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ANNOUNCEMENTS

2025 Annual Meeting

The 2025 AIPLA Annual Meeting moves back to the heart of Washington, DC. This year's Meeting will be held October 30 to November 1, 2025 at the Westin Hotel between Gallery Place, City Center and the Convention Center. Hotel reservations can be made here.

Joint Cocktail Reception at the 2025 Annual Meeting

The Biotechnology Committee, Chemical Practice Committee, and the Food and Drug Law Committee are co-sponsoring a cocktail reception at the AIPLA Annual Meeting, hosted by K&L Gates. The reception will be held on **Thursday, October 30 from 5:00 to 6:00 PM at The Westin DC Downtown, Meeting Rooms 10-11.** Come and have a few drinks and get to know your fellow members! Please RVSP to lsmalley@harrisbeachmurtha.com if you would like to attend.

Committee Quarterly Calls

The next Committee call is scheduled for November 2025. Details on dates, times, and agendas will be shared via the Chemical Practice Committee microsite prior to the events.

2026 Spring Meeting

The 2026 AIPLA Spring Meeting will be held May 13-15, 2026 in San Francisco, California at the Fairmont San Francisco. More information can be found here.

2026 Advanced Chemical Practice Institute

In conjunction with the 2026 Spring Meeting in San Francisco, the Chemical Practice and Biotech Committees will hold an Advanced Chemical & Biotech Patent Practice Institute. The Committee is seeking volunteers to present on chemical practice topics and help plan the event. If you are interested in volunteering, contact Vice-Chair Josh Goldberg at JGoldberg@Nathlaw.com.

Definition of Branched Alkyl Destroys Patent Rights

By Audrey Johnson[1] and Tom Irving[2]

Summary of the Appeal to the Federal Circuit

Alnylam brought two suits against Moderna in district court, alleging that Moderna's mRNA-based COVID-19 vaccine SPIKEVAX® infringed U.S. Patent Nos. 11,246,933 (parent) and 11,382,979 (child), issued to Alnylam. Alnylam alleged that Moderna's vaccine contains a cationic lipid (SM-102), claimed by the asserted patents. The appeal at hand turns on a single issue of claim construction.

The district court found that Alnylam acted as lexicographer regarding the term "branched alkyl" in the "Definitions" section at column 412 of the specification:

> Unless otherwise specified, the term "branched alkyl" . . . refer[s] to an alkyl . . . group in which one carbon atom in the group (1) is bound to at least three other carbon atoms and (2) is not a ring atom of a cyclic group.

The parties stipulated that Moderna did not infringe the asserted patent claims under that claim construction because Moderna's product does not meet the "branched alkyl" requirement of a carbon bound to at least three other carbon atoms. Consequently, the district court found that Moderna did not infringe.

Alnylam appealed to the Federal Circuit. The Federal Circuit concluded that Alnylam acted as lexicographer in its requirement of a carbon bound to at least three other carbons "unless otherwise specified" and Alnylam did not otherwise specify for purposes of the asserted claims. The Federal Circuit therefore affirmed after each of Alnylam's arguments.

Proceedings at the District Court

A portion of Representative claim 18 of the '933 patent with the claim term at issue states:

> …for at least one biodegradable hydrophobic tail, the terminal hydrophobic chain in the biodegradable hydrophobic tail is a branched alkyl, where the branching occurs at the α-position relative to the biodegradable group and the biodegradable hydrophobic tail has the formula —R^{12}-M^{1}-R^{13}, where R^{12} is a C_4-C_{14} alkylene or C_4-C_{14} alkenylene, M^{1} is the biodegradable group, R^{13} is a branched C_{10}-C_{20} alkyl, and the total carbon atom content of the tail —R^{12}-M^{1}-R^{13} is 21 to 26; in at least one hydrophobic tail, the biodegradable group is separated from a terminus of the hydrophobic tail by from 6 to 12 carbon atoms.…

In March 2022, Alnylam sued Moderna in the district court alleging that Moderna infringed claim 18 and all other claims of the '933 patent involving the SM-102 lipid in SPIKEVAX®.

[1] Audrey Johnson is an Intern at The Marbury Law Group.
[2] Tom Irving is a Senior Partner of The Marbury Law Group.

After the '979 patent issued in July 2022, Alnylam filed a second similar suit against Moderna, alleging infringement of claim 1 and other claims of the '979 patent.

In June 2023, the parties submitted a joint claim-construction brief in preparation for a claim construction hearing set for August 2023. Regarding the "branched alkyl" and "branched C_{10}-C_{20} alkyl" terms, Alnylam asked the district court to apply what it asserted was the ordinary meaning of "a saturated hydrocarbon moiety that is not a straight chain," with the additional requirement that a "branched C_{10}-C_{20} alkyl" contains 10 to 20 carbon atoms. Moderna requested a construction that tracked what Moderna viewed as a definitional sentence in column 412 of the specification: "Alkyl in which one carbon atom in the group (1) is bound to at least three other carbon atoms, and (2) is not a ring atom of a cyclic group."

In August 2023, the district court agreed with Moderna that the passage from the '933 patents "is clear and unequivocal lexicography." The district court explained that there would need to be "some specification otherwise to depart from that lexicography" "in every instance in which you want to depart form the lexicography." Alnylam did not satisfy the district count that there was "clear and unmistakable" departure from lexicography for any part of the claims or written description. The district court entered the requested a final judgement of noninfringement, and Alnylam appealed.

Proceedings at the Federal Circuit

On appeal to the Federal Circuit, Alnylam argued that the district court erred in holding that Alnylam acted as lexicographer, contending that the intrinsic record shows that it did not intend to limit the "branched alkyl" term to a carbon bound to three carbon atoms and that the district court's construction excludes disclosed embodiments. Disagreeing, the Federal Circuit found that there is no reason to conclude that "branched alkyl" as it is used in the asserted claims encompasses a secondary carbon at the alpha position i.e. a carbon bound to only two other carbon atoms, contradicting the definition in the specification.

Alnylam contended that the asserted claims "cover," or are compatible with, a "branched alkyl" containing a secondary carbon at the alpha position as well as one bound to three carbon atoms. Alnylam looked for support to the unasserted claim 14 of the '933 patent. Relying on the principle that independent claims are generally construed to have broader scope than their dependent claims, Alnylam argues that the independent claims should be interpreted to cover a carbon atom at the alpha position that is bound to as few as two other carbon atoms. Disagreeing again, the Federal Circuit found that this argument would not follow that principle because dependent claim 14 narrows the scope of the independent claim.

The parties agreed that only Formulae I, II, and VIII depict any level of branching at the alpha position. Formula II is described as having a "branched alkyl at the alpha position adjacent to the biodegradable group M^1. Alnylam argues that where M^1 does not supply a carbon-carbon bond to the alpha-position carbon, the alpha-position carbon is bound to only two other carbon atoms. Disagreeing yet again, the Federal Circuit found that this argument did not establish "specifying" an exception to the definition.

Moreover, Alnylam argued both in the district court and in the Federal Circuit that Formula II falls outside the asserted claims. During oral argument, Alnylam reversed course; its new position was that some versions of Formula II embody the asserted claims. The Federal Circuit dismissed that position as coming too late.

In the Detailed Description section of the specification, Alnylam pointed to various embodiments that contain a secondary carbon at the relevant alpha position. Yet, nearly all of the embodiments fell outside the scope of the asserted claims and thus could not redefine a "branched alkyl."

Finally, Alnylam pointed to a line within the Definitions sections that states that "representative saturated branched alkyl groups include isopropyl, sec-butyl, isobutyl, tert-butyl, and isopentyl." It pointed out that isopropyl and sec-butyl both include a secondary carbon at the alpha position. However, the Federal Circuit found that these examples fall outside the scope of the claims as they do not contain the 10-20 carbon atoms required by the claims.

Though the prosecution history, according to the Federal Circuit, came the closest to suggesting that Alnylam understood a branched alkyl to include a secondary carbon, the Federal Circuit concluded that the prosecution history is not sufficiently decisive to override the definition set forth.

The Federal Circuit considered Alnylam's remaining arguments and found them to be unpersuasive, thus affirming the decision of the district court.

The EPO has confirmed in G1/23 a limited on-sale bar for product claims; beware the difference

By Simon Curtis[3] and Sommer Zimmerman[4]

The recent EPO Enlarged Board of Appeal decision G1/23 has been widely discussed as introducing an *on sale bar*. Is that really the effect of the decision? That would depend on how "*on sale bar*" is interpreted and U.S. practitioners, in particular, should beware an assumption that it is the same as their own principle.

In this article, we consider the similarities and differences between the two provisions.

It will be well understood by readers that the European Patent Convention (EPC) offers no grace period to inventors or their employers for public disclosures prior to the filing of a patent application. Once an invention is in the public domain, the chance to obtain patent protection for it has passed.

However, this seemingly straightforward provision has in the past been complicated when it comes to disclosures by marketing of complex products where reverse-engineering may not be possible. Many Boards of Appeal have taken the view that without direction as to how to make and characterise the product, the disclosure by marketing of the product is not an enabling one and it would not form part of the state of the art. Chemical formulations, especially those made by *in situ* reactions such as polymeric compositions, were often subject to such decisions.

The decision in G1/23 concerns an invention relating to a polymer composition that was intended for use in encapsulating solar cells. As is common in the technical field, the claim involved a mixture of limitations to both the contents (such as monomeric make up and impurities) and performance parameters. Claim 1 read:

> 1. A material suitable as an encapsulating material for solar cell, which comprises an ethylene/α-olefin copolymer which has
> (a1) a content of 80-90 mol% of structural units derived from ethylene and 10-20 mol% of structural units derived from C_{3-20}-(α-olefin);
> (a2) a MFR of 10-50 g/mol minutes, measured according to SATM D1238 at 190°C and under a load of 2.16 kg;
> (a3) a density of 0.865-0.884 g/cm^3, measured according to ASTM D1505;
> (a4) a shore A hardness of 60-85, measured according to ASTM D2240; and
> (a6) a content of aluminum element of from 10 to 500 ppm.

The main objection in the appeal underlying the referral was one of inventive step, where D1 (WO 2008/036708 A2) described in its Example 3 the use of a commercial polymer ENGAGE 8400 in encapsulating a solar cell. Neither party disputed that ENGAGE 8400 fell within the scope of all limitations of the claim save for aluminium content (a6). Neither party disputed that ENGAGE 8400 was commercially available before the priority date.

[3] Simon Curtis is a Partner in the Chemistry Practice at Potter Clarkson.
[4] Sommer Zimmerman is an Associate in the Patent Group's Life Sciences Team at Ballard Spahr.

However, the patent owner argued, in time-honoured fashion, that the composition of ENGAGE 8400 was not available to the public because there was no disclosure of the polymerisation conditions required to make it. In such a context the skilled person would not be able to produce it without undue burden. In the eyes of the patent owner, commercial product ENGAGE 8400 was not an enabling disclosure and thus could not be taken into account when deciding on inventive step, whether on its own merits or as part of the teaching of D1.

