

Lessons to Learn: from Post-KSR Pharmaceutical Obviousness Decisions

By Robert H. Resis

The Supreme Court's April 2007 decision in *KSR*¹ rejected the "rigid approach" of the Federal Circuit in favor of an "expansive and flexible approach" on whether a patent claim was obvious in view of prior art. Since the *KSR* decision, through May 31, 2009, there have been 30 precedential Federal Circuit cases with a final judgment on obviousness under 35 U.S.C. § 103 that did not involve a drug-related patent claim. Of these nondrug cases, the Federal Circuit held nonobviousness 33% of the time and obviousness 67% of the time.²

For drug-related cases, however, the numbers are quite different. Since *KSR* and through May 31, 2009, there have been 13 precedential Federal Circuit cases with a final judgment on obviousness under § 103 that involved a drug-related patent claim. Of these drug-related cases, the Federal Circuit held nonobviousness 62% of the time (eight cases: *Takeda*,³ *Forest*,⁴ *Innogenetics*,⁵ *Ortho*,⁶ *Eisai*,⁷ *Omeprazole*,⁸ *Sanofi*,⁹ and *P&G*¹⁰) and obviousness 38% of the time (five cases: *Pharmastem*,¹¹ *Aventis*,¹² *Daiichi*,¹³ *Swanson*,¹⁴ and *Kubin*¹⁵). These cases illustrate key principles for future cases where obviousness is at issue:

- (1) where there are no persuasive reasons to start with a lead compound and then modify that lead compound to form the claimed drug, the claimed drug will be held to be nonobvious (*Takeda*, *Ortho*, *Eisai*, and *P&G*);
- (2) *prima facie* obviousness of a claimed compound in view of a prior art racemic mixture comprising the claimed compound and its nonclaimed, nonsuperimposable mirror image can be rebutted where the claimed compound showed unexpected benefits, and evidence indicated that the claimed compound and its nonsuperimposable mirror image would have been difficult for a person of ordinary skill in the art to separate (*Forest* and *Sanofi*);
- (3) articulated reasoning with rational underpinning to support the legal conclusion of obviousness is not a matter of listing prior art references and concluding with a stock phrase, "to one skilled in the art it would have been obvious to perform the [claimed] method"—the kind of motivation required by the patent laws is not a generalized motivation to develop a method, but rather the motivation to combine particular references to reach the claimed method (*Innogenetics*);
- (4) an invention is nonobvious when one of ordinary skill in the art would not infer a negative interaction from a

prior art reference, and thus would have had no reason to make a claimed modification that reduced that negative interaction (*Omeprazole*);

- (5) where a person skilled in the art would have had reason to attempt to make the composition or carry out the claimed process, and would have had a reasonable expectation of success in doing so, then the claimed composition or process will be held to be obvious (*Pharmastem*, *Daiichi*, and *Kubin*);
- (6) *prima facie* obviousness of a purified form of a prior art mixture will not be rebutted where the potency of the purified form was expected (*Aventis*); and
- (7) an invention that was held to be nonobvious in an initial examination over a "secondary" reference can still be held to be obvious in a reexamination proceeding in view of the same reference when considered as a "primary" reference, even when the invention was found to be nonobvious by a jury and that finding was affirmed by the Federal Circuit in an infringement suit (*Swanson*).

These cases are presented in chronological order below.

Takeda (Nonobvious)

Takeda involved the patent for the drug pioglitazone (sold as ACTOS® to control blood sugar in diabetes patients). The defendant argued that the prior art would have led one of ordinary skill to select a known compound b as a lead compound and then make two chemical changes: first, homologation, i.e., replacing the methyl group with an ethyl group; and second, "ring-walking," or moving the ethyl substituent to another position on the ring, thereby leading to the discovery of pioglitazone.

Like the district court, the Federal Circuit disagreed with the defendant. The Federal Circuit concluded that "[r]ather than identify predictable solutions for antidiabetic treatment, the prior art disclosed a broad selection of compounds any one of which could have been selected as a lead compound for further investigation." Moreover, "the closest prior art compound (compound b, the 6-methyl) exhibited negative properties that would have directed one of ordinary skill in the art away from that compound." Thus, the Federal Circuit held that this case failed to present the type of situation contemplated in *KSR* when the Supreme Court stated that an invention may be deemed obvious if it was "obvious to try." The Federal Circuit concluded that there was nothing in the prior art to narrow the possibilities of a lead compound to compound b.

