

United States Court of Appeals for the Federal Circuit

00-1002, -1003, -1050

MONSANTO COMPANY

Plaintiff?Appellant,

v.

MYCOGEN PLANT SCIENCE, INC. and AGRIGENETICS, INC.,

Defendants?Cross Appellants,

and

NOVARTIS CORPORATION ,

Defendant-Cross Appellant.

Richard L. Stanley , Howrey Simon Arnold & White, of Houston, Texas, argued for plaintiff-appellant. With him on the brief were John F. Lynch, Susan K. Knoll, Michael E. Lee, and Steven G. Spears.

Daniel J. Thomasch , Orrick, Herrington & Sutcliffe LLP, of New York, New York, argued for defendants-cross appellants Mycogen Plant Science, Inc. and Agrigenetics, Inc. With him on the brief were Richard W. Mark, Lauren J. Elliot, and Marc P. Berger, of New York, New York, and Craig R. Kaufman, of Menlo Park, California. Of counsel was Geoffrey W. Millsom, of New York, New York.

Dimitrios T. Drivas , White & Case LLP, of New York, New York, argued for defendant-cross appellant Novartis Corporation. With him on the brief were John S. Willems, Leslie Morioka, and Jeffrey J. Oelke. Of counsel was Lori R. Begleiter.

Appealed from: U.S. District Court for the District of Delaware

Judge Roderick R. McKelvie

United States Court of Appeals for the Federal Circuit

00-1002, -1003, -1050

MONSANTO COMPANY,

Plaintiff-Appellant,

v.

MYCOGEN PLANT SCIENCE, INC. and AGRIGENETICS, INC.,

Defendants-Cross Appellants,

and

NOVARTIS CORPORATION,

Defendant-Cross Appellant.

DECIDED: August 16, 2001

Before CLEVENGER, BRYSON, and LINN, Circuit Judges.

LINN, Circuit Judge.

Monsanto Company (“Monsanto”) appeals from a final judgment of invalidity and noninfringement of its U.S. Patent No. 5,500,365 (the “365 patent”), entered by the United States District Court for Delaware on March 12, 1999. Monsanto Co. v. Mycogen Plant Science, Inc., No. 96-133-RRM (D. Del. Sep. 8, 1999) (“Opinion”). A jury returned a verdict of invalidity under 35 U.S.C. § 102(g) based on prior inventorship. In response to motions for judgment as a matter of law (“JMOL”)

under Rule 50(a) of the Federal Rules of Civil Procedure, the district court upheld the jury's verdict of invalidity. We affirm.[\[1\]](#)

BACKGROUND

A. Technology and '365 Patent

This court heard oral argument in this case along with two companion cases dealing with the same technology. Mycogen Plant Science, Inc. v. Monsanto Co., 234 F.3d 1316, 58 USPQ2d 1030 (Fed. Cir. 2001) ("Delaware I"); Mycogen Plant Science, Inc. v. Monsanto Co., --- F.3d ---, --- USPQ2d ---, 2001 WL 641778 (Fed. Cir. 2001) ("California"). The facts central to this appeal are discussed below. For additional background, the technology is explained in detail in Delaware I. Delaware I, 234 F.3d at 1321-24, 58 USPQ2d at 1034-36.

The '365 patent deals with genetically altering plants to make them more resistant to insects. This is done by modifying the plants so that they express the Bacillus thuringiensis ("Bt") protein, which is toxic to various insects. Opinion, slip op. at 6. Bt is a naturally-occurring bacterium found in soil, and it produces the Bt protein. Prior to the invention claimed in the '365 patent, scientists had successfully introduced into plants the gene that codes for the Bt protein (the "Bt gene"). However, the level of expression of the Bt protein by those plants was too low to be practicable. Id. at 7. The invention at the heart of the present suit solves that problem.

It was known in the art that, because of the degeneracy in the genetic code, more than one codon sequence would code for the Bt protein. The '365 patent uses this fact and alters the naturally occurring codon sequence of the Bt gene while still ensuring that the altered Bt gene codes for the Bt protein. The '365 patent explains that these alterations should be done so as to decrease the overall AT richness of the Bt gene. Decreasing the AT richness has the effect of removing sequences that the plant could read as regulatory sequences and which would interfere with the plant's ability to make the Bt protein. The end result of these alterations is an increase in the

plant's expression of the Bt protein over that achieved by simply inserting the Bt gene as it is found in the Bt bacterium.

Claims 7-9 and 12 are at issue and are reproduced below.

