

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

ATEA PHARMACEUTICALS, INC.
Petitioner,

v.

GILEAD SCIENCES, INC.
Patent Owner.

Case No. PGR2023-00046

U.S. Patent No. 11,642,361

PATENT OWNER'S PRELIMINARY RESPONSE
37 C.F.R. § 42.107

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I. INTRODUCTION

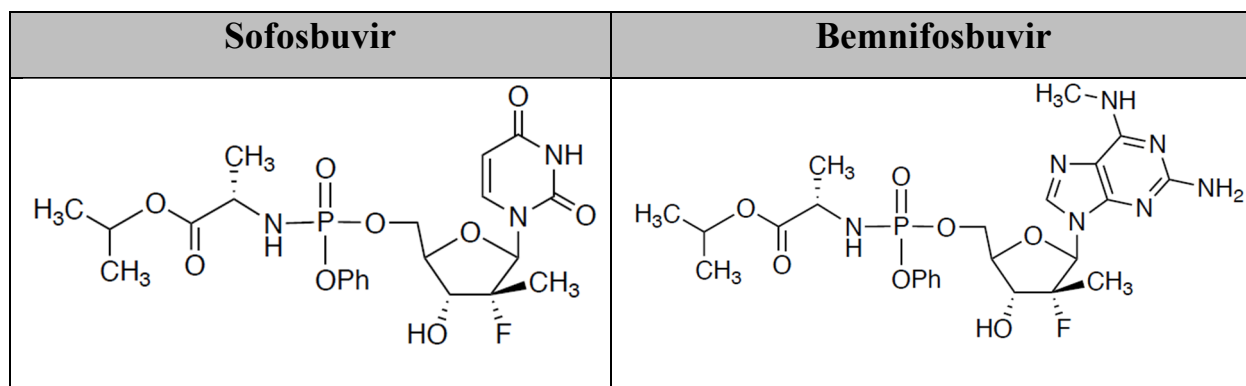
On December 6, 2013, after expedited review, the FDA approved sofosbuvir as Gilead's Sovaldi®, a once-daily oral nucleotide analogue for the treatment of chronic Hepatitis C ("HCV") infection. The scientific and popular press around the world hailed the approval, which was prominently featured on the front pages of both the *New York Times* and the *Wall Street Journal*.¹ For the first time, many HCV patients could now be treated without interferon, the previous standard of care with limited efficacy and brutal side effects, while others only needed to take interferon for 12 weeks. And, unlike the prior interferon-based treatments, most patients were *cured*. Just ten months later, Gilead took sofosbuvir to still another level when the FDA approved Harvoni®, which combines sofosbuvir with another drug. Harvoni® cures 95% of the HCV patients who take it, in as little as 8 weeks, with no interferon. Sofosbuvir revolutionized HCV treatment, replacing months and months of horrible side effects and an uncertain prognosis with a single daily pill treatment that cures.

The development effort to create sofosbuvir spanned more than a decade and tens of thousands of hours. It began with extensive research into the active moieties—the nucleotides—and then, ultimately, the prodrugs capable of effectively delivering the active nucleotide moiety to cells. The patent at issue here, U.S. Patent

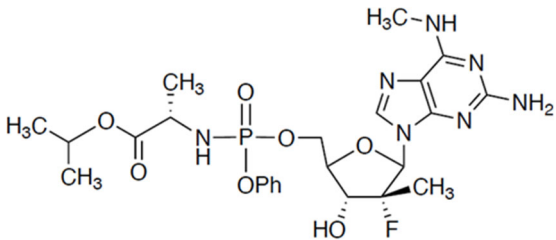
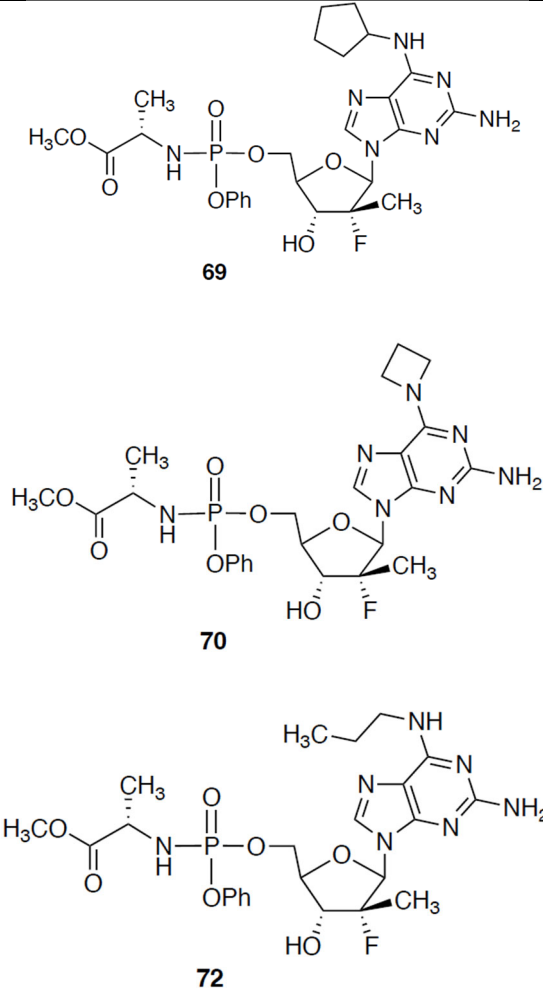
¹ Ex. 2001; Ex. 2002.

11,642,361 (“the ’361 patent”), discloses and claims some of the fruits of the sofosbuvir development effort.

Unlike sofosbuvir, and the groundbreaking development program that led to its discovery, Atea’s bemnifosbuvir is nothing more than a knockoff, the very thing the patent system is meant to prevent. Its knockoff status is self-evident by a simple comparison of the structures (and even just the names) of the two molecules:



Lest one be persuaded that the solitary difference between them (the base) somehow evidences independent creation, compare bemnifosbuvir to three compounds made and tested in the ’361 patent:

Bemnifosbuvir	'361 Patent Compounds 69, 70 and 72
 Chemical structure of Bemnifosbuvir, a nucleoside analog. It features a 2'-deoxyribose sugar with a fluorine atom at the 2' position and a methyl group at the 3' position. The sugar is linked via a phosphate group to a phosphonate group, which is further linked to a pyrazole ring. The pyrazole ring has an amino group at the 4-position and a methylamino group at the 5-position.	 Chemical structures of compounds 69, 70, and 72, which are nucleoside analogs similar to Bemnifosbuvir but with different substituents on the pyrazole ring. Compound 69: The pyrazole ring has a cyclopentylamino group at the 4-position and an amino group at the 5-position. Compound 70: The pyrazole ring has a methylamino group at the 4-position and an amino group at the 5-position. Compound 72: The pyrazole ring has a methylamino group at the 4-position and an amino group at the 5-position.

Atea brings this challenge in an attempt to bring its knockoff to market without compensating Gilead. But its Petition is meritless. Petitioner asserts lack of written description and lack of enablement but makes no attempt to apply the law of either to the facts, fails to mention, much less address, the relevant legal tests in *Ariad* and *Wands*, and improperly conflates the two distinct legal theories. As a

result, the Petition does not sufficiently “state how the identified subject matter fails to comply with the statute,” as required by 37 C.F.R. § 42.204. And Petitioner’s scattershot complaints about the disclosure, such as the specification not disclosing the claim language in *haec verba* or supposedly only disclosing one working example, are legally insufficient to establish lack of written description or enablement. As for Petitioner’s anticipation ground, it depends on the Board depriving the ’361 patent of its proper priority date based on the same insufficient Section 112 arguments and thus also fails.

