

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

FRESENIUS KABI USA, LLC AND FRESENIUS KABI SWISSBIOSIM
GmbH.,
Petitioners

v.

AMGEN INC. and AMGEN MANUFACTURING, LIMITED,
Patent Owners

Case IPR2020-00314
Patent 9,856,287

**PATENT OWNERS' PRELIMINARY RESPONSE
UNDER 37 C.F.R. §42.107**

LIST OF EXHIBITS¹

| Exhibit | Description |
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| EX2001 | Prosecution History of U.S. Patent 9,856,287 |
| EX2002 | Declaration of Sayem Osman |
| EX2003 | Excerpt of Joint Claim Construction Chart (<i>Amgen Inc., et al. v. Kashiv Biosciences, LLC</i> , No 2:18-cv-03347-CCC-MF, DE 101, at Appx. D (D.N.J. March 22, 2019)) |
| EX2004 | <i>Fresenius Kabi USA, LLC et al. v. Amgen Inc. et al.</i> , IPR2019-00971, EX3001 (Dec. 27, 2019) |
| EX2005 | <i>Fresenius Kabi USA, LLC et al. v. Amgen Inc. et al.</i> , IPR2019-00971, EX3002 (Dec. 27, 2019) |
| EX2006 | Declaration of Megan Raymond |
| EX2007 | <i>Adello Biologics, LLC et al. v. Amgen Inc. et al.</i> , PGR2019-00001, Docket Sheet |
| EX2008 | Excerpt of <i>Adello Biologics, LLC et al. v. Amgen Inc. et al.</i> , PGR2019-00001, Pap. 8 (Jan. 23, 2019) |
| EX2009 | <i>Fresenius Kabi USA, LLC et al. v. Amgen, Inc.</i> , IPR2019-00971, Docket Sheet |
| EX2010 | <i>Fresenius Kabi USA, LLC et al. v. Amgen, Inc.</i> , IPR2019-00971, Pap. 17 (Dec. 4, 2019) |
| EX2011 | Excerpt of <i>Fresenius Kabi USA, LLC et al. v. Amgen, Inc.</i> , IPR2019-00971, Pap. 8 (July 17, 2019) |
| EX2012 | Excerpt of <i>Fresenius Kabi USA, LLC et al. v. Amgen, Inc.</i> , IPR2019-00971, Pap. 12 (Sept. 5, 2019) |
| EX2013 | Excerpt of <i>Adello Biologics, LLC et al. v. Amgen Inc. et al.</i> , PGR2019-00001, Pap. 3 (Oct. 1, 2018) |
| EX2014 | Excerpt of <i>Adello Biologics, LLC et al. v. Amgen Inc. et al.</i> , PGR2019-00001, EX1002 (Oct. 1, 2018) |

¹ EX2008 and EX2011-EX2015 are included for comparison purposes to show overlap between proceedings and/or availability of information to the Petitioners. They are not submitted as substantive evidence.

| Exhibit | Description |
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| EX2015 | Excerpt of <i>Adello Biologics, LLC et al v. Amgen Inc. et al</i> , PGR2019-00001, Pap. 19 (July 26, 2018) |

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*Changes to the Claim Construction Standard for Interpreting Claims
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MISCELLANEOUS

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Pursuant to 37 C.F.R. §42.107,² Patent Owners³ Amgen Inc. and Amgen Manufacturing, Limited (collectively, “Patent Owner”) submit this Preliminary Response to the above-captioned Petition for *Inter Partes* Review (“Petition” or “Pet.” Pap. 4) of U.S. Patent No. 9,856,287 (the “’287 patent”), which is the *third* post-grant challenge filed against the ’287 patent, and *the second the ’287 IPR Petitioners themselves have filed*. Petitioners’ second IPR was filed after their first IPR was not instituted and Petitioners *missed the deadline* to file a Request for Rehearing, then subsequently sought to supplement their un-filed request. The present Petition should be denied in its entirety: pursuant to the Board’s discretion under §314; for Petitioners’ failure to take affirmative positions with respect to the correctness of, and failure to provide any analysis or record citations supporting,

² All emphasis/annotations added, and all statutory and regulatory citations are to 35 U.S.C. or 37 C.F.R., as the context indicates, unless otherwise stated.

³ Petitioners here, apparently copying petitioners in PGR2019-00001, listed both Amgen Inc. and Amgen Manufacturing, Limited in the caption as “Patent Owner.” Amgen Manufacturing, Limited is an exclusive licensee. Nevertheless, consistent with the caption, this Preliminary Response refers collectively to both parties as “Patent Owner.”

the constructions they identify; for Petitioners' failure to address whether Claims 1, 4–6, 8–10, 12, and 14–15 are indefinite (as asserted in PGR2019-00001); and for Petitioners' failure to show a reasonable likelihood of prevailing on any asserted ground. Because of the procedural and substantive failings of the Petition, institution would not be in the interest of justice, or an efficient use of the Board's limited time and resources. And, in light of *SAS Institute, Inc. v. Iancu*, 138 S. Ct. 1348 (2018), even if Petitioners had made their threshold showing for some claims or grounds—they have not—the Board, in its discretion, should deny institution under §314(a) on all challenged claims and grounds in the Petition.

I. Introduction

Petitioners' submission failed to provide the Board the basic evidence required to institute any *inter partes* review. If the Board nonetheless institutes trial on the Challenged Claims,⁴ Patent Owner will address in detail in its §42.120 Response the numerous substantive errors and shortcomings in Petitioners' arguments and their purported evidence. Here, however, where testimonial evidence purporting to raise an issue of material fact “will be viewed in the light most favorable to the petitioner” (§42.108(c)), Patent Owner addresses only a

⁴ Claims 1, 4–6, 8–10, 12, 14–16, 19–21, 23–26, 29–30 of the '287 patent.

subset of the Petition’s procedural and substantive shortcomings. Because of these threshold failures, the Petition should be denied and no IPR instituted under §314.

First, the present Petition (“IPR2,” “Pet.”) is a follow-on petition that should not be instituted under §314(a). *See* §III. Petitioners previously filed an IPR making the *same* substantive arguments to challenge the *same* claims of the ’287 patent (IPR2019-00971, “IPR1”), and Petitioners knew of all the art in the present Petition from their first IPR, and much of the art from PGR2019-00001 (“PGR”), which was the first post-grant challenge filed against the ’287 patent. When they filed this obvious re-hash of their own prior petition, Petitioners had in hand, as improper road-maps to Patent Owner’s arguments, *inter alia*, Patent Owner’s POPRs from the PGR and IPR1, Patent Owner’s POR from the PGR, and the Board’s Institution Decisions from the PGR and IPR1.

Second, Petitioners failed to provide an analysis of the proper construction of terms they were required to address, or to take an affirmative position as to the constructions they identify. Instead—attempting to thwart the efficiency motivations underlying the Board’s switch to the *Phillips* claim construction standard in IPRs—Petitioners summarily asserted they “will assume” certain constructions from the PGR while asserting they would do so “for purposes of this IPR only.” Pet.24; *see* §IV. In so doing, Petitioners also provided no citations to the record supporting the constructions they decided to “assume,” apparently (and

improperly) attempting to await some future litigation to reveal their real positions regarding the proper constructions of the claims under *Phillips*.

Third, although indefiniteness was raised (and instituted) as a ground of invalidity in the PGR (PGR ID (Pap. 13), 12–18, 22–26; EX2013 (PGR Pet. (Pap. 3)), 29–31) Petitioners here failed to take any position as to the definiteness of Claims 1, 4–6, 8–10, 12, and 14–16, let alone provide any analysis setting forth how or why the terms they seek to invalidate should be understood by the Board. *See* §IV.

Fourth, Petitioners’ own arguments and evidence confirm they cannot make a *prima facie* showing that, as a factual and legal matter for each asserted ground, there is a reasonable likelihood of proving at least one Challenged Claim unpatentable. *See, e.g.*, §314; §42.108(c); §V. For example:

- For Grounds 1 and 2, Petitioners failed to present any argument regarding dependent claims requiring thiol-pair ratio and thiol-pair buffer strength to be “calculated” (Claims 8, 9, 14, 15, 23, 24, 25, and 30) under their identified construction, inexplicably relying on *additional references* in asserting the limitations added by these dependent claims would have been *anticipated* by Vallejo or Ruddon;

- For Grounds 1 and 2, Petitioners failed to address how any of their references disclose maintaining the solubility of the solution even under Petitioners' identified construction;
- For Ground 1, Petitioners failed to address how Vallejo discloses maintaining the solubility of the preparation when that term is properly understood;
- For Ground 2, Petitioners failed to address the fact that Ruddon's process does not result in a properly refolded protein, but results, instead, in a sub-unit (hCG- β) that is competent to assemble with a second native (already-folded) sub-unit (hCG- α) to form a biologically active protein (hCG);
- For Grounds 3 and 4, Petitioners' obviousness arguments are unclear, confusing and legally insufficient. Petitioners, *inter alia*, (a) failed to delineate clearly what grounds they actually assert, using an ambiguous "and/or" approach that could reflect as many as four *different* grounds for each of Grounds 4 and 5, (b) failed to clearly specify the references and sections of the references Petitioners relied on for each combination, let alone each given limitation, (c) failed to clearly identify the base reference for each combination and how or why it was allegedly modified in the proposed combination, (d) failed to provide any meaningful explanation for

reasonable expectation of success, and (e) failed to provide any argument that any value was actually calculated for the claims that Petitioners conceded require calculation.

In view of post-SAS all-or-nothing institution, even if, *arguendo*, the Board were to unearth a Ground with merit buried within Petitioners' pile of arguments and combinations reflecting as many as five to ten different challenges per claim,⁵ the Board should exercise its discretion here and deny institution. Instituting this proceeding would not be an efficient use of the Board's limited time and resources given Petitioners' imprecise scattershot approach. *See, e.g., SAS Inst. Inc. v. Iancu*, 138 S. Ct. 1348, 1355–56 (2018); *Everstar Merchandise Co. v. Willis Elec. Co.*, IPR2019-01484, Pap. 7, 36–38 (Feb. 20, 2020) (denying institution based on inefficiency when only one-fifth of challenged claims warrant institution); *Chevron Oronite Co. v. Infieum USA LP*, IPR2018-00923, Pap. 9, 9–11 (Nov. 7, 2018) (informative) (denying institution on all claims when Petitioners' arguments and

⁵ As explained above, and in more detail below (*infra*, §V.C.1), because of Petitioners' inappropriate use of an "and/or" approach in identifying secondary references for Grounds 3 and 4, each reflects as many as four different grounds per "Ground."

proofs were deficient with respect to a subset of claims); *see also Deeper, UAB v. Vexilar, Inc.*, IPR2018-01310, Pap. 7, 41–43 (Jan. 24, 2019) (informative) (denying institution because “instituting a trial with respect to all twenty-three claims and on all four grounds based on evidence and arguments directed to only two claims and one ground would not be an efficient use of the Board’s time and resources.”); *SAS Q&As, D3*, at p. 8 (USPTO June 5, 2018), available at https://www.uspto.gov/sites/default/files/documents/sas_qas_20180605.pdf (noting that, although “[t]he Board does not contemplate a fixed threshold for a sufficient number of challenges for which it will institute,” it will “evaluate the challenges and determine whether, in the interests of efficient administration of the Office and integrity of the patent system ... the entire petition should be denied under 35 U.S.C. § 314(a).”).

