

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

NOF CORPORATION,
Petitioner,

v.

NEKTAR THERAPEUTICS,
Patent Owner.

IPR2019-01395
Patent 7,872,072 B2

Before ERICA A. FRANKLIN, ZHENYU YANG, and
JON B. TORNQUIST, *Administrative Patent Judges*.

TORNQUIST, *Administrative Patent Judge*.

DECISION

Denying Petitioner's Request on Rehearing of Decision
Denying Institution of *Inter Partes* Review
35 U.S.C. § 42.71(d)

I. INTRODUCTION

NOF Corporation (“Petitioner”) filed a request for rehearing (Paper 23, “Req. Reh’g”) of our decision denying institution of *inter partes* review of claims 1–6 of U.S. Patent No. 7,872,072 B2 (Paper 21, “Decision” or “Dec.”).

The Decision addressed six grounds of unpatentability, with either Bentley (Ex. 1015) or JP-542 (Ex. 1017) as the primary reference. Dec. 5. Petitioner requests rehearing of our decision not to institute review of grounds 1–4 based on Bentley. Petitioner argues in its request for rehearing that the Decision “misapprehends and overlooks the disclosures of the prior art,” the level of ordinary skill in the art, the common knowledge and creativity that would be applied by one of ordinary skill in the art, and improperly resolves material factual disputes against Petitioner. Req. Reh’g 1.

For the reasons discussed below, we deny Petitioner’s request for rehearing.

II. STANDARD FOR REHEARING

Pursuant to 37 C.F.R. § 42.71(d):

A party dissatisfied with a decision may file a single request for rehearing without prior authorization from the Board. The burden of showing a decision should be modified lies with the party challenging the decision. The request must specifically identify all matters the party believes the Board misapprehended or overlooked, and the place where each matter was previously addressed in a motion, an opposition, or a reply.

When reconsidering a decision on institution, we review the decision for an abuse of discretion. 37 C.F.R. § 42.71(c). An abuse of discretion exists where a “decision [i]s based on an erroneous conclusion of law or clearly

erroneous factual findings, or . . . a clear error of judgment.” *PPG Indus. Inc. v. Celanese Polymer Specialties Co.*, 840 F.2d 1565, 1567 (Fed. Cir. 1988).

III. ANALYSIS

A. Bentley

Bentley discloses activated PEG molecules having an aldehyde hydrate moiety. Ex. 1015, Abstract. In the Decision, we found Bentley instructs that the disclosed activated PEG molecules may be useful for conjugation to “biomaterials and biologically active materials,” that PEG aldehyde hydrate can be used for attachment of the PEG molecules directly to either “surfaces” or “molecules” that have an amine moiety, and that not all PEG derivatives “may be useful for biological and biotechnical applications.” Dec. 11–12 (citing Ex. 1015, 3:3–5, 6:38–39, 7:44–46). Thus, we determined that Bentley does not expressly teach or suggest conjugating all of its disclosed PEG molecules directly to a biologically active molecule using the aldehyde hydrate moiety. *Id.* at 12.

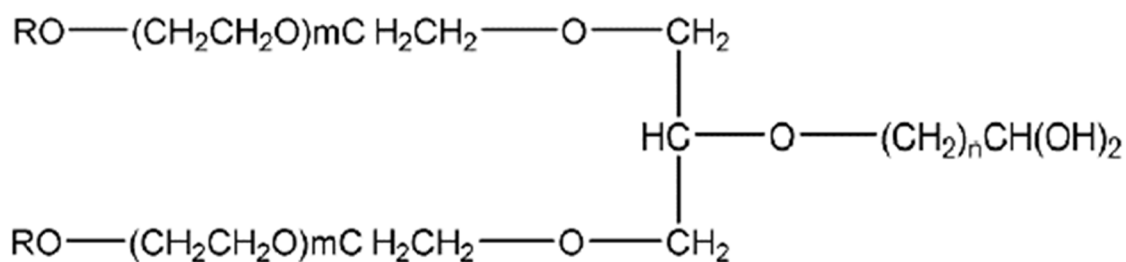
Petitioner contends the Board overlooked the fact that Bentley expressly teaches and suggests that “***all activated PEGs***” may be conjugated to a biologically active molecule. Req. Reh’g 3 (citing Pet. 30–32, 39; Ex. 1083 ¶¶ 300–312), 4 (“Bentley’s statements of his *invention* apply to **ALL** Bentley activated PEG polymers.”). We disagree.

