Federal Court  Cour fédérale

Date: 20120705

Docket: T-1184-10

Citation: 2012 FC 740

Ottawa, Ontario, July 5, 2012

PRESENT: The Honourable Mr. Justice Zinn

BETWEEN:

FOURNIER PHARMA INC. and
FOURNIER LABORATORIES IRELAND LTD.

Applicants

and

THE MINISTER OF HEALTH,
ALKERMES PHARMA IRELAND LIMITED
and SANDOZ CANADA INC.

Respondents

*** PUBLIC REASONS FOR JUDGMENT AND JUDGMENT**
(Confidential Reasons for Judgment and Judgment released June 15, 2012)

Notice of Compliance proceedings "should not be likened to actions for determining validity or infringement but are of the nature of proceedings in judicial review, to be held expeditiously, whose aim is to determine whether the Minister is free to issue the notice of compliance requested:" *Apotex Inc v Canada (Minister of National Health and Welfare)*, [1997] FCJ No 1251 (FCA), at para 6.

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* As is customary, the Reasons for Judgment were issued as Confidential Reasons to the parties who were then provided with an opportunity to make submissions regarding redaction of confidential information. Those submissions were considered and the Public Reasons reflect the redactions the Court views as necessary in order to protect confidential information.

I would add that because the scope of the proceeding is confined to administrative purposes only and not a final determination that may be made following a trial, it is reasonable for the Court to expect that the parties will focus their submissions, both written and oral, on the one or two or three serious, credible issues in dispute. These proceedings ought not to be seen as an occasion for parties to throw everything at the applications judge in order to see what might "stick."

Reasons are issuing contemporaneously in two related applications: T-1184-10, Judgment 2012 FC 740, and T-991-10, Judgment 2012 FC 741. Both deal with the drug fenofibrate; however, each involves a different patent. Both were brought into play as a result of Sandoz Canada Inc. seeking permission to market its fenofibrate composition in Canada. The result in one application is not determinative of the other, although some substantive and procedural issues are common to both. A Table of Contents follows.

TABLE OF CONTENTS

PARA.

OVERVIEW

The Proceeding and its Background

[1] Fournier Pharma Inc. markets LIPIDIL EZ in 48 mg and 145 mg tablets. The active pharmaceutical drug in LIPIDIL EZ is fenofibrate which reduces LDL (bad) cholesterol and increases HDL (good) cholesterol in patients.

[2] Sandoz Canada Inc. (Sandoz) has sought approval from the Minister of Health (Minister) to market Sandoz Fenofibrate E (the Sandoz Tablet), its generic version of LIPIDIL EZ. In its Abbreviated New Drug Submission (ANDS) filed with the Minister, Sandoz referenced LIPIDIL EZ "for the purpose of demonstrating bioequivalence or bioavailability characteristics" of the Sandoz Tablet. Three patents are listed on the register in respect of LIPIDIL EZ: Canadian Patent 2,219,475 (the '475 Patent), Canadian Patent 2,372,576 (the '576 Patent), and Canadian Patent 2,487,054 (the '054 Patent).

[3] The *Patented Medicines (Notice of Compliance) Regulations,* SOR/93-133, as amended (*PMNOC Regulations*) provide that the person seeking a Notice of Compliance (NOC) (Sandoz in this case), referred to in the legislation as the "second person," must serve a Notice of Allegation (NOA) on the person who filed the new drug submission that is referenced in its ANDS (Fournier Pharma Inc. in this case), referred to in the legislation as the "first person."

[4] Sandoz served a separate NOA in respect of each of the above referenced patents. Fournier Pharma Inc. commenced three separate applications in this Court each seeking an order, pursuant to subsection 6(1) of the *PMNOC Regulations*, prohibiting the Minister from issuing a NOC to Sandoz

in connection with its orally administered 48 mg and 145 mg tablets containing fenofibrate, until after the expiration of the relevant Canadian patents. Fournier Laboratories Ireland Ltd., a co-owner of the '054 Patent, joined with Fournier Pharma Inc. as applicants in this application (collectively Fournier). The three applications, and the patents at issue are as follows:

a. Court File T-991-10 filed June 24, 2010, in relation to the '576 Patent;

b. Court File T-1054-10 filed June 30, 2010, in relation to the '475 Patent; and

c. Court File T-1184-10 filed July 22, 2010, in relation to the '054 Patent.

[5] Court File T-1054-10 was discontinued by Fournier on January 25, 2012. The application in Court File T-1184-10 was heard the week commencing March 26, 2012, and Court File T-991-10 was heard the following week. Each application was heard separately; however, as noted below, an Order was issued prior to the hearings directing that some of the evidence filed in one proceeding could be referenced by the parties in the other proceeding.

[6] Unless Fournier is granted an order of prohibition, the Minister is prohibited from issuing a NOC to Sandoz until twenty-four (24) months after this proceeding commenced, i.e. until July 22, 2012, unless prior to that date the Court declares that the '054 Patent is invalid or if one of the other conditions in paragraph 7(2)(b) of the *PMNOC Regulations* apply.

[7] Sandoz alleges that the Sandoz Tablet does not infringe the '054 Patent because the size of the fenofibrate particles in the Sandoz Tablet do not fall within the fenofibrate particle size range set out in the claims of the '054 Patent. It further submits that to the extent of any infringement, the '054 Patent is invalid.

[8] The respondent Alkermes Pharma Ireland Limited (Alkermes), a co-owner of the '054 Patent, filed a record in this proceeding but no Memorandum of Fact and Law, and made no oral submissions. Its counsel attended the hearing.

Burden of Proof

[9] Subsection 43(2) of the *Patent Act*, RSC 1985, c P-4 provides that an issued patent is presumed to be valid "in the absence of any evidence to the contrary." In a proceeding under the *PMNOC Regulations* if there is evidence in the record that, if accepted, is capable of establishing the invalidity of the patent, then the burden is on the applicant to establish on a balance of probabilities (the civil standard) that the allegations of invalidity are not justified: *Abbott Laboratories v Canada (Minister of Health)*, 2007 FCA 153. Such evidence is in the record in this proceeding; accordingly, the issue for the Court is whether Fournier has proved on the balance of probabilities that all of the allegations raised by Sandoz are not justified.

The Drug and the '054 Patent

[10] Fenofibrate is known to reduce bad cholesterol in the blood and the risk of a heart attack; however fenofibrate comes with two central problems. First, it is almost insoluble in water. As a result, the patient must take large doses if an effective quantity of fenofibrate is to make its way into the blood stream. Second, the pharmacokinetics (the absorption and distribution) of fenofibrate vary on whether the patient takes it when in a fed or in a fasted state. It is better absorbed when taken in a fed state and particularly when taken with fatty foods. Dr. Mayersohn described as "diabolical" the fact that the patient is instructed to take fenofibrate with fatty food when the patient,

on a low cholesterol diet, is otherwise instructed to avoid fatty food. The '054 Patent is directed to the problem of bioequivalence in the fed and fasted states.

[11] The disclosure of the '054 Patent, entitled "Nanoparticulate Fibrate Formulations" describes these challenges and asserts that "[t]he present invention satisfies these needs." It explains that:

> Because fibrates, including fenofibrate, are so insoluble in water, significant bioavailability can be problematic. In addition, conventional fibrate, including fenofibrate, formulations exhibit dramatically different effects depending upon the fed or fasted state of the patient. Finally, conventional fibrate, including fenofibrate, formulations require relatively large doses to achieve the desired therapeutic effects. There is a need in the art for nanoparticulate fibrate formulations which overcome these and other problems associated with prior conventional microcrystalline fibrate formulations. The present invention satisfies these needs.

The '054 Patent

[12] Fournier asserts that the Sandoz Tablet infringes two separate sets of claims: "(a) claims 10, 27- 28, and 38 as they depend on claims 1-3; and (b) claim 20 which it alleges specifically covers Sandoz's 145 mg tablet." The relevant claims from the '054 Patent are reproduced in Appendix A.

THE EVIDENCE

[13] The filing of evidence was partially reversed: Fournier and Alkermes filed their evidence on infringement and their factual evidence on invalidity first. Sandoz then filed all of its evidence on the application and Fournier and Alkermes then filed their responding expert evidence on invalidity.

[14] Fournier filed two affidavits, both sworn by its proposed expert, Dr. Fernando Muzzio: the first dealing with the issue of infringement and the second dealing with issues relating to invalidity.

Alkermes filed two affidavits: the first sworn by Dr. Stephen B. Ruddy, one of the inventors named in the '054 Patent, and the other by Dr. Cory J. Berkland, who performed dissolution tests on the Sandoz Tablet. Sandoz filed affidavits sworn by its proposed four experts: Dr. Grégoire Leclair, Dr. Abu Serajuddin, Dr. Isadore Kanfer and Dr. Michael Mayersohn. It also filed an affidavit of Deborah Zak, a law clerk, attaching as exhibits the prior art referenced by Sandoz in its NOA and an affidavit of Christoph Heinemann, a law clerk, attesting that samples of the Sandoz Tablet were delivered to Fournier and Alkermes. As is discussed below, Sandoz urged the Court to draw an adverse inference from the fact that Fournier filed no test data on the Sandoz Tablets that had been provided to it.

Person of Ordinary Skill in the Art (POSITA)

[15] The identification of the POSITA identifies the person or group of persons to whom the patent is addressed. Because the patent is addressed to the POSITA, that person may assist the Court which is unlikely to have familiarity with the subject matter of the patent. However, that assistance is limited, as was observed by Justice Hughes in *Merck & Co v Pharamscience Inc*, 2010 FC 510, at para 70:

> Experts may assist in two ways; first they may inform the Court as to the knowledge that a person skilled in the art would have had at the relevant time, so as to bring that knowledge to bear reading both the description and the claims; second, an expert may assist in explaining any technical terms not within the experience expected of a Court.

[16] Fournier's expert, Dr. Fernando Muzzio, attests that the POSITA "would have a PhD in pharmaceutics along with 1-3 years of experience in the area of formulation of pharmaceutical products. Alternatively, the POSITA could have a Masters degree in pharmaceutics with 5-7 years

of experience in the area of formulation of pharmaceutical products." That description of the relevant POISTA does not vary significantly from that offered by Sandoz's experts and I accept it as a statement of the qualifications of the POSITA. It is the same description accepted to be the POSITA in T-991-10.