These arguments were based on an earlier decision G1/92, where the Enlarged Board had considered whether in order that a commercial (chemical) product be considered part of the state of the art, the skilled person would need a reason to analyse it to determine its composition and structure. It decided not but remarked in *obiter* that:

Where [a] teaching results from a product put on the market, the person skilled in the art will have to rely on his general technical knowledge to gather all information enabling him to prepare the said product. Where it is possible for the skilled person to discover the composition or the internal structure of the product and to reproduce it without undue burden, then both the product and its composition or internal structure become state of the art. (emphasis added)

In G1/23, the Enlarged Board determined that most case law of the Boards of Appeal had applied "reproduce" in this context to mean actually make the material from close to first principles but that this approach would introduce an additional hurdle that is not reflected in the primary legislation. Article 54(2) EPC provides:

The state of the art shall be held to comprise everything made available to the public by means of a written or oral description, by use, or in any other way, before the date of filing of the European patent application. (emphasis added)

The Enlarged Board now clarifies that the reproduction of the commercial product by the skilled person may be by acquiring it from its commercial source, even if that is only theoretically possible. The effect is that *any* product placed on the market should anticipate a claim that encompasses it, whether or not the skilled person could manufacture that product based on the common general knowledge at the filing date. The Board acknowledged that there would be occasions when it would be difficult to show that a product actually anticipated a claim but stated simply that this was merely an evidentiary burden similar to those faced by legal practitioners in other contexts.

In the United States, a claimed invention cannot be patented if it was "on sale" for more than one year before the earliest effective filing date of the patent application. *See* 35 U.S.C. §§ 102(a)(1) and 102(a)(2). Known as the "on-sale bar," the doctrine is intended to prevent a patent applicant from effectively extending their patent term by commercially exploiting the invention before filing their patent application. Once the sale or offer for sale has been made, the inventor must file a patent application to protect their invention within one year (the one-year grace period) or will forfeit the right to do so.

The Supreme Court clarified in *Pfaff v. Wells Electronics*, 525 U.S. 55 (1998) that the on-sale bar is (i) triggered by a commercial sale or commercial offer for sale of the claimed invention and (ii) requires that the invention was sufficiently "ready for patenting" at the time of the sale or offer for sale. Further, an invention is considered "ready for patenting" when it has

been reduced to practice or when the inventor has prepared "descriptions of the invention that were sufficiently specific to enable a person skilled in the art to practice the invention." *See Pfaff* at 67-69.

Importantly, the U.S. on-sale bar applies not only to the inventor themself but also to third parties, irrespective of whether the sale or offer for sale was made "innocently or fraudulently." *See Abbott Laboratories v. Geneva Pharmaceuticals, Inc.*, 182 F.3d 1315 (1999). In *Abbott Laboratories*, at least three sales of Form IV terazosin hydrochloride anhydrate were made by Byron Chemical Company, Inc. in the United States before the earliest effective filing date of Abbott's patent application. Although neither party to the transaction knew the crystalline form of the compound at the time of the sale, it was later determined that the unknown form was, in fact, the same form later patented by Abbott. The Federal Circuit found this "irrelevant." The compound, which inherently possessed the claimed limitations, was in the public domain through commercialization prior to the filing of the patent application, which is precisely what the on-sale bar seeks to prevent.

While the relevant sales in *Abbott Laboratories* were specific to the U.S., the current on-sale bar is not so limited. The America Invents Act (AIA) of 2013 extended the on-sale bar to all sales, irrespective of where they occurred. Thus, a sale (or offer for sale) anywhere in the world is relevant.

More recently, the Federal Circuit opined on whether the AIA also changed the treatment of secret sales. *See Celanese International Corporation v. ITC*, No. 2022-1827 (Fed. Cir. 2024). Pre-AIA, a secret sale triggered the on-sale bar such that even sales made in confidence could destroy patentability if they occurred before the one-year grace period. So, too, the sale of a product made using a secret process could later bar patentability of the product. *Celanese* makes clear that the AIA did not change pre-AIA law in this regard. Secret sales continue to trigger the on-sale bar.

So, is G1/23 really introducing an on-sale bar? It is certainly true that products available on the open market before the filing date of a patent have the potential to anticipate claims to the product itself, even where detailed analysis might be required to determine it, and even where a person of ordinary skill in the art could not reverse engineer it. In this sense, the restriction on patentable subject matter appears comparable to that upheld in the U.S., in which the mere existence of the product is sufficient to bar patentability. Moreover, as in the U.S., the product can be made by the inventor or by a third party and there are no geographical restrictions. Unlike in the U.S., however, there is no grace period. This is an important distinction to be cognizant of.

The treatment of a secret sale is also regarded very differently by the EPC than in the U.S. In particular, the EPC requires that prior art be *made available to the public* before the priority date. As such, a private or otherwise confidential sale or offer for sale cannot invalidate a patent claim. However, as noted above, the sale of a product whose *method of manufacture is secret* can yet serve as a bar to patentability. Thus, secret know-how *can* be used to invalidate a patent in Europe once the product of that know-how is made public.

Consider a claim to a chemical composition and a formulation product falling within the scope of that claim. That formulation product is sold by an ingredient supplier to a manufacturer of a finished product who processes the product so that it is indistinguishable from its original form and then places it on the open market. In determining whether the on-sale bar applies

in the U.S., the primary question is whether the first sale of the formulation product occurred more than one year before the priority date of that claim. At the EPO, however, two different questions must be considered: (1) whether the sale occurred *at any time* before the priority date of the claim; and (2) whether the sale of the formulation product was in confidence (express or implied). The result is that the overall impact of the sale on the patentability of the formulation product will likely differ in the two jurisdictions.

Questions regarding confidential sales often arise in cases where the Boards of Appeal are considering allegations of prior public use brought in oppositions and will likely continue to do so. In such cases, it is rare to see a confidentiality agreement but common for patentees to argue that sales by others were confidential if they were not made on the open market. The Boards of Appeal will look to whether there is evidence about how the product was ordered or developed when making a determination. If, for example, the buying party has specified the requirements of the product and it is not available to other customers of the manufacturer, it is likely to be deemed a confidential sale (or at least the proposition that it would be public would not have been evidenced to the strict *up to the hilt* standard). Of course, in the U.S., the confidentiality component is not relevant.

Should the Unified Patent Court follow the EPO Boards of Appeal in this question generally, it is likely that its greater powers to subpoena and examine evidence mean that it is also more likely to satisfy the strict standard and find claims invalid (*i.e.*, to find that the sale is not confidential).

Alternatively, consider the same fact pattern above, except that it is the formulation product itself that is sold on the open market. Further, assume that the method of preparing the formulation product is unknown and not readily ascertainable by those of skill. In this case, the only distinction between how the U.S. and Europe will evaluate the patentability is the timing of the sale. In the U.S., the sale must have occurred more than one year before the critical date, while in the EPO, it is sufficient for the sale to have occurred at any time before the critical date. The fact that the manufacturing method is secret has no bearing on the patentability of the formulation in either jurisdiction.

It would seem, therefore, that the effect of G 1/23 is not a complete prohibition on the patenting of products that have been sold before the priority date of a claim. Sales that are made in a confidential way will not be prejudicial to patent claims and neither should offers for sale, which do not provide a public and enabling disclosure of the invention. However, patent owners will no longer be able to hide behind the complexity of analysing or manufacturing a product when defending a claim in opposition proceedings. If an opponent can evidence that a product has been sold *publicly at any time prior to the critical date* and falls within the scope of the claims, it will be relevant prior art.

U.S. practitioners should continue to be wary of the absence of a grace period in Europe when advising clients on filing European applications around or after the dates of marketing of products, whether the product was marketed in the U.S. or elsewhere, with particular caution placed on the commercialization of products *before* a patent application is filed. It is always advisable to file *first*. Moreover, it is no longer possible to rely on trade secret protection of the method whilst selling the product as a public sale is now sufficient for the product to qualify as prior art, irrespective of whether the method of manufacture is known or even ascertainable. Finally, U.S. practitioners should also consider that this decision will be relevant to product claims only. Methods of manufacture and, in particular, use claims that

focus on a non-obvious effect of a component in a formulation can be very useful in these scenarios.

Review of the Safe Harbor under 37 U.S.C. §271(e)(1) "Roche-Bolar" Exemption from Infringement in the United States

By Wan Chieh (Jenny) Lee[5] and Joshua Goldberg[6]

There is currently no statutory basis in the United States for a broad "experimental use" exception to patent infringement. As outlined below, however, U.S. law provides for a more limited experimental use exception, sometimes referred to as the "Bolar exemption", as supported by the relevant case law.

1. History of the Bolar Exemption

An experimental use defense to patent infringement has long been part of the common law of the United States. Prior to the enactment of the Hatch-Waxman Act, the seminal case in this area, *Roche Products, Inc. v. Bolar Pharmaceutical Co.* from 1983, arose in the U.S. District Court. In this case, the defendant Bolar, a generic pharmaceutical manufacturer, used a patented drug product to conduct studies that were required to obtain regulatory approval of a generic version of the drug product. The District Court found that the defendant could rely on the experimental use as an exception to infringement.[7] The Court of Appeals for the Federal Circuit (the Federal Circuit) reversed.[8] Specifically, the Federal Circuit noted that Bolar's use of the patented drug product "is solely for business reasons and not for amusement, to satisfy idle curiosity, or for strictly philosophical inquiry."[9] The Federal Circuit noted that the experimental use exception is "truly narrow," and that Bolar's intended use of the patented drug "with a view to the adaption of the patented invention to the experimentor's business is a violation of the rights of the patentee to exclude others from using his patented invention."