7. A modified chimeric gene comprising a promoter which functions in plant cells operably linked to a structural coding sequence and a 3' non-translated region comprising a polyadenylation signal which functions in plants to cause the addition of polyadenylate nucleotides to the 3' end of the RNA, wherein said structural coding sequence encodes a toxin protein derived from a *Bacillus thuringiensis* protein, wherein said structural coding sequence comprises a DNA sequence which differs from the naturally occurring DNA sequence encoding said *Bacillus thuringiensis* protein and comprises the following characteristics: said naturally occurring DNA sequence comprises a region having the following sequence:

```
TTAATTAACCAAAGAATAGAAGAATTCGCTAGGAAC
1   5   10   15   20   25   30   35
```

and where said structural coding sequence comprises modifications so that at least said region contains at least one fewer sequence selected from the group consisting of an AACCAA and an AATTAA sequence.

8. The modified chimeric gene of claim 7 wherein said modifications increase the number of plant preferred codons in said structural coding sequence.

9. The modified chimeric gene of claim 7 wherein said *Bacillus thuringiensis* is *Bacillus thuringiensis* var. *kurstaki*.

....

12. A transformed plant cell comprising a modified chimeric gene which comprises a promoter which functions in plant cells operably linked to a structural coding sequence and a 3' non-translated region comprising a polyadenylation signal which functions in plants to cause the addition of polyadenylate nucleotides to the 3' end of the RNA, wherein said structural coding sequence encodes a toxin protein derived from a *Bacillus thuringiensis* protein, wherein said structural coding sequence comprises a DNA sequence which differs from the naturally occurring DNA sequence encoding said *Bacillus thuringiensis* protein and has characteristics comprising the following:

said naturally occurring DNA sequence comprises a region having the following sequence:

```
TTAATTAACCAAAGAATAGAAGAATTCGCTAGGAAC
1   5   10   15   20   25   30   35
```

and where said structural coding sequence comprises modifications so that at least said region contains at least one fewer sequence selected from the group consisting of an AACCAA and an AATTAA sequence.

'365 patent, col. 46, l. 6 – col. 48, l. 18.

At issue in the trial was whether the subject matter of the contested claims was invented by scientists at Agracetus, Inc. (“Agracetus”) before it was invented by Monsanto. Agracetus is not related to the defendants and, at the time of the alleged invention by its scientists, was not related to Monsanto. However, Agracetus is now owned by Monsanto. There are three Agracetus scientists whose work, testimony, and lab notebooks are of interest in this appeal: Barton, Miller, and Cannon. Additionally, various discovery responses provide key information. The Agracetus inventions at issue are three modified Bt genes referred to as Bt2, Bt3, and Bt4. Agracetus made Bt2 by October 20, 1987, Bt3 by November 2, 1987, and Bt4 by January 15, 1988. Beginning on January 11, 1988, Agracetus began plant transformation experiments in which it inserted the modified Bt genes into plant cells. After these genetically altered plant cells had grown into plants, Agracetus tested the plants’ toxicity beginning in May 1988. Toxicity was confirmed for the various Bt genes by performing hornworm bioassay tests on or about May 24-26, May 31 - June 2, July 6-8, and July 12-15, 1988. Western blot tests, confirming the genes’ actual level of toxicity, were performed at least by August 11, 1988. These activities are relevant to Agracetus’ conception, diligence, and reduction to practice, and are discussed in more detail in the analysis section, as are the dates of conception and reduction to practice for Monsanto.

B. Procedural History

The jury ruled in favor of Mycogen Plant Sciences, Inc. (“Mycogen”) and the other defendants by determining that the scientists at Agracetus were prior inventors. Prior invention is governed by 35 U.S.C. § 102(g), which provides that:

A person shall be entitled to a patent unless—

. . . .

(g) . . . (2) before such person’s invention thereof, the invention was made in this country by another inventor who had not abandoned, suppressed, or concealed it. In determining priority of invention under this subsection, there shall be considered not only the respective dates of conception and reduction to practice of the invention, but also the reasonable diligence of one who was first to conceive and

last to reduce to practice, from a time prior to conception by the other.

35 U.S.C. § 102 (Supp. V 1999). Section 102(g) provides multiple scenarios that can result in a finding of priority depending on the relative dates of conception and reduction to practice, as well as diligence. Although finding for the defendants, the jury verdict did not stipulate the grounds on which it found prior invention. That is, the jury did not make any specific findings regarding conception, diligence, or reduction to practice.

However, in response to the JMOL motions of the parties, the district court worked through the possible scenarios that could justify the jury's verdict. The district court first determined that no reasonable jury could have found that Agracetus had the earlier reduction to practice. Opinion, slip op. at 111. The district court then found, however, that a reasonable jury could have found that Agracetus conceived the claimed invention before Monsanto and was diligent during the required time period up to reduction to practice. Id. at 115.

