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EXEMPTION TO PATENT INFRINGEMENT UNDER 35 U.S.C. SECTION 271 (E)(1): SAFE HARBOR OR STORM A-BREWING?

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I. INTRODUCTION

Frequently, scientists assume that their work does not expose them to claims of patent infringement because they are only performing "research." Such a position reflects a fundamental misunderstanding of the patent laws which specifically provide that making and using a patented invention constitute infringement.[3] There are only two exceptions to patent infringement: the common-law "Experimental Use Exception" and the statutory "271(e) Exemption." Both are circumscribed in their applicability, however, and recent case law has potentially limited their scope even further.

The Experimental Use Exception derives from a 19th century case in which Judge Story stated that "it could not have been the intention of the legislature to punish a man" who constructed a patented device "merely for philosophical experiments."[4] In the recent case of *Madey v. Duke University* the Federal Circuit court held that the exception does not apply to work "when it is undertaken in the guise of scientific inquiry but has definite, cognizable, and not insubstantial commercial purposes."[5] Considering that the commercial purposes at issue in *Madey* were the education of students and faculty research under government grants at a privately funded university, the Experimental Use Exception would appear to provide little, if any protection in today's world.

The 271(e) Exemption, also referred to as the FDA Exemption, applies only to biomedical research undertaken to obtain governmental regulatory approval under the Federal Food, Drug and Cosmetic Act.[6] While the 271(e) Exemption was intended to rectify a specific inequity relating to generic and patented drugs, the language of the statute was not so limited and has been broadly construed by the courts. The 271(e) Exemption has been invoked by numerous defendants as a shield from claims of infringement. However, because the language of the statute is far from clear, courts have differed in their interpretations, leading to confusion and inconsistency. Despite almost 20 years of judicial construction, questions remain as to the appropriate application and scope of the exemption.

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3 35 U.S.C. Section 271(a) provides "whoever without authority makes, uses, offers to sell or sells any patented invention, within the United States or imports into the United States any patented invention during the term of the patent therefore, infringes the patent."
4 *Wittamore v. Cutter*, 29 F. Cas. 1120, 1121 (No 17,600) (C.C.D. Mass. 1813).
5 *John M.J. Madey v. Duke University*, 307 F.3d 1351 (Fed. Cir. 2002).
6 21 U.S.C. Section 301 *et seq*.

The 271(e) Exemption

The 271(e) Exemption was enacted as part of the *Drug Price Competition and Patent Term Restoration Act of 1984* (the 1984 Act),[7] also known as the Hatch-Waxman Act. The goals of the 1984 Act as a whole were two-fold: to provide an incentive for the development of patented drugs while promoting the availability of lower-cost generic alternatives. To this end, the 1984 Act contained provisions to promote the availability of low cost generic drugs, including expedited approval for generic drugs through Abbreviated New Drug Applications (ANDA).[8] At the same time, the 1984 Act included provisions designed to correct two patent term "distortions"[9] perceived by Congress, both of which result from the requirement that certain medical products obtain FDA approval prior to marketing.[10] The first distortion is the reduction in the patent term resulting from the inability of the patent holder to benefit from the early years of patent protection before the patented drug receives FDA approval. The second distortion is the effective patent term extension which results from delays in the entrance of generic products to the market if they cannot undertake the studies necessary for FDA approval prior to the expiration of the innovator's patent.

As to the first distortion, obtaining FDA marketing approval for a new drug is both a lengthy and unpredictable process.[11] Considering that patent applications are normally filed early in the drug discovery process, by the time a patent issues only a few years of protection may remain. This patent term shortening has been exacerbated further by the GATT/TRIPS legislation which changed the patent term expiration in the United States from 17 years after the date of patent issuance to 20 years from the date of filing of the patent application.[12] For new drugs entering the market, the average remaining patent term is only seven years.[13] Section 201 of the 1984 Act (now codified as 35 U.S.C. Section 156) implemented a complex set of regulations designed to extend the term a patent up to a maximum of five years to compensate for delays in achieving regulatory approval. This patent term restoration directly benefits pharmaceutical companies by extending the term of exclusivity during which the enormous costs of drug development can be recouped.[14]