Under *Roche v. Bolar*, patent owners would enjoy a *de facto* patent term extension because generic competitors are required to spend time after patent expiration to generate experimental data before they can obtain FDA approval for market entry of a generic product. The Federal Circuit declined to create a new exception to infringement. Instead, the Court stated that "[i]t is the role of Congress to maximize public welfare through legislation" and that "[n]o matter how persuasive the policy arguments are for or against these proposed bills, this court is not the proper forum in which to debate them."[10]

By denying an experimental use exception to a developer of generic drugs, the decision effectively frustrated the generic drug provisions of the then--recently enacted Federal Food Drug and Cosmetic Act of 1982.
The Bolar exemption was later codified in 35 U.S.C. § 271(e)(1) in 1984, as part of the Hatch-Waxman Act[11], which includes a statutory scheme linking generic drug approval to a patent

[5] Wan Chieh (Jenny) Lee is a Partner with Haug Partners in New York.
[6] Joshua Goldberg is Co-Managing Partner of Nath, Goldberg & Meyer in Alexandria, VA
[7] 572 F. Supp. 255 (E.D.N.Y. 1983).
[8] *Roche Products, Inc. v. Bolar Pharmaceutical Co., Inc.*, 733 F.2d 858 (Fed. Cir. 1984).
[9] Id. at 863.
[10] *Roche Products Inc.*, 733 F.2d at 865.
[11] P.L. 98-417, the Drug Price Competition and Patent Term Restoration Act of 1984 (also known as the Hatch-Waxman Act).

listing and litigation process, in direct response to and abrogated the *Roche v. Bolar* decision. 35 U.S.C. § 271(e)(1) states that:

> It shall not be an act of infringement to make, use, offer to sell, or sell within the United States or import into the United States a patented invention (other than a new animal drug or veterinary biological product (as those terms are used in the Federal Food, Drug, and Cosmetic Act and the Act of March 4, 1913) which is primarily manufactured using recombinant DNA, recombinant RNA, hybridoma technology, or other processes involving site specific genetic manipulation techniques) solely for uses reasonably related to the development and submission of information under a Federal law which regulates the manufacture, use, or sale of drugs or veterinary biological products.

This exception under 35 U.S.C. § 271(e)(1) became commonly known as the Bolar exemption or § 271(e)(1) safe harbor. Under the Bolar exemption, "[w]hile performing development work and seeking such approval, a generic drug manufacturer is free from liability for patent infringement based solely upon acts necessary to prepare the ANDA."[12]

2. Courts' Interpretations of the Bolar Exemption

The U.S. Supreme Court has interpreted the scope of 35 U.S.C. § 271(e)(1) to provide "a wide berth for the use of patented drugs in activities related to the federal regulatory process", and to indicate the exemption applies to "all uses of patented inventions that are reasonably related to the development and submission of any information under the [Federal Food, Drug and Cosmetics Act]."[13] This broad interpretation of the § 271(e)(1) exemption includes "(1) experimentation on drugs that are not ultimately the subject of an FDA submission or (2) use of patented compounds in experiments that are not ultimately submitted to the FDA."[14] The Court noted, however, that "[b]asic scientific research on a particular compound, performed without the intent to develop a particular drug or a reasonable belief that the compound will cause the sort of physiological effect the researcher intends to induce," would not be within the scope permitted by the Bolar exemption.[15]

a. Scope of Bolar Exemption

i. Applicable Fields of Technology

Although the language of the statue refers to "drugs or veterinary biological products," the Supreme Court in *Eli Lilly & Co. v. Medtronic, Inc.* interpreted this to extend beyond just drug products and veterinary biological products.[16] The Court reasoned that the Bolar exemption is generally complementary to 35 U.S.C. § 156(a), which provides patent term extension for patents relating to products that were subject to regulatory delays and could not be marketed prior to regulatory approval.[17] The combination of these two statutory provisions represents

[12] *Glaxo Inc. v. Novopharm Ltd.*, 110 F.3d 1562, 1567(Fed. Cir. 1997).
[13] *Merck KGaA v Integra Lifesciences I, Ltd.*, 545 U.S. 193, 202 (2005)
[14] *Merck KGaA*, 545 U.S. at 206.
[15] *Id.* at 205-06.
[16] *Eli Lilly & Co. v. Medtronic, Inc.,*496 U.S. 661 (1990).
[17] *Id.* at 673.

a compromise struck in the enactment of the Hatch-Waxman Act that gave additional patent term for products subject to regulatory delays and could not be marketed prior to regulatory approval, but removed the *de facto* patent term extension created by the combined effect of patent law and the requirement for premarketing regulatory approval discussed in *Roche v. Bolar*. All of the types of products eligible for patent term extension under § 156(a) are also eligible for the Bolar exemption under § 271(e)(1) and *vice versa*. Therefore, the Bolar exemption is applicable to medical devices, food additives, color additives, new drugs, antibiotic drugs, human biological products, new animal drugs and veterinary biological products that require regulatory approval by the FDA.[18]

Furthermore, the § 271(e)(1) exemption has been interpreted by the Supreme Court to apply to "all uses of patented inventions that are reasonably related to the development and submission of any information under the [Federal Food, Drug and Cosmetics Act]."[19] Therefore, the Bolar exemption is available to generic drug manufacturers as well as innovative manufacturers, as long as the use is reasonably related to seeking approval before the FDA. The exemption under § 271(e)(1) may also extend to third parties, e.g., an active pharmaceutical ingredient (API) supplier, engaged by the party seeking FDA approval. *See Shire, LLC v. Amneal Pharms., LLC.*[20]

ii. Purpose of Experiments/Infringing Activities

Under § 271(e)(1), the Bolar exemption is limited only to those activities that are "solely for uses reasonably related to the development and submission of information under a federal law which regulates the manufacture, use, or sale of drugs or veterinary biological products." This exemption does not cover all research activities. The Court in *Merck KGaA v Integra* specified that "[b]asic scientific research on a particular compound, performed without the intent to develop a particular drug or a reasonable belief that the compound will cause the sort of physiological effect the researcher intends to induce," is not within the scope of the Bolar exemption.[21]

iii. Examples of Exempted and Infringing Activities

The Bolar exemption is not limited only to information that is submitted to the FDA. Rather, the statute has been interpreted by the U.S. Supreme Court to apply to preclinical studies "as long as there is a reasonable basis for believing that the experiments will produce the type of information that are relevant to an IND or NDA."[22] These preclinical studies may relate to a drug's safety, efficacy, mechanism of action, pharmacokinetics, and pharmacology.[23] The § 271(e)(1) exemption is sufficiently broad to encompass "(1) experimentation on drugs that are not ultimately the subject of an FDA submission or (2) use of patented compounds in experiments that are not ultimately submitted to the FDA."[24]

[18] *Id.* at 673-74; *AbTox, Inc. v. Exitron Corp.,* 122 F.3d 1019, 1030 (Fed. Cir.1997)(holding that the §271(e)(1) exemption applies to Class II medical devices).
[19] *Merck KGaA.*, 545 U.S. at 202.
[20] *Shire, LLC v. Amneal Pharms., LLC,* 802 F.3d 1301 (Fed. Cir. 2015).
[21] *Merck KGaA*, 545 U.S. at 205-06.
[22] *Merck KGaA*, 545 U.S. at 208 (*internal citations omitted*).
[23] *Id.* at 203-204.
[24] *Id.* at 206.

The § 271(e)(1) exemption allows uses for more than FDA approval, as long as the use is reasonably related to FDA approval.[25] The Federal Circuit in *AbTox, Inc. v. Exitron Corp.* explained that the statute "does not look to the underlying purposes or attendant consequences of the activity (e.g., tests led to the sale of the patent), as long as the use is reasonably related to FDA approval."[26]

Recently, in *Edwards Lifesciences Corp. v. Meril Life Scis. Priv. Ltd.*, the Federal Circuit reiterated the standard from *Merck KGaA v Integra* that "for each act of infringement the safe harbor is available only for acts or uses that bear a reasonable relation to the development and submission of information to the FDA."[27] In view of this framework, the Court determined that "Meril's importation of the transcatheter heart valves [to the medical conference] constituted another step in the right direction 'on the road to regulatory approval'," and therefore, "firmly resides in the § 271(e)(1) safe harbor."[28]

While the § 271(e)(1) exemption is to be broadly applied, there are some activities that do not fall within the scope of the exemption. For example, in *Proveris Sci. Corp. v. Innovasystems, Inc.,* the Federal Circuit declined to extend the § 271(e)(1) exemption to research tools used for generating data for FDA submission.[29] The defendant, Innova, produces an optical spray analyzer that measures the physical parameters of aerosol sprays used in drug delivery devices subject to a required FDA approval process. However, neither plaintiff Proveris' patented product nor Innova's optical spray analyzer are subject to FDA approval. The court in *Proveris* declined to extend the § 271(e)(1) exemption to Innova's sale of the optical spray analyzer, because the product at issue does not require FDA approval.[30]

In *Classen v. Biogen,* the Court explained that "§ 271(e)(1) provides an exception to the law of infringement in order to expedite development of information for regulatory approval of generic counterparts of patented products," but "does not apply to information that may be routinely reported to the FDA, long after marketing approval has been obtained."[31] At issue in *Classen* were post-approval studies conducted to evaluate suggested association between childhood vaccinations and risk of developing type 1 diabetes, and to determine whether timing of vaccination influences risk.[32] Biogen and GlaxoSmithKline provided vaccines, advised on immunization schedules, and reported any adverse vaccine effects to the FDA. The court in *Classen* found that "the Biogen and Glaxo activities charged with infringement are not related to producing information for an IND or NDA and are not a 'phase of research' possibly leading to marketing approval."[33] Therefore, the § 271(e)(1) exemption was found not applicable to these activities.

However, not all post-approval activities fall outside of the § 271(e)(1) exemption. In *Momenta Pharms. Inc. v. Amphastar Pharm., Inc.*, the Federal Circuit declined to adopt a bright line pre-/post-approval distinction for § 271(e)(1), and instead, held that "post-approval studies that are 'reasonably related to the development and submission of information under a Federal

[25] *AbTox, Inc.,* 122 F.3d at 1030.
[26] *Id.*
[27] *Edwards Lifesciences Corp.,* 96 F.4th at 1353 (Fed. Cir. 2024)(citing to *Merck KGaA*, 545 U.S. at 205-07).
[28] *Id.* at 1353-1354.
[29] *Proveris Sci. Corp. v. Innovasystems, Inc.,* 536 F.3d 1256 (Fed. Cir. 2008).
[30] *Id. at 1265-1266*
[31] *Classen Immunotherapies, Inc. v. Biogen Idec*, 659 F.3d 1057, 1070 (Fed. Cir. 2011).
[32] *Id.*
[33] *Id.* at 1072.

law which regulates the manufacture, use, or sale of drugs' fall within the scope of the § 271(e)(1) safe harbor."[34] In a subsequent proceeding, the Court clarified that "routine record retention requirements associated with testing and other aspects of the commercial production process" are different from "non-routine submissions that may occur both pre- and post-approval, such as the submission of investigational new drug applications ("INDs"), new drug applications ("NDAs"), supplemental NDAs, or other post-approval research results."[35] Therefore, "[t]he routine quality control testing of each batch of generic [drug] as part of the post-approval, commercial production process is… not 'reasonably related to the development and submission of information' to the FDA," and not exempt from infringement under § 271(e)(1).[36]

In contrast, in *Classen Immunotherapies v. Elan Pharms., Inc.*, the Court of Appeal for the Federal Circuit held that a post-approval clinical study and submission of the results from the study to the FDA to revise an approved product's label was exempt from infringement under § 271(e)(1).[37] The court explained that in the post-approval context the analysis may be less straightforward, however, the § 271(e)(1) exemption "does not categorically exclude post-approval activities from the ambit of the safe harbor."[38] The § 271(e)(1) exemption allows drug manufacturers to voluntarily conduct post-approval studies on their products for purposes of developing and submitting information to the FDA, such as supplemental new drug applications seeking the FDA's approval to revise the label of their products.[39] The court considered these post-approval studies to "serve similar purposes as pre-approval studies in ensuring the safety and efficacy of approved drugs" and is therefore "an integral part of the regulatory approval process" and exempt from infringement under § 271(e)(1).

