

UNITED STATES DISTRICT COURT
EASTERN DISTRICT OF VIRGINIA
NORFOLK DIVISION

BASF PLANT SCIENCE, LP,)
)
Plaintiff,)

v.)

COMMONWEALTH SCIENTIFIC AND)
INDUSTRIAL RESEARCH)
ORGANISATION,)
)
Defendant.)

C.A. No. 2:17-CV-503-HCM

COMMONWEALTH SCIENTIFIC AND)
INDUSTRIAL RESEARCH)
ORGANISATION, GRAINS RESEARCH)
AND DEVELOPMENT CORP., AND)
NUSEED PTY LTD.,)
)
Plaintiffs-Counterclaimants,)

v.)

BASF PLANT SCIENCE, LP, AND)
CARGILL, INCORPORATED,)
)
Defendants-)
Counterdefendants,)

BASF PLANT SCIENCE GMBH,)
)
Counter-Counterclaimant.)

SUPPLEMENTAL CLAIM CONSTRUCTION OPINION AND ORDER II

JAN 13 2020

RECEIVED

This matter comes to the Court on the construction of a disputed patent claim term, referred to herein as “term (9).” The Court advised the parties of its construction before trial of this matter, and hereby issues this Opinion and Order to explain its construction.

I. FACTUAL BACKGROUND & PROCEDURAL HISTORY

The facts and procedural posture of this case have been summarized in this Court’s previous Opinions, including its Claim Construction Opinion & Order, doc. 274, and the Court’s recent Findings of Fact and Conclusions of Law, doc. 821. Accordingly, this Court will not repeat its recitation of the background of this case; the Court will only briefly summarize the posture of this case as it relates to the instant construction.

A. THE PATENTS AND TECHNOLOGY

The patents asserted in this case are directed at plant cells that are genetically modified to have the capability to produce certain long-chain polyunsaturated omega-3 fatty acids (“LC-PUFAs”). Australia’s national, government science research agency, the Commonwealth Scientific and Industrial Research Organisation (“CSIRO”) is the owner of several United States patents directed at such plants. CSIRO has partnered with two other Australian entities, Nuseed Pty Ltd. (“Nuseed”) and the Grains Research and Development Corporation (“GRDC”) to commercialize their LC-PUFA product. While CSIRO was researching methods to achieve the recombinant plants, BASF Plant Science L.P. and BASF Plant Science GmbH (collectively, “BASF”) was conducting similar research. BASF has partnered with Cargill, Inc. (“Cargill”) to market their LC-PUFA product.¹

¹ CSIRO, along with its co-parties Nuseed and the GRDC are collectively referred to herein as “Proponents,” as they were at trial, because they are the proponents of the patents in suit. BASF and Cargill are referred to collectively herein as “Opponents,” as they were at trial, because they oppose the patents in suit.

Ordinarily, land plants, such as Brassica napus (the primary target plant by the parties, which is popularly known as rapeseed or canola), lack the capability of producing LC-PUFAs. The parties to this case have taken several steps to modify canola in a way that it can produce LC-PUFAs.

One of the aspects of the invention at issue is incorporating into land plants a desaturase that is capable of acting on an acyl-CoA substrate. Usually, desaturation in land plants occurs in an enzymatic pool known as the “acyl-PC pool” and elongation occurs in the “acyl-CoA pool.” To achieve LC-PUFAs, both elongation and desaturation must occur multiple times at different points on a fatty acid. This results in a cell passing a soon-to-be-LC-PUFA back and forth between the acyl-PC pool and the acyl-CoA pool. The invention at issue incorporates desaturases which are capable of acting on a acyl-CoA substrate to avoid this shifting. Such “acyl-CoA desaturases” can be found in vertebrate organisms, such as a fish, and select invertebrate organisms, such as a microalgae.

At issue here is whether the invention asserted by Proponents only claims the use of acyl-CoA desaturases from vertebrate organisms.