The second distortion relates to the time of generic drug entry to the market. At the time of the 1984 Act, generic drug manufacturers could not begin the studies required for FDA market approval during the term of patent protection on the innovator drug without the risk of being sued for infringement. In *Roche v. Bolar* [15] Roche held a patent on the anti-anxiety drug flurazapam. Intending to market a generic version, Bolar imported quantities of the drug to begin the testing required for FDA marketing approval prior to expiration of Roche's patent. The Federal Circuit declined to apply the common law Experimental Use Exception to Bolar's activities on the basis that they were being undertaken "solely for business reasons and not for amusement, to satisfy idle curiosity, or for strictly philosophical inquiry" and thus held that Bolar infringed Roche's patent.[16]

7 Pub. L. No. 98-417, 98 Stat. 1585 (1984).
8 21 C.F.R Section 314, Subpart C.
9 *Eli Lilly & Co. v. Medtronic, Inc.*, 496 U.S. 661, 669-670 (1990).
10 21 U.S.C Section 301 *et seq*.
11 *See, generally,* 21C.F.R Section 31258 *et seq*. for the regulations applicable to the filing of an Investigational New Drug Application (IND).
12 35 U.S.C. Section 154(a)(2).
13 Competition in the Pharmaceutical Marketplace: Hearings before the Federal Trade Commission and the Department of Justice—Anti-Trust Division (March19, 2002)(Gregory J. Glover, M.D., J.D. on behalf of the Pharmaceutical Research and Manufacturers Association).
14 Tufts Center for the Study of Drug Development, news release of May 13, 2003, ("The fully capitalized cost to develop a new drug, including studies conducted after receiving regulatory approval, averages $897 million.")
15 *Roche Products, Inc. v. Bolar Pharmaceutical Co.*, 733 F.2d 858 (Fed. Cir. 1984).
16 *Id.* at 863.

If generic drug manufacturers are prevented from performing studies necessary to obtain FDA approval until the after expiration of the patent on the innovator drug, the patent holder in effect obtains an extension of its term of exclusivity. Negating the holding of *Roche*, Section 202 of the 1984 Act (codified as 35 U.S.C. Section 271(e)(1)) obviated this patent term distortion by providing a safe harbor for otherwise infringing studies undertaken on generic drugs in order to obtain regulatory approval.

While Section 271(e)(1) was enacted specifically to allow generic drugs to enter the market simultaneously with the expiration of the innovator's patent, the language of the statute was not so limited. The section reads as follows:

> It shall not be an act of infringement to make, use, or sell a patented invention . . . 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 ducts.[17]

There is clearly a disparity between the limited purpose for which Congress enacted the 271(e) Exemption and the broad language of the exemption itself. It is not, for example, limited to generic drugs but rather includes all patented invention[s]." Because the language of 271(e)(1) is so broad, the courts have long struggled to determine the limits of its application. The uncertainties inherent in the statutory language have also led to sometimes-conflicting judicial interpretations of its scope and applicability.

The courts have repeatedly noted that the language of Section 271(e)(1) is not without ambiguity. "No interpretation we have been able to imagine can transform section 271(e)(1) into an elegant piece of statutory draftsmanship."[18] Nonetheless, in many of the cases in which the 271(e) Exemption has been considered, the parties have asked the courts to decide as a matter of law, and often in motions for summary judgment, whether entire classes of patents or activities fall outside the scope of the exemption. The case law that has developed increasingly indicates that application of the exemption will not be decided as a matter of law but as a question of fact. While some clear standards have emerged, many questions remain unanswered.