Expert Evidence Filed By Fournier

Dr. Fernando Muzzio (On Infringement)

[17] Dr. Muzzio has a B.Sc. in Chemical Engineering from the University of Mar del Plata, Argentina, and a Ph.D. from the University of Massachusetts in Chemical Engineering. He is a Professor II of Chemical Engineering at Rutgers University and teaches a course called Pharmaceutical Unit Operations which includes lectures on size reduction of particles and milling. He directs a staff of approximately 130 persons at the National Science Foundation Engineering Research Center (NSFERC) where he oversees projects relating, in part, to nanoparticle stabilization of pharmaceutical products. As part of NSFERC's industrial mentor program, he interacts and collaborates closely with an additional 120 representatives. He is also the Director of the National Science Engineering and Research training program in Nanopharmaceutical Engineering at Rutgers University. Additionally, he teaches courses for industry and regulatory agencies such as the U.S. Food and Drug Administration and he has authored approximately 200 peer-reviewed scientific papers and book chapters on subjects which include powder mixing fundamentals and mixing and segregation in tumbling blenders.

[18] In Dr. Muzzio's affidavit on infringement, he says that Sandoz's allegation that the Sandoz Tablet would not infringe any claims of the '054 Patent is incorrect. He provides his reading of the

claims in the '054 Patent and notes that Sandoz's only allegation of non-infringement with respect to claims 1-3 and 24-31 is:

> The dispersion used to prepare the Sandoz tablets prior to formulation in the solid dosage form (the tablet) comprise particles which are not fenofibrate *per se* and/or which particles are not within the claimed particle size ranges. Furthermore, the Sandoz Tablets once formulated and in final dosage forms do not comprise particles of fenofibrate *per se* in the claimed particle size range.

[19] Dr. Muzzio reviews the manufacturing procedure of the Sandoz Tablet and refers to various figures and tables in Sandoz's ANDS relating to the particle size of the fenofibrate and says that he has no doubt that the particle size of the fenofibrate in the Sandoz Tablet are within the '054 Patent's claimed ranges. Finally, he notes that there are no manufacturing steps […]

[…]

[…] such that the Sandoz Tablets, once formulated and in final dosage form, do not comprise particles of fenofibrate *per se* within the claimed particle size distribution range.

[20] Dr. Muzzio responds to Sandoz's allegation that claims 13-16 are not infringed because the procedure to measure T_{max} is not defined in the '054 Patent by pointing out that T_{max} could be measured as part of a procedure well known as of May 2004.

[21] Dr. Muzzio responds to Sandoz's allegation that claims 34-38 would not be infringed because the Sandoz Tablet does not have the dissolution required by providing a table illustrating the fenofibrate dissolution in the Sandoz Tablet and noting that it does fall within all of the ranges in claims 34-38.

[22] […]

[…]

[…]

[…] .

Dr. Fernando Muzzio (On Validity)

[23] Dr. Muzzio opines that the inventive concept of the '054 Patent is that: (a) it has essentially the same bioavailability in the fed and fasted states; (b) the D50 particle size of fenofibrate is less than about 200 or 150 nm; (c) it has a rapid dissolution rate; (d) it redisperses to a particle size no larger than 2 μm; and (e) it permits reduced dosing.

[24] Dr. Muzzio says that none of the prior art referenced by Sandoz discloses or enables the POSITA to come to the inventive concept of the '054 Patent. Moreover, he says that the inventive concept of the '054 Patent would not have been obvious to the POSITA. In his opinion, the POSITA was unaware that it was possible to achieve essentially the same bioavailability in the fed and fasted state with fenofibrate compositions. The prior art included many attempts to reduce the food effect, but no one achieved what the '054 Patent claimed and achieved, the elimination of the food effect. He notes examples in the '054 Patent which, in his opinion, compel the conclusion that the 145 mg fenofibrate formulation of the invention would be bioequivalent to the prior art 200 mg formulation.

[25] Dr. Muzzio states that the different aspects of the inventive concept are what render the '054 Patent useful. He disagrees with Sandoz's allegation that the '054 Patent lacks sound prediction.

He says that the particle size was predicted through Examples 5 and 6 in the '054 Patent; guidance was given for the choice of surface stabilizers as the '054 Patent stated the preferred stabilizers and referenced the *Handbook of Pharmaceutical Excipients*; and the reduced dosage could be predicted through Example 8.

[26] Dr. Muzzio disagrees with the Sandoz experts who opined that the inventors of the '054 Patent were not entitled to claim any fenofibrate composition apart from the precise composition in Example 5 of the '054 Patent. Dr. Muzzio highlights and relies on one of the statements in the description which reads:

> The following examples are given to illustrate the present invention. It should be understood, however, that the invention is not to be limited to the specific conditions or details described in these examples.

According to Dr. Muzzio, the POSITA would have understood that the claimed invention was not the formulation of Example 5, but rather that fenofibrate compositions with the claimed particle sizes can be made and will achieve bioequivalence in the fed and fasted states.

[27] Dr. Muzzio writes that the '054 Patent provided a sound line of reasoning to predict that other surface stabilizers not found in the stated example would likewise be effective. He notes that the dissolution profile was not overly broad and was demonstrated in Example 8. Similarly, he notes that the particle sizes were shown in Tables 1, 4, 5 and 7.

[28] Dr. Muzzio addresses and disagrees with Dr. Kanfer's statement that the boundaries of the claims are undefined. In Dr. Muzzio's opinion, the POSITA would have understood that the invention was limited to phospholipid-free compositions, for oral administration, with

bioequivalence in fed and fasted states. No undue experimentation would be required to come to formulations covered by the invention described in the ‘054 Patent.

Expert Evidence Filed By Sandoz

Dr. Grégoire Leclair

[29] Dr. Leclair has a Ph.D. in Pharmaceutical Sciences from Université de Montréal, where he is currently employed as an Assistant Professor. His current research includes nanoparticulate compositions for active ingredients which have poor solubility in water.

[30] Dr. Leclair notes that the only examples in the ‘054 Patent which are shown to exhibit bioequivalence in the fed and fasted states are Examples 5 and 6 which relate to tablets containing 160 mg nanoparticulate fenofibrate. In his opinion, the POSITA would not understand any of the other ranges of particle size to be bioequivalent in the fed versus fasted states and therefore, in his view, the particle ranges claimed in the ‘054 Patent are too broad. Similarly, he says that the redispersion of the particle size is too broad because the claims do not contain a limitation. The claims in the ‘054 Patent merely state that redispersed particle sizes can be determined with reference to another U.S. patent.

[31] Dr. Leclair says that the lack of limitations relating to surface stabilizers in the claims of the ‘054 Patent also renders the claims of the ‘054 Patent too broad. He notes that all the preferred formulations set out in the ‘054 Patent use as surface stabilizers docusate sodium (DOSS) and hypromellose, and he says that the POSITA would know that the inventors could not predict which

other stabilizers would provide compositions that are bioequivalent in the fed versus fasted states; because, as the '054 Patent indicates, not all stabilizers will work.

[32] Additionally, Dr. Leclair advances that there is no sound line of reasoning given as to why particle sizes under 2 µm would work, nor as to why other surface stabilizers could be effective. Dr. Leclair also notes that the '054 Patent does not describe how to measure the particle size in the composition.

[33] Finally, Dr. Leclair says that Dr. Muzzio's assertion that the fenofibrate in the Sandoz Tablet has the same particle size as in the suspension used in the process to make the tablet is not correct. In his opinion, aggregation will inevitably occur […]
[…] . Dr. Leclair describes a procedure he designed in order to determine the minimum particle size of the fenofibrate in the Sandoz Tablet and states that Dr. Muzzio has wrongly assumed that there is no agglomeration in the Sandoz Tablet. Dr. Leclair's results show that the mean size of the fenofibrate in the Sandoz Tablet is greater than […] , with a D50 greater than […] and a D90 greater than […] . Moreover, […]
[…]
[…] .

[34] Lastly, Dr. Leclair disagrees with Dr. Muzzio that the inventors of the '054 Patent solved the food effect problem by making very small particles. Dr. Leclair states that the inventors did not demonstrate any comparison to other particle sizes. Also, he challenges Dr. Muzzio's statement that: "The inventors report that the nanoparticlulate fenofibrate tablet of the invention was as

effective at a dosage of 160 mg as the 200 mg dosage available in the prior art." Dr. Leclair notes that the inventors state that:

> Finally, as shown by the data in Table 16, below, administration of a 160 mg nanoparticulate fenofibrate tablet in a fasted state is not bioequivalent to administration of a 200 mg conventional microcrystalline fenofibrate capsule (TRICOR®) in a fed state. This is because CI 90% for the two treatments is outside 0.80 to 1.25 for AUC and C_{max} [emphasis by Dr. Leclair].

Dr. Abu Serajuddin

[35] Dr. Serajuddin obtained his Bachelor in Pharmacy at Dhaka University in 1967, his Masters of Science in pharmaceutics from Colombia University in 1976 and his Ph.D. in Industrial Pharmacy from St. John's University in 1982. His thesis related to solubility and dissolution of poorly soluble drugs. Since September 2008 he has been a Professor of Industrial Pharmacy at St. John's University. Prior to joining St. John's University, Dr. Serajuddin worked for more than 30 years in the pharmaceutical industry in a variety of positions relating to the development of drug formulations.

[36] Dr. Serajuddin explains the general knowledge of the POSITA at the relevant time and states that the advantages described in the '054 Patent as set out below "described the usefulness of the invention of the '054 Patent promised by the inventors:"

> (1) smaller tablet or other solid dosage form size; (2) smaller doses of drug required to obtain the same pharmacological effect; (3) increased bioavailability; (4) substantially similar pharmacokinetic profiles of the nanoparticulate fibrate, preferably fenofibrate, compositions when administered in the fed versus fasted state; (5) improved pharmacokinetic profiles; (6) bioequivalence of the nanoparticulate fibrate, preferably fenofibrate, compositions when administered in the fed versus fasted state; (7) an increased rate of dissolution for the nanoparticulate fibrate, preferably fenofibrate,

> compositions; (8) bioadhesive fibrate, preferable fenofibrate, compositions; and (9) the nanoparticulate fibrate, preferably fenofibrate, compositions can be used in conjunction with other active agents useful in treating dyslipidemia, hyperlipidemia, hypercholesterolemia, cardiovascular disorders, or related conditions.

