United States District Court,
S.D. New York.

BRASSICA PROTECTION PRODUCTS LLC and The Johns Hopkins University,
Plaintiffs.
v.
CAUDILL SEED & WAREHOUSE CO., INC,
Defendant.

No. 07 Civ. 7844(SAS)

July 16, 2008.

Background: Exclusive licensee of patents directed to the preparation of food products containing specific chemoprotective compounds brought infringement action against sub-licensee alleging that despite the termination of sub-license agreement, sub-licensee continued to produce, distribute, offer to sell, and sell products covered by the patents without authorization to do so.

Holdings: Following a Markman hearing, the District Court, Shira A. Scheindlin, J., held that:
(1) term "extract" meant substance containing glucosinolates and/or isothiocyanates resulting from exposure of one or more of cruciferous sprouts, seeds, plants, and/or plant parts to non-toxic solvent, and
(2) term "food product" meant any ingestible preparation containing sprouts, seeds, extracts of sprouts, or extracts of seeds of the invention, capable of delivering Phase 2 inducers through ingestion.

Ordered accordingly.

5,725,895, 5,968,567, 6,177,122, 6,242,018, 7,303,770. Construed.

Richard S. Taffet, Esq., Edward Lawrence Powers, Esq., Lavanya Kilaru, Esq., Bingham McCutchen LLP, New York, NY, for Plaintiffs.

Ann Gallagher Schoen, Esq., Frost Brown Todd LLC, Cincinnati, OH, Gregory Paul Gulia, Esq., Vanessa C. Hew, Esq., Duane Morris LLP, New York, NY, for Defendant.

OPINION AND ORDER

SHIRA A. SCHEINDLIN**, District Judge:**

I. INTRODUCTION

Brassica Protection Products LLC ("Brassica") and the Johns Hopkins University ("Johns Hopkins") allege that Caudill Seed & Warehouse Co., Inc. ("Caudill") infringed certain of their patents directed to the preparation of food products containing specific chemoprotective compounds. Despite the termination of a prior sub-license agreement between Brassica and Caudill, plaintiffs contend that Caudill has continued to produce, distribute, offer to sell, and sell products covered by the patents without authorization to do so.

The parties dispute the meaning of two terms contained in a number of the asserted claims of the relevant patents. Caudill requests that the Court construe an additional eighteen terms. Plaintiffs do not believe that those terms require separate construction. Based on the rulings set forth below, I agree that the additional terms need not be construed. FN1 A Markman Hearing was held on June 16, 2008. FN2 The Court's construction of the two disputed terms follows.

FN1. The construction of those remaining terms can be readily derived from the Court's constructions of "extract" and "food product" as set forth in this Opinion and Order and/or are otherwise apparent to one possessing ordinary skill in the relevant art at the time of invention. As a result, I decline to separately construe those terms.

FN2. *See* Markman v. Westview Instruments, Inc., 517 U.S. 370, 116 S.Ct. 1384, 134 L.Ed.2d 577 (1996).

II. BACKGROUND

A. Facts

1. Patents at Issue

There are five patents at issue-U.S. Patent Nos. (1) 5,725,895 (the "'895 patent"); (2) 5,968,567 (the "'567 patent"); (3) 6,177,122 (the "'122 patent"); (4) 6,242,018 (the "'018 patent"); and (5) 7,303,770 (the "'770 patent"). The '895 patent is the original patent, first filed with the U.S. Patent and Trademark Office (the "USPTO") on September 15, 1995 and issued on March 10, 1998. FN3 The ' 567 patent is a continuation of the ' 895 patent, and the '122, '018, and ' 770 patents are, in turn, divisional of the ' 567 patent. FN4 The latter four patents will expire when the ' 895 patent expires, and all patents share the specification for the ' 895 patent (the "patent specification").

FN3. *See* '895 Patent, Ex. 1 to Joint Exhibits Filed Under Seal Pursuant to Protective Order to Joint Claim Construction and Prehearing Statement ("Joint Exhibits").

FN4. The USPTO defines a "continuation" as a "second application for the same invention claimed in a prior nonprovisional application and filed before the original prior application becomes abandoned or patented." *Manual of Patent Examining Procedure* s. 201.07, available at http:// www. uspto. gov/ web/ offices/ pac/ mpep/ documents/ 0200_(1)6 d 201_(1)6 d 07. htm # sect201.07. A "divisional" is defined as a "later application for an independent or distinct invention, carved out of a pending application and disclosing and claiming only subject matter disclosed in the earlier or parent application ...." *Id*. s. 201.06, available at http:// www. uspto. gov/ web/ offices/ pac/ rnpep/ documents/ 0200_(1)6 d 201_(1)6 d 06. htm.

Both the '895 and '567 patents are entitled "Method of Preparing a Food Product from Cruciferous Seeds." The '122, '018, and '770 patents are entitled "Cancer Chemoprotective Food Products." All of the patents generally purport to set forth a method for preparing food products and additives rich in certain plant compounds known to have anti-carcinogenic and chemoprotective properties.

It has been widely accepted that cruciferous plants such as broccoli contain chemical compounds-specifically, isothiocyanates and their precursors, glucosinolates ("G & I")-that elevate levels of Phase 2 enzymes, which are known to detoxify carcinogens in the human body. FN5 It has also been previously discovered that the use of the seeds or sprouts of these plants leads to the greatest amount of Phase 2 enzyme-inducing potential. Techniques for the extraction of the Phase 2 enzyme-inducers from cruciferous vegetables existed prior to the patents at issue. According to the patent specification, however, plaintiffs' patents set forth an "improved procedure" resulting in the increased recovery of Phase 2 enzyme inducer activity and inducer potential. FN6

FN5. "Phase 1 enzymes catalyze the activation of procarcinogens to reactive electrophiles which react with DNA and initiate carcinogensis. Phase 2 enzymes detoxify the reactive products of Phase 1 enzymes, and the reactive oxygen species resulting from normal oxidative cellular processes." *The Science of Chemoprotection Tutorial,* presented to the Court on June 16, 2008 by Dr. Paul Talalay, Department of Pharmacology, The Johns Hopkins Medical School.

