IN THE UNITED STATES DISTRICT COURT
FOR THE DISTRICT OF DELAWARE

BAYER HEALTHCARE LLC,

Plaintiff,

v.

BAXALTA INC., BAXALTA US INC., and NEKTAR THERAPEUTICS,

Defendants.

No. 16-cv-1122-RGA

MEMORANDUM OPINION

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ANDREWS, U.S. DISTRICT JUDGE:

Presently before the Court are Defendants' motion for summary judgment (D.I. 246) and Plaintiff's motion for partial summary judgment (D.I. 237). I have reviewed the parties' briefing. (D.I. 238, 247, 265, 268, 276, 281).

I. BACKGROUND

Plaintiff asserts claims 1–9 of U.S. Patent No. 9,364,520 ("the '520 patent"). (D.I. 1; D.I. 268 at 2). The '520 patent is directed to forms of factor VIII, "a protein necessary for normal blood clotting in response to injury." (D.I. 99 at 1). The patent claims factor VIII conjugates not found in nature, made up of recombinant factor VIII and one or more biocompatible polymers chemically bonded to factor VIII at the protein region known as the "B-domain." (*Id.* at 1, 3). The claimed factor VIII conjugates are formed through a process called pegylation, which is the conjugation of recombinant factor VIII with polyethylene glycol ("PEG"), a biocompatible polymer. (*Id.* at 5). The '520 patent has two independent claims (1 and 9):

> 1. An isolated polypeptide conjugate comprising a functional factor VIII polypeptide and one or more biocompatible polymers, wherein the functional factor VIII polypeptide comprises the amino acid sequence of SEQ ID NO: 4 or an allelic variant thereof and has a B-domain, and further wherein the biocompatible polymer comprises polyalkylene oxide and is covalently attached to the functional factor VIII polypeptide at the B-domain.
>
> 9. A pharmaceutical composition comprising (1) a therapeutically effective amount of a monopegylated polypeptide conjugate, wherein the monopegylated polypeptide conjugate comprises a functional factor VIII polypeptide and one polyethylene glycol polymer, the functional factor VIII polypeptide comprises the amino acid sequence of SEQ ID NO: 4 or an allelic variant thereof and has a B-domain, and the polyethylene glycol is covalently attached to the functional factor VIII polypeptide at the B-domain; and (2) a pharmaceutically acceptable adjuvant.

Claims 2–8 depend from claim 1.

The accused product is Adynovate, a pegylated factor VIII used to treat hemophilia A. (D.I. 28 ¶ 25; D.I. 247 at 1). Hemophilia A is a congenital bleeding disorder caused by deficient or defective factor VIII. ('520 patent at 1:25–32). The FDA approved the Adynovate Biologics License Application ("BLA") on November 13, 2015. (D.I. 28 ¶ 25).

Defendants move for summary judgment on all asserted claims for noninfringement, and invalidity as not enabled. (D.I. 246). Plaintiff moves for summary judgment on Defendants' invalidity defenses of anticipation, obviousness, and lack of utility. (D.I. 237).

II. LEGAL STANDARD

A. Infringement

A patent is infringed when a person "without authority makes, uses, offers to sell, or sells any patented invention, within the United States . . . during the term of the patent . . . ." 35 U.S.C. § 271(a). A two-step analysis is employed in making an infringement determination. *See Markman v. Westview Instruments, Inc.*, 52 F.3d 967, 976 (Fed. Cir. 1995) (en banc), *aff'd*, 517 U.S. 370 (1996). First, the court must construe the asserted claims to ascertain their meaning and scope. *See id.* The trier of fact must then compare the properly construed claims with the accused infringing product. *See id.* at 976. This second step is a question of fact. *See Bai v. L & L Wings, Inc.*, 160 F.3d 1350, 1353 (Fed. Cir. 1998).

"Literal infringement of a claim exists when every limitation recited in the claim is found in the accused device." *Kahn v. Gen. Motors Corp.*, 135 F.3d 1472, 1477 (Fed. Cir. 1998). "If any claim limitation is absent from the accused device, there is no literal infringement as a matter of law." *Bayer AG v. Elan Pharm. Research Corp.*, 212 F.3d 1241, 1247 (Fed. Cir. 2000). If an accused product does not infringe an independent claim, it also does not infringe any claim depending thereon. *See Wahpeton Canvas Co. v. Frontier, Inc.*, 870 F.2d 1546, 1553 (Fed. Cir.