[37] Dr. Serajuddin reviews the claims of the '054 Patent and finds that they are broader than the invention itself. According to him, all the advantages "address what the composition of the invention does or is supposed to do but not what the composition is." He also notes that notwithstanding the difficulty in selecting the surface stabilizer to be used, the inventors refer to a broad group of surface stabilizers that could be used in the compositions and then refer to thousands of possible surface stabilizers and combinations. According to him, the POSITA would know that there was nothing inventive in this or any of the other characteristics of the invention. Additionally, he states that the promised utilities cannot be predicted for the claimed compositions. In his opinion, the POSITA would not have been able to predict that the composition was physically stable and would be bioequivalent in the fed versus fasted states.

[38] Dr. Serajuddin also believes that the POSITA would require experimentation to practice what is found in the invention. In this regard, Dr. Serajuddin targets the very broad range of stabilizers. He says that to select those that would work as promised would require more than routine testing.

[39] Dr. Serajuddin reviews prior publications and states that from each of them the POSITA would have been able to prepare the compositions covered by the claims he identified in the '054 Patent.

[40] Dr. Serajuddin disagrees with the conclusion of Dr. Muzzio that the Sandoz Tablet would infringe the '054 Patent. Specifically, he disagrees with Dr. Muzzio's statement that a tablet taken orally will redisperse in gastrointestinal fluids to the same size as the original particles used to prepare the formulation. Dr. Serajuddin refers to United States Patent 6,375,986 (US '986 Patent) which found redispersion to the particle size in the original suspension to be a problem. He states:

> US '986 clearly shows that Dr. Muzzio's statement is incorrect. In US '986, Elan states that it has discovered a combination of surfactants and surface stabilizers (for example DOSS, SLS and PVP) that resulted in an improvement in the particle size of the redispersed materials. However, the mean particle sizes of the redispersion was still more than 20 times larger than the mean particle size of the original suspension …

Dr. Isadore Kanfer

[41] Dr. Kanfer has a B.Sc. (Pharm) as well as a B.Sc. (Hons) and a Ph.D. (Pharm) from Rhodes University, South Africa. He is currently Professor and Dean Emeritus in the Faculty of Pharmacy of Rhodes University where he teaches undergraduate, Masters and Ph.D. courses relating to biopharmaceutical analysis, bioavailability, dissolution, bioequivalence, drug interaction, drug absorption and drug regulation.

[42] Dr. Kanfer reviews the '054 Patent and echoes Dr. Serajuddin in stating that the advantages listed in the description are the promises of the invention. Dr. Kanfer adds that the POSITA would also understand that the inventors were promising the nanoparticulate compositions to be stable. He provides graphs and tables to explain that none of the promises in the '054 Patent were demonstrated or soundly predictable.

[43] Dr. Kanfer says that the claims in the ‘054 Patent are too broad and cover formulations that would not work. He emphasizes that there is no direction as to which surface stabilizers would work and, as such, bioequivalence in the fed versus fasted states cannot be predicted; undue experimentation would be required.

Dr. Michael Mayersohn

[44] Dr. Mayersohn holds a B.Sc. in Pharmacy from Columbia University and was awarded a Ph.D. in Pharmaceutics/Pharmacokinetics from State University of New York in 1971. Since 1983 he has been a Full Professor of Pharmaceutical Sciences at the University of Arizona. He has conducted research projects which involved examination and characterization of oral bioavailability and pharmacokinetic properties of drugs and their metabolites in animals and humans.

[45] Dr. Mayersohn compares the ‘054 Patent to the prior art. In his view, Canadian Patent 2,423,335 (the ‘335 Patent) and WO Patent 02/24193 (the WO ‘193 Patent) describe and enable fenofibrate formulations having a particle size of most preferably 100 nm to 2 µm and although those prior patents prefer the use of phospholipid stabilizers, they also describe and enable the use of surface stabilizers that are not phospholipids. Additionally, he says that both can be administered without regard to food. Even if the ‘054 Patent was not anticipated, everything in the prior art rendered the inventive concept obvious.

[46] According to Dr. Mayersohn, the inventive concept of claims 1-3 are: (a) a stable nanoparticulate fenofibrate composition; (b) a particular particle size for the fenofibrate; (c) at least

one surface stabilizer; (d) bioequivalence; and (e) redispersion in a biorelevant media. He says that the POSITA would not understand phospholipid-free to be part of the inventive concept since the '054 Patent lists useful stabilizers which include phospholipids. Alternatively, being phospholipid-free would have been obvious to the POSITA.

[47] Dr. Mayersohn reviews the prior art and states that the '335 Patent, WO '193 Patent, United States Patent 5,145,684 (US '684 Patent), United States Patent 5,510,118 (US '118 Patent), WO 01/21154 (WO '154 Patent), United States Patent 6,177,103 (US '103 Patent), and United States Patent 6,368,620 (US '620 Patent) all describe and enable the invention of the '054 Patent. Moreover, Dr. Mayersohn says, these prior patents render the inventive concept of the '054 Patent obvious.

Additional Expert Evidence

[48] One issue of significance in this application is the particle size of the fenofibrate particles in the Sandoz Tablet. It is also an issue of significance in T-991-10. A few days prior to the hearing of these applications, Fournier brought a motion seeking an order allowing the cross-referencing of certain affidavits and cross-examination transcripts as between Court Files T-1184-10 and T-991-10 on the basis that the evidence filed in these two applications by Sandoz, relating to the particle size of the fenofibrate in the Sandoz Tablet, was contradictory and that the interests of justice demanded that all of this evidence be before the applications judge in both matters.

[49] Sandoz resisted the motion, in part, on the basis that there is no conflict in the evidence, and in part of the basis that it would suffer prejudice because it has not had an opportunity to file expert evidence to assist the Court is assessing whether there truly is a conflict in the evidence.

[50] I granted the motion on the basis that:

> [T]he interests of justice in having all of the relevant evidence before the Court and avoiding the possibility of conflicting findings of fact outweigh any prejudice of the sort Sandoz asserts it will suffer. Further, it is not clear that expert evidence of the type it says it would file is necessary or helpful to the Court in assessing what are statements of fact by the various expert witnesses.

[51] The issue as to whether there was any actual conflict in the evidence was to be determined as part of the decision on the merits of each application, if necessary.

[52] The portions of the Order relevant to this application are paragraphs 1 and 2 which read as follows:

> 1. The portions of the affidavit of Dr. Muzzio dated February 21, 2011, filed in T-991-10 on particle size, as well as the portions of his cross-examination transcript relating to particle size, are incorporated into the Applicants' Record in T-1184-10.
>
> 2. The portions of the affidavits of Drs. Bogardus and Fairhurst in T-991-10 on particle size, as well as the portions of their cross-examination transcripts relating to particle size, are incorporated into the Applicants' Record of T-1184-10.

[53] The evidence set out in these documents and the relevance, if any, in this application is discussed below.

Challenges to the Opinions of the Experts

[54] Both Fournier and Sandoz raised complaints about the expert(s) proposed by the other and made representations as to whether that evidence ought to be accepted and, if so, the weight it ought to be given.

[55] Fournier, at paragraph 12 of its Memorandum of Fact and Law, asked the Court to approach with caution the evidence of the experts put forward by Sandoz:

> Sandoz put forward a 413 paragraph affidavit from Dr. Mayersohn (a pharmacist), a 384 paragraph affidavit from Dr. Serajuddin (a pharmacist), a 361 paragraph affidavit from Dr. Kanfer (a pharmacist), and a 241 paragraph affidavit from Dr. LeClair (a pharmacist). Sandoz's experts were not always forthcoming in their cross-examinations, were difficult, refused to answer important questions, and accepted direction from Sandoz's counsel to avoid answering questions. Not only were these witnesses advocates for Sandoz's position, they clung to unreasonable positions with uncommon truculence, and in some cases gave evidence incapable of belief. Worse, Sandoz has put forward witnesses in this case who have given opinions directly opposite the position it has taken in the Notice of Allegation of T-991-10. If any of the issues in this application fall to be determined on the basis of any assessment of credibility, it is respectfully submitted that the evidence of Sandoz's experts should be approached with caution, given the above [references omitted].

[56] Sandoz, for its part, at paragraphs 12 and 13 of its Memorandum of Fact and Law, challenged the evidence of Fournier's expert, Dr. Muzzio:

> Fournier's only expert Dr. Muzzio admits that he does not have the credentials of the person to which the '054 Patent is addressed by his own definition.
>
> Fournier has not challenged the qualifications of Sandoz's experts or their expertise to provide the opinions in their affidavits and none of their opinions were shaken on cross-examination. Sandoz challenges the qualifications' of Fournier's expert Dr. Muzzio. Fournier did not

> permit Sandoz to complete his cross-examination [references omitted].

[57] Shortly before this application was heard, Sandoz brought a motion seeking to strike from the Application Record in this proceeding the affidavits of Dr. Muzzio on the ground that he was unresponsive and long winded, and because the respondent had been prevented from completing the cross-examination, despite being given additional time. I dismissed that motion and provided the following short endorsement setting out my reasons for so doing:

> I accept that Dr. Muzzio's responses to the questions asked were neither brief nor direct. He was, as was suggested by counsel, a difficult witness. However, Sandoz cross-examined this witness for four days and made no request at the end of that period for further cross-examination. It cannot now, a few days prior to the hearing on the merits, seek as a remedy the striking of that evidence when it failed to seek any additional time when it could have been provided.
>
> It is also submitted that "Dr. Muzzio breached his signed Code of Conduct by relying on testing he had not done in his lab to support his opinion regarding sound prediction without referring to it in the Muzzio Validity Affidavit." I am not satisfied on the balance of probabilities that the testing complained of was in the mind of the witness and formed a part of the basis for the opinion set out in the affidavit he provided. Rather, it appears more likely that this "testing" came to mind as he was being cross-examined and he mentioned it as a further basis to support his opinion. I find no breach of the Code of Conduct. Had I found a breach, given its nature, I would not have struck his evidence but rather would have determined that the violation would go to the weight to be given his evidence where there was conflicting evidence.

[58] It will be noted that the complaint raised by Fournier as to the challenges it faced in cross-examining the experts put forward by Sandoz mirror the complaint raised by Sandoz with respect to Fournier's witness and which has been dealt with by the Court. For the reasons given in rejecting Sandoz's motion to strike, I likewise give little weight to Fournier's complaint. To paraphrase that

endorsement, and with reference to Fournier's complaint, I say this: Sandoz's witnesses on some occasions were difficult; however, Fournier completed its cross-examination of them and made no request for further cross-examination or to have any objected questions answered.