The Federal Circuit stated that even if the defendant had established that one skilled in the art would look to compound b as a lead compound, there was nothing in the prior art to suggest making the modifications to compound b that were necessary to achieve the claimed compounds. Indeed,

Robert H. Resis practices in the Chicago office of Banner & Witcoff, Ltd. He has over 20 years of experience representing clients in a wide variety of intellectual property matters. His primary concentration is in trial and appellate work. He can be reached at resis@bannerwitcoff.com.

there was no reasonable expectation that the claimed pioglitazone would possess the desirable property of nontoxicity, particularly in light of the toxicity of compound b.

Pharmastem (Obvious)

Pharmastem involved claimed compositions and methods relating to a medical procedure for treating persons with compromised blood and immune systems. The treatment was based on the discovery that blood from a newborn infant's umbilical cord is a rich source of a type of stem cells useful for rebuilding an individual's blood and immune system after that system has been compromised by disease or a medical treatment such as chemotherapy. The claimed invention included the steps of isolating neonatal or fetal blood components containing hematopoietic stem cells, and then cryopreserving, thawing, and introducing the blood components into a suitable human host, such that the hematopoietic stem cells are viable and can proliferate with the host. The district court upheld the jury's verdict of validity.

The Federal Circuit reversed the district court's holding of nonobviousness. The Federal Circuit held that the accused infringers proved that a person of ordinary skill would have had reason to attempt to make the claimed composition or carry out the claimed process and would have had a reasonable expectation of success in doing so. The Federal Circuit held that it was reasonable for the inventors of the patent, like the authors of the prior art references, to infer the presence of high concentrations of stem cells in cord blood, even though the prior art studies did not offer conclusive proof of their presence.

The Federal Circuit concluded that while the inventors may have proved conclusively what was strongly suspected before—that umbilical cord blood is capable of hematopoietic reconstitution—and while their work may have significantly advanced the state of the science of hematopoietic transplantations by eliminating any doubt as to the presence of stem cells in cord blood, the mouse experiments and the conclusions drawn from them were not inventive in nature. Instead, the inventors merely used routine research methods to prove what was already believed to be the case.

Forest (Nonobvious)

Forest involved the patent on the antidepressant drug LEXAPRO®. The defendants argued that the claimed compound, which was an “enantiomer,” was obvious in light of (1) a prior art racemic mixture containing the claimed compound and its nonsuperimposable mirror image and (2) descriptions of techniques available to separate enantiomers from their racemates. The defendants further argued that there was a general expectation in the art that one enantiomer would be more potent than the other, which provided reason for a person of ordinary skill to isolate the enantiomers.

The patent owner argued that any *prima facie* obviousness based on the racemic mixture was rebutted by the evidence demonstrating the difficulty of separating the enantiomers at issue and the unexpected properties of the claimed enantiomer. The patent owner argued that it was unexpected that all of the therapeutic benefit of the racemic mixture

would reside in the claimed enantiomer over that of its nonsuperimposable mirror image enantiomer, resulting in a composition of just the claimed enantiomer having twice the potency of a racemic mixture. The patent owner also argued that the district court was entitled to credit evidence that a person of ordinary skill would not have easily turned to an intermediate to attempt resolution of the racemic mixture, both because of the uncertainty involved and because the prior art described compounds less complex than those at issue. The Federal Circuit agreed with the patent owner and affirmed the district court's holding of nonobviousness.

Aventis (Obvious)

In *Aventis*, the district court held that the defendant failed to prove that claims that covered the high blood pressure treatment drug ALTACE® were obvious, even though the claimed composition was a purified form of a mixture that existed in the prior art. The Federal Circuit disagreed and reversed. The Federal Circuit stated that “if it is known that some desirable property of a mixture derives in whole or in part from a particular one of its components, or if the prior art would provide a person of ordinary skill in the art with reason to believe that this is so, the purified compound is *prima facie* obvious over the mixture even without an explicit teaching that the ingredient should be concentrated or purified.” The Federal Circuit held that there was no evidence that separating the claimed composition from the nonclaimed composition in the known mixture was outside the capability of an ordinarily skilled artisan. The Federal Circuit held that the potency of the purified form was expected, as compared to a mixture containing other inert or near-inert stereoisomers. Indeed, the Federal Circuit noted that all of the evidence suggested that potency varied with the absolute amount of the claimed isomer in a mixture.

