The Rhineland Biopatent Gazette

brought to you by Michalski Huettermann & Partner Patent Attorneys - Issue 1/2017

Duesseldorf/Munich, **28 February 2017** The times they are a'changing – particularly in the Biopatent discipline. Biopatent professionals live in a quickly developing world, which is sometimes hard to keep pace with. Michalski • Huettermann & Partner Patent Attorneys have decided to produce relief to this situation, and are proud to present a new information service related to Patent issues in Biotechnology. This newsletter issues on an irregular basis in order to provide information with respect to actual events, as well as in-depth-analyses of long-term developments. Patent Attorneys from our firm explain the meaning of recent developments and decisions affecting the Biopatent community, and provide expert insight into what's going on behind the scenes. In this issue, we will discuss a recent development in the epic CRISPR Cas dispute, and refer to some UK court decisions related to 2nd generation antibody patents.

CRISPR Cas interference decided in favor of Broad

Yet, appeal possible

In Issue 9/2016 we reported about an agreement between CRISPR Therapeutics, Intellia Therapeutics, Caribou Biosciences, and ERS Genomics, together with their licensors, University of Vienna and UC Berkeley, in which the parties undertook to streamline and coordinate prosecution and defense of what they call the "foundational patent portfolio" protecting CRISPR/Cas9, which is mainly based on WO2013176772.

In some way, this agreement can also be considered to be an anti-Broad coalition, in view of the pending interference between UC Berkeley and Broad Institute.

You'd better replace "pending" by "was pending". On Feb 15, 2017, the Patent Trial and Appeal Board (PTAB) announced that there was actually no interference between UC Berkeley (who claimed inventorship of Broad's US Patent Nos 8697359, 8771945, 8795965, 8865406, 8871445, 8889356, 8895308, 8906616, 8932814, 8945839, 8993233, 8999641, and U.S. Patent Application Serial No. 14/704,551, hence dismissing UC Berkeleys interference action.

The PTAB found that the „parties claim patentably distinct subject matter, rebutting the presumption created by declaration of this interference".

The Board went on by statng that „the evidence shows that the invention of such systems in eukaryotic cells would not have been obvious over the invention of CRISPR-Cas9 systems in any environment, including in prokaryotic cells or in vitro, because one of ordinary skill in the art would not have reasonably expected a CRISPR-Cas9 system to be successful in a eukaryotic environment.

The Board emphasized that „Broad provided sufficient evidence to show that its claims,

Antibody cases at UK courts

straightforward and refreshing arguments, yet oftentimes quite anti-patentee

Because of lengthy opposition proceedings at the EPO, in particular when many opponents exist, biosimilar manufacturers seeking quick legal certainty do oftentimes demand a declaratory judgement from a UK court (unfortunately, the German Federal Patent Court does not admit invalidity actions against the German parts of EP patents as long as a respective opposition procedure is pending, while UK Courts do)

Well, in antibody oppositions there are usually more than two opponents, and thanks thereto, UK courts have handeled quite a few cases related to antibody patents – oftentimes revealing a rather critical attitude towards 2nd or higher generation antibody patents, plus, sometimes, remarkable reasonings, which we want to share with you today:

In [2014] EWHC 1094 (Pat), a dosage patent related to Genentech's Trastuzumab was at stake. EP(UK)1210115, claimed a 8 mg/kg loading dose and 6 mg/kg triweekly follow up doses. The patent was eventually invalidated for lack of inventive step, in view of the published FDA-approved regime of a 4 mg/kg loading dose and subsequent 2 mg/kg weekly doses

To make a long story short, the patent was revoked for obviousness. In the first instance, Justice Birss stated that a *"clinician would consult with the pharmacokinetics expert and decide to go ahead with a trial of a 3-weekly dosing schedule and select the claimed doses."* In the second instance ([2015] EWCA Civ 57)), Justice Floyd went even further, in stating that *"pharmacokinetics was not a field hat was slavish to calculations and that clinical variability meant that such dosage regimens were always likely to fall within a range."*

The latter statements are certainly oversimplifying the art of developing and establishing a dosage regimen that carefully weighs up patient compliance, therapeutic efficacy and side effects. Still, the ruling may generally affect the validity of dosage patents, in particular when prior art exists that discloses an earlier dosage regimen roughly similar to the claimed regimen. It is, however, not necessarily relevant for dosage patents that refer to the first dosage of an active ingredient, i.e., where there is no prior art benchmark to compete within terms of non-obviousness.

