

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

INTAS PHARMACEUTICALS LTD.,
Petitioner

v.

ATOSSA THERAPEUTICS, INC.,
Patent Owner

Case IPR2025-00799
Patent 11,261,151

DECLARATION OF STEPHEN GRAHAM DAVIES DPhil

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I, Stephen Graham Davies, DPhil hereby declare under penalty of perjury:

I. Introduction

1. I have been retained by Groombridge, Wu, Baughman & Stone LLP, on behalf of Atossa Therapeutics, Inc. (“Atossa”) to provide opinions regarding U.S. Patent No. 11,261,151 (“the ’151 patent”). Specifically, I have been asked to consider the validity of claims 1-21 of the ’151 patent (the “Challenged Claims”) in connection with Inter Partes Review (IPR) No. 2025-00799, filed by Intas Pharmaceuticals Ltd (“Intas” or “Petitioner”), which challenges the patentability of all claims of the ’151 patent. Except as otherwise indicated, I have personal knowledge of the facts and opinions set forth in this declaration, and believe them to be true. If called upon to do so, I would testify competently thereto.

2. I am being compensated for my time at my standard consulting rate of £450/hour. I will be reimbursed for the expenses that I incur in the course of this work. My compensation is not contingent upon the results of my analysis, the substance of my opinions, or the outcome of any proceeding involving the Challenged Claims. I have no financial interest in the outcome of this matter or in the pending matters involving Petitioner or Atossa.

II. Background and Qualifications

3. I offer statements and opinions on behalf of Atossa, generally regarding the novelty and non-obviousness of the Challenged Claims, the prior art, and the

understanding of a person of ordinary skill in the art as it relates to the '151 patent and I offer responses to the opinions presented in the declarations of Dr. Ron Bihovsky (EX1033), Dr. Jason McConville (EX1032), and Dr. William Mayo (EX1038).

4. My extensive background, training and research endeavors in the field of organic and pharmaceutical chemistry are relevant to the subjects of this declaration. My qualifications in these areas, as well as other areas of knowledge, are established below and by my curriculum vitae, attached as **Appendix A**.

5. I received my B.A. in Chemistry from the University of Oxford in 1973. I earned my D. Phil. in Chemistry from the University of Oxford in 1975. I received my D. Sc. in Chemistry from the University of Paris in 1980. Between 1975 and 1980, I also completed two Postdoctoral fellowships. First, I held an ICI Postdoctoral Fellowship and later a NATO Fellowship, before I joined the Centre National de la Recherche Scientifique (CNRS) at Gif-sur-Yvette as Attaché de Recherche (Research Assistant). The University of Salamanca, Spain also awarded me a Doctor Honoris Causa (honorary degree).

6. My current position is the Waynflete Professor of Chemistry Emeritus at the University of Oxford and Extraordinary Lecturer in Chemistry at New College, Oxford, England. I first began working as a chemistry instructor at Oxford in 1980. In 1996, I became a Professor of Chemistry at Oxford. I was Chairman of

the Department of Chemistry from 2006 to 2011. As the Chairman, I had full responsibility for all research, teaching, managerial and financial matters in one of the largest academic chemistry departments in the world. At Oxford, I have also supervised more than 100 graduate students and 100 post-doctoral fellows in the areas of organic organometallic, and medicinal chemistry.

7. In addition, I have received several editorial appointments. I was the Founding Editor and Editor-in-chief of the journal, "Tetrahedron: Asymmetry" from 1990-2017. I was also the Founding Editor and Editor of the Organic Series of "Oxford Chemistry Primers" and "Oxford Chemistry Masters." I also the Editor of the "On Chemistry" Books, and I was an Executive Editorial Board Member of the "Tetrahedron" family of Journals from 1989-2017.

8. I have continuously conducted academic, peer-reviewed, grant-funded research in the areas of medicinal chemistry and organic chemistry throughout my career. I have published over 600 peer-reviewed publications in addition to giving scores of research lectures. I have also been a committee member of many professional bodies, which are listed in my *curriculum vitae*.

9. Pertinent to the '151 patent, I have been interested in researching and have many publications on synthetic organic and medicinal chemistry, and in particular, the preparation of chemically and isomerically pure organic compounds, including the synthesis of polymorphs of pharmaceutical compounds for potential

therapeutic use. I also have research experience and many publications on the identification, synthesis, and evaluation of small molecule inhibitors of potential breast cancer biomarkers. A list of my more than 600 publications is included with my curriculum vitae.

10. I have also founded numerous companies including several focused on the preparation and development of compounds for potential pharmaceutical use. I founded Oxford Asymmetry, Ltd. in 1992 along with several other colleagues, which became a division of Oxford Asymmetry International plc, with a mission to provide pharmaceutical companies with enantiomerically pure compounds of interest on any desired scale, from small amounts for biological evaluation and research, to commercial quantities. I also am one of the founders of Summit Therapeutics plc and Summit Therapeutics Inc., which develop pharmaceutical compounds and have one such compound for treating Duchenne Muscular dystrophy which is currently being reformulated after a Phase II clinical trial and a novel specific antibiotic against the *C. difficile* bacterium that is being reevaluated after two phase III trials. I am also the Founder and Non-executive Director of Raphael Laboratories Limited, a company which focuses on developing prophylactics against airborne respiratory viruses including COVID-19 and its variants, one of which successfully completed a Phase II clinical trial and is being prepared for a Phase III trial. I am also the Founder and Non-executive Chairman of Sci-ink Ltd. And I previously was a Non-

executive Director of Oxford University Innovation Ltd. In addition, I was a Founder and Non-executive Director of OxStem Ltd., OxStem Neuro Ltd., Ox-Stem Cardio Ltd., OxStem Oncology Ltd., OxStem Ocular Ltd, Ox-Stem Beta Ltd, and OxStem Immuno Ltd. I am also the Founder and Non-executive director of OxReGen Ltd which uses AI and zebrafish for drug discovery.