FN6. '895 Patent at col. 81. 58.

The patent specification lists the following three objectives: (1) "to provide food products and food additives that are rich in cancer chemoprotective compounds;" (2) "to provide food products which contain substantial quantities of Phase 2 enzyme-inducers and are essentially free of Phase 1 enzyme-inducers;" and (3) "to provide food products which contain substantial quantities of Phase 2 enzyme-inducing potential and non-toxic levels of indole glucosinolates and their breakdown products and goitrogenic hydroxybutenyl glucosinolates." FN7

FN7. Id. at col. 2 ll. 37-49.

2. Relationship Between Plaintiffs and Defendant

Drs. Jed W. Fahey and Paul Talalay of Johns Hopkins are listed as the inventors of the patents at issue. Johns Hopkins School of Medicine is listed as the assignee. These patent rights were exclusively licensed to Brassica by Johns Hopkins as of March 10, 1998 for the use, manufacture, and worldwide sale by Brassica of licensed products, as defined in the agreement, for the life of the patents.FN8 Brassica granted Caudill a non-exclusive sub-license (the "Agreement") as of December 6, 2004 to manufacture, sell, offer to sell, and distribute products-defined in the Agreement as extracts of glucosinolates and isothiocyanates from cruciferous seeds or sprouts-in North America. FN9

FN8. *See* Amended Complaint ("Compl.") para. 12.

FN9. *See* id. para. 13.

B. Procedural History

On September 5, 2007, Brassica filed suit in this Court against Caudill for infringement of four of the five patents at issue, breach of contract, and trademark infringement. Brassica amended the Complaint on February 19, 2008 to add Johns Hopkins as a plaintiff as well as to add an infringement claim for the '770 patent.

Plaintiffs allege that Caudill committed several "events of default" as defined by the Agreement and failed to cure those events, thereby breaching the Agreement. Brassica alleges that Caudill, inter alia, failed to manufacture the products in compliance with certain good practice and quality control specifications, failed to obtain advance approval by Brassica for labels and packaging, and failed to pay royalties that were due. The Agreement ended in July 2007. Notwithstanding the termination of the Agreement and Caudill's events of default, Brassica claims that Caudill continues to manufacture, sell, and distribute the products and has failed to return confidential manufacturing information to Brassica.

In November 2007, Caudill moved to dismiss, stay, or transfer this action to the Western District of Kentucky where Caudill had filed suit for a declaratory judgment of non-infringement and invalidity of the patents at issue. By Memorandum Opinion and Order dated December 19, 2007, this Court denied the motion based on a forum selection clause in the Agreementwhich designated New York.FN10 The declaratory judgment action in Kentucky was subsequently transferred to this district, assigned to this Court as related to the instant action, and both cases have now been consolidated.FN11

FN10. *See* Brassica Prot. Prods. LLC v. Caudill Seed & Warehouse Co., Inc., No. 07 Civ. 7844, 2007 WL 4468655 (S.D.N.Y. Dec. 19, 2007).

FN11. *See* Caudill Seed & Warehouse Co., Inc. v. Brassica Prot. Prods., LLC, 552 F.Supp.2d 658 (W.D.Ky.2008). Caudill answered the Complaint in the action originally filed in this Court and asserted a counterclaim, which is the same claim raised in its declaratory judgment action. As a result, the parties jointly stipulated to consolidation of the two actions on the ground that the "sole claim in [the action transferred from the Western District of Kentucky] ... is also asserted as a counterclaim in the instant action." 6/2/08 Stipulation and Order to Consolidate Actions para. 1.

III. APPLICABLE LAW

[1] [2] Determination of infringement in a patent case involves two steps: (1) construction of the terms of the asserted claims ("claim construction") and (2) a determination of whether the accused device infringes the claims, as construed.FN12 Claim construction is a question of law, FN13 the purpose of which is to determine what is covered by the claims of a patent. In other words, " '[t]he construction of claims is simply a way of elaborating the normally terse claim language in order to understand and explain, but not to change, the scope of the claims.' " FN14 Claim disputes often turn on the meaning of a phrase, a word, or a single functional or structural aspect of the patented device.

FN12. *See* Metabolite Labs., Inc. v. Laboratory Corp. of Am. Holdings, 370 F.3d 1354, 1360 (Fed.Cir.2004).

FN13. *See* Markman, 517 U.S. at 384, 390-91, 116 S.Ct. 1384.

FN14. DeMarini Sports, Inc. v. Worth, Inc., 239 F.3d 1314, 1322 (Fed.Cir.2001) (quoting Embrex, Inc. v. Service Eng'g Corp., 216 F.3d 1343, 1347 (Fed.Cir.2000)).

[3] Courts confronted with the task of construing patent claims are guided by well-settled principles of interpretation. Of primary importance is the "intrinsic evidence of record, *i.e.*, the patent itself, including the claims, the specification and, if in evidence, the prosecution history." FN15 "The intrinsic evidence constitutes the public record of the patent on which the public is entitled to rely." FN16

FN15. Vitronics Corp. v. Conceptronic, Inc., 90 F.3d 1576, 1582 (Fed.Cir.1996). Intrinsic evidence is the "most significant source" in ascertaining the "legally operative meaning of disputed claim language." Id.

FN16. Advanced Card Techs., LLC v. Versatile Card Tech., Inc., 410 F.Supp.2d 158, 162 (S.D.N.Y.2006) (citing Markman v. Westview Instruments, Inc., 52 F.3d 967, 979 (Fed.Cir.1995)).

[4] [5] Additionally, courts may, as a discretionary matter, receive extrinsic evidence, such as expert testimony, to understand the technical aspects of a patent.FN17 However, extrinsic evidence cannot be used to "arrive at a claim construction that is clearly at odds with the construction mandated by the intrinsic evidence." FN18 Resort to extrinsic evidence should only be made if needed to resolve an ambiguity in a disputed claim term. FN19 Indeed, "if the intrinsic evidence is sufficient to resolve the meaning of a disputed term, it is improper to resort to extrinsic evidence, such as expert testimony or treatises." FN20

FN17. *See* Metabolite Labs., 370 F.3d at 1360.