1989). However, "[o]ne may infringe an independent claim and not infringe a claim dependent on that claim." *Monsanto Co. v. Syngenta Seeds, Inc.*, 503 F.3d 1352, 1359 (Fed. Cir. 2007) (internal quotations omitted). A product that does not literally infringe a patent claim may still infringe under the doctrine of equivalents if the differences between an individual limitation of the claimed invention and an element of the accused product are insubstantial. *See Warner–Jenkinson Co. v. Hilton Davis Chem. Co.*, 520 U.S. 17, 24 (1997). The patent owner has the burden of proving infringement and must meet its burden by a preponderance of the evidence. *See SmithKline Diagnostics, Inc. v. Helena Lab. Corp.*, 859 F.2d 878, 889 (Fed. Cir. 1988) (citations omitted).

When an accused infringer moves for summary judgment of non-infringement, such relief may be granted only if at least one limitation of the claim in question does not read on an element of the accused product, either literally or under the doctrine of equivalents. *See Chimie v. PPG Indus., Inc.*, 402 F.3d 1371, 1376 (Fed. Cir. 2005); *see also TechSearch, L.L.C. v. Intel Corp.*, 286 F.3d 1360, 1369 (Fed. Cir. 2002) ("Summary judgment of noninfringement is . . . appropriate where the patent owner's proof is deficient in meeting an essential part of the legal standard for infringement, because such failure will render all other facts immaterial."). Thus, summary judgment of noninfringement can only be granted if, after viewing the facts in the light most favorable to the non-movant, there is no genuine issue as to whether the accused product is covered by the claims (as construed by the court). *See Pitney Bowes, Inc. v. Hewlett-Packard Co.*, 182 F.3d 1298, 1304 (Fed. Cir. 1999).

B. Invalidity

1. Anticipation

A patent claim is invalid as anticipated under 35 U.S.C. § 102 if "within the four corners of a single, prior art document . . . every element of the claimed invention [is described], either expressly or inherently, such that a person of ordinary skill in the art could practice the invention without undue experimentation." *Callaway Golf Co. v. Acushnet Co.*, 576 F.3d 1331, 1346 (Fed. Cir. 2009). As with infringement, the court construes the claims and compares them against the prior art. *See Enzo Biochem, Inc. v. Applera Corp.*, 599 F.3d 1325, 1332 (Fed. Cir. 2010). Anticipation "may be decided on summary judgment if the record reveals no genuine dispute of material fact." *Encyclopaedia Britannica, Inc. v. Alpine Elecs. of Am., Inc.*, 609 F.3d 1345, 1349 (Fed. Cir. 2010).

2. Obviousness

A patent claim is invalid as obvious under 35 U.S.C. § 103 "if the differences between the claimed invention and the prior art are such that the claimed invention as a whole would have been obvious before the effective filing date of the claimed invention to a person having ordinary skill in the art to which the claimed invention pertains." 35 U.S.C. § 103; *see also KSR Int'l Co. v. Teleflex Inc.*, 550 U.S. 398, 406–07 (2007). "Under § 103, the scope and content of the prior art are to be determined; differences between the prior art and the claims at issue are to be ascertained; and the level of ordinary skill in the pertinent art resolved. Against this background, the obviousness or nonobviousness of the subject matter is determined." *KSR*, 550 U.S. at 406 (citation and quotation marks omitted).

A court is required to consider secondary considerations, or objective indicia of nonobviousness, before reaching an obviousness determination, as a "check against hindsight bias." *See In re Cyclobenzaprine Hydrochloride Extended-Release Capsule Patent Litig.*, 676 F.3d 1063, 1078–79 (Fed. Cir. 2012). "Such secondary considerations as commercial success,

long felt but unsolved needs, failure of others, etc., might be utilized to give light to the circumstances surrounding the origin of the subject matter sought to be patented." *Graham v. John Deere Co. of Kansas City*, 383 U.S. 1, 17–18 (1966). Where "the content of the prior art, the scope of the patent claim, and the level of ordinary skill in the art are not in material dispute, and the obviousness of the claim is apparent in light of these factors, summary judgment is appropriate." *KSR*, 550 U.S. at 427.

3. Enablement

The enablement requirement, considered a separate and distinct requirement contained in paragraph one of 35 U.S.C. § 112, assesses whether "one skilled in the art, after reading the specification, could practice the claimed invention without undue experimentation." *Sitrick v. Dreamworks, LLC*, 516 F.3d 993, 999 (Fed. Cir. 2008). Because the enablement inquiry takes into account what is known to one skilled in the art, the Federal Circuit has "repeatedly explained that a patent applicant does not need to include in the specification that which is already known to and available to one of ordinary skill in the art." *Koito Mfg. Co. v. Turn-Key-Tech, LLC*, 381 F.3d 1142, 1156 (Fed. Cir. 2004). "Enablement is a legal question based on underlying factual determinations." *Vasudevan Software, Inc. v. MicroStrategy, Inc.*, 782 F.3d 671, 684 (Fed. Cir. 2015). Factors considered in assessing the enablement requirement include:

> (1) the quantity of experimentation necessary, (2) the amount of direction or guidance presented, (3) the presence or absence of working examples, (4) the nature of the invention, (5) the state of the prior art, (6) the relative skill of those in the art, (7) the predictability or unpredictability of the art, and (8) the breadth of the claims.