1. Should the exemption look to the "sole purpose" of the acts?

In the first case to construe the 271(e) Exemption, *Scripps v. Genentech,*[19] the court declined to grant defendant Genentech's motions for dismissal or summary judgment based on the 271(e) Exemption. The Scripps patent claimed a protein, the human blood clotting FactorVIII:C, which Genentech used to determine its amino acid sequence in order to clone the gene. In addition, Genentech prepared a European patent application, entered into an agreement to develop commercial scale-up manufacturing processes and contemplated sales outside the United States.

The District Court relied on the word "solely" in the statute and held that Genentech's activities were not shielded from infringement; although they might "eventually lead to the submission of data. . .that was not the *sole purpose*. . . . To apply 271(e)(1) in

17 35 USC Section271(e)(1) as amended by the Uruguay Round Agreement Act, Pub. L. No. Section533(a)(3)(A), 108 Stat. 4809 1994 (effective January 1, 1996) the acts of offering for sale or importing the invention into the United States were further included so as to conform to the amendments of 35 U.S.C. Section271(a). The language of the statute as provided in the cases may therefore differ depending on the date of decision.

18 *Eli Lilly & Co. v. Medtronic, Inc.*, 496 U.S. 661, 679 (1990).

19 *Scripps Clinic & Res. Found. v. Genentech, Inc.,* 666 F. Supp. 1379 (N.D. Cal. 1987) *aff'd in part, rev'd in part on different grounds,* 927 F.2d 1565 (Fed. Cir. 1991).

those circumstance would be to permit the exception to swallow the rule."[20] This was the first and last case to focus its analysis on the word "solely."[21] Doubtless, it is also the only court to venture that "[t]he statute's meaning is clear. . . ."[22]

2. What activities are "reasonably related" to regulatory approval?

Subsequent decisions declined to follow the "solely for the purpose" standard of Scripps, instead focusing on whether the acts were "reasonably related" to obtaining regulatory approval. In *Intermedics v. Ventritex*[23] the court articulated a more objective standard, not dependent on the defendant's "purpose" as in *Scripps.*[24] The court looked to the plain language of the 271 (e) statute, noting that the words are " 'solely for *uses* reasonably related,' not 'solely for *purposes* reasonably related'. . .[i]f Congress had wanted courts to focus on 'purposes' it probably would have selected that word. . . ."[25]

Ventritex had developed implantable cardiac defibrillators which fell within the scope of patents held by Intermedics. The district court articulated a two step test for determining whether Ventritex's uses of the defibrillators were covered by the 271(e) Exemption. First, it determined which activities were in fact infringing under 35 U.S.C. 271(a).[26] Having determined that defendant Ventritex's sales to hospitals in the United States, sales to international distributors, tests of the device in the United States and abroad and demonstrations of the device at trade shows infringed Intermedics patents, the court then asked:

> Would it have been reasonable, objectively, for a party in defendant's situation to believe that there was a decent prospect that the 'use' in question would contribute (relatively directly) to the generation of [the] kinds of information that was likely to be relevant in the process by which the FDA would decide whether to approve the product?[27]

Finding that each of defendant's uses satisfied this latter test, the district court held the activities to be exempt from infringement under Section 271(e)(1).

The scope of exempt activities has been further expanded in later cases to include the personal use of a patented female condom by a physician, and its use in consumer focus groups, color tests and interviews,[28] and demonstrations of medical devices to non-physicians at medical conferences.[29]

In another case involving Scripps Clinic's Factor VIII:C,[30] the court did not follow the "solely" reasoning in the earlier *Scripps v. Genentech* decision, and declined to dismiss certain of Baxter's defenses. Instead the court invoked the "reasonably related" standard, indicating that the "scope of 271(e)(1)presents a question of law that has no clear answer. . . This question must be more fully developed before the Court can decide it."[31]