Rather than simply relying on the merits, merits it knows are weak, Atea resorts to name calling, accusing Gilead of any manner of untoward things based on out-of-context statements made in litigations over patents that are very different than the patent at issue here. When viewed in the light of day, it is clear this name calling is just that. Gilead has done nothing wrong, and this is just the latest attempt by someone to take advantage of Gilead’s (and its predecessor, Pharmasset’s) groundbreaking innovation. Atea’s request for post-grant review should be denied.

II. BACKGROUND

A. HCV

Hepatitis C virus (HCV) is a viral disease that targets the liver. Since 2007, it has caused more deaths than HIV and AIDS. At the time of the invention, over 200

million people worldwide, including more than 4.5 million in the U.S., suffered from HCV.² Left untreated, HCV ultimately leads to liver disease and is the primary cause of liver cancer and liver transplants.³ The prior standard of care, an interferon-based therapy that required 48 weeks of treatment and had a 50% success rate, was so debilitating that patients often chose to live with the life threatening disease rather than endure treatment.⁴ Sofosbuvir changed all of that.

Sofosbuvir was first approved in December of 2013.⁵ Even at the time, the scientific press hailed sofosbuvir as a major scientific breakthrough.⁶ Time would prove them correct. In the decade that followed, sofosbuvir-based treatments have cured over four million HCV patients around the world.⁷ The lead inventor of sofosbuvir, named on the '361 patent, Michael Sofia, was awarded the Lasker-

² Ex. 1001 at 1:51-60.

³ *Id.* at 1:60-64.

⁴ *Id.* at 3:62-4:3.

⁵ Ex. 2004 at 2.

⁶ Ex. 2001; Ex. 2002.

⁷ Ex. 2003

Debakey Clinical Medical Research Award from the Lasker Foundation (sometimes referred to in the industry as the “American Nobel Prize”) for his work to treat HCV.⁸

B. The Invention of the '361 Patent

The '361 patent resulted from Dr. Sofia's development work that led to sofosbuvir. The patent discloses novel “nucleoside phosphoramidate prodrugs” “useful as inhibitors of HCV NS5B polymerase and for treatment of hepatitis C in mammals,” one of which is sofosbuvir.⁹

The disclosure spans 320 pages and 618 columns. The inventors first lay out ten generic structural formulas for their nucleotide prodrugs, each with various “aspects” that refine the substituents in their inventive compounds.¹⁰ The inventors proceed to provide 31 groups of tables with 12,400 “contemplated species of the various aspects of the disclosed embodiments.”¹¹ The patent then teaches how to make the disclosed nucleotide prodrugs, including references to earlier applications that teach how to make the “nucleoside analog” portion of the compounds, including

⁸ Ex. 2028

⁹ Ex. 1001 at 1, 1:41-44.

¹⁰ *Id.* at 12:33-54:16.

¹¹ *Id.* at 54:17-579:39.

the previously difficult to synthesize 2'methyl-up, 2'fluoro-down nucleotide analogs (discussed more below) and 12 synthetic examples teaching how to synthesize the full prodrug compounds.¹² In total, the inventors included 75 examples of nucleotide prodrugs that they had synthesized, NMR data for all but six of those examples, and anti-HCV activity data for 19 of them.¹³ Example 25 is sofosbuvir.¹⁴

The '361 patent concludes with three claims, of which only claim 1 is challenged by Petitioner ("the Challenged Claim").

C. The '361 Patent Prosecution History

The prosecution history here shows that the examiner closely examined the application that led to the '361 patent ("the '267 application"), including assessing the proposed claims' compliance with Section 112. Experienced examiner Patrick Lewis had a long history with the specification of the '361 patent and saw no problem with the support for the Challenged Claim.

¹² *Id.* at 584:51-596:50.

¹³ *Id.* at 590:9-617:20.

¹⁴ *Id.* at 597-98.

The applicants filed the first non-provisional application in the '361 patent family on March 21, 2008.¹⁵ Examiner Lewis served as the primary examiner on that application, which later issued as U.S. Patent No. 7,964,580.¹⁶ Examiner Lewis continued as the primary examiner for later applications, in total examining nine applications that resulted in nine issued patents prior to the '267 application.¹⁷ Over the course of his twelve years examining those nine applications, Examiner Lewis performed 59 prior art searches, considered hundreds of potential prior art references, and issued 15 office actions.¹⁸ To say the least, by the time he examined the '267 application in 2021-2022, Examiner Lewis knew well the relevant technology, the prior art, and the application's disclosure.

On October 22, 2020, the applicants filed the '267 application.¹⁹ Before any substantive prosecution, the applicants filed a preliminary amendment cancelling the

¹⁵ *See* Ex. 1005.

¹⁶ *Id.*

¹⁷ Ex. 1006 at 1; Ex. 1007 at 1; Ex. 1008 at 1; Ex. 1009 at 1; Ex. 1010 at 1; Ex. 2012 at 1; Ex. 2013 at 1; Ex. 2014 at 1.

¹⁸ Exs. 2015-2026.

¹⁹ Ex. 2029 at 772.

original claims and adding new claims 13-19.²⁰ The applicants also identified support for the newly added claims, including the fourteenth aspect of the third embodiment and Examples 67-80.²¹ New independent claim 13 mirrored the scope of the fourteenth aspect of the third embodiment disclosed in the specification, with non-substantive changes to certain “proviso” language.²²

Examiner Lewis carefully examined the newly proposed claims of the '267 application. He performed multiple prior art searches, issued two separate office actions rejecting the pending claims, and assessed their compliance with Section 112.²³ Examiner Lewis's scrutiny of the claims was such that, in one Office Action, he rejected certain of the pending claims for non-compliance with Section 112(d), noticing and pointing out the unintentional exclusion of a single oxygen atom in the structure of several dependent claims.²⁴

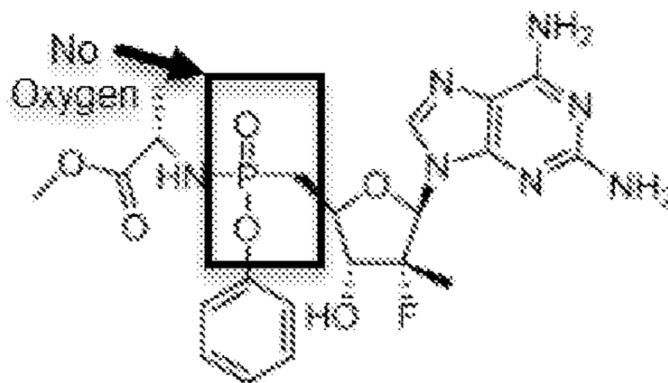
²⁰ *Id.* at 789-795.

²¹ *Id.* at 789.

²² Compare *id.* at 792-793 with Ex. 1001 at 37:46-38:10.

²³ Ex. 2029 at 1151-1153; 1215-1216.

²⁴ *Id.* at 1151-1153.



Examiner Lewis also rejected pending claim 13, substantively the same as the fourteenth aspect of the third embodiment, as obvious over the prior art.²⁵ Examiner Lewis, however, found that pending dependent claim 16 “would be allowable if rewritten into independent form.”²⁶ Pending dependent claim 16 fell within the scope

²⁵ *Id.* at 1153-1159, 1216-1221.

²⁶ *Id.* at 1220.

of the fourteenth aspect of the third embodiment but narrowed that genus to preferred substituents for R⁴, R¹⁰ (including R'), and R¹¹.²⁷

16. (Previously presented) The compound of claim 15, wherein:
- (a) R⁴ is -CH₃, ethyl, *n*-propyl or *i*-propyl;
 - (b) R¹⁰ is -NHR' and R¹¹ is -NH₂; and
 - (c) R' is C₁₋₆ alkyl.