For these reasons, the Petition should be denied.

II. The Challenged Claims Of The '287 Are Directed To A Novel Invention

The '287 is directed to a novel and efficient protein refolding method based on control of redox conditions with reductant and oxidant (“redox”) reagents. EX1001, 2:62–3:4. The goal of protein refolding is to increase and maximize yield of properly-folded proteins. EX1001, 1:32–38. Desired proteins are recombinantly expressed in non-mammalian culture systems (*e.g.*, bacteria). But, these expressed proteins misfold and precipitate in intracellular limited-solubility

precipitates known as inclusion bodies. *Id.*, 1:25–30. These inclusion bodies are formed because the bacterial host cell is unable to fold recombinant proteins properly. *Id.*, 1:29–31. The host cells are collected and lysed, and then the released inclusion bodies are solubilized in a denaturing solution to linearize the proteins into individual protein chains. *Id.*, 1:43–50.

Prior to the '287 patent, those skilled in the art needed to manipulate a large number of variables—through trial and error—to achieve high yields of properly refolded proteins. *Id.*, 8:47–65. The inventors of the '287 patent addressed the difficulty of identifying acceptable refolding conditions by controlling the concentrations of the reductant and oxidant present in the refolding buffer in a particular manner (*e.g.*, using the interrelationship of thiol-pair ratio (*i.e.*, $\frac{[\text{reductant}]^2}{[\text{oxidant}]}$) and thiol-pair buffer strength ($2[\text{oxidant}] + [\text{reductant}]$)) for the purpose of properly refolding a recombinantly-expressed protein. *Id.*, 4:52–5:10, 6:50–55, 6:63–67.

III. The Board Should Exercise Its Discretion And Deny Institution Under 35 U.S.C. §314(a)

Institution of *inter partes* review is discretionary. *See* 35 U.S.C. §314(a); 37 C.F.R. §42.108(a) (“the Board *may* authorize the review to proceed”); *Cuozzo Speed Techs., LLC v. Lee*, 136 S. Ct. 2131, 2140 (2016) (the “decision to deny a petition is a matter committed to the [PTO’s] discretion.”); *Harmonic Inc. v. Avid*

Tech., Inc., 815 F.3d 1356, 1367 (Fed. Cir. 2016) (“the PTO is permitted, but never compelled, to institute an [*inter partes* review] proceeding”). *General Plastic* enumerated a number of non-exclusive factors that the Board considers in exercising discretion on instituting *inter partes* review, especially as to “follow-on” petitions challenging the same patent as challenged previously in an IPR, PGR, or CBM proceeding. *Gen. Plastic Indus. Co. v. Canon Kabushiki Kaisha*, IPR2016-01357, Pap. 19 (Sept. 6, 2017).

As stated above, this is the ***third*** post-grant challenge filed against the ’287 patent, and the ***second by Petitioners***. Nevertheless, Petitioners ask the Board to start with a clean slate and pretend as if their first IPR, IPR1, does not exist.

On October 1, 2018, Adello Biologics, LLC, Apotex, Inc., and Apotex Corp. filed PGR2019-00001. EX2007, 1. Just days before institution of the PGR, Petitioners here filed their IPR1 against the ’287 patent. The Board issued a non-institution decision in IPR1 on October 16, 2019. Any request for rehearing was due by Nov. 15, 2019. But on October 23, 2019, Petitioners submitted a request for refund of post institution fees. EX2009 (IPR1 Pap. 14 “Request for Refund of Post-Institution Fees”), 3. Petitioners did not file a request for rehearing on or before November 15. Nevertheless, on December 4, 2019, Petitioners filed a supplemental mandatory notice indicating that the parties to the PGR had jointly

moved to terminate that proceeding. EX2010 (IPR1 Pap. 17, Petitioners' Updated Mandatory Notices), 2–3.

Petitioners then emailed the Board on December 6, 2019 requesting permission to file “supplemental information” related to a request for rehearing (that Petitioners had never filed). The email recited Patent Owner's objections to Petitioners' request, including, among other things, the fact that the proceeding was over based on Petitioners' failure to timely file a request for rehearing. EX2006, ¶3. Nevertheless, Petitioners did not ask for leave to file a request for rehearing out of time in that email. EX2005; EX2006, ¶3.

During the subsequent telephonic hearing on December 10, 2019, in addition to addressing Petitioners' request to submit what it called “supplemental information,” Petitioners for the first time requested that the Board permit them to file a request for rehearing and for it to be treated as timely filed. EX2006, ¶¶4–5. Petitioners had not previously conferred with Patent Owner on such a request, and the Board noted that such a request was not made by Petitioners in their email requesting the telephonic hearing. EX2006, ¶5. During the hearing, Petitioners claimed to have had unspecified difficulties filing a request for rehearing. Nevertheless Petitioners said they did not read the PTAB End to End (“E2E”) email notification they received on Nov. 15, 2019, which stated in capital letters “THERE WERE NO DOCUMENTS SUBMITTED WITH THIS REQUEST.”

EX2004; EX2006, ¶¶5–6. Petitioners also did not bother to check the electronic docket to confirm whether Petitioners’ Request for Rehearing had actually been filed, as they apparently intended, on Nov. 15, 2019. EX2006, ¶¶5–6.

The Board considered Petitioners’ failure to seek leave to file their Request for Rehearing out of time, and determined that the IPR was over because Petitioners did not timely file a request for rehearing. EX2006, ¶7. The Board also denied Petitioners’ request for authorization to file “supplemental information” or any other supplemental filing. *Id.* The Board noted that correction of Petitioners’ mistake would prejudice Patent Owner. EX2006, ¶7. If Petitioners had been diligent and properly filed a request of rehearing in their first IPR, the Board would have had before it the fact of the PGR termination (the motion for which was identified in the December 4 supplemental mandatory notice) when considering Petitioners’ Request for Rehearing. IPR2 is effectively Petitioners’ attempt to make yet another late request for rehearing outside the time provided in the Board’s rules, notwithstanding that the Board has already held Petitioners’ prior (shorter) delay was prejudicial to Patent Owner.

As discussed below, rather than reward Petitioners’ disguised request for a second do-over of their already-rejected, belated first request for a do-over, the Board should exercise its discretion under §314(a) to deny this Petition.

A. The General Plastic Factors Support Denial Of Institution

1. Factor 1: Whether Petitioner Previously Filed A Petition Directed To The Same Claims Of The Same Patent

As noted above, this is the third post-grant challenge filed against the '287 patent, and the second by Petitioners. Following the Board's determination that Petitioners' first '287 IPR was over (EX2006, ¶¶3–7), Petitioners filed the present Petition, again challenging the *same* claims and based on the *same* grounds as IPR1. Despite this history, this new Petition offered no reason why Petitioners should be allowed a second petition under these circumstances. This obvious omission may be understandable, as *General Plastic* factor 1 strongly weighs *against* institution based on Petitioners' previous IPR. *See, e.g., Laird Tech. Inc. v. A.K. Stamping Co.*, IPR2018-01163, Pap. 8, 8–9 (Dec. 18, 2018) (denying subsequent petition that asserted nearly identical grounds of invalidity as the previous petition); *Intel Corp. v. Inst. of Microelectronics, Chinese Academy of Scis.*, IPR2019-00834, Pap. 11, 8–12, 17 (Oct. 4, 2019) (denied institution when the same petitioner filed a subsequent petition using nearly identical prior art against the same claims).

Even when filing their *first* petition, Petitioners—while not formally a party to the earlier PGR—were well aware of the PGR and acted in a conscious tag-team with the PGR petitioners (including by attending the July 10, 2019 deposition of the PGR petitioners' expert). IPR1 ID, 7. Petitioners' IPR1 (re-hashed in IPR2),

contained permutations of previously-considered PGR art and arguments, as well as some of the very same grounds that were pending in the PGR. *Compare* EX2013, 15–27 *with* Pet.27–42; IPR1 ID, 9 (“a significant portion of the arguments and contentions in [IPR1] are similar to those in Adello’s petition in PGR2019-00001, such as those relating to alleged anticipation by Vallejo.”). As in *Samsung Elecs. Co. v. ELM 3DS Innovations, LLC*, IPR2017-01305, Pap. 11, 19 (Oct. 17, 2017), the Petition here has a “high degree of similarity” with the previously-filed PGR petition, which included Vallejo (EX1031; PGR EX1038) and Ruddon (EX1025; PGR EX1040) in its grounds asserting anticipation and/or obviousness, as well as Clark 1998 (EX1042, PGR EX1051) as a background reference. *See* EX2007, 2 (listing PGR EX1038 (“Vallejo EP1449848”), PGR EX1040 (“Ruddon”), PGR EX1051 (“Clark 1998”)); IPR1 ID, 9–10. Clearly, Petitioners recycled the PGR in preparing their arguments in their Petition and expert report here (as in IPR1), even copying some of the arguments verbatim (*compare, e.g.,* Pet.29 *with* EX2013, 17; Pet.31–33 *with* EX2013, 20–22; Pet.35–36 *with* EX2013, 22–23; Pet.36–37 *with* EX2013, 24–25; EX1002, ¶¶89, 103, 104 *with* EX2014 (PGR EX1002), 10 (¶118), 11–12 (¶¶137, 138) and using the same organization and formatting (*compare, e.g.,* Pet.38–44 *with* EX2013, 15–22 (using same tables under subheaders); *compare, e.g.,* EX1002, ¶¶18, 20, 23, 25, 26 *with* EX2014, 4 (¶¶15, 17), 5 (¶18), 6 (¶¶21, 22), respectively (presenting same

subheaders and content)). This previous PGR filing also weighs against institution. Indeed, since *General Plastic*, the Board has held that the application of the first *General Plastic* factor is not limited to instances where multiple petitions are filed by the same petitioner. See *Valve Corp. v. Elec. Scripting Prods., Inc.*, Case IPR2019-00062, -00063, -00084, Pap. 11 (Apr. 2, 2019) (precedential) (denying institution when a party filed follow-on petitions for *inter partes* review after the denial of an *inter partes* review request of the same claims filed by the party's co-defendant).

Petitioners argued that, for the Board to apply discretion under §314(a), the relationship between the petitioner of a pending proceeding and the petitioner of a follow-on proceeding must rise to the level of real party-in-interest (“RPI”) to be relevant. Pet.9–10. First, this ignores that Petitioners themselves are second-time petitioners. Second, even with respect to the earlier PGR, Petitioners cited no cases where any panel has ever held being an RPI to be a requirement for *General Plastic* factor 1 to support non-institution (and, of course, decisions like *Valve Corp.* do not). Petitioners’ lone cited case (Pet.8 fn. 4 (citing *Corning Optical Comm. RF, LLC, v. PPC Broadband, Inc.*, IPR2014-00440, IPR2014-00041, and IPR2014-00736, Pap. 68, 23–25 (Aug. 18, 2015))) is about whether a party who is not a named participant in a given proceeding is an RPI, and *not* about the Board’s discretion to deny follow-on petitions under §314(a). Indeed, as the Board

recognized in declining to institute IPR1, “[when] different petitioners challenge the same patent, we consider *any relationship* between those petitioners when weighing the *General Plastic* factors.” IPR1 ID, 6–7 (emphasis original) (quoting *Valve Corp.*, IPR2019-00062, Pap. 11); Patent Trial and Appeal Board Consolidated Trial Practice Guide, 57 fn.1 (Nov. 2019); *see also PayPal, Inc. v. IOENGINE, LLC*, IPR2019-00884, Pap. 22, 2, 6–12 (Oct. 3, 2019) (denying institution under §314 and finding factor 1 supported non-institution when the previous petitioner was not an RPI of the petitioner at hand and specifically held that “for purposes of applying the *General Plastic* factors, we need not and do not determine whether Ingenico is Petitioner’s real party in interest in this proceeding”).