In *Amgen Inc. v. Hospira, Inc.*, the issue of whether the manufacture and stockpiling of batches of product would be exempt from infringement under § 271(e)(1) was determined at trial by a jury and upheld by the Court of Appeals for the Federal Circuit.[40] The patented inventions in this case are related to a method of manufacturing. Amgen asserted that Hospira's manufacture of batches of drug substance for its biosimilar drug product infringes the patented methods. At trial, the jury found certain batches were entitled to protection under the § 271(e)(1) safe harbor. In affirming the jury finding, the Federal Circuit explained that manufacturing to stockpile commercial inventory does not automatically remove the activity from the § 271(e)(1) safe harbor, but can be probative evidence of whether the use was reasonably related to seeking FDA approval.[41] Therefore, certain stockpiling activities are permitted under the § 271(e)(1) exemption, but manufacturing solely for the purpose of stockpiling without any relationship to submitting information to the FDA is not exempt from infringement under § 271(e)(1).

3. Conclusion

The Bolar exemption is codified in 35 U.S.C. § 271(e)(1) and provides a limited exemption to patent infringement for certain experimental uses. Specifically, this exemption is "solely for

[34] *Momenta Pharms. Inc. v. Amphastar Pharm., Inc.,* 686 F.3d 1348,1358-1360 (Fed. Cir. 2012).
[35] *Momenta Pharms., Inc. v. Teva Pharms. USA Inc.*, 809 F. 3d 610, 620 (Fed. Cir. 2015).
[36] *Id.*
[37] *Classen Immunotherapies v. Elan Pharms., Inc.,* 786 F.3d 892, 896-897 (Fed. Cir. 2015).
[38] *Id.* at 897.
[39] *Id.*
[40] *Amgen Inc. v. Hospira, Inc.,* 944 F.3d 1327 (Fed. Cir. 2019).
[41] *Id.*

uses reasonably related to the development and submission of information under a Federal law which regulates the manufacture, use, or sale of drugs or veterinary biological products," which includes medical devices, food additives, color additives, new drugs, antibiotic drugs, human biological products, new animal drugs and veterinary biological products that require regulatory approval by the FDA.[42] Under § 271(e)(1), the commercial character of the act is not dispositive as long as the act is reasonably related to the development and submission of information for FDA approval. Contrary to the experimental use exception, the scope of the Bolar exemption has so far been broadly interpreted. However, for technologies that are not subject to FDA premarketing approval, *i.e.*, non-pharmaceutical or non-medical technologies, the § 271(e)(1) exemption is not available.

[42] 35 U.S.C. §271(e)(1); *Eli Lilly & Co.*, 496 U.S. at 673-74.

How to Protect a Crystal Form (Polymorph) Patent in China

By Jennifer Che[43]

Crystalline forms are critical to pharmaceutical patents, offering extended protection for improved stability, bioavailability, or manufacturability. However, securing such patents in China has grown increasingly difficult due to the China National Intellectual Property Administration (CNIPA)'s strict patentability criteria. Unlike the U.S. or Europe, where structural novelty or problem-solving utility may suffice, China demands quantifiable evidence of superiority over prior art forms and rejects patents based on routine screening alone. Recent decisions, like the invalidation of fruquintinib Crystal Form I, highlight common pitfalls: insufficient comparative data, incremental technical effects, and failures to preempt obviousness challenges. With China's pharmaceutical market surging and secondary patents under heightened scrutiny, companies must strategically align their IP strategies with CNIPA's exacting standards to have best chances of success.

A recent invalidation of a patent covering fruquintinib Crystal Form I (Patent No. 201580047368.6) by the CNIPA offers insightful lessons for pharmaceutical companies seeking to protect polymorphs and crystalline forms in China. The decision further confirms China's rigorous standards for patentability, particularly around *support requirements* and *inventive step*.

Key Takeaways

1. Support Requirements Under Article 26.4: Defining "Sufficient Disclosure"

The invalidation request argued Claims 1–2 and 6–20 lacked support under Patent Law §26.4, asserting that using only 6–7 XRD peaks (vs. the purported industry standard of 8–10 peaks per evidence 4) failed to sufficiently distinguish "Form I" from undiscovered polymorphs sharing those peaks. The panel rejected this, reasoning that:

- *Definitive Characterization*: The claims explicitly defined "Form I" as a distinct polymorph, and the specified XRD peaks (even 6–7) were sufficient to differentiate it from other forms disclosed in the specification (Forms II–IX), none of which shared all listed peaks.

- *No Evidence of Overlap*: The requester provided no proof that other unclaimed polymorphs with the same XRD profile existed, rendering the "overbreadth" argument speculative.

- *Technical Justification*: Citing expert literature (counter evidence9), the panel noted that even 3 strong peaks can uniquely identify a polymorph, affirming that the claimed XRD data met the support requirement.

[43] Jennifer Che is President and Managing Director at Eagle IP.

- *No Rigid Rules*: While industry guidelines (e.g., *Polymorphism in Pharmaceutical Solids*) suggest 8–10 peaks for regulatory identification, China's patent law focuses on whether the disclosed data sufficiently defines the invention.

2. Inventive Step Under Article 22.3: The Bar for "Unexpected Effects"

The invalidation request contended Claims 1–20 lacked inventiveness under Patent Law §22.3, asserting that Form I of fruquintinib was obvious over evidence1 (disclosing the compound but not its crystal form) combined with routine polymorph screening (per evidence4/5). The panel agreed, reasoning:

- *Obvious Technical Path*: Developing stable, non-hygroscopic polymorphs is standard in drug development. Evidence4/5 confirmed solvents and crystallization methods used for Form I were conventional, making its discovery predictable.

- *No Unexpected Effects*: While Form I showed stability advantages over *other polymorphs* (e.g., Form IX in counter evidence1/6), **no comparison to evidence1's HMPL-013** (used in pre-clinical studies) existed. Thus, Form I's stability/performance could not rebut the presumption of obviousness.

- ***Routine Optimization***: The panel emphasized that identifying a stable form via routine screening—without *unforeseen properties* (e.g., radically enhanced bioavailability or unprecedented stability)—did not rise to inventive step.

- ***Secondary Considerations***: Commercial success claims (counter evidence8) failed to link fruquintinib's market performance *specifically to Form I*, undermining non-obviousness arguments.

The decision underscores that mere identification of a new polymorph, absent **comparative data against the closest prior art form** or **unpredicted technical leaps**, cannot satisfy inventiveness requirements.

EIP thoughts

It's generally quite difficult to get granted polymorph claims in China. Standards of patentability that work overseas are often insufficient in China. Applicants wishing to protect formulations, polymorphs, and other "line extension" type IP in China need to proactively adjust their patenting strategies - *ideally at the drafting stage* - to have a chance of obtaining granted claims in these areas.

1. Robust Comparison Data is Key

- Include as many **head-to-head comparisons** as possible of stability, bioavailability, manufacturability, or other unforeseen or unpredictable properties against *publicly known prior art forms* (not just internal variants), ideally in the specification as filed. If this cannot be done at the drafting stage, consider generating post-filing data as a ready defense, whether during prosecution or an invalidation.

- Use **multiple analytical methods** (e.g., XRD, DVS, DSC) to build up a case for uniqueness.

- Tightly link any surprising results to the specific polymorph form that needs to be protected. This may be easier said than done. In the case above, for example, it would have been very difficult to show comparison data of commercial success with another polymorph, since no other polymorph was presumably ever approved to be sold on the market. For first time drugs, this type of comparison data is very, very difficult. However, patentees can generate many other types of comparison data in anticipation of these types of challenges in China.

2. File Process Patents

- Protect non-obvious crystallization methods (e.g., yield >90%, reduced solvent residues). Although the standards of patentability are same, it is relatively "easier" to show technical effects for process of preparation claims in China versus polymorph composition of matter claims.

3. Incorporate China's Strict Standards into Your Global Patent Strategy

- ***Do not assume foreign strategies translate***: China has one of the strictest patentability standards for polymorphs around the world. Structural novelty alone may suffice in some jurisdictions, but China requires proof of *superiority over the prior art*.

- ***Tailor applications early***: Integrate China-specific data during the patent drafting stage, if possible.

So, can we patent polymorphs in China?

The fruquintinib decision clarifies and further confirms China's patentability standard for polymorph IP. Although in many ways it's not surprisingly (*China has always required data showing surprising technical effect*), the requirement that "surprising" data needs to be a direct comparison to known prior art forms raises the bar beyond other jurisdictions.

To prepare, pharma and biotech companies should start early, ideally at the R&D and patent drafting stage, to align "line extension" protection strategies with China's emphasis on *technical effects* and *comparative data*. Meanwhile, companies should continue to explore other ways to round out protection, such as by protecting the processes by which these polymorphs are made.

Companies mapping out "patent cliff" risks for their polymorph patents will need to consider China differently. Polymorph patent with little comparison data support showing superiority over the prior art have a higher chance or being invalidated in China than in foreign jurisdictions.

Still, crystal form patents do get granted and upheld in China, and they can still be part of a powerful portfolio of protective assets if they are drafted in accordance with China's stricter standards.

Pro Tip: Engage local IP counsel early to stress-test applications against CNIPA's evolving standards.

Federal Circuit Ruling Broadens Reach of Prosecution History Estoppel to Include Canceled Claims

By Heather Morehouse Ettinger, Ph.D.[44] *and Tanya Leavy, Ph.D.*[45]

Prosecution history estoppel typically arises when a claim is rejected during prosecution and is then amended (narrowed) to overcome the rejection. However, in *Colibri Heart Valve LLC v. Medtronic CoreValve, LLC*, No. 2023-2153 (Fed. Cir. July 18, 2025), the U.S. Court of Appeals for the Federal Circuit held that prosecution history estoppel can be triggered by simply canceling a claim — even when the canceled claim is a standalone independent claim that was not itself amended during prosecution. This decision broadens the reach of the prosecution estoppel doctrine by rejecting the notion that, for estoppel to apply, the patentee must have amended the specific claim that ultimately issued.

U.S. Patent No. 8,900,294, owned by Colibri Heart Valve LLC (Colibri), claims a method for implanting a replacement heart valve. At the outset of prosecution, two independent claims were presented for examination: one that claimed "pushing" the valve from an outer sheath of a delivery apparatus, and the other that claimed "retracting" the outer sheath to expose the valve. The examiner rejected the "retracting" claim for lack of written description support under 35 U.S.C. §112, and Colibri canceled it without any amendment.