Although they disagreed with Examiner Lewis's obviousness rejection, the applicants amended claim 13 to "incorporate the limitations previously recited in claim 16" in order to "place the application in a condition for allowance."²⁸ After considering the applicants' amendment, Examiner Lewis issued a Notice of Allowance, and the '361 patent subsequently issued on May 9, 2023.²⁹

III. PREVIOUS DISPUTES

In the Petition, Atea discusses at length documents from unrelated lawsuits and proceedings involving Gilead's HCV drugs, trying to paint Gilead as dishonest or worse, without providing the Board any context. Those allegations are all

²⁷ *Id.* at 1200.

²⁸ *Id.* at 1308.

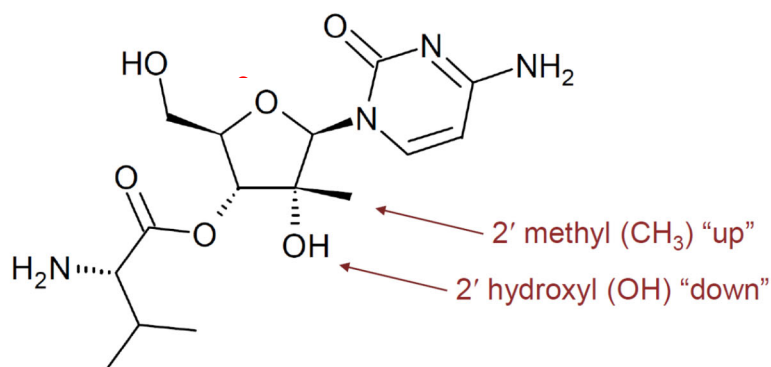
²⁹ *Id.* at 1319-1321, 2730.

baseless, and we briefly take the opportunity to provide the Board with the context that Petitioner chose to omit.

When sofosbuvir was discovered, everyone in the industry immediately recognized the clear market opportunity, given the dire medical need for a safe and effective treatment for HCV. From just before approval, Gilead was besieged with lawsuits from parties hoping to reap a windfall based on patents stretched to cover that which they did not actually invent. Those disputes spanned the globe: five suits in the U.S., additional suits in Canada, the U.K., Australia, and Germany, to name a few, as well as multiple actions in the various patent offices worldwide, all claiming that someone else had invented (or at least patented) sofosbuvir. All told, the suits numbered almost 20. Gilead was successful in each and every case, and for one simple reason: its scientists were the true inventors. Now, Atea, in an attempt to take Gilead's innovations, albeit in a different manner, presents the Board with cherry-picked statements from some of those disputes in an attempt to divert attention from the lack of merit of its Petition. But those disputes involve different patents, different issues, and, importantly, different priority dates, and have little, if any, relevance to the patentability of the Challenged Claim.

A. Idenix

In the same timeframe as Pharmasset's development work, Idenix was also investigating different compounds as potential HCV treatments. Idenix's own lead anti-HCV candidate at that time, NM283 (also known as valopicitabine) (pictured below) was a 2'-methyl-up, 2'-hydroxyl-down nucleoside prodrug.

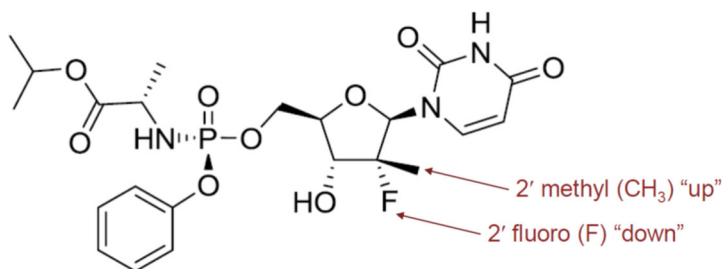


Like every other 2'-methyl, 2'-hydroxyl compound tested in the clinic, NM283 was unsuccessful—it was discontinued during phase II clinical trials due to toxicity.³⁰ As such, Idenix's years-long anti-HCV investigations never resulted in a successful treatment for HCV.

³⁰ Ex. 2005 at 453-454.

In an effort to reap a windfall, notwithstanding its years of failure, Idenix tried to use the patent system to pretend that it, not Pharmasset, invented sofosbuvir.³¹ Those actions spanned the globe: the United States, Canada, the United Kingdom, Australia, France, Germany, Norway, and both the European and United States Patent Offices. Every court or agency that looked at the merits of the case came out the exact same way—Idenix lost, and always for the exact same reason.

Simply put, Idenix's patent applications, with a range of priority dates from 2000 to 2003,³² failed to teach how to make 2'-methyl, 2'-fluoro nucleosides (the nomenclature is explained below using sofosbuvir as an example).



³¹ The patents at issue in the U.S. Idenix actions were prosecuted by lead counsel for Atea, Sherry Knowles. (Ex. 2030.) Moreover, the lead inventor on those patents, Jean-Pierre Sommadossi, is the Founder, Chairman and CEO of Atea. (Ex. 2031.) All of Idenix's patents were found to be invalid for various reasons.

³² Exs. 2032-2034.

Indeed, in affirming one such victory from an interference at the U.S. Patent Office, the Federal Circuit noted that, in 2003, it would take undue experimentation for a skilled artisan to synthesize a 2'-methyl, 2'-fluoro nucleoside. *Storer v. Clark*, 860 F.3d 1340, 1350-52 (Fed. Cir. 2017). It is from this family of disputes that Atea cherry picks the declarations it relies on from the Idenix matters.³³ And while Atea suggests that these statements are inconsistent with the prosecution of the '361 patent, Atea chooses to ignore, or rather overlook, one salient detail: the '361 patent has a priority date in 2007. A lot changed between 2003 and 2007, not the least of which is that, in the intervening years, Pharmasset scientists taught the world how to make the very 2'-methyl, 2'-fluoro nucleoside that Idenix scientists could not.³⁴ That work, and more, is specifically referenced in the '361 patent.³⁵

B. Nucana

Nucana, another client of Atea's lead counsel, is just Idenix in different clothing. Like Idenix, hoping to recover a windfall for that which it did not invent,

³³ See, e.g., Paper 2 at 96-97; Exs. 1036-1037.

³⁴ Ex. 2006 at 5504-5508; Ex. 2007.

³⁵ See, e.g., Ex. 1001 at 589:3-40.

Nucana sued Gilead for patent infringement across Europe. And, like Idenix, Nucana sought to stretch its patent to cover what Dr. Sofia invented.

Nucana's now revoked patent, filed in July 2003, was directed to the treatment of cancer: "The present invention relates to nucleotide derivatives and their use in the treatment of cancer."³⁶ Like Idenix's patent, it failed to teach how to make a 2'-methyl, 2'-fluoro nucleoside. In fact, there was no teaching whatsoever in the patent at issue as to how to make such a nucleoside.³⁷ And like Idenix, Nucana through the acts of Ms. Knowles, argued that it would be well within the skill of a person in the art to make nucleosides that fell within the scope of the claims.³⁸ Claim 1 is illustrative.³⁹

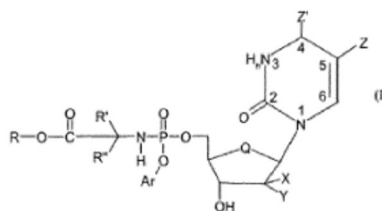
³⁶ Ex. 1029 at 2.

³⁷ *Id.*

³⁸ Ex. 2027, Para. 441(ii).

³⁹ Ex. 1029 at 66.

1. A chemical compound having formula I:



wherein:

R is selected from the group alkyl, aryl and alkylaryl;
R' and R'' are independently selected from the group H, alkyl and alkylaryl, or R' and R'' together form an alkylene chain so as to provide, together with the C atom to which they are attached, a cyclic system;
Q is selected from the group -O- and -CH₂-;
X is independently selected from the group H, F, Cl, Br, I, OH and methyl (-CH₃);
Y is F;
Ar is a monocyclic aromatic ring moiety or a fused bicyclic aromatic ring moiety, either of which said ring moieties is carbocyclic or heterocyclic and is optionally substituted;
Z is selected from the group H, alkyl and halogen; and
n is 0 or 1,
wherein when n is 0, Z' is -NH₂ and a double bond exists between position 3 and position 4, and
when n is 1, Z' is =O;
or a pharmaceutically acceptable salt, ester or salt of such ester of a compound of formula I.