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20 *Id.* at 980, (emphasis added); *see also,* 666 F. Supp. at 1396.
21 *See, Amgen, Inc. v. Hoecsht Marion Roussel, Inc.,* 3 F. Supp. 2d 104, 108 (D. Mass.1998) ("the use must be reasonably related to (albeit not for the exclusive purpose of) FDA approval.")
22 *Scripps Clinic & Res. Found. v. Genentech, Inc.*, 231 U.S.P.Q 978, 980 (N.D. Cal. 1986).
23 *Intermedics, Inc. v. Ventritex, Inc.*, 775 F. Supp. 1269 (N.D. Cal. 1991) *aff'd* 991 F.2d 808 (Fed. Cir. 1993).
24 *Id.* at 1274 ("Plaintiff has urged that we put the 'intent' of the party that claims to be engaged in activity protected by the exemption at the center of the judicial inquiry. . . . We also fail to understand why the subjective state of mind of a party should be significant in this setting. Surely Congress was not concerned about clearing certain 'unacceptable' thoughts or hope or visions out of certain persons' minds.").
25 *Id.* at 1278 (emphasis added).
26 See note 1, *supra.*
27 Intermedics, *supra*, at 1280.
28 *Chartex Int'l PLC v. M.D. Personal Products Corp.*, 5 F.3d 1993 (Fed. Cir. 1993).
29 *Telectronics Pacing Systems, Inc. v. Ventritex, Inc.*, 982 F.2d 1520 (Fed. Cir. 1992).
30 *Scripps Clinic & Research Foundation v. Baxter Travenol Labs, Inc.,* 7 U.S.P.Q. 2d 1562 (D.Del. 1998).
31 *Id.* at 1565.

An unusual approach to determining whether activities were "reasonably related" to FDA approval was employed by the District Court of Delaware.[32] The defendants acts included sending information to physicians and soliciting them through a website to participate in clinical trials, maintaining a booth at trade shows displaying the device, and advertising in medical journals. Rather than determine whether these acts were "reasonably related to FDA approval" test, the district court initially held that "the FDA is in a better position than the courts to determine what activities are reasonably related to obtaining regulatory approval. . . .The court will not resolve the issue of whether AmCell's activities are protected by 271(e)(1). Rather, the court will defer to the FDA."[33] The FDA declined to make the evaluation.[34]

While the *Intermedics* court may have expanded the five words of the phrase "solely for uses reasonably related" into some 56 words, it is not clear that the standard has been clarified. Although the test is ostensibly objective, the number of words with subjective connotations is likely to prevent consistent application. However, the *Intermedics* test has now become the prevailing standard for determining whether the 271(e) Exemption applies.

3. To what "patented inventions" does the Exemption apply?

An early issue considered by the courts in construing the 271(e) Exemption was whether the term "patented invention" is limited to "drugs" or is to be given broader scope to include all FDA regulated products. The term was first considered in the *Eli Lilly v. Medtronic* line of cases.[35] Lilly's predecessor-in-interest sued Medtronic for patent infringement based, in part, on Medtronic's pre-market testing of implantable cardiac defibrillators. Medtronic defended on the basis that its activities were exempt under the safe harbor provision of 35 U.S.C. Section 271(e)(1). While the district court held that the exemption was not applicable to medical devices, the Federal Circuit reversed, and the Supreme Court affirmed and remanded for a determination of whether Medtronic's activities were reasonably related to the development and submission of information for regulatory approval.[36]

Characterizing the language of the statute as "as imprecise and not plainly comprehensible"[37] the Supreme Court looked to the structural symmetry of the 1984 Act to discern its applicability to medical devices. The Court noted that the 1984 Act "[t]aken as a whole" was designed to remedy the two complementary patent term distortions: loss of patent term during the patent holder's efforts to obtain regulatory approval and the extension of patent term pending approval for competitors to enter the market.[38]

The Court invoked a symmetry rationale, reasoning that it was implausible that the 1984 Act would seek to correct the dual distortions for some products subject to regulatory approval, while correcting only one aspect for other regulated products. Noting that, like pharmaceuticals, medical devices are eligible for patent term restoration to compensate for lengthy pre-market regulatory delays,[39] the court held that the 271(e) Exemption was applicable to medical devices. The court indicated that any other holding would "leave in place an anti-competitive restriction at the end of the monopoly term but simultaneously