Accordingly, the district court entered a judgment of invalidity under § 102(g) based on Agracetus' earlier conception coupled with diligence. Id. at 115, 148. Monsanto appeals the judgment of invalidity. We have exclusive jurisdiction. 28 U.S.C. § 1295(a)(1) (1994).

DISCUSSION

A. Standard of Review

In reviewing the district court's JMOL, we reapply the district court's JMOL standard anew. Read Corp. v. Portec, Inc., 970 F.2d 816, 821, 23 USPQ2d 1426, 1431 (Fed. Cir. 1992), abrogated on other grounds by Markman v. Westview Instruments, Inc., 52 F.3d 967, 34 USPQ2d 1321 (Fed. Cir. 1995) (en banc), aff'd, 517 U.S. 370 (1996). Priority of invention is a question of law based on underlying factual determinations. Innovative Scuba Concepts, Inc. v. Feder Indus., Inc., 26 F.3d 1112, 1115, 31 USPQ2d 1132, 1134 (Fed. Cir. 1994). In this case, the district court had only the

jury's verdict of prior inventorship without any specific findings of underlying facts. In such circumstances, factual findings in support of the prior inventorship verdict are presumed to have been made by the jury. Perkin-Elmer Corp. v. Computervision Corp., 732 F.2d 888, 893, 221 USPQ 669, 673 (Fed. Cir. 1984); Read, 970 F.2d at 821, 23 USPQ2d at 1431. Therefore, to overturn the jury's prior inventorship verdict, Monsanto needed to show that such presumed findings were not supported by substantial evidence. Id.

"Substantial evidence is such relevant evidence from the record taken as a whole as might be accepted by a reasonable mind as adequate to support the finding under review." Perkin-Elmer, 732 F.2d at 893, 221 USPQ at 673 (internal quotations omitted). "A finding of fact must stand unless appellant shows that on the entirety of the evidence of record, including that which detracts from the weight of the favorable evidence, and taking into account the required quantum of proof, no reasonable juror could have made the finding." Read, 970 F.2d at 821, 23 USPQ2d at 1431 (citations omitted). Because a patent is presumed valid, the quantum of proof required at trial was clear and convincing evidence. 35 U.S.C. § 282 (1994) ("A patent shall be presumed valid."); Verdegaal Bros., Inc. v. Union Oil Co. of Cal., 814 F.2d 628, 631 (Fed. Cir. 1987). Thus, in its JMOL motion, Monsanto needed to show that substantial evidence did not support the jury's presumed finding that the defendants had established invalidity by clear and convincing evidence.

B. Analysis

Section 102(g)(2) is applicable to lawsuits involving patent invalidity, such as this case. Mahurkar v. C.R. Bard, Inc., 79 F.3d 1572, 1577, 38 USPQ2d 1288, 1290 (Fed. Cir. 1996). This court has interpreted § 102(g) to provide that "priority of invention goes to the first party to reduce an invention to practice unless the other party can show that it was the first to conceive the invention and that it exercised reasonable diligence in later reducing that invention to practice." Mahurkar, 79 F.3d at 1577, 38 USPQ2d at 1290 (internal quotations omitted). Thus, a showing of diligence is necessary for a party who was first to conceive but second to reduce to practice. The time

period for which diligence must be shown by the party first to conceive is “from a date just prior to the other party’s conception to . . . [the date of] reduction to practice [by the party first to conceive].” *Id.* at 1578, 38 USPQ2d at 1291. In this opinion we affirm, and therefore need only address, the district court’s determination that a reasonable jury could have found an earlier conception coupled with diligence over the time period to reduction to practice by Agracetus. To arrive at our conclusion, we address the following issues: (1) whether the diligence theory was before the jury; (2) the exact dates of the critical period for which diligence must have been shown; and (3) whether substantial evidence supports a presumed jury finding of diligence throughout the critical period.

1.

We first address the threshold issue of whether the theory of an earlier conception coupled with diligence was properly before the jury. It is undisputed that the defendants tried the case principally on the theory that Agracetus both conceived the invention prior to Monsanto and reduced it to practice before Monsanto, and that the defendants did not explicitly inform the jury that the defendants should prevail under the theory of an earlier conception coupled with diligence.

Also undisputed, however, is the fact that the jury was read proper instructions on establishing prior invention by an earlier conception coupled with diligence. These instructions included both a general instruction on prior inventorship, explaining that prior inventorship could be established by finding an earlier conception coupled with diligence, and a specific instruction explaining the requirements for diligence. There was also evidence relating to Agracetus’ activities during the period for which diligence would need to be established. This evidence included deposition testimony from Miller stating, albeit in a conclusory manner, that Agracetus had made reasonable efforts, from conception until the first hornworm bioassay tests, to create and test the invention. This evidence also included lab notebooks, discovery responses, and additional deposition

testimony.