In re Wands, 858 F.2d 731, 737 (Fed. Cir. 1988).

III. DEFENDANTS' MOTION FOR SUMMARY JUDGMENT

Defendants move for summary judgment on all asserted claims for noninfringement, and invalidity as not enabled. (D.I. 247).

A. Noninfringement

1. Claims 1–8

Defendants argue that no genuine issue of infringement exists for claim 1, and its dependent claims 2–8, because Adynovate is made by random conjugation and thus fails to meet the limitation of "an isolated polypeptide conjugate." I have construed "an isolated polypeptide conjugate" as "a polypeptide conjugate where conjugation was not random." (D.I. 195 at 4).

First, Defendants argue that Plaintiff disclaimed Adynovate in the prosecution history. Defendants point to Plaintiff's response to a Patent Office rejection of claim 1 as anticipated by Bossard (U.S. App. Pub. No. 2004/0235734, granted as U.S. Patent No. 7,199,223):

> Bossard's purification does not teach Appellant's isolated conjugates. Claim [1] recites isolated conjugates having B-domain conjugation. Thus, the conjugate is separate from conjugates that do not have a polyalkylene oxide attached at the B-domain. Much of the Patent Officer's prior arguments relied upon possible conjugation at amines or carboxy sites, which are present not only in the B-domain but in other domains. Any conjugation with these reactive groups is random and does not ensure that attachment occurs at the B-domain.

(D.I. 247 at 5, 8–9; D.I. 248, ex. 4 at BAYER0001716). Defendants focus on the phrase "[a]ny conjugation with these reactive groups is random," wherein "these reactive groups" are "amines or carboxy sites." The phrase allegedly shows that Plaintiff "unconditionally defined 'random' in the context of the '520 patent to be 'any' conjugation with amines." (D.I. 247 at 8).[1] It is undisputed that Adynovate has conjugations with amines. (D.I. 248, ex. 5 at 38:12–15).

[1] Defendants also argue, "The '520 patent defines conjugation with amines is [sic] random: '[r]andom modification of FVIII by targeting primary amines (N-terminus and lysines) with large polymers . . . has been attempted . . . .'" (D.I. 247 at 8 (quoting '520 patent at 3:50–52)). The quoted language, when read in full, clearly describes "random modification" that existed in the prior art. '520 patent at 3:50–61. The specification does not state, as Defendants suggest, that any modification targeting amines is a "random modification." *See id.*

Therefore, Defendants argue that Adynovate relies on random conjugation and cannot meet my construction of "an isolated polypeptide conjugate." (*Id.*).

I rejected Defendants' arguments during claim construction. Addressing the same passage from the prosecution history, I stated:

> Defendants argue that Plaintiff's statements constitute clear and unmistakable disclaimer of conjugation at amines and carboxy sites. I disagree. Plaintiff stated that conjugation at amines and carboxy sites cannot ensure PEGylation at the B-domain—not that conjugation cannot occur at amines and carboxy sites.

(D.I. 195 at 16). Defendants take the phrase, "[a]ny conjugation with [amines] is random," out of context. When the entire passage is read together, it is clear that "[a]ny conjugation" refers to the conjugations allegedly *disclosed by Bossard*. In other words, Bossard may have taught conjugations at various sites on factor VIII, such as amines or carboxy sites, but Plaintiff argued that the conjugations were not targeted to particular sites. Therefore, Plaintiff described "[a]ny conjugation" in Bossard as random. It does not follow, however, that Plaintiff defined all conjugations with amines or carboxy sites as random. Defendants have failed to provide any evidence to the contrary. The fact that Adynovate may have conjugations with amines does not necessarily mean that Adynovate is the product of random conjugation.

Second, Defendants argue that Adynovate is made by random conjugation as defined by Plaintiff's expert, Dr. Ploegh. (D.I. 247 at 10–11). Dr. Ploegh stated, "Random PEGylation allows for PEG attachment without regard to location. That is, the PEG reagent may attach at any available site of reaction throughout the protein." (D.I. 248, ex. 2 ¶ 37). Dr. Ploegh also agreed that the Adynovate manufacturing process, as described in one study, allowed PEG to attach at any of the 55 identified available sites throughout factor VIII, some of which are

outside the B-domain.[2] (*Id.*, ex. 5 at 70:3–19). Defendants thus argue that there is no genuine dispute as to whether Adynovate is made by random conjugation.