As we discussed in the Decision, the “invention” of Bentley is “a method for conjugating PEG and related polymers with substances including biomaterials and biologically active materials.” Dec. 11 (citing Ex. 1015, 3:3–5). The polymers contemplated in Bentley include PEG as well as a broad “variety of other polymer forms.” Ex. 1015, 3:49–62. The materials

that can be conjugated to such activated polymers include “any material having a reactive amine group accessible to the activated polymer.” *Id.* at 6:15–18; Dec. 8. Thus, according to Bentley, the aldehyde hydrate moiety can be used to conjugate nearly any polymer to nearly any amine-containing substance. Ex. 1015, 3:49–62, 6:15–18.

As we discussed in the Decision, Bentley does not assert that all of these conjugates would be useful for all possible purposes. Dec. 11–12. Nor does it describe how to determine which conjugates will be useful for any particular desired application. At most, Bentley discloses a tool that can be used to conjugate a broad variety of polymers to nearly any amine-containing substance or surface. Petitioner does not persuasively explain why a disclosure that a particular tool may be used to conjugate polymers to amine-containing materials is a teaching or suggestion to conjugate any particular PEG polymer to any particular type of amine-containing substance.

As noted by Petitioner, Bentley discloses a specific form of activated PEG polymer, the structure of which is reproduced below:



The figure above is Petitioner’s depiction of the chemical structure identified at column 7, lines 16–20 of Bentley. Pet. 30–31 (citing Ex. 1015, 7:12–20). Bentley does not provide any properties for this polymer or expressly explain how this molecule is to be used. Bentley does explain, however, that

this is a “star molecule” and that such molecules are generally described in Merrill (U.S. Patent No. 5,171,264). Ex. 1015, 7:2–20. Merrill discloses one use for such “star molecules,” which is the formation of hydrogels for use in affinity columns. Ex. 2020, Abstract (“This invention pertains to a method for immobilizing polyethylene oxide (PEO) star molecules in the form of hydrogels.”).

The Petition does not address Bentley’s incorporation of Merrill or persuasively explain why one of ordinary skill in the art would have believed that the disclosed activated PEG polymer would be useful when conjugated to a biologically active molecule, as opposed to a support surface of an affinity column. Pet. 31–32, 38. Petitioner relies instead on Bentley’s broad disclosure that an aldehyde hydrate moiety *could* be used to conjugated nearly any PEG to nearly any amine-containing substance, including biologically active molecules. *Id.* But, identifying a disclosure that something could be done is not sufficient to demonstrate a reason to do so in a particular instance or manner.

In view of the foregoing, Petitioner has not established that we overlooked Bentley’s teachings or that we erred in concluding that Petitioner had not sufficiently demonstrated that Bentley teaches or suggests that all of its disclosed polymers should be conjugated to biologically active molecules, as asserted by Petitioner. Req. Reh’g 3.

B. Dr. Yamamoto’s Testimony

Dr. Yamamoto testifies that “[w]hile Bentley does not explicitly describe the branched active aldehyde hydrate and aldehyde polymers conjugated to a biologically active molecule, one skilled in the art would obviously understand that conjugation with a biologically active molecule is

exactly for what Bentley disclosed the branched polymers.” Ex. 1083 ¶ 301. Petitioner contends it was error for the Board to ignore or dismiss this testimony over attorney argument from Patent Owner. Req. Reh’g 12–13.