Monsanto argues that the defendants' failure to explicitly argue to the jury that the defendants should prevail on a diligence theory resulted in a waiver and precluded the diligence theory from being before the jury. Monsanto further argues that the defendants' failure to provide argument or testimony that both explained the evidence and showed how it supported a diligence theory foreclosed the jury from relying on that theory. In a related argument, Monsanto asserts that it was prejudiced because it was deprived of an opportunity to rebut the defendants' diligence theory. We address these in turn.

a.

Monsanto's first argument reduces to the proposition that the defendants' failure to explicitly argue to the jury that the defendants should prevail on a diligence theory resulted in the diligence theory not being before the jury.^[2] This argument presents an issue that is "not unique to our jurisdiction [and accordingly] we defer to the law of the regional circuit." Pro-Mold & Tool Co. v. Great Lakes Plastics, Inc., 75 F.3d 1568, 1574, 37 USPQ2d 1626, 1631 (Fed. Cir. 1996). The regional circuit in this case is the Third Circuit.

Monsanto does not cite a Third Circuit case and we question the proposition of law Monsanto espouses. Indeed, our independent review suggests that the Third Circuit does not require that the defendant explicitly argue a theory in order for it to be before the jury. The Third Circuit appears to place the emphasis on the jury instructions, using them as the benchmark for determining whether an issue is before the jury. Hurley v. Atl. City Police Dep't, 174 F.3d 95, 115 (3d Cir. 1999) ("We review jury instructions to determine whether, 'taken as a whole, they properly apprised the jury of the issues and the applicable law.'"); United States v. Ellis, 156 F.3d 493, 498 n.7 (3d Cir. 1998) ("A jury instruction does not constitute reversible error if the instruction 'fairly and adequately' presents the issues in the case without confusing or misleading the jury.").

As support for its proposition, Monsanto cites a number of cases from our sister circuits and from district courts. Those cases do not support Monsanto, however, because they principally stand for the proposition that the jury must be properly instructed, not that explicit arguments must be made. Sinclair v. Long Island R.R., 985 F.2d 74, 77-78 (2d Cir. 1993) (rejecting an alternate ground for upholding the district court's refusal to disturb a jury award because that ground alleged a new legal duty that had never been presented to the jury and on which the jury had, presumably, never been instructed); Charles Woods Television Corp. v. Capital Cities/ABC, Inc., 869 F.2d 1155, 1160 n.6 (8th Cir. 1989) (quoting and relying on Country Shindig Opry, Inc. v. Cessna Aircraft Co., 780 F.2d 1408, 1413 (8th Cir. 1986), which states that "[t]he jury, however, was not instructed on a concealment theory and such a theory therefore may not provide the basis for upholding the jury verdict")^[3]; Gibraltar Sav. v. LDBrinkman Corp., 860 F.2d 1275, 1294 (5th Cir. 1988) (holding that a new legal theory had not been before the jury because, in part, the jury had not received appropriate instructions covering the theory); Dumbell Ranch Co. v. Cherokee Exploration, Inc., 692 F.2d 706, 708 (10th Cir. 1982) (refusing to consider Cherokee's proffered ground for reversal because, "[m]ost important, Cherokee never requested [a jury] instruction on the [proffered] implied license issue"); McPhail v. Municipality of Culebra, 598 F.2d 603, 607 (1st Cir. 1979) (refusing to consider a legal theory different from that charged to the jury); Fan Fare, Inc. v. Fourdel Indus. Ltd., 563 F. Supp. 754, 756-58 (M.D. Ala. 1983) (agreeing that a direct liability theory was not before the jury because, in part, there was no jury instruction on the theory), aff'd, 732 F.2d 943 (11th Cir. 1984) (unpublished table decision).

This rule of law also accords with Trans-World Manufacturing Corp. v. Al Nyman & Sons, Inc., 750 F.2d 1552, 1565-66, 244 USPQ 259, 267-68 (Fed. Cir. 1984), which placed an emphasis on the jury's being properly instructed. In Trans-World, this court noted that Trans-World "did not object to the district court's failure to charge the jury on unjust enrichment" and, based at least in part on Trans-World's failure to object, held that the district court did not abuse its discretion in denying Trans-World's motion, submitted after the jury rendered its verdict, to amend the complaint to

include an additional cause of action for unjust enrichment. Id. As mentioned above, the jury was properly instructed in this case.

