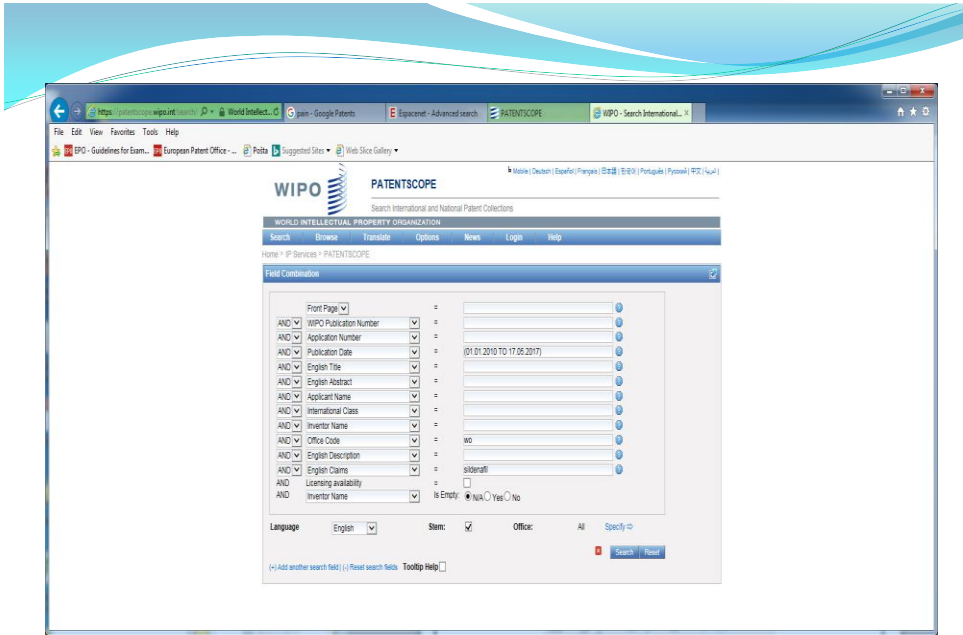
AND Inventor Name = Is Empty

Language: English | Sitem:  | Office: All | Specify: All

16 results | Search | Reset

12/02/2018 Copyright by G. Turkalj 96

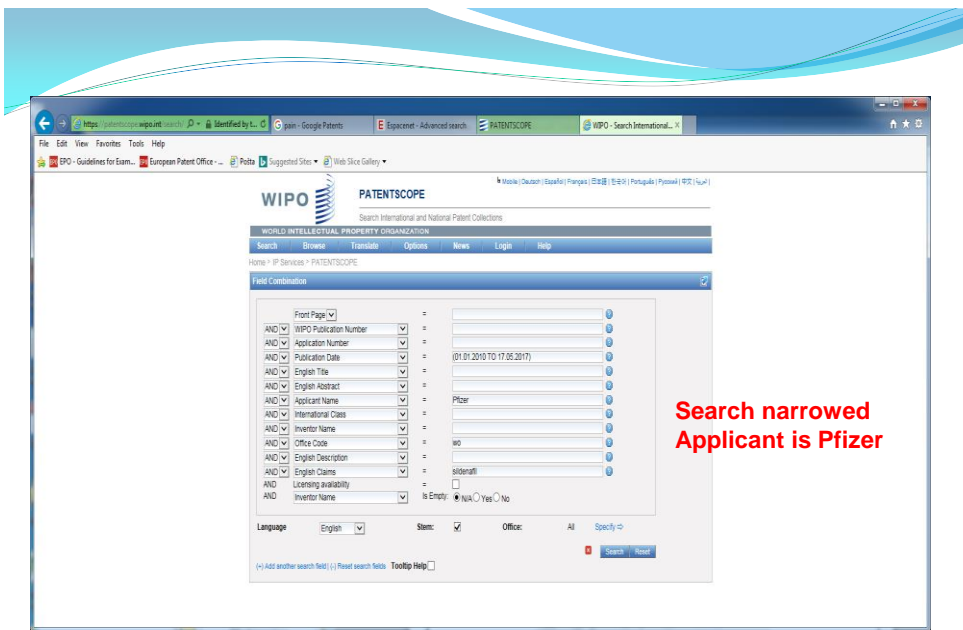
## Field Combination Search



12/02/2018

Copyright by G. Turkalj

97



12/02/2018

Copyright by G. Turkalj

98





**HVALA!**