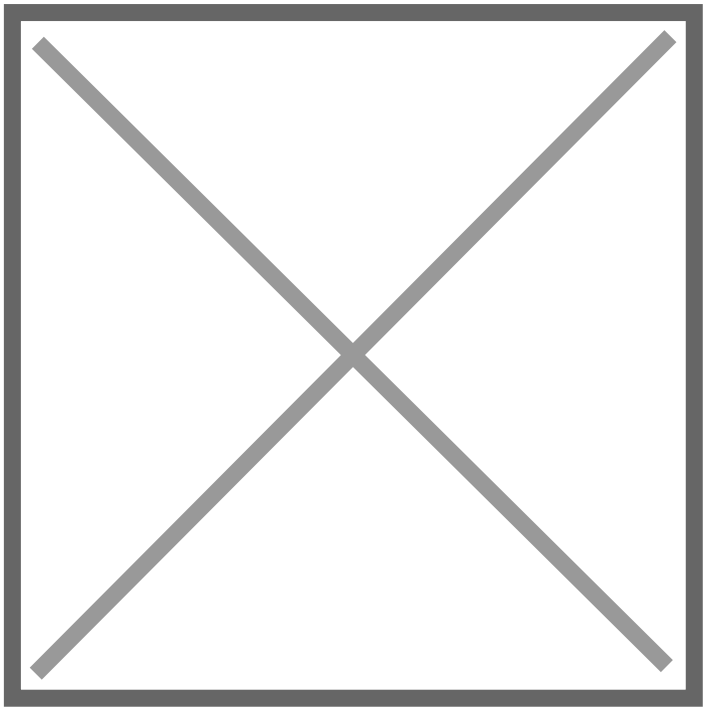
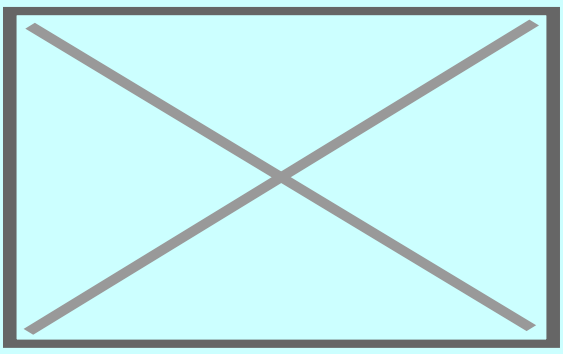


On Einstein's tracks: Dependent patents & selection inventions

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Dr Thomas Westphal and Dr Ralf D Kirsch

A lot of findings that come up in R&D may be patentable in Europe, even if they fall into a broader range of a pre-existing "ruling" patent.

Patents, which cannot be used without falling into the scope of another "ruling" patent, are so-called "dependent patents". The comments of Albert Einstein on "dependent patents" concerning a patent case in the year 1919 are still valid today. Dependent patents in the biotech field are often based on a "selection invention", where a selection of a narrow region having surprising effects is made within a broader, known region (e.g. certain dose ranges of a pharmaceutical formulation, enzymes etc.). Selection inventions are usually patentable and this works particularly well as a European patent. Unfortunately, one exception is Germany, where the national case law on selection inventions is more restrictive.

Thoughts of Albert Einstein on dependent patents

Did you know that Albert Einstein, the famous physician, was employed as a patent examiner at the Swiss Patent Office? If not, you will be even more surprised to learn that he was also a much valued expert in patent infringement proceedings, e.g. in the case, Anschuetz & Co. contra. Kreiselbau-Gesellschaft mbH., which was on the infringement of a patent granted in 1917 for an airplane part.

The Einstein expert opinion on this has been published (The Collected Papers of Albert Einstein, Volume 7, The Berlin Years: Writings, 1918-1921, Doc.21, Court Expert Opinion in the Matter of AnschÃ?Â¼tz & Co. contra Kreiselbau-Gesellschaft mbH., Princeton University Press 2002) and it is of particular interest with regard to selection inventions as biotech or pharmaceutical patents.

After Einstein had commented on the questions raised in the infringement proceedings in his expert opinion, he explained his model on a "dependent invention".

The dilemma of an inventor who owns a "dependent invention" is that he cannot work his invention (independent of whether it is patented or not). This is because the dependent invention falls into the scope of the ruling patent, the owner of which has a prohibitive right that is granted by the patent. This is in line with one fundamental rule of patent law, i.e. to exclude others from using the invention.

Thus, it is not surprising that disputes as in the infringement proceedings mentioned above, in which Einstein gave his infringement opinion, as well as during licensing negotiations do occur. Here, the owner of the dependent invention is dependent on the goodwill of the owner of the ruling patent, which is usually accomplished in return for services such as the payment of licensing fees.

