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.,

DOCKET

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.

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 (3<sup>rd</sup> 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 (9<sup>th</sup> 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 (5<sup>th</sup> 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 (2<sup>nd</sup> 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 (3<sup>rd</sup> 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 (6<sup>th</sup> ed. 2001), bearing Bates numbers UTC\_REM\_II\_000001639 – UTC\_REM\_II\_000001641.

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.

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.

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 (9<sup>th</sup> 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.

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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.

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.

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 (14<sup>th</sup> 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 (3<sup>rd</sup> 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 7<sup>th</sup> day of July, in Austin, Texas.

Robert A. Delafield II