Daiichi (Obvious)

Daiichi involved a method for treating ear infections by topically administering the antibiotic ofloxacin. A prior article taught the successful use of ear drops containing ciprofloxacin to treat middle ear infections without side effects of any kind observed. The article reported that use of gyrase inhibitors “should be used only in difficult cases and exclusively by the otologist.” Because the district court held that an otologist was outside the level of ordinary skill in the art, it held that the article did not support the accused infringer's argument that it was obvious that ofloxacin, a gyrase inhibitor like ciprofloxacin, would be effective and safe to treat ear infections topically.

The Federal Circuit reversed and held that the asserted claim was obvious. The Federal Circuit held that the level of ordinary skill in the art was a person engaged in developing pharmaceutical formulations and treatment methods for the ear or a specialist in ear treatments, including an otologist who also had training in pharmaceutical formulations. The Federal Circuit held that the conclusory statement of the patent owner's expert that “[o]ne cannot extrapolate a safety profile for one antibiotic to another” could not refute the detailed testimony of the defendant's expert of obviousness.

Innogenetics (Nonobvious)

Innogenetics involved diagnostic tools that detect and classify hepatitis C virus (HCV) genotypes in a biological sample, which facilitates tailoring pharmaceutical treatments. The district court held that the report of the defendant's expert was deficient under Rule 26 and held that the defendant had not proven obviousness. The Federal Circuit affirmed, stating that for each of the claims that the defendant's expert analyzed for obviousness, he merely listed a number of prior art references and then concluded with the stock phrase "to one skilled in the art it would have been obvious to perform the [claimed] method." The Federal Circuit held that "there must be some articulated reasoning with some rational underpinning to support the legal conclusion of obviousness," citing *KSR*. Nowhere did the defendant's expert state how or why a person of ordinary skill in the art would have found the claims of the asserted patent obvious in light of some combination of prior art references.

The Federal Circuit acknowledged that the defendant's expert had suggested that one of ordinary skill was motivated to find a method capable of genotyping because at least one prior art reference had disclosed that "different genotypes of HCV respond differently to interferon therapy." The Federal Circuit held, however, that knowledge of a problem and motivation to solve it are entirely different from motivation to combine particular references to reach the claimed method. Further, there was no abuse of discretion in precluding the expert's vague and conclusory obviousness testimony, which did not offer any motivation for one skilled in the art to combine the particular references he cited.

Ortho (Nonobvious)

Ortho involved the patent to the epilepsy drug topiramate (sold as *TOPOMAX*[®]). The Ortho scientist invented the drug during a search for new antidiabetic drugs. Topiramate was a reaction intermediate in the synthesis the inventor ran as part of his antidiabetic efforts. Unexpectedly, he discovered that this particular intermediate had powerful anticonvulsant properties. The Federal Circuit affirmed the district court's holding of nonobviousness. The Federal Circuit held that one of ordinary skill in the art would not even be likely to begin with a starting compound as done by the inventor and would not have any reason to select among several unpredictable alternatives the exact route that produced the claimed composition as an intermediate. Further, it would not have been obvious to one of ordinary skill, without any clue of potential utility of the composition, to stop at that intermediate and test it for properties for a field far from the purpose of development in the first place.

The Federal Circuit noted of particular importance the evidence of objective criteria showing nonobviousness. Specifically, the record showed powerful unexpected results (anticonvulsive activity) for topiramate. The record also included skepticism of experts, copying, and commercial success. The Federal Circuit held that this evidence was not just a cumulative or confirmatory part of the obviousness calculus but constituted independent evidence of nonobviousness.

Eisai (Nonobvious)

In *Eisai*, a defendant alleged obviousness of the patent covering rabeprazole, the active ingredient in *ACIPHEX*[®] for suppression of gastric acid production.

