

United States District Court,
N.D. California.

MOLECULAR PROBES, INC,
Plaintiff.

v.
TEXAS FLUORESCENCE LABORATORIES, INC,
Defendant.

No. C 02-0461 SI

Aug. 9, 2002.

Gillian Winifred Thackray, James A. Isbester, Isbester & Thackray, LLP, Berkeley, CA, for Plaintiffs.

Jeffrey W. Guise, Michael J. Hostetler, Vicki Gee Norton, Brobeck, Phleger & Harrison LLP, San Diego, CA, for Defendants.

CLAIM CONSTRUCTION ORDER

SUSAN ILLSTON, District Judge.

On July 26, 2002, the Court heard argument from the parties regarding claim construction for United States Patent No. 6,162,931. Having considered the arguments of counsel and the papers submitted, the Court hereby construes the disputed patent terms as set out below.

BACKGROUND

In this patent infringement action, plaintiff Molecular Probes, Inc. ("Molecular") accuses defendant Texas Fluorescence Laboratories, Inc. ("Tef Labs") of infringing United States Patent No. 6,162,931 ("the '1 patent"), issued December 19, 2000. The '1 patent describes fluorine-substituted fluorescent dyes used as detectable tracers and for preparing conjugates of organic and inorganic substances. '1 patent Abstract. Molecular develops, manufactures, and distributes an array of chemical diagnostic agents and probes, including a fluorescent probe marketed under the product name "Fluo-4." Complaint, para. 1. According to Molecular, the Fluo-4 product is a fluorine-substituted fluorescent dye developed according to the teaching of, and embodying the technology described in, the '1 patent. Id. at para. 13. Fluo-4 is used by researchers to detect the presence of calcium ions in biological tissues.

Akwasi Minta, Ph.D. ("Minta") is the Chief Executive Officer of Tef Labs. While he was on the faculty of the Department of Physiology at the University of California at Berkeley, Dr. Minta designed a group of compounds to detect calcium ions in cells and tissues. These compounds were referred to as the Fluo compounds. Def.'s Brf., 3:20-23. Dr. Minta was a co-inventor of U.S. Patent No. 5,049,673 ("the '673 patent"), issued on September 17, 1991 and assigned to the Regents of the University of California. Both

Molecular and Tef Labs have licenses from the Regents of the University of California to practice the invention disclosed in the '673 patent. Tef Labs, like Molecular, also manufactures a fluorescent probe called "Fluo-4." Compl., para. 2.

In its complaint, Molecular alleges infringement under 35 U.S.C. s. 271, claiming that Tef Labs' Fluo-4 product has the chemical structure claimed in the '1 patent and that it is used in diagnostic tests using the methods claimed in the '1 patent. Id. at para. 14. Now before the Court are the parties' proposed claim constructions for the '1 patent.

LEGAL STANDARD

Proper construction of patent claims is to be made by the trial court as a matter of law. *See Markman v. Westview Instruments, Inc.*, 52 F.3d 967, 979 (Fed.Cir.1995) (en banc), *aff'd*, 517 U.S. 370, 116 S.Ct. 1384, 134 L.Ed.2d 577 (1996). In determining the proper construction of a claim, the Court begins with the intrinsic evidence of record, consisting of the claim language, the patent specification, and, if in evidence, the prosecution history. Id. at 979 (citing *Unique Concepts, Inc. v. Brown*, 939 F.2d 1558, 1561 (Fed.Cir.1991)). "The appropriate starting point ... is always with the language of the asserted claim itself." *Comark Communications, Inc. v. Harris Corp.*, 156 F.3d 1182, 1186 (Fed.Cir.1998). Accordingly, although claims speak to those skilled in the art, in construing a claim, claim terms are given their ordinary and accustomed meaning unless examination of the specification, prosecution history, and other claims indicates that the inventor intended otherwise. *See Electro Medical Systems, S.A. v. Cooper Life Sciences, Inc.*, 34 F.3d 1048, 1054 (Fed.Cir.1994). Although words in a claim are generally given their ordinary and customary meanings, a patentee is free to act as his own lexicographer provided that the patentee's special definition is clearly stated in the patent specification or prosecution history. *See Hormone Research Found., Inc. v. Genentech, Inc.*, 904 F.2d 1558, 1563 (Fed.Cir.1990).

The claims must be read in view of the specification. *Markman*, 52 F.3d at 979. Yet while "claims are to be interpreted in light of the specification and with a view to ascertaining the invention, it does not follow that limitations from the specification may be read into the claims." *Sjolund v. Musland*, 847 F.2d 1573, 1581 (Fed.Cir.1988) ("This court has cautioned against limiting the claimed invention to preferred embodiments or specific examples in the specification."). Therefore, the specification can supply understanding of unclear terms, but should never trump the clear meaning of the claim terms. *See E.I. du Pont de Nemours & Co. v. Phillips Petroleum Co.*, 849 F.2d 1430, 1433 (Fed.Cir.1988). Even "[r]eferences to a preferred embodiment, such as those often present in a specification, are not claim limitations." *Laitram Corp. v. Cambridge Wire Cloth Co.*, 863 F.2d 855, 865 (Fed.Cir.1988).

Finally, the Court may consider the prosecution history of the patent, if in evidence. The prosecution history limits the interpretation of claim terms so as to exclude any interpretation that was disclaimed during prosecution. *See Southwall Technologies, Inc. v. Cardinal IG Co.*, 54 F.3d 1570, 1576 (Fed.Cir.1995).

