United States District Court,
D. Delaware.

POLYMASC PHARMACEUTICALS, PLC,
Plaintiff.
v.
ALZA CORPORATION,
Defendant.

Civil Action No. 01-228-JJF

Dec. 2, 2002.

Thomas C. Grimm, Morris, Nichols, Arsht & Tunnell, Wilmington, DE, for Plaintiff.

Steven J. Balick, Ashby & Geddes, Wilmington, DE, for Defendant.

MEMORANDUM ORDER

JOSEPH J. FARNAN, JR.**, District Judge.**

Plaintiff, PolyMASC Pharmaceuticals ("PolyMASC") filed this action against Defendant, Alza Corporation alleging infringement of United States Patent No. 6,132,763 (the "'763 Patent"). The issue currently before the Court is the claim construction of two terms in the '763 Patent. The parties briefed their respective positions, and the Court held a *Markman* hearing on November 26, 2002. This Memorandum Order provides the Court's interpretation of the claim terms disputed by the parties.

BACKGROUND

The technology pertinent to the '763 Patent relates to drug delivery systems that are used in administering drugs to humans. (D.I. 195 at 5). The drug delivery system at issue is called a liposomal drug delivery system in which liposomes are used to deliver the drugs to patients. Id.; Affidavit of Alexander Klibanov (D.I. 138, Tab 16 at para. 3)). The '763 Patent relates to modifying liposomes by attaching a coating of polyethylene glycol ("PEG") to the liposome. (D.I. 195 at 7; Affidavit of Alexander Klibanov (D.I. 138, Tab 16 at para. 7)). The '763 Patent describes this coating technique as one in which a form of PEG is attached directly to the outside of the liposome. This process is sometimes referred to as "pegylating." Affidavit of Alexander Klibanov (D.I. 138, Tab 16 at para. 8). Alza's technique for pegylating a liposome involves a PEG molecule called CDI-MPEG, in which a second chemical moiety is attached to the end of the PEG moiety. Alza than attaches the PEG molecule to the lipids. *See* Affidavit of Alexander Klibanov (D.I. 138, Tab 16 at para. 8).

DISCUSSION

I. The Legal Principals Of Claim Construction

Claim construction is a question of law. Markman v. Westview Instruments, Inc., 52 F.3d 967, 977-78 (Fed.Cir.1995), *aff'd,* 517 U.S. 370, 388-90, 116 S.Ct. 1384, 134 L.Ed.2d 577 (1996). When construing the claims of a patent, a court considers the literal language of the claim, the patent specification and the prosecution history. Markman, 52 F.3d at 979. A court may consider extrinsic evidence, including expert and inventor testimony, dictionaries, and learned treatises, in order to assist it in construing the true meaning of the language used in the patent. Id. at 979-80 (citations omitted). A court should interpret the language in a claim by applying the ordinary and accustomed meaning of the words in the claim. Envirotech Corp. v. Al George, Inc., 730 F.2d 753, 759 (Fed.Cir.1984). However, if the patent inventor clearly supplies a different meaning, the claim should be interpreted accordingly. Markman, 52 F.3d at 980 (noting that patentee is free to be his own lexicographer, but emphasizing that any special definitions given to words must be clearly set forth in patent). If possible, claims should be construed to uphold validity. In re Yamamoto, 740 F.2d 1569, 1571 & n. * (Fed.Cir.1984) (citations omitted).

II. Construction of Disputed Terms

1) "on the external surface"

In the papers submitted, PolyMASC contends that "on the external surface" means "on the external surface", but not limited to only the external surface. (D.I. 185 at 4). Alza contends that "on the external surface" means "on the external surface and not on the internal surface." (Alza Corporation's Presentation for *Markman* Hearing, November 26, 2002; D.I. 195 at 4).

The term "on the external surface" appears in claim 1 of the '763 Patent. In construing this term the Court has considered the claim language, the prosecution history and extrinsic evidence. Based on this review, the Court adopts Alza's proffered interpretation of "on the external surface."

Claim 1 of the '763 Patent states: "Liposomes having PEG moieties covalently bound to phospholipids on the external surface, wherein said liposomes are selected from large unilamellar vesicles (LUV's), small unilamellar vesicles (SUV's) and multilamellar vesicles (MLV's)." (D.I. 138, Tab 1, '763 Patent col. 10 lines 14-18). In May 1992 PolyMASC amended claim 1 of the '763 Patent to read "Liposomes having *non-biodegradably* covalently bound PEG moieties bound *at least* on the external surface *in amounts sufficient to extend the serum stable lifetime of the PEG-bound liposome in comparison to a liposome not having covalently bound PEG moieties*." (D.I. 138 Tab 2, May 4, 1992 Amendment at ALZA-020513). In response to the amendment, the Examiner asked PolyMASC "[w]hat was intended by the term ' *at least* '?" (June 15, 1994 Office Action at ALZA-020518 (emphasis in the original)). PolyMASC responded to the Examiner's question and stated that the term " *at least* on the external surface" is intended to express the requirement that PEG moieties must be present on the external surface and that the presence elsewhere is immaterial." (October 15, 1992 Amendment at ALZA-020522) (emphasis in original).