B. CLAIM CONSTRUCTION IN THIS CASE

On April 10, 2019, the Court held a Markman hearing for the purpose of construing ten (10) disputed terms in the patents at issue and resolving two (2) motions to dismiss and a motion to compel discovery. At the hearing, the Court resolved the meanings for eight (8) of these terms and took the construction of two (2) terms – terms (9) and (10) – under advisement. Doc. 274. On May 15, 2019, the Court entered an Opinion and Order explaining its construction of term (10). Doc. 289.

The remaining term, “term (9),” was taken under advisement. The Court decided that it declines to construe term (9) and will give the term its **PLAIN AND ORDINARY MEANING, WITH NO “VERTEBRATE LIMITATION.”** At a motions hearing held on September 24, 2019, the Court advised parties that the Court would not construe term (9).

II. CLAIM CONSTRUCTION

A. LEGAL PRINCIPLES OF CLAIM CONSTRUCTION

i. Claim Construction, Generally

“Claim construction is a matter of resolution of disputed meanings and technical scope, to clarify and when necessary to explain what the patentee covered by the claims, for use in the determination of infringement. It is not an obligatory exercise in redundancy.” NTP, Inc. v. Research in Motion, Ltd., 418 F.3d 1282, 1311 (Fed. Cir. 2005) (citing U.S. Surgical Corp. v. Ethicon, Inc., 103 F.3d 1554, 1568 (Fed. Cir. 1997)).

Claim construction begins with the words of the claims. Vitronics Corp. v. Conceptrome, Inc., 90 F.3d 1576, 1582 (Fed. Cir. 1996) (“First, we look to the words of the claims themselves . . .”). Words in a claim are generally given their ordinary meaning as understood by a person of ordinary skill in the art (“POSITA”). Id. This “[POSITA] is deemed to read the claim term not only in the particular claim in which the disputed term appears but also in the context of the entire patent, including the specification.” Phillips v. AWH Corp., 415 F.3d 1303, 1313 (Fed. Cir. 2005) (en banc). “In some cases, . . . the ordinary meaning of claim language as understood by a [POSITA] may be readily apparent even to lay judges, and claim construction in such cases involves little more than application of the widely accepted meaning of commonly understood words.” Id. at 1314. Often, however, “determining the ordinary and customary meaning of the claim requires examination of terms that have a particular meaning in a field of art. Because the

meaning of a claim term as understood by [POSITAs] is often not immediately apparent, and because patentees frequently use terms idiosyncratically, the court looks to those sources available to the public that show what a [POSITA] would have understood disputed claims language to mean.” Id.

Further, the claims themselves can provide substantial guidance as to the meaning of particular claim terms. Id. First, “the context in which a term is used within a claim can be highly instructive.” Id. In addition, other claims of the patent in question, both asserted and unasserted, can also be useful because claim terms are “normally used consistently throughout the patent” and therefore “can often illuminate the meaning of the same term in other claims.” Id.

The claims should not be read alone, however, but rather should be considered within the context of the specification of which they are a part. Markman v. Westview Instruments, Inc., 52 F.3d 967, 985 (Fed. Cir. 1995), aff’d, 517 U.S. 370 (1996).

In addition to consulting the specification, a court may also consider the patent’s prosecution history, if in evidence, because it provides information regarding how the United States Patent and Trademark Office and the inventor understood the patent. See id. at 1317. It also enables the Court to determine if the inventor limited the invention during the course of prosecution. Id. “[W]here an applicant whose claim is rejected on reference to a prior patent . . . voluntarily restricts himself by an amendment of his claim to a specific structure, having thus narrowed his claim in order to obtain a patent, he may not by construction . . . give the claim the larger scope which it might have had without the amendments.” I.T.S. Rubber Co. v. Essex Rubber Co., 272 U.S. 429, 444 (1926). Thus, consulting prior art reference in the prosecution history is permissible. Vitronics, 90 F.3d at 1583.