In most situations, analysis of this intrinsic evidence alone will resolve claim construction disputes. *See Vitronics Corp. v. Conceptronics, Inc.*, 90 F.3d 1576, 1583 (Fed.Cir.1996). Courts should not rely on extrinsic evidence in claim construction to contradict the meaning of claims discernable from examination of the claims, the written description, and the prosecution history. *See Pitney Bowes, Inc. v. Hewlett-Packard Co.*, 182 F.3d 1298, 1308 (Fed.Cir.1999) (citing *Vitronics*, 90 F.3d at 1583). However, it is appropriate "for a court to consult trustworthy extrinsic evidence to ensure that the claim construction it is tending to from the patent file is not inconsistent with clearly expressed, plainly apposite, and widely held

understandings in the pertinent technical field." *Id.* at 1309. This is especially the case with respect to technical terms or terms of art in the claim-drafting art. *Id.*

DISCUSSION

1. Evidentiary Objections

Both parties submit objections to declarations filed in support of the claim construction briefing. Molecular objects to portions of the declaration of Akwasi Minta and exhibits attached to the declaration of Vicky G. Norton. Tef Labs objects to portions of the declarations of Kyle Gee and an exhibit attached to the declaration of Gillian W. Thackray.

A. Declaration of Akwasi Minta

Molecular objects to 41 of 48 paragraphs of the declaration of Dr. Minta, the Chief Executive Officer of Tef Labs ("Minta Decl."). For each of the paragraphs, Molecular raises at least one of four objections: (1) impermissible extrinsic evidence; (2) irrelevant-"fails to prove or disprove any consequential fact"; (3) "contradicts intrinsic evidence of '1 patent"; and (4) "waste of time-raises collateral issues that waste the Court's time." Beyond listing these objections in a chart, Molecular provides no argument or authority supporting its contention that the paragraphs should be stricken from the record. Pl.'s Objection, 2:4-5:24.

The objections raised by Molecular go more to the weight due to the Minta declaration than to its admissibility. The Court is, of course, cognizant of the weight that should be accorded to extrinsic evidence like the Minta declaration. The Federal Circuit has explained repeatedly that courts should look first to the intrinsic record and, if possible, rely on that evidence alone to resolve all disputes. *Vitronics*, 90 F.3d at 1583. The Court also recognizes the limited relevance of Dr. Minta's testimony regarding his involvement in the development of Fluo-3 and work on the '673 patent. At this stage, the Court is focused primarily on the intrinsic record of the '931 patent. Dr. Minta's discussion of the '673 patent, Fluo-3, and the accused product is only marginally relevant, if at all.

However, Molecular has not provided any authority suggesting that the Court must strike the portions of the declaration, and the Court will not do so. A trial court "may, in its discretion, receive extrinsic evidence in order 'to aid the court in coming to a correct conclusion' as to the 'true meaning of the language employed' in the patent." *Markman*, 52 F.3d at 980-81. Extrinsic evidence is to be used "for the court's understanding of the patent, not for the purpose of varying or contradicting the terms of the claims." *Id.* As will be seen from the analysis set forth below, the Court relies almost entirely on the intrinsic record here, and relies on the Minta declaration only to the extent that it provides background on the relevant field.

B. Declaration of Vicki G. Norton

Molecular objects to Exhibits 3-10 of the declaration of Vicki G. Norton ("Norton Decl."), arguing that the exhibits constitute extrinsic evidence that may not properly be considered by the Court at this stage. Furthermore, Molecular argues that Exhibits 9 and 10 are unduly prejudicial.

First, Molecular argues that Exhibits 3, 4, 5, and 6 must be stricken because they are prior art not cited in the prosecution of the '1 patent. For this proposition, Molecular cites *Karsten Mfg. Corp. v. Cleveland Golf Co.*, 242 F.3d 1376, 1384 (Fed.Cir.2001), in which the Federal Circuit refused to limit claim language based on a piece of newly discovered prior art. *Karsten* does not state an unbending rule requiring that all prior art

not cited in the prosecution of a patent be stricken from the record in claim construction proceedings. In fact, the Federal Circuit has provided that trial courts "may admit and rely on prior art ... whether or not cited in the specification or the file history. This prior art can often help to demonstrate how a disputed term is used by those skilled in the art." *Vitronics*, 90 F.3d at 1584. *See also* *Arthur A. Collins, Inc. v. Northern Telecom Ltd.*, 216 F.3d 1042, 1044-45 (Fed.Cir.2000) ("Even when prior art is not cited in the written description or the prosecution history, it may assist in ascertaining the meaning of a term to a person skilled in the art."). Accordingly, Exhibits 3-6 will not be stricken from the record.

Molecular also argues that Exhibits 7 and 8, which are scientific articles not cited in the patent or prosecution history, cannot be used to narrow the scope of the claims. Again, although caselaw suggests that the articles should not be accorded significant weight in the claim construction process, neither of the cases cited by Molecular requires that these items be stricken, and the Court will not do so. *See Pitney Bowes, Inc. v. Hewlett-Packard Co.*, 182 F.3d 1298, 1308 (Fed.Cir.1999) (recognizing that it is appropriate to consult trustworthy extrinsic evidence to ensure that construction is not inconsistent with widely held understandings in pertinent technical field). For the same reason, the Court will not strike Exhibit 9, which is a bibliography of scientific articles. Finally, although it is of little relevance at this stage, the Court will not strike Exhibit 10 from the record.