FN18. Medinol Ltd. v. Guidant Corp., No. 03 Civ. 2604, 2004 WL 2210290, at (S.D.N.Y. Sept. 30, 2004) (quotation marks omitted).

FN19. *See* Advanced Card Techs., 410 F.Supp.2d at 162 (citing CVI/Beta Ventures, Inc. v. Tura, L.P., 112 F.3d 1146, 1153 (Fed.Cir.1997)).

FN20. Joao v. Sleepy Hollow Bank, 418 F.Supp.2d 578, 581-82 (S.D.N.Y.2006) (citing Vitronics, 90 F.3d at 1583) (stating that the Federal Circuit has reinforced its instruction that courts should "not look to extrinsic evidence such as dictionaries where the patent and its prosecution history provide sufficient guidance").

[6] [7] [8] [9] [10] Courts first consider the "words of the claims themselves ... to define the scope of the patented invention." FN21 A claim term is presumed to possess its ordinary and customary meaning in view of both the temporal and technological context in which it arose. That is, the critical inquiry for purposes of claim construction relates to how "artisans of ordinary skill in the relevant art at the time of invention" understood the claim terms.FN22 The presumption favoring the general usage of particular terms can be rebutted by evidence in the intrinsic record. For instance, "a patentee may choose to be his own lexicographer and use terms in a manner other than their ordinary meaning, as long as the special definition of the term is clearly stated in the patent specification or file history." FN23 Moreover, "claim language should be read in a manner that causes the claim to make sense. Courts are to construe claims so as to sustain a patent's validity where possible." FN24

FN21. Vitronics, 90 F.3d at 1582.

FN22. Metabolite Labs., 370 F.3d at 1360 ("Indeed, normal rules of usage create a 'heavy presumption' that claim terms carry their accustomed meaning in the relevant community at the relevant time.").

FN23. Vitronics, 90 F.3d at 1582.

FN24. Joao, 418 F.Supp.2d at 581 (citing ACS Hosp. Sys., Inc. v. Montefiore Hosp., 732 F.2d 1572, 1577 (Fed.Cir.1984)).

[11] [12] Accordingly, courts also review the patent specification, which is perhaps the "single best guide to the meaning of a disputed term" FN25 and demonstrates whether the patentee "used terms in a manner inconsistent with their ordinary meaning." FN26 The specification contains a "written description of the invention which must be clear and complete enough to enable those of ordinary skill in the art to make and use it." FN27 The presumption of ordinary meaning is overcome by the specification where the patentee "has set forth a definition for the term different from its ... customary meaning or where the patentee has disavowed or disclaimed scope of coverage, by using words or expressions of manifest exclusion or restriction, representing a clear disavowal of claim scope." FN28 The Federal Circuit has made clear that "dictionaries are to be consulted only after looking at the specification, because the specification is the best guide to the meaning of a term." FN29

FN25. Vitronics, 90 F.3d at 1582.

FN26. DeMarini Sports, 239 F.3d at 1323.

FN27. Vitronics, 90 F.3d at 1582. *See also* 35 U.S.C. s. 112.

FN28. International Rectifier Corp. v. IXYS Corp., 361 F.3d 1363, 1370 (Fed.Cir.2004).

FN29. Advanced Card Techs., 410 F.Supp.2d at 163 (citing Free Motion Fitness, Inc. v. Cybex Int'l, Inc., 423 F.3d 1343, 1348-49 (Fed.Cir.2005)).

[13] Courts also examine the prosecution history of the patent to assess whether the patentee made express representations regarding the scope and meaning of the claims to obtain the patent.FN30 The prosecution history includes the record of all proceedings relating to the patent that took place before the USPTO, including "any express representations made by the applicant regarding the scope of the claims," and possibly an examination of the prior art.FN31

FN30. *See* DeMarini Sports, 239 F.3d at 1323.

FN31. Vitronics, 90 F.3d at 1582. *Accord* Middleton, Inc. v. Minnesota Mining & Mfg. Co., 311 F.3d 1384, 1388 (Fed.Cir.2002) ("This court also considers the prosecution history ... to determine whether the applicant clearly and unambiguously disclaimed or disavowed [any interpretation] during prosecution in order to obtain claim allowance.") (quotation marks and citation omitted).

[14] "As in the case of the specification, the patent applicant's consistent usage of a term in prosecuting the patent may enlighten the meaning of that term." FN32 In particular, under the doctrine of prosecution disclaimer, the prosecution history " 'limits the interpretation of claim terms so as to exclude any interpretation that was disclaimed during prosecution.' " FN33 Indeed, it is a "fundamental precept" in claim construction jurisprudence that patentees cannot "recaptur[e] through claim interpretation specific meanings disclaimed during prosecution." FN34 This "promotes the public notice function of the intrinsic evidence and protects the public's reliance on definitive statements made during prosecution." FN35

FN32. Metabolite Labs., 370 F.3d at 1360.

FN33. Rheox, Inc. v. Entact, Inc., 276 F.3d 1319, 1325 (Fed.Cir.2002) (quoting Digital Biometrics, Inc. v. Identix, Inc., 149 F.3d 1335, 1347 (Fed.Cir.1998)).

FN34. Omega Eng'g, Inc. v. Raytek Corp., 334 F.3d 1314, 1323 (Fed.Cir.2003).

FN35. Id. at 1324.

[15] Although prosecution disclaimer does not attach where the "alleged disavowal of claim scope is ambiguous," FN36 an unequivocal disavowal of a particular meaning advanced by the patentee to overcome the prior art and obtain the patent narrows the "ordinary meaning of the claim congruent with the scope of surrender." FN37 Notably, "[w]hen multiple patents derive from the same initial application, the prosecution history regarding a claim limitation in any patent that has issued applies with equal force to subsequently

issued patents that contain the same claim limitation." FN38

FN36. Id.

FN37. Id. *See also* id. at 1325 ("To balance the importance of public notice and the right of patentees to seek broad patent coverage, we have thus consistently rejected prosecution statements too vague or ambiguous to qualify as a disavowal of claim scope.").