I do not think the fact that some pegylation occurs outside the B-domain is sufficient to show that Adynovate is made by random conjugation. I determined during claim construction that non-random conjugation does not require total homogeneity. Defendants argued that Plaintiff disclaimed all heterogenous conjugation by adding the term "an isolated polypeptide conjugate." I disagreed because although the prosecution history "disparage[s] products with a high degree of heterogeneity," it "do[es] not expressly distinguish all prior art products with even the slightest degree of heterogeneity." (D.I. 195 at 6 & n.1). I believe the same analysis applies regardless of whether the heterogeneity is among factor VIII conjugates in a product, or within each individual factor VIII conjugate. (*See* '520 patent at 8:21–30).

Dr. Ploegh opines extensively on the controlled nature of the Adynovate manufacturing process, such that pegylation is concentrated in the B-domain. (D.I. 248, ex. 2 ¶¶ 51–93). Plaintiff further identifies "thousands of pages" of the Adynovate BLA that allegedly show its "controlled" and "targeted" process that results in full-length factor VIII "predominantly" and "preferentially" pegylated at the B-domain. (D.I. 268 at 5–8, 15). Thus, I believe there is a genuine dispute of fact as to whether Adynovate is manufactured by non-random conjugation.

Third, Defendants argue that Adynovate is randomly conjugated because it does not separate conjugates that are pegylated at the B-domain from those that are pegylated elsewhere. Defendants argue that this separation is required by the term "isolated" in "an isolated

[2] Plaintiff points out that Dr. Ploegh also testified that 40 of the 55 sites are inside the B-domain. (D.I. 268 at 17).

polypeptide conjugate." (D.I. 247 at 12–13). Defendants again rely on Plaintiff's response to the Patent Office rejection of claim 1 as anticipated by Bossard:

> [T]he purification discussed in [Bossard] would not separate conjugates with B-domain attachment from those without B-domain attachment. Instead, [Bossard] discusses separating conjugates based on the number of PEG molecules attached, not the positions where they are attached. . . . Accordingly, the Patent Office has not shown where Bossard teaches isolation of conjugates having B-domain polyalkylene attachment from conjugates that do not.

(D.I. 248, ex. 4 at BAYER0001716).

Defendants are rearguing claim construction. I have construed "an isolated polypeptide conjugate" as "a polypeptide conjugate where conjugation was not random." "[I]solated" is not a separate limitation. If Adynovate practices "a polypeptide conjugate where conjugation was not random," it will necessarily practice an "isolated" polypeptide conjugate.[3]

For the foregoing reasons, Defendants' motion for summary judgment of noninfringement of claims 1–8 is **DENIED**.

2. Claim 9

To the extent that Defendants argue noninfringement of claim 9 for the same reasons as claims 1–8, their motion is **DENIED**. (D.I. 247 at 13).

Defendants' remaining arguments relate to the "monopegylated" limitation in claim 9—unlike claim 1, claim 9 requires a "*monopegylated* polypeptide conjugate." I construed "monopegylated polypeptide conjugate" as its plain and ordinary meaning, "a polypeptide with one polyethylene glycol polymer (PEG) attached." (D.I. 195 at 16). Defendants argue that Plaintiff has not offered any evidence to show that Adynovate contains monpegylated

[3] As a matter of claim construction, I do not believe Plaintiff's response to the Patent Office shows that claim 1 specifically requires separating B-domain conjugates from other conjugates. Rather, I think Plaintiff merely argued that Bossard does not teach any targeted pegylation, either by initially targeting the B-domain, or by later separating out B-domain pegylated conjugates.

conjugates, let alone that the monopegylated conjugates are (i) present in a "therapeutically effective amount," (ii) have one PEG attached, (iii) at the B-domain of a factor VIII polypeptide, which (iv) has the entire B-domain, and (v) retains functional activity. (D.I. 247 at 13–14). Essentially, Defendants argue that Plaintiff fails to address (1) presence in a "therapeutically effective amount," and (2) structure—a factor VIII with one PEG attached at the complete B-domain.

Regarding therapeutic effectiveness,[4] Plaintiff argues that Adynovate meets the claim limitation because "its activity is comparable" to Advate, Baxalta's preceding factor VIII product, which is therapeutically effective. (D.I. 268 at 18).[5] Defendants argue that summary judgment is warranted because Plaintiff relies on insufficient evidence. (D.I. 247 at 14–15). Specifically, Defendants assert that therapeutic effectiveness can only be determined by "quantitative evidence" such as "extensive research to characterize the amount of [monopegylated polypeptide conjugates] in Adynovate® and test[ing] them for their efficacy in treating hemophilia, such as in a clinical trial." (*Id.* at 15). Defendants do not argue, however, that as a matter of law, Plaintiff may not prove infringement by indirect evidence. I do not think Plaintiff is limited to such "quantitative evidence." I believe whether Plaintiff can meet its burden of showing that Adynovate is therapeutically effective through comparison with Advate depends on factual questions. For example, are there material differences between Adynovate and Advate? What is the significance of the testing done on each?