C. Declarations of Kyle Gee

Kyle Gee, Ph.D., is among the named inventors listed in the "1 patent. Tef Labs objects to those paragraphs of the two declarations of Dr. Gee in which he testifies regarding claim interpretation. It is certainly true that testimony of an inventor regarding the scope of claim language is of little, if any use in the claim construction process. In *Markman*, the Federal Circuit held that the testimony of an inventor as to the meaning of the claims in his or her patent is "of little or no probative weight in determining the scope of a claim." *Markman*, 52 F.3d at 985. *See also* *Bell & Howell Document Mgmt. Prod. Co. v. Altek Sys.*, 132 F.3d 701, 706 (Fed.Cir.1997) ("The testimony of an inventor is often a self-serving, after-the-fact attempt to state what should have been part of his or her patent application....").

Most, if not all, Federal Circuit cases discussing the issue simply state that inventor testimony is entitled to little, if any weight in determining the scope of the claims, suggesting that the testimony may at least be considered. *See, e.g., Engel Indus., Inc. v. Lockformer Co.*, 96 F.3d 1398, 1405 (Fed.Cir.1996) (inventor testimony "is of little or no probative weight in determining the scope of the claims"); *Roton Barrier, Inc. v. Stanley Works*, 79 F.3d 1112, 1126 (Fed.Cir.1996) (inventor testimony "is of little weight compared to the clear import of the patent disclosure itself"). The Federal Circuit has, on the other hand, explained that "[a]n inventor is a competent witness to explain the invention and what was intended to be conveyed by the specification and covered by the claims." *Voice Techs. Group, Inc. v. VMC Sys., Inc.*, 164 F.3d 605, 615 (Fed.Cir.1999). *See also* *Hoechst Celanese Corp. v. BP Chemicals Ltd.*, 78 F.3d 1575, 1580 (Fed.Cir.1996) (inventor's testimony considered as "enlarging [Federal Circuit's] understanding of the technology and the usage of the disputed terms"). The Court recognizes that the objected-to portions of the Gee declaration are entitled to little, if any, probative weight in determining the scope of the claims. However, the disputed portions of the declaration will not be stricken.

Tef Labs also objects to paragraph 9 of Dr. Gee's second declaration, in which he sets forth a chemical reaction in which 5-methyl BAPTA can be created using BAPTA as the parent substance, on the grounds that the statements therein are "unsupported speculation and thus unreliable." Def.'s Objections, 1:11-12. Both Dr. Gee and Dr. Minta make significant conclusions in their declarations without extensive discussion.

The Court considers the lack of explanation in attributing weight to the declarations, but will not strike paragraph 9 of the Gee declaration for that reason alone.

D. Declaration of Gillian Thackray

Tef Labs objects to Exhibit C of the Declaration of Gillian Thackray ("Thackray Decl.") on the grounds that it consists of only one page of a lengthy scientific publication. According to Tef Labs, this exhibit is incomplete and any statements therein may be taken out of context. If Tef Labs believed that other portions of the publication were relevant or provided context, they were entitled to copy those portions and submit them to the Court. They did not do so. Instead, they argue, without any elaboration, that statements from the copied portion might be "taken out of context." The Court will not strike Exhibit C from the record based on this objection.

2. U.S. Patent No. 6,162,931

The parties dispute the meaning of six terms used in the claims of the "1 patent, each of which will be discussed in turn.

A. Conjugated Substance

The term "conjugated substance" is found in each independent claim asserted against Tef Labs. The relevant portion of Claim 46 reads as follows: "further provided that at least one of R², R³, R⁴, R⁵, R⁷, R⁸, R⁹, R¹⁰, R¹², R¹³, R¹⁴, R¹⁵ and R¹⁶ is an-L-S_c;.... S_c is a conjugated substance." "1 patent, 87 :59-88 :1.

Claim 67 reads, in relevant part: "R¹⁰ is-L-S_c.... S_c is a conjugated substance." Id. at 89:66-67; 90 :55.

Claim 103 reads, in relevant part: "each-L-is bound to a S_c that is a conjugated substance." Id. at 98:44-45.

Molecular contends that the term should be construed to mean "any organic or inorganic material that is linked by a chemical bond to a second substance." Pl.'s Brf., 10:15-17. Tef Labs' proposed construction is:

A conjugated substance is a substance that has become covalently conjugated to a single fluorinated fluorophore. "Covalently conjugated" means bonded as described in the "1 specification and not as the result of a carbon-carbon bond coupling reaction or a condensation reaction neither of which are described in the specification.

Def.'s Brf., 22:11-14. The parties dispute three central issues with respect to the meaning of "conjugated substance": (1) whether the conjugated substance must be conjugated to a single fluorinated fluorophore; (2) whether the conjugated substance encompasses all organic and inorganic substances; and (3) whether conjugated substance refers only to a substance that is covalently linked by a conjugation reaction. Each of these issues will be addressed below.

I. Whether "Conjugated Substance" Must be Conjugated to a Single Fluorinated Fluorophore

Under Tef Labs' proposed construction, only one fluorophore can be attached to the conjugated substance. To support this interpretation, Tef Labs notes first that the claim language uses the term "S_c" to refer to a conjugated substance. "1 patent, 88 :1 ("S_c is a conjugated substance."). Because the claim language does not specifically define either "S_c" or "conjugated substance," Tef Labs relies on a portion of the specification which reads:

Where a single fluorinated fluorophore is covalently conjugated to a substance, the conjugated substance is typically represented by $-L-S_c$, where S_c is the conjugated substance itself, and $-L-$ is a covalent linkage attaching the conjugated substance to the fluorinated fluorophore, as described previously.

Id. at 16:18-24. According to Tef Labs, this section of the specification amounts to an "implicit definition" of the term "conjugated substance," indicating that a conjugated substance may only be linked to a single fluorophore. Def.'s Brf., 23:13-14.