FN38. Elkay Mfg. Co. v. Ebco Mfg. Co., 192 F.3d 973, 980 (Fed.Cir.1999).

IV. DISCUSSION

A. Claims Requiring Construction

Plaintiffs argue that only two claims need to be construed: "extract" and "food product." Defendant agrees that those claims require construction but puts forth an additional eighteen terms to be construed. However, defendant concedes that the Court's construction of "extract," "extracting," "food product," "crucifer," and "cruciferous" will "largely govern the disputed terms." FN39 The Court construes "extract" and "food product" as follows. The remainder of the terms disputed by defendant do not require separate construction.

FN39. Caudill Seed & Warehouse Co., Inc.'s Claim Construction Brief ("Def. Mem.") at 1.

1. "Extract"

a. Parties' Contentions

[16] Plaintiffs contend that because the "goal of the claimed inventions is to provide chemoprotective Phase 2 enzyme inducers using a dietary approach," the "extract" made from the cruciferous plants "must provide the beneficial Phase 2 enzyme[] [inducers] and/or their precursors." FN40 They propose the following construction as consistent with the language of the claims themselves, the patent specification, and the goal of the inventions:

FN40. Plaintiffs' Memorandum of Law Regarding Claim Construction ("Pl. Mem.") at 8.

the substance *containing beneficial amounts of Phase 2 enzyme inducers and/or their precursors* that results from the manipulation of one or more of cruciferous sprouts, seeds, plants, and/or plant parts, where the manipulation causes the separation of component fractions of the cruciferous sprouts, seeds, plants, and/or plant parts.FN41
FN41. *Id*. (emphasis added).

Plaintiffs assert that the patents set forth a method whereby chemoprotective compound-rich sprouts and/or seeds are manipulated, resulting in component fractions. According to plaintiffs, the resultant "extract" must

not only contain "chemoprotective G & I," FN42 but be "that [component] fraction which exists ... that contains the greatest amount of the desired [G & I]." FN43 Moreover, the "manipulation" contemplated by plaintiffs' proposed construction is not limited to exposure of the plant material to a solvent. As plaintiffs' counsel noted during the Markman hearing, "manipulation" could include, for example, the act of grinding the plant material in its dry state.FN44

FN42. Plaintiffs' Reply Memorandum of Law Regarding Claim Construction ("Pl. Reply") at 2.

FN43. Pl. Mem. at 10.

FN44. *See* 6/16/08 Markman Hearing Transcript ("Markman Hearing Tr.") at 20:18-21 (The Court: "The process doesn't have to be through the use of a nontoxic solvent. It could be as simple as grinding, is that true?" Plaintiffs' counsel: "That's correct.").

Defendant contends that the claim term "extract" should be narrowly construed to mean "material removed from a solid by use of a solvent, wherein the extract can contain the removed material and the solvent." FN45 According to defendant, the "extract" is solely the substance containing G & I that moves from the plant material into the solvent following exposure to the solvent, and it may (but does not have to) include the solvent itself.FN46 Additionally, according to defendant, the chemoprotective compounds present in the extract must consist of *both* glucosinolates *and* isothiocyanates although defendant's proposed construction of "extract" makes no mention of the presence of either compound.FN47

FN45. Def. Mem. at 16.

FN46. *See* Markman Hearing Tr. at 53:8-13 (Defendant's counsel: "[T]he claims that talk about an extract, they're talking about the G & I that has been removed using a solvent from the seeds or sprouts and moved into the liquid, and that extract is only the liquid. So the G & I has to move into the liquid and out of the seeds or sprouts to be considered an extract in the context of these claims."). *See also id*. at 54:7-10 (Defendant's counsel: "[T]here is this concept of movement that you are taking the G & I, the good stuff, and removing it out of the seeds or sprouts and moving it into the solvent. So, there is this concept of movement.").

FN47. *See* Def. Mem. at 21.

Plaintiffs oppose defendant's proposed construction as inappropriate on a number of grounds: *first,* it defines "extract" without any reference to the presence of chemoprotective compounds, thus failing to consider the point of the invention.FN48 Plaintiffs contend that the language of the claims requires that the "extract" contain "beneficial amounts" of the chemoprotectivecompounds and defendant's construction would "result in an 'extract' being merely solvent and other material, with no G & I ...," FN49 *Second,* plaintiffs argue that nowhere do the claims require that the solvent must comprise part of the "extract." FN50 *Third,* plaintiffs do not limit the extraction process to one that uses a solvent, as defendant proposes.

FN48. *See* Pl. Mem. at 13.

FN49. Pl. Reply at 2.

FN50. *See id*.

b. Intrinsic Evidence

i. Claim Language

The term "extract" is found in claim 18 of the '567 patent and claims 1, 2, 5, 6, 7, 8, 9, 10, and 12 of the '122 patent.FN51 Reviewing those claims, the claim language dictates that the "extract" must contain glucosinolates and/or isothiocyanates. For example, claim 9 of the ' 567 patent, which is referenced in claim 18, sets forth a "method of preparing a human food product, comprising *extracting [G & I]* from cruciferous sprouts rich in glucosinolates ..., or from cruciferous seeds, or a combination thereof, with a non-toxic solvent, removing the extracted sprouts, seeds, or a combination thereof from said solvent, *and recovering the extracted [G & I]*" FN52 Claims 16 and 17, which are also referenced in claim 18, refer to the "extracted [G & I]." FN53 Giving the claim language its "ordinary and customary meaning," FN54 it is clear that the end product of the extraction process must contain glucosinolates and/or isothiocyanates-the very compounds that are at the core of the patents.

FN51. *See* Parties' Proposed Claim Constructions ("Prop. Claim Constr."), App. A to Joint Claim Construction and Prehearing Statement.

FN52. '567 Patent, Ex. 2 to Joint Exhibits, at col. 22 ll. 22-32 (emphasis added).

FN53. Id. at col. 22 ll. 53-59.

FN54. Joao, 418 F.Supp.2d at 581 ("Words in the claim are generally given their ordinary and customary meaning.").

