

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

OVID THERAPEUTICS, INC.,
Petitioner

v.

MARINUS PHARMACEUTICALS, INC.,
Patent Owner

Case IPR2024-00726
Patent 11,110,100

DECLARATION OF DR. MACIEJ GASIOR

I, MACIEJ GASIOR, declare as follows:

1. I am Vice President of Clinical Development at Marinus Pharmaceuticals. I am also an inventor on the 11,110,100 patent (Exhibit 1001), along with David Czekai, Lorianne Masouka, Julia Tsai, Joseph Hulihan, and Alex Aimetti. I was involved in the design of Marinus's Phase 2 clinical trial of intravenous ganaxolone for the treatment of refractory status epilepticus (Clinical Trial Registration No. NCT03350035), including its dosing regimens.

2. I understand, as explained to me by Marinus's counsel, that certain of Ovid's challenges to Marinus's 11,110,100 patent rely on the disclosures in a series of four Marinus references related to the NCT03350035 trial (Exhibits 1008, 1009, 1010, and 1011). In particular, Ovid's challenge relates to whether or not non-inventor co-authors on those publications contributed to the invention of the subject matter that Ovid relies upon—"that the target dose of ganaxolone (713 mg/day) achieved plasma concentrations above 500 ng/ml for approximately 8 hours and also resulted in good seizure control."

3. My co-inventors and I conceived of the subject matter of the claims of the '100 patent, as I had previously declared. (Declaration, attached as **Appendix A**). None of the non-inventor co-authors listed on any of Exhibits 1008, 1009, 1010, or 1011 contributed to the invention claimed in the '100 patent, including the 713 mg/day dosing regimen and maintaining plasma concentrations above 500

ng/ml for approximately 8 hours, or, indeed, of any of the other particulars of the dosing regimens, including the particular dose levels used for the bolus and continuous infusion. That information was all communicated either directly or indirectly from me and/or my co-inventors.

Exhibit 1010—Practical Neurology 2019

4. Exhibit 1010 (Practical Neurology 2019) is a news post from Practical Neurology that I understand Petitioner asserts was published on October 18, 2019, highlighting the results that Marinus had presented at the Neurocritical Care Society 17th Annual Meeting in Vancouver, BC. There are no authors listed on the news post, but both Dr. Scott Braunstein (Marinus's CEO) and Dr. Vaitkevicius (one of the Study Investigators) were quoted discussing the study results.

5. Although it is common for Dr. Braunstein, in his role as CEO, to engage in media relations, he was not involved in designing the dosing regimens of the study and did not contribute to the invention claimed in the '100 patent, including the 713 mg/day dosing regimen and maintaining plasma concentrations above 500 ng/ml for approximately 8 hours, or of any of the other particulars of the dosing regimens, including the particular dose levels used for the bolus and continuous infusion.

6. Dr. Vaitkevicius, in his role as Study Investigator, was one of the physicians responsible for conducting the clinical trial. He was not, however,

involved in designing the dosing regimens of the study and did not contribute to the invention claimed in the '100 patent, including the 713 mg/day dosing regimen and maintaining plasma concentrations above 500 ng/ml for approximately 8 hours, or of any of the other particulars of the dosing regimens, including the particular dose levels used for the bolus and continuous infusion. That information was provided, confidentially, to the Study Investigators by Marinus scientists—either directly or indirectly from inventor(s) on the '100 patent. The Study Investigators ran the clinical study using a protocol, including the particulars of the dosing regimen, provided by myself and the other co-inventors.

7. Dr. Vaitkevicius had presented the results highlighted in the Practical Neurology post at the Neurocritical Care Society 17th Annual Meeting in Vancouver, BC. The meeting was held at the Vancouver Convention Center from October 15 to October 18, 2019. I was also in attendance. The Abstract for that presentation (Oral Abstract #2) was published online before the meeting (on October 1, 2019) as page S3 of Neurocritical Care 31:S1–S341 (2019) (doi:10.1007/s12028-019-00857-7), which is available at <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7100118/>. (Ex. 2003).

8. The abstract lists a number of the inventors of the '100 patent (myself, Lorianne Masouka, and Julia Tsai) as well as a number of other co-authors

(Henrikas Vaitkevicius, Aatif Husain, Christa B. Swisher, Steven Smith, Heather Van Heusen, and R. Eugene Ramsay).

