

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

BUTAMAX ADVANCED BIOFUELS LLC,
Petitioner,

v.

GEVO, INC.,
Patent Owner.

Case IPR2014-00581
Patent 8,273,565 B2

Before RAMA G. ELLURU, CHRISTOPHER L. CRUMBLEY, and
KERRY BEGLEY, *Administrative Patent Judges*.

CRUMBLEY, *Administrative Patent Judge*.

DECISION

Denying Institution of *Inter Partes* Review
and Dismissing Motion for Joinder
35 U.S.C. §§ 315(c), 325(d); 37 C.F.R. §§ 42.122, 42.108

I. INTRODUCTION

Butamax Advanced Biofuels LLC filed a Petition seeking *inter partes* review of claims 5 and 10 of U.S. Patent No. 8,273,565 B2 (Ex. 1001, “the ’565 patent”). Paper 1, “Pet.” Along with its Petition, Butamax filed a Motion for Joinder, requesting joinder with Case IPR2013-00539, an *inter partes* review trial currently pending before the Board. Paper 4, “Joinder Mot.” Gevo, Inc., the owner of the ’565 patent, did not file a preliminary response or an opposition to the Motion for Joinder.

Upon consideration of the Petition, Motion for Joinder, and the specific facts of this case, we exercise our discretion to deny review under 35 U.S.C. § 325(d). Because we determine that the Petition does not warrant institution, we may not grant, and thus dismiss as moot, the Motion for Joinder under 35 U.S.C. § 315(c).

A. *The ’565 Patent*

1. *Background*

The ’565 patent, titled “Methods of Increasing Dihydroxy Acid Dehydratase Activity to Improve Production of Fuels, Chemicals, and Amino Acids,” is directed to recombinant yeast microorganisms with increased activity of dihydroxy acid dehydratase (“DHAD”). Ex. 1001, Abstract, 1:29–2:25. DHAD is an enzyme that catalyzes steps in various biosynthetic pathways that produce metabolites, such as isobutanol, a common fuel additive. *Id.* at Abstract, 1:46–66, Fig. 1. Increased DHAD activity is favorable for production of these metabolites. *Id.* at 1:65–2:20, 24:31–33. In addition, the ’565 patent is directed to methods of producing

such metabolites by cultivating the recombinant microorganisms in a culture medium containing a feedstock providing a carbon source. *Id.* at Abstract, 8:55–63.

The specification of the '565 patent discloses various embodiments, including recombinant microorganisms with increased DHAD activity resulting from alterations in the regulation, expression, and activity of proteins monothiol glutaredoxin-3 (“GRX3”), monothiol glutaredoxin-4 (“GRX4”), or both GRX3 and GRX4. *Id.* at 24:36–45; *see id.* at 24:1–30. The specification also discloses recombinant microorganisms with improved DHAD activity resulting from overexpression of one or more nucleotides encoding activator of ferrous transport (“Aft”) proteins, Aft1 and Aft2, or constitutively active Aft proteins. *Id.* at 2:9–25, 4:14–26, 15:49–54. The DHAD in these embodiments may be localized in either the cytosol or the mitochondria of the microorganisms. *Id.* at 3:30–46, 16:33–34, 24:36–45. Further, the recombinant microorganisms may be one of various disclosed yeast genera and species, including *Saccharomyces cerevisiae*. *See id.* at 7:49–8:54.

2. *Challenged Claims*

Both challenged claims depend indirectly from independent claim 1 and read as follows:

5. The recombinant yeast microorganism of claim 4, wherein said ketol-acid reductoisomerase is an NADH-dependent ketol-acid reductoisomerase.
10. The recombinant yeast microorganism of claim 2, wherein said recombinant yeast microorganism is further

engineered to inactivate one or more endogenous glycerol-3-phosphate dehydrogenase (GPD).

Ex. 1001, 91:46–48, 62–65.