The Federal Circuit stated that where the patent at issue claims a chemical compound, the obviousness analysis "often turns on the structural similarities and differences between the claimed compound and the prior art compounds." In keeping with the flexible nature of the obviousness inquiry, the Federal Circuit, citing *KSR*, stated that the requisite motivation can come from any number of sources and need not necessarily be explicit in the art. Rather, the Federal Circuit noted, "it is sufficient to show that the claimed and prior art compounds possess 'a sufficiently close relationship . . . to create an expectation,' in light of the totality of the prior art, that the new compound will have 'similar properties' to the old."

The Federal Circuit held that, post-*KSR*, a *prima facie* case of obviousness for a chemical compound still, in general, begins with a reasoned identification of a lead compound. The Federal Circuit held that the record contained no reasons why a skilled artisan would have considered modification of a lead compound by removing a fluorinated substituent from that lead compound as an identifiable, predictable solution. Thus, the Federal Circuit held that the district court properly concluded that the record did not support a case of obviousness as a matter of law.

Omeprazole (Nonobvious)

Omeprazole involved claimed pharmaceutical preparations containing omeprazole, the active ingredient in AstraZeneca's *Prilosec*[®], a drug designed to treat acid-related gastrointestinal disorders. The inventors of the asserted patents added an inert subcoating to a conventional enteric coating having an alkaline reacting compound (ARC). The subcoating increased storage stability and provided sufficient gastric acid resistance to prevent omeprazole from degrading in the stomach. Once the dosage reached the small intestine, the solubility of the subcoating allowed for the rapid release of the omeprazole in the drug core.

One party found to be an infringer at trial (Apotex) argued that the claims were obvious in light of a European application in combination with other references. The European application described a tablet containing omeprazole magnesium salt with an enteric coating but did not disclose tablets with any subcoating or tablets containing an ARC. The European application also did not suggest a negative interaction between the drug core and the enteric coating. Apotex argued, however, that a number of references disclosed the use of subcoatings in various pharmaceutical preparations and that it would have been obvious to one of ordinary skill to apply an inert subcoating to the example in the European application.

The Federal Circuit concluded that an article by a named inventor supported the view that a person of ordinary skill would not have believed that an enteric coating would create a problem resulting from contact with omeprazole. Based on that evidence and the testimony of opposing experts,

the Federal Circuit held that the district court reasonably concluded that a person of ordinary skill would not have seen any need to apply the teachings of references disclosing subcoatings to the example in the European application.

The Federal Circuit also noted that the district court found that even if a skilled artisan would have recognized that there would be a negative interaction between the enteric coating and the drug core, it would not have been obvious to try applying a water-soluble subcoating as a means of solving that problem. Indeed, there were multiple paths that could have been taken by a skilled artisan who recognized the stability problem resulting from a directly applied enteric coating: (1) one might have decided to abandon the enteric coating altogether; (2) one might instead have modified the enteric coating; for instance, by removing monomers and small acidic pieces from the coating, or by using an inert coating; or (3) one might have altered the drug core by adding an antioxidant. Finally, even if one had decided to use a subcoating, one would not necessarily have used a water-soluble subcoating since omeprazole was moisture-sensitive and needed to be delivered to the alkaline environment of the small intestine without degrading in the stomach. Thus, one of ordinary skill would have likely tried a nonsoluble subcoating or a subcoating containing a fatty acid, not the claimed “subcoating which is soluble or rapidly disintegrating in water.”

Swanson (Obvious)

In *Swanson*, the Federal Circuit affirmed a reexamination finding that claims were anticipated and obvious in light of a prior art reference considered in the initial examination and despite the Federal Circuit’s holding in an earlier infringement case¹⁶ that the same claims were valid over the same prior art. The patent disclosed a method of quantitatively analyzing small amounts of biological fluids, which facilitates tailoring pharmaceutical treatment. Like the patent at issue, a prior art reference, *Deutsch*, also disclosed a method of detecting ligand-antiligand binding pairs in order to determine the presence of a ligand (the analyte) in a biological fluid sample. During initial examination of the application that led to the patent, claims were initially rejected as being obvious based on a combination of references, including a combination that cited *Deutsch* as a secondary reference. After the claims were amended, the patent issued.