This section of the specification refers to one instance in which a single fluorophore is covalently conjugated to a substance, but does not limit the scope of the patent to dyes containing only one fluorinated fluorophore. *See Specialty Composites v. Cabot Corp.*, 845 F.2d 981, 987 (Fed.Cir.1988) ("Where a specification does not require a limitation, that limitation should not be read into the claims."). Importantly, Tef Labs' proposed single fluorophore limitation ignores a later portion of the specification, which reads, in relevant part: "A conjugated substance may be conjugated to more than one fluorophore, which may be the same or different" ¹⁰ patent, 16:28-29. Although it may be true that in the context of a specific claim, "conjugated substance" or the term " S_c " are attached to modifiers mandating that the substance be bonded to a single fluorophore, the Court is not willing to add such a limitation into the construction of the term itself.

ii. Whether "Conjugated Substance" Encompasses Any Organic and Inorganic Material

Molecular's proposed construction covers "any organic or inorganic material." In response, Tef Labs argues that use of the term in the claim language of the ¹⁰ patent suggests that the inventor intended to exclude certain materials from being considered "conjugated substances." Claims 46 and 67 list $-L-S_c$ as one species in a lengthy list of organic and inorganic groups for the R^{10} position of the claimed compound. ¹⁰ patent, 87 :5-14; 89 :56-67. Because $-L-S_c$ is listed among a number of alternative groups, Tef Labs contends that $-L-S_c$ must not include each of those alternative groups. Def.'s Brf., 24:15-16. By extension, "conjugated substances," as the term is used in the ¹⁰ patent, cannot encompass all organic or inorganic materials.

The Court is not convinced that the term "conjugated substance" should be limited in the manner suggested by Tef Labs. First, the specification makes clear that the inventor intended that "conjugated substance" be interpreted in its ordinary sense, covering a wide variety of substances that could be attached to the fluorophore portion of the dye. For example, the portion of the specification describing dye conjugates reads, in part: "Any organic or inorganic substance that contains an appropriate functional group with suitable cross-reactivity may be conjugated with a dye of the present invention." ¹⁰ patent, 16 :25-27. FN1 Further, the portions of the claim language relied upon by Tef Labs simply list, in the alternative, substances that can be joined to the fluorophore. " $-L-S_c$ ", which is employed to symbolize a covalent linkage to a conjugated substance in that context, is included in the list. The claim language relied upon by Tef Labs does not indicate that the term "conjugated substance," which is only one part of the symbol " $-L-S_c$ ", may not, under any circumstances, include the other items on the list.

At oral argument, Tef Labs raised for the first time the fact that the patentee amended the claim language during the prosecution history such that R^{10} is not allowed to be H or CN. Thackray Decl., Tab 14 at 20. Molecular acknowledges that it gave up claim coverage for H and CN as substituents to the R^{10} site. This fact alone, though, does not mandate any alteration of the Court's construction of the term conjugated substance. Among other things, Tef Labs overlooks the fact that S_c , when used to represent a conjugated

substance located at R¹⁰, also includes a requirement for a covalent bond or a chain of atoms connected by covalent bonds attaching the conjugated substance at the R¹⁰ position. There is no such specific linkage requirement for the substituents listed before-L-S_c in the claim language. Tef Labs' argument would be better taken were the Court being asked to construe the symbol "R¹⁰".

iii. Whether "Conjugated Substance" Refers Only to a Substance that is Covalently Linked by Conjugation Reaction

The parties dispute whether the term "conjugated substance" should be limited to a substance that is covalently linked by a "conjugation reaction." Tef Labs argues that a "conjugated substance" may only be "bonded as described in the '931 specification and not as the result of a carbon-carbon bond coupling reaction or a condensation reaction." Def.'s Brf., 24:26-28. Molecular, on the other hand, maintains that the term should not be limited based upon the type of reaction used to create the bond with the fluorophore.

Tef Labs describes three separate types of chemical reactions that may be used for attaching chemical substances: conjugation, condensation, and carbon-carbon bond coupling. According to Tef Labs, the specification consistently uses the term "conjugated substance" to mean a substance that has been covalently linked to a single fluorophore by means of a conjugation reaction. Tef Labs maintains that there is no indication that the patentee intended to include condensation or coupling reactions among those that could be used to bond the conjugated substance to the fluorinated fluorophore. Tef Labs notes that 21 examples in the specification describe conjugation reactions between the substance to be conjugated and the dye, whereas the examples do not describe carbon-carbon bond coupling or condensation reactions when referring to conjugated substances. Following this line of reasoning, Tef Labs argues that the word "conjugated" specifically refers to the way in which the substance is attached to the reactive dye, namely through a conjugation reaction.

The specification does describe a fluorophore being "covalently conjugated to a substance," and explains that "any organic or inorganic substance that contains an appropriate functional group with suitable cross-reactivity may be conjugated with a dye of the present invention." '1 patent, 16 :18-20; 16 :25-27. Tef Labs also points to a portion of the specification explaining that:

Conjugates of most low molecular weight drugs, peptides, toxins, nucleotides, phospholipids and other organic molecules are prepared by organic synthesis methods using the reactive dyes of the invention, by means well recognized in the art (Haugland, *Molecular Probes Handbook*, supra, Sets 1-7 (1992)).