[59] I find inappropriate and unfair the submission that the experts were advocates for Sandoz's position. Each witness provided an affidavit as required by Rule 52.2 of the *Federal Courts Rules*, SOR/98-106, attesting that he or she had read and agreed to be bound by the Code of Conduct for Expert Witnesses. Paragraphs one and two of that Code provide as follows:

> 1. An expert witness named to provide a report for use as evidence, or to testify in a proceeding, has an overriding duty to assist the Court impartially on matters relevant to his or her area of expertise.
>
> 2. This duty overrides any duty to a party to the proceeding, including the person retaining the expert witness. An expert is to be independent and objective. An expert is not an advocate for a party [emphasis added].

[60] Fournier's challenges to the impartiality of these witnesses are set out in footnotes 21 and 22 of its Memorandum of Fact and Law. These footnotes include the following two serious allegations: a witness's "claim to have calculations – undisclosed contrary to the Code of Conduct – that yielded a 10% difference is reported to be 61%," and similarities between the wording used in portions of the affidavits of Dr. Serajuddin and Dr. Mayersohn.

[61] I reject the submission that a Sandoz witness, contrary to the Code, failed to make a disclosure as has been suggested. Fournier cites as support for this allegation the cross-examination of Dr. Mayersohn taken October 28, 2011, Q 664-669 and 754-770. I see nothing in those passages that makes any reference to a claim to have calculations that yielded a 10% difference. Dr.

Mayersohn at Question 665 said that he "pulled that [figure] out of the air" and at Question 750 said that it was a "guesstimation." I find that Fournier's characterization of the evidence of Dr. Mayersohn's evidence in this respect to be inaccurate and its submission that he breached the Code of Conduct to be without foundation.

[62] I considered an allegation that a witness copied another's words in his affidavit in *Janssen-Ortho Inc v Novopharm Limited*, 2010 FC 42 and commented that "fairness and reason dictate that when a party proposes to make a submission that the words contained in a sworn affidavit are those of another and do not express the views of the affiant, that proposition ought to be squarely put to the affiant in order that he has an opportunity to respond [emphasis added]." Having reviewed the cross-examination of Dr. Serajuddin, I have concluded that Fournier did just that.

[63] Dr. Serajuddin, in response to a direct question, answered that he did not copy any portion of his affidavit from Dr. Mayersohn's affidavit, that he had no discussion with him, had no copy of his affidavit, and provided no copy of his own affidavit to Dr. Mayersohn. He describes the process that was followed in preparing his affidavit. He prepared text and then counsel for Sandoz would question him on it and he would "try to explain it" and that "there would then be maybe a proposal to put it slightly differently [and] I would look at it and then maybe agree." This manner of developing expert affidavit evidence intended to assist the Court is not offensive or inappropriate. I would be surprised if counsel for Fournier did not follow much the same process when having its experts prepare and finalize their affidavits.

[64] At the end, what is important when considering an expert's affidavit is two-fold. First, that the affidavit is helpful to the Court. This requires that it be written in a manner that is understandable by judges who are not experts in the area. Drafting in this manner is something that many experts, especially it seems those in the scientific community, are ill-equipped to do without assistance. An affidavit written in technical language understandable only by another expert is of little assistance to a court. Second and most important is the requirement that the words set out in the affidavit express the views of the affiant. Dr. Serajuddin on cross-examination stated: "[I]t was my opinions and that is why I signed the affidavit." Fournier makes no real challenge to that assertion.

[65] For these reasons, I reject the submission of Fournier that the evidence of Sandoz's experts ought to be approached with caution. This evidence, like all evidence, must be weighed and considered within the context of the case as a whole, the other evidence, and the submissions made by the parties.

[66] There is merit in the submission of Sandoz that Dr. Muzzio does not have the credentials of the POSITA by his own definition. He does not profess to have these credentials; rather, in his affidavit sworn February 23, 2011, he states with respect to the POSITA: "I have worked with many individuals with these credentials and can speak to their understanding of this area of science and their capabilities." Some of the evidence of Dr. Muzzio might best be described as "scientific hearsay" insofar as it is the evidence of a scientific witness without the required background offering an opinion on what scientists with the relevant background would understand a patent that is directed to them to mean. Taken to the extreme, it is akin to a physicist saying that he has worked

with biologists and chemists and therefore can speak to their understanding of a document that is directed to biologists or chemists. The evidence of that physicist would be given little weight.

[67] The situation of Dr. Muzzio is not quite akin to the extreme example offered above. Dr. Muzzio does have education and expertise that is relevant and therefore I am not prepared to simply strike his affidavit. For example, as a chemical engineer, he is able to speak to the meaning of some of the terms used in the '054 Patent and assist the Court in understanding basic chemistry and formulations relevant to the invention. However, whenever his evidence is in conflict with that of the experts put forward by Sandoz, or is not supported by another expert or scientific evidence on a matter properly within the role of an expert, I prefer their evidence as Fournier made no challenge to their credentials or the fact that they were experts and met the definition of the POSITA.

THE INTERPRETATION OF THE '054 PATENT

[68] What is the invention captured by the '054 Patent? The Supreme Court has instructed that patent claims are to be purposively interpreted, the key to which is "the identification by the court, with the assistance of the skilled reader, of the particular words or phrases in the claims that describe what the inventor considered to be the "essential" elements of his invention [emphasis added]." *Whirlpool Corp v Camco Inc*, 2000 SCC 67, at para 45. Claims construction is a question of law: *Bristol-Myers Squibb Co v Apotex Inc*, 2007 FCA 379, at para 27. The purposive approach to construction ought to be used when construing the patent as a whole. The aim is to determine the inventor's view as to what it is that he or she has invented and how that invention is to be made or the process described followed; how the invention is to be used or the result obtained from the invented process; and what the invention does.

[69] What then are the essential elements of the '054 Patent? This is where the parties are in fundamental disagreement. The answer to this question goes a long way to resolving the numerous other issues between these parties.

Bioequivalence and Pharmacokinetic Profile

[70] Each of the three independent claims (claims 1-3) stipulates that the composition "exhibits bioequivalence upon administration to a human subject in a fed state as compared to administration to a human subject in a fasted state." These claims define how bioequivalence is to be "established" namely by "(a) a 90% Confidence Interval for AUC which is between 80% and 125%, and (b) a 90% Confidence Interval for C_{max}, which is between 80% and 125%." This is the pharmacokinetic profile (PK Profile) of the invention. Fournier says that this PK Profile is an essential element; Sandoz says it is not.

[71] The witnesses agree that there are two different guidelines that one may use when speaking of bioequivalence in the fed and fasted state: the US Food and Drug Administration (USFDA) guideline, and the European Medicines Agency (EMEA) guideline.

[72] Dr. Kanfer informs the Court that under the USFDA "requirements, bioequivalence is established by a 90% [Confidence Interval] for AUC and C_{max} of 80%-125% [whereas] under the EMEA requirements, bioequivalence is established by a 90% [Confidence Interval] for AUC of 80%-125% and a [Confidence Interval] for C_{max} of 70%-143%." As he notes, "the EMEA requirement permits a wider limit in the C_{max} between two products to establish bioequivalence."

What is also clear is that a composition that is bioequivalent as defined by the USFDA guideline will also be bioequivalent as defined by the EMEA guideline, but that a composition that is bioequivalent as defined by the EMEA guideline will not necessarily also be bioequivalent as defined by the USFDA guideline.

[73] Sandoz says that the PK Profile in claims 1-3 is not an essential element of the invention for two main reasons. First, it says that it is ambiguous because reference is made elsewhere in the disclosure to the EMEA guideline, and the PK Profile in claims 1-3 "is inconsistent with dependant claims 4-7 which include compositions that do not fall within the USFDA Confidence Intervals." Second, Sandoz says that the C_{max} in the PK Profile is not essential for bioequivalence.

[74] In relation to Sandoz's first allegation, I note that a composition that is marketed in Canada as bioequivalent must meet the USFDA guideline. The PK Profile set out in claims 1-3 reflects the USFDA guideline. I am unable to accept that the PK Profile is arbitrary since it reflects exactly the USFDA bioequivalence requirement. Given that the inventors of the '054 Patent were seeking bioequivalence, given that Canada requires that bioequivalence be established using the USFDA guideline, and given that the '054 Patent is a Canadian patent for an invention to be marketed in Canada, I find that the PK Profile as set out in claims 1-3 is a minimum requirement and an essential feature of the invention.

[75] Both Dr. Kanfer and Dr. Mayersohn point to the AUC difference set out in claims 4-7 and note that claims 4-7 include compositions that do not meet the USFDA guidelines. Accordingly, they say, the PK Profile cannot be an essential element. That view seemed to be confirmed by Dr.

Mayersohn who swore that "an Ordinary Skilled Worker would not deem strict compliance with this element to be important to the function of the invention." However, on cross-examination he admitted that strict compliance with the USFDA guidelines, although not the EMEA guidelines, was a requirement of the claims and a person skilled in the art would read the claims of the '054 Patent as requiring such:

> 1161 Q. Okay, so you have to meet the US/Canada requirements?
> A. Definitely.
>
> 1162 Q. Got it, and that is bioequivalence as determined by the 90 percent confidence interval for AUC and C_{max} of 80 to 125?
> A. Correct.
>
> 1163 Q. And that is how the skilled person would understand claims 1 to 3 of the '054 Patent?
> A. The only reason I am hesitating, Counsel, is I want to be sure that I am being consistent with what I believe to be the claimed invention, which is paragraph 17, and that includes bioequivalence, so the answer is yes.

[76] Even if I had accepted Sandoz's reasoning, then at best I would say that claims 4-7 make it unclear or ambiguous as to what PK Profile constitutes bioequivalence in the inventors' minds. From there, I would agree with Fournier that the disclosure at pages 62-64 of the '054 Patent makes it clear that meeting the USFDA guideline is what makes the composition bioequivalent in the fed and fasted state and that this is an essential element of the invention. The inventors at those pages discuss the data contained in Table 14, the pharmacokinetic parameters of the invention disclosed in testing and examine that data with specific reference to the UDFDA guideline and no other and state as follows:

> Accordingly, pursuant to [USFDA] regulatory guidelines, administration of a nanoparticulate fenofibrate tablet in a fasted state

> is bioequivalent to administration of a nanoparticulate fenofibrate tablet in a fed state. Thus, the invention encompasses a fibrate composition wherein administration of the composition to a subject in a fasted state is bioequivalent to administration of the composition to a subject in a fed state [emphasis added].