In an infringement suit, the Federal Circuit sustained the judgment that *Deutsch* did not anticipate or render obvious the asserted claims after reviewing “the evidence presented on obviousness in view of *Deutsch*, and in view of the burden of proof.”¹⁷

In a later *ex parte* reexamination, certain claims were rejected as anticipated by *Deutsch* and another claim rejected as obvious in light of *Deutsch* and a secondary reference (*Tom*). On appeal, the Federal Circuit held that a “substantial new question of patentability” refers to a question that has never been considered by the USPTO; thus, a substantial new question can exist even if a federal court previously considered the question.

Similarly, the Federal Circuit upheld the rejection based on *Deutsch*, including the obviousness rejection, even though

Deutsch was cited in the original prosecution of the patent. The Federal Circuit stated that to decide whether a reference that was previously considered by the USPTO creates a substantial new question of patentability, the USPTO should evaluate the context in which the reference was previously considered and the scope of the prior consideration and determine whether the reference is now being considered for a substantially different purpose. The Federal Circuit held that substantial evidence supported the conclusion of the Board of Patent Appeals and Interference (BPAI) that, in the initial examination, “*Deutsch* was relied upon, as a secondary reference” for the limited purpose of “teaching immunoreactions in general, and not for the specific method steps claimed.”

Sanofi (Nonobvious)

Sanofi involved whether claims covering clopidogrel bisulfate, sold under the brand name Plavix[®] to treat or prevent heart attacks and strokes, were obvious. Prior art patents by the patent owner disclosed clopidogrel bisulfate, a dextrorotatory isomer, and its known racemate. The Federal Circuit noted that enantiomers are spatial isomers, also called stereoisomers, that have the same chemical formula and the same chemical structure but differ in their orientation in three-dimensional space, i.e., they are related like right and left hands. The Federal Circuit also noted that enantiomers are generally formed in equal amounts to produce what is known as a racemate. At trial, experts for both sides explained the difficulty of separating enantiomers is because they are identical except for the spatial arrangement at one of the carbon atoms. It also was explained at trial that enantiomers tend to have identical or almost identical properties.

Despite the difficulty of separating enantiomers and that separation was unlikely to provide a benefit over their racemates, *Sanofi* decided to study the enantiomers of a particular compound designated as PCR 4099. After months of experimentation, *Sanofi* eventually separated the enantiomers of PCR 4099. *Sanofi* then found that they had the rare characteristic of “absolute stereoselectivity” in that the dextrorotatory enantiomer provided all of the favorable antiplatelet activity but with no significant neurotoxicity, while the levorotatory enantiomer produced no antiplatelet activity but with virtually all of the neurotoxicity.

In affirming the holding of nonobviousness, the Federal Circuit noted that the expert witnesses agreed that (1) a person of ordinary skill would have known at the relevant time that enantiomers can exhibit different biological activities; (2) it was not predictable whether such differences, if any, would be weak, moderate, or strong, or how they would be manifested; (3) no known scientific principle allows prediction of the degree to which stereoisomers will exhibit different levels of therapeutic activity and toxicity; (4) weak stereoselectivity of biological properties is more common than strong stereoselectivity and absolute stereoselectivity is rare; (5) activity and toxicity were more likely to be positively correlated, such that a reduction in toxicity also would be expected to reduce the beneficial activity; and (6) for compounds whose biological activity is delivered through metabolism in the body, the acid environment in the stomach or other metabolic processes often

restores the racemic state, thereby removing any potential benefit of a separated enantiomer. The Federal Circuit, like the district court, concluded that one skilled in the art would not have reasonably predicted that the dextrorotatory enantiomer would provide all of the favorable antiplatelet activity and none of the adverse neurotoxicity.

The Federal Circuit also concluded that the separation used by Sanofi was not a simple and routine procedure and that success in separation, as well as the allocation of properties, was unpredictable. Further, only with hindsight knowledge that the dextrorotatory enantiomer had highly desirable properties would one select this particular racemate and undertake the arduous separation. Citing *Graham* and *KSR*, the Federal Circuit held that the application of hindsight was inappropriate where the prior art did not suggest that this enantiomer could reasonably be expected to manifest the properties and advantages that were found for this particular dextrorotatory isomer. The Federal Circuit concluded that the facts in the case were closer to those in *Forest, supra*, than in *Aventis, supra*.