11. I have received several awards, over the course of my career, including the Hickinbottom Fellowship (1984); Pfizer Award for Chemistry (1985); 1984 Corday Morgan Medal, Royal Society of Chemistry (1986); Royal Society of Chemistry Award for Organometallic Chemistry (1987); Pfizer Award for Chemistry (1988); Royal Society of Chemistry Bader Award (1989); Tilden Lecture Award, Royal Society of Chemistry (1996); Royal Society of Chemistry Award in Stereochemistry (1997); Prize Lectureship of the Society of Synthetic Organic Chemistry, Japan (1998); Distinguished Technopreneur Award, Singapore (2008); Royal Society of Chemistry Perkin Prize for Organic Chemistry (2011); and Doctor Honoris Causa, University of Salamanca, Spain.

12. In the past four years I provided testimony in the following proceedings:

- *Mitsubishi Tanabe Pharma Corp. v. Sandoz Inc et al*, CA No. 17-5319 (FLW)(DEA) (D.N.J.) (2021)

- *Biodelivery Sciences International Inc. and Arius Two Inc. v. Alvogen Group Inc.*, CA No. 1:18-cv-01395-CFC-CJB (D. Del.) (2021)
- *Celgene Corp. v. Sandoz Inc. et al*, CA No. 18-11026 (MAS)(DEA) (D.N.J.) (2021)
- *Slayback Pharma LLC v. Eye Therapies LLC*, Case IPR2022-00142 (2022)
- *Gilead Sciences Inc v. Nucana Ltd London*, Claim No. HP-2021-000007 (2023)
- *Mylan Pharmaceuticals Inc v. Bausch Health Ireland Ltd*, IPR2022-00722 (2023)
- *Bausch Health Ireland Ltd. v. Mylan Pharmaceuticals Inc.*, CA No. 22-cv-00020 (N.D. W.Va.) (2023)
- *Bausch Health Ireland Ltd. v. MSN Laboratories Pvt. Ltd.*, CA No. 21-cv-10057 (D.N.J.) (2023/2025)
- *Eisai R&D Management Co. v. Shilpa Medicare Ltd. and Sun Pharmaceutical Industries Inc.*, CA No. 19-19998 (CPO)(AMD) (D.N.J.) (2023)
- *Arbor Pharmaceuticals et al v. Saba Ilac Sansyii Ve Ticareet As, et al*, C.A. No. 22-353-MN (Consolidated) (D. Del.) (2023)

- *Bausch Health Ireland Ltd. And Eye Therapies LLC v. Dr Reddy's Laboratories Inc and Slayback Pharma LLC*, CA No. 21-16766 (RK) (RLS) (Consolidated) (D.N.J.) (2024)
- *Bausch Health Ireland Ltd. And Salix Pharmaceuticals Inc. v. MSN Laboratories Private Ltd and MSN Pharmaceuticals Inc.*, CA No. 21-10057 (SRC) (JSA) (D.N.J.) (2024)
- *Intas Pharmaceuticals Ltd. v. Atossa Therapeutics, Inc.*, PGR No. 2023-0043 (2024)
- *Eisai Inc and MSD Int GMBH v. Dr Reddy's Laboratories Inc*, C.A. No. 24-6765 (CPO) (AMD) (D.N.J.) (2025)
- *AbbVie Inc. v. Alkem Laboratories Limited*, CA No. 1:22-cv-01423 (JLH) (D. Del.) (2025)
- *Biogen Inc. and Alkermes Pharma Ireland Ltd. v. Zydus Worldwide et al*, CA No. 23-732 (GBW) (D. Del.) (2025)
- *Marck Sharp & Dohme LLC v. Zydus Pharmaceuticals Inc.*, CA No. 1:24-cv-10820 (KMW) (SAK) (D.N.J.) (2025)
- *Bausch Health Ireland Ltd. v. MSN Laboratories Pvt. Ltd.*, CA No. 21-cv-10057 (D.N.J.) (2023/2025)

- *Eisai Inc and MSD Int GMBH v. Shilpa Medicare Ltd and Sun Pharmaceutical Industries Inc.*, CA No 19-19998 (ZNQ)(DEA) (D.N.J.) (2023/2025)
- *Harmony Biosciences et al v. Lupin Ltd et al*, CA No. 23-1286 (JLH) (D. Del.) (2025)

III. Materials Relied Upon

13. In reaching the conclusions described in this declaration, I have relied on the documents and materials cited in this Declaration and those identified in **Appendix B**. These materials are the Petition, as well as the attendant Petitioner's Exhibits, patents, related documents, and printed publications. Each of these is a type of document that experts in my field would reasonably rely upon when forming their opinions.

14. My opinions are also based on my education, training, knowledge, and personal and professional experience in the relevant areas of organic and medicinal chemistry.

IV. Legal Standards

15. I am not an attorney, but I have been informed by Atossa's counsel about the appropriate legal standards as set forth below for anticipation and obviousness and have applied these standards in rendering my opinions.

16. I understand that the Board has instituted an *inter partes* review of claims 1-21 of the '151 patent in its Institution Decision (Pap.13, "ID"). I understand that the instituted grounds are as follows: **Ground 1** challenges claims 1-6, 16, 18, and 21 of the '151 patent as unpatentable as anticipated by Liu; **Ground 2** challenges claims 1-21 of the '151 patent as obvious over Liu and Ahmad in view of the knowledge of a POSA.

17. I understand that for *inter partes* review, invalidity must be shown under a preponderance of the evidence standard. I understand that to establish something by a preponderance of the evidence it must be proven that it is more likely true than not.

A. Anticipation

18. I understand that anticipation occurs when a given prior art reference discloses each and every limitation of a claimed invention, either expressly or inherently. I further understand that a reference must not only disclose all elements of the claim within the four corners of the document, but must also disclose those elements arranged as in the claim. I further understand that for anticipation, mixing and matching from different embodiments of a prior-art reference is not permitted.

19. I understand that prior art that must be modified to meet the disputed claim limitation does not anticipate the claim. I have also been informed that, to establish inherent anticipation, a party must show that the natural result flowing from

the operation as taught would result in the performance of the claimed method. I further understand that inherent anticipation requires that the teaching of a prior art reference necessarily and inevitably results, as opposed to presenting a mere possibility of resulting, in the challenged claimed invention.

B. Obviousness

20. I understand that to find a patent claim unpatentable for obviousness, the claimed invention, as a whole, when considered against the prior art, as a whole, must have been obvious to a person having ordinary skill in the art at the time the invention was made.