9. Henrikas Vaitkevicius, Christa B. Swisher, and R. Eugene Ramsay were Study Investigators on the Phase II clinical trial, overseeing the trials and reporting on bedside experience. Aatif Husain was a Study Investigator on previous Marinus trials and a Principal Investigator on the Phase II clinical trial (in charge of reading EEGs) and collaborated with Christa B. Swisher and Brad Kolls in doing so. As noted above, the daily doses and dosing regimens, as well as any corresponding pharmacokinetic (PK) data were provided to the Study Investigators and their collaborators by me and other Marinus scientists. Steven Smith was a Marinus contract employee who provided PK modeling at the request, guidance, and direction of me and my co-inventors. Heather Van Heusen was the Director of Clinical Operations at the time, responsible for coordination and communication with the Study Investigators. None of these authors conceived of the invention claimed in the '100 patent, including the 713 mg/day dosing regimen and maintaining plasma concentrations above 500 ng/ml for approximately 8 hours, nor of any of the other particulars of the dosing regimens, including the particular dose levels used for the bolus and continuous infusion. Rather, they were communicated to the co-authors by myself and/or my co-inventors.

10. Furthermore, on October 17, 2019 (i.e., before October 18, 2019), Marinus had posted these same results (which had been presented at the Neurocritical Care Society 17th Annual Meeting) in its own press release (Ex. 2004).

Exhibits 1011 and 1008—AES 2019 Poster and Abstract

11. Exhibit 1011 is a Marinus poster titled “Pharmacokinetic and Pharmacodynamic (PK/PD) Relationship of Intravenous Ganaxolone in Refractory Status Epilepticus,” which would have been presented at the December 2019 American Epilepsy Society (AES) Annual Meeting; Exhibit 1008 is the corresponding abstract, which shows a “Published Date” of November 25, 2019.

12. The poster and the corresponding abstract have the same title, although the list of authors on the abstract (Ex. 1008) appears to be truncated compared to the poster. The abstract lists:

R. Eugene Ramsay . . . Aatif M. Hussain . . . Christa B.
Swisher . . . Steven Smith . . . Heather Van Heusen . . .
Julia Tsai . . .

and then cuts off at “Marinus Pharmac,” (without completing the word “Pharmaceuticals” or the remainder of the authors and affiliations, whereas the poster lists:

R. Eugene Ramsay . . . Aatif M. Hussain . . . Christa B. Swisher . . . Steven Smith . . . Heather Van Heusen . . . Julia Tsai . . . Lorianne Masouka . . . [me] . . . and Henrikas Vaitkevicius.”

13. That truncation appears to be due to a technical issue. Separately indexed records of the Abstract (including bibliographic details and a summary) show the full list of authors. (Exhibit 2008, Declaration of Anne Koch Baland, with Attachments.)

14. I am a co-author on both the 2019 AES abstract and poster (though my name was lost to truncation of the author list in the abstract).

15. The abstract and poster include the dosing and PK results that Ovid relies upon (i.e., that the 713 ng/day dosing regimen achieves a plasma concentration of 500 ng/mL for ~8 hours; the poster shows that this regimen included a bolus plus continuous infusion), in addition to new pharmacokinetic (PK) results, which provided additional evidence of efficacy.

16. The non-inventor co-authors (Ramsay, Husain, Swisher, Smith, Van Heusen, and Vaitkevicius) were not involved in designing the dosing regimens of the study and did not contribute to the invention claimed in the '100 patent, including the 713 mg/day dosing regimen and maintaining plasma concentrations above 500 ng/ml for approximately 8 hours, or of any of the other particulars of the

dosing regimens, including the particular dose levels for the bolus and continuous infusion.

17. As noted above, that information was provided, confidentially, to the Study Investigators and their collaborators (including Drs. Ramsay, Husain, Swisher, and Vaitkevicius) by Marinus scientists—either directly or indirectly from inventor(s) on the '100 patent. As also noted above, Steven Smith was a Marinus contract employee who provided PK modeling at the request, direction, and control of the Marinus inventors. Heather Van Heusen was the Director of Clinical Operations at Marinus at the time, responsible for coordination and communication with the Study Investigators.