These elements of the patent itself—the claims, the specification, and its prosecution history—constitute intrinsic evidence of claim construction. In addition to such intrinsic evidence, a court may consider extrinsic evidence to determine the meaning of disputed claims. Phillips, 415 F.3d at 1317. Such extrinsic evidence “consists of all evidence external to the patent and prosecution history, including expert and inventor testimony, dictionaries, and learned treatises.” Phillips, 415 F.3d at 1317 (citing Markman, 52 F.3d at 980). However, the Court should not rely on extrinsic evidence when the intrinsic evidence removes all ambiguity. Vitronics, 90 F.3d at 1583.

Such extrinsic evidence generally is held as less reliable than the intrinsic evidence and “is unlikely to result in a reliable interpretation of patent claim scope unless considered in the context of intrinsic evidence.” Id. at 1317–18. With respect to expert evidence, for example, “[c]onclusory, unsupported assertions by experts as to the definition of a claim term are not useful to a court . . . [and] a court should discount any expert testimony that is clearly at odds with the claim construction mandated by the claims themselves, the written description, and the prosecution history, in other words, with the written record of the patent.” Id. at 1318. Additionally, inventor testimony has little to no probative value in construing claims. Markman, 52 F.3d at 985, see also E-Pass Tech., Inc. v. 3Com Corp., 343 F.3d 1364, 1370 n.5 (Fed. Cir. 2003) (“[T]his court has often repeated that inventor testimony is of little probative value for the purposes of claim construction.”), Soloman v. Kimberly-Clark Corp., 216 F.3d 1372, 1379 (Fed. Cir. 2000).

ii. Incorporating Claim Limitations From the Specification

As the Federal Circuit stated in Phillips, “the specification is always highly relevant to the claim construction analysis. Usually, it is dispositive; it is the single best guide to the meaning of a disputed term.” Phillips, 415 F.3d at 1315. The court, however, must not read in limitations

from the specification without clear intent by the inventor to do so. Thorner v. Sony Comp. Entmt. Am. LLC, 669 F.3d 1362, 1366 (Fed. Cir. 2012). Accordingly, a patentee is not limited to the metes and bounds of his preferred embodiment. A court should keep in mind that the purpose of claim construction is to ascertain the true scope of the invention, which is ordinarily described by the patent claims read in light of the specification. United States v. Adams, 383 U.S. 39, 49 (1966) (“[I]t is fundamental that claims are to be construed in the light of the specifications and both are to be read with a view to ascertain the invention.”).

It is clear that a patentee is not limited to his preferred embodiment. Phillips, 415 F.3d at 1323 (en banc) (“[A]lthough the specification often describes very specific embodiments of the invention, we have repeatedly warned against confining the claims to those embodiments.”), Home Diagnostics, Inc. v. LifeScan, Inc., 381 F.3d 1352, 1358 (Fed. Cir. 2004) (“Absent a clear disavowal or contrary definition in the specification or the prosecution history, the patentee is entitled to the full scope of its claim language.”). Nevertheless, “[w]here the specification clearly limits the invention to a particular form . . . it is appropriate to construe the claims consistently with that limitation.” In Re: Rembrandt Tech., LP, 496 F. App’x 36, 45 (Fed. Cir. 2012) (emphasis added), Edwards Lifesciences LLC v. Cook, Inc., 582 F.3d 1322 (Fed. Cir. 2009) (holding that a claim term, “graft,” was limited to “intraluminal graft” because, inter alia, the invention only disclosed “intraluminal grafts”). Without a clear limitation, or clear intent to limit, it is inappropriate to read a limit in to the claims from the specification.

B. DISPUTED TERM (9)

The following table lists the remaining disputed terms, each parties’ proposed construction and the relevant patents and claims to each disputed term.