[77] Further, at page 63 of the '054 Patent, when comparing the 160 mg nanoparticulate tablet with the 200 mg TRICOR tablet (the existing product) the inventors state that Table 16 shows that when their product is administered in a fasted state it is not bioequivalent to TRICOR in the fed state "because [Confidence Interval of] 90% for the two treatments is ***outside*** 0.80 to 1.25 for AUC and C_{max} [emphasis in the original]" meaning it is outside the USFDA guideline. Critically, as was noted by Fournier, the C_{max} range of 1.08 to 1.304 in that example meets the EMEA guideline as that criterion goes up to 1.43 whereas the USFDA guideline ends at 1.25. In my view, this makes it abundantly clear that the inventors consider that bioequivalence is met only if the USFDA guideline has been met.

[78] Sandoz's second allegation, that the C_{max} is not essential, relies on the Dalton Rule. This rule, according to Dr. Mayersohn's affidavit at paragraph 98 teaches that "if the arithmetic mean for AUC and C_{max} differs by less than 10% or less than 5%, an Ordinary Skilled Worker would understand that the 90% [Confidence Interval] of 80-125% for AUC and C_{max}, respectively, would be met."

[79] This proposition was put to another of Sandoz's experts, Dr. Kanfer, who responded as follows:

407. Q. If you came to the FDA with evidence of a difference in means of less than 10 percent and no other evidence of bioequivalence, they would say, 'That doesn't cut it'?
A. They would say, "Calculate the confidence intervals."

408. Q. You can't calculate the confidence intervals just from the difference in the means, can you?
A. You need to look at the study, you need to see that the study is powered correctly.

409. Q. Right.
A. It is far more complicated than just looking at a simple difference between means or ratio.

[80] This exchange explains that the arithmetic mean alone cannot give you the confidence intervals required for USFDA approval. As such, if the invention does not provide a C_{max} confidence interval of 80%-125%, it will not necessarily obtain approval. This, in my view, is sufficient to reject Sandoz's second allegation.

[81] It is my finding that bioequivalence established by a 90% Confidence Interval for AUC and C_{max} of 80%-125% is essential for the invention and claims 1-3.

At Least One Surface Stabilizer and Phospholipid-Free

[82] Each of the independent claims 1-3 specifies that the composition is phospholipid-free. Fournier says that this is an essential element of the invention. Sandoz asserts that it is not and that it has been included in the claims in order to avoid WO 02/24193, a prior art reference containing phospholipids.

[83] The ‘054 Patent requires “at least one surface stabilizer” and both parties agree that it is an essential element of the invention. Both parties also agree that it is an essential element of the invention that it be a “stable fenofibrate composition.” WO 03/013474, a prior art reference relied on by Sandoz, at page 7 of its disclosure states that “fenofibrate suspensions stabilized using only phospholipids are reported as not stable.” Accordingly, if the essential element, the “at least one surface stabilizer” was a phospholipid, then the invention would not work as it would not be stable. For this reason, I agree with Fournier that, as the ‘054 Patent is drafted, it is an essential element of the invention that it be phospholipid-free.

Redisperses in a Biorelevant Media

[84] Claim 1 uses the word “disperses” whereas claim 2 and claim 3 use the word “redisperses.” Nothing turns on this slight variation in terminology. What is meant is that the component parts of the composition disseminate in a “biorelevant media.” Dr. Serajuddin informs the Court that the particle size of the redispersed fenofibrate would be less than 2µm:

> Claim 1 refers to “disperses” and claims 2 and 3 refer to “redisperses”. The particle size on redispersion would be restricted by the meaning of “stable” pharmaceutical composition. As such, the particle size would be limited to less than 2 µm.

Dr. Muzzio agrees, stating: “ [I]t is my opinion that the POSITA reading the ‘054 Patent as a whole as of May 2004 would understand that the inventive concept of the claims requires compositions that dispersed or redisperse in a biorelevant media to a particle size of less than 2 microns (2000 nm).”

[85] Dr. Serajuddin further informs the Court that the POSITA would know that there are two biorelevant media for the fenofibrate composition: gastric fluid and intestinal fluid. Dr. Kanfer informs the Court that the POSITA would know the recipes for formulating simulations of these fluids.

[86] Is it an essential element that the composition redisperses to a particle size of less than about 2 µm? I am of the view that it is. Dr. Muzzio was cross-examined quite extensively regarding the size of the redispersed fenofibrate particles. He informs us, as does the prior art, that bioavailability of fenofibrate is improved as the particle size is reduced. Sandoz, in its Memorandum of Fact and Law captures this as being common general knowledge of the POSITA:

> The rate of dissolution of poorly water soluble drugs could be increased by decreasing the particle size and thereby increasing the surface area of drug particles which was expected to increase the bioavailability and reduce or eliminate the food effect for drugs like fenofibrate.

Moreover, the Court takes guidance from the observation of Dr. Serajuddin that the composition must be "stable" and, in his opinion, this means that the particle size would be less than 2 µm.

[87] As such, for the invention to work, the particles must remain small when redispersing in a biorelevant media and the composition must be stable. For these criteria to be met, the '054 Patent teaches that the particles must redisperse to under 2 µm. That is therefore an essential element of the claims.

Particle Size of the Fenofibrate in the Composition

[88] The three independent claims, claims 1-3, each speak to the size of the fenofibrate particles in the "composition for oral administration" which is to say in the tablet.

[89] Dr. Muzzio asserts, and I accept, that a large part of the inventors' solution to the problem in the prior art of differences between administration of fenofibrate in the fed versus the fasted state was the use of "very small particles of fenofibrate." The particle size distribution is set out in the three independent claims of the '054 Patent.

[90] Claim 1 asserts that the composition will be comprised of fenofibrate particles having a D50 of less than about 500 nm; i.e. 50% of the particles of fenofibrate will have a particle size of about 500 nm or less. Claim 2 asserts that the composition will be comprised of fenofibrate particles having a D90 of less than about 700 nm; i.e. 90% of the particles of fenofibrate will have a particle size of about 700 nm or less. Claim 3 asserts that the composition will be comprised of fenofibrate particles having mean particle size of less than about 500 nm; i.e. the average particle size is about 500 nm.

[91] Claim 28, which is one of the dependant claims asserted by Fournier in this application further limits the particle size to a D50, D90, or mean particle size of less than about 150 nm.

[92] In my view, the fenofibrate particle size is an essential element of the '054 Patent. This is not seriously in dispute. The issue of infringement rests on a determination of whether or not

Fournier has established on the balance of probabilities that the particle size of the fenofibrate in the Sandoz Tablet infringes the particle size distribution range set out in the '054 Patent.

Claim 20

[93] Claim 20 covers a "composition of any one of claims 1 to 19 comprising a dosage of about 145 mg of fenofibrate" with two additional limitations: "(a) the dosage is therapeutically effective; and (b) the composition is bioequivalent to a 160 mg micronized fenofibrate tablet or 200 mg micronized fenofibrate capsule, wherein bioequivalency, when administered in a human, is established by a 90% Confidence Interval of between 0.80 and 1.25 for both C_{max} and AUC [emphasis added]."

[94] The issue between the parties on the proper construction of claim 20 is whether the claim requires that the composition be bioequivalent to both the 160 mg and the 200 mg composition or only to one or the other. This dispute is relevant to a utility submission made by Sandoz in that it is not disputed that the Fournier product is not bioequivalent to the 160 mg composition but only to the 200 mg composition.

[95] Fournier argues, and I agree, that this submission by Sandoz is one created by its counsel and not by its experts whose interpretation of the '054 Patent does not clearly state that the POSITA would understand that the composition must be bioequivalent to both the 160 and 200 mg composition. Nonetheless, it is an issue requiring the Court's attention because it is an issue of patent construction which is an issue of law for the Court and not for the experts.

[96] Sandoz relies on the decisions of Justice von Finkenstein in *Abbott Laboratories v Canada (Minister of Health)*, 2005 FC 1095 and Justice Phelan in *Abbott Laboratories v Canada (Minister of Health)*, 2005 FC 1332; however I find them to be of no assistance. First, they both deal with a patent different from that at hand. Second, the claim being construed in those cases used the connecting word "and" and not "or" as in this case.

[97] In my view, the plain and unambiguous meaning of claim 20 is that the composition must be bioequivalent either to the 160 mg composition or to the 200 mg composition, but need not be bioequivalent to both. This view is consistent with that of Dr. Serajuddin who swore at paragraph 186 of his affidavit that "Claim 20 relates to bioequivalency of the 145 mg dosage to the 160 mg or 200 mg micronized fenofibrate capsule (i.e. no food effect)."

Conclusion on Construction of the '054 Patent

[98] The purposive approach to interpretation focused on "the particular words or phrases in the claims that describe what the inventor considered to be the 'essential' elements of his invention" as directed by the Supreme Court in *Whirlpool* leads me to conclude that the proper interpretation of this patent is the following.

[99] The first sets of claims, claims 10, 27-28 and 38, as they depend on claims 1-3, has the following essential elements:

a. The composition exhibits bioequivalence a fed versus a fasted state as defined by the USFDA when administered to a human (as specified in claims 1-3);

b. The composition is phospholipid-free (as specified in claims 1-3);

c. The particle size of the fenofibrate particles on dispersion or redispersion in a biorelevant media (either gastric fluid or intestinal fluid) is less than 2 µm (as specified in claims 1-3);

d. The D50, D90, or mean particle size of the fenofibrate in the tablet is less than about 500 nm, 700 nm, or 500 nm (as specified in claims 1-3) and any one of those criteria is less than 150 nm (as specified in claim 28);

e. The difference in AUC of the composition when administered to a human in the fed versus the fasted state is less than about 5% (as specified in claim 10); and

f. At least 80% of the composition is dissolved within 10 minutes or less (as specified in claim 38).

[100] The second set of claims, being claim 20, has the following essential elements:

a. The essential elements of any one of claims 1 to 19 in a dosage of about 145 mg;

b. The dosage is therapeutically effective; and

c. The composition is bioequivalent as defined by the USFDA to either (a) a 160 mg micronized fenofibrate tablet, or (b) a 200 mg micronized fenofibrate tablet.

[101] With this construction of the '054 Patent, I turn to the substantive allegations of infringement and invalidity addressed by Fournier.