Further, although Petitioners did not file the PGR, they were clearly tracking the PGR, and intentionally filed IPR1 just before the PGR’s institution. *See, e.g., Abiomed Inc. v. Maquet Cardiovascular, LLC*, IPR2017-02134, Pap. 7, 9–10 (April 16, 2018) (finding this factor did not favor institution when petition challenged claims of scope similar in an earlier IPR). And Petitioners actively coordinated with the PGR petitioners and benefitted from the earlier-filed PGR. For example, as the Board noted in denying institution of IPR1, Petitioners’ counsel of record here attended the July 10, 2019 deposition of PGR petitioners’ expert, appearing alongside PGR petitioners’ counsel who defended and redirected

that witness. IPR1 ID, 6–7. Petitioners further admitted, in IPR1, that “[Fresenius] and Adello are willing to coordinate [IPR1] with the instituted PGR ... to facilitate joint consideration by the Board.” IPR1 ID, 7 (citing Petitioners’ reply to Patent Owner’s preliminary response in IPR1). The Board correctly found that Petitioners “clearly [are] seeking to coordinate” their challenges in IPR1 with Adello’s challenges in PGR2019-00001. IPR1 ID, 7. Petitioners now try to re-imagine this affirmative admission as merely an “attempt to coordinate the schedule of the IPR with the PGR” for efficiency. Pet.7 fn. 3. But, Petitioners should not be allowed to rewrite their broad admission to coordinate the entire IPR, not just the schedule.

Petitioners’ other factor 1 arguments also do not support their position. For example, Petitioners, citing *Foundation Medicine, Inc. v. Guardant Health, Inc.*, IPR2019-00652, Pap.12, 29–30 (Aug. 19, 2019), argued that the fact the current Petition challenges *fewer* claims than the PGR “is further evidence that their interests are not co-extensive.” Pet.9–10. But, the panel in *Foundation Medicine* did not indicate that the lack of complete overlap in challenged claims drove its determination. *Id.* And, unlike here, *Foundation Medicine*’s panel found the facts *did not support* an inference of coordination. *Id.* And in *PayPal* (cited by the Petitioners, Pet.9 fn.3), the Board denied institution even when the follow-on petition challenged additional claims, and relied on different prior art and different

arguments because there *was* a relationship between the two petitioners. *See, e.g., PayPal, Inc.*, IPR2019-00884, Pap, 22, 9–12 (“Although Petitioner seeks review of five claims ... ‘the non-overlapping claims’ ... that are not part of the [earlier-filed petition] the existence of the non-overlapping claims is not substantial enough to tip the first factor to favor instituting trial”); *Apple Inc. v. Qualcomm Inc.*, IPR2019-00112, Pap. 7, 6 (Apr. 11, 2019) (denying institution and holding that this factor weighed in favor of denying institution even when the later-filed petition challenged fewer claims, *i.e.*, claims 1–3, 5, 8, 9, and 11, compared to the earlier filed petitions, which challenged claims 1–6 and 8–20 of the same patent). *Compare PayPal*, IPR2019-00884, Pap. 22, 10–11 (“Although Petitioner states that the Petition was prepared ‘without contribution from [previous petitioner]’ ... that, by itself, does not contradict the existence of a significant and meaningful relationship between the parties”) *with* Pet.7–8 (Petitioners assert they “were not involved in the preparation or filing of Adello’s PGR petition”). Furthermore, contrary to their assertion, Petitioners’ own cases (*Cook Inc. v. Medtronic, Inc.*, IPR2019-00123, Pap. 11, 34–35 (June 11, 2019); *Choirock Contents Factory Co. v. Spin Master Ltd.*, IPR2019-00897, Pap. 17, 12–13 (Sept. 26, 2019)) look at “any relationship” between the petitioners. *See also* IPR1 ID, 6 (under factor 1 “we consider *any relationship* between [two] petitioners”) (emphasis original).

This factor weighs against institution.

2. Factor 2: Whether At The Time Of Filing Of The First Petition The Petitioner Knew Of The Prior Art Asserted In The Second Petition Or Should Have Known About It

Petitioners' art in the present Petition overlaps entirely with the art relied on in IPR1, which Petitioners filed on *Apr. 14, 2019*. Petitioners do not and cannot deny their knowledge of this art based on IPR1. For this reason, this second *General Plastic* factor weighs against institution.

In addition, even *before* IPR1, Petitioners knew or should have known of at least two of their three base references, Vallejo (*compare* EX1031 with EX2007, 2 (listing PGR EX1038 ("Vallejo EP1449848"))) and Ruddon (*compare* EX1025 with EX2007, 2 (listing PGR EX1040 ("Ruddon")), plus one of their secondary references, Clark 1998 (*Compare* EX1042 with EX2007, 2 (listing PGR EX1051 ("Clark 1998))), at about the time the '287 PGR was filed on *Oct. 1, 2018*.

Petitioners attempted to excuse their knowledge of the PGR art by asserting that Petitioners had no interest in, or control over, the Adello PGR when it was filed. Pet.9. But Petitioners ignored that this factor relates simply to whether a party knew or should have known of the art or could have found the art with reasonable diligence. *See, e.g., Ivantis, Inc. v. Glaukos Corp.*, IPR2019-00972, Pap. 7, 12 (Oct. 10, 2019) ("consideration of this factor is based solely on the *timing* of Petitioner's awareness of the prior art in question with respect to filing the petition") (emphasis original). In *Valve*, the Precedential Opinion Panel held that

“[t]his factor includes considering whether the prior art relied on in the later petition ‘could have been found with reasonable diligence.’” *Valve*, IPR2019-00062, Pap. 11, 10–11. As the Board explained in its decision denying IPR1, although Petitioners did not file the first ’287 petition, their *knowledge* of the prior art asserted in that first petition at about the time it was filed weighed in favor of denial of the second petition based on the same art. IPR1 ID (Pap. 13), 8. The Board found “Fresenius does not offer any argument distinguishing *Valve* with respect to this factor, nor does it dispute that it knew or should have known of Vallejo and Ruddon at about the time Adello filed the petition in PGR2019-00001.” *Id.*; *see also* Pet.3–4. The same is certainly still true today. Petitioners also knew or should have known of Clark 1998 (also cited in the PGR), one of their secondary references. *Compare* EX1042 and EX1007 *with* PGR EX1051. Petitioners also did not deny knowing of the remaining references, Schafer and Gilbert. Thus, this factor again weighs in favor of denying institution because Petitioners knew, or should have known, of the references cited in the PGR filed by other petitioners for months before filing IPR1 and IPR2. IPR2019-00972, Pap. 7, 12; IPR2019-00062, Pap. 11, 11; IPR2018-01642, Pap. 11, 8 (April 10, 2019). *See also* *Abiomed*, IPR2017-02134, Pap. 7, 10.

3. Factor 3: Whether At The Time Of Filing Of The Second Petition The Petitioner Already Received The Patent Owner’s Preliminary Response To The First Petition Or

**Received The Board’s Decision On Whether To Institute
Review In The First Petition**

In making their new filing in IPR2, Petitioners had available to them the filings in IPR1, which included the POPR and Patent Owner’s response to Petitioner’s POPR sur-reply, as well as the Board’s Institution Decision. EX2011 (IPR2019-00971 POPR (Pap. 8)); EX2012 (PO-Sur-Reply (Pap. 12)); IPR1 ID; *Gen. Plastic*, IPR2016-01357, Pap. 19, 17; *Intel Corp.*, IPR2019-00834, Pap. 11, 18 (holding factor 3 weighs in favor of denying institution when a petitioner received patent owner’s previous preliminary response). Petitioners also had available to them the information from the PGR, including, *inter alia*, Patent Owner’s POPR (EX2008 (Pap. 8, filed Jan. 23, 2019)), the Board’s Institution Decision (PGR ID (Pap. 13, issued Apr. 19, 2019)), the transcript of Patent Owner’s deposition of PGR petitioners’ expert (EX2007, 4 (indicating PGR EX2027 was filed July 26, 2019)), and Patent Owner’s POR (EX2007, 4 (indicating Pap. 19 was filed July 26, 2019)). *See also*, EX2008, 7–14, 20–41 (showing Patent Owner’s analysis of Vallejo, Ruddon, and Hevehan, which is substantially the same as Clark 1998); PGR ID, 26–28, 30–32; EX2015 (PGR POR), 6–20, 21–27. This “evinces benefit Petitioner[s] [] derived from those prior proceedings.” *Samsung*, IPR2017-01305, Pap. 11, 20. As the Board explained in *Samsung*, “[t]he availability of the Patent Owner’s Response and Patent Owner’s

expert testimony from other proceedings also weighs strongly in favor of exercising our discretion, as does Petitioners’ *use* of such information in [their] Petition.” *Id.* at 21; *see also Intel*, IPR2019-00834, Pap. 11, 18; *ZTE (USA) Inc. v. Fundamental Innovation Sys. Int’l LLC*, IPR2018-01076, Pap. 14, 10–11 (Dec. 3, 2018) (denying institution because petitioner “had ample opportunity to study the arguments raised by patent owner [in patent owner preliminary response] regarding the identically challenged claims” in the first petition filed by the petitioner). This factor weighs strongly in favor of denying institution. *See also Samsung*, IPR2017-01305, Pap. 11, 20–21; *NetApp Inc. v. Realtime Data LLC*, IPR2017-01660, Pap. 17, 10–11 (Jan. 25, 2018); *Valve Corp.*, IPR2019-00062, Pap. 11, 12–13; *Nichia Corp. v. Document Sec. Sys., Inc.*, IPR2019-00398, Pap. 10, 16–17 (Apr. 15, 2019).