Term at Issue	Proponents' Proposed Construction	Opponents' Proposed Constructions	Asserted Claims Including the Term ²
9. "a desaturase [an exogenous desaturase] which desaturates an acyl-CoA substrate"	No construction necessary. If construed, "a desaturase capable of desaturating an acyl-CoA substrate."	<u>BASF's Construction:</u> no construction necessary <u>Cargill's Construction:</u> The term "a desaturase [an exogenous desaturase] which desaturates an acyl-CoA substrate" means "a vertebrate desaturase [a vertebrate exogenous desaturase] which desaturates an acyl-CoA substrate."	'250 patent claims 1, 6, 7 '579 patent claims 1, 7 '033 patent claims 4, 5, 10, 19, 31-34

(9) "a desaturase [an exogenous desaturase] which desaturates an acyl-CoA Substrate."

This term appears in claims 1, 6, and 7 of United States Patent No. 7,834,250. The term also appears in claims 1 and 7 of United States Patent No. 9,926,579 and claims 4, 5, 10, 19, and 31-34 of United States Patent No. 9,970,033 ("the '033 patent"). At trial, claim 5 of the '033 patent was the only asserted claim containing term (9).

The dispute over term (9) is whether the term requires a desaturase that originates from a vertebrate organism. Both BASF and Opponents agree that term (9) requires no construction. However, Cargill submits that the patent only claims desaturases derived from a vertebrate organism, because the specification only describes vertebrate desaturases acting on acyl-CoA

² Only claims which explicitly contain the claim term in question are identified in this table. Claims which depend from these claims implicitly contain the claim term in question by reference.

substrates. Cargill also argues that Proponents waived the use on non-vertebrate desaturases in patent prosecution as well.

Notably, the language of the claim itself contains no “vertebrate limitation.” A plain, ordinary reading shows that the patent claims a desaturase that desaturates an acyl-CoA substrate. Thus, the claim is drawn to desaturases marked by their function – i.e., one that acts on an acyl-CoA substrate – rather than the organism of origin. At the relevant time, a POSITA would have known that desaturases derived from non-vertebrate organisms could act on acyl-CoA substrates. E.g., Doc. 205-12, 265-1, 265-3, 265-4, 265-5, 265-6, 265-7, 265-8.³ Thus, a POSITA would understand that the claim refers to any desaturase that can act on an acyl-CoA desaturase.

Although the specification only describes the use of a zebrafish, acyl-CoA desaturase – that is, a desaturase originating from a vertebrate – it is generally improper to read a limitation into a patent claim from the specification. E.g., Phillips, 415 F.3d at 1323 (en banc) (“[A]lthough the specification often describes very specific embodiments of the invention, we have repeatedly warned against confining the claims to those embodiments.”); Home Diagnostics, 381 F.3d at 1358 (Fed. Cir. 2004) (“Absent a clear disavowal or contrary definition in the specification or the prosecution history, the patentee is entitled to the full scope of its claim language.”).

Additionally, the specification does not limit the scope of the invention to that particular embodiment. Indeed, under the heading “Summary of the Invention,” the specification states, that the subject plant cell, “comprises either . . . (ii) at least one desaturase which is able to act on an acyl-CoA substrate, (iii) at least one desaturase from a vertebrate or a variant desaturase thereof,

³ Although a court should generally refrain from using extrinsic evidence in claim construction, a court may, in its discretion, rely on extrinsic evidence to understand the field of the invention as it would be understood by a POSITA who is reviewing the intrinsic evidence. Phillips, 415 F.3d at 1319 (“Nonetheless, because extrinsic evidence can help educate the court regarding the field of the invention and can help the court determine what a person of ordinary skill in the art would understand claim terms to mean, it is permissible for the district court in its sound discretion to admit and use such evidence.”).

or (iv) any combination of . . . (ii) or (iii).” E.g., ‘033 patent, col. 7, ll. 31-49 (emphasis added).⁴

The specification goes on to state, “[p]referably, the at least one desaturase is naturally produced by a vertebrate.” *Id.* at col. 7 ll. 54-55 (emphasis added). It would be redundant for the patent to involve “at least one desaturase which is able to act on an acyl-CoA substrate,” and “a desaturase from a vertebrate” or any combination of those two, if the patent only claimed a vertebrate desaturase. Thus, a POSITA who reviewed the patent specification and claims together would know that the patent claims the use of a desaturase which acts within the acyl-CoA enzymatic pool, regardless of the organism that originally produced the desaturase.