'1 patent, 20 :6-11. Tef Labs claims that an analysis of the reactive dyes described in the '1 patent and the relevant reactions in the *Molecular Probes Handbook* reveals that the patentees use the term "covalently conjugated" to refer to a conjugation reaction prepared by mixing a reactive dye in a suitable solvent with the substance to be conjugated. Def.'s Brf., 26:23-26. This reaction, according to Tef Labs, is distinct from the carbon-carbon coupling used to create Fluo-4, FN2 which requires, among other things, that the reaction take place at extremely low temperatures. FN3

Tef Labs' proposed construction runs into at least two problems. First, in limiting the claimed compound by excluding compounds produced by a carbon-carbon bond coupling reaction or a condensation reaction, Tef Labs improperly seeks to read in extraneous limitations regarding the manner in which the compound is synthesized. This might be appropriate were the '1 patent drafted in a "product-by-process" format, defining the claimed product in terms of the process by which it is made. "A 'product-by-process' claim is

one in which the product is defined at least in part in terms of the method or process by which it is made." 3 Donald S. Chisum, *Chisum on Patents*, s. 8.05 (2000). However, the '1 patent is not drafted in a "product-by-process" format. The patent claims specific compounds—not a process for obtaining those compounds. The product is defined in terms of its structural characteristics. Two of the asserted independent claims begin with the preamble "A compound having the formula: ..." '1 patent, 86 :9; 88 :57. Likewise, independent Claim 103 begins with the preamble "One or more dye compounds of the formula...." Id. at 96:45. The claim language then goes on to describe particular structural characteristics of the compound, rather than the manner in which those compounds are synthesized. *Compare* Scripps Clinic & Research Foundation v. Genentech, Inc., 927 F.2d 1565 (Fed.Cir.1991) (product-by-process claim includes preamble reading: "An improved method for preparing Factor VIII pro-coagulant activity protein comprising the steps of...."). Tef Labs' proposed construction is an effort to limit the method for bonding the conjugated substance to the fluorophore to one particular process, ignoring the fact that the patent covers the claimed structure, however it is synthesized.

Second, aside from citing to examples included in the specification, Tef Labs does not direct the Court to any language in the intrinsic record limiting "conjugated substances" to substances that have been attached to the dye through a "conjugation reaction." None of the 21 examples cited by Tef Labs include any wording indicating that what is being described is a "conjugation reaction." Moreover, Tef Labs has not established that what it terms "conjugation reactions" exclude reactions including carbon-carbon coupling or even that the term "conjugated," as it is used in the claim language, specifically delineates a particular subset of reactions. In short, the Court is not convinced that a "conjugated substance" is necessarily bonded to a fluorophore through a conjugation reaction.

iv. Invalidity Concerns

Tef Labs further argues that "conjugated substance" must be construed to exclude substances attached in carbon-carbon coupling or condensation reactions so as to preserve the validity of the '1 patent. According to Tef Labs, the '673 patent, which was issued prior to the '1 patent, describes conjugated substances attached to dye precursors by carbon-carbon bond coupling and condensation reactions. FN4 Tef Labs therefore argues that, were the Court to include those two reactions among the methods for attaching the binding groups to the dye precursors, the '931 patent would be rendered invalid.

These invalidity arguments would be better raised at summary judgment. *See* Rhine v. Casio, Inc., 183 F.3d 1342, 1345 (Fed.Cir.1999) ("if the only claim construction that is consistent with the claim's language and the written description renders the claim invalid, then the axiom [that claims should be construed to sustain their validity] does not apply and the claim is simply invalid."). The Court must interpret the claims of the '1 patent as they would be interpreted by one of ordinary skill in the art. Precedent from the Federal Circuit does not require the Court to read out processes or structures Tef Labs contends are covered by the '673 patent. *See* Quantum Corp. v. Rodime, Plc, 65 F.3d 1577, 1584 (Fed.Cir.1995), *cert. denied*, 517 U.S. 1167, 116 S.Ct. 1567, 134 L.Ed.2d 666 (1996) (courts may not redraft claims in order to sustain their validity). None of the cases cited by Tef Labs stand for the proposition that the Court must engage in a detailed invalidity analysis at claim construction, construing the claim terms around the purported scope of other patents. FN5

It may be appropriate to evaluate claim terms in light of prior art in order to sustain the validity of a patent where the terms of a claim are susceptible to two reasonable interpretations. *See* Modine Mfg. Co. v. U.S. Int'l Trade Comm'n, 75 F.3d 1545, 1556 (Fed.Cir.1996), *cert. denied sub nom.* Showa Aluminum Corp. v.

Modine Mfg. Co., 518 U.S. 1005, 116 S.Ct. 2523, 135 L.Ed.2d 1048 (1996) ("When claims are amenable to more than one construction, they should when reasonably possible be interpreted so as to preserve their validity."). However, as set forth above, the term "conjugated substance" is not ambiguous. The Federal Circuit has held that where this is the case, the axiom of interpreting claims to sustain their validity does not apply. *See* *Elekta Instrument S.A. v. O.U.R. Scientific Int'l, Inc.*, 214 F.3d 1302, 1309 (Fed.Cir.2000) ("having concluded that the amended claim is susceptible to only one reasonable construction, we cannot construe the claim differently from its plain meaning in order to preserve its validity"); *Process Control Corp. v. Hydrex Corp.*, 190 F.3d 1350, 1356-57 (Fed.Cir.1999) (refusing to adopt a construction that would avoid invalidity where there was only one reasonable interpretation of the claim term). This Court will not construe "conjugated substance" in the manner proposed by Tef Labs because doing so would conflict with the explicit language of the claim and the written description.

Accordingly, the Court construes "conjugated substance" as follows:

"Conjugated substance" means any organic or inorganic material that contains an appropriate functional group with suitable cross-reactivity that is linked by a chemical bond to a second substance.

B. Ion-Complexing Moiety

The term "ion-complexing moiety" is used in Claim 54 as follows: "A compound, as claimed in claim 49, wherein S_C is an ... ion-complexing moiety." '1 patent, 88 :21-23. Of the asserted claims, Claim 104 also describes S_C as an ion-complexing moiety. *Id.* at 98:46-47. Finally, Claim 106 describes a compound wherein "the conjugated substance is an ion-complexing moiety that is a BAPTA." *Id.* at 98:51-54.