Colibri sued Medtronic CoreValve LLC (Medtronic), a manufacturer of replacement heart valves, in district court for infringement of the granted "pushing" claim, alleging that, under the doctrine of equivalents, Medtronic was inducing surgeons to perform the claimed method by using Medtronic's heart valve product. Medtronic argued that its product involves "retracting," not "pushing," the valve, and sought judgment as a matter of law that prosecution history estoppel as to the canceled "retracting" claim precluded Colibri's use of the doctrine of equivalents. The district court disagreed with Medtronic on grounds that the canceled claim was "an independent claim separate from" the retained claim, and the case proceeded to trial. The jury found that Medtronic had induced infringement under the doctrine of equivalents and awarded more than $106 million in damages to Colibri.

In reversing the jury verdict, the Federal Circuit concluded that prosecution history estoppel, based on the canceled "retracting" claim, bars application of the doctrine of equivalents. In arriving at its decision, the Federal Circuit determined that prosecution history estoppel goes beyond narrowing a particular claim's terms; it can be triggered by canceling "closely related" claims and/or claims involving "intertwined terminology" when such cancellation would communicate to a person of skill in the art that the scope of the retained claims has also been narrowed. Here, it was determined that a skilled person would consider the canceled "retracting" claim to be closely related substantively to the retained "pushing" claim based on the similar language used in claims as well as Colibri's own affirmative theory of equivalence that pushing necessarily accompanies retracting. Thus, the court concluded that canceling the "retracting" claim conveyed a message that the scope of the "pushing" claim had been narrowed. It was further noted that if Colibri wished to capture subject matter involving "retracting" that was outside of the scope of the retained "pushing" claim, it could have filed a continuation application and there sought to show written description support.

[44] Heather Morehouse Ettinger is a Partner at Troutman Pepper Locke LLP.
[45] Tanya Leavy is an Associate at Troutman Pepper Locke LLP.

This decision makes clear that prosecution history estoppel not only applies to claims that are amended but may also arise from claims that are canceled. Practitioners should be strategic in their claim cancellation decisions and further consider pursuing canceled claims in a continuing application to avoid creating a presumption of prosecution history estoppel as to the canceled subject matter. This decision further underscores the importance of presenting narrowly tailored claims at the outset of prosecution that anticipate possible grounds for future rejection and are drafted to avoid them.

Seeking Grace: Pursuing Method of Treatment Claims in View of Clinical Trial Related Disclosures

By Cara A. Mosley, Ph.D.[46]

I. Background

Method of treatment patents based on Phase II and Phase III clinical trial protocols are routinely pursued to extend patent exclusivity and strategically build a patent portfolio for a drug asset. The claims of these "later-generation" method of treatment patents recite salient features of the Phase II or Phase III clinical trial protocol including patient populations, dosage amounts, dosing regimens, and efficacy outcome measurements. This is done for good reason, as the salient features of the study protocol often appear on the drug label, sometimes as part of explicit active steps.

For a new chemical entity (NCE), a later-generation method of treatment patent provides additional patent term, sometimes years beyond the patent term of the earlier-generation patents, i.e., foundational patents providing composition of matter and/or broad method of treatment exclusivity.

For repurposed drugs or novel dosing protocols, method of treatment patents based on Phase II or Phase III clinical trial study protocols may provide the *only* meaningful source of patent exclusivity, e.g., if the compound is known and the composition of matter patent has expired or is soon to expire.

Conventional wisdom dictates filing a patent application based on a Phase II or Phase III clinical trial protocol *prior* to a public disclosure of the study to avoid creation of prior art that can preclude patentability of the method of treatment claims, particularly outside the U.S.[47] Given the strategic importance of later-generation method of treatment patents, care should be taken to understand the timing of any public disclosures relating to the clinical trial and to plan patent application filings accordingly.

One such clinical trial related public disclosure is the posting of the innovator's clinical trial protocol to ClinicalTrials.gov ("CTG") as a so-called "study record."[48] Posting of the study record is part of the U.S.'s well-intentioned effort to conduct human clinical trials with transparency to, *inter alia*, build public trust in clinical research and help patients find trials for which they might be eligible to participate. Innovators are to submit clinical trial study protocols to FDA no later than 21 days after the first patient is enrolled in the trial[49], and the study record will be posted not later than 30 days after submission[50-51]. Given these deadlines, it is typically not possible to predict the exact day a study record becomes public on CTG.

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[46] Cara A. Mosley, Ph.D. is a Senior Patent Agent at Foley & Lardner, LLP.

[47] Most ex-US jurisdictions do not permit "method of treatment" claims *per se*, although such claims can be reformulated in accordance with local practice, *e.g.*, as Swiss-type claims and/or purpose-limited compounds for use-type claims.

[48] 42 U.S.C. § 282(j)(2)(A)

[49] 42 U.S.C. § 282(j)(2)(C)

[50] 42 U.S.C. § 282(j)(2)(D)

[51] Changes to the clinical trial, including changes to the protocol, are also posted to CTG by the same mechanism such that multiple study records are typically available on CTG for a given clinical trial.

Such an "un-docketable" deadline, unlike the firm date of an expected journal article publication or public symposium, has - perhaps unsurprisingly – led to a fact pattern where a study record is posted to CTG before a corresponding method of treatment patent application is filed.

II. Use of the § 102(b)(1)(A) exception

Clinical trials themselves are not considered a prior public use under 35 U.S.C. § 102(a)(1).[52] CTG study records and other clinical trial related disclosures, however, are considered printed publications and/or "otherwise available to the public" under §§ 102(a)(1) if made before the effective filing date of the patent application. Such clinical trial related disclosures can therefore be used to reject a later-filed patent application's method of treatment claims as anticipated under 35 U.S.C. § 102(a)(1) and/or obvious under 35 U.S.C. § 103.

In the event a CTG study record or related disclosure becomes publicly available prior to filing a corresponding U.S. method of treatment patent application, the grace period exception under § 102(b)(1)(A) may be invoked to disqualify the disclosure under § 102(a)(1) – ***provided the disclosure is made one year or less before the effective filing date of the application***. Procedurally, should an Examiner make a rejection under 35 U.S.C. §§ 102(a)(1) and/or 103 based on a CTG study record or related disclosure, Applicant can invoke the grace period by submitting a declaration under 37 CFR § 1.130 ("Rule 130") establishing that the disclosure was made by the inventor or joint inventors, or by another who obtained the subject matter disclosed directly or indirectly from the inventor or a joint inventor, and requesting removal of the CTG study record or related disclosure as prior art.

While submission of the Rule 130 declaration seems straightforward, a recent PTAB example, *Murray & Poole Enterprises Ltd. v. Institut de Cardiologie de Montreal*[53] is illustrative of potential traps. Institut de Cardiologie de Montreal (ICM) attempted to remove "Bouabdallaoui" as prior art by invoking the grace period exception under § 102(b)(1)(A). Bouabdallaoui was published within the one-year grace period and expanded on the results of the "COLCOT" CTG study record. Bouabdallaoui listed seven authors, the second of whom, Dr. Tardif, was the sole inventor on ICM's patent. The board articulated that invocation of the grace period hinged on whether the declaration of Dr. Tardif provided sufficient information to conclude that Bouabdallaoui was not "by another."[54] Dr. Tardif's declaration explained the working relationship with only ***one*** co-author (Bouabdallaoui), as *inter alia*, acknowledgement of Bouabdallaoui's assistance in conducting the clinical trial and to provide a first author publication. Dr. Tardif's declaration also described the scope of the COLCOT multi-center clinical trial and ICM's status as the sponsor, supported by agreements between some of the centers and the sponsor. The board pointed out that only a subset of center-sponsor agreements was provided and, among the agreements provided, none listed Dr. Tardif as the

[52] See, e.g., *Sanofi v. Glenmark Pharms, Inc., USA*, 204 F. Supp. 3d 665 (D. Del. 2016), aff'd sub nom., *Sanofi v. Watson Lab'ys Inc.*, 875 F.3d 636 (Fed. Cir. 2017) (A patent on a method of using dronedarone in treating patients was not ready for patenting before the critical date and thus not a public use); *In Re Omeprazole Patent Litigation*, 536 F.3d 1361 (Fed. Cir. 2008) (A Phase III clinical trial was not a public use because the invention had not been reduced to practice and therefore was not ready for patenting).
[53] IPR2023-01064, Paper 9 (P.T.A.B., Jan. 16, 2024).
[54] *Id.*, page 54.

principal investigator.[55] Ultimately, in its decision of institution, the board found that Dr. Tardif's declaration was insufficient to disqualify Bouabdallaoui as prior art.[56]

As *Murray* demonstrates, all differences between the authors of the clinical trial related disclosure and inventors on the patent application should be thoroughly explained. Declarations from any superfluous authors, *i.e.*, non-inventors, disclaiming their contribution to the subject matter relied on in making the prior art rejection may help establish that the clinical trial related disclosure is not "by another." CTG study records, unlike typical publications, list only the sponsor of a clinical trial, not specific individuals responsible for designing the study. Nonetheless, the inventor(s) can attest to the CTG study record as their own work in a declaration. Supporting documentation clearly tying the inventor(s) to the CTG study record, *e.g.*, by naming the inventor(s) as the principal investigator(s), can also be provided.

III. International grace period provisions and filing strategies

In addition to the U.S., several foreign jurisdictions also provide a grace period. While not exhaustive, Table 1 summarizes grace period availability in commonly filed foreign jurisdictions, application filing timing, and whether proactive steps should be taken to make use of the grace period. Practitioners should work closely with local counsel to understand nuanced national requirements and timing to properly rely on each country's available grace period.

Table 1

Country	Grace Period Available	Time to file application (from disclosure)	Type of first application that should be filed	Can the first application serve as priority document… †	Notes
AU	Yes	12 months	AU Standard Application or PCT	Yes (for PCT)	No proactive steps required.
BR	Yes	12 months	U.S. Provisional, BR, or PCT	Yes	No proactive steps required.
CA	Yes	12 months	CA or PCT	No	No proactive steps required.
CN	No	--	--		CTG disclosure does not qualify for the grace period.
EP	No	--	--		CTG disclosure does not qualify for the grace period.

[55] *Id.*, page 55.
[56] *Id.*, page 56.

Country	Grace Period Available	Time to file application (from disclosure)	Type of first application that should be filed	Can the first application serve as priority document… †	Notes
JP	Yes	12 months	JP or PCT	No	Within 30 days of filing the JP national application or JP national phase entry, a certificate must be filed describing several features of the public disclosure.
KR	Yes	12 months	KR or PCT	Yes, but only if priority filing is (a) a PCT application designating only KR or (b) a direct KR application	Evidentiary documents must be submitted proving the applicant/inventor's disclosure and showing (i) the date and type of the disclosure, (ii) the disclosing party, and (iii) the content of the disclosure.
MX	Yes	12 months	U.S. Provisional, MX, or PCT	Yes	The date of the public disclosure must be included on a form when filing the MX national application or MX national phase entry of the PCT.
PH	Yes	12 months	U.S. Provisional, PH, or PCT	Yes	No proactive steps required.
SG	Yes	12 months	PCT	No	No proactive steps required.
TW	Yes	12 months	TW	No	No proactive steps required.