Exhibit 1009—Husain 2020

18. Exhibit 1009 (Husain 2020) is a *Journal of Clinical Neurophysiology* Publication (Volume 37, Number 4, July 2020), that includes “Poster Abstracts” from the “2020 American Clinical Neurophysiology Society (ACNS) Annual Meeting,” including Poster Abstract F53 titled “Intravenous Ganaxolone Achieves Rapid and Dose-Dependent Sustained Improvement in EEG Seizure Burden in Patients with Refractory Status Epilepticus.” I am an author on that Poster Abstract, as are Drs. Husain, Swisher, Ramsay, Kolls, Aimetti, Tsai, and Vaitkevicius. Drs. Aimetti and Tsai are also inventors on the '100 patent.

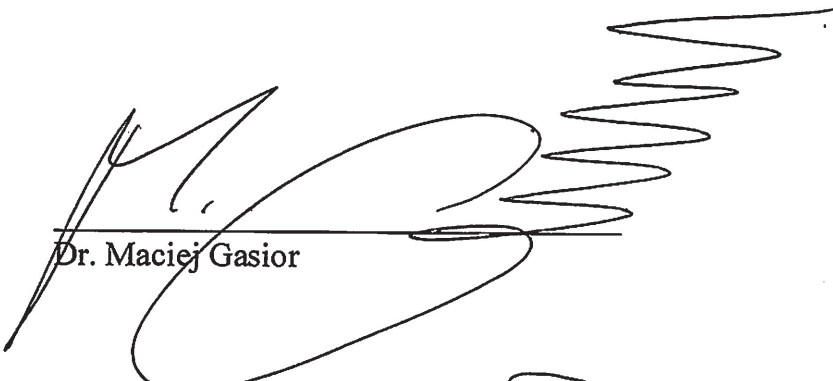
19. Ex. 1009 does not include the dosing or PK results that Ovid relies upon (i.e., that the 713 mg/day dosing regimen achieves a plasma concentration of 500 ng/mL for ~8 hours). Rather, the results presented in Husain highlight new EEG seizure data.

20. The non-inventor co-authors (Drs. Husain, Swisher, Ramsay, Kolls, and Vaitkevicius) were not involved in designing the dosing regimens of the study and did not contribute to the invention claimed in the '100 patent, including the 713 mg/day dosing regimen and maintaining plasma concentrations above 500 ng/ml for approximately 8 hours, or of any of the other particulars of the dosing regimens, including the particular dose levels used for the bolus and continuous infusion.

21. As noted above, that information was provided, confidentially, to the Study Investigators and their collaborators (including Drs. Husain, Swisher, Ramsay, Vaitkevicius, and Kolls) by Marinus scientists—either directly or indirectly from inventor(s) on the '100 patent.

I declare under the penalty of perjury that the foregoing is true and correct.

Executed on June 21, 2024.



Dr. Maciej Gasior

M. GASIOR

APPENDIX A

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it displays a valid OMB control number.

DECLARATION (37 CFR 1.63) FOR UTILITY OR DESIGN APPLICATION USING AN APPLICATION DATA SHEET (37 CFR 1.76)

**Title of
Invention**

GANAXOLONE FOR USE IN TREATMENT OF STATUS EPILEPTICUS

As the below named inventor, I hereby declare that:

This declaration
is directed to:

☐

The attached application, or

☒

United States application or PCT international application number 17/186,569

filed on February 26, 2021

The above-identified application was made or authorized to be made by me.

I believe that I am the original inventor or an original joint inventor of a claimed invention in the application.

I hereby acknowledge that any willful false statement made in this declaration is punishable under 18 U.S.C. 1001 by fine or imprisonment of not more than five (5) years, or both.