Monsanto also draws our attention to E.I. du Pont de Nemours & Co. v. Phillips Petroleum Co., 656 F. Supp. 1343, 2 USPQ2d 1545 (D. Del. 1987), aff'd in part, 849 F.2d 1430, 7 USPQ2d 1129 (Fed. Cir. 1988), in which the district court rejected Phillips' attempt to advance an additional fraud theory for the first time in post-trial briefing. 656 F. Supp. at 1379, 2 USPQ2d at 1571. Du Pont is distinguishable, however, because Phillips represented at the close of its case that the evidence would not be used to support any additional fraud theory. Id. Such a concession is missing from this case.

We also note that the defendants did allude to a diligence theory in Miller's deposition testimony. Further, although the defendants did not proffer an argument under a diligence theory, Monsanto did. Thus, there can be no assertion that the jury instructions on diligence were presented in a vacuum such that the jury would have had no understanding of their application.

For the foregoing reasons, we hold that the defendants' failure to explicitly argue to the jury that the defendants should prevail on a diligence theory does not result in the diligence theory not being before the jury.

b.

Monsanto asserts that the defendants were required to provide explanatory argument or testimony both explaining the evidence and showing how it proved diligence, and that the defendants' failure to do so precluded the jury from relying on a diligence theory. Monsanto presents a number of possible theories, in varying levels of detail, to justify its conclusion. From these arguments, we have parsed out the following two alleged justifications for requiring such argument or testimony: (1) to explain the contents of the lab notebooks; and (2) to link the

evidence to the legal requirements of diligence. We address these in turn.

i.

Monsanto's argument that the lab notebooks must be explained, and cannot stand by themselves, is sufficiently broad to suggest that such explanation is required as a matter of law in all cases and, alternatively, that the lab notebooks in this case required it. We address both possibilities, discussing the first in this section because it would preclude the diligence theory from going to the jury, and discussing the second later in this opinion when we evaluate whether there is substantial evidence to support the jury's verdict.

To support its proposition that lab notebooks must be explained, Monsanto cites the following binding cases: Estee Lauder Inc. v. L'Oreal, S.A., 129 F.3d 588, 44 USPQ2d 1610 (Fed. Cir. 1997); Johnston v. IVAC Corp., 885 F.2d 1574, 12 USPQ2d 1382 (Fed. Cir. 1989); Alpert v. Slatin, 305 F.2d 891, 134 USPQ 296 (CCPA 1962); Teter v. Kearby, 169 F.2d 808, 79 USPQ 65 (CCPA 1948); Israel v. Creswell, 166 F.2d 153, 76 USPQ 594 (CCPA 1948); Farrington v. Mikeska, 155 F.2d 412, 69 USPQ 509 (CCPA 1946). Upon inspection, however, these cases do not stand for the proposition that the contents of a lab notebook or other written document must always be explained to the jury. In fact, these cases do not even stand for the proposition that lab notebooks must sometimes be explained to the jury, the issue we address later when we consider the sufficiency of the evidence in this particular case. These cases deal with a lack of evidence or a lack of credibility, not with a lack of clarity in the evidence or a lack of understanding by the finder of fact.

We discuss three of these cases, Alpert, Teter, and Farrington, briefly below. The remaining three cases, Estee Lauder, Johnston, and Israel, are even more clearly inapposite, dealing with a lack of evidence and not a lack of explanation of the evidence, and we decline to address them further.

In Alpert, the documents in question were reports summarizing the results of various tests. 305 F.2d at 896, 134 USPQ at 300. The problem with those reports was their lack of content, not a lack of explanation about what the content disclosed. Id. (“There is nothing in these reports as evidence other than self-serving declarations The defect in these reports as evidence is their inherent lack of material”). Thus, the reports did not need to be explained, as Monsanto urges for the lab notebooks in the present case, but needed to contain more details.

Likewise, Teter also dealt with documents that summarized test results but failed to provide enough information to establish a reduction to practice. 169 F.2d at 816, 79 USPQ at 71-72. The documents in Teter were data sheets and they, along with the rest of the evidence, did not “sufficiently establish[] the identity of the catalyst used in the [test] runs which [were] shown in the written exhibits.” Id. at 816, 79 USPQ at 71. Establishing the identity of the catalysts was necessary to show that the counts were reduced to practice. Id. at 810, 816, 79 USPQ at 66, 71. Thus, the data sheets did not need to be explained, as Monsanto urges for the lab notebooks in the present case, but needed to contain more details.