It was in the context of that dispute, over a patent filed 4 years earlier than the '361 patent, that Atea cherry-picks the statements of Gilead's experts.⁴⁰ Yet, Atea never mentions that the priority date was different nor that the disclosure was woefully inadequate despite knowing both to be true. Nor does Atea mention that, critically, the '361 patent explicitly teaches how to make a 2'-methyl, 2'-fluoro nucleoside.

C. University of Minnesota

The University of Minnesota dispute, yet another unrelated dispute that Atea relies on, is no different. Two of the most challenging diseases to treat are cancer and viral infections. Based on a scant 9-page disclosure, the University of Minnesota

⁴⁰ See, e.g., Paper 2 at 89-116; Exs. 1032 at 1039-41.

attempted to claim many millions of nucleosides that could supposedly be used to treat cancer or viral infections.⁴¹ Like Idenix and Nucana, the University's patent had a priority date well before the '361 patent.⁴² And like with the facts of Idenix and Nucana, Atea's counsel chose not to share that with the Board. Atea chose not to mention the material difference in priority date or in claim scope. Instead, based on its cherry-picked recitation of the facts, Atea alleges that Gilead failed to live up to its duty of candor in prosecuting the '361 patent. But, as discussed above, a review of the prosecution history makes clear that is simply not the case.⁴³

IV. CLAIM CONSTRUCTION

The Board "need only construe terms that are in controversy, and only to the extent necessary to resolve the controversy." *See Nidec Motor Corp. v. Zhongshan Broad Ocean Motor Co. Matal*, 868 F.3d 1013, 1017 (Fed. Cir. 2017). Petitioner

⁴¹ Ex 2008.

⁴² *Id.*

⁴³ Petitioner's counsel's long history adverse to Gilead leads one to question the motivation behind the vitriolic nature of the unfounded accusations in Atea's Petition. Those accusations are based on an obviously incomplete recitation of the facts and do not support any available ground of unpatentability.

does not seek Board construction of any terms.⁴⁴ Gilead does not believe the Board need construe any terms to resolve the controversy by denying the Petition. Gilead reserves the right to propose constructions for terms of the Challenged Claim should the Board institute trial.

V. LEVEL OF ORDINARY SKILL IN THE ART

Factors pertinent to a determination of the level of ordinary skill in the art include “(1) the educational level of the inventor; (2) type of problems encountered in the art; (3) prior art solutions to those problems; (4) rapidity with which innovations are made; (5) sophistication of the technology; and (6) educational level of active workers in the field.” *Envtl. Designs, Ltd. v. Union Oil Co. of Cal.*, 713 F.2d 693, 696 (Fed. Cir. 1983). “Not all such factors may be present in every case, and one or more of these or other factors may predominate in a particular case.” *Id.* at 696–97.

Here, a person of ordinary skill in the art (“skilled artisan”) would encompass a team of individuals, each having knowledge, education and skills ordinarily associated with the various disciplines involved in the process of drug discovery.

⁴⁴ Paper 2 at 16.

The skilled artisan would have included someone with a Ph.D. in organic, synthetic, or medicinal chemistry, who also had at least two years of post-doctoral experience in drug discovery. This person could also have a bachelor's or master's degree in one of these disciplines with at least four years of experience in drug discovery. This person would possess certain skills and experience relevant to conducting the chemical aspects of drug discovery.

The skilled artisan team would also have included someone with a Ph.D. in virology, microbiology, or molecular biology who also had at least two years of post-doctoral experience in drug discovery. This person could also have had a bachelor's or master's degree in one of these disciplines with at least four years of practical experience in drug discovery. This person would possess certain skills and experience relevant to conducting the biological aspects of drug discovery.⁴⁵

⁴⁵ In the Petition, Petitioner purports to provide Gilead's definition from the University of Minnesota post-grant review proceeding but fails to tell the Board that it includes only a portion of that definition. *Compare* Paper 2 at 15, fn.1 *with* Ex. 1022 at 14-15. Gilead's proposal above is similar to its full proposed definition of the level of skill in the art in the University of Minnesota IPR. Ex. 1022 at 14-15.

Unlike Petitioner’s proposal, Gilead’s proposed definition of a skilled artisan correctly provides that the skilled artisan consists of a team of scientists with experience in various aspects of drug development. In practice, drug discovery is performed by such teams, not one scientist with a single skill set. The Federal Circuit and the Board have recognized on multiple occasions that skilled artisans in the context of drug discovery consist of such teams. *Indivior, Inc. v. Dr. Reddy’s Labs, S.A.*, 930 F.3d 1325, 1345 (Fed. Cir. 2019) (affirming district court finding that skilled artisan would be part of a team); *Onyx Therapeutics, Inc. v. Cipla Ltd.*, 613 F. Supp. 3d 817, 829-30 (D. Del. 2020) (finding a skilled artisan in the drug discovery context would work in a multidisciplinary team including at least medicinal chemists, preclinical researchers, formulators, and medical doctors), *aff’d*, 839 F. Appx. 545 (Fed. Cir. 2021)); *Mylan Pharms. Inc. v. Novo Nordisk A/S*, IPR2023-00723, Paper 9, at *11-12 (P.T.A.B. Oct 2, 2023) (finding skilled artisan is a team of skilled artisans with at least two years of experience in developing therapeutic peptides or proteins); *NeuroDerm Ltd. v. AbbVie Inc.*, PGR2022-00040, Paper 9, at *15-16 (P.T.A.B. Nov. 14, 2022) (finding skilled artisan would be a member of a team); *NeuroDerm Ltd. v. AbbVie Inc.*, PGR2022-00040, Paper 77, at *8-9 (P.T.A.B. Oct. 31, 2023) (same).

Gilead's proposed definition also requires the skilled artisan have practical experience in drug discovery, not just an academic degree. Petitioner's definition of a skilled artisan allows for a Ph.D. without any relevant experience in drug discovery. Each of the inventors had a Ph.D. and multiple years of drug discovery experience at the priority date,⁴⁶ suggesting that Gilead's definition is correct, and Petitioner's is not. *See, e.g., Daiichi Sankyo Co., Ltd. v. Apotex, Inc.*, 501 F.3d 1254, 1256-57 (Fed. Cir. 2007) (relying on educational experience of inventors to determine level of ordinary skill in the art); *Extractiontek Sales LLC v. Gene Pool Techs., Inc.*, IPR2022-00832, Paper 32, at *10-11 (P.T.A.B. Oct. 23, 2023) (considering education level of inventor in defining skilled artisan); *Intuitive Surgical, Inc. v. Ethicon LLC*, IPR. IPR2018-01248, Paper 34, at *20-21 (P.T.A.B. Feb. 6, 2020) (explaining the educational background and experience of those working in the field are factors considered in determining appropriate level of ordinary skill).

Gilead thus asks the Board to adopt its proposal for the level of skill in the art. However, the Board should deny the Petition under either party's proposed

⁴⁶ Exs. 2035-2038.

definition of a skilled artisan because the Petitioner has failed to meet its burden, as we explain below.