In the present IPR, Petitioners argued that (a) they asserted “identical grounds of invalidity as presented in IPR2019-00971 [IPR1 Petition],” and (b) they “have not gained any benefit from either the institution decision in the now-terminated Adello PGR or PO’s preliminary response in Petitioners’ IPR2019-00971 and simply ask that their previously-presented arguments be considered on their merits.” Pet.9–10. But this does not change the fact that Petitioners *received*, *inter alia*, the POPR and the Institution Decisions (from both the PGR and IPR1), the transcript of Patent Owner’s deposition of PGR petitioners’ expert, and Patent

Owner's PGR POR and, as discussed below, benefitted from them. Further, in response to Patent Owner's arguments in IPR1 and the ID (EX2011, 6–14, 18, 23–24; EX2012, 2–3; IPR1 ID, 6–11), Petitioners inserted into the present Petition an entirely new section on §314 and *General Plastic*.⁶ IPR2 includes a number of other changes as well. In the name of “citation corrections” (Pet.9 fn. 5), Petitioners changed citations to different exhibits (EX1047, 24, 25, 28) and added/changed various substantive citations to exhibits and their expert's declaration (*e.g.*, EX1047, 27, 42, 46, 48, 57, 59, 60, 70, 71, 74, 75, 76, 78, 81). These edits are clearly in response to, and gain benefit from, Patent Owner's preliminary response in IPR1, which noted the lack of cited expert support for a number of Petitioners' theories. *Compare* IPR1 Pap. 8, 48 (“while Petitioners argue about what ‘[a] POSA would have understood’ or ‘expected,’ they never cite any expert or other evidence for that proposition”), 58 (“nowhere in Petitioners' section on these issues do Petitioners cite any expert support, despite making

⁶ Even so, in their *General Plastic* argument, Petitioners generally failed to address why their *second* IPR should be allowed after they filed a *first* IPR, and instead focused on why they are purportedly entitled to institution in view of the PGR.

numerous assertions about what a POSITA would have understood or done”), 59 (“Petitioners also cite no expert in support of their assertion regarding reasonable expectation of success” for grounds 3 and 4), 59 (citing *Olympus Corp. v. Maxell, Ltd.*, IPR2018-00905, Pap. 9, 16–17 (Nov. 19, 2018) (attorney argument for how a POSITA would understand prior art was unpersuasive and insufficient for institution)) with EX1047, 24, 25, 27, 28, 42, 46, 48, 57, 59, 60, 70, 71, 74, 75, 76, 78, 81.

Further, even though the Petitioners at the time of IPR1 had access to fewer materials from the ’287 PGR than they did here, the Board nevertheless found this factor favored non-institution. IPR1 ID, 7, 9 (“a significant portion of the arguments and contentions in the [IPR1] Petition are similar to those in Adello’s petition in PGR2019-00001, such as those relating to alleged anticipation by Vallejo, which supports Amgen’s position that Fresenius benefited from Adello’s petition and, thus, likely Amgen’s preliminary response as well.”); *see also Samsung*, IPR2017-01305, Pap. 11, 20–21 (noting new petitioner gained benefit from patent owner’s response and expert testimony in related proceedings and, “if we were to institute a review here, Petitioner would be able to use the final written decisions” from those proceedings, as well, to “improve its position”); *Am. Honda Motor Co. v. Intellectual Ventures II LLC*, IPR2018-00347, Pap. 10, 15 (June 27, 2018) (finding factor 3 weighed against institution when petitioner had the benefit

of seeing patent owner's initial position and the Board's institution decision in prior IPR); *Instrumentation Lab. Co. v. Hemosonics, LLC*, IPR2018-00264, Pap. 8, 10–12 (May 10, 2018) (finding factor 3 weighed against institution when petitioners' second petition address deficiencies from the first petition). With the unfair benefit of even more material now, this factor certainly still favors denial of institution.

4. Factor 4: The Length Of Time That Elapsed Between The Time The Petitioner Learned Of The Prior Art Asserted In The Second Petition And The Filing Of The Second Petition

The PGR was filed October 1, 2018 (PGR Pap. 3), and IPR1 was filed April 14, 2019. The present Petition was not filed until December 20, 2019. Thus, Petitioners knew of all of the art for more than eight months before filing the present IPR, and at least some of the central art to the Petition for over 14 months before the present IPR. *See supra* §III.A.2.

Petitioners argued that IPR2 was filed two weeks after the *termination* of the PGR, but that is not the relevant inquiry. This factor is about “the length of time that elapsed *between the time the petitioner learned of the prior art asserted in the second petition and the filing of the second petition.*” *Gen. Plastic*, IPR2016-01357, Pap. 19, 9; *Intel Corp.*, IPR2019-00834, Pap. 11, 18–19 (“The fourth *General Plastic* factor examines the delay between the date Petitioner learned of the existence of [prior art used in the petition] and the date Petitioner filed the

present Petition, not the delay between Petitioner’s understanding the contents of [the prior art] and Petitioner’s filing of the present Petition”); *Pfenex, Inc. v. Glaxosmithkline Biologicals SA*, IPR2019-01478, Pap. 9, 11–13 (Feb. 10, 2020) (denying petitioner’s substantively identical petition as the previous petition because petitioner knew about the prior art since the previous petition was filed); *Ivantis*, IPR2019-00972, Pap. 7, 15 (“factor [4] considers the time lapse between the discovery of new relevant prior art and the filing of a subsequent petition”); *Shenzen Silver Star Intelligent Tech. Co. v. iRobot Corp.*, IPR2018-00897, Pap. 9, 10 (Oct. 1, 2018) (finding factor 4 favors denying institution when the petitioner knew about the prior art for a little over 6 months before filing the petition); *see also Valve Corp.*, IPR2019-00062, Pap. 11, 14; *Juniper Networks, Inc. v. Parity Networks*, IPR2018-01642, Pap. 11, 9 (Apr. 10, 2019).

This factor favors denial of institution.

5. Factor 5: Whether The Petitioner Provides Adequate Explanation For The Time Elapsed Between The Filings Of Multiple Petitions Directed To The Same Claims Of The Same Patent

Petitioners failed to adequately explain the length of time that elapsed between the time Petitioners learned of the prior art (*see supra* III.A.4) and this IPR. Indeed, based on Petitioners’ §311(c) argument in IPR1 (IPR1 Pet.1–3), it appears Petitioners were *actively tracking* the PGR and *intentionally waited* until

just before the PGR institution decision to file IPR1. *See supra* §III.A.2. Even Petitioners’ generic justification that they “developed an interest in challenging the ’287 patent after the nine-month window to file a PGR had expired” (Pet.10) does not justify the more than 14 months that have passed since the PGR was filed just a day before the 9-month deadline. The Board properly found this same explanation in IPR1, when there was *less* delay, to be insufficient. IPR1 ID, 9–10; *see also*, *e.g.*, *Pfenex, Inc.*, IPR2019-01478, Pap. 9, 11–13 (rejecting petitioner’s argument that it could not have foreseen that previous petition would settle and terminate and holding that “[s]ettlement and termination of an *inter partes review* proceeding ... is neither unusual nor rare.... [I]f Petitioner was interested in pursuing the same challenge as that presented in the [previously terminated IPR], it could have requested joinder under 37 C.F.R. §42.122(b).... That the [previous IPR] settled after institution is not an adequate excuse for delay.”); *Pharmacosmos A/S v. American Regent, Inc.*, IPR2019-01142, Pap. 13, 13 (Dec. 18, 2019) (rejecting petitioner’s explanation that timing of learning of the prior art does not matter as it is “‘forced to bring this IPR now’ because of ‘Patent Owner’s continued prosecution strategy targeting [petitioner’s product]’” and denying institution because petitioner was aware of the prior art for over four years and despite the fact that the petitioner did not gain any strategic advantage from the delay); *Valve Corp.*, IPR2019-00062, Pap. 11, 13–14 (finding this factor weighed against

institution despite petitioners' explanation that an intervening change in law had created a need to file a petition to preserve their ability to do so); *Parity Networks*, IPR2018-01642, Pap. 11, 10 (finding this factor weighed against institution where petitioner offered merely "generic justification" for delay).

The same certainly remains true here, and this factor favors denial.

6. Factors 6 and 7: Board's Considerations Of Finite Resources/One-Year Time Line

These related factors consider the "finite resources of the Board" and the timing requirement for the Board's final determination. In both the PGR and IPR1, the Board spent considerable resources to review the papers and issue the institution decisions. And, in IPR1 the Board spent additional resources to resolve Petitioners' request to submit supplemental information even when their Request for Rehearing was not timely filed, and they failed to ask for leave to file it out of time. *See supra* §III, pp.8–11. Asking the Board to adjudicate here what is effectively Petitioners' second late attempt to request rehearing does not conserve the Board's finite resources—and, indeed, it would encourage other parties to waste the Board's (and Patent Owner's) resources as Petitioners here have done. Petitioners offered no reason that the Board should ignore their repeated mistakes or reach a different result in analyzing multiple *General Plastic* factors that the Board already found weighted against institution *the last time Petitioners made*

these same arguments in IPR1. *See, e.g., Pharmacosmos*, IPR2019-01142, Pap. 13, 14–15 (holding that “[t]he sixth and seventh factors are efficiency considerations” and denying institution because petitioner could have requested rehearing and prevented wasting Board’s resources on relitigating issues that should have been handled in previous IPR); *Ivantis*, IPR2019-00972, Pap. 7, 16–17 (finding petitioner’s argument that the merits of any challenge to the disputed claims have not been considered unpersuasive because the sixth and seventh factors are efficiency considerations and generally “having multiple petitions challenging the same patent, especially when not filed at or around the same time . . . is inefficient and tends to waste resource”). This is particularly egregious given the multiplicity of up to ten (*see infra* §V.C.1) unspecified, undifferentiated challenges per claim packed into their Petition. *See iRobot Corp.*, IPR2018-00897, Pap. 9, 11–12 (“number of grounds asserted against the same claims [could] result in enough of a strain on Board resources to merit consideration towards denial”); *cf.* Consolidated Trial Practice Guide, 59 (Nov. 2019), available at <https://www.uspto.gov/sites/default/files/documents/tpgnov.pdf?MURL=> (“2019 Trial Practice Guide Update”) (“Based on the Board’s prior experience, one petition should be sufficient to challenge the claims of a patent in most situations.”); “[t]wo or more petitions filed against the same patent at or about the same time ...

may place a substantial and unnecessary burden on the Board and the patent owner and could raise fairness, timing, and efficiency concerns.”).

Thus, while factor seven (concerning the one-year timeline) may not weigh significantly for or against institution, factor six weighs in favor of denying institution.

7. Additional Factors Warrant Denial

As *General Plastic* itself makes clear), other factors may also be considered when a different petitioner files a subsequent petition, including whether there is potential prejudice to the subsequent petitioner if institution is denied and the pending instituted proceedings involving the first petitioner are terminated, and whether multiple petitions filed against the same patent are a direct result of patent owner’s litigation activity. *Gen. Plastic*, IPR2016-01357, Pap. 19, 16. *See also Am. Honda Motor Co.*, IPR2018-00348, Pap. 10. Here, Petitioners are not prejudiced because they have not been sued, and the filing of the present Petition is not the direct result of Patent Owner’s litigation activity, as the ’287 patent has not been and is not currently being litigated against Petitioners. Further, as discussed *supra* §III, pp.8–11, Petitioner’s supposed prejudice in their inability to file a follow-on petition was their own fault. Petitioners had multiple opportunities to save themselves from the predicament they created here. For example, Petitioners here chose not to join or consolidate with the pending PGR even when they

admitted that “[Fresenius] and Adello are willing to coordinate [IPR1] with the instituted PGR ... to facilitate joint consideration by the Board.” IPR1 ID, 7 (citing Petitioners’ reply to Patent Owner’s preliminary response) . Additionally, Petitioners were not diligent in filing a timely Request for Rehearing in IPR1 (indeed, they filed a request for a refund, instead) or in seeking leave to file such a request out of time. Thus, these factors favor the Board exercising its discretion to deny institution. Any other result would encourage other petitioners to waste Board (and Patent Owner) resources as Petitioners here have done.

* * *

For all these reasons, the Petition should be denied under §314(a).