3. *Related Proceedings*

Butamax informs us that Gevo asserted the '565 patent in *Gevo, Inc. v. ButamaxTM Advanced Biofuels LLC*, No. 12-1202(SLR) (D. Del.), filed September 25, 2012. The same day, Butamax filed for declaratory judgment of invalidity of the '565 patent in *ButamaxTM Advanced Biofuels LLC v. Gevo, Inc.*, No. 12-1201(SLR) (D. Del.). According to the Petition, on August 9, 2013, the claims by Gevo against Butamax in both actions were voluntarily dismissed without prejudice, and the claims by Butamax against Gevo in both actions were dismissed with prejudice.

The '565 patent is also the subject of an *inter partes* review trial currently pending before the Board, *Butamax Advanced Biofuels LLC v. Gevo, Inc.*, Case IPR2013-00539 (the “539 IPR”). In that proceeding, we instituted review of claims 1–9 and 11–19 on March 4, 2014, and denied review of claim 10. 539 IPR, Paper 9, “539 Dec. on Inst.” Trial is currently ongoing in the 539 IPR, with oral argument scheduled for October 28, 2014. 539 IPR, Paper 24.

B. Prior Art Relied Upon

Butamax relies on the following references:

Anthony	US 2010/0081179 A1	Apr. 1, 2010	Ex. 1005
Dundon	WO 2007/106524 A2	Sept. 20, 2007	Ex. 1028
Flint	WO 2011/103300 A2	Aug. 25, 2011	Ex. 1003

H. Valadi et al., *Improved Ethanol Production by Glycerol-3-phosphate dehydrogenase Mutants of Saccharomyces cerevisiae*, 50 AMB 434–439 (1998) (Ex. 1027)

Sergi Puig et al., *Coordinated Remodeling of Cellular Metabolism During Iron Deficiency Through Targeted mRNA Degradation*, 120 CELL 99–110 (2005) (Ex. 1006)

Luis Ojeda et al., *Role of Glutaredoxin-3 and Glutaredoxin-4 in the Iron Regulation of the Aft1 Transcriptional Activator in Saccharomyces cerevisiae*, 281 J. BIOLOGICAL CHEMISTRY 17661–17669 (2006) (Ex. 1007)

Of these references, Anthony, Flint, Puig, and Ojeda were previously made of record in the 539 IPR.

C. The Asserted Grounds

Butamax presents the following grounds of unpatentability:

Claim Challenged	Basis	References
5	§ 102	Flint
10	§ 103	Flint and Valadi
10	§ 103	Anthony in view of Puig, Ojeda, and Valadi
10	§ 103	Flint and Dundon
10	§ 103	Anthony in view of Puig, Ojeda, and Dundon

II. ANALYSIS

A. Statutory Discretion to Institute and Join

Our statutory authority to institute *inter partes* review derives from 35 U.S.C. § 314(a), which provides that a review may not “be instituted

unless the Director¹ determines that the information presented in the petition . . . shows that there is a reasonable likelihood that the petitioner would prevail with respect to at least 1 of the claims challenged in the petition.” As we have recognized, “Congress did not mandate that an *inter partes* review must be instituted under certain conditions. Rather, by stating that the Director—and by extension, the Board—*may not* institute review *unless* certain conditions are met, Congress made institution discretionary.”

Intelligent Bio-Systems, Inc. v. Illumina Cambridge Ltd., Case IPR2013-00324, slip op. at 4 (PTAB Nov. 21, 2013) (Paper 19). In determining whether to institute an *inter partes* review, the Board may “deny some or all grounds for unpatentability for some or all of the challenged claims.” 37 C.F.R. § 42.108(b); *see* 35 U.S.C. § 314(a).

Our discretion is further guided by 35 U.S.C. § 325(d), which states, in relevant part, that “In determining whether to institute or order a proceeding under this chapter, chapter 30, or chapter 31,² the Director may take into account whether, and reject the petition or request because, the same or substantially the same prior art or arguments previously were presented to the Office.”