32 *Nexell Therapeutics, Inc. v. Amcell Corp.,* 143 F. Supp. 2d 407 (D. Del. 2001).
33 *Id.* at 422, 423.
34 *Nexell Therapeutics v. AmCell Corp.,* 199 F. Supp. 2d 197, 202 (D. Del.) ("It is not clear to the FDA what, if anything, the court expects the agency to do in this litigation").
35 *Eli Lilly & Co. v. Medtronic, Inc.,* 872 F.2d 402 (Fed. Cir. 1998); 496 U.S. 661 (1990).
36 *Id.*
37 *Id.* at 1123.
38 *Id.* at 669.
39 *Id.* Patent term restoration is available for "a drug product. . . any medical device, food additive, or color additive subject to regulation under the Federal Food, Drug, and Cosmetic Act. . . ." 35 U.S.C. Section156 *et seq.* 2003.

expand the monopoly term itself, thereby not only failing to eliminate but positively aggravating distortion" of the patent term.[40]

In a subsequent decision, *AbTox v. Exitron,*[41] the Federal Circuit was confronted with the issue of whether a medical device which is not eligible for patent term restoration under 35 U.S.C. 156 is nonetheless subject to the 271(e) Exemption.[42] Devices, such as the plasma sterilizer at issue, are not subject to the rigorous pre-market approval process of the potentially more risky devices considered in *Lilly*. While noting that the Supreme Court's reasoning in *Lilly* stressed the symmetry of the two provisions, the court in *AbTox* nonetheless held that under the broad holding of *Lilly*, the 271(e) Exemption is applicable to all classes of medical devices.[43]

4. Does the exemption cover uses of tool technology?

Many of the inventions that underlie the biotechnology revolution of the late 20th century relate to basic platform technologies, new materials or methods for discovering new products. Such platform, or "tool," technology has enormously increased the types of diagnostic and therapeutic products currently available. However, patents claiming the tools themselves, rather than the products obtained
through the use of the tools, present novel issues. Among these is the question of whether otherwise infringing uses of tool patents can be shielded by the 271(e) Exemption.

In *Infigen v. ACT,*[44] the defendants conceded that in developing transgenic cows they infringed Infigens's tool patents. The court looked to the patented products covered by the tool patents—methods and materials for producing and growing bovine embryos—and determined that these patents were not eligible for patent term restoration under 35 U.S.C. 156. Using the *Lilly* symmetry rationale requiring that products eligible for the 271(e) Exemption also be subject to patent term restoration, the court held the defendant's acts not immune from infringement.[45] However, the holding was not well taken in view of the Federal Circuit's directly inopposite prior decision in *Abtox* which dismissed the symmetry rationale relied on by *Infigen*. Under the reasoning of *Infigen*, it would be difficult to imagine any tool patents to which the 271(e) Exemption could apply.

A contrary result was reached in *Bristol-Myers v. Rhone-Poulenc*[46] which found that utilizing patented research tools could fall within the 271(e) Exemption. Bristol Myers was seeking new taxol analogs useful as cancer therapeutics. Using chemical intermediates patented by Rhone-Poulenc, Bristol–Myers created a structure/function database for analysis of thousands of compounds for activity. The District Court for the Southern District of New York looked to the *Abtox-Chartex* line of cases for the precedent that "patented invention" includes "all patented inventions or discoveries, and not merely those that are covered by section 156" to find that defendant's work was exempted from infringing plaintiff's tool patents.[47]

40 Lilly, *supra*, at 672-73.
41 *AbTox, Inc. v. Exitron Corp* 122 F.3d 1019 (Fed. Cir. 1997).
42 Medical Device patents eligible for term restorations under 35 USC156(g)(B) are limited to those that require regulatory review under section 21 U.S.C. 360(e); these include the Class III medical devices at issue in *Lilly*, but not class II devices of *AbTox*.
43 AbTox, *supra*, at 1029.
44 *Infigen, Inc v. Advanced Cell Technology, Inc.* 65 F. Supp. 2d 967 (W. D. Wis.1999).
45 *Id.* at 981.
46 *Bristol-Myers Squibb Company v. Rhone-Poulenc Rorer, Inc.*, No. 95 Civ. 8833, 2001 WL 1512597 (S.D. N.Y. Nov. 28, 2001).
47 *Id.* at 6.