IV. Petitioners Failed To Provide Sufficient Claim Construction Analysis Of Key Claim Terms⁷

⁷ With respect to claim language directed to the percentage of properly refolded proteins, Petitioners erroneously claimed Patent Owner “assert[ed] that this claim language was non-limiting” in its PGR POPR. Pet.22. That is not the case. Rather, Patent Owner argued that PGR Petitioners *failed to address* whether this claim language is limiting. EX2008, 15–19. And Petitioners here, rather than provide a construction as required, purport simply to “*assume* that the term is limiting.” Pet.35.

Petitioners here failed to fulfill their obligation under the Rules to explain “[h]ow the challenged claim is to be construed” and, when construed properly, “[h]ow the construed claim is unpatentable.” §42.104(b)(3)–(4). Petitioners were *required* to construe at least “preparation,” “is calculated,” and “maintains solubility” as necessary to the arguments they have advanced. But Petitioners did not take an affirmative position as to the proper constructions, explain why the constructions they present are correct, or even cite *any evidence whatsoever*. Instead, without any analysis, Petitioners simply recited constructions they do not even concede are correct. Petitioners apparently hoped to preserve their ability to argue entirely different constructions in other proceedings. However, the claim construction standard in this IPR is the *same* as the standard applicable in district court, and Petitioners have failed to satisfy their explicit obligation to tell the Board what Petitioners assert the claims mean. 37 C.F.R. §42.100(b); *Expedia, Inc. v. Int’l Bus. Mach. Corp.*, IPR2019-00404, Pap. 8, 7 n.3 (June 5, 2019); *see also Phillips v. AWH Corp.*, 415 F.3d 1303 (Fed. Cir. 2005) (en banc). By not providing their own constructions and addressing which constructions they believe are actually correct, and holding back their arguments to reveal them later elsewhere, Petitioners directly undercut the efficiency motivations underlying the Board’s switch to the *Phillips* claim construction standard. *See Changes to the Claim Construction Standard for Interpreting Claims in Trial Proceedings Before*

the Patent Trial and Appeal Board, 83 Fed. Reg. 51,340, 51,342 (Oct. 11, 2018) (Final Rule) (“Minimizing differences between claim construction standards used in the various fora will lead to greater uniformity and predictability of the patent grant, improving the integrity of the patent system. In addition, using the same standard in the various fora will help increase judicial efficiency overall.... [T]he scope of an issued patent should not depend on the happenstance of which court or governmental agency interprets it.”)

The Petition’s grounds should all be rejected on this basis. *See, e.g., Hologic, Inc. v. Enzo Life Scis. Inc.*, IPR2018-00019, Pap. 21, 6 (Nov. 28, 2018) (“Petitioner does not satisfy Rule 42.104(b)(3) when, in a proceeding applying the *Phillips* claim-construction standard, it ‘expressly disagree[s] with its proffered construction.’”); *SharkNinja Operating LLC v. Flexible Techs., Inc.*, IPR2018-00903, Pap. 8, 9–10, 23 (Oct. 17, 2018) (“Petitioner has not met its burden to provide a construction of the claims at issue, as required by 37 C.F.R. §42.104(b)(3) and (4)”); “The Petition indicates Petitioners’ own understanding that the meaning of the claim was unclear from the specification, and it was therefore incumbent on Petitioner to engage in further analysis or to propose a construction in order to satisfy the rules”).

“Wherein The Thiol-Pair Buffer Strength Maintains The Solubility Of The Preparation” (Claims 1, 4–6, 8–10, 12, and 14–15) and **“Wherein The**

Thiol-Pair Buffer Strength Maintains The Solubility Of The Solution” (Claims 16, 19–21, 23–26, and 29–30).⁸ Petitioners stated that “the specification and file history *do not provide clear guidance as to the meanings of the terms.*” This statement “indicates Petitioner[s]’ own understanding that the meaning of the claim was unclear from the specification, and it was therefore incumbent on Petitioner[s] to engage in further analysis” for both of these phrases. *Sharkninja*, IPR2018-00903, Pap. 8, 9, 23 (denying institution, noting “Petitioner has failed to satisfy its burden under 37 C.F.R. §42.104(b).”).

PGR petitioners contended that “wherein the thiol-pair buffer strength maintains the solubility of the preparation” is *indefinite*. EX2013, 29–31; *see also* PGR ID, 26. And, in litigation, Adello publicly asserted that “wherein the thiol-pair buffer strength maintains the solubility of the preparation” is indefinite. EX2003. Petitioners’ failure here to explain what these claims mean and why, so

⁸ Particularly in view of Petitioners’ failure to present claim construction analysis, Patent Owner’s POPR-stage analysis reflects only disputes relevant to the arguments it presents about Petitioners’ failure of proof and the Board’s upcoming institution decision. If instituted, Patent Owner may present in more detail additional claim construction analysis.

that review may proceed on this basis, is fatal to their Petition. *Cf.*, *Samsung Elecs. Am., Inc. v. Prisia Eng'g Corp.*, 948 F.3d 1342, 1353 (Fed. Cir. 2020) (“the proper course for the Board to follow, if it cannot ascertain the scope of a claim with reasonable certainty for purposes of assessing patentability, is to decline to institute the IPR or, if the indefiniteness issue affects only certain claims, to conclude that it could not reach a decision on the merits with respect to whether petitioner had established the unpatentability of those claims under sections 102 or 103.”).

Petitioners’ statement they “*will assume* the terms mean ‘maintains the solubility of the protein that properly refolds during incubation’” (Pet.26) does not save the Petition. Petitioners’ statement was not accompanied—as required—by any affirmative statement that such construction is correct, any analysis of how to construe the term, or any citations to intrinsic or extrinsic evidence. *Hologic, Inc.*, IPR2018-00019, Pap. 21, 6 (denying institution when petitioner applied construction with which it disagrees); *CareFusion Corp. v. Baxter Int’l, Inc.*, IPR2016-01456, Pap. 9, 6–7 (Feb. 6, 2017) (denying institution when petitioner “failed to indicate that it agrees with, proposes, or adopts the constructions” that it applies); *Robert Bosch LLC v. Orbital Australia PTY Ltd.*, IPR2015-01249, Pap. 9, 6 (Dec. 21, 2015) (denying institution when petition “include[d] no explanation for the proposed construction” and “no analysis of the claim language, the written

description, or the prosecution history”). Apparently hoping to preserve their ability to argue indefiniteness later, Petitioners omitted the required analysis. Pet.24–26. This behavior should not be encouraged by institution. Indeed, as discussed in this section above, by not providing their own constructions and addressing which constructions they believe are actually correct, Petitioners intentionally attempted to thwart the efficiency motivations underlying the Board’s switch to the *Phillips* claim construction standard. Pet.24. To the extent Petitioners’ §§102 and 103 arguments are nonetheless considered—and they should not be—“**wherein the thiol-pair buffer strength maintains the solubility of the preparation**” should be construed with reference to the solutes in the preparation, not with respect to solubility of proteins. According to the claims, those solutes include (1) at least one of a denaturant, an aggregation suppressor, and a protein stabilizer; (2) an oxidant; and (3) a reductant but do not include any protein. Indeed, the claims’ plain language (claims 1 and 10, reciting “the preparation”) requires that the solutes in the *preparation*, *i.e.*, those solutes that effectuate protein refolding, remain soluble.⁹ *See Phillips*, 415 F.3d at 1312–13.

⁹ In the PGR, both PGR petitioners and their expert (whose deposition was attended by counsel for Petitioners here) conceded that the very construction

The preparation contains no proteins. Therefore, construing “the preparation” in relation to solubility of proteins makes no sense and would be contrary to the plain language of the claims. In fact, the preparation claims make clear that maintenance of solubility recited in those claims refers to the effectuators of protein refolding rather than the protein itself.

Petitioners’ identified construction is also unsupported by the ’287 specification. First, it is clear from the specification that the “refold buffer” is the “preparation.” For instance, just like the “preparation” in the claims, the specification describes the refold buffer as including (1) at least one of a denaturant, an aggregation suppressor, and a protein stabilizer; (2) an oxidant; and (3) a reductant, but not any protein. EX1001, 2:62–3:4. Petitioners’ expert took a consistent position, for example, in describing *contacting the refold buffer with a protein*, which reflects an understanding that the refold buffer/preparation does not itself include protein. EX1002, ¶96.

Independent claims 16 and 26 recite the same solutes that effectuate protein refolding as the preparation in independent claims 1 and 10, namely (1) at least one

Petitioners proposed here is inconsistent with the plain meaning of the limitation. EX2013, 12; EX2014, 7–8 (¶¶66-67).

of a denaturant, an aggregation suppressor, and a protein stabilizer; (2) an oxidant; and (3) a reductant. As such, the construction of “**wherein the thiol-pair buffer strength maintains the solubility of the solution**” likewise should address the solubility of those solutes recited in the claims that effectuate protein refolding. At any given buffer strength within the scope of the claims, some protein—but not necessarily all—is acted upon by the chemical components that effectuate refolding for the given protein and that refolded protein is soluble. Petitioners’ proposed construction (requiring the solubility of the proteins and only the proteins to be maintained) ignores these refolding solutes/components. In addition to being inconsistent with the plain language of the claims, Petitioners’ identified construction is also inconsistent with the specification, which refers to refolding components as being in solution. *See, e.g.*, EX1001, 13:12–15, 8:56–65.

V. The Petition Failed To Establish Anticipation Or Obviousness Of Any Challenged Claim

Because the Petition failed to establish that any of the prior art references disclose—explicitly or inherently—each and every limitation of the Challenged Claims, alone or in combination, Petitioners have failed to meet their burden for institution. *See, e.g., Endo Pharm. Inc. v. Depomed, Inc.*, IPR2014-00653, Pap. 12, 9–11, 13–14 (Sept. 29, 2014) (prior art reference lacking one or more elements cannot anticipate that claim or any dependent claim). Indeed, even if the Board

were to find, buried within Petitioners' pile of arguments and combinations, an asserted Ground with merit (there isn't one), the burden of a full trial on all the Grounds would weigh heavily in favor of non-institution, and the Board should nevertheless exercise its discretion here to deny institution. *Chevron Oronite Co.*, IPR2018-00923, Pap. 9, 9–11; *Deeper, UAB*, IPR2018-01310, Pap. 7, 41–43 (informative).

A. Petitioners Failed To Show That Claims 1, 4, 8–10, 12, 14–16, 19, 23–26, And 20–30 Are Anticipated By Vallejo (Ground 1)

1. Petitioners Failed To Show Vallejo Teaches The Limitation “Thiol-Pair Buffer Strength To Maintain The Solubility Of The Preparation/Solution”

(a) Petitioners Failed To Show Vallejo Teaches The Limitation “Thiol-Pair Buffer Strength To Maintain The Solubility Of The Solution” (Claims 16, 19–21, 23–26, And 29–30)

Petitioners did not meet their burden to establish Vallejo teaches the limitation “maintains the solubility of the solution” as required in independent claims 16 and 26. Pet.34. Petitioners presented no analysis of the correct construction of this phrase, and presented no analysis of Vallejo under any correct construction. Thus, Petitioners did not meet their burden.

