

## Evergreening

### Introduction

“Evergreening” is an inherently pejorative term. It is used by some to convey the false impression that research-based pharmaceutical companies abuse the patent system by obtaining patents on what are characterised as “minor” improvements to existing medicines in order to prevent competition by delaying the legitimate market entry of generic products. The accusation is made without producing evidence that “evergreening” has had any impact on patients or markets.

The accusation of evergreening is based on a number of fallacies:

- that improvement patents are not justified within patent law. This is not true. Improvement patents, for pharmaceutical and other products, are only available if they meet the normal requirements of patentability (ie. that they are new and involve an inventive step) as assessed by trained patent examiners;
- that improvements subject to later patents are not medically important and should not be encouraged. The patent system is a significant method of providing incentives to improve products and for supporting innovation generally; that is its function. The importance of patented improvements is assessed by the market and clinical demand;
- that later improvements delay generic competition. That is not true as the patent system will allow for generic versions of the basic product to compete with the improved product.

### Basic Principles of the Patent System

The patent system provides an incentive for commercial operators to incur the cost and risk of research and to disclose information that might otherwise be kept secret. It does this by providing a time-limited exclusive right to commercialise a product which is novel (in the sense that it was not known prior to the invention) and inventive (in the sense that it was not obvious at the time it was invented). If the alleged innovation is neither new nor inventive, no patent should be granted; and if it is granted, it can be successfully challenged.

Patent law does not distinguish between inventions consisting of “brand new products” (for example, a new compound) and inventions relating to improvements (for example, a new formulation of the compound): the same criteria for patentability apply. Only if the subject matter is found to be novel and inventive will a patent be granted. Thus pharmaceutical and other companies only obtain patents on developments or modifications of products if those developments or modifications are objectively considered by an independent and skilled agency to meet the requirements for patent protection. A patent on the development or modification will only give rights to that development or modification.

Further, the scope of the invention for which the exclusive right is granted is in broad terms commensurate with the scope of the scientific advance it reflects. Thus, a patent for a brand new product (pharmaceutical or otherwise) may give exclusive rights which are broader than

a patent for an improvement of that product, which will only protect the modification. This is illustrated below.

It is also worth noting that not only those who develop an original product file patent applications relating to developments or modifications of their products. Many applications are filed by other companies, including generic companies.

## **Secondary patents as a “barrier” to generic competitors**

Patents for modifications of existing products, or “secondary patents”, are necessarily narrower in scope than what goes before. It follows that, following expiry of an earlier patent, a secondary patent cannot preclude a generic competitor from selling products defined in that earlier patent and which are not covered by the secondary patent.

For example, if the innovator markets product X for disease Y which is covered by a patent on the molecule, once the patent on the basic molecule expires, a generic competitor will be able to sell product X. If the originator company also develops and patents a slow-release formulation, the generic will be able to sell the standard formulation during the remaining term of the slow release patent. It is the medical community that will decide whether any price premium for the slow release product is worth paying.

Equally, if a patent for use of the product to treat a second disease is granted, following expiry of the first patent, the generic competitor will be able to market the product for use in the treatment of the first disease.

## **Patents as a Reflection of Technological Progress- A GSK Example**

The principles relating to requirements for, and scope of, a patent underpin the patent system and provide incentives to undertake research while allowing for legitimate competition following patent expiry. A simple example will illustrate these points.

Lamictal™ is an anticonvulsant medication (active ingredient: lamotrigine) which is sold by GlaxoSmithKline (GSK) for use in the treatment of epilepsy in adults and children. It is also used as a maintenance therapy for certain patients with bipolar disorder. The patent for the active ingredient was applied for in 1980 and expired in many countries in 2000. In some countries a patent term extension was obtained. In the UK for example it expired in 2005.

Lamictal™ is marketed as tablets which are to be swallowed with a little water, and as chewable/dispersible tablets which may be swallowed, chewed or dispersed in water or diluted fruit juice (swallowing the resulting liquid dispersion). A patent for the chewable/dispersible tablet formulation of lamotrigine was applied for in 1992 and will expire in most countries in 2012. A chewable/dispersible tablet has advantages for patients in terms of ease of use and compliance.

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™ Lamictal is a trade mark of the GlaxoSmithKline group of companies.

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An earlier patent, relating to lamotrigine itself as a chemical entity and active ingredient, has already expired in many countries, for example in all European countries. The invention is therefore now available for third parties to use in those territories. This means that generic lamotrigine can be made and sold as tablets to be taken with water to compete with the GSK product Lamictal™. Several such generic products are being sold, and the market can therefore choose between the original GSK product or a generic version (government regulations in the different countries will determine the extent to which pharmacies, doctors, hospitals and even patients can exercise that choice – in some countries the generic version is mandated under certain circumstances).

The existence of the second patent means that generic producers may not yet make a chewable/dispersible tablet which is the same as that sold by GSK without infringing our patent. However, this does not mean that there are no generic chewable/dispersible lamotrigine tablets available. As is always the case for second (and subsequent) patents protecting later-invented aspects of a pharmaceutical product, this patent provides narrower and/or different protection. In this case, it is quite specifically tailored to the GSK formulation. It is therefore open to competitors to design a different formulation which will achieve the same effect and be acceptable as an alternative to the medicines regulatory authorities, but which will not infringe the patent.

The development of a non-infringing competitor product is often referred to as “designing around” the patent. Several competitor chewable/dispersible tablets, containing generic lamotrigine but utilising different dispersing technology from that used in the GSK product, are already on the market and competing with Lamictal™ chewable/dispersible tablets.

So not only does GSK’s secondary patent on chewable/dispersible formulations allow competition from “ordinary” tablets, it also allows competition from other types of chewable/dispersible formulations which fall outside the patent. And some of these other types may themselves be patentable. So by allowing patents for secondary developments, the patent system provides incentives for companies which may not have the commercial or scientific capability to invent and develop new chemical entities to engage in incremental innovation. For example, many Indian companies, including historically generic companies, are increasingly involved in this area of activity.

In the case of Lamictal™, GSK believes that its product offers certain advantages over these alternative formulations, but all can compete in the same market – it is for the market to determine the success or otherwise of each product.

## **Data exclusivity and evergreening**

It is sometimes claimed that innovative companies will delay launching a product until close to the end of patent term and then rely on data exclusivity to provide “evergreened” market protection.

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This is simply not the case. Innovative companies seek to launch products as soon as it is commercially viable to do so. There is almost always competition within therapeutic areas from a number of drugs available from different companies. Delaying market entry is not commercially attractive as it risks the market being satisfied by those competitive drugs.

Further, currently most data exclusivity laws do not provide a period of data protection for most types of improvements.

## **Conclusion**

The patent system provides an incentive to innovate while allowing competition through copying after the term of the patent expires. And, importantly, it does so in a way which works well given how most innovation in fact takes place. There is comparatively little “groundbreaking” innovation. Most innovation represents an improvement over what already exists. One only has to look at the advances in the last 30 years in such areas as computing, electronics, communications, pollution control etc to see that this is true.

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