The Court, however, declines to construe the claim to require " *beneficial amounts* of the Phase 2 enzyme inducers and/or their precursors"-i.e., glucosinolates and/or isothiocyanates-as plaintiffs propose.FN55 The term "beneficial" is, in itself, vague and open to varied meanings and would have to eventually be construed as well, if adopted. Indeed, as plaintiffs concede, "beneficial amounts" does not appear in the intrinsic evidence and nowhere is it quantified in a way that would provide guidance. FN56 For similar reasons, the Court declines to include plaintiffs' alternatively-proposed phrases "rich amount" or "substantial quantities" of glucosinolates and/or isothiocyanates in its construction.FN57

FN55. Pl. Mem. at 8 (emphasis added).

FN56. *See* Markman Hearing Tr. at 22:25-23:3, 23:8-10 (The Court: "This phrase 'beneficial amounts,' is that just showing up in court or is that somewhere found in the patents? Because I couldn't find the phrase 'beneficial amounts,' ... in the patent language anywhere." Plaintiffs' counsel: "You will not see the term 'beneficial.' ").

FN57. Markman Hearing Tr. at 23:14-24:25.

Whether the claims require the use of a solvent to create an "extract," whether the "extract" must include the solvent, and whether the "extract" is limited to the substance that is removed from the plant material into the solvent cannot be determined definitively from the claim language. Reading claim 9 of the '567 patent, a person of ordinarily skill in the relevant art at the time of invention may understand the method to require recovery of the chemoprotective compounds from the solvent-exposed sprout or seed. The claim language sequentially presents the steps of "removing the extracted sprouts, seeds, ... from said solvent and, and [sic] recovering the extracted [G & I]," FN58 suggesting that the recovery is made from the removed sprout or seed. However, the claim does not actually specify from which fraction-whether it is the solid fraction or the solvent fraction-the glucosinolates and/or isothiocyanates are found, or whether the compounds are found in both fractions. As such, it is unclear which fraction constitutes the "extract," as set forth by the claim language. Because the claim language is ambiguous, I now consider other intrinsic evidence.

FN58. '567 Patent at col. 20 ll. 29-30.

ii. Patent Specification

According to the patent specification, the "extract" refers to the substance containing glucosinolates and/or isothiocyanates that results from the exposure of certain cruciferous plant materials to a non-toxic solvent. This substance can take a number of forms and is not limited to the material that moves out of the plant tissue into the solvent following exposure to the solvent, as defendant proposes. Rather, the specification makes clear that while the "extract" can be the material removed from the plant tissue into the solvent by the solvent, it can, for example, also be the solvent and the removed material, or collectively, the solvent, the removed material, *and* the original plant material.

For example, the specification notes the patentees have developed "an improved *extraction* procedure" FN59 and that

FN59. Patent Specification at col. 8 ll. 50-51 (emphasis added).

[t]he improved procedure is both simple and efficient, requiring only that the plant sample be completely homogenized in solvent. Using this technique, the present inventors have thus been able to demonstrate dramatic increases in the recovery of inducer activity and inducer potential from cruciferous vegetables over previously described techniques.FN60

FN60. Id. at col. 8 ll. 58-64. *See also* id. at col. 5 ll. 46-51 ("A further embodiment of the present invention

provides a method of extracting glucosinolates and isomiocyanates from plant tissue which comprises homogenizing the plant tissue in an excess of a mixture of dimethyl sulfoxide, acetonitrile, and dimethlyformamide at a temperature that prevents myrosinase activity.").

The specification sets forth a number of examples of experiments and embodiments. In Example 5, entitled "Inducer Potential of Broccoli Sprout Extracts," the specification lists two methods for preparing plant "extracts": "[s]prouts ... were gently harvested and immediately and rapidly plunged into ... boiling water in order to inactivate [ ] myrosinase as well as to extract [G & I] from the plant tissue. Water was returned to a boil and maintained at a rolling boil for 3 mins. The sprouts were then either strained from the boiled infusion (tea, soup) or homogenized in it, and the residue then removed by filtration or centrifugation." FN61 The table of data corresponding to this example is entitled "Inducer Potentials of Hot Water Extracts of 3-Day Saga Broccoli Sprouts," and "represent[s] both homogenates and infusions." FN62 It contains two columns. One is labeled "Extract No." and the second column is a measurement of "units/g fresh weight." FN63

FN61. Id. at col. 15 ll. 1-10.

FN62. Id. at col. 15 ll. 11-12.

FN63. Id. at col. 15 ll. 18-40.

This example and its corresponding table suggest that "extracts" can be prepared by at least two different methods: *i.e.*, exposing the sprout or seed to boiling water and then straining the sprout or seed out thus creating an "infusion," or homogenizing (for *e.g.*, grinding) the sprout or seed into the water thus creating a "homogenate." Both are considered "extracts" for purposes of the patent.

In Example 11-entitled "Metabolism and Clearance of Glucosinolates in Humans"-a similar method for preparation of a "plant extract" is set forth. The example states that a "large quantity of sprouts was harvested by immediately and rapidly plunged [sic] into ... boiling water in order to inactivate [ ] myrosinase as well as to extract [G & I] from the plant tissue. Water was returned to a boil and maintained at a rolling boil for 3 mins. Following the boiling step, sprouts were homogenized directly in their infusion water for 1 min. and the preparations were frozen [ ] until use." FN64 The method set forth in this example again suggests that the "extract" can be comprised of not only the material removed from the solid, as defendant proposes, but the homogenized solid itself. The example refers to this type of "extract" as "broccoli sprout soup." FN65

FN64. Id. at col. 20 ll. 14-24.

FN65. Id. at col. 20 l. 1. *But see* id. col. 4 ll. 45-48 (referring to the sprouts and the extract as separate entities, stating that "[m]yrosinase enzyme, or a vegetable, such as Raphanus species, containing the enzyme is mixed with the cruciferous sprouts, the extract or both the sprouts and the extract").

Elsewhere, the patent specification suggests that the "extract" can be ingested directly," FN66 such as the broccoli sprout soup from Example 11, as well as "soups, teas, or other drinks and infusions." FN67 The specification, however, allows for but does not appear to require that the solvent be present in order for the substance to constitute "extract." It states that the "extract" can be "further treated ... for example, be evaporated to yield a dried extracted product. It can be cooled, frozen, or even freeze-dried." FN68

FN66. Id. at col. 11 ll. 28-29.