Kubin (Obvious)

Kubin involved an appeal from a final U.S. Patent and Trademark Office rejection for claims directed to DNA molecules encoding a protein. The Federal Circuit held that the record showed that the prior art taught the protein of interest, a motivation to isolate the gene coding for that protein, and illustrative instructions to use a monoclonal antibody specific to the protein for cloning the gene. Therefore, the Federal Circuit concluded that the claimed invention is the “product not of innovation but of ordinary skill and common sense,” citing *KSR*. The Federal Circuit declined to “cabin” *KSR* to the “predictable arts” (as opposed to the “unpredictable art” of biotechnology). According to the Federal Circuit, the record in *Kubin* showed that one of ordinary skill in this advanced art would have found the claimed “results” profoundly “predictable.” The Federal Circuit stated that it could not, in the face of *KSR*, cling to the formalistic rules for obviousness, customize legal tests for specific scientific fields in ways that deem entire classes or prior art teachings irrelevant, or discount the significant abilities of artisans of ordinary skill in an advanced area of art.

The Federal Circuit noted that the record showed that the prior art did not explicitly supply an amino acid sequence for NAIL [Natural Killer Cell Activation Inducing Ligand] or a polynucleotide sequence for the NAIL gene. In that sense, the Federal Circuit acknowledged that the applicant’s disclosure represented some minor advance in the art. But the Federal Circuit held that “[g]ranting patent protection to advances that would occur in the ordinary course without real innovation retards progress,” citing *KSR*.

The Federal Circuit stated that in light of the concrete, specific teachings of the prior art, artisans in this field, as found by the BPAI in its expertise, had every motivation to seek and every reasonable expectation of success in achieving the sequence of the claimed invention. In that sense, the Federal Circuit noted that the claimed invention was reasonably expected in light of the prior art and “obvious to try,” citing *KSR*. The Federal Circuit stated that the prior art references,

which together taught a protein identical to NAIL, a commercially available monoclonal antibody specific for NAIL, and explicit instructions for obtaining the DNA sequence for NAIL, were not analogous to prior art that gave “no direction as to which of many possible choices [was] likely to be successful” or “only general guidance as to the particular form of the claimed invention or how to achieve it.” Rather, as the BPAI found, the prior art provided a “reasonable expectation of success” for obtaining a polynucleotide within the scope of the claim at issue, which, “[f]or obviousness under § 103 [is] all that is required.” Thus, the Federal Circuit affirmed the BPAI’s conclusion as to obviousness.

P&G (Nonobvious)

P&G involved the defendant’s argument that the claimed composition risedronate, a bisphosphonate and the active compound in P&G’s osteoporosis drug Actonel®, was obvious in light of an expired P&G patent. The Federal Circuit stated that a court must determine whether, at the time of invention, a person having ordinary skill would have had “reason to attempt to make the claimed composition” known as risedronate and “a reasonable expectation of success in doing so.” At trial, the patent owner’s expert witnesses testified that a person having ordinary skill at the time of invention realized that the properties of bisphosphonates could not be anticipated based on their structure. Additionally, the trial court relied on contemporaneous writings from “the preeminent authority” on bisphosphonates during the relevant time period. The preeminent authority wrote that “every compound, while remaining a bisphosphonate, exhibits its own physical-chemical, biological and therapeutic characteristics, so that each bisphosphonate has to be considered on its own. To infer from one compound the effects in another is dangerous and can be misleading.”

In light of the Supreme Court’s instruction in *KSR*, the Federal Circuit stated that, “[t]o the extent an art is unpredictable, as the chemical arts often are, *KSR*’s focus on [] ‘identified, predictable solutions’ may present a difficult hurdle because potential solutions are less likely to be genuinely predictable,” citing *Eisai* and *KSR, supra*.