WARNING:

Petitioner/applicant is cautioned to avoid submitting personal information in documents filed in a patent application that may contribute to identity theft. Personal information such as social security numbers, bank account numbers, or credit card numbers (other than a check or credit card authorization form PTO-2038 submitted for payment purposes) is never required by the USPTO to support a petition or an application. If this type of personal information is included in documents submitted to the USPTO, petitioners/applicants should consider redacting such personal information from the documents before submitting them to the USPTO. Petitioner/applicant is advised that the record of a patent application is available to the public after publication of the application (unless a non-publication request in compliance with 37 CFR 1.213(a) is made in the application) or issuance of a patent. Furthermore, the record from an abandoned application may also be available to the public if the application is referenced in a published application or an issued patent (see 37 CFR 1.14). Checks and credit card authorization forms PTO-2038 submitted for payment purposes are not retained in the application file and therefore are not publicly available.

LEGAL NAME OF INVENTOR

Inventor: Maciej GASIOR

Date (Optional): March 8, 2021 | 3:24 PM EST

Signature: Maciej Gasior

Note: An application data sheet (PTO/SB/14 or equivalent), including naming the entire inventive entity, must accompany this form or must have been previously filed. Use an additional PTO/AIA/01 form for each additional inventor.

This collection of information is required by 35 U.S.C. 115 and 37 CFR 1.63. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.11 and 1.14. This collection is estimated to take 1 minute to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

If you need assistance in completing the form, call 1-800-PTO-9199 and select option 2.

Privacy Act Statement

The **Privacy Act of 1974 (P.L. 93-579)** requires that you be given certain information in connection with your submission of the attached form related to a patent application or patent. Accordingly, pursuant to the requirements of the Act, please be advised that: (1) the general authority for the collection of this information is 35 U.S.C. 2(b)(2); (2) furnishing of the information solicited is voluntary; and (3) the principal purpose for which the information is used by the U.S. Patent and Trademark Office is to process and/or examine your submission related to a patent application or patent. If you do not furnish the requested information, the U.S. Patent and Trademark Office may not be able to process and/or examine your submission, which may result in termination of proceedings or abandonment of the application or expiration of the patent.

The information provided by you in this form will be subject to the following routine uses:

1. The information on this form will be treated confidentially to the extent allowed under the Freedom of Information Act (5 U.S.C. 552) and the Privacy Act (5 U.S.C. 552a). Records from this system of records may be disclosed to the Department of Justice to determine whether disclosure of these records is required by the Freedom of Information Act.
2. A record from this system of records may be disclosed, as a routine use, in the course of presenting evidence to a court, magistrate, or administrative tribunal, including disclosures to opposing counsel in the course of settlement negotiations.
3. A record in this system of records may be disclosed, as a routine use, to a Member of Congress submitting a request involving an individual, to whom the record pertains, when the individual has requested assistance from the Member with respect to the subject matter of the record.
4. A record in this system of records may be disclosed, as a routine use, to a contractor of the Agency having need for the information in order to perform a contract. Recipients of information shall be required to comply with the requirements of the Privacy Act of 1974, as amended, pursuant to 5 U.S.C. 552a(m).
5. A record related to an International Application filed under the Patent Cooperation Treaty in this system of records may be disclosed, as a routine use, to the International Bureau of the World Intellectual Property Organization, pursuant to the Patent Cooperation Treaty.
6. A record in this system of records may be disclosed, as a routine use, to another federal agency for purposes of National Security review (35 U.S.C. 181) and for review pursuant to the Atomic Energy Act (42 U.S.C. 218(c)).
7. A record from this system of records may be disclosed, as a routine use, to the Administrator, General Services, or his/her designee, during an inspection of records conducted by GSA as part of that agency's responsibility to recommend improvements in records management practices and programs, under authority of 44 U.S.C. 2904 and 2906. Such disclosure shall be made in accordance with the GSA regulations governing inspection of records for this purpose, and any other relevant (*i.e.*, GSA or Commerce) directive. Such disclosure shall not be used to make determinations about individuals.
8. A record from this system of records may be disclosed, as a routine use, to the public after either publication of the application pursuant to 35 U.S.C. 122(b) or issuance of a patent pursuant to 35 U.S.C. 151. Further, a record may be disclosed, subject to the limitations of 37 CFR 1.14, as a routine use, to the public if the record was filed in an application which became abandoned or in which the proceedings were terminated and which application is referenced by either a published application, an application open to public inspection or an issued patent.
9. A record from this system of records may be disclosed, as a routine use, to a Federal, State, or local law enforcement agency, if the USPTO becomes aware of a violation or potential violation of law or regulation.