The Board, acting on behalf of the Director, also has broad discretion whether to join a party to an *inter partes* review under 35 U.S.C. § 315(c):

¹ “The Board institutes the trial on behalf of the Director.” 37 C.F.R. § 42.4(a).

² Chapter 31 of the Patent Act covers *inter partes* review proceedings. Thus, although § 325(d) appears in Chapter 32, which is directed to post-grant reviews, it is applicable to *inter partes* reviews.

JOINDER.—If the Director institutes an inter partes review, the Director, in his or her discretion, may join as a party to that inter partes review any person who properly files a petition under section 311 that the Director, after receiving a preliminary response under section 313 or the expiration of the time for filing such a response, determines warrants the institution of an inter partes review under section 314.

Thus, joinder in an *inter partes* review may be warranted in certain circumstances, but is not required in any. *See Sony Corp. v. Network-1 Sec. Solutions, Inc.*, Case IPR2013-00386, slip. op. at 3 (PTAB July 29, 2013) (Paper 16) (“[t]he Board will determine whether to grant joinder on a case-by-case basis, taking into account the particular facts of each case, substantive and procedural issues, and other considerations”). The statute does, however, set forth at least one circumstance in which we do *not* have the discretion to join a party: if the Board determines that the second petition does not warrant institution. 35 U.S.C. § 315(c) (“the Director . . . may join as a party . . . any person who properly files a petition . . . that the Director . . . determines warrants the institution of an inter partes review under section 314”).

With these statutory provisions in mind, we turn to the question of whether, in our discretion, Butamax’s Petition in this case warrants *inter partes* review.³ Because the Petition presents substantially the same prior

³ In the present case, the parties have not briefed the issue of whether we have statutory authority to join Butamax’s Petition to its own prior 539 IPR. *Compare Ariosa Diagnostics v. Isis Innovation Ltd.*, Case IPR2012-00022 (PTAB Sept. 2, 2014) (Paper 166), *with Target Corp. v. Destination*

art, and substantially the same arguments, as the Petition in the 539 IPR, we exercise our discretion to deny institution of review under 35 U.S.C. § 325(d).

B. Anticipation of Claim 5 by Flint

In the 539 IPR, we instituted *inter partes* review of claim 5 of the '565 patent on an obviousness ground based on the combined teachings of four references, but declined to institute review of claim 5 on an asserted anticipation ground based on the disclosure of Flint. 539 Dec. on Inst. 18, 24–25. As we noted, Butamax's argument for anticipation by Flint "relie[d] exclusively on a disclosure in U.S. Patent Application Publication No.

Maternity Corp., Case IPR2014-00508 (PTAB Sept. 25, 2014) (Paper 18). As we determine that the Petition does not warrant institution, and consequently we may not grant the Motion for Joinder, we need not reach the issue of whether we would have statutory authority to do so if the Petition warranted institution.

For similar reasons, we need not address whether the one-year bars of 35 U.S.C. § 315(b) and 37 C.F.R. § 42.101(b) apply to Butamax's Petition if we deny joinder. *Compare Sony Corp. v. Network-1 Sec. Solutions, Inc.*, Case IPR2013-00386, slip op. at 5 (PTAB July 29, 2013) (Paper 16) (denying joinder but noting that "[t]he one-year bar, therefore, does not apply to Petitioners because they filed a motion for joinder with their Petition"), and *ZTE Corp. v. ContentGuard Holdings Inc.*, Case IPR2013-00454, slip. op at 5–6 (PTAB Sept. 25, 2013) (Paper 12), with *Microsoft Corp. v. Surfcast, Inc.*, Case IPR2014-00271, slip op. at 7 (PTAB June 13, 2014) (Paper 20) ("absent joinder of this proceeding with [the first IPR], the petition would be barred"), and *Samsung Elec. Co. v. Virginia Innovation Sci., Inc.*, Case IPR2014-00557, slip op. at 15 (PTAB June 13, 2014) (Paper 10).

