Medical Treatment Patent Claims Held Patentable Subject Matter Under the Alice/Mayo Section 101 Test

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In Vanda, the Federal Circuit affirmed the district court’s finding that the asserted claims of U.S. Patent No. 8,586,610 (“the ‘610 Patent”) were valid and infringed. The ‘610 patent relates to a method of treating schizophrenia patients with a drug called iloperidone, where the dosage range is based on the patient’s genotype. The cytochrome P450 2D6 gene (“CYP2D6”) encodes an enzyme known to metabolize iloperidone. The ‘610 Patent teaches “that treatment of a patient, who has a lower CYP2D6 activity than a normal person, with a drug [such as iloperidone] that is pre-disposed to cause QT prolongation and is metabolized by the CYP2D6 enzyme, can be accomplish[ed] more safely by administering a lower does of the drug than would be administered to a person who has normal CYP2D6 enzyme activity.” ‘610 Patent, col. 2, ll. 15-21. QT prolongation can lead to serious cardiac issues in a patient.

The Challenged Claims and Invention
The ‘610 Patent is directed to treatment of patients who are poor metabolizers of CYP2D6. The claimed invention reduces the side effects associated with QT prolongation, thus enabling safer treatment of patients with schizophrenia who have this genotype. Claim 1 is representative, and reads:

“A method for treating a patient with iloperidone, wherein the patient is suffering from schizophrenia, the method comprising the steps of:

- determining whether the patient is a CYP2D6 poor metabolizer by:
- obtaining or having obtained a biological sample from the patient; and

performing or having performed a genotyping assay on the biological sample to determine if the patient has a CYP2D6 poor metabolizer genotype; and

if the patient has a CYP2D6 poor metabolizer genotype, then internally administering iloperidone to the patient in an amount of 12 mg/day or less, and

if the patient does not have a CYP2D6 poor metabolizer genotype, then internally administering iloperidone to the patient in an amount that is greater than 12 mg/day, up to 24 mg/day,

wherein a risk of QTc prolongation for a patient having a CYP2D6 poor metabolizer genotype is lower following the internal administration of 12 mg/day or less than it would be if the iloperidone were administered in an amount of greater than 12 mg/day, up to 24 mg/day.”

‘610 Patent, col. 17, ll. 2-25.

Vanda owns a New Drug Application (“NDA”) for Fanapt®, the FDA approval for which was based in part on the invention disclosed in the ‘610 patent.

The patent challenge arose out of defendant West-Ward’s Abbreviated NDA (“ANDA”) that sought approval to manufacture and sell a generic version of Fanapt®. Defendant certified in a subsequent amendment that the ‘610 Patent was invalid or not infringed (a similar certification was earlier made regarding a related patent but the Federal Circuit did not address that patent as no appeal from the district court’s ruling related to that patent was taken). In a bench trial on Vanda’s patent infringement action, the district court rejected both the jurisdictional and substantive arguments of defendant, finding the ‘610 Patent valid and that defendant was liable for inducing infringement. The Federal Circuit affirmed on a number of grounds, but the ruling on defendant’s unsuccessful patent ineligibility argument under Section 101 patentable subject matter will be the sole focus of the balance of this post.

**Patent-Eligibility**

Defendant argued that the ‘610 Patent is invalid for failing to be directed to patent-eligible subject matter because the asserted claims are directed to a natural relationship between iloperidone, CYP2D6 metabolism, and QT prolongation, and add nothing “inventive” to those natural laws and phenomena. The defendant argued
that, the asserted claims here were virtually indistinguishable from those found not patentable in the U.S. Supreme Court decisions in Association for Molecular Pathology v. Myriad Genetics, Inc., 569 U.S. 576 (2013) and Mayo Collaborative Services v. Prometheus Laboratories, Inc., 566 U.S. 66 (2012).

Vanda responded that the asserted claims are patent-eligible under Section 101 at both steps of the applicable two-part test.

The Federal Circuit’s Analysis – The Majority View

In analyzing patent-eligibility under Section 101, the Federal Circuit cited the two-part framework established by the U.S. Supreme Court as recited in Alice Corp. Pty. v. CLS Bank Int’l, 134 S. Ct. 2347, 2355 (2014) (“Alice”). Step one of the test requires a determination “whether the claims at issue are directed to one of the patent-ineligible concepts of laws of nature, natural phenomena and abstract ideas.” Slip Op. at 27-28. If the claims are found not to be directed to a patent-ineligible concept, the court need not proceed to step 2 of the analysis.

The Federal Circuit determined that the challenged claims were not directed to patent-ineligible subject matter under step 1 of the two-part Alice/Mayo test. The Federal Circuit focused on the treatment element of the claims and noted that unlike the challenged Mayo claims, the ‘610 Patent claims are directed to a novel treatment method. The Mayo claims, in contrast, were directed to a diagnostic method based on the “relationships between concentrations of certain metabolites in the blood and the likelihood that a dosage of thiopurine drug will prove ineffective or cause harm.” Slip Op. at 29. The representative Mayo claim recited:

“A method of optimizing therapeutic efficacy for treatment of an immune-mediated gastrointestinal disorder, comprising:

(a) administering a drug providing 6-thioguanine to a subject having said immune-mediated gastrointestinal disorder; and

(b) determining the level of 6-thioguanine in said subject having said immune-mediated gastrointestinal disorder,

wherein the level 6-thioguanine less than about 230 pmole per 8 X 10⁸ red blood cells indicates a need to increase the amount of said drug subsequently administered to said subject and

wherein the level of 6-thioguanine greater than about 400 pmol per 8 X 10⁸ red blood cells indicates a need to decrease the amount of said drug subsequently administered to said subject.”