After considering PolyMASC's response, the Examiner rejected the claim under 35 U.S.C s. 112, first paragraph, as nonenabling to certain claims. (May 10, 1993 Office Action at ALZA-020545). In his rejection the Examiner stated that the term " 'at least on the external surface' in claim 1 would include PEG covalently bound to the internal surface of the liposome. Applicants have not provided enough guidance for one of ordinary skill in the art to prepare such liposomes. The examiner suggests the deletion of at least." FN1 (D.I. 138, Tab 2, May 10, 1993 Office Action at ALZA-020545). In response to this rejection, PolyMASC agreed to delete the term "at least", stating:

Applicant disagrees that the claims are limited in any of the manners expressed by the Examiner. Nevertheless applicant has amended claim 1 to delete 'at least' in keeping with the Examiner's suggestion.

(D.I. 138, Tab 2, May 10, 1993 Office Action at A1ZA-0205450).

The Court concludes that the Examiner's rejection based on lack of enablement was an undue breadth rejection (i.e. claim 1 of the '763 Patent did not disclose PEG covalently bound to the internal surface as within its scope). Additionally, Petitioner's deletion of the words "at least", although reluctant, supports the conclusion that claim 1 does not cover PEG covalently bound to the internal surface.

Extrinsic evidence also supports Alza's proffered interpretation of this term. Dr. Gillian Francis, POLYMASC's CEO, in a letter dated May 30, 1991, discussing the possible collaboration between Alza and PolyMASC stated "[u]nlike you we have not synthesized PEG-lipids and incorporated them into liposomes.... This gives rise to two significant differences from your technology: 1) We couple PEG only on the outside 2) Coupling is carried out in aqueous solution." (D.I. 139, Tab 7 at PLY 032153). In the Court's view, this statement demonstrates that PolyMASC's CEO understood that PolyMASC's technology was limited to covalent bonding on the external surface only. Accordingly, the Court construes the term "on the external surface" as used in claim 1 of the '763 Patent to mean "on the external surface and not on the internal surface."

2) "covalently bound"

PolyMASC contends that "covalently bound" means "bound by covalent bonds." (D.I. 185 at 18). PolyMASC also contends that this plain meaning of "covalently bound" does not restrict the claim to direct, indirect, biodegradable, or non-biodegradable covalent bonding. Id. Alza contends that "covalently bound" as used in claim 1 of the ' 763 Patent means "PEG moieties being directly linked to phospholipids in that an atom in the PEG moiety shares electrons with an atom in the phospholipid." (Alza Corporation's Presentation for *Markman* Hearing, November 26, 2002).

The term "covalently bound" appears in claim 1 of the '763 Patent. In construing this term the Court has reviewed the patent claims and the prosecution history of the of '763 Patent. Based on this review, the Court adopts Alza's proffered interpretation of the term "covalently bound."

The Court finds that the prosecution history of the '763 Patent clearly indicates that PolyMASC disclaimed their proffered interpretation of this term. Specifically, PolyMASC, in addressing the prior art of the "Sears Patent" argued that:

Additionally, the linkage between the lipid and the poleythylene oxide polymer [PEG] moiety described in Sears, a biodegradable amide bond, is quite different from the link between the PEG moiety and the liposome of the present invention which is a nonbiodegradable direct linkage.

(D.I. 138, tab 3, May 9, 1996 Amendment at ALZA 020667). Although PolyMASC now contends that this statement was a mistake on the part of the prosecuting attorney who was relying on previous proposed claim language, the Court finds this argument unpersuasive. Accordingly, the Court construes the term "covalently bound" as "PEG moieties being directly linked to phospholipids in that an atom in the PEG moiety shares electrons with an atom in the phospholipid."

FN1. The Court recognizes that the Examiner in this case, in rejecting the claims, cited to two relevant sections in the Manual of Patent Examining Procedure ("MPEP"). Specifically s. 706.03(z), entitled Undue Breadth, states that:
in applications directed to inventions in arts where the results are unpredictable, the disclosure of a single species usually does not provide an adequate basis to support generic claims, (citations omitted). This is because in arts such as chemistry it is not obvious from the disclosure of one species, what other species will work.

MPEP, Fifth Edition s. 706.03(z) (1983). Additionally s. 706.03(n) states that "[i]n chemical cases, a claim may be so broad as to not be supported by disclosure, in which case it is rejected as unwarranted by the disclosure." MPEP, Fifth Edition s. 706.03(n) (1983).
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