+ from our firm +

10. Rhineland Biopatent Forum (June 8, 2016): Speaker list is now complete

The 10th Rhineland Biopatent Forum will take place June 8, 2016, in our premises in Duesseldorf.

The speaker list is now complete:

- Dr. Ranjit Ranbhor, Dy. General Manager IPR, Sun Pharmaceutical Industries Ltd, India, will speak about the changing role, and acceptance, of IP in India, in particular for the Indian Pharma Industry
- Atushi Shiomi, PhD, JP Patent Attorney, Tsukuni & Associates, will preset new options for 2nd medical use claims in Japan
- Tilman Breitenstein, Director DSM Innovation Center Intellectual Property, Delft, will discuss the use of Trade Secrets in Biotech
- Violeta Georgieva, LL.M., Legal and Regulatory

which are all limited to CRISPR-Cas9 systems in a eukaryotic environment, are not drawn to the same invention as UC's claims, which are all directed to CRISPR-Cas9 systems not restricted to any environment", hence suggesting that Broad's patents (with Feng Zhang as inventor) would relate to inventions dependent on UC Berkeley's own CRISPR Cas portfolio (with Emanuelle Charpentier and Jennifer Doudna as inventors).

The decision does not affect patentability and ownership issues of UC Berkeley's patent application – instead, it does rather support their patentability.

Hence, the new development could result in a standoff situation, where both parties need licenses from one another, resulting in a de-facto patent pool – something that has been demanded by scientific writers in 2016 already (see issue 9/2016 of this Gazette).

Such pool might be necessary also in view of the huge investments that have already been made. So far, the Boston-based CRISPR companies Editas (licensee of Broad's patents), Intellia and CRISPR therapeutics (licensees of UC Berkeley's patent applications) have acquired more than 1 bn USD of funding, *inter alia*, from venture capital firms.

In a press release of Feb 15, Broad Inst expresses their satisfaction with the decision. They then declare that they believe CRISPR should be available to the scientific community to advance understanding of the biology and treatment of human disease, and that they would be willing to provide free licenses to the worldwide academic community, only to add that for commercial and human therapeutic research use, they would offer an inclusive innovation model.

In a press release of the same day, UC Berkeley emphasized instead that the PTAB „clears way for UC Berkeley to receive patent on CRISPR-Cas9 gene editing". They further announced their disagreement with the Board's finding that Broad's patents would rely on an indepenendet invention, and that they would check all options to overturn the decision.

Neither of the two parties seem to actually suggest, in their press releases, the establishment of a patent pool, but who knows what's going on behind the scenes ?

The PTAB decision does not necessarily have an impact on the co-pending oppositions against Broad's patents in Europe. However, the point that Charpentier/Doudna are assumed to be the inventors of the technology *per se*, while Broad's Zhang is assumed to have invented the transfer into eukaryote, will not go unnoticed by the EPO.

Yet as reported in this Gazette, Issue 7/2016, UC Berkeley's EP regional phase application, EP2800811, was objected for lack of clarity. After UC Berkeley defended the claims, the examining division declared

In [2014] EWHC 3857 (Pat), Justice Birss had to determine whether a novel formulation for Genentech's Trastuzumab would be inventive. The respective patent claims (EP(UK)1516628 and EP(UK)2275119) comprised a relatively long list of ingredients, and were hence novel.

However, J. Birss objected what he thought would be too formal in the EPO's could/would approach.