Even assuming, *arguendo*, that Petitioners' construction of “wherein the thiol-pair buffer strength maintains the solubility of the preparation” is correct, and the focus of the claim is the solubility of the protein and only the protein,

Petitioners simply argued that the “result” of protein refolding in Vallejo “**would not have occurred unless** the redox components maintained the solubility of the protein that properly refolded.” *Id.* This apparent **inherency** argument (though never identified as inherency in the Petition) is not sufficiently supported, as Petitioners provided no explanation as to why protein refolding necessarily (and thus inherently) requires that the solubility of the protein be “maintained.” *Crown Operations Int’l, Ltd. v. Solutia Inc.*, 289 F.3d 1367, 1377 (Fed. Cir. 2002) (citing *Cont’l Can Co. USA v. Monsanto Co.*, 948 F.2d 1264, 1268–69 (Fed. Cir. 1991)); *Fluidmaster, Inc. v. Danco, Inc.*, IPR2017-00770, Pap. 13, 20–21 (July 28, 2017) (denying institution because petitioners’ contention that the prior art “would necessitate” the claimed limitation, without providing additional argument or identifying persuasive evidence, was not enough). Petitioners also failed to square their assertion that the refolding **would not be “possible” without** the redox components with the fact that Schlegl, asserted in the PGR cited by Petitioners, **teaches that an alpha-LA protein is capable of refolding without redox chemicals**. See EX2013, 28 (“Schlegl discloses that redox chemicals are optional for refolding of α -LA.”); PGR ID, 7–8 (citing ’287 patent’s prosecution history); EX2001, 165; see also EX2008, 28. Petitioners’ expert failed to present evidence sufficient to support their assertion in light of Schlegl’s disclosure. See EX1002, ¶135; *Lifewave, Inc. v. Edward Blendermann*, IPR2016-00571, Pap. 7, 8–9 (Sept.

7, 2016) (denying institution where petitioner’s expert provides conclusory assertion of inherency that mirrors language in petition and is not supported by objective evidence); *TCL Corp. v. Telefonaktiebolaget LM Ericsson*, IPR2015-01584, Pap. 74, 47 (Jan. 24, 2017) (finding conclusory assertion insufficient to demonstrate express or inherent disclosure); *Roland Corp. v. inMusic Brands, Inc.* IPR2018-00335, Pap. 14, 26 (July 2, 2018) (denying institution because petitioner “proffers no evidence or argument to support its assertion that [the claimed] feature is inherent aside from the conclusory assertion that it is”).

(b) Petitioners Failed To Show Vallejo Teaches The Limitation “Thiol-Pair Buffer Strength To Maintain The Solubility Of The Preparation” (Claims 1, 4–6, 8–10, 12, And 14–15)

Petitioners presented no argument in the Petition as to whether Vallejo teaches “thiol-pair buffer strength to maintain the solubility of the preparation” under the correct construction of this phrase. *See supra* §IV.A.1(a). Petitioners were aware that the construction they identified was inconsistent with the plain claim language. PGR ID, 22 (citing PGR Pet.20–23); EX2008, 42–44; EX1047, 15–16 (showing Petitioners were aware of the PGR in IPR1); Pet.3–4.¹⁰

¹⁰ Petitioners’ only acknowledgement of a construction requiring that something other than the solubility of the proteins be maintained appeared in a conclusory

To the extent the Board adopts Petitioners’ incorrect and merely assumed (but not explained or supported) construction (Pet.25–26), Petitioners’ proof is insufficient for the same reasons discussed above (§V.A.1(a)).

2. Petitioners Improperly Mix And Match Disclosures From Different Embodiments

Petitioners did not address how Vallejo discloses every element of the asserted claims *arranged as in the claim*, as required for anticipation. *SynQor, Inc. v. Artesyn Techs., Inc.*, 709 F.3d 1365, 1375 (Fed. Cir. 2013).¹¹ Vallejo describes

footnote in Petitioners’ expert declaration. But, this assertion is improper incorporation by reference and cannot be considered. *Costco Wholesale Corp. v. Robert Bosch LLC*, IPR2016-00035, Pap. 23, 10–11 (Aug. 12, 2016). And in any case, Petitioners’ expert’s assertion was itself unexplained and conclusory, and therefore cannot meet Petitioners’ burden. *See, e.g., TCL Corp.*, IPR2015-01584, Pap. 74, 47 (conclusory assertion insufficient to demonstrate express or inherent disclosure); *Roland Corp.*, IPR2018-00335, Pap. 14, 26 (denying institution because “Petitioner proffers no evidence or argument to support its assertion that [the claimed] feature is inherent aside from the conclusory assertion that it is”).

¹¹*See also Microsoft Corp. v. Biscotti, Inc.*, 878 F.3d 1052, 1069 (Fed. Cir. 2017) (“anticipation is *not* proven by ‘multiple, distinct teachings that the artisan might

different, separate “Examples.” And Petitioners, in analyzing Vallejo, relied on bits and pieces pulled from different examples without acknowledging or explaining why they pick and choose across multiple examples of Vallejo for each claim. *See, e.g.*, Pet.28 (“Examples 2 and 6 of Vallejo disclose refolding rhBMP-2”), 29–30 (relying on and quoting Example 8 [0055] before jumping back to Examples 2 and 6), 31–32 (relying on Example 8 [0055] before jumping back to Examples 2 and 6); EX1002, ¶¶119 (“Vallejo discloses several Examples of protein refolding, including Examples 2 (refolding at different pH and redox conditions) and Example 6 (“pulse refolding” in which the protein concentration is increased over time).”), 122, 130–134, 136 (relying on Example 8 [0055] before jumping back to Examples 2 and 6), 125–129 (relying on Example 8 [0055] before jumping back to Example 6), 137 (relying on Description [0012] before jumping to

somehow combine to achieve the claimed invention.”); *Net MoneyIN, Inc. v. VeriSign, Inc.*, 545 F.3d 1359, 1371 (Fed. Cir. 2008) (for anticipation, “it is not enough that the prior art reference discloses . . . multiple, distinct teachings that the artisan might somehow combine to achieve the claimed invention.”); *Symantec Corp. v. RPost Commc’ns Ltd.*, IPR2014-00357, Pap. 14, 20 (July 15, 2014) (same).

Examples 3 [0046] and 4 [0047]). Petitioners have therefore failed to establish anticipation by Vallejo.

The Claimed Refold Mixture. Petitioners’ mixing and matching across embodiments is particularly problematic in connection with Petitioners’ analysis of “the claimed refold mixture” limitations. Pet.28–30. There, Petitioners relied on Vallejo’s “standard renaturation buffer” in Example 8 in arguing that “Examples 2 and 6 of Vallejo ... us[e] the same ‘standard renaturation buffer.’” Pet.30. But Petitioners ignored the fact that Example 4 identifies a *different* “standard renaturation buffer.” *Compare* EX1031, ¶55 *with id.*, ¶47. Petitioners did not explain why a POSITA would have understood that the renaturation buffer of Example 8 would be used in Examples 2 and 6 (which never say so), and not a different renaturation buffer—for example, the one in Example 4. To the contrary, the Example 4 buffer affirmatively disproves Petitioners’ assumption that there is one single “standard renaturation buffer” used across all of Vallejo’s different examples.

3. Petitioners Failed To Present Any Argument Applying Their Assumed Construction Of “Is Calculated” And Cited To Art Other Than Vallejo In Arguing “Anticipation”

With respect to claims 8, 9, 14, 15, 23–25, and 30, Petitioners failed to present *any* argument that Vallejo teaches the “is calculated” limitation under their own proffered construction of the term. Pet.37–38. Petitioners asserted, without

analysis, that Vallejo “inherently discloses examples of refolding using thiol-pair ratios and thiol-pair buffer strengths that fall within the ranges.... Adding Equations 1 and 2 ... does not render them patentable.” Pet.37. But in construing these claims, Petitioners stated they would construe “is calculated” in these claims to require an “active step of determining” and that the ratio and buffer strength “actually be calculated.” Pet.25. Petitioners further stated they would construe “is calculated” to mean “is determined using an equation as part of practicing the method, rather than using the equation in hindsight.” *Id.* But Petitioners provided no analysis showing how these claims are purportedly anticipated under their own construction of “is calculated.”

Further, despite asserting *anticipation* by Vallejo, Petitioners actually argued something very different: Petitioners asserted “[t]he equations would have been part of the ... knowledge of a POSA in 2009 and *their use by a POSA to calculate thiol-pair ratios and buffer strengths would have been trivial.*” Pet.37. Petitioners cited no expert support for this assertion, again failing to apply the construction of “is calculated” they identified in the Petition, and did not explain how this assertion (apparently suggesting, at most, obviousness) would fit into a theory of anticipation. Indeed, Petitioners actually cited *four additional prior art references* to argue “use by a POSA to calculate thiol-pair ratios and buffer strengths would have been trivial and elementary.” Pet.37; *InVue Sec. Prods. Inc. v. Mobile Tech,*

Inc., PGR2019-00019, Pap. 7, 8–10 (May 29, 2019) (denying institution; “Marszalek is one of the references discussed in Section IV.B of the Petition (Pet. 17), but it is not identified as forming the basis for unpatentability in Petitioner’s identification of ‘Ground 1’”); *Investors Exch., LLC. v. NASDAQ Tech. AB*, IPR2018-01796, Pap. 11, 6–7 (May 6, 2019) (“we determine that the Petition fails to identify ‘in writing and with particularity’ the printed publications that are the basis for the challenges Contrary to the chart presented in its Reply [to patent owner’s POPR], Petitioner’s analysis in the Petition cites to the additional documents, not just Exhibits 1005–1007 The above statements indicate that the Petition relies additionally upon Exhibits 1004 and 1008 to teach elements of ‘the comm-diff combination’ and not just as background references.”). For this additional reason, Petitioners failed to show that those claims are “anticipated” by Vallejo.

B. Petitioners Failed To Establish That Claims 16, 19–21, 23–26, And 29–30 Are Anticipated By Ruddon (Ground 2)

1. Petitioners Failed To Show Ruddon Discloses A Process That Properly Refolds Proteins Into Biologically Active Forms

Petitioners failed to explain how Ruddon’s refolding process for the hCG- β *sub-unit* results in properly folded, biologically active protein. Instead, Petitioners argued Ruddon’s refolding process results in “properly-folded hCG- β protein that

is *competent for assembly into* the full hCG hormone with biological activity.”

Pet.44. But Petitioners and their expert acknowledged that *only the fully assembled hCG hormone* is capable of binding to hormone receptors and that hormone-receptor binding is biological activity. *Id.*; EX1002, ¶¶150–151. Neither Petitioners nor their expert explained how a protein sub-unit that is merely “competent for assembly” into a biologically active hormone with other components *is itself biologically active*. And Petitioners also failed to address the contradictory disclosure in Ruddon itself, which drew a distinction between biological activity and competence for assembly: “Unfolded glycoprotein hormone sub-units are expressed in prokaryotic cells, then re-folded in vitro in a thiol redox buffer *to form assembly-competent sub-units*. The sub-units *are assembled to produce active hormones*.” EX1025, 1. Indeed, biological activity was shown in Ruddon only after the refolded β sub-unit was combined with a *native* α sub-unit (*e.g.*, the α sub-unit was not made in a non-mammalian expression system and subsequently refolded). EX1025, 53:7–28.