According to Molecular, an ion-complexing moiety is "part of a larger chemical substance (e.g., a molecule) that joins with or attaches to an atom or group of atoms having a positive or negative electrical charge." Pl.'s Brf., 11: 8-10. Evidently, Tef Labs agrees that Molecular's proposed construction is an accurate general definition of the term. However, Tef Labs argues that the term is only defined in functional language and the claim language fails to recite sufficiently definite structure to perform the "ion-complexing" function, meaning that the term must be limited to the specific examples in the patent specification pursuant to 35 U.S.C. s. 112 para. 6. Def.'s Brf., 35:2-6. Tef Labs further argues that the term is functional because those of skill in the art would understand "ion-complexing moiety" as defining a function of a chemical moiety rather than its structure. Def.'s Brf., 34:8-9. FN6 Accordingly, Tef Labs proposes a detailed definition drawn from a portion of the specification.

Claims may be specified in a "means-plus-function" format "as a means or step for performing a specified function without the recital of structure, material, or acts in support thereof...." 35 U.S.C. s. 112, para. 6 (1999). Means-plus-function claims "shall be construed to cover the corresponding structure, material, or acts described in the specification and equivalents thereof." *Id.* Therefore, "[t]he applicant must describe in the patent specification some structure which performs the specified function." *Valmont Indus., Inc. v. Reinke Manuf. Co., Inc.*, 983 F.2d 1039, 1042 (Fed.Cir.1993). This structure must be clearly linked or associated with the function that the claim recites by either the specification or the prosecution history. *See* *B. Braun Medical, Inc. v. Abbott Labs.*, 124 F.3d 1419, 1424 (Fed.Cir.1997). If a patentee uses the word "means" in a claim, a presumption arises that section 112, paragraph 6 has been invoked. *See* *Sage Products, Inc. v. Devon Indus., Inc.*, 126 F.3d 1420, 1427-1428 (Fed.Cir.1997). Conversely, a rebuttable presumption that section 112, paragraph 6 does not apply arises where the word "means" is not included. That presumption can be rebutted if the claim phrase is functional, does not have a "reasonably well understood

meaning in the art," and does not recite sufficient structure for performing the function. *Watts v. XL Systems, Inc.*, 232 F.3d 877, 880-81 (Fed.Cir.2000).

Here, Tef Labs must overcome the presumption against application of s. 112 para. 6 because the word "means" is not used in the disputed claim language. *See CCS Fitness, Inc. v. Brunswick Corp.*, 288 F.3d 1359, 1369 (Fed.Cir.2002). Tef Labs devotes little attention to overcoming this presumption in its brief, concluding, with little argument, that "ion-complexing moiety" describes a function and that the term does not describe any structure. Def.'s Brf., 34:5-16. In fact, it is not at all clear that, as required to invoke s. 112 para. 6, the disputed term invokes purely functional terms. The Court is satisfied that "ion-complexing moiety" is not a functional term and that one of ordinary skill in the art would understand that the term itself, at it is used in the claim language, sets forth the requisite structure. All of the words in the disputed term have meanings that would be easily understood by one of ordinary skill in the art. *See CCS Fitness*, 288 F.3d at 1369 (referring to dictionary definitions of disputed term in determining that artisan of ordinary skill would understand term to have an ordinary meaning and connote a particular structure). Taken together, "ion-complexing moiety" describes a structure, namely part of a larger chemical substance that joins with or attaches to an atom or group of atoms having a positive or negative electrical charge. For that reason, application of s. 112 para. 6 would be inappropriate.

Moreover, the specification does not limit "ion-complexing moieties" to the compounds listed in the portion relied upon by Tef Labs. The specification refers to the listed ion-complexing moieties as "preferred." "1 patent, 18 :67. Nowhere is there any indication of an intent to limit the term to the substances listed in the portion of the specification relied upon by Tef Labs. Reading in a limitation under these circumstances would be inappropriate. *See Sjolund*, 847 F.2d at 1581. FN7

Accordingly, the Court adopts the following construction of the term "ion-complexing moiety":

An "ion-complexing moiety" is part of a larger chemical substance (e.g., a molecule) that joins with or attaches to an atom or group of atoms having a positive or negative electrical charge.

C. BLOCK

The term "BLOCK" is used first in Claim 67, which reads, in relevant part: "A is OR ⁷ ... where each R ⁷ is independently a BLOCK" "1 patent, 89 :33-35. Molecular contends that BLOCK refers to a removable portion of a molecule, the presence of which alters the behavior of the molecule. Pl.'s Brf., 12:19-21. Tef Labs, on the other hand, proposes a construction drawn directly from the language of Claim 67, which reads, in relevant part: "each BLOCK moiety is independently a monovalent moiety derived by removal of a hydroxy group from phosphate or from sulfate, or a biologically compatible salt thereof ..." and goes on to describe a number of alternative moieties. ' 931 patent, 90 :57-67.