5. How far back in the research process does the Exemption extend?

After many years of extending the scope of the 271(e) Exemption, the Federal Circuit has now issued a decision narrowing its scope. In its most recent consideration of the 271(e) Exemption, *Integra LifeSc*ences *v. Merck KGaA,*[48] the court had to determine "whether the pre-clinical research . . . is exempt from liability for infringement."[49] The issue before the Court was whether the 271(e) Exemption "reaches back down the chain of experimentation to embrace development and identification of new drugs that will, in turn, be subject to FDA approval."[50]

The *Integra LifeSciences* case involved the use of peptides that contain the amino acid sequence Arg-Gly-Asp (otherwise abbreviated as RGD) which are involved in cell adhesion. The peptides have application where cells, appropriately or inappropriately, adhere to each other or to extracellular matrix proteins. Patents covering the RGD peptides themselves, their receptors and various methods of their use were exclusively licensed to Integra LifeSciences.

After their initial discovery, RGD peptides became the subject of much further research; a scientist working at The Scripps Research Institute discovered that they were involved in the growth of new blood vessels (a process known as angiogenesis) and thus had potential for treating cancer by starving solid tumors. Interested in the practical application of RGD peptides to inhibit angiogenesis, Merck KGaA entered into a sponsored research agreement with The Scripps Research Institute to test the activity of various RGD peptides. The research at issue with regard to the 271(e) Exemption involved *in vitro* screening of certain RGD peptides for anti-angiogenesis activity as well as testing the RGD peptides on fertilized chicken eggs to determine their effect on blood vessel development.[51]

Merck KGaA was offered, and declined to take, a sub-license. Integra LifeSciences brought suit alleging that Merck KGaA was directly infringing their patents by importing RGD peptides into the United States and inducing Scripps to infringe their patents by virtue of the sponsored research agreement. Merck KGaA defended the right to make and use the patented compositions and methods on the basis, inter alia, that the work fell under the 271(e) Exemption. After a 27-day trial, the jury was asked to determine whether the infringing acts were "reasonably related" to FDA approval so as to be exempt.[52] The district court concurred with the jury's verdict, holding that the research was not exempt from infringement and awarded damages of $15 million based on a hypothetical license negotiation.[53]

On appeal, defendant Merck KGaA argued that the 271(e) Exemption should be construed to exempt all experimentation that could serve as a "rational predicate" for subsequent experimentation leading to information directly pertinent to FDA review for safety and efficacy.[54] Rejecting this broad construction, the court stated that "*271(e)(1)* simply does not globally embrace all experimental activity that at some point, however attenuated, may lead to an FDA approval process."[55] The Court pointed out that "the FDA

48 *Integra LifeScences I, Ltd. v. Merck KGaA* 331 F.3d 860 (Fed. Cir. 2003).
49 *Id.* at 865.
50 *Id.* at 865-66.
51 *See Id.* at 863 and Opening Brief of Plaintiffs-Cross Appellants in Appeal to the United States Court of Appeals for the Federal Circuit, p. 21.
52 The jury was instructed that for the 271(e) Exemption to apply, Merck must prove "that it would be objectively reasonable for a partying Merck's and Scripps' situation to believe that there was a deeent prospect that the accused activities would contribute, relatively directly, to the generation of the kinds of information that are likely to be relevant in the process by which the FDA could decide whether to approve the product in question." Jury Instructions, *Integra LifeSciences, I Ltd. v. Merck*, (S.D. Cal. 96-CV-1307).
53 Because damages only attach in situations where the 271(e) Exemption does not apply, they will not be considered further.
54 Opening Brief of Defendant-Appellant in Appeal to the United States Court of Appeals for the Federal Circuit, p. 45.
55 Integra Lifesciences, *supra*, at 867.

