UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

KELONIA THERAPEUTICS, INC.
Petitioner

v.

INTERIUS BIOTHERAPEUTICS, INC.
Patent Owner

PGR2024-00008
U.S. Patent No. 11,767,366

PETITIONER'S REPLY TO PATENT OWNER'S OPPOSITION TO PETITIONER'S REHEARING REQUEST

Table of Contents

I. PO Misunderstands Petitioner's Argument Regarding the I182 Mutation in *Perkins* 1

II. The Decision Overlooked Reasons for Selecting I182 "E" and "D" 5

Pursuant to the Board's email on July 3, 2024, Petitioner submits the instant Reply to Patent Owner's ("PO") Opposition (Paper 13, "Opp."). Amongst its many failures, PO misunderstands Petitioner's ***primary*** argument in the Rehearing Request (Paper 12, "Request"). As explained in the Request, the Decision (Paper 11, "Decision" or "Dec.") overlooked Petitioner's argument (expressly set forth in the Petition) that a POSA would have found it obvious to select a mutation at I182 (out of 13 disclosed mutations). Such a selection renders the claim obvious because it leaves only 19 options, including the claimed I182E and I182D mutations. PO dismisses the argument as new. This is expected because PO cannot, ***and does not***, dispute that narrowing *Perkins*' 13 mutations to I182 renders the claims obvious.

I. PO Misunderstands Petitioner's Argument Regarding the I182 Mutation in *Perkins*

As explained in the Request, the Decision overlooked or misapprehended Petitioner's evidence with respect to why a POSA would have routinely and rationally narrowed *Perkins*' limited list of 13 disclosed mutations down to I182. (Request, 4-11 (citing Petition, 20-22, 72-74; Ex. 1002, ¶¶ 52-55, 208-213).) Once a POSA narrows *Perkins*' list of mutations down to I182, then there are only 19 options for making a mutation at I182, including the claimed I182E and I182D mutations. A mere nineteen (19) options clearly constitutes a "small or finite number of alternatives" under *KSR* and renders the claim obvious. Indeed, a "species" (e.g.,

I182E or I182D) is "unpatentable when prior art disclosures describe the genus containing those species such that a person of ordinary skill in the art would be able to envision every member of the class." *Abbvie Inc. v. Mathilda & Terence Kennedy Inst. of Rheumatology Tr.*, 764 F.3d 1366, 1379 (Fed. Cir. 2014). In overlooking Petitioner's argument regarding the reasons for selecting I182 as the mutation position, the Board abused its discretion.

PO does not dispute that narrowing the mutations in *Perkins* to I182 leaves a mere nineteen (19) options, including the claimed I182E and I182D mutations. Nor does PO dispute that a mere 19 options constitutes a "small or finite number of alternatives" under *KSR* that renders the claims obvious. Instead of explaining ***where*** the Board addressed this issue and set forth its disagreement with Petitioner on it, PO seeks to dismiss the issue altogether. (Opp., 2 ("The Board was not required to make an initial finding as to whether a POSA would have selected I182 for a mutation."), 3 ("The Board analyzed the arguments in precisely the same way they were presented in the Petition, and there was no legal error.").) PO is wrong.

First, the Petition squarely raised this argument. (*See, e.g.,* Petition, 65 ("it would have been obvious for a POSA to make a I182 mutation to *Perkins*' VSV-G envelope protein"), 66 (I182 constitutes a "genus of . . . 19 natural amino acids . . . inclusive of I182E"), 72 ("A POSA would also have had a good reason to focus on

Perkins' express disclosure of a I182 mutation.").[1])

Second, the Decision overlooked this argument and PO cannot show otherwise. (Opp., 4-5.) PO contends that "the Board extensively considered all of the evidence . . . and found it unpersuasive." (*Id*., 4) But PO does not show ***where*** the Board offered a legally acceptable reason for rejecting Dr. Rose's testimony that, based on the crystal structure of VSV-G (as deposited in *RCSB PDB*), I182 is one of the best of the 13 disclosed options in *Perkins* for achieving *Perkins*' express objective of inhibiting binding of VSV-G to LDL-R receptor. (Ex. 1002, ¶¶ 208-213.) Indeed, it cannot be legitimately disputed that the Decision analyzed the wrong question—amongst all possible 254 options, why would a POSA pick I182E and I182D—when it first needed to ask whether a POSA would have narrowed down the 254 options to a mere 19 by selecting I182.