The prosecution history further supports this conclusion. The record before the Court shows that the Examiner initially rejected the subject claim term, but the applicant responded by arguing that plant desaturases only act on phospholipid substrates, and the claim is directed at a plant cell that comprises a desaturase that acts on an acyl-CoA substrate. Doc. 205-12. The Examiner indicated that “a showing that these are two functionally distinct classes of desaturases that are known in the art” would overcome the Examiner’s rejection. *Id.* The applicant did so by distinguishing plant desaturases from vertebrate desaturases. Doc. 205-10. Subsequently, the patent issued.

However, the applicant did not clearly waive or disavow the use of non-vertebrate, acyl-CoA desaturases in prosecution. Indeed, while discussing the Examiner’s concerns, the applicant informed the Examiner that at least one such invertebrate acyl-CoA existed. Doc. 205-12 (“Applicants’ representatives stated that desaturases which desaturate acyl-CoA substrates are found in vertebrates and that one has been isolated from a microalgal [that is, an invertebrate]

⁴ The use of the ‘033 patent is illustrative only. Each relevant patent contains a similar description.

species.”). Therefore, there is no clear prosecution disavowal contained in the prosecution history that would restrict the scope of the claim. See Home Diagnostics, Inc., 381 F.3d at 1358.

Thus, a POSITA reviewing the patent and its history as a whole would know that the claim term refers to a desaturase that acts on an acyl-CoA substrate, without identifying a particular organism of origin. Although the patent “prefers” the use of a vertebrate desaturase, it does not limit itself to that preferred desaturase. A POSITA would have known that the desaturase could come from a vertebrate, such as a zebra fish, or an invertebrate, such as a microalgae. Therefore, it is inappropriate to limit the instant claim term to a vertebrate desaturase.

Accordingly, the Court **FINDS** that reading a “vertebrate limitation” into the claim language would improperly limit the scope of the claim terms to a preferred embodiment. Because a vertebrate limitation is not necessary, the Court need not construe the claim term and **ORDERED** that it be given its plain and ordinary meaning.

III. CONCLUSION

For the reasons stated on the record and elaborated herein the Court **ORDERS** the following construction:

Disputed Term	The Court's Construction
9. “a desaturase [an exogenous desaturase] which desaturates an acyl-CoA substrate”	No construction. The term has its plain and ordinary meaning.

The Clerk is **REQUESTED** to deliver a copy of this Supplemental Opinion and Order II to all counsel of record.

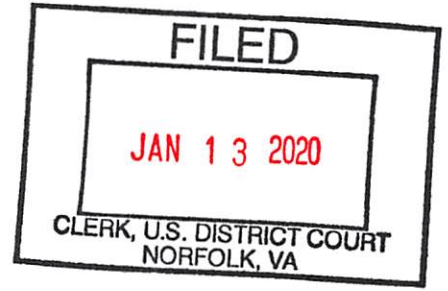
It is **SO ORDERED**.

/s/
 Henry Coke Morgan, Jr.
 Senior United States District Judge

 HENRY COKE MORGAN, JR. *HCM*
 SENIOR UNITED STATES DISTRICT JUDGE

Norfolk, Virginia
January 13, 2020

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One of the aspects of the invention at issue is incorporating into land plants a desaturase that is capable of acting on an acyl-CoA substrate. Usually, desaturation in land plants occurs in an enzymatic pool known as the “acyl-PC pool” and elongation occurs in the “acyl-CoA pool.” To achieve LC-PUFAs, both elongation and desaturation must occur multiple times at different points on a fatty acid. This results in a cell passing a soon-to-be-LC-PUFA back and forth between the acyl-PC pool and the acyl-CoA pool. The invention at issue incorporates desaturases which are capable of acting on a acyl-CoA substrate to avoid this shifting. Such “acyl-CoA desaturases” can be found in vertebrate organisms, such as a fish, and select invertebrate organisms, such as a microalgae.