INFRINGEMENT

[102] If the size of the fenofibrate particles in the Sandoz Tablet falls within the particle distribution ranges specified in the '054 Patent, then the Sandoz Tablet infringes the '054 Patent.

All of the submissions of the parties as to the particle size in the Sandoz Tablet rely on evidence of the particle size in either an earlier state (the dispersion) or a later state (the redispersion). There is no direct specific evidence of the particle size of the fenofibrate in the Sandoz Tablet; no one actually measured the particles in those tablets. Dr. Muzzio in cross-examination advises that Scanning Electron Microscopy-Energy Dispersive Spectroscopy would have determined the particle size in the Sandoz Tablet but it was not done:

> The particle size in the Sandoz tablets is what it would have been measured if anybody had bothered to use the right method, which is SEM with EDS, where you can actually see the particles and then you can answer your question the size is this. … The right method was to use EDS. Nobody did it, so the exact answer to your question is not there [emphasis added].

[103] Fournier's evidence was described by its counsel as a mixture of direct and circumstantial evidence; however, Fournier relies primarily on the evidence of Dr. Muzzio. In this respect it must be noted that when cross-examined and specifically asked the size of the fenofibrate particles in the Sandoz Tablets are, Dr. Muzzio responded: "I can give you an educated estimate and that educated estimate is that its going to be similar to or slightly larger than the […] that they start with except for the caveat that there could be some moderate amount of growth [emphasis added]." Later he says: "I expect there is a very good chance that indeed the value would be under […] [emphasis added]." The qualifications expressed in these responses are why I do not accept Dr. Muzzio's opinion on the particle size of the fenofibrate in the Sandoz Tablet absent supporting and corroborative evidence.

[104] The evidence before the Court on the particle size in the Sandoz Tablet requires a general understanding of the manufacturing and dissolution process of the compositions. Dr. Muzzio, in his

affidavit sworn February 23, 2011, having reviewed Sandoz's manufacturing process, states that "Sandoz's process closely matches every step in the process described in the '054 Patent." There is no evidence to the contrary.

[105] Example 5 in the '054 Patent describes the process in making the invention in the following steps:

1. A fenofibrate nanoparticulate dispersion is prepared by combining fenofibrate and other components including surface stabilizers and then milling the dispersion until the fenofibrate is reduced to nanoparticulate size.
1. A granulated feed dispersion is prepared by combining the fenofibrate nanoparticulate dispersion with some additional components, including surface stabilizers.
2. The granulated feed dispersion is then sprayed onto very small particles of lactose which is then dried to a powder.
3. This powder of dried fenofibrate covered lactose particles is formed into tablets.
4. When the tablet is taken by a patient the fenofibrate particles in the tablet redisperse.

In summary, the process is comprised of four stages: (1) the creation of a dispersion that contains nanoparticles of fenofibrate, (2) spraying the dispersion onto lactose and then drying it, (3) tableting the dried powdered fenofibrate, and (4) the redispersion of the fenofibrate in the patient.

[106] The parties are in agreement that it is the particle size of the fenofibrate in the tablet that is relevant when assessing whether or not there is infringement. Sandoz's allegation of non-infringement is presumed to be true. Accordingly, Fournier must disprove that allegation on a

balance of probabilities. Fournier submits that the evidence shows that the particle size distribution of the fenofibrate in the Sandoz Tablets falls within the particle size distribution range set out in the '054 Patent. Sandoz, on the other hand, submits that the size of the fenofibrate in its tablets is above […] , well outside the '054 Patent's scope.

[107] Fournier's expert, Dr. Muzzio, opines, based on data from Sandoz's ANDS, that the particle size of the fenofibrate in the Sandoz Tablet infringes the '054 Patent. His opinion is based on data obtained from Sandoz's ANDS showing the particle size of the fenofibrate in four different dispersion samples […] . […]

[…]

[…] . If these particle size distributions are found in the Sandoz Tablet as well, then the Sandoz Tablet infringes the '054 Patent.

[108] To determine the particle size of the fenofibrate in the tablet form from that in the dispersion form, Fournier relies on the evidence of Dr. Muzzio, together with portions of the evidence of Dr. Kanfer and Dr. Fairhurst.

[109] Dr. Muzzio attests that there is nothing in the manufacturing process used by Sandoz that would appreciably increase the size of the fenofibrate from that stage in the process to the tablet stage.

> I have reviewed Sandoz's manufacturing process and it is my opinion that the particle size of the fenofibrate measured by Sandoz after 11 hours in the suspension will be essentially the same as the particle size of the fenofibrate in the Sandoz Tablets. […]
> […]

[…]
[…]

[110] Fournier submits that Dr. Muzzio's opinion that the particle size in the dispersion would not change when the composition is tabletted is supported, in part, by the evidence of Dr. Kanfer.

[111] Dr. Kanfer agreed in cross-examination that the '054 Patent teaches that a stabilizer is added to the fenofibrate in the milling process to ensure that the fenofibrate retains its small size throughout the manufacturing process up to the spraying and drying of the dispersion onto the lactose. Dr. Kanfer's evidence below supports a conclusion that the size of the fenofibrate dried on the lactose is the same as its size in the dispersion that results after milling:

694 Q. Thank you. In example 5 [of the '054 Patent], a dispersion of particles with a mean particle size of 169 nanometres was prepared and sprayed onto some lactose; is that correct?
A. Yes.

695 Q. And then that material was tabletted?
A. From an intermediate, it was granulated.

696 Q. Right.
A. And then tabletted.

697 Q. So what goes into the tablet is the particles from the dispersion that are sprayed onto the lactose where they dry; is that the idea?
A. Yes.

698 Q. And one of the reasons why you want a stable dispersion is so that the particles remain in their original small size through the spraying process; is that correct?
A. Yes, when the...yes.

699 Q. So you have a stable dispersion where the particles don't agglomerate and you spray that onto the lactose where it dries...

A. M'hmm.

700 Q. ...in order to get those nano-sized particles onto the lactose?
A. To keep them at that size.

701 Q. To keep them at that size on the lactose?
A. Right.
[emphasis added]

[112] At best, Dr. Kanfer's evidence only partially supports Dr. Muzzio's opinion; there is no change in the size of the fenofibrate after the milling process through the spraying and drying process provided the dispersion is stable.

[113] Fournier also relies on the evidence of Dr. Fairhurst, an expert put forward by Sandoz in T-991-10 and which evidence, as outlined previously, was ordered to form part of the record in this proceeding.

[114] At paragraph 83(9) of his affidavit sworn June 11, 2011, Dr. Fairhurst attests to the following:

[…]
[…]
[…]
[…]
[…]
[…] [emphasis added].

[115] When cross-examined on this statement he affirms that the particle size of the fenofibrate in the Sandoz Tablet is less than […] :

> Q. And so what you're saying in [paragraph 83(9)] is that when a patient takes the Sandoz tablet, and we're here concerned about dissolution and bioavailability, that 90 percent of the particles in the tablet would be less than […]?
> A. Yes.
>
> Q. And that's your opinion in this case?
> A. From the data shown to me, yes.
> [emphasis added]

[116] Dr. Fairhurst's evidence as to the D90 of the fenofibrate in the Sandoz Tablet coincides with […]

[…] . As such, Dr. Fairhurst's evidence appears to confirm that the particle size of the fenofibrate in the Sandoz Tablet does not vary materially from the size in the dispersion; this evidence supports Dr. Muzzio's testimony. However, like Dr. Muzzio, Dr. Fairhurst provides no independent scientific basis as support for the proposition that the fenofibrate particles will not agglomerate in the period beginning from the end of the milling process and ending after the tableting.

[117] Evidence contrary to Dr. Muzzio's position is offered by Dr. Serajuddin and Dr. Leclair.

[118] Dr. Serajuddin says "when the nanoparticles are in close contact with each other in the dried state they will agglomerate because the stabilizer diffuses away from the high energy zones between the two particles." As support for that statement at paragraph 333 of his affidavit he relies on an article by L. Pelonen et al. entitled "Pharmaceutical nanocrystals by nanomilling: critical process parameters, particle fracturing and stabilization methods." He quotes the following passage under the heading "Amount of Stabilizer" in the article:

> It is important to remember that although the steric stabilization of polymer chains may be sufficient in aqueous suspensions, in the dry form it may no longer effectively maintain steric repulsion. Also, in a suspension flocculated particles may lead to irreversible aggregation as a function of time. When particles are close to each, it is possible that the stabilizer is slowly diffused away from the high energy zones between two separated particles, and the stabilizing effect is lost [emphasis added].

[119] This authority is not nearly as definitive as Dr. Serajuddin's testimony. It does not say that nanoparticles in a dried state will agglomerate. Rather, it points out, when assessing the amount of stabilizer to be used, that there are differences between the aqueous and dry state and what may be a sufficient amount to maintain steric stabilization in the aqueous state may not be sufficient in the dry state. The authors remind the formulator that when particles are close to each other it is possible the stabilizer will slowly diffuse away from the high energy zones resulting, in time, in the agglomeration of the particles. Presumably this possibility must also be taken into account when determining the amount of stabilizer to use. However, while the scientific basis for Dr. Serajuddin's opinion is not as definitive as he suggests, it does support the proposition that the particle size may increase in the period after creating the dispersion and creating a tablet.

[120] Dr. Serajuddin also says that the tableting process itself will result in the particles agglomerating:

> In addition, during the tableting step, the fenofibrate particles will be further compressed such that additional contact between particles will occur resulting in agglomeration. Also, the tableting process involves applying very high pressure to the ingredients to form a solid tablet. This pressure results in fenofibrate particles being brought into contact and forming bridges between them.

[121] He cites as support for his opinion US '986 Patent. That patent teaches that a solid spray granulated nanoparticulate composition comprising a poorly water soluble active agent (such as fenofibrate), at least one surface stabilizer, and DOSS, redisperses to a particle size of the active agent that is larger than its particle size in the dispersion prior to incorporation into a solid dose form. Dr. Serajuddin in cross-examination, Applicant's Record vol. 4 page 845, explains that Sample E in Tables 5 and 6 shows that the particle size from dispersion to redispersion increased at least 10 fold:

> Q. The range of multipliers supported by U.S. 986 is 10 to 20 times; is that your opinion?
> A. If you look at formulation E in Table 5 and then you look at formulation E in Table 6 unsonicated, you will see that the numbers are 2186, 2163, 2544 and 2000 2203, so those are the mean values. So that's how I considered it has to be at least ten times higher when you do the dispersing test.