We need not credit expert testimony that does not adequately address the disclosures of a reference as a whole or adequately provide the justification for certain conclusions. *See TQ Delta, LLC v. Cisco Sys., Inc.*, 942 F.3d 1352, 1359–60 (Fed. Cir. 2019); *Ashland Oil, Inc. v. Delta Resins & Refractories*, 776 F.2d 281, 294–95 (Fed. Cir. 1985). As discussed above, Petitioner and Dr. Yamamoto did not adequately explain why Bentley’s disclosure of being able to conjugate nearly any polymer to nearly any amine-containing material is a teaching or suggestion that nearly any polymer, or the specific polymer identified at column 7, lines 14–20, would be useful when conjugated to any amine-containing substance identified in Bentley, including biologically active molecules.

Moreover, Bentley generally discloses that activated PEG polymers can be conjugated to molecules or *surfaces* and specifically incorporates by reference Merrill, which discloses conjugating “star” molecules to the support *surface* of an affinity column. Ex. 1015, 6:12–13; Ex. 2020, 2:5–8. Dr. Yamamoto does not address these disclosures or explain adequately why one of ordinary skill in the art would have sought to conjugate the specific activated PEG molecule disclosed in Bentley (Ex. 1015, 7:14–20) to a biologically active molecule, as opposed to the support surface of an affinity column. Ex. 2020, 2:5–8. Indeed, Dr. Yamamoto does not persuasively identify any actual properties of the specific activated PEG molecule of Bentley relied upon in the Petition.

Accordingly, Petitioner has not established that we failed to properly consider Dr. Yamamoto's testimony.

C. Grounds 2–4

Petitioner contends the Board overlooked the additional teachings in Grounds 2–4, which address combinations of Bentley with either MDD (Ex. 1029), Harris (Ex. 1016), or PSTT (Ex. 1030). Req. Reh'g 14–15. According to Petitioner, "Ground 3 confirms that a POSA would have conjugated the cited Bentley polymers to biologically active molecules in view of the combined teachings." *Id.* at 14. This argument was not made in the Petition. Instead, for Ground 3 the Petition asserts that "[i]t would have been obvious to select methoxy capped PEG chains and the claimed MW for the Bentley polymers in further view of Harris." Pet. 44. We could not have overlooked an argument that was not made in the Petition.

D. Level of Ordinary Skill in the Art

The level of ordinary skill in the art asserted by Petitioner is high. Dec. 5 (adopting Petitioner's definition of a person of ordinary skill in the art as having a Ph.D. and "3–5 years of experience in the field of synthesis of active PEG polymers for PEGylation of biological molecules"); Req. Reh'g 14. Petitioner contends we overlooked this high level of ordinary skill in the art when we declined to institute review in this case. Req. Reh'g 13–14.

A high level of skill in the art tends to favor an obviousness conclusion. *See Innovention Toys, LLC v. MGA Entm't, Inc.*, 637 F.3d 1314, 1323 (Fed. Cir. 2011) ("A less sophisticated level of skill generally favors a determination of nonobviousness, and thus the patentee, while a higher level of skill favors the reverse."). Even when the level of skill is high, to meet its

burden for institution, Petitioner must still adequately explain why the art and such high skill would have led to the claimed invention. As noted above, we do not find that Petitioner and Dr. Yamamoto did so. Thus, Petitioner has not established that we overlooked its argument as to this issue.

E. Conclusion

We have considered Petitioner's request for rehearing, but determine that Petitioner has not established that we misapprehended or overlooked any matter in declining to institute an *inter partes* review.

IV. ORDER

It is

ORDERED that Petitioner's Requests for Rehearing in IPR2019-01395 is *denied*.

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PETITIONER:

Thomas Donovan
Mark Hagedorn
Vincent Liptak
BARNES & THORNBURG LLP
Thomas.donovan@btlaw.com
mhagedorn@btlaw.com
Vincent.liptak@btlaw.com

PATENT OWNER:

Edgar H. Haug
Brian P. Murphy
Angus Chen
Andrew S. Wasson
Erika V. Selli
Kaitlin M. Abrams
Andrew Roper
HAUG PARTNERS LLP
ehaug@haugpartners.com
bmurphy@haugpartners.com
achen@haugpartners.com
awasson@haugpartners.com
eselli@haugpartners.com
kabrams@haugpartners.com
aroper@haugpartners.com