

Stephen M. Orlofsky
David C. Kistler
New Jersey Resident Partners
BLANK ROME LLP
301 Carnegie Center, 3d Floor
Princeton, NJ 08540
Telephone: (609) 750-7700

William C. Jackson
BOIES, SCHILLER & FLEXNER LLP
5301 Wisconsin Ave, NW
Washington, DC 20015

Douglas Carsten
WILSON SONSINI GOODRICH & ROSATI
12235 El Camino Real
Suite 200
San Diego, CA 92130

**IN THE UNITED STATES DISTRICT COURT
FOR THE DISTRICT OF NEW JERSEY**

UNITED THERAPEUTICS
CORPORATION,

Plaintiff,

v.

SANDOZ, INC.,

Defendant.

Civil Action No. 3:14-cv-5499
(PGS)(LHG)

**DECLARATION OF ROBERT
DELAFIELD IN SUPPORT OF
PLAINTIFF'S OPENING CLAIM
CONSTRUCTION BRIEF**

I, Robert A. Delafield II, declare the following:

1. I am an attorney at Wilson Sonsini Goodrich & Rosati, counsel to Plaintiff United Therapeutics Corporation (“United Therapeutics”). I submit this Declaration in support of United Therapeutics’ Opening Claim Construction Brief.
2. Attached hereto as Exhibit 1 is a true and correct copy of U.S. Patent No. 8,497,393, bearing Bates numbers UTC_REM_II_000003353 – UTC_REM_II_000003369.
3. Attached hereto as Exhibit 2 is a true and correct copy of an excerpt from Zumdahl, *Chemistry*, p. A26 (1986), bearing Bates numbers UTC_REM_II_000001645 – UTC_REM_II_000001647.
4. Attached hereto as Exhibit 3 is a true and correct copy of an excerpt from Aulton, *Aulton’s Pharmaceutics: The Design and Manufacture of Medicines*, pp. 338-341 (3rd ed. 2007), bearing Bates numbers UTC_REM_II_000001755 – UTC_REM_II_000001758.
5. Attached hereto as Exhibit 4 is a true and correct copy of an excerpt from Richet, *The Physical Basis of Thermodynamics with Application to Chemistry*, pp. 285-286 (2001), bearing Bates numbers UTC_REM_II_000005495 – UTC_REM_II_000005498.
6. Attached hereto as Exhibit 5 is a true and correct copy of an excerpt from Brown, et al., *Chemistry: The Central Science*, p. G-1 (9th ed. 2003), bearing Bates numbers UTC_REM_II_000001584 – UTC_REM_II_000001586.
7. Attached hereto as Exhibit 6 is a true and correct copy of an excerpt from March, et al., *March’s Advanced Organic Chemistry*, pp. 327-332 (5th ed. 2001), bearing Bates numbers UTC_REM_II_000001587 – UTC_REM_II_000001594.

8. Attached hereto as Exhibit 7 is a true and correct copy of an excerpt from Rayner-Canham, et al., *Descriptive Inorganic Chemistry*, pp. 121-134 (2nd ed. 1996), bearing Bates numbers UTC_REM_II_000001595 – UTC_REM_II_000001610.

9. Attached hereto as Exhibit 8 is a true and correct copy of an excerpt from Loudon, et al., *Organic Chemistry*, pp. 87-112 (3rd ed. 1995), bearing Bates numbers UTC_REM_II_000001611 – UTC_REM_II_000001638.

10. Attached hereto as Exhibit 9 is a true and correct copy of an excerpt from Bettelheim, et al., *Introduction to General, Organic & Biochemistry*, p. G-2 (6th ed. 2001), bearing Bates numbers UTC_REM_II_000001639 – UTC_REM_II_000001641.

11. Attached hereto as Exhibit 10 is a true and correct copy of an excerpt from Suchocki, et al., *Conceptual Chemistry*, p. G-1 (2001), bearing Bates numbers UTC_REM_II_000001642 – UTC_REM_II_000001644.

12. Attached hereto as Exhibit 11 is a true and correct copy of file history for U.S. Patent No. 8,497,393, bearing Bates numbers UTC_REM_II_000003371 – UTC_REM_II_000003575.