FN67. Id. at col. 11 l. 45.

FN68. Id. at col. 11 ll. 28-32.

"Extract" is construed to mean "the substance containing glucosinolates and/or isothiocyanates that results from the exposure of one or more of cruciferous sprouts, seeds, plants, and/or plant parts to a non-toxic solvent." It is not limited to the material that moves from the plant tissue into the solvent when the plant tissue is exposed to the solvent. For example, it can be the removed material separate from the solvent, or the removed material and the solvent, or the removed material and the solvent and the starting plant tissue from which the extraction was made. Under the patent, all of these configurations constitute the "extract." This construction makes clear that the "extract" must contain the chemoprotective compounds-glucosinolates and/or isothiocyanates-that are the focus of the patent, as plaintiffs insist. It also acknowledges that there are different forms that the "extract" may take according to the specification, and does not limit "extract" solely to the "removed material" as defendant proposes.

However, contrary to plaintiffs' proposal, this construction does not include the phrase "manipulation ... where the manipulation causes the separation of component fractions of the cruciferous sprouts, seeds, plants, and/or plant parts." That construction would theoretically include ground seeds or sprouts, for example, as "extract" because the act of grinding is technically a "manipulation [that] causes the separation of component fractions ...." But the specification does not use the terms "extract" or "extracting" when discussing this type of manipulation of the plant material. Indeed, the specification draws a distinction between grinding plant material versus extracting, stating: "Suitable crucifer seeds may be ground into a flour or meal for use as a food or drink supplement .... *Alternatively,* the seeds may be extracted with a non-toxic solvent such as water ... to prepare soups, teas or other drinks and infusions." FN69

FN69. Id. at col. 11 ll. 39-45.

Because the specification consistently discusses "extract" or "extracting" together with "solvent," it is inappropriate to omit any reference to the use of a solvent in the construction of "extract." Indeed, plaintiffs have already conceded that the only "manipulation" described in the claims that results in the creation of an "extract" occurs through the use of a solvent.FN70 The Court's review reveals the same to be true of the specification as well.

FN70. *See* Markman Hearing Tr. at 45:1-3 (The Court: "The only manipulation described is the use of a

solvent." Plaintiffs' counsel: "In the claims, that's correct.").

For the foregoing reasons, the Court construes the term "extract" to mean "the substance containing glucosinolates and/or isothiocyanates that results from the exposure of one or more of cruciferous sprouts, seeds, plants, and/or plant parts to a non-toxic solvent."

2. "Food Product"

a. Parties' Contentions

[17] Plaintiffs propose that the claim "food product" be construed to mean "any ingestible substance containing beneficial amounts of Phase 2 enzyme inducers and/or their precursors." FN71 According to plaintiffs, the claim language dictates that *first,* the "food product" must contain beneficial amounts of glucosinolates and/or isothiocyanates, and *second,* it is not limited to any particular type of food.FN72 Rather, it can take any form of an ingestible substance, such as breads, soup, food supplements, and pills. FN73 Plaintiffs also note that because "extract" should be construed to contain beneficial amounts of G & I and because a "food product" is made with the "extract," the "food product" will necessarily have glucosinolates and/or isothiocyanates as well.FN74

FN71. Pl. Mem. at 15.

FN72. *See* id. at 15-17.

FN73. *See* id. at 17.

FN74. *See* id.

Defendant offers the following construction of "food product":

Any ingestible preparation *containing the sprouts of the instant invention,* which are identified and have the characteristics described in the '895 patent specification, at col. 10, 1.28-col. 11, 1.17, or extracts or preparations *made from these sprouts,* which are capable of delivering Phase 2 inducers to the mammal ingesting the product.FN75

FN75. Def. Mem. at 9 (emphasis added).

Defendant contends that this construction of "food product" is proper because it is taken from the language of the patent specification's "Definitions" section. According to defendant, the language dictates that "food product" must include sprouts (or sprout extracts) as a "baseline", FN76 and those sprouts are limited to "those identifiedand described in the patent itself." FN77 Because "the [plaintiffs] expressly limited this term to ingestible preparations that contain sprouts or extracts or preparations made from sprouts," defendant argues they cannot now reject that limitation by relying on the "goal" of the invention.FN78

Moreover, defendants claim the prosecution history shows that plaintiffs distinguished the instant inventions from prior art by emphasizing that the "food product" is to be comprised of, at a minimum, the sprouts or the extracts made from those sprouts.

FN76. Markman Hearing Tr. at 69:22-24.

FN77. Def. Mem. at 10-11.

FN78. Def. Reply at 2 (quoting Pl. Mem. at 15).

In rebuttal, plaintiffs contend that defendant has selectively read portions of the specification while ignoring other portions, and fails to consider "food product" in the context of the entire patent.FN79 Claim 12 of the '122 patent, for example, claims a "food product comprising a source of [G & I], wherein said [G & I] source is a cruciferous seed *or* cruciferous sprout, or extract of said seed or sprout ...." FN80 Plaintiffs contend that the language of the claims would be read by someone with ordinary skill in the relevant art to not require the presence of sprouts or sprout extracts in the "food product," but to include "any combination of one or more sprouts, seeds, plants, plant parts, or extracts thereof." FN81

FN79. Plaintiffs do concede, however, that the "definition" of "food product" found in the specification was perhaps an inadvertent failure on the part of the drafter to reflect the meaning of "food product" in light of the claims. *See* Markman Hearing Tr. at 38:20-39:6 (The Court: "[What accounts for the fact] [t]hat the first definition would make it appear limited to sprouts? Is it bad drafting?" Plaintiffs' counsel: "I would assert that it is ...." The Court: "So if you were able to start over, you just wouldn't have that paragraph." Plaintiffs' counsel: "Correct.").

FN80. '122 Patent, Ex. 3 to Joint Exhibits, at col. 22 (emphasis added).

FN81. Pl. Reply at 7.