The owner of the dependent patent (e.g. on a "selection invention") can strengthen his position vis-Ã?Â -vis the owner of the ruling patent by filing a patent application for his dependent invention himself, which could be effectively used in the negotiations. Still, the owner of the ruling patent would have a prohibitive right also for the dependent patent. That means that without the approval of the ruling patent's owner, it is not possible for the owner of the dependent patent to "work" the invention. The way out of this dilemma is usually by exchanging licences ("cross licensing") by which both of the parties allow each other to commercially use the respective invention against the payment of a licence fee. If the licensing negotiations are not successful the dependent patent (e.g. on a "selection invention") can often only be commercially exploited after the ruling patent has lapsed. This, however, is usually too late for a return on investment. The additional possibility of a "compulsory license" on a ruling patent is not further discussed here.

> Einstein speak
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> "... To each invention described in a patent belongs a certain region G of options on how to realize the patented invention. Let us think of said region G as a certain, limited area of a plane of all possibilities ... Subject-matter that is part of the invention can be thought of as a point (black circle) within said region G.
>
> Would the inventor of the patent that is protecting the region G have complete knowledge of all the possible embodiments of the invention, he would indeed be without any doubt the intellectual owner of all possible embodiments of his invention. In real life, however, the inventor never has a complete overview on all the possible embodiments of his invention. In a way, he does not know about all of the points in his region G, but only about a certain limited number of points of this region. However, there can be embodiments of the invention of which the inventor himself had not thought of, and which bring about novel, characteristic technical advantages (the finding of valuable points P or subregions of the region G, which had not previously been seen). In such a case, one can speak of a "dependent invention". The question of whether to assign an inventor of a "dependent invention" any rights is not to be discussed by myself; this is up to the attorneys ...".

Selection inventions are important in biotech

What is now exciting about all this is that "selection inventions" are particularly important in the biotech and pharmaceutical area. As an example, let us assume that there is a ruling patent of a company A that protects an organic or biological compound X for the treatment of a disease Y (unlike in India, medical use claims are possible in Europe). The upper limit of the daily dose is given in the patent as 20 mg, and the examples in the patent disclose daily doses of 15, 18 and 20 mg. However, the R&D of a competitor, company B, has found to their big surprise that compound X is at least 100 times more effective when it is administered to the patient in a daily dose of only 1-3 mg (let us disregard the molecular mechanism that may be the basis for this). First, this subregion of 1-3 mg is narrow in comparison to the known, patented region (up to 20 mg). Second, it is distant from the examples of the known, patented region (15, 18 and 20 mg) and third, it is not a randomly chosen subregion Ã¢â?¬â?? instead it is a purposive selection of a region, since it could be shown that the surprisingly high

effectiveness can only be seen in that particular subregion of 1-3 mg (in contrast to an arbitrary selection). Such a "selection invention" is patentable in Europe, as has been laid down in one of the hallmark decisions of the Technical Boards of Appeal of the EPO (T 198/94, Hoechst/Thiochloroformates, OJ EPO, 1985, p.209). These three criteria for a selection invention have been the basis for more recent decisions of the EPO. Obviously, a lot of variations of this example could be envisaged, e.g. selection of other doses (units of enzyme, doses of particular factors or other parameters).

What this means for a biotech or pharmaceutical company in India is that a lot of findings that come up in R&D may be patentable in Europe, even if they fall into a broader range of a pre-existing "ruling" patent.

A German problem - no patents for selection inventions in Germany

Although the option of a selection invention is open for European Patents, there is a problem: the German part of this European patent is unlikely to last very long, since German case law has not accepted the principle of a "selection invention" (i.e. the German part is open to attack by a nullity suit in Germany). In short, German courts have taken the view that e.g. 1-3 mg is comprised in "up to 20 mg" and therefore an invention on that subregion a priori cannot be novel. Other countries in Europe, e.g. the UK, do have a practice of granting patents for selection inventions that is similar to the EPO practice.

One can only hope that German case law will slowly come closer to the EPO practice of granting patents for selection inventions. Inventors all over the world who have made tremendous efforts in R&D deserve it.

About the authors

Dr Ralf D Kirsch studied biology in Konstanz, Germany, and went into research in molecular biology and cellular and molecular immunology at the University of Cambridge, UK, where he did his PhD. After his science period in Cambridge, he did a postdoc at the Max-Delbrueck-Centre for Molecular Medicine in Berlin, Germany, also in the field of cellular and molecular immunology (kirsch@glawe.de).

Dr Thomas Westphal studied biology in Moscow and spent years in research in genetics, molecular biology and biochemistry at the Lomonossow University in Moscow as well as at the Martin Luther University in Halle, Germany. He is active in the field of patents and trademarks.

Claus Becker has been working with GLAWE DELFS MOLL since 2007. He studied aerospace engineering at the University of Stuttgart, Germany. Claus Becker is working on intellectual property cases in the fields of medical engineering and laboratory technology.