2010/0197519 A1 (“’519 [published] application”), which Butamax represent[ed] is incorporated by reference into Flint at paragraph 0145 and into the Flint ’333 provisional [i.e., U.S. Provisional Application No. 61/305,333] at paragraph 0118.” *Id.* at 18. We found, however, that the Flint ’333 provisional did not, in fact, incorporate by reference the ’519 published application. *Id.* Therefore, with respect to claim 5, we concluded that “Butamax . . . failed to put forward sufficient evidence to establish that Flint is entitled to priority to the Flint ’333 provisional.” *Id.* As such, we determined that Butamax had not shown sufficiently that “Flint is . . . prior art to the ’565 patent for purposes of claim 5.” *Id.*

In its present Petition, Butamax again asserts that claim 5 of the ’565 patent is anticipated by Flint (Ex. 1003), arguing that Flint is entitled to claim priority to the filing date of the Flint ’333 provisional (Ex. 1004). Pet. 15–23. Rather than again erroneously asserting that the Flint ’333 provisional incorporates by reference the disclosure of the ’519 published application, Butamax now explains that the Flint ’333 provisional incorporates by reference U.S. Ser. No. 12/637,905 (Ex. 1025, “the ’905 application”), which eventually published as the ’519 published application. Significantly, Butamax submits the ’905 application as an exhibit in this proceeding, in contrast to the 539 IPR, in which the ’905 application was never made of record.

With respect to claim 5, Butamax is asserting Flint—the same prior art reference it asserted in the 539 IPR—as part of a ground that is identical to a ground asserted in the 539 IPR. The only difference in the present

proceeding is that Butamax corrects its misstatement of which document is incorporated by reference in the Flint '333 provisional, and includes this document in the record as an exhibit. We, therefore, have discretion under § 325(d) to deny institution of this ground, “because[] the same or substantially the same prior art or arguments previously were presented to the Office.” Our discretion is further informed by the fact that Butamax has already succeeded in petitioning the Board to institute *inter partes* review of claim 5, albeit on grounds other than anticipation by Flint. Furthermore, Butamax’s proposed ground is effectively an attempt to request rehearing of a prior decision instituting trial, outside the time period provided in our Rules for such requests.⁴ *See Microsoft Corp. v. Enfish, LLC*, Case IPR2014-00577, slip op. at 8 (PTAB Sept. 29, 2014) (Paper 12) (denying second petition that is “essentially a rehearing request”). For these reasons, we exercise our discretion under § 325(d) and do not institute *inter partes* review of claim 5 as anticipated by Flint.

⁴ In any event, to the extent that Butamax’s current Petition can be viewed as a rehearing request, we would not grant such a request. We could not have misapprehended or overlooked facts which were not presented to us in the 539 Petition. As Petitioner, it was Butamax’s responsibility to set forth in its Petition all facts supporting its challenges to patentability. 37 C.F.R. § 42.104(b). By its own admission, Butamax failed to correctly identify, and to submit, the documents incorporated by reference in the Flint '333 provisional upon which it wished to rely; it is not the Board’s responsibility to find and review all other documents also incorporated by reference in the '333 provisional to rectify Butamax’s error.

C. Obviousness Challenges to Claim 10

Claim 10 of the '565 patent is the sole challenged claim on which we did not institute *inter partes* review in the 539 IPR, as we denied Butamax's proposed obviousness ground based on Anthony, Puig, Ojeda, and Overkamp.⁵ 539 Dec. on Inst. 27–29. In that case, we found that Petitioner had not shown sufficiently that Overkamp discloses inactivated glycerol-3-phosphate dehydrogenase (“GPD”), or provides a person of ordinary skill in the art reason to delete GPD to increase isobutanol production. *Id.* at 28.