The Federal Circuit held that in *P&G* there was no credible evidence that the structural modification was routine. The Federal Circuit concluded that the only direct evidence that the structural modification was routine was presented by an expert witness that the district court discredited. As noted by the Federal Circuit, the discredited expert “‘had no specialized experience in the area of bisphosphonates’ aside from his preparation to testify in the litigation . . . [and he] prepared his opinion by reviewing drug profiles in the current version of the Physician’s Desk Reference instead of the drug profiles from the relevant time, causing his opinions to be ‘marred by hindsight.’” The Federal Circuit concluded that even if 2-pyr EHDP (disclosed in the patent owner’s expired prior art patent) was a lead compound, the evidence did not establish that it would have been obvious to a person of ordinary skill in the art at the time of invention to modify 2-pyr EHDP to create risedronate. Because the accused infringer did not establish a prima facie case of obviousness, the patent

owner need not have relied on unexpected results evidence to defend the asserted patent. According to the Federal Circuit, it was not clear error for the district court to conclude that risedronate met a long-felt need and that secondary considerations supported a finding of nonobviousness.

Conclusions

While there has been a tendency, post-*KSR*, for the Federal Circuit to hold drug-related claims to be nonobvious at a higher rate than nondrug-related claims (i.e., 62% versus 33%), holdings of obviousness in drug-related cases may become more common after *Kubin*. *Kubin* demonstrates that the Federal Circuit will not “cabin” *KSR* to the “predictable arts,” and will look to whether the claimed invention was “obvious to try” and whether the results were “predictable.” Because ordinary skill in the drug-related arts is typically high, it will be more challenging to procure and defend drug-related patents under *Kubin*—even for a claim to an isolated and purified DNA sequence not disclosed in the prior art. ■

Endnotes

1. *KSR Int'l Co. v. Teleflex Inc.*, 550 U.S. 398 (Apr. 30, 2007).
2. Of the ten non-drug precedential patent cases wherein nonobviousness was found, six of them related to medical devices. Of the twenty non-drug precedential patent cases wherein obviousness was found, only one of

them related to a medical device. This shows that in medical contexts, even when the case did not strictly involve a drug-related treatment, the Federal Circuit is more inclined to find nonobviousness than obviousness.

3. *Takeda Chem. Indus., Ltd. v. Alphapharm Pty., Ltd.*, 492 F.3d 1350 (Fed. Cir. June 28, 2007).
4. *Forest Labs., Inc. v. Ivax Pharms, Inc.*, 501 F.3d 1263 (Fed. Cir. Sept. 5, 2007).
5. *Innogenetics, N.V. v. Abbott Labs.*, 512 F.3d 1363 (Fed. Cir. Jan. 17, 2008).
6. *Ortho-McNeil Pharm., Inc. v. Mylan Labs., Inc.*, 520 F.3d 1358 (Fed. Cir. Mar. 31, 2008).
7. *Eisai Co., Ltd. v. Dr. Reddy's Labs. Ltd.*, 533 F.3d 1353 (Fed. Cir. July 21, 2008).
8. *In re Omeprazole*, 536 F.3d 1361 (Fed. Cir. Aug. 20, 2008).
9. *Sanofi-Synthelabo v. Apotex, Inc.*, 550 F.3d 1075 (Fed. Cir. Dec. 12, 2008).
10. *Procter & Gamble v. Teva Pharm.*, 566 F.3d 989 (Fed. Cir. May 13, 2009).
11. *Pharmastem Therapeutics, Inc. v. Viacell, Inc.*, 491 F.3d 1342 (Fed. Cir. July 9, 2007).
12. *Aventis Pharma Deutschland GmbH v. Lupin Ltd.*, 499 F.3d 1293 (Fed. Cir. Sept. 11, 2007).
13. *Daiichi Sankyo Co. v. Apotex Inc.*, 501 F.3d 1254 (Fed. Cir. Sept. 12, 2007).
14. *In re Swanson*, 540 F.3d 1368 (Fed. Cir. Sept. 4, 2008).
15. *In re Kubin*, 561 F.3d 1351 (Fed. Cir. Apr. 3, 2009).
16. *Abbott Labs. v. Syntron Bioresearch, Inc.*, 334 F.3d 1343 (Fed. Cir. 2003).
17. *Id.* at 1357.