Additionally, plaintiffs argue that defendant's construction of "food product" is inconsistent with its construction of "extract" because, elsewhere, defendant proposes that "extracting" means " 'removing [G & I] by a solvent from solid material, *i.e.*, seeds, sprouts, etc.' " FN82 Because this proposed construction acknowledges that the source of G & I can be non-sprout material, such as seeds, it follows that the "food product" would not necessarily contain sprout-material either.FN83

FN82. Id. at 4 (quoting Def. Mem. at 16).

FN83. *See* id.

The dispute between the parties focuses on when and how a definition set forth in the specification limits or otherwise modifies the claim language. The "inventor may use the specification to give a special definition to claim terms distinct from their ordinary meaning, or to disclaim or disavow potential claim scope." FN84 "In such cases, the inventor's intention to define or disclaim must be clearly expressed in the specification." FN85 The Federal Circuit has made clear that "[w]hile the specification is helpful in understanding the meaning of the claim terms, the court may not simply import limitations into the patent claims from the specification, particularly based on a preferred embodiment or embodiments." FN86

FN84. Alloc, Inc. v. Norman D. Lifton Co., No. 03 Civ. 4419, 2007 WL 2089303, at (S.D.N.Y. July 18, 2007) (citing Phillips v. AWH Corp., 415 F.3d 1303, 1316 (Fed.Cir.2005)).

FN85. Id. (citing Conoco, Inc. v. Energy & Envtl. Int'l, Inc., 460 F.3d 1349, 1357-58 (Fed.Cir.2006)).

FN86. Id. (citations omitted).

At the Markman Hearing and in their written submissions, the parties relied on and cited to the Federal Circuit's recent decision in Sinorgchem Co., Shandong v. International Trade Comm'n ("Sinorgchem") in support of their respective positions.FN87 According to defendant, Sinorgchem stands for the proposition that where a patentee "clearly, deliberately, and with precise language" defines a claim term, that definition governs even if it then "render[s] some of the disclosed embodiments inoperable." FN88 Analogizing the instant case to Sinorgchem, defendant contends that because plaintiffs chose to act as their own lexicographer and expressly define "food product," that definition must be read into the claim language even if it then limits the scope of the patent.FN89 Plaintiffs dispute defendant's analogy to Sinorgchem, contending that the case is actually consistent with their approach because there, the court only adopted the definition after finding it to be consistent with the rest of the specification and the claims. FN90 A similar holding could not be reached here, according to plaintiffs, where adopting the definition of "food product" found in the specification would create internal inconsistency "when the patents are considered as a whole." FN91

FN87. 511 F.3d 1132 (Fed.Cir.2007).

FN88. Def. Opp. at 10 (citing Sinorgchem, 511 F.3d at 1136-38).

FN89. *See, e.g.*, Markman Hearing Tr. at 76:11-15 (Defendants' counsel: "This is, of course, because the specification is acting as a dictionary, as we talked about, and Sinorgchem says, basically, there's no need to search further.").

FN90. *See* Pl. Reply at 7.

FN91. *Id.* at 8.

b. Intrinsic Evidence

i. Claim Language

Substantively, the key difference between the parties' proposed constructions is the question of whether "food product" must contain, at a minimum, cruciferous sprouts. The parties agree that the term "food product" is found in claims 14 and 15 of the '895 patent, claims 9, 16, and 18 of the '567 patent, claims 1 and 2 of the '018 patent, and claims 10, 13, 15, 16, 17, 18, 19, 20, 21, 23, 24, and 26 of the '770 patent.FN92

FN92. *See* Prop. Claim Constr. at 2.

Claim 12 of the '122 patent expressly states that the patentees claim a "food product comprising a source of [G & I], wherein said [G & I] source is *a cruciferous seed or cruciferous sprout, or extract of said seed or sprout* ...." FN93 Claim 9 of the ' 567 patent also describes the "food product" as containing extracted G & I from cruciferous sprouts or seeds, or "a combination thereof." FN94 Giving the "or" found in the claim language its ordinary meaning, the claim provides alternatives to serve as the source of the G & I and does not require any single source: *i.e.*, either sprouts *or* seeds or sprout extract *or* seed extract *or* both. Similarly, claim 10 of the ' 770 patent generally states that the patentees claim a "method of making a food product comprising extracting [G & I] *from cruciferous plant tissue* ....," and claim 15 further explains that "said plant tissue is *selected from the group consisting of cruciferous sprouts* measured after 3 days of growth, *cruciferous seeds, plants, and plant parts*."FN95

FN93. '122 Patent at col. 22 l. 13 (emphasis added).

FN94. '567 Patent at col. 22 l. 30.

FN95. '770 Patent at col. 22 ll. 37-39.

The claim language unambiguously states that "food product" can be comprised of sprout or seed material, or their extracts. However, even where it is largely undisputed that the claim language is unambiguous, the inclusion of a "special definition" in the specification indicates that the "inventor has dictated the correct claim scope." FN96 As a result, I turn to the question of whether the specification does in fact reveal such a definition.

FN96. Phillips, 415 F.3d at 1316.

ii. Patent Specification

As an initial matter, the Federal Circuit in Sinorgchem made clear that "a definition set forth in the specification governs the meaning of the claims." FN97 However, the court further noted that the definition found in the specification must explain and define the term " 'without ambiguity or incompleteness.' "FN98

FN97. Sinorgchem, 511 F.3d at 1138 (citation omitted).

FN98. Id. (quoting Multiform Desiccants, Inc. v. Medzam, Ltd., 133 F.3d 1473, 1478 (Fed.Cir.1998)).

Here, it is undisputed that the drafters chose to include a section entitled "Definitions" in their specification despite not being required to do so. It is further undisputed that the drafters wrote, "A food product *is* ....[,]" thus signaling that what follows is a definition.FN99 Although plaintiffs do not advance this argument, it appears that the definition for "food product" is not "without ambiguity," and therefore cannot be accorded the weight that defendant seeks under Sinorgchem.

FN99. *But see* Abbott Labs. v. Andrx Pharms., Inc., 473 F.3d 1196, 1210 (Fed.Cir.2007) (stating that, as compared to "means," the word "is" "does not as unambiguously signify that the description provided is definitional").