Relying on its decision in Rapid Litig. Mgmt. Ltd. V. CellzDirect, Inc., 827 F.3d 1042 (Fed. Cir. 2016), the Federal Circuit stated that “it is not enough to merely identify a patent-ineligible concept underlying the claim; we must determine whether that patent-ineligible concept is what the claim is directed to. . . . If the claims are not directed to a patent-ineligible concept at step one, we need not address step two of
the inquiry.” Slip Op. at 28. Thus, while the ‘610 Patent claims did recite a law of nature, the court determined that the claims as a whole were directed to an eligible concept – treatment of a specific disease. In contrast to the Mayo claims which recited the administration of a thiopurine drug to a patient, the Federal Circuit determined that ‘610 Patent claims as a whole were not directed to the application of a drug to treat a disease. Slip Op. at 28-29.

The Federal court also found support in the Supreme Court’s affirmation that application ineligible concepts are still patent-eligible, noting that “‘[u]nlike, say a typical patent on a new drug or a new way of using an existing drug, the patent claims do not confine their reach to particular applications of those laws.’” Id. In sum, the Federal Circuit characterized the ‘601 patented invention and claims as a treatment method and not a law of nature that is judicially excluded from patent protection.

The Federal Circuit also determined that also unlike the Mayo claims, the ‘610 claims are not a preemption concern, the ‘610 Patent claims do not tie up subsequent treatment decisions. In Mayo, the Federal Circuit stated, a doctor could violate the claim even if he did not actually alter his treatment decision and therefore, would tie up the doctor’s subsequent treatment decisions whether or not the treatment does or does not change in light of the inference he has drawn using the correlations. Slip Op. at 30.

The Federal Circuit also focused on the fact that the ‘601 Patent claims recited particular dosage amounts, a further distinguishing fact from the Mayo claims.

**Chief Judge Prost’s Dissent**

In Chief Judge Prost’s strong dissent, he opined that the majority incorrectly relied on the claims’ recitation of specific applications of the discovery underpinning the patent claims. This, he asserted, conflates the inquiry at step one with the search for the inventive concept at step two.

Chief Judge Prost also dismissed the majority’s reliance on the dosage limitation of the claim by noting the Mayo claim’s recitation of specific metabolite levels in the patient’s blood as a comparative numerical limitation that did not rescue the Mayo claim from invalidation by the Supreme Court. Rather, he stated that similar to the Mayo claim, the ‘610 Patent claims are “no more than an optimization of an existing treatment of schizophrenia, just as the claims in Mayo concerned ‘optimizing therapeutic efficacy’ of thiopurine drugs. Mayo warned ‘drafting effort[s] designed to monopolize the law of nature itself.’” Slip Op. dissent at page 5, quoting 566 U.S. at 77.

**CellzDirect Still Good Law**

Even though the majority and the dissent disagreed on the validity of Vanda’s claims, each agreed that the court’s decision in CellzDirect is consistent with its analysis and conclusion. Vanda’s claims, the majority noted, are similar to the invention claimed in CellzDirect which was held patent-eligible as a new and useful method of preserving hepatocyte cells. The mere fact that the subject matter of the
claims could undergo a natural process did not make the claim “directed to” that natural ability. Slip Op. at 31. “Otherwise, claims directed to actually ‘treating cancer with chemotherapy’ or ‘treating headaches with aspirin’ would be patent ineligible.” Id.

The dissent did not disagree with the majority’s reliance on the language and application of the Alice/Mayo two-part test in CellzDirect, but rather opined that Vanda’s claim could be distinguished from the claims at issue in CellzDirect. Agreeing that CellzDirect recited a patent-eligible invention because the end result of the claims was more than the observation or detection of the ability of hepatocytes to survive multiple freeze-thaw cycles the dissent did not reach the same end result. The dissent noted that in contrast, the end result of the ‘610 Patent claims are no more than the conclusion of a natural law. “The fact that a reduction of iloperidone dosage in poor metabolizers ... may reduce QTc prolongation is both the means and the ends of this claim.” Slip Op. dissent at 8.

**Useful Guidance for Patent Drafters**

The majority’s opinion affirmed that method of treatment claims can be patent-eligible, even if the claim recites a natural law. Indeed, a determination that the claim as a whole at step one of the two-part eligibility test eliminates the need for an analysis to determine that the claim recites something more than the natural law itself. In addition, the majority’s reliance on the dosage elements in the claims also encourages the recitation of dosage ranges in patent claims where appropriate.

**Who Got it Right?**

The majority and dissent each provided a reasoned and persuasive analysis. However, this author thinks that the majority got this one right. Method of treatment claims typically rely on a preliminary test or analysis of the patient. For example, one would not give a chemotherapy drug to a healthy patient. The patient must at some point have been tested and determined to been suffering from cancer and therefore be in need of such treatment. Thus, the fact that a patient had been tested prior to treatment should not prevent patenting of medical therapies. Whether the use of a chemotherapeutic the drug to treat the disease is a patentable invention is within the ambit of a prior art analysis, not patent-eligibility.

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