VI. PETITIONER FAILS TO ESTABLISH IT IS MORE LIKELY THAN NOT THAT THE CHALLENGED CLAIM IS UNPATENTABLE

A. Ground 1: Petitioner Fails to Demonstrate That the Challenged Claim Is Unpatentable for Lack of Written Description

Petitioner first incorrectly asserts that the Challenged Claim lacks written description support. As Petitioner acknowledges, Claim 1 is closely tied to the fourteenth aspect of the third embodiment.⁴⁷ Both start with Formula I-6 and have the exact same options at ten of the fourteen substituent positions: R¹, R², R^{3a}, R^{3b}, R⁵, R⁶, X, Y, Z and R¹². Claim 1 simply narrows the allowed substituents for R⁴, R¹⁰ (including R'), and R¹¹ to preferred options and uses “proviso” language slightly different, but entirely consistent with, the fourteenth aspect of the third embodiment.

Petitioner does not argue that the specification does not provide sufficient written description support for the fourteenth aspect of the third embodiment or does not describe the specific substituents claimed for R⁴, R¹⁰ (including R'), and R¹¹. Instead, Petitioner offers a meandering 81-page section entitled “Summary of the '361 Patent and Violation of 35 U.S.C. § 112” that offers various criticisms of the

⁴⁷ Paper 2 at 61-63.

specification and discussion of expert declarations submitted on behalf of Gilead in different legal proceedings, but little in the way of legal analysis.

Petitioner's facially deficient written description proffer fails to meet the statutory requirements for a post-grant review petition. Moreover, even if one tries to divine its legal theory, Petitioner's complaints about the disclosure are insufficient to show that the Challenged Claim is more likely than not unpatentable for lack of written description.

1. Petitioner's Written Description Analysis Is Insufficient

Petitioner's written description arguments are, first, insufficient to meet the statutory requirements for a post-grant review petition. 37 C.F.R. § 42.22(a) requires petitioners to provide "[a] full statement of the reasons for the relief requested, including *a detailed explanation of the significance of* the evidence including material facts, *and the governing law, rules, and precedent.*" (emphasis added.) Moreover, for non-prior art grounds, "the petition must identify the specific part of the claim that fails to comply with the statutory grounds raised and *state how the identified subject matter fails to comply with the statute.*" 37 C.F.R. § 42.204 (emphasis added).

The Petition fails to meet either requirement. In the section of the Petition directed to Section 112, Petitioner marches through the file history and specification

of the '361 patent, performs a series of numerical calculations, and then purports to point out supposed “inconsistencies” (with what is not clear) in expert declarations submitted by Gilead in different proceedings about different patents with different priority dates.⁴⁸ In its march through its evidence, Petitioner never explains how that evidence shows that the Challenged Claim legally lacks sufficient written description. Indeed, the Petition includes a single paragraph of generic written description law⁴⁹ and, in the eighty pages that follow, only includes one additional case cite (citing *Novartis Pharm. Corp. v. Accord Healthcare, Inc.*, 38 F.4th 1013, 1016-17 Fed. Cir. 2022, discussed below).⁵⁰ Nowhere in its 81-page section on Section 112 does the Petitioner apply the law of written description to its version of the facts.⁵¹

⁴⁸ Paper 2 at 26-116.

⁴⁹ *Id.* at 26-27.

⁵⁰ *Id.* at 39.

⁵¹ Even Petitioner seems to recognize its own lack of legal analysis, preemptively stating that it “does not include extended discussions of the law in its Petition and instead focuses on the facts at hand, unless a discussion of the case law is particularly pertinent,” supposedly based on guidance in the Consolidated Trial Practice Guide.

Remarkably, Petitioner fails to cite, much less apply, the controlling Federal Circuit case for analyzing written description of genus claims, *Ariad Pharmaceuticals, Inc. v. Eli Lilly and Co.*, 598 F.3d 1336 (Fed. Cir. 2010). In *Ariad*, the *en banc* Federal Circuit held that a sufficient description of a genus “requires the disclosure of either [1] a representative number of species falling within the scope of the genus or [2] structural features common to the members of the genus so that one of skill in the art can visualize or recognize the members of the genus.” *Id.* at 1350. Petitioner makes no attempt to show that the claimed genus does not exhibit common structural features sufficient to satisfy the second prong of the *Ariad* test. Nor does Petitioner make any attempt to show that the disclosed species are not representative. Indeed, the phrases “representative species” and “common structural features” do not even appear in the Petition.

Petitioner also makes no attempt to distinguish its written description argument from its enablement argument, making it unclear what its real theory is on either. Although it purports to include “Lack of Enablement” as Ground 2, Petitioner

Paper 2 at 27, fn. 5. But nothing in the Trial Practice Guide excuses Petitioner from providing a clear statement of “how the identified subject matter fails to comply with the statute.” 37 C.F.R. § 42.204.

does not even dedicate a section to enablement in the Petition. Petitioner does include a subsection entitled “Synthesis,” which one might assume would relate to enablement, but the first paragraph of that section argues that the alleged lack of synthetic information “is further evidence of the lack of written description.”⁵² Petitioner’s failure to separate written description from enablement renders its arguments for both inadequate. *See Centrak, Inc. v. Sonitor Techs., Inc.*, 915 F.3d 1360, 1366 (Fed. Cir. 2019) (written description is about whether a skilled artisan reading the patent “can recognize that what was claimed corresponds to what was described[,]” not about whether the patentee has proven “the invention works, or how to make it work, which is an enablement issue.”); *Alcon Res. Ltd. v. Barr Labs, Inc.*, 745 F.3d 1180 (Fed. Cir. 2014) (reversing finding of inadequate written description because the court, in conflating written description and enablement, “failed to apply the proper test.”); MPEP § 2161 (“The enablement requirement of 35 U.S.C. 112(a) or pre-AIA 35 U.S.C. 112, first paragraph, is separate and distinct from the written description requirement.”).

At bottom, the 112 section of the Petition reads like a laundry list of complaints, both about the disclosure and past proceedings involving Gilead. But it

⁵² Paper 2 at 85.

lacks any application of the law to those complaints, and neither Gilead nor the Board should have to do Petitioner's work for it. Petitioner's failure to explain why the specification legally fails to provide adequate written description support for the claims is fatal to Ground 1. *Agarwal v. Junjhunwala*, PGR2021-00071, Paper 10, *10-14 (P.T.A.B. Sep. 17, 2021) (denying institution where "[a]lthough it might be possible to puzzle through the arguments to discern grounds for the claims 1 and 2 of the '782 patent based on Section 112, the exact grounds and what is intended as evidence for each are not sufficiently clear on this record."); *Hybrigenics SA v. Forma Therapeutics, Inc.*, PGR2018-00098, Paper 23, at *57 (P.T.A.B. Mar. 19, 2020) (explaining Petitioner does not clearly articulate grounds for invalidity and "for this reason alone, Petitioner does not carry its burden"); *Invue Security Products, Inc. v. Mobile Tech, Inc.*, PGR2019-00019, Paper 7, at *9 (P.T.A.B. May 29, 2019) (denying institution where invalidity challenges were "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.").

2. Petitioner's Proviso Arguments Are Flawed

Turning to its apparent arguments, Petitioner first seems to suggest that there is no support for the proviso language in the Challenged Claim.⁵³ The proviso

⁵³ Paper 2 at 34-39.

language relates to the variables R^5 , R^6 , and X, and the claims impose the following requirements on those variables:

- “ R^5 is H”
- “ R^6 is H, -CH₃, -CH₂F, -CHF₂, -CF₃ or -F”
- “X is H, -OH, -OCH₃, -F, -NH₂, or -N₃; *with the proviso that X cannot be OH when R^6 is -CH₃ or CH₂F*”

Of particular importance here, the claims dictate that R^5 must be H and that X cannot be OH when R^6 is -CH₃ or CH₂F.