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meaning of a claim term as understood by [POSITAs] is often not immediately apparent, and because patentees frequently use terms idiosyncratically, the court looks to those sources available to the public that show what a [POSITA] would have understood disputed claims language to mean.” Id.

Further, the claims themselves can provide substantial guidance as to the meaning of particular claim terms. Id. First, “the context in which a term is used within a claim can be highly instructive.” Id. In addition, other claims of the patent in question, both asserted and unasserted, can also be useful because claim terms are “normally used consistently throughout the patent” and therefore “can often illuminate the meaning of the same term in other claims.” Id.

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In addition to consulting the specification, a court may also consider the patent’s prosecution history, if in evidence, because it provides information regarding how the United States Patent and Trademark Office and the inventor understood the patent. See id. at 1317. It also enables the Court to determine if the inventor limited the invention during the course of prosecution. Id. “[W]here an applicant whose claim is rejected on reference to a prior patent . . . voluntarily restricts himself by an amendment of his claim to a specific structure, having thus narrowed his claim in order to obtain a patent, he may not by construction . . . give the claim the larger scope which it might have had without the amendments.” I.T.S. Rubber Co. v. Essex Rubber Co., 272 U.S. 429, 444 (1926). Thus, consulting prior art reference in the prosecution history is permissible. Vitronics, 90 F.3d at 1583.

These elements of the patent itself—the claims, the specification, and its prosecution history—constitute intrinsic evidence of claim construction. In addition to such intrinsic evidence, a court may consider extrinsic evidence to determine the meaning of disputed claims. Phillips, 415 F.3d at 1317. Such extrinsic evidence “consists of all evidence external to the patent and prosecution history, including expert and inventor testimony, dictionaries, and learned treatises.” Phillips, 415 F.3d at 1317 (citing Markman, 52 F.3d at 980). However, the Court should not rely on extrinsic evidence when the intrinsic evidence removes all ambiguity. Vitronics, 90 F.3d at 1583.

Such extrinsic evidence generally is held as less reliable than the intrinsic evidence and “is unlikely to result in a reliable interpretation of patent claim scope unless considered in the context of intrinsic evidence.” Id. at 1317–18. With respect to expert evidence, for example, “[c]onclusory, unsupported assertions by experts as to the definition of a claim term are not useful to a court . . . [and] a court should discount any expert testimony that is clearly at odds with the claim construction mandated by the claims themselves, the written description, and the prosecution history, in other words, with the written record of the patent.” Id. at 1318. Additionally, inventor testimony has little to no probative value in construing claims. Markman, 52 F.3d at 985, see also E-Pass Tech., Inc. v. 3Com Corp., 343 F.3d 1364, 1370 n.5 (Fed. Cir. 2003) (“[T]his court has often repeated that inventor testimony is of little probative value for the purposes of claim construction.”), Soloman v. Kimberly-Clark Corp., 216 F.3d 1372, 1379 (Fed. Cir. 2000).

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As the Federal Circuit stated in Phillips, “the specification is always highly relevant to the claim construction analysis. Usually, it is dispositive; it is the single best guide to the meaning of a disputed term.” Phillips, 415 F.3d at 1315. The court, however, must not read in limitations

from the specification without clear intent by the inventor to do so. Thorner v. Sony Comp. Entmt. Am. LLC, 669 F.3d 1362, 1366 (Fed. Cir. 2012). Accordingly, a patentee is not limited to the metes and bounds of his preferred embodiment. A court should keep in mind that the purpose of claim construction is to ascertain the true scope of the invention, which is ordinarily described by the patent claims read in light of the specification. United States v. Adams, 383 U.S. 39, 49 (1966) (“[I]t is fundamental that claims are to be construed in the light of the specifications and both are to be read with a view to ascertain the invention.”).