21. I understand that in evaluating obviousness, I must consider: 1) the level of skill in the art, 2) the scope and content of the prior art, 3) differences between the claimed invention and prior art, and 4) objective evidence of non-obviousness.

22. I understand that the claimed invention and the prior art must each be looked at as a whole and that the party alleging obviousness has the burden of establishing that a person of ordinary skill in the art would have been motivated to make the invention as claimed with a reasonable expectation of success in doing so.

23. I further understand that whether a person of ordinary skill in the art would have had a reasonable expectation of success in practicing the claims is

determined based on the degree of unpredictability in the art as well as the guidance provided by the art.

24. I also understand that, in making an obviousness determination, it is improper to consider the prior art with a hindsight bias based on the teachings of the subject patent. Specifically, one must not use the subject patent as a template to suggest how the elements of the prior art could have been combined.

25. For the purposes of my opinions herein, I have assumed that the priority date for the '151 patent is September 11, 2017.

V. Claim Construction

26. I understand that, for purposes of an *inter partes* review, claim terms are construed in accordance with their ordinary and customary meaning. I understand claim construction begins with the claim language itself. Claim terms are presumed to have their ordinary and customary meaning in light of the patent's specification as understood by persons of skill at the time of invention, unless (1) the patentee sets out a definition and acts as his own lexicographer, or (2) the patentee disavows the full scope of a claim term either in the specification or during prosecution. I understand that the "ordinary and customary" meaning of a claim term is the meaning that the term would have to persons of skill at the time of the invention.

27. I have been asked to assume that, “stable” as used in claim 21, means “the continued presence of at least 90% (Z)-endoxifen in a composition...measurable by (Z)-endoxifen conversion to (E)-endoxifen starting from the date of synthesis.” EX1001, 82:15-20. I have applied this understanding in my analysis below.

28. I have been asked to assume that all other terms have their plain and ordinary meaning as would have been understood by a person of ordinary skill in the art in light of the specification.

VI. Person of Ordinary Skill in the Art

29. I understand that a person of ordinary skill in the art (“POSITA”) is a hypothetical person who is presumed to have known the relevant art at the time of the invention. I understand that a POSITA is also a person of ordinary creativity, who in many cases will be able to fit the teachings of multiple patents or printed publications together. I further understand that the factors that may be considered in determining the level of ordinary skill in a particular field of art include (1) the level of education and experience of those working in the field, (2) the types of problems encountered in the field, and (3) the sophistication of the technology at the time of the invention, which I understand to be September 11, 2017. I understand this date is sometimes referred to as the “priority date” or “earliest filing date” of the patent. I understand that not every factor may be present in every case. I understand that a POSITA is not a specific real person, but rather is a hypothetical person having

the qualities reflected by the above-discussed factors. I further understand that a POSITA would have knowledge from the teachings of the prior art, including the art cited herein.

30. I understand that the Board has preliminarily adopted Petitioner's definition of a POSITA as "someone with a graduate degree in organic chemistry, medicinal chemistry, pharmaceutical chemistry, or a related field, and four to six years of experience in the synthesis, purification, analysis, design, and/or formulation of pharmaceutical compounds and derivatives," and "would have worked with a team of professionals with training in related disciplines, such as pharmacology, pharmacokinetics, formulation, drug discovery and/or drug development as of the date of the claimed inventions." ID, 8-9. I have been asked to assume this definition of a POSITA for the purpose of my analysis.

VII. Technical Background

A. The '151 Patent

31. Before the '151 patent, in which the inventors developed a novel synthesis and purification process that yields a crystalline form of (Z)-endoxifen (at least 90% by weight) with long-term stability and commercial-scale feasibility, obtaining relatively pure and stable forms of (Z)-endoxifen proved a challenge. *See* EX1001, 27:23-40. The '151 patent teaches a synthetic pathway and purification process to create this highly pure (Z)-endoxifen. *See id.* at Examples 1, 4-9.

32. Following the procedure of the '151 patent, the starting isomeric mixture of (E)/(Z)-endoxifen is first subjected to crystallization. *Id.* Because the inventors of the '151 patent observed that (E)-endoxifen is less soluble than (Z)-endoxifen, this initial crystallization step results in an enriched (Z)-endoxifen component (*e.g.*, a mother liquor or filtrate). *See id.* at 68:3-10 (“(Z)-endoxifen was seen to be more soluble than (E)-endoxifen in EtOAc.... Serial enrichment of Z-endoxifen by adding filtrates back to the first filtrate (first mother liquor) can also be performed.”).

33. According to the '151 patent, the enriched (Z)-endoxifen component is then subjected to further crystallization to obtain pure (Z)-endoxifen solid in a free-base composition. *See id.* at 67:67-68:3 (“Both solids and filtrates are useful for the preparation of (Z)-endoxifen free base.”). The (Z)-endoxifen free-base solid composition obtained is shown to be stable in ambient conditions, with reduced isomeric conversion to the (E)-isomer. *See id.* at 84:20-29 (“Results show that solid Z-endoxifen free base is stable for at least 9 months at 5° C. and 25° C./60% RH... (Z)-to-(E)”).

34. The claims of the '151 patent are directed to a crystalline Form I of (Z)-endoxifen, defined by a specific X-ray powder diffraction (“XRPD”) fingerprint, as well as methods of using this highly pure polymorphic form. EX1001, cl. 1 (“A composition comprising a crystalline form of a compound of Formula (III)...

wherein the crystalline form of the (Z)-isomer is Form I”), cl.16 (“A method of treating a hormone-dependent breast disorder or a hormone-dependent reproductive tract disorder in a subject, the method comprising administering to the subject a composition comprising a crystalline form of a compound of Formula (III)... wherein the crystalline form of the (Z)-isomer is Form I”); *see id.* at cl. 2-15, 17-21.

B. Prosecution of the ’151 Patent

35. The application that led to the ’151 patent was subject to two rejections before Patent Owner overcame those rejections and the Challenged Claims were ultimately allowed by the Office.

36. Notably, in the first office action, the Examiner found that “[t]he key to instant claims 1, 4-9, 32-35, 38-44, 46, 47, 49 and 52 is the polymorph of Form I. The closest prior art appears to be WO 2014/141292 A2, cited in the IDS, which teaches an endoxifen citrate polymorph (abstract; page 4, 5th full paragraph). (Instant diagramed Formula (III) is (E)/(Z)-endoxifen.) The reference does not teach, show, suggest or make obvious the instant Form I polymorph.” EX1002 at 433.