Third, Dr. Rose did not "attempt[] to fill in the gaps of the prior art." (Opp., 5, 9-10.) I182 is an expressly recited option in a list of thirteen (13) mutations

[1] Petitioner's "two-step analysis" argument is not new. (Opp., 3.) The Petition began by first asserting that a POSA would have found it obvious to make the I182 mutation (Petition, 65) and ***thereafter*** explained why a POSA would have further narrowed the I182 genus of 19 options to the claimed species (I182E and I182D mutations). (*Id*., 66-72.)

disclosed in ***both*** the *Perkins* provisional and non-provisional. (Ex. 1005, 21:16-27 (disclosing a mutation at "N9, Q10, K50, A51, S183, S179, N180, **I182**, M184, I347, T350, T352, and E353") (emphasis added); Ex. 1006, 17-18 (same).[2]) Thus, there is no gap to fill. Dr. Rose simply testified as to the motivation for picking I182, which "'may be found in any number of sources, including common knowledge, the prior art as a whole, or the nature of the problem itself.'" *Pfizer, Inc. v. Apotex, Inc.*, 480 F.3d 1348, 1362 (Fed. Cir. 2007) (internal citation omitted). PO is thus wrong that Dr. Rose was required to "point to . . . other prior art that supported the particular conclusions that he drew." (Opp., 7.)

Fourth, PO blatantly distorts the record by asserting that Dr. Rose provided no support for his assertions that a POSA would focus on the list of 13 mutations instead of the potential "insertions" and "deletions." (Opp., 6.) Dr. Rose referenced *Nikolic*, which per Dr. Rose, "expressly indicates that a 'point mutation' should be

[2] PO is wrong in contending that "Dr. Rose offered no testimony that a I182 mutation would have been obvious to a POSA in view of" *Perkins*' provisional application. (Opp., 10.) Dr. Rose referenced both *Perkins* non-provisional at 21:16-27 and provisional at pages 17-18. (Ex. 1002, ¶208.) His ***additional*** reliance on the four mutation combination described only in the non-provisional (*see* Opp., 11) does not take anything away from his above testimony regarding the list of 13 mutations.

made which ablates the natural receptor tropism." (Ex. 1002, ¶208 n.14.)

Fifth, contrary to PO's assertion (Opp., 13-14), the I182A mutation in *Perkins* supports obviousness as it confirms the particular relevance of the I182 mutation.

The Decision's failure to address Petitioner's ***primary*** argument for obviousness is an abuse of discretion warranting rehearing and institution so that the Board can consider these issues on a fully developed record.

II. The Decision Overlooked Reasons for Selecting I182 "E" and "D"

PO repeats the Decision's legally erroneous conclusion that Dr. Rose sought to supply a "limitation missing from the prior art." Not so. Dr. Rose explained in excruciating detail why a POSA, ***having already narrowed the mutation to I182***, would have then arrived at I182D or I182E through "common sense." (Ex. 1002 at ¶¶ 206-207; *see also* Petition at 71-72.) That is legally permissible testimony and distinguishes this case from *Xerox*, which does not pertain to an expert's testimony regarding reasons for selecting a readily recognizable species (I182E or I182D) from a finite genus (I182 mutation), like here. Furthermore, the I182A mutation disclosed in the *Perkins* PCT does not undercut Dr. Rose's testimony (Opp., 14) because PO does not dispute that ***only*** two negatively charged amino acids exist, D and E, which are capable of opposing ***an interaction with negatively charged residues through anionic repulsion***. (Ex. 1002, ¶207.) Indeed, I182A contains an ***uncharged*** alanine.

Rehearing should be granted and trial should be instituted.

Respectfully submitted,

Dated: August 2, 2024

By: /Naveen Modi/
Naveen Modi (Reg. No. 46,224)
Counsel for Petitioner

CERTIFICATE OF SERVICE

I hereby certify that on August 2, 2024, I caused a true and correct copy of the foregoing Petitioner's Reply to Patent Owner's Opposition to Petitioner's Rehearing Request to be served by email at the following email addresses of record:

Linnea Cipriano (lcipriano@goodwinlaw.com)
Daryl Wiesen (DWiesen@goodwinlaw.com)
Craig Lytle (CLytle@goodwinlaw.com)
GOODWIN PROCTER LLP

DG-Interius-Kelonia@goodwinlaw.com

By: /Naveen Modi/
Naveen Modi (Reg. No. 46,224)
Counsel for Petitioner