EXTENDING THE TERM OF PHARMACEUTICAL PATENTS IN AUSTRALIA

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OUTLINE OF PRESENTATION

- Patent Term Extensions
  - **Legislation**
  - **Issues of interpretation**
  - **Case law**
  - **Products produced by rDNA technology**
  - **Autologous human cell and tissue products**

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PHARMACEUTICAL PATENT TERM EXTENSION PROVISIONS

Eligibility for Patent Term Extension

Patent must "in substance disclose" and claim (a) "a pharmaceutical substance ***per se***" OR (b) "a pharmaceutical substance when produced by a process which involves the use of recombinant DNA technology".

- Pharmaceutical substance means "a substance (including a mixture or compound of substances) for therapeutic use whose application (or one of whose applications) involves:
  (a) a chemical interaction, or physico-chemical interaction, with a human physiological system; or
  (b) action on an infection agent, or on a toxin or other poison, in a human body…"

A product "containing or consisting of" such pharmaceutical substance must be included in Australian Register of Therapeutic Goods (ARTG)

There must be more than five years delay between patent filing date and earliest ARTG date

PHARMACEUTICAL PATENT TERM EXTENSION PROVISIONS

Timing of Application

- Within 6 months of earliest ARTG date or patent grant date, whichever is later
- Must be filed during normal 20 year term of patent

Term of Extension

- Difference between earliest ARTG date and filing date minus 5 years, subject to 5 year maximum EQUIVALENT TO
- An expiry date 15 years from earliest ARTG date subject to 25 year maximum term

Effect of Extension

- Whole patent extended
- During extended term patent only enforceable in relation to unauthorised exploitation of pharmaceutical substances *per se* (or as produced by rDNA) which are claimed and in substance disclosed **for human therapeutic use**.

PHARMACEUTICAL PATENT TERM EXTENSION PROVISIONS

Spring-boarding/Bolar provisions

From 28 July 1999 – 24 October 2006

- For extended patents it is not an infringement to exploit any pharmaceutical substance *per se* (or as produced by rDNA technology) in substance disclosed and claimed in the patent solely for purposes of supporting ARTG registration or obtaining similar regulatory approval overseas [from date of grant of extension]

From 25 October 2006

- General infringement exemption now applies to all pharmaceutical patents regardless of existence of patent term extension [only exception is when patent is extended and the pharmaceutical substance is exported for purposes associated with gaining regulatory approval]

PHARMACEUTICAL PATENT TERM EXTENSION PROVISIONS

Issues of Interpretation/Operation

- Can applications be filed late?
- What is meant by "pharmaceutical substance *per se*"?
- What is meant by "included in the ARTG"?
- What is meant by "in substance disclosed"?
- How much of the substance needs to be in the registered good?

EXTENSION OF TERM DECISIONS

Boehringer Ingelheim International Cases

- Case #1 Application filed within six months of start date, but after expiry of patent (Ipratropium bromide)
  - Attorney failed to note application was divisional, dating from parent
  - Normal term expired two weeks prior to filing date of extension application
  - Extension of time refused due to exclusion in regulations

- Case#2 Application filed on patent claiming a container containing an aerosol or spray composition in form suitable for nasal administration (Atrovent nasal-Ipratropium bromide)
  - Container and contents not "pharmaceutical substance *per se*"
  - Decision upheld by Federal Court and Full Federal Court
  - Leave to appeal to High Court was not granted

EXTENSION OF TERM DECISIONS

LTS Lohman Therapie-Systeme GmbH

- Patent claimed a transdermal patch having features allowing controlled release of 17[Beta] Estradiol for HRT
- Examiner refused extension and hearing requested
- Extension refused
- Not a "mixture" of substances, due to controlled spatial arrangement of components
- Not a "compound" of substances, because no chemical bond between the components, i.e. compound means chemical compound
- Caused difficulty with patents relating to capsules or tablets having controlled spatial arrangement of components