I note that Table 6 shows that if Sample E is sonicated for one minute the particle size drops substantially (297, 357, 436, 291, and 292) but it still increases by close to double the original size in the suspension.

[122] In spite of vigorous cross-examination, Dr. Serajuddin was firm in stating that there would be no agglomeration of the particles in the dispersion prior to the spraying, although there could be agglomeration in the spray drying process. Importantly, he is equally firm that there would be no agglomeration in the redispersion <u>provided there was stabilizer in the composition:</u>

> Q. Would you agree with me that the summary agglomeration could happen in the spray drying process?
> A. Yes.
>
> Q. And some re-agglomeration could happen in the dispersion?
> A. Not in the dispersion. It could happen in the spray dry process because once you take some spray dry material and you put it in a

> solvent, there is no way of re-agglomeration. If they're agglomerated, they're agglomerated during spray dry, not in the dispersion.
>
> …
>
> Q. If there is an adequate amount of surface stabilizer and no steps are taken to prevent re-agglomeration, then there could be some re-agglomeration of the particles in the re-dispersion media over time, correct?
> A. There is no chance of re-agglomeration in a dispersion medium because this formulations, if you look at them, if you look at Table 5, to begin with, they are very fine particles and they have not said that these are not stabilized formulations. They double up formulations here. Then they put them in a tablet and once they're dispersed from the tablet, they gave very fine particles. So there is no chance there. When you're dispersing something -- if I have a tablet or granules and it dispersed, it means that it's coming out from that agglomerated state or solid state and it's dispersing. Then there is no other force to put them back later in a dispersion medium. So there cannot be any re-agglomeration later on.

[123] In summary, it is his evidence, based on the US ‘986 Patent, that the particle size of the fenofibrate in the redispersion will reflect the particle size in the solid form and, based on a demonstrated increase of at least ten-fold, Dr. Serajuddin is of the opinion that the D50 particle size of the fenofibrate in the Sandoz Tablet would be expected to be at least […], well outside the particle size distribution range of the ‘054 Patent.

[124] Sandoz also proffered the evidence of Dr. Leclair who also asserts that the particle size of the fenofibrate in the tablet is larger than that in the dispersion. At paragraph 25 of his affidavit he states:

> Manufacturing processes employed to produce a tablet of a drug nanosuspension include spray drying or spray granulating and tableting. These processes will cause aggregation of the primary

> particles. The particle size of a dispersion of drug particles which undergoes spray drying or spray granulation will increase.

[125] Based on a redispersion test he conducted he opines that the D50 particle size would be expected to be at least […], well outside the particle distribution ranges in the '054 Patent.

[126] I give no weight whatever to the redispersion test Dr. Leclair conducted. He is not an expert in such testing. This was the first he has done. After placing the Sandoz Tablets in the relevant medium, without the addition of any surfactant or stabilizer, he proceeded to stir the mixture for about 45 minutes before filtering it to determine the particle size. The evidence is clear that absent a stabilizing agent the fenofibrate particles will agglomerate. Accordingly, there is no reasonable scientific basis to find that the particle size he determined through this test equals the particle size in the solid form.

[127] However, like Dr. Serajuddin, and relying in part on the US '986 Patent, Dr. Leclair opines that the particle size in the solid form will be greater than in the dispersion and that tableting will increase particle size due to the pressures brought to bear in that process.

[128] This summarizes the evidence of the particle size of the fenofibrate in the Sandoz Tablet.

[129] I cannot conclude that Fournier has established, on the balance of probabilities, that the particle size of the fenofibrate in the dispersion that is disclosed in the Sandoz ANDS reflects the size of the fenofibrate particles in the Sandoz Tablet. The evidence of Dr. Muzzio and Dr. Fairhurst is not supported by any reference to scientific literature or study. I prefer the evidence of Dr.

Serajuddin and Dr. Leclair, which is supported by US '986 Patent, and which shows that a solid spray granulated nanoparticulate composition or tablet redisperses to a particle size of the active agent that is larger than its particle size in the dispersion prior to incorporation into a solid dose form.

[130] We know from Sandoz's disclosure that the particle size in their dispersion has a D50 of […] and a D90 of […]. We also know that those particles may agglomerate. The mean particle size of similar dispersions has been found to agglomerate to a factor of at least 10 to 20 times the original particle size. As such, the scientific evidence is that the particle size increases and it may be of a magnitude sufficient to remove the Sandoz Tablet particle size from the particle size distribution ranges of the '054 Patent. Accordingly, I find that Fournier has not shown on the balance of probabilities that Sandoz's allegation of non-infringement is not justified.

[131] Before leaving this discussion, I wish to briefly address a submission made by Sandoz. Sandoz provided a number of the Sandoz Tablets to Fournier, presumably so it could test the product. No test results were filed in this application and Sandoz asks the Court to draw an inference that it has been done but not disclosed because it would not support its position. Its position is that the Court should apply the common law presumption that "where a party fails to lead evidence of a fact that it is in a better position to establish, the Court will infer that the facts are adverse to that party's interest."

[132] The difficulty with Sandoz's submission is that Fournier was not in any better position than Sandoz to establish the particle size from tests done directly on the tablets of the sort suggested by Dr. Muzzio. Admittedly, the burden of proof lies with Fournier and not Sandoz; however, it was fully within Sandoz's ability to do the testing and establish conclusively whether its tablets did or did not infringe the '054 Patent. Fournier submits that if any adverse inference is to be drawn, it should be drawn against Sandoz. I disagree. No adverse inference against either party is warranted in these circumstances.

[133] My finding on non-infringement is sufficient to dispose of this application because Fournier cannot be granted the prohibition order it seeks unless, on the balance of probabilities, it disproves all of the allegations of Sandoz that, if unchallenged, would allow the Minister to issue a NOC. However, for completeness, I will briefly address the allegations of invalidity raised by Sandoz and addressed by Fournier.

ANTICIPATION

[134] Anticipation requires that there be a single prior art reference that discloses all of the essential elements of the invention at issue: *Eli Lilly & Co v Apotex Inc*, 2009 FC 991, at para 410. Anticipation may be found when an essential element of the invention is not specifically disclosed in the prior art if, when the prior art is performed, the patent under review will be infringed. In that circumstance, the prior art anticipates the invention even if it was not apparent to anyone at the time of the prior art. However, in that circumstance, "the infringement must be more than merely a possible or even likely consequence of performing the invention disclosed by the prior disclosure. It must be necessarily entailed:" *Synthon BV v Smithkline Beecham plc*, [2005] UKHL 59, at para 23.

[135] When determining whether the prior art discloses the invention, experimentation is not permissible. As was noted by the Supreme Court in *Sanofi-Synthelabo Canada Inc v Apotex Inc*, 2008 SCC 61 [*Sanofi-Synthelabo*] at paras 25 and 27:

> When considering the role of the person skilled in the art in respect of disclosure, the skilled person is "taken to be trying to understand what the author of the description [in the prior patent] meant" (para. 32). At this stage, there is no room for trial and error or experimentation by the skilled person. He is simply reading the prior patent for the purposes of understanding it.
> …
> Once the subject matter of the invention is disclosed by the prior patent, the person skilled in the art is assumed to be willing to make trial and error experiments to get it to work. While trial and error experimentation is permitted at the enablement stage, it is not at the disclosure stage. For purposes of enablement, the question is no longer what the skilled person would think the disclosure of the prior patent meant, but whether he or she would be able to work the invention.

[136] I have found that bioequivalence, as defined in the '054 Patent, is an essential element of that invention. Not one of the numerous pieces of prior art cited by Sandoz specifically mentions or describes bioequivalence, let alone bioequivalence as defined in the '054 Patent. If one of the prior art references does anticipate the '054 Patent then it must be on the basis that if performed, it must necessary result in the infringement of the '054 Patent, i.e. it must result in such specified bioequivalence. There is no evidence that any of the prior art references do so and therefore I find that the '054 Patent was not disclosed in the prior art.

[137] If I had found that the '054 Patent was disclosed in the prior art, then I would have had to ask whether that disclosure was enabling. Does the prior patent give enough information to allow

the subsequently planned invention to be performed without undue burden? Routine trials are acceptable and will not be considered undue burden, but experiments or trials and errors are not to be prolonged even in fields where trials and experiments are generally carried out. Prolonged or arduous trial and error is not considered routine.

[138] Generally, I accept all of the submissions made by Fournier on enablement. In particular, I accept its submission that the evidence of Dr. Kanfer proves that there is no enablement in the prior art even if there was disclosure. Dr. Kanfer, at paragraph 301 of his affidavit states, with reference to the '054 Patent, that "an Ordinary Skilled Worker would not be able to formulate compositions which are covered by the scope of claim 1, i.e. that are different than the formulation in the Examples, without undue experimentation [emphasis added]." I agree with Fournier's counsel: "The skilled person trying to work the ['054 Patent], knows of the prior art and still Dr. Kanfer says they couldn't work the patent and make the claimed inventions even with the prior art and even with the ['054 Patent] and it's flatly inconsistent with the allegation that the prior art is enabling."

[139] Accordingly, I find that Fournier has established on the balance of probabilities that Sandoz's allegation of anticipation is not justified.

OBVIOUSNESS

[140] Obviousness is to be determined in accordance with the four-part analysis outlined by the Supreme Court in *Sanofi-Synthelabo* at para 67:

> (1) Identify the notional "person skilled in the art" and the relevant common general knowledge of that person;

> (2) Identify the inventive concept of the claim in question or if that cannot readily be done, construe it;
>
> (3) Identify what, if any, differences exist between the matter cited as forming part of the "state of the art" and the inventive concept of the claim or the claim as construed;
>
> (4) Viewed without any knowledge of the alleged invention as claimed, do those differences constitute steps which would have been obvious to the person skilled in the art or do they require any degree of invention?

The Supreme Court set out additional factors to consider within the fourth step, the "obvious to try" step, at paragraphs 69-70:

> a. Is it more or less self-evident that what is being tried ought to work? Are there a finite number of identified predictable solutions known to persons skilled in the art?
>
> b. What is the extent, nature and amount of effort required to achieve the invention? Are routine trials carried out or is the experimentation prolonged and arduous, such that the trials would not be considered routine?
>
> c. Is there a motive provided in the prior art to find the solution the patent addresses?
>
> d. The actual course of conduct which culminated in the making of the invention.