It is clear that a patentee is not limited to his preferred embodiment. Phillips, 415 F.3d at 1323 (en banc) (“[A]lthough the specification often describes very specific embodiments of the invention, we have repeatedly warned against confining the claims to those embodiments.”), Home Diagnostics, Inc. v. LifeScan, Inc., 381 F.3d 1352, 1358 (Fed. Cir. 2004) (“Absent a clear disavowal or contrary definition in the specification or the prosecution history, the patentee is entitled to the full scope of its claim language.”). Nevertheless, “[w]here the specification clearly limits the invention to a particular form . . . it is appropriate to construe the claims consistently with that limitation.” In Re: Rembrandt Tech., LP, 496 F. App’x 36, 45 (Fed. Cir. 2012) (emphasis added), Edwards Lifesciences LLC v. Cook, Inc., 582 F.3d 1322 (Fed. Cir. 2009) (holding that a claim term, “graft,” was limited to “intraluminal graft” because, inter alia, the invention only disclosed “intraluminal grafts”). Without a clear limitation, or clear intent to limit, it is inappropriate to read a limit in to the claims from the specification.

B. DISPUTED TERM (9)

The following table lists the remaining disputed terms, each parties’ proposed construction and the relevant patents and claims to each disputed term.

Term at Issue	Proponents' Proposed Construction	Opponents' Proposed Constructions	Asserted Claims Including the Term ²
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(9) "a desaturase [an exogenous desaturase] which desaturates an acyl-CoA Substrate."

This term appears in claims 1, 6, and 7 of United States Patent No. 7,834,250. The term also appears in claims 1 and 7 of United States Patent No. 9,926,579 and claims 4, 5, 10, 19, and 31-34 of United States Patent No. 9,970,033 ("the '033 patent"). At trial, claim 5 of the '033 patent was the only asserted claim containing term (9).

The dispute over term (9) is whether the term requires a desaturase that originates from a vertebrate organism. Both BASF and Opponents agree that term (9) requires no construction. However, Cargill submits that the patent only claims desaturases derived from a vertebrate organism, because the specification only describes vertebrate desaturases acting on acyl-CoA

² Only claims which explicitly contain the claim term in question are identified in this table. Claims which depend from these claims implicitly contain the claim term in question by reference.

substrates. Cargill also argues that Proponents waived the use on non-vertebrate desaturases in patent prosecution as well.

Notably, the language of the claim itself contains no “vertebrate limitation.” A plain, ordinary reading shows that the patent claims a desaturase that desaturates an acyl-CoA substrate. Thus, the claim is drawn to desaturases marked by their function – i.e., one that acts on an acyl-CoA substrate – rather than the organism of origin. At the relevant time, a POSITA would have known that desaturases derived from non-vertebrate organisms could act on acyl-CoA substrates. E.g., Doc. 205-12, 265-1, 265-3, 265-4, 265-5, 265-6, 265-7, 265-8.³ Thus, a POSITA would understand that the claim refers to any desaturase that can act on an acyl-CoA desaturase.

Although the specification only describes the use of a zebrafish, acyl-CoA desaturase – that is, a desaturase originating from a vertebrate – it is generally improper to read a limitation into a patent claim from the specification. E.g., Phillips, 415 F.3d at 1323 (en banc) (“[A]lthough the specification often describes very specific embodiments of the invention, we have repeatedly warned against confining the claims to those embodiments.”); Home Diagnostics, 381 F.3d at 1358 (Fed. Cir. 2004) (“Absent a clear disavowal or contrary definition in the specification or the prosecution history, the patentee is entitled to the full scope of its claim language.”).