[4] I assume, for purposes for summary judgment, that if the factor VIII conjugate is present in a "therapeutically effective amount," the factor VIII retains functional activity. Neither party provides substantive arguments specific to retaining functional activity. (D.I. 247 at 16; D.I. 268 at 17–19; D.I. 281 at 9).

[5] Adynovate is "built on" Advate, but with modifications to extend its circulating half-life. (D.I. 1, ex. C).

Regarding structure, Plaintiff's experts opine that B-domain monopegylated conjugates are "necessarily present" in Adynovate based on the manufacturing process. (D.I. 268 at 17–18). For example, one expert described the type of branched PEG used to manufacture Adynovate as "umbrella-like," which can block other PEGs from reacting, resulting in monopegylated conjugates. (D.I. 269, ex. M ¶¶ 44–45). The expert further opined that a laboratory analysis of Adynovate shows it contains B-domain monopegylated factor VIII. (*Id.* ¶ 39). Plaintiff's experts also opined that Adynovate uses full length factor VIII, which includes a complete B-domain. (D.I. 268 at 18). Likewise, Defendants' BLA refers to Advate, allegedly an unpegylated form of the same factor VIII used to make Adynovate, as a "full length human rFVIII [factor VIII] with a complete B-domain." (D.I. 268 at 18; D.I. 269, ex. A at BAXADYNO0000542). I do not think Plaintiff's arguments are mere *ipse dixit*. I believe there is a genuine dispute of fact over whether Adynovate meets the structural limitations of claim 9.

For the foregoing reasons, Defendants' motion for summary judgment of noninfringement of claim 9 is **DENIED**.

B. Enablement

Defendants argue that claims 1–9 are invalid as not enabled because the '520 patent fails to teach a person of ordinary skill in the art how to practice the claimed invention using amine-conjugation. (D.I. 247 at 16). Defendants argue that the '520 patent is not only silent as to how to conjugate PEG at amines but teaches away from it. (*Id.* at 17). Defendants again rely on Plaintiff's statement to the Patent Office that "[a]ny conjugation" in Bossard "is random" to argue that all conjugations with amines are random and thus taught against. (*Id.*).[6]

[6] In addition, Defendants again assert that the '520 patent defines conjugation with amines as random based on a clause of a sentence in the specification. (D.I. 247 at 17). The specification, read in context, does not support Defendants' argument. *See supra* note 1.

This is the same argument I rejected during claim construction and discussed in detail with respect to noninfringement. *See supra* III.A.1. Just as the statement does not show that Plaintiff disclaimed conjugation at amines, it also does not show that the '520 patent teaches against conjugation at amines. (*See* D.I. 195 at 15–16). Therefore, I find no evidence that the '520 patent teaches away from amine conjugation generally.

The fact that the specification does not teach how to conduct amine conjugation is by itself insufficient to show lack of enablement. "A patent need not disclose what is well known in the art." *In re Wands*, 858 F.3d at 735. The priority date of the '520 patent is in 2005. (D.I. 268 at 10). "The enablement requirement is satisfied when one skilled in the art, after reading the specification, could practice the claimed invention without undue experimentation." *Sitrick*, 516 F.3d at 999. Plaintiff's experts have opined, based on the '520 patent specification and prior art, that skilled artisans in 2005 "knew how to take advantage of reaction chemistries and protein properties to control and select conditions for localized amine pegylation in order to practice the '520 patent." (D.I. 268 at 19). For example, one expert relied on pre-2005 literature to identify specific properties that affect the "location and rate of reaction between amino-reactive PEG and amino acid residues in Factor VIII," such as "side-chain pK_a, exposed surface area (ESA), polarity and hydrophobicity." (D.I. 269, ex. O ¶¶ 40–44).

Defendants argue that Plaintiff's expert testimony is inappropriate, because "an expert's opinion on the ultimate legal issue must be supported by something more than a conclusory statement." *In re Buchner*, 929 F.2d 660, 661 (Fed. Cir. 1991).[7] Although Plaintiff's experts do

[7] Defendants appear to blend several issues together. (D.I. 281 at 10). The fact that an expert must provide more than a conclusory statement does not affect the general rule that a patent need not disclose information well known in the art. *In re Buchner*, 929 F.2d at 661. If information is *not* well known in the art, "the application itself must contain this information; it is not sufficient to provide it only through an expert's declaration." *Id.*

opine on the ultimate legal issue of enablement, those opinions are based on their specific findings about the state of the art in 2005. (*See, e.g.* D.I. 269, ex. O ¶¶ 40–44). I believe that is sufficient to show a genuine dispute of fact as to whether amine conjugation was well-known in the art at the time, or more generally, whether one skilled in the art could have practiced amine conjugation in the claimed invention without "undue experimentation."