2. Petitioners Failed To Show Ruddon Teaches The Limitation “Thiol-Pair Buffer Strength To Maintain The Solubility Of The Solution”

Petitioners also did not meet their burden to establish Ruddon teaches the limitation “maintains the solubility of the solution” as required in independent claims 16 and 26. Pet.44–46. Petitioners presented no analysis of the correct

construction of this phrase, and presented no analysis under any correct construction. Thus, Petitioners did not meet their burden.

Even assuming, *arguendo*, that Petitioners' construction of "wherein the thiol-pair buffer strength maintains the solubility of the preparation" is correct, Petitioners explicitly relied on their flawed analysis for the same limitation in Vallejo (Pet.46), and it fails for the same reasons discussed above. *See supra* §V.A.1.

3. Petitioners Failed To Present Any Argument Applying Their Assumed Construction Of "Is Calculated" And Cited To Art Other Than Ruddon In Arguing "Anticipation" (Claims 23–25 And 30)

With respect to claims 23–25 and 30, as with Vallejo (*see supra* §V.A.3), Petitioners failed to present *any* argument that Ruddon teaches this limitation under the correct construction of "is calculated." Pet.37–38. While Petitioners stated they would assume "is calculated" requires an "active step of determining" and that the ratio and buffer strength "actually be calculated," and stated they would construe "is calculated" to mean "is determined using an equation as part of practicing the method, rather than using the equation in hindsight," Petitioners provided no analysis under this construction. Pet.25.

For claim 23, Petitioners asserted only that the thiol-pair ratio is "expressly calculate[d]." Pet.46–47. But Petitioners did not assert, let alone explain how,

Ruddon teaches the “active step of determining” or show how the ratio is determined in Ruddon “as part of practicing the method, rather than using the equation in hindsight.” *See* Pet.25. Further, while Petitioners argued about what “[a] POSA would have understood” or “expected,” they never cited any expert or other evidence for that proposition. *See* Pet.47 n.10.

For claims 24, 25, and 30, Petitioners’ Ruddon analysis was the same as for Vallejo and cited back to their Vallejo arguments regarding the “is calculated” limitations. Pet.47. Thus, Petitioners failed to show Ruddon anticipates these claims for the same reasons described above for Vallejo. *Supra* §V.A.3.

C. Petitioners’ Obviousness Grounds Are Unclear, Confusing, and Legally Insufficient (Grounds 3 And 4)

As an initial matter, Petitioners did not make any attempt to establish Clark 1998, Gilbert, or Schafer are prior art printed publications. Petitioners merely asserted without support that Clark 1998 “was published in a printed publication as of 1998.” Pet.51; *Hulu, LLC v. Sound View Innovations, LLC*, IPR2018-01039, Pap. 29, 16–17 (Dec. 20, 2019) (precedential) (“[T]here is no presumption in favor of ... finding a reference to be a printed publication ... [T]he burden is on the petitioner to identify with particularity evidence sufficient to establish a reasonable likelihood that the reference was publicly accessible before the critical date of the challenged patent, and therefore that there is a reasonable likelihood that it

qualifies as a printed publication”). Similarly, Petitioners merely concluded without support that Gilbert, and Schafer “were each published in a printed publication before June 2008.” Pet.52. But Petitioners said nothing about where the pages they attached as an exhibit were found or generated. For instance, Petitioners presented no evidence establishing that the Clark 1998, Gilbert, or Schafer exhibits were from regularly published journals, and gave no explanation for the asserted 1998 or 2008 dates. Even if Petitioners took the date from the text of the exhibits (which Petitioners did not assert), they provided no explanation as to why such date would not be hearsay. Petitioners thus failed to meet their burden on a basic element of anticipation: establishing their references are prior art printed publications and authentic. *See, e.g., Hulu, LLC*, IPR2018-01039, Pap. 29, 13 (“at the institution stage, the petition must identify, with particularity, evidence sufficient to establish a reasonable likelihood that the reference was publicly accessible before the critical date of the challenged patent and therefore that there is a reasonable likelihood that it qualifies as a printed publication”); *Dr. Reddy’s Labs., Inc. v. Celgene Corp.*, IPR2018-01507, Pap. 7, 8–11 (Feb. 11, 2019) (denying institution for lack of proof regarding printed publication status of references, collecting cases); *TRW Auto. U.S. LLC v. Magna Elecs. Inc.*, IPR2014-01347, Pap. 25, 8–9 (Jan. 6, 2016) (“[C]opyright notice is ... not probative that the article was ever published by IEEE or anyone else.”).

Moreover, in violation of the Board’s rules and the Federal Circuit’s minimum requirements for any showing of obviousness (*see, e.g.*, 35 U.S.C. §312(a)(3); 37 C.F.R. §42.104(b)(4)–(5); *In re Magnum Oil Tools, Int’l. Ltd.*, 829 F.3d 1364, 1380 (Fed. Cir. 2016)), the Petitioners failed to articulate and explain any of their obviousness arguments, and also failed to specify where each element of the claim is found in the prior art and to identify the specific portions of evidence supporting their challenges, improperly leaving it to the Board and Patent Owner to guess what Petitioners might be suggesting. *Clim-A-Tech Indus., Inc. v. Ebert*, IPR2017-01863, Pap. 13, 27–28 (Feb. 12, 2018) (denying institution when petition “fail[ed] to identify ‘with particularity’ the grounds and evidence that form the underlying basis for the patentability challenge”); *Teoxane S.A. v. Allergan, PLC*, IPR2017-01906, Pap. 15, 24–25 (March 9, 2018) (“Petitioner should not expect the Board to search the record to piece together what may support a challenge.”); *John Crane, Inc. v. Finalrod IP, LLC*, IPR2016-01827, Pap. 6, 11 (Jan. 31, 2017) (describing petitioner’s responsibility “to explain specific evidence that support[s] its arguments, not the Board’s responsibility to search the record and piece together what may support Petitioner’s arguments”); *InfoBionic, Inc. v. Braemer Mfg., LLC*, IPR2016-01236, Pap. 8, 13 (Dec. 23, 2016) (denying institution where petitioner “does not persuasively articulate an adequate reason why and how the teachings of the three relied-upon references would have

rendered obvious the claimed subject matter”); *Free-Flow Packaging Int’l, Inc. v. Automated Packaging Sys., Inc.*, IPR2016-00351, Pap. 7, 14 (June 27, 2016) (denying institution where petitioner failed to show “a person of ordinary skill in the art would have had a reason to combine” prior art references); *Apple, Inc. v. ContentGuard Holdings, Inc.*, IPR2015-00358, Pap. 9, 7–8 (July 2, 2015) (denying institution where petitioner failed to “identify sufficiently the differences between the claimed invention and the prior art, or how the prior art teachings are to be modified or combined” making it “difficult to understand the distinctions (if any) between the asserted grounds, because they are lumped together”); *AOL Inc. v. Coho Licensing LLC*, IPR2014-00966, Pap. 6, 13 (Nov. 20, 2014) (“A petitioner who does not state the differences between a challenged claim and the prior art, and relies instead on the Patent Owner and the Board to determine those differences risks having the corresponding ground of obviousness not included for trial for failing to adequately state a claim for relief.”).

1. Grounds 3 And 4 Are A Combination Of Multiple Poorly-Delineated Grounds

Ground 3, asserted to be an obvious ground based on “Ruddon in view of Clark 1998 in light of Schafer *or* Gilbert” (Pet.51) is also referred to as “Ruddon and Clark 1998 and [if necessary] Schafer *and* Gilbert” (Pet.59) (“a POSA would have combined the teaching of Ruddon and Clark 1998, and if necessary Schafer

and Gilbert...”). Ground 4, to the extent it can be understood at all, apparently adds Vallejo as a base reference and relies on the art identified in Ground 3 as the secondary references. Pet.65–66. But Petitioners also contended neither Schafer nor Gilbert are necessary to these grounds. Pet.59 (“if necessary Schafer and Gilbert”). Thus, “Ground 3” is apparently at least four different grounds: Ruddon in view of Clark 1998; Ruddon in view of Clark 1998 and in light of Schafer and Gilbert; Ruddon in view of Clark 1998 and in light of Schafer; and Ruddon in view of Clark 1998 and in light of Gilbert. Similarly, “Ground 4” is also at least four different grounds: Vallejo in view of Ruddon and Clark 1998; Vallejo in view of Ruddon and Clark 1998 and in light of Schafer and Gilbert; Vallejo in view of Ruddon and Clark 1998 and in light of Schafer; and Vallejo in view of Ruddon and Clark 1998 and in light of Gilbert.

Petitioners’ suggestion of using these additional, alternative references in an apparent hope the Board might find something—*anything*—that is compelling is improper and a waste of resources. It makes it nearly impossible for Patent Owner to adequately respond to the unwieldy Petition and for the Board to oversee and manage such a trial. It also inappropriately shifts Petitioners’ burden under §312(a)(3) to the Board and Patent Owner. *See InVue Sec. Prods.*, PGR2019-00019, Pap. 7, 8–9 (denying institution and stating, with respect to “and/or” combinations, “the Obviousness Challenges are not set forth with particularity

because it is unclear what each challenge encompasses and what evidence Petitioner relies upon to establish unpatentability under each challenge”); *Zetec, Inc. v. Westinghouse Elec. Co.*, IPR2014-00384, Pap. 10, 14 (Jul. 23, 2014) (“Moreover, numerous grounds are presented and argued together in the Petition, thereby obfuscating the arguments ... [this] places a significant and unfair burden on the Patent Owner to respond adequately.”). Again, Petitioners failed to meet their obligations under §312(a)(3), and the Board should not institute trial.

2. Petitioners Did Not Clearly Identify Which “Gilbert” Reference Was Intended To Be Part Of Grounds 3 And 4

Petitioners included *two* references by Gilbert in their exhibit list, EX1013 and EX1014. But it is not clear from the Petition which Gilbert reference Petitioners are relying on. In the beginning of their Ground 3 analysis, Petitioners asserted “Gilbert” was published in 1995, referencing the document corresponding to Exhibit 1014. Pet.52. However, just five pages later, Petitioners referenced what “Gilbert 1990 ... show[s]” and cited Exhibit 1013. Pet.56. Subsequently, Petitioners referred to “Gilbert,” making assertions about what Gilbert teaches and why would have allegedly combined it with other references. Pet.58. However, Petitioners did not identify which Gilbert exhibit is relied upon for these assertions, let alone which page. Ground 4 simply incorporates this analysis. Pet.65–66. Patent Owner and the Board are thus left to guess at which Gilbert reference is

meant to be part of the combinations, and it would be prejudicial and a practical impossibility for Patent Owner to know what to rebut in any Patent Owner Response. *Teoxane*, IPR2017-01906, Pap. 15, 24–25 (“We will not search the record (including [Petitioner’s expert’s] declaration) to ascertain whether any evidence supports that bare argument.”); *ContentGuard Holdings, Inc.*, IPR2015-00358, Pap. 9, 8–9 (“Petitioner leaves it to the Board to ascertain what gaps to fill Patent Owner need not present a showing to ‘render’ its claims patentable. The burden is on Petitioner to show unpatentability.”).