These limitations find support at least in the fourteenth aspect of the third embodiment, which provides that “when X is OH, R^6 is CH₃ or CH₂F, R^5 cannot be H.”⁵⁴ Initially, a skilled artisan would recognize that the proviso in the fourteenth aspect of the third embodiment contains a typo. Based on the remainder of the specification, that proviso should read “when X is OH, **[and]** R^6 is CH₃ or CH₂F, R^5 cannot be H.” The specification includes multiple earlier aspects of the invention with a similar proviso that states “when X is OH, R^6 is CH₃ or CH₂F and B is a purine base, R^5 cannot be H” (emphasis added).⁵⁵ In the fourteenth aspect of the third

⁵⁴ Ex. 1001 at 37:61-62.

⁵⁵ See, e.g., *id.* at 13:39-40.

embodiment, the compound is already limited to a purine base because Formula I-6 requires one.⁵⁶ A skilled artisan would recognize that the applicants deleted the “and B is a purine base” language in later embodiments where the base was already defined as a purine and intended to add an “and” between the “X is OH” and “R⁶ is CH₃ or CH₂F” terms, consistent with the earlier iterations. *Pavo Solutions LLC v. Kingston Tech. Co., Inc.*, 35 F. 4th 1367, 1373 (Fed. Cir. 2022) (explaining a court can correct obvious minor typographical and clerical errors in patents); *Ultimax Cement Mfg. Corp. v. CTS Cement Mfg. Corp.*, 587 F.3d 1339, 1352-53 (correcting mistake that a skilled artisan would understand as a drafting error).

With that typo addressed, the meaning of the proviso in the fourteenth aspect is clear: if X is OH and R⁶ is CH₃ or CH₂F, then R⁵ cannot be H. Conversely, if R⁵ *is* H, as is claimed, then it cannot be true that both X is OH and R⁶ is CH₃ or CH₂F. That is precisely what the challenged claims dictate: the applicants decided to define R⁵ as H and, as a result, required that X could not be OH if R⁶ is CH₃ or CH₂F, consistent with the proviso in the fourteenth aspect.

Petitioner’s arguments to the contrary put form over substance. Petitioner suggests the specification is “indefinite” because the fourteenth embodiment does

⁵⁶ *Id.* at 34:36-48; 37:36-37.

not say what R⁵ *is* if X is OH and R⁶ is CH₃ or CH₂F, only what it *is not*.⁵⁷ But that question is irrelevant for two reasons. First, the concept of indefiniteness in patent law applies to *the claims*, not the written description. *See* 35 U.S.C. § 112(b) (“The specification shall conclude with *one or more claims particularly pointing out and distinctly claiming* the subject matter which the inventor or a joint inventor regards as the invention.”) (emphasis added). Second, what R⁵ might be if X is OH *and* R⁶ is CH₃ or CH₂F does not matter because the claim provides that X and R⁶ *cannot be* OH and CH₃ or CH₂F, respectively, at the same time. There is thus no need for the skilled artisan to determine what R⁵ *might be if* X was OH and R⁶ was CH₃ or CH₂F—the claim language explicitly excludes that possibility.

Petitioner’s real argument seems to be that the “exact language” in the challenged claims “is not found . . . in the referenced sections of (or anywhere else in) the application.”⁵⁸ The law, however, is clear that “the description requirement does not demand . . . that the specification recite the claimed invention *in haec verba*.” *Ariad*, 598 F.3d at 1352. Instead, the pertinent question is whether the disclosure demonstrates possession of the claimed invention or feature. *Id.* Here,

⁵⁷ Paper 2 at 36-37.

⁵⁸ *Id.* at 35.

understood in the context of the entire disclosure, the proviso language in the fourteenth aspect shows possession of a compound where R⁵ is H, and X is not OH if R⁶ is -CH₃ or CH₂F.

The *Novartis* case is completely different. *Novartis Pharms. Corp. v. Accord Healthcare, Inc.*, 38 F.4th 1013 (Fed. Cir. 2022). There, the Federal Circuit found claims to a method of treatment “at a daily dosage of 0.5 mg, absent an immediately preceding loading dose regimen” invalid for lack of written description. *Id.* at 1015-1016 (emphasis added). The court reached that conclusion because the specification did not “mention loading doses, much less the absence of a loading dose” and there was no evidence that a skilled artisan would have understood the absence of a loading dose to be inherently disclosed. *Id.* at 1015-16. In so holding, the court stressed that the specification need not use the same words as the claims: “The exact terms need not be used *in haec verba*.” *Id.* Instead, the court found lack of written description because the specification did not include **any form** of disclosure showing that the patentees had invented methods of treatment **excluding** loading doses. *Id.*

There is no similar problem here. The proviso in the fourteenth aspect of the third embodiment provides that “R⁵ is H, with the proviso that when X is OH [and]

R⁶ is CH₃ or CH₂F, R⁵ cannot be H.”⁵⁹ A skilled artisan would recognize that language to show the inventors had possession of compounds where R⁵ is H and X is not OH if R⁶ is -CH₃ or CH₂F, and the Novartis decision explicitly rejected Petitioner’s complaint that the claims do not state the proviso in the exact same way as the written description.

3. Petitioner Fails to Show the Claimed Genus Is Not Described Based on the Fourteenth Aspect of the Third Embodiment and Further Preferences in the Specification

Petitioner also seems to incorrectly question whether there are sufficient “blaze marks” to the claimed subgenus.⁶⁰ Although it does not clearly articulate its legal theory, Petitioner’s “blaze marks” complaints do not establish it is more likely than not that the claimed subgenus is not adequately described for multiple reasons.

First, Petitioner incorrectly argues that there is no written description because the fourteenth aspect of the third embodiment would not be “a more likely starting point for a [skilled artisan] than any other embodiment” of the specification.⁶¹ The specification includes five different generic embodiments, two pyrimidine

⁵⁹ Ex. 1001 at 14:39-40.

⁶⁰ Paper 2 at 59-88.

⁶¹ *Id.* at 61.

embodiments and three purine embodiments.⁶² Petitioner does not (and cannot possibly) dispute the adequacy of blaze marks for the three purine embodiments. The third purine embodiment is further refined in a series of nineteen “aspects” that limit the options at one or more variable groups.⁶³ Petitioner cites no legal authority for the proposition that written description support requires one of those 19 aspects to be a “more likely starting point for a [skilled artisan]” than the others. Instead, the correct question is whether each of them is sufficiently described. *See I-MAK v. Gilead Pharmasset*, IPR2018-00119, Paper 9, at *4 (P.T.A.B. Jul. 3, 2018) (denying institution where “[t]he fact that the . . . provisional discloses thousands of compounds by reference to structural formula and listings of the particular constituent for individual compounds does not render its disclosure of the compounds a nullity”); *Nelson v. Bowler*, No. 101,217, 1986 WL 83353, at *4 (B.P.A.I. Jun. 19, 1986) (“the issue is not whether one following the . . . disclosure would necessarily produce the compounds or prefer the particular disclosed substituents . . . rather, it is whether he would necessarily recognize that such a

⁶² Ex. 1001 at 28:34-41:39.

⁶³ *Id.*

combination was disclosed as a construction which might be selected if desired”) (citing *Byrne v. Trifillis*, 442 F.2d 1390 (CCPA 1971)).

Second, Petitioner bases its argument on the fallacy that “[t]he fourteenth aspect of the third embodiment includes over ***10²⁷*** different possible combinations of variables.”⁶⁴ Petitioner and its expert reach this exaggerated number by performing a “combinatorial” approach to counting subgenera.⁶⁵

For example, the fourteenth aspect of the third embodiment lists twenty potential options at R⁴.⁶⁶ In calculating the number of possible subgenera, Petitioner does not start with those twenty possible options, but instead first morphs the twenty options number into ***1,048,575*** possible ***combinations*** of those options at R⁴ alone.⁶⁷ Similarly, Petitioner asserts that the fifteen possible options at each of R¹⁰ and R¹¹ results in 32,767 possible combinations at each of those variables, and the 4 possible options at R’ result in fifteen possible combinations at that variable.⁶⁸ Petitioner then

⁶⁴ Paper 2 at 59-60.