Additionally, the specification does not limit the scope of the invention to that particular embodiment. Indeed, under the heading “Summary of the Invention,” the specification states, that the subject plant cell, “comprises either . . . (ii) at least one desaturase which is able to act on an acyl-CoA substrate, (iii) at least one desaturase from a vertebrate or a variant desaturase thereof,

³ Although a court should generally refrain from using extrinsic evidence in claim construction, a court may, in its discretion, rely on extrinsic evidence to understand the field of the invention as it would be understood by a POSITA who is reviewing the intrinsic evidence. Phillips, 415 F.3d at 1319 (“Nonetheless, because extrinsic evidence can help educate the court regarding the field of the invention and can help the court determine what a person of ordinary skill in the art would understand claim terms to mean, it is permissible for the district court in its sound discretion to admit and use such evidence.”).

or (iv) any combination of . . . (ii) or (iii).” E.g., ‘033 patent, col. 7, ll. 31-49 (emphasis added).⁴

The specification goes on to state, “[p]referably, the at least one desaturase is naturally produced by a vertebrate.” *Id.* at col. 7 ll. 54-55 (emphasis added). It would be redundant for the patent to involve “at least one desaturase which is able to act on an acyl-CoA substrate,” and “a desaturase from a vertebrate” or any combination of those two, if the patent only claimed a vertebrate desaturase. Thus, a POSITA who reviewed the patent specification and claims together would know that the patent claims the use of a desaturase which acts within the acyl-CoA enzymatic pool, regardless of the organism that originally produced the desaturase.

The prosecution history further supports this conclusion. The record before the Court shows that the Examiner initially rejected the subject claim term, but the applicant responded by arguing that plant desaturases only act on phospholipid substrates, and the claim is directed at a plant cell that comprises a desaturase that acts on an acyl-CoA substrate. Doc. 205-12. The Examiner indicated that “a showing that these are two functionally distinct classes of desaturases that are known in the art” would overcome the Examiner’s rejection. *Id.* The applicant did so by distinguishing plant desaturases from vertebrate desaturases. Doc. 205-10. Subsequently, the patent issued.

However, the applicant did not clearly waive or disavow the use of non-vertebrate, acyl-CoA desaturases in prosecution. Indeed, while discussing the Examiner’s concerns, the applicant informed the Examiner that at least one such invertebrate acyl-CoA existed. Doc. 205-12 (“Applicants’ representatives stated that desaturases which desaturate acyl-CoA substrates are found in vertebrates and that one has been isolated from a microalgal [that is, an invertebrate]

⁴ The use of the ‘033 patent is illustrative only. Each relevant patent contains a similar description.

species.”). Therefore, there is no clear prosecution disavowal contained in the prosecution history that would restrict the scope of the claim. See Home Diagnostics, Inc., 381 F.3d at 1358.

Thus, a POSITA reviewing the patent and its history as a whole would know that the claim term refers to a desaturase that acts on an acyl-CoA substrate, without identifying a particular organism of origin. Although the patent “prefers” the use of a vertebrate desaturase, it does not limit itself to that preferred desaturase. A POSITA would have known that the desaturase could come from a vertebrate, such as a zebra fish, or an invertebrate, such as a microalgae. Therefore, it is inappropriate to limit the instant claim term to a vertebrate desaturase.

Accordingly, the Court **FINDS** that reading a “vertebrate limitation” into the claim language would improperly limit the scope of the claim terms to a preferred embodiment. Because a vertebrate limitation is not necessary, the Court need not construe the claim term and **ORDERED** that it be given its plain and ordinary meaning.

III. CONCLUSION


For the reasons stated on the record and elaborated herein the Court **ORDERS** the following construction:

Disputed Term	The Court's Construction
9. “a desaturase [an exogenous desaturase] which desaturates an acyl-CoA substrate”	No construction. The term has its plain and ordinary meaning.

The Clerk is **REQUESTED** to deliver a copy of this Supplemental Opinion and Order II to all counsel of record.

It is **SO ORDERED**.

/s/
Henry Coke Morgan, Jr.
Senior United States District Judge

HENRY COKE MORGAN, JR. 
SENIOR UNITED STATES DISTRICT JUDGE

Norfolk, Virginia
January 13, 2020