We all know that if the claimed combination is not directly disclosed in the prior art (e.g., all features but one in one document and the remaining feature in another related document), e.g., when the lacking feature is simply in the routine of the skilled person, an inventive step attack is quite an uphill battle. J Birss puts his discomfort towards such situation like this:

„The law of obviousness cannot be accurately summarised simply by stating that the question is whether the skilled person *would* have arrived at the claimed invention, not whether they *could* have. (…) Real skilled teams faced with trying to formulate lyophilised trastuzumab would do many different things. They would have their own personal experience and idiosyncrasies and their own resource limitations. (..) It is not true to say that a real team *would* arrive at a formulation consisting of polysorbate 20, histidine and trehalose. It would be idle to pretend otherwise (…). But (…) the claimed result can be reached by the application of nothing other than routine approaches applied to excipients which were part of their common general knowledge. In my judgment on the facts of this case that is correct."

In [2016] EWHC 3383 (Ch), Justice Carr had to deal with a situation where Samsung and FKB had demanded a negative declaratory judgement against two 2nd generation patents assigned to AbbVie, EP(UK)2940044 and EP(UK)1944322, protecting second generation embodiments of their blockbuster adalimumab.

AbbVie argued it would submit to revocation of all EP (UK) patents concerning dosage regimen and formulation, and demanded to not continue the proceedings. AbbVie went on that it would be an abuse to use the resources of the UK court to resolve a dispute that has no connection with the UK anymore, to obtain relief to influence other jurisdictions.

Justice Carr did not follow this demand. He referred to AbbVie's patent filing strategy which he believed is a cat and mouse game, comprising strategic withdrawals and new filings of divisional applications, with the only goal to keep uncertainty for biosimilar manufacturers at a constantly high level:

„The judge at trial may well conclude that AbbVie has consistently adopted a policy of publicly expressing its confidence in its Humira patent portfolio, and its intention to enforce it against competition from biosimilars, *whilst at the same time shielding patents within the portfolio from scrutiny by the court*. The trial judge may take the view that when patent protection is abandoned by AbbVie, another sub-divisional is applied for, thereby *perpetuating commercial uncertainty*. (...) In my view, there is a real prospect that the judge at trial may consider that the grant of the declarations would serve a useful purpose, namely, *to make it more difficult for AbbVie to continue this strategy* (...). It may be considered that AbbVie is *"willing to wound and yet afraid to strike"* and that the time has come to put its professed confidence in its ability to prevent biosimilar competition to the test.

These are clear words I would say, just like in the two other decisions. Although one does not necessarily have

Manager, EuropaBio, Brussels will present the European Commission's notice on certain articles of the Biopatent Directive 98/44

- Dr. Bettina Wanner, Bayer Intellectual Property GmbH, will speak about the Unitary Patent and risks and advantages through the eyes of a Pharma inhouse counsel

Further, there will be sufficient time to network with biopatent colleagues.

We will send out invitations by February 2017. Those of you who are already interested to attend can however make a prenotation here.

Feedback please !

What do you think about this newsletter? Let us have your comments here.

Archive

To obtain a neat overview of the quickly changing world of Biopatents, find prior issues of the Rhineland Biopatent Gazette here.

its consent with the claims on file In Dec 2016, but shortly thereafter two 3rd party observations were filed by anonymous parties, in which mainly lack of clarity and enablement were objected. UC Berkeley has very briefly replied thereon in January 2017. We will wait and see what happens.

to agree with the judges' opinions in all three cases, the straightforwardness of their argumentation is actually refreshing.

It adds some real life tone to the decisions – something we sometimes miss in decisions by the EPO, or the German Courts.

EURIPTA® EEIG is getting personal... Today: Federico Corradini – Studio Corradini

Federico joined studio Corradini in 1998. He handles trade marks and designs and is specialized in registration procedures in Italy and abroad, prior searches, oppositions and cancellation actions, licensing, contracts and registration procedures of domain names specializing on novelty searches. He can be reached under federico.corradini@corradini.it.

MICHALSKI · HÜTTERMANN & PARTNER

Imprint: Michalski · Hüttermann & Partner Patent Attorneys, c/o: Dr. Ulrich Storz - email: st@mhpatent.de

Hafenspitze - Speditionstrasse 21 - 40221 Düsseldorf - Tel.: +49 (0)211 159 249 0 - Fax: +49 (0)211 159 249 20
Nymphenburger Strasse 4 - 80335 München - Tel.: +49 (0)89 208 027 274 - Fax: +49 (0)89 208 027 275