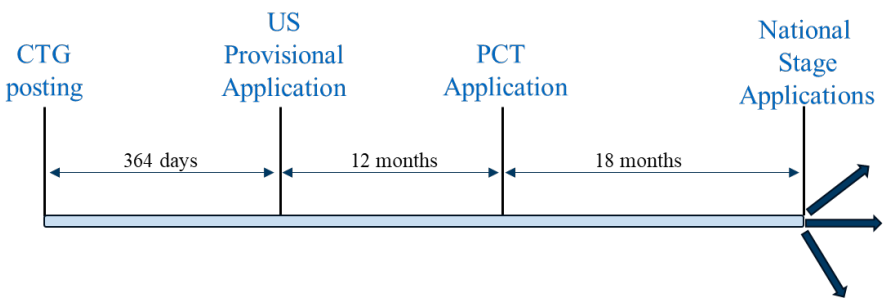
Country	Grace Period Available	Time to file application (from disclosure)	Type of first application that should be filed	Can the first application serve as priority document… †	Notes
U.S.	Yes	12 months	U.S. prov or PCT	Yes	No proactive steps required.

†for a PCT or other application filed <u>after</u> the grace period that benefits from the grace period?

Like the U.S., Australia, Brazil, Canada, Japan, Mexico, the Philippines, South Korea, Singapore, and Taiwan all provide grace periods for CTG study records and related disclosures within 12 months of a first patent application's filing date. They differ, however, with respect to whether the first patent application can serve as a priority document to a later-filed application, e.g., a PCT application, where the national stage application of the PCT application will *also* be eligible to benefit from the grace period. Certain jurisdictions, e.g., China and Europe, effectively do not have grace periods applicable to CTG study records or related disclosures.

In view of these distinctions, one can envisage complex potential filing strategies depending on international filing priorities.

Scenario 1 is a "typical" filing strategy where a U.S. provisional application is the first-filed application in the family. This filing strategy can be followed to pursue patent coverage in countries where a U.S. provisional application filed within 12 months of the CTG study record or related disclosure ***can serve as a priority document*** to a PCT application filed 12 months after the U.S. provisional application, and the national phase applications of the PCT application are eligible to benefit from the grace period based on the U.S. provisional application's filing date. Representative countries in which this filing strategy can be utilized include the U.S., Brazil, Mexico, and the Philippines.

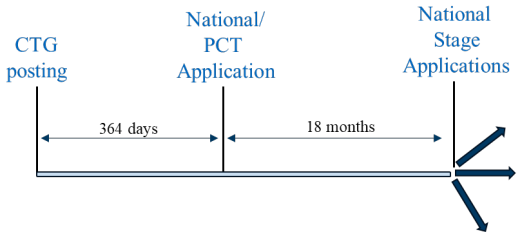


Filing Scenario 1

Scenario 1 can also be followed in countries that actually or effectively lack grace periods (e.g., China and Europe). To overcome the absolute novelty bar in China, possible aspects of the planned commercial methods that are not disclosed in the clinical trial related disclosure can be included in the U.S. provisional and/or PCT application. In Europe, CTG study records or announcements regarding ongoing trials not considered to be novelty destroying, although

they can be used in an inventive step analysis.[57] For guidance on the implications of clinical trials as prior art in Europe, we direct the reader to the Spring 2024 AIPLA Chemical Practice Committee's informative article on this very topic.[58]

Scenario 2 can be followed in countries where a PCT or non-PCT country national application must be filed within one year of the public disclosure for the national application to be eligible to benefit from a grace period. Representative countries in which this strategy can be utilized include Australia, Canada, Japan, Korea, Singapore, and Taiwan.



Filing Scenario 2

Scenario 1 provides two potential advantages compared to (a) a more conservative filing strategy where the U.S. provisional application is filed prior to the CTG study record posting and (b) Scenario 2: (1) maximum time for generating clinical trial results which, if available, can be included in the PCT application, and (2) the potential for maximum patent term.

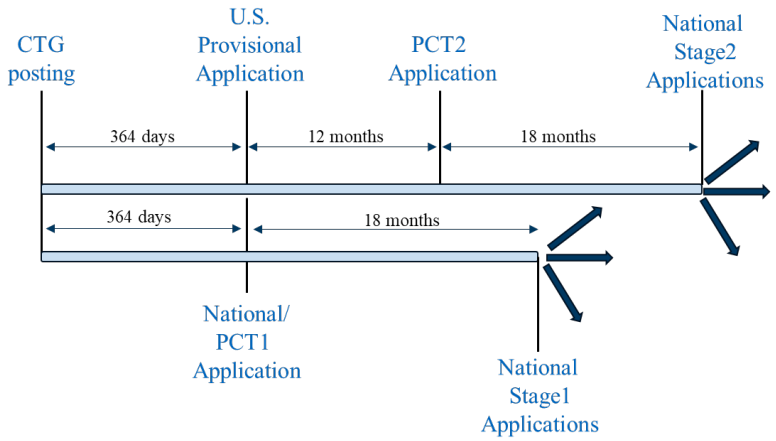
Scenario 2 does not offer the benefit of an extended duration between CTG study record posting and national or PCT application filing. As such, results of the clinical trial are generally less likely to be available by the time a PCT application or non-PCT country national application is filed. However, many of the above-mentioned countries permit post-filing data during prosecution by which clinical trial results can be presented.[59]

Scenario 3 combines Scenario 1 and Scenario 2 into a unified filing strategy. First, a U.S. provisional application (following Scenario 1), a first PCT application (PCT1) (following Scenario 2), and non-PCT country national application(s) (following Scenario 2) are filed ***on the same day and within one year of the CTG study record posting***. Prior to filing any applications outside the U.S., a foreign filing license should be considered and, if necessary, obtained. PCT1 can be nationalized in the jurisdictions with stricter grace period requirements outlined above for Scenario 2.

[57] T 158/96, T 715/03, T 1859/08 and T 2506/12

[58] Dr. Holger Tostmann, Newsletter of the AIPLA Chemical Practice Committee, Spring 2024, Volume 12, Issue I, p. 24.

[59] In Canada, utility is established by demonstration or "sound prediction" *at the time the application is filed*.



Filing Scenario 3

A second PCT application (PCT2) claiming priority to the U.S. provisional application can then be filed on the 12-month Convention date for the U.S. provisional application that includes the results of the clinical trial, if available. PCT2 can be nationalized in the jurisdictions with more relaxed grace period requirements as outlined above for Scenario 1.

This bespoke approach maximizes the potential benefits of grace periods, where available, while accounting for inclusion of clinical trial results data (either in PCT2 or as post-filing data during national stage application prosecution). The result is improved chances of obtaining method of treatment coverage and longer patent term.

IV. Conclusion

CTG posting of a Phase II or Phase III study record or a related public disclosure does not inevitably preclude patentability of method of treatment claims in a later-filed patent application based on the clinical trial protocol. A surprising number of jurisdictions provide grace periods by which a CTG study record or related disclosure can be removed as prior art ***if a patent application is filed within one year of the disclosure***. However, the type of patent application that must be filed within one year varies by jurisdiction, thereby leading to complex filing strategies. In the U.S., to exclude CTG study records using the § 102(b)(1)(A) exception, practitioners should carefully draft Rule 130 declarations that unambiguously tie the inventor(s) of the patent application to the sponsor and principal investigator(s) of the clinical trial. Similarly, Rule 130 declarations to exclude clinical trial related disclosures using the § 102(b)(1)(A) exception should unambiguously explain any and all differences between the author(s) of the disclosure and the inventor(s) of the claimed subject matter.

Important New Procedural Guidelines From the PMPRB

By Kaitlin Soye[60] and Kitt Sinden[61]

The Patented Medicine Prices Review Board (PMPRB) is a Canadian federal agency that regulates the prices of patented medicines in Canada. The PMPRB is established and empowered under the federal jurisdiction over patents in subsection 91(22) of the *Constitution Act, 1867*.[62] Under sections 79-83 of the *Patent Act*,[63] the PMPRB makes sure that the exclusivity granted by patents for medicines in Canada is not abused. The PMPRB works with a consumer protection objective and aims to guard Canadians from medicines deemed excessively priced.

Under the *Patent Act*[64] and the *Patented Medicine Regulations*,[65] pharmaceutical patent rights holders are required to file price and sales information about their patented medicines within a prescribed period after their first sale in Canada, and subsequently twice a year. The PMPRB reviews the prices using the PMPRB's Guidelines as a procedural framework.

On June 30, 2025, the PMPRB released new Guidelines[66] to monitor and review drug prices in Canada. The new Guidelines will take effect on January 1, 2026.

The new Guidelines are not intended to determine what constitutes an "excessive price," to set drug prices, or to encourage compliance tests or price ceilings. The new Guidelines are designed to provide transparency for patent rights holders on the process PMPRB staff uses to identify potentially excessively priced patented drugs and to recommend those cases to the PMPRB Chairperson for consideration of a hearing.

The process described in the new Guidelines provides two screening steps intended to prioritize the cases that are recommended for a hearing. The PMPRB states that the goal of the new Guidelines is to allow the PMPRB to use its limited hearing-related resources efficiently.

The new Guidelines provide a two-step process:

Step 1: Initial / Annual Review. This serves as a screening process to determine if an In-Depth Review will be required. The PMPRB service standard is 60 days from the filing deadline for the patented medicine's first semi-annual filing for both the Initial and Annual Review. The same International Price Comparison identification criteria (the highest international price (HIP)) and methodology is used for both the Initial Review and the Annual Review, but the Annual Review focuses on the most recent domestic and international pricing data.

[60] Kaitlin Soye is a Partner at Aird & Berlis LLP.
[61] Kitt Sinden is a Partner at Aird & McBurney LP.
[62] See https://laws-lois.justice.gc.ca/eng/const/page-3.html#h-19.
[63] See https://laws-lois.justice.gc.ca/eng/acts/p-4/page-12.html#h-413371.
[64] See https://laws-lois.justice.gc.ca/eng/acts/P-4/.
[65] See https://laws-lois.justice.gc.ca/eng/regulations/SOR-94-688/index.html.
[66] See https://www.canada.ca/en/patented-medicine-prices-review/services/legislation/guidelines.html.

Patented medicines whose prices are above the HIP threshold are subject to an In-Depth Review. During an Annual Review, the PMPRB will also compare price changes against the consumer price index as a criterion to warrant an In-Depth Review.