The paragraph that constitutes the "definition" of "food product" in the specification consists of four sentences. Defendant contends that the first sentence unambiguously defines a "food product" as "any ingestible preparation containing the sprouts of the instant invention, or extracts or preparations made from these sprouts ...." FN100 During the Markman Hearing, defendant argued that this definition for "food product" must be read into the claim language such that every time "food product" appears, the reader knows that sprouts must be included.

FN100. '895 Patent at col. 6 ll. 27-29.

Reading the following sentences in the paragraph, however, raises ambiguities that call into question whether the drafters intended to expressly define "food product" in accordance with the limit set forth in the first sentence. For example, the sentences that immediately follow the purported "definition" continue to modify the term "food product" with the phrase "containing the sprouts of the instant invention." FN101 This redundancy- *i.e.*, reciting "containing sprouts of the instant invention" as a modifier of "food product"- is troubling because according to the first sentence of the same paragraph (and defendant's proposed definition), the term "food product" already encompasses "sprouts of the instant invention." While I cannot surmise the intent of the drafters in including this paragraph in the specification, I find there to be sufficient ambiguity such that the "definition" cannot be accordedthe weight of "express definitional language" that defines a term "without ambiguity or incompleteness." FN102

FN101. *See, e.g.*, id. at col. 6 ll. 31-35 ("The *food product* can be freshly prepared such as salads, drinks or sandwiches *containing sprouts of the instant invention*. Alternatively, the *food product containing sprouts of the instant invention* can be dried, cooked, boiled, lyophilized or baked.") (emphasis added).

FN102. Sinorgchem, 511 F.3d at 1138 (citations omitted).

Elsewhere in the specification, the drafters' elaboration upon the meaning of "food product" accords with the relevant claim language. For example, the specification states in pertinent part:

Food products of the instant invention may include sprouts, seeds or extracts of sprouts or seeds taken from one or more different crucifer genera .... It has been found that genetically distinct crucifers produce chemically distinct Phase 2 enzyme-inducers. Different Phase 2 enzyme-inducers detoxify chemically distinct carcinogens at different rates. Accordingly, food products composed of genetically distinct crucifer sprouts or seeds, or extracts or preparations made from these sprouts or seeds, will detoxify a broader range of carcinogens. FN103

FN103. '895 Patent at col. 11 ll. 50-60.

iii. Prosecution History

The Federal Circuit has recognized that "because the prosecution history represents an ongoing negotiation between the [US]PTO and the applicant ... it often lacks the clarity of the specification and is thus less useful for claim construction purposes." FN104 Because the parties have submitted the prosecution histories as evidence and because these histories "can often inform the meaning of the claim language by demonstrating how the inventor understood the invention and whether the inventor limited the invention in the course of prosecution," I have reviewed them.FN105

FN104. Elbex Video, Ltd. v. Sensormatic Elecs. Corp., 508 F.3d 1366, 1372 (Fed.Cir.2007) (quoting Phillips, 415 F.3d at 1317).

FN105. Phillips, 415 F.3d at 1317 (citations omitted).

Defendant has pointed to various portions of the prosecution histories for the patents at issue where plaintiffs attempted to distinguish the instant patents from prior art by arguing that the prior art did not teach a method for preparing food products comprised of the recited cruciferous sprouts or sprout extracts.FN106 Plaintiffs contend that defendant's reliance on the prosecution histories is misplaced because their emphasis on sprouts and sprout extracts during the patent application process was simply in response to the USPTO's "sprout-based" conclusion that the ' 895 patent, for example, should be rejected because of obviousness in light of prior art.FN107 "The inventors did not address the rejected claims' recitation of cruciferous seeds, plants, or plant parts because that information was not necessary to rebut the Examiner's sprout-based conclusion; those features were never asserted as a basis of unpatentability." FN108

FN106. *See* Def. Mem. at 11-16.

FN107. Pl. Reply at 8.

FN108. Id.

Plaintiffs are correct. The Court's review of the prosecution history for the '895 patent, as an example, reveals that the USPTO rejected certain claims of that patent as "unpatentable over Kenjirou" which "disclose[s] broccoli sprouts." FN109 In response, the plaintiffs then set forth in their report requesting reconsideration of the USPTO's rejection the reasons why *first,* the prior art does not disclose a method for preparing broccoli sprouts and *second,* even if it did, why the instant invention discloses a sprout-based method that constitutes an improvement that is distinct from the prior art.FN110 Considering the context of the basis for the USPTO's rejection of the patents, it is reasonable that plaintiffs focused their response on the specific issues raised by the prior art.

FN109. Report of Leslie Wong, Primary Examiner, USPTO, Ex. 1 to Joint Exhibits, at 1-C31.

FN110. *See* Amendment and Request for Reconsideration Under 37 C.F.R. s. 1.111, Ex. 1 to Joint Exhibits, at 1-C36-44.

Moreover, plaintiffs did not disavow claim scope over cruciferous seeds or seed extracts through their exchanges with the USPTO. "The required words or expressions of manifest exclusion or restriction representing a clear disavowal of claim scope are not present in these passages from the prosecution history." FN111

FN111. NTP, Inc. v. Research in Motion, Ltd., 418 F.3d 1282, 1309 (Fed.Cir.2005).

Based on the claim language, the specification, and the prosecution history, I adopt the following construction of the term "food product": "any ingestible preparation containing the sprouts, seeds, extracts of sprouts, or extracts of seeds of the instant invention, which are capable of delivering the Phase 2 inducers through ingestion."

V. CONCLUSION

For the reasons set forth above, the disputed claim terms are construed as follows: "extract" is "the substance containing glucosinolates and/or isothiocyanates that results from the exposure of one or more of cruciferous sprouts, seeds, plants, and/or plant parts to a non-toxic solvent." "Food product" is "any ingestible preparation containing the sprouts, seeds, extracts of sprouts, or extracts of seeds of the instant invention, which are capable of delivering the Phase 2 inducers through ingestion." A conference is scheduled for August 7, 2008, at 4:30 p.m.

SO ORDERED.

S.D.N.Y.,2008.
Brassica Protection Products LLC v. Caudill Seed & Warehouse Co., Inc.