For the foregoing reasons, Defendants' motion for summary judgment of invalidity of claims 1–9 for lack of enablement is **DENIED**.

IV. PLAINTIFF'S MOTION FOR PARTIAL SUMMARY JUDGMENT

Plaintiff moves for summary judgment on three of Defendants' invalidity defenses—(1) § 102 anticipation by Bossard, (2) § 103 obviousness based on Bossard, and (3) lack of § 101 utility.

A. Anticipation

Plaintiff argues that Bossard does not anticipate any of the '520 patent claims for three independent reasons.

First, Plaintiff argues that Bossard's pegylation process was disclaimed during prosecution of the '520 patent, and "[w]here particular subject matter of a prior art reference was disclaimed during prosecution of a patent, that prior art subject matter falls outside the scope of the patent claims, and therefore cannot constitute disclosure of the distinguished claim elements for purposes of showing anticipation." (D.I. 238 at 8). Plaintiff cites to *Ekchian v. Home Depot, Inc.*, which states, "[S]ince, by distinguishing the claimed invention over the prior art, an applicant is indicating what the claims do not cover, he is by implication surrendering such protection." 104 F.3d 1299, 1304 (Fed. Cir. 1997) (discussing prosecution history estoppel). Under Plaintiff's theory, because it disclaimed Bossard's random pegylation process during

prosecution, the claims do not cover random pegylation, and thus, Bossard cannot anticipate the claims.

I do not think *Ekchian* supports Plaintiff's argument—the court merely described the concept of disclaimer. Plaintiff argues, far beyond disclaimer, that because the claims do not cover the *disclaimed* subject matter in the prior art, the prior art does not disclose the *claimed* subject matter. This logic is flawed. I held during claim construction that Plaintiff disclaimed any "polypeptide conjugate where conjugation was random" based on Plaintiff's response to the Patent Office rejection over Bossard. (D.I. 195 at 7). I did not make any rulings on what Bossard did or did not disclose. The relevant question for anticipation is whether Bossard disclosed, in addition to all the other claim limitations, a non-random pegylation process. The fact that Plaintiff characterized Bossard as only disclosing random pegylation during prosecution does not mean that, as a matter of law, Bossard only disclosed random pegylation. Therefore, Plaintiff has failed to show a lack of genuine dispute over whether Bossard discloses non-random pegylation as claimed by the '520 patent.

Second, Plaintiff argues that no reasonable jury could conclude that the Patent Office erred in issuing the '520 patent over Bossard, because Defendants' invalidity expert, Dr. Zalipsky, merely repeats arguments rejected during prosecution. (D.I. 238 at 9–12). Whether Dr. Zalipsky presented new evidence not seen by the Patent Office, although disputed, is not dispositive. The fact, if true, that the Patent Office previously addressed the same arguments related to the same prior art is insufficient to meet Plaintiff's burden on summary judgment. The Federal Circuit recently held:

> [A] reexamination confirming patentability of a patent claim alone is not determinative of whether a genuine issue of fact precludes summary judgment of no invalidity. Surviving a reexamination does not warrant *ipso facto* summary judgment that a patent is not invalid. Holding otherwise would

> improperly give complete deference and preclusive effect to the PTO's patentability determination, foreclosing challenges to patent validity in district court based on the same prior art.

Exmark Mfg. Co. Inc. v. Briggs & Stratton Power Prod. Grp., LLC, 879 F.3d 1332, 1341 (Fed. Cir. 2018). Likewise, granting a patent claim over prior art objections does not by itself warrant summary judgment of no anticipation. Plaintiff has a presumption of validity under 35 U.S.C. § 282. "The presumption of validity, however, is just that—a *presumption*—which can be overcome by the patent challenger who meets its high burden of proving the factual elements of invalidity by clear and convincing evidence." *Id.* Plaintiff has not shown that, given Dr. Zalipsky's testimony, no reasonable jury could find the '520 patent invalid as anticipated by Bossard.

Third, Plaintiff argues that Dr. Zalipsky's anticipation theories are legally flawed because they relied on references beyond the four corners of Bossard. (D.I. 238 at 11–12). In addition to Bossard, Dr. Zalipsky relied on three prior art references and several of Plaintiff's internal documents. (D.I. 266, ex. 4 (ex. B ¶¶ 101–12)).