Step 2: In-Depth Review. During an In-Depth Review, the PMPRB analyzes information and prepares a recommendation to the Chairperson on whether the matter should be brought to a hearing. The In-Depth Review includes both a scientific review and a price review. The result of the In-Depth Review may be a recommendation to the Chairperson to issue a Notice of Hearing.

The determination of whether the price of a patented medicine is excessive or not can only be made by a Hearing Panel at a hearing. A hearing is commenced by the issuance of a Notice of Hearing by the Chairperson.

The PMPRB prepared a visual depiction of the timeline described above and the relevant service standards. This figure is available for review.[67]

The new Guidelines have been established following consultations and consideration from the PMPRB. The new Guidelines are a significant departure from the previous Guidelines (which were challenged in Federal Court). While the goal of these amendments is to provide better transparency for patent rights holders, it will be important for patent rights holders to become familiar with the new procedures as they come into effect in 2026.

Please contact the authors or a member of the Intellectual Property Group at Aird & Berlis LLP and Aird & McBurney LP[68] if you have any questions or require assistance in regard to the new PMPRB Guidelines.

[67] See https://www.canada.ca/en/patented-medicine-prices-review/services/review-process.html.
[68] See https://www.airdberlis.com/what-we-do/expertise/service/intellectual-property.

Jurisprudence Clarifies Timing Requirements for Listing Pharmaceutical Patents on Health Canada's Patent Register

By Eileen McMahon[69], Teresa Reguly[70], and Henry Mah[71]

Regulatory Framework for Listing Patents

The Health Canada Patent Register, the Canadian version of the U.S. Orange Book, is a register of patents regarding drug products that have been authorized for marketing in Canada under a notice of compliance or NOC (Canada's version of a "marketing authorization"). The *Patented Medicines (Notice of Compliance) Regulations* (Regulations) require Health Canada to include any patent on a patent list or certificate of supplementary protection submitted by a "first person" (*i.e.*, an innovative drug manufacturer) that meets the requirements for addition to the Register – the patent must include a claim to the medicine, the formulation, the dosage form or the use of a drug as approved by Health Canada and must also meet certain timing requirement to be eligible for listing.

Subsequent market entrants (*i.e.*, a "second person") must file a submission seeking a NOC to market a generic or biosimilar version of a patented drug. If the submission directly or indirectly compares the drug to, or references, another drug marketed in Canada, the second person must 'address' each patent listed on the Register against such drug. The second person may state that it will not market its drug until the expiry of all of the listed patents, or the second person can allege that the listed patents are invalid or not infringed. Under the Regulations, the second person is obliged to address the patents listed on the Register as of the date it files its regulatory submission with Health Canada, in essence, freezing in time the patents that must be addressed.

If the second person alleges that a listed patent is invalid or would not be infringed, it must serve a Notice of Allegation on the first person/patentee. The patentee may then bring an action in the Federal Court seeking a declaration that the generic/biosimilar drug product would infringe the listed patent. The action prevents Health Canada from issuing a NOC for 24 months from the date of commencement of the action.

If patents are listed on the Register, the Regulations prohibit a second person from entering the market with the same medicine as one covered by a listed patent, except in accordance with the notice of compliance regime set out in the Regulations.

Recent Court Decisions on Timing of Listing

Recent jurisprudence has clarified the relevant date for <u>when</u> a patent is *effectively* added to the Register, and therefore whether a patent must be addressed by a second person.

Administrative decision regarding MAVENCLAD® cladribine

[69] Eileen McMahon is a Partner and Chair of Intellectual Property and Food and Drug Regulatory Practices at Torys LLP.
[70] Teresa Reguly is Partner at Torys LLP.
[71] Henry Mah is an Associate at Torys LLP.

EMD Serono, a division of EMD Inc., Canada and Merck Serono SA (collectively, Serono) was granted Canadian Patent No 3,087,419 ('419 Patent) on March 7, 2023. On March 16, 2023, Serono submitted a patent list to the Health Canada to list the '419 Patent against MAVENCLAD® (cladribine) on the Patent Register.

One week later, Serono was informed that the patent had been added to the Register effective as of March 23, 2023. However, Apotex Inc. (Apotex) had filed an abbreviated new drug submission for generic cladribine on March 22, 2023. Serono asked Health Canada to reconsider the listing date of the '419 Patent, arguing that the proper date for listing should have been the date on which the patent list was submitted to Health Canada – i.e. March 16, 2023.

Health Canada determined that Apotex needed only to address listed patents, not patents that have merely been submitted for possible listing on the Register, and that patents are not eligible to be added to the Register until Health Canada has determined the submitted patents meet the regulatory requirements for listing. Health Canada maintained the listing date of March 23, 2023, meaning Apotex did not have to address the '419 Patent.

Judicial review of Health Canada's decision re MAVENCLAD® cladribine

Serono commenced a judicial review of Health Canada's decision in the Federal Court (*EMD Serono v. The Minister of Health and Apotex*, 2024 FC 1848). Serono described the framework of the Regulations as a race between a first person and a second person - the first person rushes to have their patents listed on the Register, while the second person rushes to file a regulatory submission. Serono argued it won the race against Apotex because it submitted its patent list to Health Canada prior to Apotex filing its abbreviated new drug submission – the delay in adding the '419 Patent to the Register was attributable to Health Canada. Serono argued the wording of section 5(1) of the Regulations —"in respect of which a patent list has been submitted"—supports the position that second persons must address patent lists that have been merely submitted to Health Canada by a first person.

The Court did not find Serono's arguments persuasive and dismissed Serono's application for judicial review, agreeing with Health Canada's interpretation of the Regulations and finding the that the decision was not unreasonable.

The Court held that while Health Canada does not have discretion to delay adding patents to the Register, it does exercise discretion in determining whether patents submitted for listing are indeed eligible to be added to the Register.

According to the Court, following a reasonable approach to interpreting the Regulations read as a whole, the Register contains those patents that Health Canada has determined to be eligible for listing; it does not include all patents submitted for listing. As such, patents are not added to the Register immediately upon submission of a patent list. A first person must await a determination on eligibility before a patent is actually listed on the Register. A second person must only address each patent that has been included on the Register at the time that the second person files its regulatory submission.

Subsequent judicial review regarding EYLEA® aflibercept

Shortly following the Serono proceeding, the Federal Court released a judicial review decision in *Bayer Inc v Amgen Canada Inc*, 2025 FC 107 involving "substantially similar issues" to those in the *EMD Serono* case above.

Bayer Inc. (Bayer), submitted a patent list in relation to its Canadian Patent No. 2,970,315 ('315 Patent) for listing against its drug EYLEA® (aflibercept) on August 22, 2023. Health Canada found the '315 Patent eligible for inclusion on the Register on August 30, 2023. However, in the interim, Amgen Canada Inc. (Amgen) filed a drug submission for the approval of its biosimilar version of aflibercept on August 24, 2023.

Health Canada concluded that because the '315 Patent had not been added to the Register on the date that Amgen's drug submission was filed, Amgen did not have to address the '315 Patent. On judicial review, the Federal Court again found that Health Canada's decision and its interpretation of the Regulations was not unreasonable and therefore dismissed the application for judicial review.

According to the Court, a reasonable interpretation of the Regulations is found within a guidance document issued and relied upon by Health Canada, which makes clear that patents are added to the Register only after they have been reviewed and found to be eligible; a second person need only address patents that have actually been included on the Register following that review.

Per the findings, Health Canada staff screened Bayer's patent list for eligibility on the day it was submitted, but a determination on eligibility was not made until August 30, 2023. The '315 Patent was added to the Register on the same day that the determination was made – however by then, Amgen had already filed its regulatory submission. The Court held that it was not unreasonable for Health Canada to conclude that Amgen was not required to address the '315 Patent.

The Federal Court of Appeal Agrees

On appeal to the Federal Court of Appeal (FCA) in *Bayer Inc v Amgen Canada Inc*, 2025 FCA 142, Bayer employed a similar argument as Serono, framing the issue as a race between a first person and a second person. In dismissing the appeal, the FCA, in essence, found the finish line of the race was not the submission of a patent list by Bayer, but rather the actual inclusion of the '315 Patent on the Register following Health Canada's eligibility determination.

The FCA noted that although subsection 5(1) of the Regulations refers to a patent list that has been submitted, the requirements of a second person are set out in subsection 5(2.1), which limits patents that must be address to those that are "included on the register". Subsection 5(4) of the Regulations also explicitly excludes from the requirements any patents that are added to the Register on or after the date that a second person files its regulatory submission.

Conclusion

These recent decisions highlight the complexity of the Canadian patent listing regime and the discretion conferred upon Health Canada with respect to listing eligibility determinations.

Note that Serono filed its patent list nine days after the '419 Patent was granted and Bayer filed its patent list the same day the '315 Patent was granted. Nevertheless, the second person won the race.

Unfortunately, there have been significant delays in processing of patent applications at the Canadian patent office over the last year due to technology updates. This has meant that applicants are waiting several weeks or months from the date that a final fee is paid before their patent is granted. For patents that may be eligible for listing on the Register, patentees should consider prosecution strategies to attempt to accelerate the issuance of a notice of allowance, and then act quickly to file patent lists with Health Canada as soon as the patent is granted.

Celator's Patent Upheld against Post-Grant Oppositions filed by Cipla and Mylan

By Sharad Vadehra[72]

Introduction

The Indian Patent Office (IPO) has upheld Indian Patent No. 315447 in favor of Celator Pharmaceuticals Inc., dismissing post-grant oppositions filed by Cipla Ltd. and Mylan Laboratories Ltd. This landmark ruling affirms the strength of Celator's patent covering its novel lyophilized gel-phase liposomal composition encapsulating daunorubicin and cytarabine.

Kan and Krishme's Mr. Sharad Vadehra (Managing Partner), Ms. Shikha Baiswar (Senior Partner), and Ms. Reena M.P. Singh (Partner), represented Celator Pharmaceuticals in the post-grant opposition proceedings. The landmark 172-page order can be found here.

Facts

Celator Pharmaceuticals Inc. filed patent application no. 4087/DELNP/2014 for a novel lyophilized gel-phase liposomal composition encapsulating two therapeutic agents, *i.e.*, cytarabine and daunorubicin, wherein gel-phase liposomes exhibit a melting phase temperature (Tc) of at least 37°C without internal cryoprotectant. The patent was granted on July 3, 2019.

Two leading Indian pharmaceutical companies Cipla Ltd. (Opponent 1) and Mylan Laboratories Ltd. (Opponent 2) filed post-grant opposition on the following grounds:

- **Ground I:** Section 25 (2)(b) – Lack of Novelty due to prior publication
- **Ground II:** Section 25 (2)(d) – Prior public use/Prior knowledge
- **Ground III:** Section 25(2)(e) – Obviousness/lack of inventive step
- **Ground IV:** Section 25(2)(f) – Not an invention (3d and 3e)
- **Ground V:** Section 25(2)(g) – Insufficiency of Disclosure
- **Ground VI:** Section 25(2)(h) – Non-compliance with Section 8

Cipla and Mylan relied on various prior art documents including published patent applications, clinical studies, and scientific literature (D1 to D5 and O1 to O7 respectively).