3. Petitioners Did Not Clearly Identify The Base Reference For Ground 3 And Failed To Explain The Modifications To The Base Reference For Grounds 3 And 4 Or Analyze The Motivation To Combine

Petitioners did not clearly identify their base reference for Ground 3. While the section header for Ground 3 might suggest that Ruddon is the primary reference, Petitioners’ actual analysis muddies this assertion. *Petitioners switched between Ruddon and Clark 1998 as the primary references*, first asserting, for instance what “Clark 1998 in combination with Ruddon teach[es]” (Pet.59) and then, for the next limitation, asserting what “Ruddon in combination with Clark 1998” (Pet.60) allegedly teaches. Ground 4 only builds and relies upon these deficiencies. Pet.65–66.

Because of these failings, and because of Petitioners' failure to provide appropriate citations, it is also *not clear which reference Petitioners are relying on for what* alleged teaching. *Clim-A-Tech Indus.*, IPR2017-01863, Pap. 13, 27–28; *Costco Wholesale Corp. v. Robert Bosch LLC*, IPR2016-00042, Pap. 28, 3–4 (July 7, 2016) (denying rehearing and confirming “[i]t is not [the Board’s] role to sift through the information provided and determine on our own if there is a reasonable likelihood that the asserted references show unpatentability.”). For example, for certain claim limitations (*e.g.*, the “redox components” limitations (Pet.61)), Petitioners cited to disclosures from both Ruddon and Clark 1998 without explaining what they assert is lacking in the primary reference or explaining how the secondary reference would fill whatever gap they have in mind. *See, e.g., Graham v. John Deere*, 383 U.S. 1, 17–18 (1996) (holding that the question of obviousness is resolved on the basis of underlying factual determinations including: (1) the “scope and content of the prior art”; (2) any “differences between the claimed subject matter and the prior art”; (3) the “level of ordinary skill in the art”; and (4) “secondary considerations” of non-obviousness.); *Feit Elec. Co. v. Philips Lighting N. AM. Corp.*, IPR2018-00790, Pap. 9, 16 (Oct. 10, 2018) (denying institution because petitioner failed to identify with particularity how the prior art teaches or suggests the structures of the claim elements as required by §312(a)); *DISH Network Corp. v. Customedia Techs.*,

LLC, IPR2017-00936, Pap. 13, 10–11 (Aug. 24, 2017) (denying institution because petitioner failed to articulate with sufficient particularity which of two disclosures in the prior art mapped to two distinct claim elements); *John Crane, Inc.*, IPR2016-01827, Pap. 6, 12 (denying institution when it was unclear which prior art reference petitioner relied upon to teach each claim element or unclear whether petitioner relied upon an unarticulated combination of the prior art references); *Dep’t of Justice v. EnvisionIt, LLC*, IPR2017-00186, Pap. 8, 26 (May 3, 2017) (denying institution, noting the Board is “not inclined to play archaeologist with the record in an attempt to fill the gaps in Petitioner’s argument”); *Adidas AG v. Nike, Inc.*, IPR2016-00920, Pap. 6, 6–7 (Oct. 20, 2016) (denying institution where the Board “[was] generally [] left to guess as to what limitations [petitioner] seeks to supply from the teachings of each of the references that it cites as a part of the proposed ground” and “[t]hose uncertainties and vagaries also deprive[d] [patent owner] of an appropriate basis for it to formulate a response to the [p]etition.”). As a second example, with respect to the claimed preparation and solution (Pet.60), it is not apparent whether, in Petitioners’ combination, only elements of Ruddon or elements of Clark 1998 are being relied upon, or whether Ruddon is being modified based on Clark 1998’s teachings or vice versa. The same is true with respect to the “redox components” limitations. Pet.61.

In part due to these deficiencies, Petitioners also failed to provide any meaningful analysis of *how a POSITA would modify* the base reference(s). *See, e.g., Healthcare Logistics, Inc. v. Kit Check, Inc.*, IPR2019-00385, Pap. 7, 14 (June 3, 2019) (denying institution because petitioner failed to explain how to modify a reference to meet a limitation and why a POSITA would be motivated to do so); *ADT LLC v. Applied Capital, Inc.*, IPR2017-01825, Pap. 7, 15 (Jan. 24, 2018) (denying institution because petitioner failed to explain whether and why it would have been obvious to modify a prior art disclosure); *John Crane, Inc.*, IPR2016-01827, Pap. 6, 14 (denying institution and stating petitioner must “articulat[e] how and why specific teachings of the references would have been combined. It is Petitioner’s responsibility to explain specific evidence that support[s] its arguments, not the Board’s responsibility to search the record and piece together what may support Petitioner’s arguments.”) (citing *Dominion Dealer Sols., LLC v. Autoalert, Inc.*, IPR2013-00225, Pap. 15, 4 (Oct. 10, 2013)); *Adidas AG*, IPR2016-00920, Pap. 6, 6–7 (denying institution where Board “left to guess as to what limitations [Petitioner] seeks to supply from the teachings of each of the references that it cites as a part of the proposed ground”); *Axon Enter., Inc. v. Digital Ally, Inc.*, IPR2017-00515, Pap. 10, 18–19 (July 6, 2016) (denying institution, stating neither petitioner nor its expert “explains in sufficient detail the nature of

Petitioner’s proposed modification ... Petitioner does not explain in sufficient detail *how* the proposed modification is supposed to work”).

In addition to failing to point out specific modifications to the base reference, Petitioners failed to explain *why a POSITA would be motivated to make each such modification*. *ContentGuard Holdings, Inc.*, IPR2015-00358, Pap. 9, 9 (denying institution when petition “lack[ed] an articulated or apparent reason supported by ‘some rationale underpinning’ to modify/combine the purportedly known elements” of the prior art); *Linear Tech. Corp. v. In-Depth Test LLC*, IPR2015-00421, Pap. 15, 17 (July 21, 2015) (denying institution when petition failed to adequately explain motivation to modify the prior art). Indeed, Petitioners’ arguments regarding motivation to combine are insufficient, generic, and conclusory. Pet.57–58. Petitioners failed to address motivation to combine particular elements of the prior art, and, at best, Petitioners’ motivation to combine arguments are really just arguments about analogous art. *Front Row Techs., LLC v. MLB Adv. Media, L.P.*, IPR2015-01932, Pap. 7, 20–21 (March 25, 2016) (“The fact that the cited references are ‘analogous art’ [] and ‘are all in the same field of endeavor as the claimed invention’ [] does not, by itself, however, establish that it would have been obvious to combine their features.” (internal citations omitted)); *Shopkick Inc. v. Novitaz, Inc.*, IPR2015-00279, Pap. 7, 29–30 (May 29, 2015) (“The fact that the cited references are ‘analogous to the claimed invention’ and

share ‘the same design incentives with each other and with the [patent at issue] itself’ [] does not establish that it would have been obvious to combine their features.” (internal citations omitted)). For example, Petitioners never explained (nor could they, given the deficiencies identified above) the benefit of any proposed combination, or how the proposed combination would improve the primary reference.

4. Petitioners Failed To Articulate A Reasonable Expectation Of Success For Grounds 3 And 4

The Petition is also devoid of any discussion of reasonable expectation of success other than a conclusory statement that the combination would work “[g]iven the success reported in Ruddon and Clark 1998” (Ground 3) and “[b]ecause of the success reported in these references” (Ground 4). Pet.59, 65. But those teachings *do not even apply to combinations of teachings from Ruddon and Clark 1998*, let alone, *e.g.*, Schafer and Gilbert. Pet.59; *see, e.g., Nintendo Co. v. Genuine Enabling Tech LLC*, IPR2018-00543, Pap. 7, 24 (Aug. 6, 2018) (denying institution because the petitioners’ “only support [was] a conclusory statement [from their expert] without any evidentiary support, which has no weight”). It is nearly impossible to analyze Petitioners’ reasonable expectation of success arguments given the other problems with their analysis noted above, including the fact that one cannot discern from the Petition what Petitioners’

proposed modifications are. Petitioners’ vaguely- and inconsistently-defined combination of elements “is not sufficient to allow for a reasoned analysis of the proposed combination or to allow proper consideration of whether a POSITA would have had a reasonable expectation of success in combining the teachings of the prior art references to arrive at the claimed invention.” *10X Genomics, Inc. v. Bio-Rad Labs., Inc.*, IPR2018-00301, Pap. 18, 14–16 (June 15, 2018); *see also In re Stepan Co.*, 868 F.3d 1342, 1346–48 (Fed. Cir. 2017) (vacating PTAB unpatentability judgment and discussing requirement for a reasonable expectation of success); *Amgen Inc. v. F. Hoffman-La Roche Ltd.*, 580 F.3d 1340, 1362 (Fed. Cir. 2009) (“An obviousness determination requires that a skilled artisan would have perceived a reasonable expectation of success in making the invention in light of the prior art.”); *Apple Inc. v. Memory Integrity, LLC*, IPR2015-00159, Pap. 12, 27 (May 11, 2015) (finding obviousness ground deficient where petition did not address reasonable expectation of success).

5. Petitioners Failed To Present Any Argument Applying Their Assumed Construction Of “Is Calculated”

As with their arguments regarding Vallejo (*supra* §V.A.2), with respect to claims 8, 9, 14, 15, 23–25, and 30 Petitioners failed to present *any* argument that the proposed combination or combinations teach this limitation under the correct construction of “is calculated” (Pet.64–66), which Petitioners conceded requires

the “thiol-pair ratio or thiol-pair buffer strength to actually *be calculated*” (Pet.25). Petitioners asserted only that these ratios were known, not that *actually calculating them* would have been obvious. Thus, Petitioners failed for this additional reason to show that claims 8, 9, 14, 15, 23–25, and 30 are obvious based on Grounds 3 or 4.

VI. Conclusion

Because of the Petition’s failures in both proof and specificity of argument, Petitioners failed to show that the Challenged Claims are anticipated or rendered obvious. Because the Petition failed to show a reasonable likelihood that the Petitioners will prevail in proving any Challenged Claim is unpatentable, the Petition should be denied in its entirety, and, pursuant to §314, no *inter partes* review should be instituted. Even to the extent that, arguendo, the Board determines that the Petitioners have met their burden on any subset of these grounds (they have not), post-*SAS*, the Board should use its discretion under §314(a) to deny institution on all grounds because, (1) Petitioners here are improperly pursuing their second petition against the ’287 patent (effectively making their second untimely Request for Rehearing from the proper denial of the first) and have improperly benefited from road-mapping from prior filings by the Patent Owner and decisions by the Board in both their own prior IPR and another PGR in which they actively coordinated and participated, and (2) because, in light

of the evidence and arguments presented in this IPR Petition, requiring the Board and Patent Owner to bear the wasteful burden and of a trial on all grounds to reach such a subset of grounds would not, *inter alia*, be an efficient use of the Board's limited time and resources.

Respectfully submitted by:

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CERTIFICATE OF WORD COUNT

The undersigned certifies that the foregoing PATENT OWNER'S PRELIMINARY RESPONSE UNDER 37 C.F.R. §42.107 complies with the type-volume limitation in 37 C.F.R. §42.24(c)(1). According to the word-processing system's word count, the brief contains 13,943 words, excluding the parts of the brief exempted by 37 C.F.R. §42.24(a)(1).

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The undersigned hereby certifies that a copy of PATENT OWNER'S PRELIMINARY RESPONSE UNDER 37 C.F.R. §42.107 has been served in its entirety by causing the aforementioned document to be electronically mailed to the following attorneys of record for the Petitioners listed below:

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