Anticipation, as compared to obviousness, requires a single prior art reference to disclose every claim limitation. *Callaway Golf*, 576 F.3d at 1346. "[A]nticipation by inherent disclosure is appropriate only when the reference discloses prior art that must necessarily include the unstated limitation." *Monsanto Tech. LLC v. E.I. DuPont de Nemours & Co.*, 878 F.3d 1336, 1343 (Fed. Cir. 2018). "Whether a claim limitation is inherent in a prior art reference is a question of fact." *Telemac Cellular Corp. v. Topp Telecom, Inc.*, 247 F.3d 1316, 1328 (Fed. Cir. 2011). "[R]ecourse to extrinsic evidence is proper to determine whether a feature, while not explicitly discussed, is necessarily present in a reference. The evidence must make clear that the

missing feature is necessarily present, and that it would be so recognized by persons of ordinary skill in the relevant art." *Id.* (citations omitted).

Defendants argue that Dr. Zalipksy relied on the extrinsic documents only to support what is "necessarily present" in Bossard. (D.I. 265 at 9). For anticipation of claim 1, Dr. Zalipsky relied on three prior art references to opine, "A POSA would understand, based on the prior art, that the B-domain is surface-exposed and flexible." (D.I. 266, ex. 4 (ex. B ¶ 103)). He also relied on Plaintiff's internal documents to opine, "A POSA would know that the B-domain of non-mutated, factor VIII contains four cysteines, and that the non-mutated, B-domain deleted form of factor VIII contains nineteen cysteines, 16 of which form disulfides and the remaining three of which are buried and not accessible for PEGylation." (*Id.* ¶ 102). For anticipation of both claims 1 and 9, he relied on Plaintiff's internal documents to opine, "Bossard inherently discloses functionally active conjugates PEGylated at the B-domain." (*Id.* ¶¶ 103–04).

Plaintiff argues that Dr. Zalipsky's analyses reach beyond the bounds of inherent anticipation because he fails to connect the extrinsic documents to Bossard—specifically, by showing that the documents address factor VIII conjugates made using the Bossard processes. (D.I. 238 at 12; D.I. 276 at 4–5). I disagree with Plaintiff's framing of the issue. I do not think what is "necessarily present" in Bossard must be tied to the disclosed conjugation processes. For example, the fact, if true, that "the B-domain is surface-exposed and flexible" or that "the B-domain of non-mutated, factor VIII contains four cysteines," remains true regardless of whether the Bossard processes are used. The focus for inherent anticipation is whether a person of ordinary skill in the art, given Bossard, would agree that those elements are "necessarily present" in the reference. I believe that is a disputed question of fact.

For the foregoing reasons, Plaintiff's motion for summary judgment of no anticipation by Bossard is **DENIED**.

B. Obviousness

Plaintiff argues that Dr. Zalipksy's obviousness opinions based on Bossard fail as a matter of law because they do not account for every claim limitation, namely, "*functional* factor VIII." (D.I. 238 at 13).

Defendants identify several instances where Dr. Zalipsky opined that Bossard discloses functionally active factor VIII. (D.I. 265 at 12–13). As discussed above, Dr. Zalipsky opined, "Bossard inherently discloses functionally active conjugates PEGylated at the B-domain." (*Id.* ¶¶ 103–04). He also stated:

> Bossard describes the activity for PEGylated conjugates using stable linkages (i.e., amine bonds). The disclosed activity ranges from 2-100% in incremental amounts and explains that the stable conjugate "will possess at least some degree of bioactivity." Bossard also explains how to assay for bioactivity.

(D.I. 266, ex. 4 (ex. C ¶ 76) (citations omitted)). Plaintiff argues that Dr. Zalipsky's testimony should be disregarded as conclusory. Plaintiff further argues that Dr. Zalipsky's citations to Bossard are insufficient because Bossard is not directed to B-domain pegylation, and Dr. Zalipsky fails to explain "what such 'bioactivity' or 'activity' represents, or how this reference to levels as low as 2% supposedly relates to the functional requirements of the '520 patent." (D.I. 276 at 6).

Plaintiff has not met its burden of showing that no reasonable jury could find the '520 patent obvious based on Bossard. Obviousness requires resolving several factual issues, including the scope and content of the prior art. *KSR*, 550 U.S. at 406. I do not think Dr. Zalipsky's opinions are so conclusory that they fail to raise a genuine dispute as to the scope and content of Bossard, specifically, as to whether Bossard discloses "functional factor VIII."

For the foregoing reasons, Plaintiff's motion for summary judgment of no obviousness based on Bossard is **DENIED**.