does not require information about drugs other than the compound featured" in an IND.[56] Accordingly, the Court held that the Merck-sponsored Scripps research to select the best among several possible drug candidates does not fall within the 271(e)(1) Exemption. The damage award was remanded to the District Court for further consideration.[57]

The *Integra LifeSciences* decision cannot be taken to mean that all-preclinical research necessarily is outside the scope of the 271(e) Exemption. In fact, the court noted that some activities that do not themselves produce FDA information may nevertheless be exempted.[58] The decision holds only that application of the 271(e) Exemption requires a specific factual showing of relatively direct relevance to core FDA concerns of safety and efficacy. Merck KGaA failed to make a sufficient showing to convince a judge and jury that the exemption should apply. But in other cases the connection between infringing pre-clinical experiments and FDA review may well be direct enough to invoke the 271(e)(1) Exemption.

The *Integra LifeSciences* court also considered the effect of the "rational predicate" theory urged by Merck on "tool patents." The court noted that extending the safe harbor of 271(e)(1) to cover the Scripps experiments "would effectively vitiate the exclusive rights of patentees owning biotechnology tool patents. . . . [and] would swallow the whole benefit of the Patent Act for some categories of biotechnological inventions."[59] The *Intega LifeSciences* case was not simply a tool. patent case. The Merck-sponsored research included using patented compositions and methods to search for non-peptide alternatives. However,. the patent claims which were infringed included claims that had been construed to directly cover the peptides Merck had imported and Scripps had used in their experiments.[60] Thus, while the decision may be a bellwether of the Federal Circuit's inclination to consider tool patents outside the scope of the 271(e) Exemption, the decision should not be read to so hold.

II. WHERE ARE WE NOW?

In many of the cases leading up to *Integra LifeSciences*, the courts have been asked to hold that the 271(e) Exemption is applicable, or inapplicable, to entire categories of "uses" or "inventions." No such bright lines can be drawn. *Lilly* demonstrated that the exemption is not limited to drugs, much less generic drugs. Further, *Abtox* dismissed the symmetry theory, by which the exemption would only be applied to patents which were also eligible for patent term restoration. While there remain apparently conflicting decisions between the district courts as to whether the 271(e) Exemption is properly applied to tool patents, ultimately they should be treated in the same manner as any other patents in asking: were the infringing uses of the patented invention "reasonably related" to obtaining FDA approval?

The decision in *Integra LifeSciences* reaffirms that application of the 271(e) Exemption will be determined under the *Intermedics* "reasonably related" standard. Exemption cannot be determined as a matter of law according to either the class of infringing product or the type of patent. Instead, the analysis will focus on the nature of the

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56 *Id.*
57 *Id.* at 872.
58 *Id.* at 866 ("The term 'reasonably' permits some activities that are not themselves the experiments that produce FDA information to qualify as 'solely for uses reasonably related' to clinical tests for the FDA").
59 *Id.* at 867.
60 U.S. Patent No. 4,792,525, entitled *Tetrapeptide*, issued December 20, 1998 (inventors: Ruoslahti and Pierschbacher), includes claim 8, which reads as follows: "A substantially pure peptide including as the cell-attachment-promoting constituent the amino acid sequence Arg-Gly-Asp-R wherein R is Ser, Cys, Thr or other amino acid, said peptide having cell-attachment-promoting-activity, and said peptide not being a naturally occurring peptide."

otherwise infringing acts, a question of fact. For this reason, cases are more likely to go to trial, with juries deciding whether the defendant's activities satisfy the *Intermedics* standard and verdicts being reviewed only for substantial evidence. With biomedical technology becoming ever more complex and patent rights ever more important, doubtless many juries will grapple to determine—based on the facts of the case—when the causal chain of research events actually enters the safe harbor of the 271(e) Exemption.[61]

61 The authors wish to thank David Beckwith and Mauricio Flores for their constructive suggestions.