EXTENSION OF TERM DECISIONS

Prejay Holdings Ltd v Commissioner of Patents

- Patent related to method of hormonally treating menopausal or post-menopausal disorders by continuously administering a combination of progestogen and estrogen
- Prejay argued that patent claimed pharmaceutical substance per se since only reasonable use of combination would infringe due to contributory infringement provisions
- Extension refused by Patent Office
- Patentee appealed to Federal Court
- Extension refused

EXTENSION OF TERM DECISIONS

Zentaris Aktiengesellschaft

- Claims directed to lyophilisate of polypeptide, Cetrorelix, characterised by general process steps, including dissolving in acetic acid and lyophilising
- Specification described a particular morphological form of the peptide that could not be reasonably described with reference to structural characteristics, e.g. folding etc.
- According to information submitted in connection with extension, a particular concentration of acetic acid was required to get morphological form of registered product
- Extension allowed on basis of omnibus claim (directed to examples) since example described the particular concentration of acetic acid

EXTENSION OF TERM DECISIONS

Pfizer Inc. v Commissioner of Patents

- Pfizer had previously extended a selection patent relating to the oral or intravenous antifungal agent VFEND (voriconazole)
- Pfizer then sought to extend an earlier generic patent which encompassed voriconazole, but which did not specifically describe the compound.
- Pfizer argued that voriconazole was in substance disclosed in earlier generic patent, and that the existence of the selection patent was irrelevant to that determination
- Hearing officer equated "in substance disclosed" test with "fair basis" test
- Extension refused and appeal to Federal Court
- Extension allowed by Federal Court on basis that "in substance disclosed" test is "a lesser requirement" than fair basis test

EXTENSION OF TERM DECISIONS

Merck & Co, Inc. v Arrow Pharmaceuticals

- Patent claimed metabolite of Lovastatin (originally claimed lovastatin but limited to metabolite due to prior claim by Sankyo)
- Extension based on export listing for Mevacor (Lovastatin, but analysis showing presence of 0.2% metabolite)
- Patent Office refused extension after opposition by Arrow, so Merck appealed to Federal Court
- Merck argued that (i) Lovastatin fell within the scope of the claims since only reasonable use of Lovastatin produced metabolite, therefore contributory infringement and (ii) Listed product contained metabolite
- Second argument was accepted by Federal Court and the extension allowed

EXTENSION OF TERM DECISIONS

Pfizer Corp v Commissioner of Patents

- Case concerned 4 patents relating to amlodipine (NORVASC) and eletriptan hydrobromide (REPLAX)
- Patents were extended on basis of first registrations in ARTG
- Commissioner became aware of earlier "Export Only" listings in ARTG and amended regulations to provide power to amend term of extension on the patent register
- The Commissioner issued a notice setting out intention to reduce the terms of the patents by between 10 and 13 months, and in the case of one patent, to an extension of "zero"
- After unsuccessful hearing, and unsuccessful appeal to the Federal Court, Pfizer appealed to Full Federal Court
- Appeal dismissed on basis that export listing is relevant ARTG inclusion for calculating term of extension

EXTENSION OF TERM DECISIONS

Sanofi-Aventis

- Patent claimed a pharmaceutical formulation comprising zolpidem in a controlled release dosage form adapted to release active according to biphasic *in vitro* dissolution profile
- Extension requested based on STILNOX CR bi-layered tablet having intermediate release layer and prolonged release layer
- Patent Office refused extension and hearing requested (with hearing officer with pharmaceutical background)
- Extension allowed
- Claims are directed to pharmaceutical substance *per se* because, although formulation not a mixture of substances, the formulation does represent a "compound" of substances, as that term is used in the pharmaceutical arts

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EXTENSION OF TERM DECISIONS

Alphapharm P/L v H Lundbeck (24 April 2008)