In Farrington, the written document in question was an “unverified note book.” 155 F.2d at 415, 69 USPQ at 511. That immediately distinguishes the present case in which all of the lab notebooks at issue are verified with the author’s signature and contain a witness signature as well. Further, the overriding problem in Farrington with the note book was not that it needed to be explained, which is Monsanto’s argument in this case, but that the note book and the testimony related to it was not credible. Id. (stating that three witnesses testifying about an experiment had no independent recollection, but based their testimony on the unverified note book which had not even been identified by the alleged author). The credibility of the Agracetus lab notebooks and their authorship are not issues in the present case.

ii.

As stated above, Monsanto further asserts that linking argument or testimony is required to tie the evidence to the various elements of diligence. As with the previous argument, Monsanto appears to assert that this is required as a matter of law and, alternatively, to satisfy the defendants' required evidentiary burden in this specific case. We address both possibilities, discussing the first in this section because it would preclude the diligence theory from going to the jury, and discussing the second later in this opinion when we evaluate whether there is substantial evidence to support the jury's verdict.

The defendants were certainly required to produce evidence of diligence—indeed, clear and convincing evidence. However, there is no general requirement that a party necessarily provide explanatory argument linking the evidence to each of the various elements of a legal theory. Monsanto cites no case holding to the contrary, and its arguments are unpersuasive.

The lack of a general requirement to provide linking argument is implicit in this court's jurisprudence relating, for example, to the function-way-result test associated with the doctrine of equivalents, in which linking argument is explicitly required. Under Graver Tank and Manufacturing Co. v. Linde Air Products Co., 339 U.S. 605, 608 (1950), a party asserting infringement under the function-way-result test is required to present not only evidence, but also argument linking the evidence to the three legal elements of function, way, and result. Lear Siegler, Inc. v. Sealy Mattress Co. of Mich., Inc., 873 F.2d 1422, 1425, 10 USPQ2d 1767, 1770 (Fed. Cir. 1989); Nestier Corp. v. Menasha Corp.-Lewisystems Div., 739 F.2d 1576, 1579, 222 USPQ 747, 749 (Fed. Cir. 1984). Lear, which relies on Nestier, states that the requirement for linking argument is required to ensure a "separate analysis" of the three Graver Tank elements and to avoid the "risk [that] the jury will simply compare the two inventions as to overall similarity, in violation of Graver Tank." Lear, 873 F.2d at 1425, 1427, 10 USPQ2d at 1770-71. It is implicit, from the justifications provided in Lear and Nestier for requiring linking argument, that such a requirement is the exception and not the rule. See Lear, 873 F.2d at 1425-27, 10 USPQ2d at

1770-71.

We acknowledge that determining whether a party was diligent during a critical period can, in certain cases, be complex. But it is not fraught with the same problems as a function-way-result inquiry. That is, the Supreme Court has not identified separate elements that must be addressed in a diligence inquiry, and there is no risk analogous to the concern that the jury will merely look to overall similarity and bypass the analysis of these separate elements. Further, the diligence inquiry is concerned with whether a party exercised reasonable diligence. 35 U.S.C. § 102(g) (“there shall be considered . . . the reasonable diligence of one who was first to conceive and last to reduce to practice”); California, --- F.3d at ---, --- USPQ2d at ---, 2001 WL 641778 at --- (discussing the requirement to prove reasonable diligence). Such reasonableness determinations are a standard task for juries and do not justify, without more, the imposition of an additional requirement for linking argument. John C. P. Goldberg & Benjamin C. Zipursky, The Restatement (Third) and the Place of Duty in Negligence Law, 54 Vand. L. Rev. 657, 681 (2001) (noting that “[r]easonable care is normally a jury issue”) (emphasis added); Martin A. Kotler, Social Norms and Judicial Rulemaking: Commitment to Political Process and the Basis of Tort Law, 49 U. Kan. L. Rev. 65, 126 (2000) (noting the jury’s role in determining whether the defendant has acted as a reasonably prudent man); Bart A. Starr, Fixing Copyright’s Three-Year Limitations Clock: The Accrual of an Infringement Claim under 17 U.S.C. § 507(B), 2000 Wash. U. L.Q., 623, 640 (noting the jury’s role in determining whether a plaintiff has exercised reasonable diligence). We discern no justification for imposing an additional requirement that, as a matter of law, linking argument must necessarily be presented to the jury in a diligence inquiry.

c.