Tef Labs' proposed construction ignores the fact that neither the claim language nor the specification limits the general term "BLOCK," as it is used in the "1 patent, to the moieties listed in Claim 67. For example, in Claim 84 the term is used differently: "where BLOCK is an amino acid, a peptide or a protected peptide...." *Id.* at 91:47-49. Moreover, Claim 67 specifically describes a BLOCK that is a photolabile caging group. *Id.* at 91:2. Tef Labs' proposed construction does not include these possibilities, though they are included directly in the claim language. Tef Labs' proposed construction is also found in a portion of the specification which begins with the introductory phrase: "Typically, BLOCK is" "1 patent, 21 :49. Tef Labs' construction substitutes this "[t]ypically" introduction with " 'BLOCK' means...." Use of the word

"typically" indicates that the inventor was describing preferred embodiments of the invention rather than setting forth an exclusive list of the types of BLOCKS that may be used in implementing the invention. The problem with Tef Labs' approach is further evidenced by the fact that other embodiments of the invention found later in the specification, in which the BLOCK is described in a different manner, are not incorporated into Tef Labs' proposed construction. *See, e.g.*, '1 patent, 21 :66-67; 24 :44-62. At column 24, for example, the specification describes a BLOCK moiety that is a photolabile caging group in which fluorescence is restored by photolytic illumination rather than enzymes. *Id.*

Accordingly, the Court construes the word "BLOCK" as follows:

"BLOCK" refers to a removable portion of a molecule, the presence of which alters the behavior of a molecule.

D. Reactive Site

The term "reactive site" appears in Claim 67 and its dependent claims. The relevant portions of Claim 67 read: "A is OR⁷ or NR⁸R⁹, where each R⁷ is independently a BLOCK, or R⁷ is-L-R_x, or R⁷ is-L-S_c;... R_x is a reactive site." '1 patent, 89 :33-35; 90 :54. Molecular proposes the following construction of the term: "'Reactive site' refers to a location on a molecule at which bonds can be formed or broken during a chemical transformation or change." Pl.'s Brf., 14:2-3. Tef Labs contends that the term should be construed as: "Reactive sites are sites on the surface of cells, in cell membranes or in intracellular compartments such as organelles, or in the cell's cytoplasm." Def.'s Brf., 40:21-23. In its responsive brief, Tef Labs argue that the specification describes "reactive sites" as sites that: "occur at the surface of cells, in cell membranes or in intracellular compartments such as organelles, or in the cell's cytoplasm." Def.'s Brf., 41:6-8. However, Tef Labs conspicuously neglects to note that the cited sentence reads: "Fluorinated reactive dye compounds are selected to label reactive sites such as occur at the surface of cells, in cell membranes or in intracellular compartment such as organelles, or in the cell's cytoplasm" '1 patent, 26 :63-65. Use of the word "such as" indicates that the cited portion of the specification is not an exclusive list of possible reactive sites. Tef Labs fails to point to any additional intrinsic evidence suggesting that their proposed construction should be adopted by the Court. Moreover, as the term is used in the intrinsic record, it is clear that the patentee did not intend to limit its meaning to a site on the targeted cell.

The Court therefore adopts the construction proposed by Molecular:

"Reactive site" refers to a location on a molecule at which bonds can be formed or broken during a chemical transformation or change.

E. BAPTA

The term BAPTA is first included in Claim 105. That claim reads: "A compound, as claimed in claim 104, wherein the ion-complexing moiety is a BAPTA or APTRA or a phenanthroline." '1 patent, 98 :48-50.

Both parties' constructions reflect the fact that "BAPTA" is an acronym for 1,2-bis-(2-aminophenoxyethane)-N,N,N',N'-tetraacetic acid. Under Tef Labs' construction, "BAPTA" would be limited to this meaning. Tef Labs argues that ion-complexing moieties do not include "BAPTA-like molecules, including 5-methyl-1,2-bis-(2-aminophenoxyethane)-N,N,N',N'-tetraacetic acid (5-methyl-BAPTA), or the ester derivatives of 5-methyl-BAPTA." Under Molecular's proposed construction, "BAPTA" includes

derivatives of BAPTA, as described in U.S. Patent No. 5,453,517 to Kuhn et al. (1995). Molecular further argues that the construction should not include Tef Labs' proposed carve-out for "BAPTA-like" molecules.

Tef Labs' proposed construction requires the Court to accept its contention that there is a widely recognized distinction between "BAPTA," "BAPTA derivatives," and "BAPTA-like molecules," and that the terms are not used interchangeably. This the Court will not do. Tef Labs argues that prior art discloses three categories of relevant compounds: BAPTA, BAPTA derivatives, and BAPTA-like molecules, each of which is mutually exclusive. According to Tef Labs, the "1 patent, when it uses the term "BAPTA," is only referring to BAPTA (and potentially BAPTA derivatives), but not BAPTA-like molecules. Tef Labs argues that BAPTA derivatives are chemical compounds that are derived, or produced, from BAPTA. Def.'s Brf., 6:5. Tef Labs draws a further distinction between BAPTA derivatives and "BAPTA-like" molecules which, they argue, are structurally similar to BAPTA, but do not result from a chemical reaction in which BAPTA is the parent substance. Id. at 6:10-15.

Tef Labs contends that U.S. Patent No. 5,453,517 ("the '517 patent"), which is incorporated by reference in the "1 patent, describes each of the three categories of compounds separately. Def.'s Brf., 37:7-8. However, a review of that patent reveals that BAPTA derivative and "BAPTA-like" are used interchangeably in the abstract. Tef Labs also cites an article written by the inventors of the "1 patent in which they note that "Fluo-3 and related dyes possess a BAPTA-like Ca^{2+} -chelator component." K.R. Gee, et al., *Chemical and Physiological Characterization of fluo-44 Ca^{2+} -indicator dyes*, 27 Cell Calcium 97 at 98 (2000). A single mention of the word "BAPTA-like" in a publication written by the inventor several years after the "1 patent was drafted does not establish that there is a recognized distinction between "BAPTA-like" molecules and BAPTA derivatives.

