UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

MYLAN PHARMACEUTICALS INC.,
Petitioner,

v.

MERCK SHARP & DOHME CORP.,
Patent Owner.

Case IPR2020-00040
U.S. Patent 7,326,708

DECLARATION OF GARY HERMAN, M.D.

I, Gary Herman, M.D., hereby declare as follows:

I. INTRODUCTION

1. I understand that this proceeding involves issues related to U.S. Patent No. 7,326,708 ("the '708 patent"). I understand that Merck Sharp & Dohme Corp. ("Merck") is the owner and assignee of the '708 patent.

2. I understand that claim 17 of the '708 patent claims a pharmaceutical composition comprising a therapeutically effective amount of the 1:1 dihydrogenphosphate salt of sitagliptin ("1:1 sitagliptin DHP") in association with one or more pharmaceutically acceptable carriers.

3. I understand that claim 19 of the '708 patent claims a method for the treatment of type 2 diabetes comprising administering to a patient in need of such treatment a therapeutically effective amount of 1:1 sitagliptin DHP, or a hydrate thereof.

4. In this declaration, I provide facts about which I have first-hand knowledge regarding the timing of the early clinical development of sitagliptin, which led to various FDA approved drugs, including Januvia®. I did not invent the subject matter claimed in the '708 patent, but it is my understanding that I have relevant knowledge about the dates by which certain of the inventions conceived of by the inventors listed on the '708 patent were actually reduced to practice.

II. BACKGROUND

5. In 1982, I received a Bachelor's Degree in Biochemistry and Cell Biology from the University of California, San Diego.

6. After graduating from UCSD, I attended Harvard Medical School, from which I received an M.D. in 1988.

7. In 1988, I returned to California to train as a resident and postdoctoral fellow at the University of California, San Francisco. In 1995, I became an assistant professor at UCSF responsible for running a laboratory, taking care of patients, and teaching.

8. In 2001, I joined Merck as Associate Director, Clinical Pharmacology, and was promoted in 2003 to Director, Clinical Pharmacology, and in 2006 I was again promoted to Senior Director, Clinical Pharmacology.

9. In my roles at Merck as Associate Director, Director, and Senior Director, Clinical Pharmacology, I co-chaired the MK-0431 product development team and, among other things, lead the entire early clinical and clinical pharmacology program for Januvia®, from planning, first-in-human trials, and regulatory filing.

10. Between 2006 and 2015, I held various other position at Merck, including senior positions in Clinical Pharmacology, Experimental Medicine, and Early Stage Development.

11. In 2015, I left Merck to become Vice President, Early Clinical Development at Regeneron Pharmaceuticals, Inc. I am now Senior Vice President, Early Clinical Development & Experimental Sciences at Regeneron.

III. EARLY CLINICAL STUDIES INVOLVING MK-0431

12. During 2002, I was heavily involved in planning, executing, and evaluating the results from the early clinical studies involving MK-0431, which I understand to be 1:1 sitagliptin DHP. MK-0431 was first administered to patients—that is, humans with type 2 diabetes—in October 2002, as part of a clinical study that I will refer to as "Protocol 005." EX2106 is a true and correct copy of the Synopsis and Comprehensive Study Summary of the Clinical Study Report for Protocol 005, as submitted to the FDA as part of the Januvia® NDA. I am an author of Protocol 005. *See* EX2106 at 23.

13. A major objective of Protocol 005 was to evaluate whether administering doses of MK-0431 to patients would have the desired therapeutic effect in patients, i.e., lead to a dose-dependent decrease in glucose levels. If such dose-dependent decreases in glucose levels were observed, it would establish "proof-of-concept."

14. The Protocol 005 Clinical Study Report is dated November 2005; however, the portion of the study that actually involved administering MK-0431 to patients ended no later than March 16, 2003, *see* EX2106 at 17, and I and others on

the Merck team working to develop MK-0431 into an FDA-approved drug received data showing partial but reliable results from Protocol 005 well before then.

15. As part of Protocol 005, patients received treatments consisting of a 25 mg dose of MK-0431 and a 200 mg dose of MK-0431, formulated into simple oral capsules. *See* EX2106 at 17-18, 39-40. These simple capsules were formulated in three strengths: 5 mg, 20 mg, and 100 mg. *Id.*

16. It was Merck's ordinary and customary practice to assign a formulation number to each formulation, and the 5 mg, 20 mg, and 100 mg strengths were assigned formulation numbers 0431DFC001E001, 0431DFC001G001, and 0431DFCF002D001, respectively. *Id.*

17. It was also Merck's ordinary and customary practice to assign a number to each batch of drug substance, and the MK-0431 in the capsules used as part of Protocol 005 came from Drug Substance Batch No. L-000224,715-006F017. *See* EX2108 at 4-5. I understand that EX2108 is a true and correct copy of module 3.2.P.5.4 Batch Analysis submitted to the FDA as part of the Januvia® NDA.

18. In late November and early December 2002, I conducted an interim analysis on the first 18 patients who had completed Protocol 005. My interim analysis showed that administering MK-0431 to patients with type 2 diabetes led to

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