Monsanto also argues that it was prejudiced because it was deprived of an opportunity to rebut the defendants’ diligence theory. Even assuming that a showing of prejudice, without more, could remove an issue from the jury that was otherwise properly before the jury, we are not persuaded

by Monsanto's argument. The facts of this case establish that Monsanto knew that: (1) the jury was explicitly instructed on the law of prior invention, noting that prior invention could be established by earlier conception coupled with diligence; (2) the jury was explicitly instructed on the requirements for diligence; (3) the jury was presented with evidence relating to Agracetus' diligence, including a conclusory deposition response essentially asserting that Agracetus had been diligent; and (4) the defendants had not explicitly waived or conceded the diligence theory. Monsanto did not try this case in the dark and can hardly complain of prejudice for not addressing this theory.

d.

For the foregoing reasons, we hold that the issue of Agracetus' prior invention through an earlier conception coupled with diligence was properly before the jury.

2.

Having determined that the diligence issue was before the jury, we now identify the period for which diligence must have been shown—the critical period. Monsanto does not dispute that Agracetus conceived the claimed invention first. Monsanto conceived the claimed invention no earlier than September 8, 1987 and Agracetus conceived the claimed invention no later than August 27, 1987.

The parties dispute whether Agracetus reduced the invention to practice in late May or mid-August and, thus, dispute which party was the first to reduce to practice. It is undisputed that Monsanto reduced the claimed invention to practice on August 5, 1988 and that Agracetus reduced it to practice no later than August 11, 1988. For the sake of argument, we shall accept this mid-August date for Agracetus' reduction to practice and, thus, accept that Monsanto reduced the claimed invention to practice before Agracetus. Accordingly, to establish prior invention by Agracetus, it is sufficient if Agracetus was diligent during the critical period from

September 8, 1987 (Monsanto's earliest possible conception) through August 11, 1988 (Agracetus' latest possible reduction to practice).

3.

We now address whether substantial evidence supported a presumed finding by the jury that Agracetus was diligent during the critical period. As indicated earlier, Monsanto argues that the lab notebooks must be accompanied, in this case, by explanatory argument or testimony as well as linking argument or testimony. We implicitly reject this contention in determining that the evidence, particularly the lab notebooks, is sufficient to enable a reasonable juror to conclude that Agracetus was diligent. Our decision is predicated on the presumed ability of a reasonable juror to understand the evidence in this case and on the reasons articulated earlier for not adopting a general requirement for linking argument or testimony in diligence cases.

Monsanto also argues that the evidence of record contains numerous gaps in diligence that are unexplained. That evidence includes videotaped deposition testimony and lab notebooks of Agracetus scientists, and discovery responses from Monsanto. We address this argument explicitly below.

The law regarding diligence is settled. The evidence must show that the alleged earlier inventor was diligent throughout the entire critical period. Fitzgerald v. Arbib, 268 F.2d 763, 766, 122 USPQ 530, 532 (CCPA 1959); Rieser v. Williams, 255 F.2d 419, 424, 118 USPQ 96, 100-01 (CCPA 1958); Wilson v. Sherts, 81 F.2d 755, 762, 28 USPQ 379, 386 (CCPA 1936). However, there need not necessarily be evidence of activity on every single day if a satisfactory explanation is evidenced. California, --- F.3d at ---, --- USPQ2d at ---, 2001 WL 641778 at --- ("Proof of reasonable diligence, however, does not require a party to work constantly on the invention or to drop all other work."); Rey-Bellet v. Engelhardt, 493 F.2d 1380, 1389, 181 USPQ 453, 459 (CCPA 1974) (finding diligence despite approximately a three month delay in testing because the delay

was explained by “a shortage of monkeys and a limited ability to house them”); Fitzgerald, 268 F.2d at 766, 122 USPQ at 532 (implicitly allowing for inactivity but finding that the inactivity was not adequately explained); Jones v. Evans, 46 F.2d 197, 202, 8 USPQ 240, 245 (CCPA 1931) (finding diligence despite a “possible interval from April 16th to early in July . . . in which it did not “affirmatively appear that any steps were being taken,” but during which some activity was ongoing). Additionally, determining whether the required “reasonable diligence,” 35 U.S.C. § 102(g), has been satisfied is a case specific inquiry. Jones, 46 F.2d at 203, 8 USPQ at 245 (“Each case where diligence is involved, rests and must be decided upon its own facts, and all the surrounding circumstances must be viewed and considered in determining whether there was sufficient diligence.”).

The defendants point us to record evidence showing activity in every month during the critical period. Although not conceding the point, Monsanto does not offer any reason to doubt that this evidence shows activity, relevant to reducing the claimed invention to practice, on the various dates that are explicitly identified in the lab notebooks, testimony, and discovery responses. Rather, Monsanto points to the gaps between those dates, asserting that they are unexplained and preclude a finding of reasonable diligence.