37. In the Notice of Allowance, the Examiner noted, “[a]s was stated in the 9/7/2021 Office Action, the key to instant claims is the polymorph of Form I. The closest prior art appears to be WO 2014/141292 A2, cited in the IDS, which teaches an endoxifen citrate polymorph (abstract; page 4, 5th full paragraph). (Instant

diagramed Formula (III) is (E)/(Z)-endoxifen.) The reference does not teach, show, suggest or make obvious the instant Form I polymorph.” *Id.* at 537.

C. X-Ray Powder Diffraction (XRPD)

38. XRPD is a technique used to characterize polymorphs by shooting a beam of X-rays at a crystalline material, which scatter off the regularly spaced atoms. EX1011, 3. When X-rays scatter from a substance with structure, interference can take place, resulting in a pattern of higher and lower intensities. *Id.*; *see also* EX1031, 1-3. The XRPD instrument measures the intensity of these diffracted X-rays, producing a pattern of peaks that reveals the material’s unique atomic structure, helping identify substances, determine crystallinity, and analyze phase purity. EX1011, 3; EX1031, 1-3.

39. As of the September 11, 2017 priority date of the ’151 patent, a POSITA would have understood that XRPD “is the front-line technology to analyze polymorphs.” EX2038, 7 (published in 2014 in a regularly published journal (Asian Journal of Pharmaceutical Sciences), a journal with which a POSITA would have been familiar). A POSITA would have understood that “X-ray diffraction techniques are the most suitable and more utilized tools to study and characterize polymorphs in pharmaceutical solids because they provide unequivocal proof of either polymorphism existence or polymorphism occurrence.” EX2040, 3 (published in 2016 in a regularly published journal (World Journal of

Pharmaceutical Sciences), a journal with which a POSITA would have been familiar). Moreover a POSITA would have understood that, using XRPD, it is “possible to simultaneously identify more than one API in the formulation.” EX2040, 3-4.

D. Polymorphs of (Z)-Endoxifen

40. The '151 patent identifies three separate polymorphs of Z-endoxifen by XRPD peaks. Figures 9 and 10 show Form I, while Figures 11 and 12 show Form II, and Figure 13 shows Form III. EX1001, Figs. 9-14. The '151 patent similarly explains that “[i]n some embodiments, the pharmaceutical composition comprises endoxifen predominantly as polymorph Form I. In some embodiments, the pharmaceutical composition comprises endoxifen predominantly as polymorph Form II. In some embodiments, the pharmaceutical composition comprises endoxifen predominantly as polymorph Form III.” EX1001 at 35:1-10. In addition, the '151 patent provides different routes of synthesis for Form I (Example 9) and Form II and Form III (Example 10). In particular, in Example 9, after the intermediate filtrate is concentrated at NMT 75°C, the mixture is cooled at 0-5°; whereas in Example 10, that intermediate filtrate is heated to reflux and then cooled to 50±5° C and then n-Heptane is added slowly at 50±5° C before the mixture is cooled to 0±5° C and stirred at 0±5° C for NLT 2 hours. EX1001 at 78:1-78:65. Further, in Example 9, the cooled filtrate is mixed with a second solvent and

undergoes further processing thereafter, whereas in Example 10 the cooled is filtered and washed with EtOAc/n-Heptane=1/2 (v/v) and the wet cake is dried under reduced pressure at NMT 60° C and “[i]n this manner, polymorph Forms II and III of endoxifen [are] prepared.” *Id.* Thus, the ’151 patent recognizes that there are at least three polymorphs of Z-endoxifen with distinct XRPD patterns, and it teaches that changes in external factors during synthesis can affect which polymorph results.

41. Additionally, as was known in 2023 at the time of Dr. Bihovsky’s experiments, there are at least 14 additional polymorphic forms of (Z)-endoxifen and which form is adopted can be affected by changes to both temperatures and impurities in the reactions used to create (Z)-endoxifen. EX2042, [0030], [0034], [0036]-[0048], [0059]-[0083], [0278], [0280]-[0281], [0284]-[0312], [0315]-[0335], [0568]-[0677], [0708], Figs. 8-10, 20-92.

E. The Asserted Prior Art

1. Liu (EX1003)

42. Liu, which was affirmatively considered by the Examiner during prosecution of the ’151 patent (EX1002, 431), is an international patent application publication titled “Process for Preparing (Z)-Endoxifen of High Purity.” EX1003, 1.

43. Liu provides experimental protocols regarding synthesis of what Liu states is (Z)-endoxifen, but does not report any XRPD data as to any of the compounds described by Liu.

2. Ahmad (EX1004)

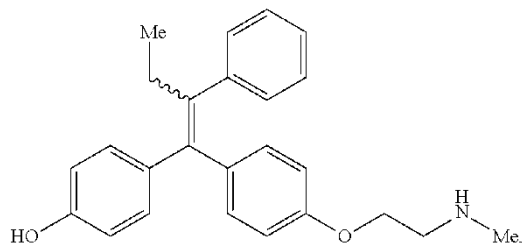
44. U.S. Patent No. 9,333,190 (“Ahmad”), which is listed on the face of the ’151 patent, is entitled “Endoxifen compositions and methods.” EX1004, Cover. Ahmad disclose methods of treatment using compositions containing endoxifen and methods for making those compositions. EX1004, Abstract. Ahmad does not disclose the generation of specific polymorphs of endoxifen, methods of identifying different polymorphs via XRPD, or Form I.

VIII. The ’151 Patent Claims

45. I understand that the Petition challenges claims 1-21 of the ’151 patent which are reproduced below.

1. A composition comprising a crystalline form of a compound of Formula (III):

Formula (III)



wherein at least 90% by weight of the compound of Formula (III) in the composition is the (Z)-isomer, and wherein the crystalline form of the (Z)-isomer is Form I,

characterized by an x-ray powder diffraction pattern comprising major peaks at $16.8\pm0.3^\circ$, $17.1\pm0.3^\circ$ and $21.8\pm0.3^\circ$ two theta.

2. The composition of claim 1, wherein the x-ray powder diffraction pattern further comprises at least one peak selected from $16.0\pm0.3^\circ$, $18.8\pm0.3^\circ$ and $26.5\pm0.3^\circ$ two theta.