⁶⁵ *Id.* at 65.

⁶⁶ Ex. 1001 at 37:55-60.

⁶⁷ Paper 2 at 65-67.

⁶⁸ *Id.* at 67-69.

multiplies those already exaggerated numbers together to arrive at its number of possible subgenera.⁶⁹

Petitioner justifies the “combinatorial” approach because “[Gilead] also used this equation in its IPR petition against U.S. Patent No. 8,815,830.”⁷⁰ What Petitioner does not tell the Board is that this approach *was rejected* in that IPR.⁷¹ After Gilead presented its combinatorial analysis in the University of Minnesota IPR, the petitioner there cited a case from the Federal Circuit’s predecessor court dismissing the combinatorial approach as “hopelessly exaggerated.”⁷² In the Final Written Decision, the panel in the University of Minnesota IPR agreed, “question[ing] the propriety of Petitioner’s factorial approach in calculating the

⁶⁹ *Id.* at 69.

⁷⁰ Paper 2 at 65, fn.9. Petitioner’s expert apparently did not even come up with or perform this calculation himself. Instead, the Petition states that the expert “review and accepted” the analysis. *Id.* at 65; Ex. 1015 at 65.

⁷¹ Ex. 1024 at 36.

⁷² *Id.* at 23 (citing *Snitzer v. Etzel*, 465 F.2d 899, 903 (CCPA 1972)).

number of subgenera in formula I” and finding “Petitioner’s number of subgenera higher than warranted.”⁷³

Given the decision in the University of Minnesota IPR and the *Snitzer* case, the premise for Petitioner’s blaze marks argument—that the claims recite one of 10²⁷ possible combinations—is hopelessly flawed.

Third, Petitioner compounds that error by writing off large portions of the specification as supposedly irrelevant to the written description analysis without any justification. *See In re Wright*, 866 F.2d 422, 425 (Fed. Cir. 1989) (written description analysis requires “considering the specification as a whole”).

Petitioner, for instance, dismisses each of the embodiments and aspects of the invention presented in the first 54 columns of the patent as not “relevant to ’361 patent claim 1.”⁷⁴ Petitioner dismisses many of those embodiments and aspects because they include a pyrimidine base, not a purine base like claim 1.⁷⁵ For those that do contain a purine base, Petitioner dismisses their relevance because they do not include the *exact proviso language* used in Claim 1. (*Id.* at 40, 48, 51 (“Relevant

⁷³ *Id.* at 36.

⁷⁴ Paper 2 at 39-59.

⁷⁵ *Id.*

to '361 patent claim 1? . . . No, because 'R⁵ is H, with the provisos that when X is OH, R⁶ is CH₃ or CH₂F, R⁵ cannot be H' and this proviso is not in claim 1.") Petitioner provides no explanation why those differences would cause a skilled artisan to completely disregard 54 columns of teachings in assessing written description support.

Petitioner similarly dismisses each of the 12,400 species disclosed in Tables II-1 to XXXII-50 because they don't have the *exact same substituents* on the base as recited in claim 1.⁷⁶ In doing so, Petitioner ignores that the specification "contemplates that any one of the exemplified nucleoside bases can be used in combination with any one of [the] contemplated species [in the Tables] that specify a particular combination of R¹, R², R^{3a}, R^{3b}, R⁴, R⁵, R⁶, X and Y."⁷⁷ Petitioner again provides no explanation why the use of a different base renders over 12,000 embodiments completely irrelevant to the written description analysis.

Contrary to Petitioner's approach, in looking for blaze marks, a skilled artisan must consider *the entirety* of the teachings of the specification, not simply look for individual species that fall within the scope of the claims. *Ariad*, 598 F.3d at

⁷⁶ *Id.* at 78-83.

⁷⁷ Ex. 1001 at 54:23-27.

1351(assessing written description support “requires an objective inquiry into the four corners of the specification from the perspective of a [skilled artisan].”); *Smith v. Horne*, 450 F.2d 1401, 1404 (CCPA 1971) (genus supported by (1) example satisfying genus in all respects except one element and (2) disclosure identifying claimed element as alternative to example element); *Heymes v. Takaya*, 6 U.S.P.Q.2d 1448, 1448 (Bd. Pat. App. & Interf. 1988) (genus supported by (1) example with phenyl substituents rather than thiazolyl and (2) disclosure identifying thiazolyl as alternative to phenyl).

Given that it incorrectly ignored large parts of the disclosure, Petitioner’s conclusion that the specification does not provide “any guidance” for the “individual selections” at R⁴, R¹⁰ and R¹¹ should not be given any weight.⁷⁸ As just one example, Petitioner and its expert fail to even acknowledge that at least 7,440 of the embodiments disclosed in Tables II-1 to XXXII-50 include the claimed methyl, ethyl, or propyl substituents at R⁴.⁷⁹ Petitioner’s (and its expert’s) approach of simply ignoring large portions of the disclosure is legally wrong, and their conclusions are based on an incomplete and deficient analysis.

⁷⁸ Paper 2 at 71.

⁷⁹ Ex. 1001 at 55:1-579:39.

Fourth, to the extent it is arguing the claimed genus is too broad,⁸⁰ Petitioner has failed to provide a sufficient analysis.

As noted above, Petitioner does not even cite, much less attempt to apply, the Federal Circuit’s test for written description support for genus claims from *Ariad*. 598 F.3d at 1350. Specifically, the phrases “representative species” and “common structural features” do not even appear in the Petition, and Petitioner makes no attempt to analyze those two prongs of the *Ariad* test.

Petitioner does state, without further explanation, that a “single compound” within the scope of the claims cannot “possibly support” the claimed genus (Paper 2 at 76), but no such per se rule exists. Instead, the Federal Circuit has been consistent that assessing written description involves a highly factual analysis and that there is no set number of species that are required to support a genus. *Ariad*, 598 F.3d at 1351 (“Nor do we set out any bright-line rules governing, for example, the number of species that must be disclosed to describe a genus claim, as this number necessarily changes with each invention, and it changes with progress in a field.”); *Allergan Sales, LLC v. Sandoz, Inc.*, 717 Fed. Appx. 991, 995 (Fed. Cir. 2017) (“Even a single representative embodiment can support written description of a

⁸⁰ Paper 2 at 71-77.

claimed genus.”) (citing *Invitrogen Corp. v. Clontech Laby’s, Inc.*, 429 F.3d 1052, 1073 (Fed. Cir. 2005) and *Bilstad v. Wakalopulos*, 386 F.3d 1116, 1124–25 (Fed. Cir. 2004).) Moreover, the law is clear that “examples are not necessary to support the adequacy of a written description.” *Flako-Gunter Falkner v. Inglis*, 448 F.3d 1357, 1366 (Fed. Cir. 2006).

Petitioner’s criticism of the specification for purportedly providing the “*synthesis* of just one [species within the claimed genus]” is also misplaced.⁸¹ Synthetic methods are not required to establish written description for a compound claim. *Centrak*, 915 F.3d 1360, 1366 (written description not about whether the patentee has proven “the invention works, or how to make it work, which is an enablement issue.”). The law is also clear that written description does not require actual reduction to practice. *Alcon*, 754 F.3d at 1190 (“There is no requirement that the disclosure contain either examples or an actual reduction to practice”) (internal quotations omitted).

As a result, to the extent Petitioner argues that the claims are too broad, the Petition simply does not support such an argument.

⁸¹ Paper 2 at 76, 85-89 (emphasis added).