After receipt of the notice of the post-grant oppositions, our team at Kan and Krishme filed a detailed statement and evidence on behalf of Celator Pharmaceuticals to contest the oppositions. Oral hearings were conducted on June 21, 2024, with all parties provided an opportunity to present their arguments.

Opponents' Submissions

1. **Anticipation and Prior Publication** – The Opponents cited D1 (a clinical study of CPX-351), and O1 (WO2006055903) respectively to establish that the claimed invention was anticipated. They contended that D1 and O1 discloses lyophilized

[72] Sharad Vadehra is the Managing Partner of Kan and Krishme

liposomal formulation with similar components and characteristics, in absence of internal cryoprotectant.

2. **Lack of Inventive Step** – The Opponents argued that cited documents D1 to D5 and O1 to O7 rendered the invention obvious. They mentioned that these documents already taught lyophilized formulations with similar liposomal compositions. According to them, combining known elements from these documents would have been within the routine capability of a skilled person.

3. **Section 3(d) –New Form of a Known Substance** – The Opponents argued that invention was a new form of a known substance without enhanced therapeutic efficacy. They submitted that the lipid components and drug ratios were already known from prior art (e.g., CPX-351). Further, no experimental data had been provided to show significantly enhanced therapeutic efficacy over known formulations.

4. **Section 3(e) – Mere Admixture** – The Opponents asserted that claimed invention is a substance obtained by mere admixture resulting only in the aggregation of properties of the components without any synergistic effect.

5. **Insufficiency of Disclosure** – The Opponents contended that the patent lacks sufficient disclosure in complete specification that a person skilled in the art would be unable to perform the invention across its full breadth without undue experimentation.

Arguments by the Patentee

Represented by Mr. Sharad Vadehra, Ms. Shikha Baiswar and Ms. Reena MP Singh of Kan and Krishme

1. **Anticipation and Prior Publication** – The patented lyophilized gel-phase liposomal composition is prepared with daunorubicin and cytarabine in the absence of any internal cryoprotectant. Since each and every feature of the claimed invention is not disclosed in the cited document D1 or O1, the claimed invention is novel and not anticipated by prior publication or prior claiming.

2. **Lack of Inventive Step** – The Opponents failed to define the "person skilled in the art." Further, by applying the 5-step inventive step test[73], Opponents failed to show how cited references would motivate a skilled person to arrive at the claimed invention. Further, none of the cited prior art teach or suggest lyophilizing the liposomes with substantially no internal cryoprotectant and maintaining mean diameter, and drugs are retained in the liposomes following reconstitution in a pharmaceutical carrier. It was emphasized that unexpected technical effect of the patent is that a liposomal formulation of daunorubicin and cytarabine is provided which is able to safely and synergistically treat cancer, in particular acute myeloid leukaemia (AML), even after it has been stored for a long period. This inventive concept cannot be derived from any of the cited prior arts.

3. **Section 3(d)** – Mere New Form of Known Substance – The invention relates to a novel lyophilized gel-phase liposomal composition. Further, as per *DS Biopharma*

[73] F. Hoffman-La Roche Ltd. And Ors v. Cipla Ltd (2015 SCC OnLine Del 13619)

Limited v. The Controller of Patents and Designs And Anr.[74], Section 3(d) requires opponent/Controller to:

a. Identify the "known substance."
b. Prove that the claimed invention is a "new form" of it.

No such identification was done. Further, enhanced stability, size retention, and drug encapsulation after long storage establish enhanced efficacy (supported by data in Examples 2 & 3 of complete specification and additional data also submitted in the form of declaration) of lyophilized gel-phase liposomal composition. Relying on *Novozymes vs. Assistant Controller of Patents*[75], it was argued that efficacy under 3(d) is not restricted to therapeutic efficacy alone, it may include stability or functional improvement. It was argued that claimed invention improves efficacy via enhanced stability and drug retention. Thus, the claims fall outside the scope of Section 3(d).

4. **Section 3(e) – Mere Admixture** – Relying on *British Celanese Ltd., v. Courtaulds Ltd.*[76], it was argued that Section 3(e) is not applicable to the claimed invention because: "The claimed invention is a synergistic composition i.e. lyophilized gel-phase liposomal Composition characterized by both structural and functional features. Further, the individual components are added in specific ranges or concentrations which resulted in unexpected advantages of the end product i.e., long term stability of the liposomal composition. Further, it maintains liposomal integrity, drug ratio, and size after lyophilization and reconstitution. Thus, claimed composition is not a mere "admixture" but shows the synergy and unexpected technical advancement."

5. **Sufficiency of disclosure**: It was argued that it is not necessary to exemplify all the embodiments and the best method to perform the invention is sufficiently disclosed. Further, detailed support of the embodiments was provided in the complete specification and working examples.

Controller's Finding

Despite the Opposition Board's recommendation for revocation, the Controller adopted a different view, noting that the Opponents failed to identify the Person Skilled in the Art (PSITA) and did not establish how such PSITA would be motivated to combine the cited prior art to arrive at the claimed invention. The Opponents merely stated that the invention constitutes a new form of a known substance but failed to identify the specific known substance. They could neither establish that the claimed composition is a mere admixture nor substantiate their allegation of insufficiency of disclosure. In contrast, the Patentee effectively demonstrated that a PSITA would not be motivated to arrive at the present invention and provided clear evidence, through examples in the specification and supporting data, that the invention has inventive step, exhibits enhanced efficacy, has synergistic effect and sufficiently disclosed in the specification:

1. **Anticipation and Prior Publication** – The Controller of Patents held that neither O1 nor D1 clearly and unambiguously discloses all the essential features of the claimed

[74]2022 SCC OnLine Del 3211
[75]OA/6/2017/PT/CHN
[76]1935 52 RPC 171 (HL) at 193

invention in a single enabling disclosure. Thus, claims as granted meet the requirements of novelty.

2. **Lack of Inventive Step –** The claimed invention represents a significant and non-obvious advancement over the prior art references D1 - D5 and O1-O7. None of these documents disclose or suggest the critical technical features of the patent, namely the lyophilization of liposomal pharmaceutical compositions in the substantial absence of internal cryoprotectants, while maintaining drug stability and therapeutic efficacy. Experimental data, particularly from Examples 2 and 3, substantiate the claimed advantages, showing minimal drug leakage and consistent maintenance of the synergistic 1:5 daunorubicin/cytarabine ratio, even after extended storage periods. This ensures effective treatment of AML upon reconstitution, a result that would not have been expected by a person skilled in the art at the priority date. The invention thus meets the legal criteria for inventive step.

3. **Section 3(d) – Mere New Form of Known Substance –** The claimed invention is not merely a new form of a known substance but a novel lyophilized gel-phase liposomal composition characterized by specific membrane properties that preserve liposome integrity during lyophilization and reconstitution. Unlike prior art, present invention effectively prevents drug leakage and liposomal size increase. This represents an unpredictable and significant technical advancement. The data as presented, confirm the stability and efficacy of the composition for up to nine months, clearly demonstrating enhanced therapeutic efficacy. Thus, claimed invention does not fall under the purview of Section 3(d) of the Act.

4. **Section 3(e) – Mere Admixture –** The claimed invention is a synergistic composition wherein the components interact in specifically defined ranges to achieve unexpected advantages, including long-term stability, retention of encapsulated drugs, and maintenance of liposome size post-reconstitution. The data provided supports the stability and synergistic behavior of the composition.

5. **Sufficiency of disclosure** – The specification includes detailed descriptions, working examples, and the best method known to the Applicant for performing the invention. Thus, this ground of opposition is without merit.

Conclusion

The IPO's decision in favor of Celator Pharmaceuticals, Inc. marks an important precedent in Indian Patent Law particularly with respect to complex pharmaceutical matters. It highlights the importance of an optimistic approach to evaluate novelty, inventive step, and patentability that considers not only structural differences but also functional advantages.

This ruling reinforces that novelty must be assessed based on single enabling disclosure. Further, inventive step is not merely about individual elements; their combination should result in unexpected properties/effects. It also clarifies that the requirement of enhanced efficacy under Section 3(d) may be interpreted more broadly than just therapeutic action and the improvements in stability and overall effectiveness of the composition can also satisfy the requirement of Section 3(d).

Further, there has long been a perception, especially among international applicants, that in technically complex matters, outcomes may tilt in favor of Indian opponents, especially well-established pharma companies. This case firmly defies that assumption. This ruling proves that strong patents can and will survive rigorous scrutiny when supported by sound science and compelling advocacy.

AIPLA Chemical Practice Committee Leadership and Contact Information

Chair
Ali Anoff
The Procter & Gamble Company
anoff.a@pg.com

Vice-Chair
Josh Goldberg
Nath, Goldberg & Meyer
JGoldberg@nathlaw.com

Immediate Past Chair
Wan Chieh (Jenny) Lee
Haug Partners
jlee@haugpartners.com

Legal Developments Subcommittee
Andrew Chipouras
Honigman LLP
achipouras@honigman.com

Ethan J. Ung
McCarter & English LLP
eung@mccarter.com

Young Lawyers & Law Students Subcommittee
Kimberlee T. Raley
Vorys, Sater, Seymour and Pease LLP
ktraley@vorys.com

Newsletter Subcommittee
Andrew B. Freistein
Wenderoth
afreistein@wenderoth.com

Sommer Zimmerman, Ph.D.
Ballard Spahr, LLP
zimmermans@ballardspahr.com

Women in IP Committee Liaison
Amy Schmid
Wenderoth
aschmid@wenderoth.com

Professional Programs Subcommittee
Chloe Holloway
Hoffmann Eitle
cholloway@hoffmanneitle.com

Thomas L. Irving
The Marbury Group
tirving@marburylaw.com

International Education
Matthew Barton
Forresters
mbarton@forresters-ip.com

Mark Pidkowich
Smart & Bigger
mrpidkowich@smartbiggar.ca

International Subcommittee on China
Toby Mak, Ph.D.
Tee & Howe Intellectual Property Attorneys
toby.mak@teehowe.com

Board Liaison
Ann M. Mueting
Mueting Raasch Group
amueting@mrgiplaw.com

Amicus Committee Liaison
Erick J. Palmer
Mayer Brown, LLP
ejpalmer@mayerbrown.com

Communications Subcommittee
Roberty Sovesky
K&L Gates
Robert.Sovesky@klgates.com

Warren Zitlau
Cahn & Samuels LLP
warren.zitlau@cahnsamuels.com