3. The composition of claim 1, wherein the x-ray powder diffraction pattern further comprises at least one peak selected from $12.3\pm0.3^\circ$, $28.0\pm0.3^\circ$ and $29.0\pm0.3^\circ$ two theta.

4. The composition of claim 1, wherein the x-ray powder diffraction pattern further comprises peaks at $12.3\pm0.3^\circ$, $16.0\pm0.3^\circ$, $18.8\pm0.3^\circ$, $26.5\pm0.3^\circ$, $28.0\pm0.3^\circ$ and $29.0\pm0.3^\circ$ two theta.

5. The composition of claim 1, wherein the crystalline form of the (Z)-isomer is characterized by an x-ray powder diffraction pattern substantially as set forth in FIG. 9 or FIG. 10.

6. The composition of claim 1, wherein greater than 90% by weight of the (Z)-isomer in the composition is crystalline Form I.

7. The composition of claim 1, further comprising a pharmaceutically acceptable carrier or diluent.

8. The composition of claim 7, wherein the composition is formulated for oral, parenteral, topical, or intraductal delivery.

9. The composition of claim 7, wherein the composition is formulated for oral delivery as a tablet, a caplet, a capsule, or a pill.

10. The composition of claim 7, wherein a mean half-life of the compound of Formula (III) in a subject treated with the composition is between 30 hours to 60 hours.

11. The composition of claim 1, formulated as an oral dosage form comprising 1 mg to 200 mg per unit dose of the composition, and wherein daily administration of the oral dosage form achieves in a subject treated with the composition one or more of:

a steady state plasma level of the compound of Formula (III) within 7 to 21 days;

a steady state plasma level of the compound of Formula (III) ranging from 25 nM to 300 nM;

a steady state plasma level of the compound of Formula (III) greater than 30 nM; or

maximal plasma levels of the compound of Formula (III) within 2 to 10 hours after administering.

12. The composition of claim 11, wherein a mean half-life of the compound of Formula (III) in the subject is between 40 hours to 55 hours.

13. The composition of claim 11, wherein the oral dosage form is formulated as an enteric tablet, an enteric caplet, an enteric capsule, a delayed-release tablet, a delayed-release caplet or a delayed-release capsule.

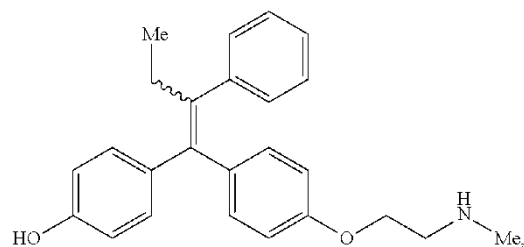
14. The composition of claim 11, wherein at least 80% of the compound of Formula (III) in the oral dosage form is released in the intestines of the subject.

15. The composition of claim 11, having a mean area under the curve extrapolated to time infinity ($AUC_{0-\infty}$) of the compound of Formula (III) of 200 hr*ng/mL to 10000 hr*ng/mL.

16. A method of treating a hormone-dependent breast disorder or a hormone-dependent reproductive tract disorder in a subject, the method comprising administering to the

subject a composition comprising a crystalline form of a compound of Formula (III):

Formula (III)



wherein at least 90% by weight of the compound of Formula (III) in the composition is the (Z)-isomer, and wherein the crystalline form of the (Z)-isomer is Form I, characterized by an x-ray powder diffraction pattern comprising major peaks at $16.8 \pm 0.3^\circ$, $17.1 \pm 0.3^\circ$ and $21.8 \pm 0.3^\circ$ two theta, thereby treating the hormone-dependent breast disorder or the hormone-dependent reproductive tract disorder.

17. The method of claim 16, wherein the subject has prostate cancer and wherein the subject further has or is at risk of having gynecomastia.

18. The method of claim 16, wherein the subject has tamoxifen-refractory or tamoxifen resistant hormone-dependent breast disorder or hormone-dependent reproductive tract disorder.

19. The method of claim 16, wherein the composition comprises 0.01 mg to 200 mg of the (Z)-isomer.

20. The method of claim 16, wherein a steady state plasma level of the compound of Formula (III) is achieved within 7 to 21 days of the first administration of the composition to the subject, and wherein the steady state plasma level of the compound of Formula (III) in the subject is greater than 30 nM.

21. The composition of claim 1, wherein the composition is stable for at least 9 months at 5°C . and 60% relative humidity or at 25°C . and 60% relative humidity.

IX. Ground 1: Liu Does Not Inherently Anticipate Claims 1-6, 16, 18, and 21

46. Dr. Bihovsky admits Liu does not disclose the claimed Form I but instead opines that Liu inherently discloses the claimed Form I. EX1033, ¶43.

47. As I discuss below in more detail, it is my opinion that Dr. Bihovsky has failed to demonstrate that the natural result flowing from Liu's teachings is the claimed Form I polymorph. In fact, it is my opinion that given Dr. Bihovsky's significant deviations from Liu's disclosed experimental procedures, a POSITA would not view Dr. Bihovsky's experiments as a reproduction of Liu, but as wholly different experiments that are not indicative of what polymorphic form Liu's experiments would have achieved.

48. As I discuss in more detail in the following sections, from the very outset of his experiments, Dr. Bihovsky changed the ratios of Liu's starting materials to attempt to perform Liu's commercial-scale processes on a smaller scale.

49. It is my opinion, however, that a reaction such as the one discussed in Liu is like baking a cake. When baking a cake, slight changes to the ratios of ingredients used can have profound effects on the final results. Dr. Bihovsky's changes to the ratios of ingredients used in Liu starting with Example 2 (and continuing through Example 7) affected every subsequent experimental step Dr. Bihovsky performed. *E.g.*, EX1033, ¶71 (Dr. Bihovsky's purification scheme

showing his use of materials from prior experiments in later experiments); EX2033, 137:2-139:8, 142:5-143:7.

50. Along with Dr. Bihovsky's other significant changes to Liu's process that I discuss below, including Dr. Bihovsky's additional changes to the ratios of ingredients used Liu's later steps, it is my opinion that a POSITA would have understood that Dr. Bihovsky's final experimental products were not the natural result flowing from the prior art's explicit disclosure.