Nowhere in the intrinsic record of the "1 patent is there any distinction drawn between BAPTA derivatives and "BAPTA-like" molecules. The specification of the "1 patent describes an embodiment in which ion-complexing moieties are derivatives of BAPTA. "1 patent, 19 :3-4. It is clear, then, that when "a BAPTA" is described in Claim 105, it is intended to refer to both 1,2-bis-(2-aminophenoxyethane)-N,N,N',N'-tetraacetic acid and to derivatives of BAPTA. Further, the "1 patent does not include any limitations with respect to molecules that are obtained using other synthetic schemes which do not use BAPTA as the starting material. The patentee used the word "derivative" in its broadest sense, encompassing "a chemical substance that is so related structurally to another substance as to be theoretically derivable from it even when not so obtainable in practice." Webster's Third New International Dictionary 608 (1986). For example, although the "1 patent is titled "Fluorinated Xanthene Derivatives," nowhere does the patent describe the creation of a fluorinated xanthene using xanthene as a starting material.

The language of Dr. Minta's '673 patent also contradicts Tef Labs' position that the three terms are distinct. Dr. Minta himself has used the terms interchangeably in the past. In the '673 patent, the inventor defines "BAPTA-like" to mean "substituted *derivatives* or BAPTA which retain the essential characteristics of BAPTA" '673 patent, 4:66-5:5 (emphasis added). Moreover, there is no support in the '673 patent for Tef Labs' argument that 5-methyl BAPTA can only be considered a "BAPTA-like molecule." Although Dr. Minta has referred to 5-methyl BAPTA as exclusively a "BAPTA-like" substance, in the '673 patent 5-methyl BAPTA is referred to as either a "BAPTA" or a "BAPTA derivative." '673 patent, 13:31; 13:56-57.

A review of the prosecution history of the "1 patent provides further support for Molecular's proposed construction. Initially, the patent examiner rejected claims including the terms "BAPTA" and "APTRA" as vague and indefinite because it was not clear what the two acronyms described. In response, the inventors

argued that the specification defined what is meant by BAPTA or APTRA when it explained that "BAPTA chelators are 'derivatives of 1,2-bis-(2-aminophenoxyethane-N,N,N',N'-tetraacetic acid....' " The response further explained that "[a] review of the teachings of the prior art reveals that "BAPTA" and "APTRA" are the terms of choice when describing compounds related to 1,2-bis-(2-aminophenoxyethane-N,N,N',N'-tetraacetic acid and 2-carboxymethoxy-aniline-N,N-diacetic acid, respectively." Thackray Decl., Ex. 34. The PTO thereafter allowed the patent to issue. The fact that the inventor relied on a definition of BAPTA that included "derivatives of" and "compounds related to" 1,2-bis-(2-aminophenoxyethane)-N,N,N',N'-tetraacetic acid, indicates that the acronym should not be limited to solely that compound.

Accordingly, the Court adopts the following construction of "BAPTA":

"BAPTA" is an acronym for the ion-complexing molecule 1,2-bis-(2-aminophenoxyethane)-N,N,N',N'-tetraacetic acid, or a derivative therefrom (described in Patent No. 5,453,517 to Kuhn et al. (1995)).

F. -L

-L is a symbol found throughout the claim language of the "1 patent. A relevant portion of Claim 46 reads: "or one or more of R², R³, R⁴ and R⁵ is-L-S_c." "1 patent, 86:44-45. Molecular asserts that -L is adequately described in each independent claim, so should be given the definition found in the claim language. Pl.'s Brf., 16:6-8. In the alternative, Molecular proposes the following construction: "-L is either a covalent bond or a chain of atoms connected by covalent bonds." Id. at 16:13-14. Tef Labs argues that -L should be construed to mean: "'-L' is a covalent linkage attaching a conjugated substance to a single fluorinated fluorophore, where a single fluorinated fluorophore has become covalently conjugated to the conjugated substance." Def.'s Brf., 42:7-9.

Tef Labs' proposed construction limiting -L to a covalent linkage attaching a conjugated substance to a *single* fluorinated fluorophore ignores language in the specification indicating that "[a] conjugated substance may be conjugated to more than one fluorophore." Id. at 16:27-29. For these reasons, as well as the analysis set forth with respect to the term "conjugated substance," *supra*, the Court construes "-L" as follows:

"-L" is used to refer to either a covalent bond or a chain of atoms connected by covalent bonds

CONCLUSION

For the reasons discussed, the terms are hereby construed as stated above.

IT IS SO ORDERED.

FN1. To clarify that the organic or inorganic substance must contain an appropriate functional group, the Court will add the above language to Molecular's proposed construction.

FN2. Both plaintiff and defendant sell a product identified as "Fluo-4."

FN3. In its brief, Molecular distinguished the reaction used to bond the binding portion to the dye precursor portion that is described in the '673 patent from the synthesis described in the "1 patent, explaining that the

'673 patent teaches synthesizing Fluo-3, a chlorinated xanthene fluorescent dye, at an extremely low temperature. Pl.'s Brf., 4:10-16.

FN4. Molecular actively disputes the scope attributed to the '673 patent by Tef Labs.

FN5. The Court here expresses no opinion regarding the validity of the '1 patent.

FN6. Tef Labs also argues here that "ion-complexing moiety" can not include BAPTA-like molecules because the inventors intentionally excluded BAPTA-like molecules as possible ioncomplexing moieties. The Court more fully addresses, and rejects, this argument in its discussion of the disputed term "BAPTA," *infra*.

FN7. Further, Tef Labs' proposed construction curiously omits language referring to derivatives of BAPTA that is included in the same passage relied upon for its proposed construction. '1 patent, 19:3-7.

N.D.Cal.,2002.

Molecular Probes, Inc. v. Texas Fluorescence Laboratories, Inc.

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