Fifth and finally, Petitioner cannot carry its burden to show the claims are more likely than not unpatentable for lack of written description by pointing to expert declarations from other proceedings, concerning other patents, with different priority dates.⁸² As with much of the Petition, it is unclear if Petitioner’s discussion of these declarations relates to written description, enablement, or both because Petitioner provides no legal analysis.⁸³

Regardless, the declarations cited by Petitioner are irrelevant because they reflect the knowledge in the field at a time *before* the priority date of the ’361 patent.⁸⁴ The Federal Circuit assesses written description as of the priority date. *Amgen Inc. v. Sanofi*, 872 F.3d 1367, 1372 (Fed. Cir. 2017) (“Appellees are correct that written description is judged based on the state of the art as of the priority date.”). Petitioner does not acknowledge that time difference, much less try to account for any change in the knowledge in the field as of the priority date, rendering the declarations irrelevant.

⁸² *Id.* at 89-116.

⁸³ *Id.*

⁸⁴ Ex. 1029; Ex. 2008; Exs. 2032-2034.

B. Ground 2: Petitioner Fails to Demonstrate Lack of Enablement

Petitioner's enablement challenge is perhaps even more deficient than its written description challenge.

Although it purports to include "Lack of Enablement" as Ground 2, Petitioner does not even dedicate a section to enablement in the Petition. Indeed, after laying out the asserted grounds, the Petition only uses the words "enable" or "enablement" two more times, and then only when characterizing what an expert for Gilead said in a different proceeding, discussing different claims, based on a different priority date.⁸⁵ It is thus difficult to tell if Petitioner is making an enablement argument and, if so, where it begins and ends, and what Petitioner's legal theory is. At best, Petitioner improperly conflates written description and enablement throughout, rendering its analysis defective. *See* Section VI.A.1., *supra*.

No matter where in the Petition one looks, Petitioner fails to perform the requisite enablement legal analysis. To prove that a claim is invalid for lack of enablement, a challenger must show "that a person of ordinary skill in the art would not be able to practice the claimed invention without 'undue experimentation.'" *Alcon*, 745 F.3d at 1188. "What is reasonable [experimentation] in any case will

⁸⁵ Paper 2 at 91.

depend on the nature of the invention and the underlying art.” *Amgen Inc. v. Sanofi*, 598 U.S. 594, 612 (2023). The Federal Circuit assesses reasonableness of required experimentation by weighing the eight so-called *Wands* factors. *In re Starrett*, No. 2022-2209, 2023 WL 3881360, at *4 (Fed. Cir. Jun. 8, 2023) (citing *In re Wands*, 858 F.2d 731, 737 (1988), 8 U.S.P.Q.2d 1400, 1404).

Petitioner fails to at all address the amount of experimentation needed to practice the claimed inventions, much less explain why any such experimentation is undue or unreasonable. The term “undue experimentation”—or even “experimentation”—does not appear once on the Petition. Nor does Petitioner perform any analysis of the *Wands* factors.

At best, the Petition can be read to assert that two embodiments “would not be feasible to make.”⁸⁶ Petitioner’s arguments are based, again, on statements made in different proceedings, about different claims, with a different priority date.⁸⁷ But, even if those two embodiments were not feasible to make as of the instant priority date, that does not establish lack of enablement. *Atlas Powder Co.*, 750 F.2d at 1576

⁸⁶ Paper 2 at 92-96 (discussing “2’-F/OH” and “2’-F/NH₂” nucleosides).

⁸⁷ *Id.*

(“Even if some of the claimed combinations were inoperative, the claims are not necessarily invalid.”).

The Petition could also be read to argue that some amount of experimentation would be needed to synthesize compounds with other substituents at the 2' position.⁸⁸ “That some experimentation is necessary does not preclude enablement; the amount of experimentation, however, must not be unduly extensive.” *Atlas*, 750 F.2d at 1576-77 (affirming enablement of claims despite “thousands of emulsions” that could be formed by combining “lists of numerous salts, fuels, and emulsifiers” even though some combinations within the scope of the claim would be “inoperative,” 40% of applicant’s experiments were labeled “failures,” and a skilled artisan would not know beforehand which combinations “would work” because skilled artisan “had little difficulty in making satisfactory emulsions”). Petitioner does not even attempt to demonstrate the amount of experimentation needed to practice the claimed invention, much less that it is “undue,” particularly in light of the nature of the invention, the state of the art, and the level of ordinary skill in the art. *See Wands*, 858 F.2d at 737 (“In evaluating whether claims are enabled, “[t]he key word is ‘undue,’ not ‘experimentation.’”).

⁸⁸ Paper 2 at 96-101.

Petitioner thus has not come close to meeting its burden to show that the Challenged Claim is more likely than not unpatentable for lack of enablement. PGR2017-00041, Paper 11 (“In its Petition, AQT asserts a ground of unpatentability under 35 U.S.C. § 112 . . . But the Petition fails to advance any analysis or explanation for this ground . . . Thus, to the extent the Petition even raises a ground based on indefiniteness and non-enablement under 35 U.S.C. § 112, it clearly fails to comply with the statutory and regulatory requirements of particularity and explanation for each ground. As such, we dismiss without further consideration the ground of the Petition that is based on 35 U.S.C. § 112.”); *see also Intelligent Bio-Systems, Inc. v. Illumina Cambridge, Ltd.*, 821 F.3d 1359, 1369 (Fed. Cir. 2016) (“It is of the utmost importance that petitioners . . . adhere to the requirement that the initial petition identify ‘with particularity’ the evidence that supports the grounds for the challenge to each claim.”).

C. Ground 3: Petitioner Fails to Establish That the ’706 Publication Is Prior Art

Petitioner bears the burden of persuasion to prove the Challenged Claim is unpatentable over the ’706 Publication. *Dynamic Drinkware v. Nat’l Graphics*, 800 F.3d 1375, 1378-79 (Fed. Cir. 2015). That burden includes establishing that the ’706

Publication is prior art. *SPTS Techs. v. Plasma-Therm*, IPR2018-00618, Paper 24 at 41 (PTAB Aug. 26, 2019).

The '706 Publication, published on September 8, 2016, is only prior art if the '361 patent is not entitled to the priority date of the first five non-provisional applications in the family.⁸⁹ As Petitioner accepts, all of those applications contain the same specification as the '361 patent.⁹⁰ Thus, Petitioner's prior art arguments rise and fall with its earlier Section 112 arguments: Petitioner can only establish that the '706 Publication is prior art if the claims of the '361 patent are not sufficiently described or enabled in view of the specification.

For the reasons provided above, Petitioner has failed to show that it is more likely than not that the claims are not entitled to the priority date of Ex. 1005 and thus has not met its burden to show that the '706 Publication is prior art.

⁸⁹ Exs. 1005-1010.

⁹⁰ Paper 2 at 25-26.

VII. CONCLUSION

For the foregoing reasons, Gilead respectfully requests that the Board deny institution.

Respectfully submitted,

Dated: November 22, 2023

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CERTIFICATE OF COMPLIANCE WITH WORD COUNT

Pursuant to 37 C.F.R. § 42.24(d), I certify that this petition complies with the type-volume limits of 37 C.F.R. § 42.24(a)(1)(i) because it contains 8,467 words, according to the word-processing system used to prepare this petition, excluding the parts of this petition that are exempted by 37 C.F.R. § 42.24(a) (including the table of contents, a table of authorities, mandatory notices, a certificate of service or this certificate word count, appendix of exhibits, and claim listings).

Respectfully submitted,

Dated: November 22, 2023

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CERTIFICATE OF SERVICE

Pursuant to 37 CFR §§ 42.6(e)(4) and 42.205(b), the undersigned certifies that on November 22, 2023, a complete and entire copy of PATENT OWNER'S PRELIMINARY RESPONSE was served via electronic mail on the Petitioner by serving Petitioner's counsel of record as follows:

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