51. As discussed below, multiple prior-art references show that the very types of changes made by Dr. Bihovsky are known to impact polymorphism. Thus, in my opinion, given the potential impact of each of Dr. Bihovsky's changes, the only way to know what form Liu would have produced is to perform Liu's experiments, not Dr. Bihovsky's. EX2037, 1 (reporting on experiments to investigate "[t]he effects of seven kinds of impurities on the solvent-mediated transformation of crystal polymorphs" of a compound); EX2036 ("***For reproducible production of polymorphs***, a critical issue may be the presence or absence of key impurities....").

52. Moreover, even if Dr. Bihovsky's experiment was considered to be evidence regarding the natural results of Liu's explicit disclosures, his results teach that following Liu leads to experiments that will not produce enough material to

proceed to later steps of Liu, and thus do not always produce the claimed Form I polymorph, in at least some cases.

53. Thus, it is my opinion that Dr. Bihovsky has failed to show that Liu inherently anticipates claims 1-6, 16, 18, and 21.

A. Dr. Bihovsky Modified Liu In Ways that Could Have Affected the Crystal Form and Purity of His Resulting Products

54. Dr. Bihovsky identifies and attempts to explain the numerous ways in which he deviated from Liu's procedures. *E.g.*, EX1033, ¶¶47-48, 51, 52 n.3 & n.4, 54 n.5, 59 n.6, 60 n.7, 61. Dr. Bihovsky does not identify (and thus does not explain) all the changes he made to Liu's experiments, including changes to the ratios of Liu's starting materials in Example 2 and all subsequent examples, changes to the temperature of at least one reaction mixture to which Dr. Bihovsky's ingredients were added, additional stirring and scratching, additional purification steps, and changes to Liu's specified reaction times.

55. In my opinion, each of these changes could have affected the final crystalline form of Dr. Bihovsky's final products and the only way to know what form Liu would have actually produced is to perform Liu's experiments, not the experiments Dr. Bihovsky performed. In fact, it was well known in the art that changes to scale, temperature, reaction time, additional agitation (*e.g.*, stirring), additional purification, impurity profile (different impurity levels or different

impurities themselves), and other changes can have a profound effect on the final polymorphic form adopted by a crystalline structure. EX2041, 2 (published in April 2017 in a regularly published journal (Minerals), a journal with which a POSITA would have been familiar); EX2040, 6; EX2038, 5; EX2035, 1-2 (published in 2003 in a regularly published journal (Bosnian Journal of Basic Medical Sciences III), a journal with which a POSITA would have been familiar); EX2036, 1 (published in 2004 in a regularly published journal (Organic Process Research & Development), a journal with which a POSITA would have been familiar); EX2037, 1 (published in 2004 in a regularly published journal (Journal of Chemical Engineering of Japan), with which a POSITA would have been familiar); *see also* EX2033, 19:15-21:3 (“initial temperature and the final temperature could conceivably cause different polymorphs”), 21:16-22:7 (impurities can “[p]ossibly” affect what polymorph a material adopts), 23:14-24:6 (“I think occasionally there were trace impurities by NMR and TLC... before the first recrystallization”), 28:11-22 (“it is conceivable that there could have been, let’s say 1 percent of some impurity or impurities”), 45:21-46:15 (agreeing that “[i]n principle” the amount of stirring of a mixture “might” dictate polymorphic form).

56. In my opinion and as explained in detail below, Dr. Bihovsky’s changes are significant and could have changed Liu’s results. EX2033, 65:1-66:3 (admitting that Dr. Bihovsky’s changes to Liu Example 2 would have affected the purity of the

final material obtained following Liu Example 7 and that it would require “speculation” to determine what would have happened had Dr. Bihovsky followed Liu Example 2 as written), 156:12-157:10 (“Q. Fair to say that you had to make changes to Liu in order to get results that were similar to Liu. A. Well, yeah. In order to improve the yield and the progress of the reaction.... I did obtain Liu’s product the very first time, but the yield was low.” (objection omitted)). This is shown by the differences between the isomers (i.e., the E:Z ratio of the intermediate material) obtained by Dr. Bihovsky and Liu and by the fact that Dr. Bihovsky obtained multiple “incomplete reactions” when attempting perform Liu’s Example 2. EX1033, ¶51 (“Initially, when I performed this reaction... I observed that the reaction was incomplete by TLC.”).

57. For example, Dr. Bihovsky explained that following his attempted recreation of Liu’s Example 4, he obtained an endoxifen mixture with a different ratio of E:Z endoxifen than disclosed by Liu. EX1033, 59 n.7 (“Liu: 51/47 ratio of E/Z; my synthesis: 67:33 ratio”). And following his attempted recreation of Example 5, Dr. Bihovsky obtained a precipitate with a “95:5 ratio of (E)- to (Z)-endoxifen” whereas Liu disclosed a “68/30 ratio of E/Z.” EX1033, ¶60 (citing EX1003, ¶0072). At the conclusion of Dr. Bihovsky’s Example 5, he obtained a product with a “33:67 ratio of (E)- to (Z)-endoxifen” whereas Liu disclosed “E/Z-ratio:19/77.” EX1033, ¶60 (citing EX1003, ¶0072). Each of these changes in isomer

ratio could have impacted the final material that Dr. Bihovsky obtained because the isomers have different solubility profiles and thus would elute from the mixture to crystallize at different points in time depending on their amount in the mixture (and determining whether these changes would have affected the polymorphic form of the final material would have required performing Liu's experiments, not Dr. Bihovsky's). For example, a mixture of 90% Z and 10% E might lead the Z to crystallize much sooner than the E, whereas a 50% Z and 50% E mixture might lead the isomers to crystallize at similar points in time, leading to a different end result.

58. In my opinion, these significant differences the E:Z isomer ratio obtained by Dr. Bihovsky and those disclosed by Liu confirm that Dr. Bihovsky's changes to Liu were not simply "minor adjustments" or "routine adjustments" (EX1033, ¶47) with no effect on Liu's outcome, but potentially result-altering changes showing that Dr. Bihovsky did not actually recreate Liu's experiments, but instead performed what a POSITA would have considered a completely different set of experiments. EX2033, 100:6-17.