[141] The POSITA has previously been identified as someone with a Ph.D. in pharmaceutics with 1-3 years of experience in the area of formulation of pharmaceutical products or as someone with a Masters degree in pharmaceutics with 5-7 years of experience.

[142] The promise is the use the inventor claims for his invention and it is the statement of that use which led to the inventor being granted a monopoly for his invention. Justice O'Reilly put it the following way in *Hoffman-La Roche v Apotex Inc*, 2011 FC 875, at para 20:

> [I]n construing a patent, the Court must identify the claimed invention - the purportedly new and useful thing. In analyzing the question whether the inventors have met the requirement of utility, the Court will consider whether the inventors have disclosed a "new article, a better article, a cheaper article, or affords the public a useful choice" (C*onsolboard Inc v MacMillan Bloedel (Sask) Ltd*, [1981] 1 SCR 504 at 521) [emphasis added].

[143] In my view, the invention reflected in the '054 Patent promises to solve the problems associated with fenofibrate and the previous fenofibrate compositions. This is clear from the disclosure wherein it is written:

> Because fibrates, including fenofibrate, are so insoluble in water, significant bioavailability can be problematic. In addition, conventional fibrate, including fenofibrate, formulations exhibit dramatically different effects depending upon the fed or fasted state of the patient. Finally, conventional fibrate, including fenofibrate, formulations require relatively large doses to achieve the desired therapeutic effects. There is a need in the art for nanoparticulate fibrate formulations which overcome these and other problems associated with prior conventional microcrystalline fibrate formulations. The present invention satisfies these needs [emphasis added].

[144] Additionally, the explicit claims and the ample bioequivalence testing in the disclosure make it clear that the inventors were promising bioequivalence in the fed and fasted state as defined in the '054 Patent.

[145] In short, the promise of the invention is a fenofibrate composition that is bioavailable, does not require large doses to achieve the therapeutic effect, and provides effectiveness independent of whether the patient is in a fed or fasted state as defined by the USFDA guideline.

[146] Fournier submits that while it was known that increasing dissolution would increase bioavailability and known that dissolution is increased by decreasing the particle size, it was not part of the common knowledge of the POSITA that this would result in the food effect being reduced or eliminated. That view is supported by Sandoz's expert Dr. Kanfer who, in cross-examination, testifies that one would not have known that reducing particle size would eliminate the food effect:

> 724. Q. Having regard to the common general knowledge and the prior art that you reviewed, would you agree with the following proposition: an ordinary skilled worker would have expected, for formulations that incorporate nano particles of fenofibrate that re-disperse, by which I mean do not significantly aggregate in biorelevant media, would provide improved bioavailability and as such would reduce or eliminate the food effect?
>
> A. An ordinary skilled worker would require additional information.
>
> 725. Q. So you would disagree with that statement?
>
> A. I disagree.
>
> 726. Q. Is that a statement that a reasonable formulator could believe in? Or do you think it is unreasonable?
>
> A. A reasonable formulator would accept that, as well. That he or she would look at the formulation and then would have to do a lot of experimentation to make sure that there is nothing predictable in terms of all the other possibilities. So they would understand that, "This is what works, but it may not work for a whole bunch of other things."
>
> 727. Q. So you are saying a reasonable formulator would agree with you?

A. Yes.

728. Q. And a reasonable formulator would disagree with the statement I asked you about? No reasonable formulator could hold that view?

A. That it would expect to show increased or bioequivalence?

729. Q. Would provide improved bioavailability and as such would reduce or eliminate the food effect?

A. I think you need to separate that, as well. Because there are components here which relate to nano-sizing and micronizing. And we know that that is one way of improving the solution and probably improving bioavailability. But as to the end result of showing bioequivalence, that is unknown.

730. Q. What I am asking is whether you agree with the statement...I will read it again: Having regard to the common general knowledge in the prior art, an ordinary skilled worker would have expected for formulations that incorporated nano particles of fenofibrate that re-dispersed...i.e., did not significantly aggregate, in biorelevant media, that such formulations would provide improved bioavailability and as such would reduce or eliminate the food effect?

A. I agree with half of that statement.

731. Q. But you don't agree with the second half?

A. Right.

732. Q. And I am asking you whether a reasonable formulator could come to the view that both halfs of that statement were true?

A. He would also agree with half of it.

733. Q. No reasonable formulator could agree with both halfs?

A. No.

[147] As a result, I find that it was not obvious to a POSITA that reducing the particle size of the fenofibrate would achieve bioequivalence as defined by the USFDA guideline. Fournier has shown, on the balance of probabilities, that the allegations of obviousness by Sandoz, are not justified.

CLAIMS BROADER / INUTILITY / SOUND PREDICTION

[148] Sandoz submits that the '054 Patent is overly broad because it is not limited to the one formulation, set out as an example in the patent, which was proven by the inventors to work. This allegation brings up the doctrine of sound prediction as Justice Mactavish observed in *Aventis Pharma Inc v Apotex Inc*, 2005 FC 1283, at para 156:

> The law is clear that a patentee is not to be limited to specific compounds that he or she has actually made and tested prior to filing for patent protection. A patentee is able to claim more broadly, so as to cover a class of compounds, as long as the claim is based upon a sound prediction.

[149] The '054 Patent tells the POSITA that there are combinations and concentrations of surface stabilizers that do not work and shows one that does work. Moreover, and importantly, the '054 Patent contains functional limitations and sets out the tests to be used to ascertain which formulations meet and which do not meet those limitations. I accept the submission of Fournier that the evidence shows that those tests are within the routine capabilities of the POSITA and accordingly the allegations of overbreadth and of lack of sound prediction and inutility are not justified.

INSUFFICIENCY OF DISCLOSURE

[150] Sandoz alleges that the POSITA would have to conduct tests beyond mere routine experimentation to obtain formulations covering the scope of the claims in the '054 Patent. In support, it refers to Dr. Ruddy's affidavit which explains the difficulties that were overcome by the inventors of the '054 Patent. Specifically, Sandoz says: "The '054 Patent does not describe that the concentration in the NCD were critical, or that SLS, DOSS and sucrose were necessary."

[151] Sandoz's allegation must fail. Nowhere did Dr. Ruddy say that those problems require more than routine experimentation. Moreover, Dr. Ruddy was describing the experimentation required before the existence of the invention in the '054 Patent. The efforts of the inventors to achieve that invention for the first time are not relevant to the current issue. Unlike the inventors of the '054 Patent, the POSITA has the '054 Patent at its disposal when trying to perform the invention. I accept Fournier's proposition that the POSITA would become aware of the cited difficulties and could use routine experimentation to overcome them. I do not agree with Sandoz that a degree of inventiveness was required to practice what is claimed.

CONCLUSION

[152] As Fournier has not established, on the balance of probabilities, that all of Sandoz's allegations are not justified, this application must be dismissed. Sandoz is entitled to its reasonable costs. If the parties are unable to agree on an amount, they may advise the Court and further directions will issue.

JUDGMENT

THIS COURT'S JUDGMENT is that:

1. The application is dismissed; and

2. Sandoz Canada Inc. is entitled to costs in accordance with these Reasons.

"Russel W. Zinn"
Judge

APPENDIX A

Relevant Claims of the '054 Patent

1. A stable fenofibrate composition for oral administration comprising:

(a) particles of fenofibrate having a D50 particle size of less than about 500 nm, and

(b) at least one surface stabilizer,

wherein the composition exhibits bioequivalence upon administration to a human subject in a fed state as compared to administration to a human subject in a fasted state;

wherein:

(i) bioequivalency is established by:

(a) a 90% Confidence Interval for AUC which is between 80% and 125%, and

(b) a 90% Confidence Interval for C_{max}, which is between 80% and 125%;

(ii) the composition disperses in a biorelevant media; and

(iii) the composition is phospholipid-free.

2. A stable fenofibrate composition for oral administration comprising:

(a) particles of fenofibrate having a D90 particle size of less than about 700 nm, and

(b) at least one surface stabilizer,

wherein the composition exhibits bioequivalence upon administration to a human subject in a fed state as compared to administration to a human subject in a fasted state;

wherein:

(i) bioquivalency is established by:

(a) a 90% Confidence Interval for AUC which is between 80% and 125%, and

(b) a 90% Confidence Interval for C_{max}, which is between 80% and 125%;

(ii) the composition redisperses in a biorelevant media; and

(iii) the composition is phospholipid-free.

3. A stable fenofibrate composition for oral administration comprising:

(a) particles of fenofibrate having a mean particle size of less than about 500 nm, and

(b) at least one surface stabilizer,

wherein the composition exhibits bioequivalence upon administration to a human subject in a fed state as compared to administration to a human subject in a fasted state;

wherein:

(i) bioequivalency is established by:

(a) a 90% Confidence Interval for AUC which is between 80% and 125%, and

(b) a 90% Confidence Interval for C_{max}, which is between 80% and 125%;

(ii) the composition redisperses in a biorelevant media; and

(iii) the composition is phospholipid-free.

10. The composition of any one of claims 1-3, wherein the difference in AUC of the fenofibrate composition, when administered to a human subject in the fed versus the fasted state, is less than about 5%.

20. The composition of any one of claims 1 to 19 comprising a dosage of about 145 mg of fenofibrate, wherein:

(a) the dosage is therapeutically effective; and

(b) the composition is bioequivalent to a 160 mg micronized fenofibrate tablet or 200 mg micronized fenofibrate capsule, wherein bioequivalency, when administered to a human, is established by a 90% Confidence Interval of between 0.80 and 1.25 for both C_{max} and AUC.

27. The composition of any one of claims 1 to 22, wherein the D50, D90, or mean particle size of the particles of fenofibrate is less than about 200 nm.

28. The composition of any one of claims 1 to 22, wherein the D50, D90, or mean particle size of the particles of fenofibrate is less than about 150 nm.

36. The composition of any one of claims 1-35, wherein

(a) within about 5 minutes at least about 40% of the composition is dissolved;

(b) within about 10 minutes at least about 60% of the composition is dissolved; or

(c) within about 20 minutes at least about 90% of the composition is dissolved,

wherein dissolution is measured in a discriminating aqueous media comprising sodium lauryl sulfate at 0.025 M, and wherein the rotating blade method is used to measure dissolution.

38. The composition of claim 36, wherein within 10 minutes at least 80% of the composition is dissolved.

FEDERAL COURT

SOLICITORS OF RECORD

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