13. Attached hereto as Exhibit 12 is a true and correct copy of an excerpt from Zumdahl, *Chemistry*, pp. A25, A36 (1986), bearing Bates numbers UTC_REM_II_000001763 – UTC_REM_II_000001766.

14. Attached hereto as Exhibit 13 is a true and correct copy of an excerpt from Brown, et al., *Chemistry: The Central Science*, pp. G-2, G-10 (9th ed. 2003), bearing Bates numbers UTC_REM_II_000001759 – UTC_REM_II_000001762.

15. Attached hereto as Exhibit 14 is a true and correct copy of an excerpt from *Webster's New Collegiate Dictionary*, pp. 29, 901, 910-911 (Springfield, MA, G. & C. Merriam Co. 1981), bearing Bates numbers UTC_REM_II_000001782 – UTC_REM_II_000001787.

16. Attached hereto as Exhibit 15 is a true and correct copy of an excerpt from Suchocki, et al., *Conceptual Chemistry*, p. G-6 (2001), bearing Bates numbers UTC_REM_II_000001767 – UTC_REM_II_000001769.

17. Attached hereto as Exhibit 16 is a true and correct copy of Williams, et.al., “Asymmetric, Stereocontrolled Total Synthesis of Paraherquamide A,” *J. Am. Chem. Soc.*, 125:12172-178 (2003), bearing Bates numbers UTC_REM_II_000001741 – UTC_REM_II_000001747.

18. Attached hereto as Exhibit 17 is a true and correct copy of Williams, et.al., “Stereocontrolled Total Synthesis of (+)-Paraherquamide B”, *J. Am. Chem. Soc.*, 118:557-579 (1996), bearing Bates numbers UTC_REM_II_000001718 – UTC_REM_II_000001740.

19. Attached hereto as Exhibit 18 is a true and correct copy of Williams, et.al., “Synthetic Studies on Et-743. Assembly of the Pentacyclic Core and a Formal Total Synthesis,” *J. Org. Chem.*, 73(24):9594-9600 (2008), bearing Bates numbers UTC_REM_II_000001748 – UTC_REM_II_000001754.

20. Attached hereto as Exhibit 19 is a true and correct copy of Heathcock, et.al., “Further Studies of the Daphniphyllum Alkaloid Polycyclization Cascade,” *J. Org. Chem.*, 66:450-454 (2001), bearing Bates numbers UTC_REM_II_000001670 – UTC_REM_II_000001689.

21. Attached hereto as Exhibit 20 is a true and correct copy of Heathcock, et.al., “Daphniphyllum Alkaloids. 12. A Proposed Biosynthesis of the Pentacyclic Skeleton. Proto-Daphniphylline,” *J. Org. Chem.*, 57:2554-2566 (1992), bearing Bates numbers UTC_REM_II_000001657 – UTC_REM_II_000001669.

22. Attached hereto as Exhibit 21 is a true and correct copy of Buchwald, et.al., "An Air-Stable Catalyst System for the Conversion of Esters to Alcohols," *J. Org. Chem.*, 57:3753-3755 (1992), bearing Bates numbers UTC_REM_II_000001648 – UTC_REM_II_000001650.

23. Attached hereto as Exhibit 22 is a true and correct copy of Buchwald, et.al., "A Practical Titanium-Catalyzed Synthesis of Bicyclic Cyclopentenones and Allylic Amines," *J. Org. Chem.*, 61:2713-2718 (1996), bearing Bates numbers UTC_REM_II_000001651 – UTC_REM_II_000001656.

24. Attached hereto as Exhibit 23 is a true and correct copy of an excerpt from *Hawley's Condensed Chemical Dictionary*, pp. 34, 221 (14th ed. 2001), bearing Bates numbers UTC_REM_II_000001770 – UTC_REM_II_000001774.

25. Attached hereto as Exhibit 24 is a true and correct copy of an excerpt from Loudon, et al., *Organic Chemistry*, pp. 454-455 (3rd ed. 1995), bearing Bates numbers UTC_REM_II_000001700 – UTC_REM_II_000001703.

I declare under penalty of perjury under the laws of the United States of America that the foregoing is true and correct.

Executed this 7th day of July, in Austin, Texas.



Robert A. Delafeld II