1. Dr. Bihovsky Changed the Ratio of Starting Ingredients in Every Example of Liu

59. It was known in the art that the relative amounts of starting materials can impact a reaction, including the polymorphic form a molecule adopts as a result of that reaction. EX 2040, 6 ("Other factors which [] also affect the polymorphism

and the factors are agitation, *supersaturation*....”). Thus, when scaling down an experiment such as Liu’s, it is my opinion that a POSITA would have understood that the amounts of ingredients (including solvents) used in both the larger-scale and smaller-scale experiment should be scaled down proportionally such that the ratio of ingredients is the same in both versions of the experiment. EX2033, 96:4-8 (“Q. When scaling up or down an experiment, is it important to scale up or down each ingredient proportionally? A. I would say yes, but you don’t scale up or down the time or temperature.”), 98:7-99:6 (“It’s possible or likely that the reaction would not proceed as it did -- as it would have if everything was kept proportional” and agreeing that the end results could possibly be different).

60. A POSITA would have also understood that in smaller-scale experiments, such as Dr. Bihovsky’s, it is easier to keep a mixture homogenous, easier to add material at a constant rate, and easier to maintain a consistent temperature across the entire mixture. This reduces the likelihood (as compared to larger-scale experiments such as Liu) that concentrations and temperatures will be different in different parts of the mixture and thus reduces the chances (as compared to larger-scale experiments such as Liu) that different crystals will seed in different parts of the mixture which can lead to different crystalline forms and different purity levels. EX2033, 131:22-133:1, 272:22-273:9, 276:19-277:9, 277:11-278:1.

61. For example, if Dr. Bihovsky performed Liu's Example 2 at one-half scale, then each ingredient in Dr. Bihovsky's experiment should be present at 50% of the amount used in Liu (*e.g.*, Liu's 3.011kg of zinc bromide would be 1.5055kg and Liu's 16.5kg of polyphosphoric acid would be 8.25kg).

62. As is also clear from this example, the ratio between zinc bromide and polyphosphoric acid in each experiment would be the same because each ingredient was scaled down proportionally: 5.4799kg of polyphosphoric acid for every 1kg of zinc bromide.¹

63. It is my opinion that this is not what Dr. Bihovsky did in his experiments. In each of Examples 2-7, Dr. Bihovsky scaled down the amounts of ingredients in different proportions, thus altering the ratios between those ingredients in every Example.

64. Dr. Bihovsky also admitted, and I agree, that an experiment in which the starting materials and reagents have not been scaled down proportionally is a

¹ The ratio of polyphosphoric acid to zinc bromide is obtained by dividing the amount of polyphosphoric acid by the amount of zinc bromide used in each version of the experiment. In this simplified example, $16.5\text{kg}/3.011\text{kg}$ and $8.25\text{kg}/1.5055\text{kg}$ both equal 5.4799.

different experiment than the original experiment. EX2033, 100:7-17 (“if you’re taking the proportions, that is a different experiment”). Additionally, I also agree with Dr. Bihovsky that a difference in the ratios of ingredients could “[p]ossibly” change the results. EX2033, 101:7-102:8.

65. I have illustrated this in the below tables, which include my calculations of the ratios of certain of Liu’s ingredients (to show how they differ in Liu and in Dr. Bihovsky’s experiments) as well the calculated percentage by which Dr. Bihovsky scaled down each ingredient (to show how Dr. Bihovsky did not scale down those ingredients proportionally).²

66. Dr. Bihovsky’s errors in scaling down were compounded with each step because of Liu’s process (each of Liu’s Examples is part of an overall process), for each subsequent step, Dr. Bihovsky used the material he generated with the prior steps, each time using a different ratio of ingredients than specified by Liu. Dr. Bihovsky began with Liu’s Example 2, using a different ratio of ingredients than specified by Liu. He then used the material he generated from Example 2 (along

² I have converted kilograms into grams and liters into milliliters where necessary to ensure a proper comparison between Liu and Dr. Bihovsky’s scaled-down version of Liu.

with another preliminary version of Example 2) to perform Example 3 (again altering the starting ratios of ingredients). He then used the Example 3 materials in Example 4 (again altering the ratios of starting materials), the Example 4 materials in Example 5 (altering the ratios of starting materials), and the Example 5 materials in both Examples 6 and 7 (in each example altering the ratios of starting materials), and the Example 6 materials in Example 7. EX1033, ¶71 (showing materials used at each step of Dr. Bihovsky's purification scheme).

67. In my opinion, and as illustrated by the tables below, each time Dr. Bihovsky altered Liu's steps, he compounded and magnified his deviations from Liu's experimental procedure, potentially resulting in a different final product than he would have obtained had he followed Liu's experimental procedures.

Liu Example 2 (EX1003, ¶¶0062-0064)					
Ingredient	Liu Amount	Dr. Bihovsky Amount	Ratio of Listed Ingredients to Zinc Bromide (Liu)³	Ratio of Listed Ingredients to Zinc Bromide (Dr. Bihovsky)	Dr. Bihovsky Scale Down %⁴
Zinc bromide	3,011g	27.1g	n/a	n/a	0.9000
Polyphosphoric acid	16,500g	149g	5.4799	5.4982	0.9030
Hydroxybenzoic acid	974g	8.77g	.3235	.3236	0.9004
2-phenoxyethyl bromide	1302g	14.1g	.4324	.5203	1.0829
Phosphorous tribromide	2720g	24.51g	.9034	.9044	0.9011

³ This ratio is the amount of each listed ingredient divided by the amount of zinc bromide used in Liu or by Dr. Bihovsky, as applicable. As can be seen from my calculations, the ratio of each listed ingredient to zinc bromide is different in Liu and in Dr. Bihovsky's experiments.

⁴ This equals the total amount of each ingredient used by Dr. Bihovsky divided by the amount used by Liu and then multiplied by 100 to obtain a percentage.