C. Utility

To meet the § 101 utility requirement, a patentee must show both "substantial" and "specific" utility. *In re Fisher*, 421 F.3d 1365, 1371 (Fed. Cir. 2005). Substantial utility, also referred to as "practical" or "real world" utility, is met when "the claimed invention has a significant and presently available benefit to the public." *Id.* Specific utility is met when "the claimed invention can be used to provide a well-defined and particular benefit to the public." *Id.* That is, "an application must disclose a use which is not so vague as to be meaningless." *Id.*

Defendants argue that the '520 patent lacks substantial utility because it fails to accomplish its disclosed objective of extending the half-life of factor VIII conjugates. (D.I. 265 at 15–20). The '520 patent states that its objectives include "to provide a biocompatible polymer-conjugated functional FVIII polypeptide having improved pharmacokinetic characteristics [*e.g.*, improved half-life] and therapeutic characteristics." '520 patent at 5:7–10. Defendants do not appear to dispute that the claimed invention, a pegylated factor VIII, is a blood coagulant. (*See* D.I. 265 at 14–17). Instead, Defendants assert that the claimed invention must have a utility that offers a benefit beyond what existed in the prior art. (*Id.*). They argue that "unless the [claimed] modification leads to an improvement (e.g., improved half-life, in the context of the '520 patent), there is no benefit to merely retaining the activity that Factor VIII had before modification." (D.I. 265 at 14). Specifically, Defendants argue that under *Fujikawa v. Wattanasin*, 93 F.3d 1559 (Fed. Cir. 1996), Plaintiff cannot claim the benefits associated with factor VIII or pegylated factor VIII, generally, because "[Plaintiff] did not discover Factor VIII,

nor PEGylated Factor VIII, nor that either Factor VIII or PEGylated Factor VIII may cause coagulation." (D.I. 265 at 16).

Defendants misstate the law in several ways.

First, it is well-accepted that "[a] claimed invention need not accomplish all objectives stated in the specification." *Raytheon Co. v. Roper Corp.*, 724 F.2d 951, 958 (Fed. Cir. 1983). The invention need only meet "at least one stated objective." *Id.* It is clear, from the plain language of the specification, that one objective of the claimed invention is to provide "functional" factor VIII polypeptides, such that they "substantially retain their coagulant activity." '520 patent at 5:7–10, 8:15–21. There is no legal basis, for purposes of utility, to specifically require that the claimed invention improve half-life as well.

Second, Defendants blur § 101 utility with § 103 nonobviousness. Unlike nonobviousness, utility is not a comparative standard—it does not require a certain level of usefulness relative to that which exists in the prior art. *See In re Fisher*, 421 F.3d at 1381–82 (Rader, J., dissenting) ("The utility requirement . . . lacks any standard for assessing the state of the prior art and the contributions of the claimed advance. The proper tool for assessing sufficient contribution to the useful arts is the obviousness requirement of 35 U.S.C. § 103."). A patentee need only show substantial and specific utility. *Id.* at 1371. There is no requirement that the "benefit to the public" be different or greater than that of prior inventions.

Third, Defendants misread *Fujikawa*. The court in *Fujikawa* held, "[A] patent may not be granted to an invention unless substantial or practical utility for the invention has been *discovered* and disclosed." 93 F.3d at 1563 (emphasis added). The relevant question is not whether Plaintiff discovered a substantial utility for pegylated factor VIII generally, but whether Plaintiff discovered a substantial utility for the claimed invention, a specific type of pegylated

factor VIII. Defendants assume that to do so, Plaintiff may not rely on the known utility of pegylated factor VIII as shown by the prior art. (D.I. 265 at 16). I do not think *Fujikawa* supports Defendants' argument. In fact, the court implied that a patentee should look to analogous compounds in the prior art to establish substantial utility. *See Fujikawa*, 93 F.3d at 1564 ("It may be difficult to predict, however, whether a novel compound will exhibit pharmacological activity, even when the behavior of analogous compounds is known to those skilled in the art.").

It seems that the court in *Fujikawa* was primarily concerned with ensuring that a claimed pharmaceutical compound is adequately linked to some substantial utility. That substantial utility is met by showing any pharmacological activity. *Fujikawa*, 93 F.3d at 1564. Defendants do not dispute that the claimed invention helps coagulate blood, a pharmacological activity. (*See* D.I. 265 at 14–17). Therefore, I do not think there is any genuine dispute of material fact as to whether the claimed invention meets § 101 utility.[8]

For the foregoing reasons, Plaintiff's motion for summary judgment on utility is **GRANTED**.

V. CONCLUSION

A separate order will be entered.

[8] The parties do not explicitly address specific utility, but to the extent it is disputed, I find specific utility is met. Defendants cannot reasonably argue that the claimed invention does not provide a "well-defined and particular benefit to the public" by helping to coagulate blood and treat hemophilia A.