The defendants assert that during approximately the first four months of the critical period, from September 8, 1987 through January 15, 1988, Agracetus was diligently creating the three modified Bt genes, Bt2, Bt3, and Bt4. The defendants further assert that during the remainder of the critical period, from January 15, 1988 through August 11, 1988, Agracetus was diligently testing the three modified Bt genes. We address the alleged gaps in diligence using the defendants’ bifurcation of the critical period.

Regarding the first part of the critical period, the lab notebook of Barton and the discovery responses indicate that the work relating to Bt2, Bt3, and Bt4 was ongoing from the beginning of the critical period through their creation on October 20, 1987, November 2, 1987, and January 15,

1988, respectively. Barton's notebook repeatedly refers to Bt2, Bt3, or Bt4 during this time period and explicitly indicates that there was recorded activity, relevant to the creation of these genes, on the following dates: August 21, August 25-27, September 3, September 25, October 1, October 6, October 20, November 2, November 21, November 24, December 2, January 5, and January 15. Moreover, with regard to each of the gaps, the notebook entries suggest that the work on Bt2, Bt3, and Bt4 was ongoing without interruption, despite the lack of daily entries. The suggestion arises from the description in the notebook entries of ongoing experiments throughout the period, as well as the lack of evidence of intervening work on other projects during this time period.

Regarding the second part of the critical period, the lab notebook of Cannon indicates that the various activities occurring from January 15, 1988 through the end of the critical period were part of an ongoing set of experiments, directed toward the claimed invention, in which activity was reasonably continuous. The largest gap alleged by Monsanto occurs between the plant transformation experiments in January 1988 and the initial hornworm toxicity tests in May 1988. However, Cannon's lab notebook identifies various activities, most notably the tending of the growing plants, ongoing during this time frame. Monsanto also identifies the gaps in the time frame between the initial hornworm toxicity test in late May 1988 and the conclusive Western blot toxicity test on August 11, 1988. However, Cannon's notebook and the discovery responses identify various activities ongoing during this time frame, including the additional hornworm tests in June and July. This pattern holds for the remaining gaps during the second period; Cannon's notebook and the discovery responses suggest that the plant transformation work was ongoing without interruption, despite the lack of daily entries.

The threshold to overturn a jury decision is high. To reverse the judgment that was based on the jury's verdict of invalidity, we need to conclude that no reasonable juror could have made the presumed findings. Read, 970 F.2d at 821, 23 USPQ2d at 1431; Shatterproof Glass Corp. v. Libbey-Owens Ford Co., 758 F.2d 613, 621, 225 USPQ 634, 638 (Fed. Cir. 1985) ("We do not

determine whether a jury could have reached a different verdict, but whether there is substantial evidence for the verdict that it reached.” (citing Lavender v. Kurn, 327 U.S. 645, 653 (1946))). For the reasons articulated above, we cannot reach that conclusion. We hold that substantial evidence does support the jury’s presumed finding that Agracetus was diligent during the critical period. The evidence is sufficient, despite the absence of argument or testimony explaining the lab notebooks and linking their contents to the elements of diligence, to support presumed jury findings that Agracetus was diligent throughout the entire critical period in creating and testing the modified Bt genes. Any gaps in the recorded activities are reasonably explained by the evidence itself that suggests that the work involved in the experiments was continuous in nature.

CONCLUSION

We hold that substantial evidence supports a presumed determination by the jury that Agracetus scientists conceived the claimed invention before Monsanto and that the Agracetus scientists were diligent during the critical period. Accordingly, we affirm the district court’s JMOL in favor of the defendants, sustaining the jury’s verdict of prior invention by Agracetus, under 35 U.S.C. § 102(g), of claims 7-9 and 12.

AFFIRMED

[1] The parties appeal, or cross appeal, a number of other issues. However, given our disposition of the prior inventorship issue, the remaining issues are deemed moot and are not addressed.

[2] The defendants contend that Monsanto’s argument is waived on appeal. We disagree because Monsanto raised this argument in its post-trial briefing at the district court.

[3] In the footnote cited by Monsanto, the Charles Woods court also refers to a misrepresentation theory, in addition to a concealment theory. Charles Woods, 869 F.2d at 1160 n.6. Because the jury had been instructed on misrepresentation, Monsanto may be arguing that the Charles Woods court refused to consider the additional misrepresentation claim simply because the additional claim was not argued to the jury and, thus, that Charles Woods is on point. However, the court stated that the concealment theory and the new misrepresentation

theory “seem to be one and the same.” Id. The court also suggested that it had already disposed of the additional misrepresentation theory. Id. (“If the verdict will not stand on misrepresentation, it cannot stand on concealment.”). In either event, this short footnote cannot stand for the proposition that Monsanto urges.