The instant Petition advances four new obviousness grounds challenging claim 10, each of which essentially seeks to replace Overkamp with one of two references that allegedly disclose inactivated GPD: Dundon or Valadi. Pet. 24, 34. In other words, the sole purpose of citing Dundon or Valadi in the instant Petition is to provide the same disclosure Butamax previously contended was provided by Overkamp. *Compare* 539 IPR, Paper 4 (Petition), 52 (“Overkamp recognized that glucose serves as a substrate for competing pathways in *S. cerevisiae* Deleting GPD would delete the pathway for glycerol production from glucose that competes with the pathway for pyruvate production.”), *with* Pet. 24 (“Valadi inactivated GPD in yeast strains in order to characterize their growth performance and fermentation properties with the goal being a reduction of glycerol formation and an improved ethanol production.”), *and* Pet. 34 (“Dundon noted that the

⁵ Karin M. Overkamp et al., *Metabolic Engineering of Glycerol Production in Saccharomyces cerevisiae*, 68 APPLIED & ENVTL. MICROBIOLOGY 2814–2821 (2002) (Ex. 1009).

pathway for glycerol production could be disrupted by the ‘deletion or disruption of at least one native glycerol-3-phosphate dehydrogenase (GPD) gene.’”).

Other than the substitution of Valadi and Dundon for Overkamp, the art cited in the present Petition’s obviousness grounds overlaps completely with that asserted against claim 10 in the 539 Petition. Furthermore, Butamax’s assertions regarding the disclosures of Valadi and Dundon are substantially similar to the disclosure of Overkamp as Butamax characterized it in the 539 IPR; in this sense, the arguments made in both cases are substantially similar. For these reasons, we conclude that the instant Petition advances “the same or substantially the same prior art or arguments [that] previously were presented to the Office” in the 539 IPR, and, therefore, we have discretion under § 325(d) to deny institution of the four obviousness grounds.

Our discretion to deny these grounds is further guided by several additional facts. First, we note that Butamax does not contend that the newly cited references were not known or available to it at the time it filed the 539 IPR. *See Unilever, Inc. v. Procter & Gamble Co.*, Case IPR2014-00506, slip op. at 6 (PTAB July 7, 2014) (Paper 17) (considering, in exercising § 325(d) discretion, whether new references were previously known). More significantly, we observe that the obviousness grounds asserted in the present Petition are expressly intended to “squarely address[] the alleged deficiencies identified by the Board” in our Decision in the 539 IPR. Pet. 2. In other words, the four obviousness grounds are “second bites

at the apple,” which use our prior decision as a roadmap to remedy Butamax’s prior, deficient challenge. Allowing similar, serial challenges to the same patent, by the same petitioner, risks harassment of patent owners and frustration of Congress’s intent in enacting the Leahy-Smith America Invents Act. *See* H.R. Rep. No. 112-98, pt.1, at 48 (2011) (“While this amendment is intended to remove current disincentives to current administrative processes, the changes made by it are not to be used as tools for harassment or a means to prevent market entry through repeated litigation and administrative attacks on the validity of a patent. Doing so would frustrate the purpose of the section as providing quick and cost effective alternatives to litigation.”); *see also ZTE Corp. v. ContentGuard Holdings, Inc.*, Case IPR2013-00454, slip op. at 6 (PTAB Sept. 25, 2013) (Paper 12) (“A decision to institute review on some claims should not act as an entry ticket, and a how-to guide, for the same Petitioner who filed an unsuccessful joinder motion, and is outside of the one-year statutory period, for filing a second petition to challenge those claims which it unsuccessfully challenged in the first petition.”). We, therefore, exercise our discretion under § 325(d) to deny institution of *inter partes* review on the four obviousness challenges to claim 10.

III. CONCLUSION

For the foregoing reasons, we determine that the Petition presents substantially the same art and arguments as the Petition in the 539 IPR, and, taking into account the particular facts of this case, we exercise our discretion to deny institution of review under 35 U.S.C. § 325(d).

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Consequently, we may not grant, and thus dismiss as moot, Butamax's Motion for Joinder with the 539 IPR.

IV. ORDER

Accordingly, it is

ORDERED that the Petition is *denied* as to all challenged claims of the '565 patent; and

FURTHER ORDERED that the Motion for Joinder with Case IPR2013-00539 is *dismissed*.

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