- Patent claims (+)-citalopram (escitalopram) and method for preparation
- Extension of term requested and granted (5 years) on basis of ARTG registration of LEXAPRO (containing escitalopram)
- Alphapharm (and Arrow) argued that earlier registration of CIPRAMIL (containing racemate) was earliest in respect of product containing escitalopram. [In an earlier proceeding before patent office the Delegate of the Commissioner determined that the relevant product was CIPRAMIL and this proceeding in part was an appeal from that decision]
- Federal Court held that CIPRAMIL contains (+)-citalopram and that all reference to extension of term should be removed from register
- No opportunity to recalculate extension based on CIPRAMIL registration, but reasons for this not provided
- Appeal to Full Federal Court unsuccessful, and leave to appeal to High Court refused

EXTENSION OF TERM DECISIONS

Alphapharm P/L v H Lundbeck

- Extension of time of more than 10 years granted by IP Australia to file new application based on CIPRAMIL [A product the patent doesn't cover!]
- Alphapharm P/L unsuccessfully appealed to AAT and Full Federal Court
- Alphapharm P/L obtained leave to appeal to High Court on question of whether Regulations allow extensions of time for filing PTEs
- According to Patent Act 1990 extensions of time are not available for "prescribed" acts
- According to Regulation 22.11(4)(b) the following is a prescribed act:

  "filing, during the term of a standard patent under subsection 7(2) of the Act, an application under subsection 70(1) of the Act for an extension of term of the patent"
- The extension of time was granted by High Court and Lundbeck obtained extension of term based on CIPRAMIL.

PRODUCTS PRODUCED BY rDNA TECHNOLOGY

Extensions may be available for claim to process for making pharmaceutical substances

- If rDNA involved in the process (even if not mentioned in claim)
- Or, if process only way to describe product (Zentaris AG decision)
- AU Patent 678613

> Claim 1: In a method for preparing a vaccine comprising an immunogenic construct and a pharmaceutically acceptable carrier, the improvement comprising producing the immunogenic construct by a process comprising
>
> a) activating at least one first carbohydrate-containing moiety with an organic cyanylating reagent; and
>
> b) covalently joining said activated carbohydrate-containing moiety to a second moiety.

- Extension allowed in this case, as well as for method of making vaccine comprising combining a protein antigen with an adjuvant (AU Patent 2002330681 - Novartis Vaccines and Diagnostics S.r.l.)

AUTOLOGOUS HUMAN CELL AND TISSUE PRODUCTS

Changes to Biologicals Regulatory Framework for Human Cell and Tissue (HCT) Products (1 July 2018)

- Pre-July 2018 certain categories of autologous HCT products were *not* considered to be therapeutic goods under the TGA.
- Increased risk associated direct-to-consumer therapeutic services based on little-to-no clinical trial data to establish safety and/or efficacy *e.g.*, stem cell therapy for the treatment of osteoarthritis, infertility, sports injuries, MS, etc.
- Post-July 2018 regulation of the majority of HCT products as biologicals under the TGA, requiring registration on the ARTG.
- Under the new framework, autologous HCT products are classified as:
  - Excluded from regulation by the TGA;
  - Exempt from some regulatory requirements; or
  - Fully regulated by the TGA as a biologic.

AUTOLOGOUS HUMAN CELL AND TISSUE PRODUCTS

What is regulated as a biological?

- A "thing" made from, or that contains, humans cells or tissues, or live animal cells, tissues or organs and that is used to treat or prevent disease, diagnose a condition, alter physiological processes, determine susceptibility to a disease, or replace or modify body parts.
- Includes tissue-based products, cell-based products (*i.e.*, genetically modified), immunotherapy products containing human cells, combination products (*i.e.*, cell therapy and medical device), autologous human cells and tissue products (including stem cells)

- Autologous HCT products registered on the ARTG satisfy the "pharmaceutical substance" requirement and are therefore eligible for patent term extension under Australian law (*e.g.* KYMRIAH - CAR-T Therapy).

THANK YOU

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