Liu Example 3 (EX1003, ¶¶0065-0067)					
Ingredient	Liu Amount	Dr. Bihovsky Amount	Ratio of Listed Ingredients to Zinc Dust (Liu)⁵	Ratio of Listed Ingredients to Zinc Dust (Dr. Bihovsky)	Dr. Bihovsky Scale Down %
Zinc dust	4300g	32.23g	n/a	n/a	.7495
Anhydrous dimethoxyethane	26000mL	190mL	6.0465	5.8951	.7308
Titanium tetra-chloride	6000g	26.4g	1.3953	.8191	.44
Propiophenone	542g	4.09g	.1260	.1269	.7546
Compound 5 ⁶	1324g	9.99g	.3079	.31	.7545
Anhydrous di-methoxyethane	10000mL	75mL	2.3256	2.3270	.75
Methyl t-butyl ether	30000mL	220mL	6.9767	6.8259	.7333
HCl solution	13000mL	98mL	3.0233	3.0406	.7538

⁵ This ratio is the amount of each ingredient divided by the amount of zinc dust used in Liu or by Dr. Bihovsky, as applicable. As can be seen from my calculations, the ratio of each listed ingredient to zinc dust is different in Liu and in Dr. Bihovsky's experiments.

⁶ Compound 5 is (4-(2-bromoethoxy)phenyl)(4-hydroxyphenyl)methanone, which was synthesized by Dr. Bihovsky attempting to follow Liu's Example 2. EX1033, ¶¶50-54.

Liu Example 4 (EX1003, ¶¶0068-0071)					
Ingredient	Liu Amount	Dr. Bihovsky Amount	Ratio of Compound 3 to Methylamine (Liu)⁷	Ratio of Compound 3 to Methylamine (Dr. Bihovsky)	Dr. Bihovsky Scale Down %
Methylamine	55000mL	232mL	n/a	n/a	.4218
Compound 3 ⁸	1875g	7.72g	.0341	.0333	.4117

⁷ This ratio is the amount of Compound 3 divided by the amount of methylamine used in Liu or by Dr. Bihovsky, as applicable. As can be seen from my calculations, the ratio of Compound 3 to methylamine is different in Liu and in Dr. Bihovsky's experiments.

⁸ Compound 3 is the 4-(1-(4-(2-bromoethoxy)phenyl)-2-phenylbut-1-enyl)phenol synthesized by Dr. Bihovsky attempting to follow Liu's Example 3. EX1033, ¶¶55-57.

Liu Example 5 (EX1003, ¶0072)					
Ingredient	Liu Amount	Dr. Bihovsky Amount	Ratio of Isopropyl Acetate to Endoxifen (Liu)⁹	Ratio of Isopropyl Acetate to Endoxifen (Dr. Bihovsky)	Dr. Bihovsky Scale Down %
Mixture of (E)- and (Z)-Endoxifen ¹⁰	5512g	.761g	n/a	n/a	.0138
Isopropyl acetate	55000mL	7.61mL	9.9782	10	.0138

⁹ This ratio is the amount of isopropyl acetate divided by the amount of endoxifen used in Liu or by Dr. Bihovsky, as applicable. As can be seen from my calculations, the ratio of isopropyl acetate to endoxifen is different in Liu and in Dr. Bihovsky's experiments.

¹⁰ This mixture of (E)- and (Z)-endoxifen was synthesized by Dr. Bihovsky attempting to follow Liu Example 4. EX1033, ¶¶59-60.

Liu Example 6 (EX1003, ¶¶0073-0075)					
Ingredient	Liu Amount	Dr. Bihovsky Amount	Ratio of Isopropyl Acetate to Endoxifen (Liu)¹¹	Ratio of Isopropyl Acetate to Endoxifen (Dr. Bihovsky)	Dr. Bihovsky Scale Down %
Mixture of (E)- and (Z)-Endoxifen ¹²	2721g	.236g	n/a	n/a	.0087
Isopropyl acetate	27000mL	2.36mL	9.9228	10	.0087

¹¹ This ratio is the amount of isopropyl acetate divided by the amount of endoxifen used in Liu or by Dr. Bihovsky, as applicable. As can be seen from my calculations, the ratio of isopropyl acetate to endoxifen is different in Liu and in Dr. Bihovsky's experiments.

¹² This mixture of (E)- and (Z)-endoxifen was synthesized by Dr. Bihovsky attempting to follow Liu Example 5. EX1033, ¶¶60, 65-66.

Liu Example 7 (EX1003, ¶¶0076-0077)					
Ingredient	Liu Amount	Dr. Bihovsky Amount	Ratio of Acetone to Endoxifen (Liu)¹³	Ratio of Acetone to Endoxifen (Dr. Bihovsky)	Dr. Bihovsky Scale Down %
Mixture of (E)- and (Z)-Endoxifen (from Example 5) ¹⁴	5013g	.416g	n/a	n/a	.0083
Acetone	52000mL	4.1mL	10.3730	9.8558	.0079
Mixture of (E)- and (Z)-Endoxifen (from Example 6) ¹⁵	5013g	.108g	n/a	n/a	.0022
Acetone	52000mL	1.1mL	10.3730	10.1852	.0021

¹³ This ratio is the amount of acetone divided by the amount of endoxifen used in Liu or by Dr. Bihovsky, as applicable. As can be seen from my calculations, the ratio of acetone to endoxifen is different in Liu and in Dr. Bihovsky's experiments.

¹⁴ This mixture of (E)- and (Z)-endoxifen was synthesized by Dr. Bihovsky attempting to follow Liu Example 5. EX1033, ¶¶60-61.

¹⁵ This mixture of (E)- and (Z)-endoxifen was synthesized by Dr. Bihovsky attempting to follow Liu Example 6. EX1033, ¶¶69-70.

68. As can be seen from my calculations above, for every example of Liu that Dr. Bihovsky attempted to recreate, the ratios of starting materials used in Liu are different than those used by Dr. Bihovsky. Had Dr. Bihovsky properly scaled down Liu's experiments, the ratio of these ingredients would be the same in both Liu's experiments and Dr. Bivhosky's experiments. Dr. Bihovksy's experiments are therefore not properly scaled down and thus do not provide a POSITA with evidence regarding the natural results of Liu's procedures as written. In my opinion, Dr. Bihovsky's failure to scale down properly would prevent a POSITA from relying on the results of his experiment as evidence of what Liu discloses when performed at the proper scale.

69. Dr. Bihovsky does not explain whether or how these deviations from Liu's expressly disclosed experimental procedures affected the intermediate products used by Dr. Bihovsky in each subsequent step of Liu or the final purity and polymorphic form of the (Z)-endoxifen obtained by Dr. Bihovsky from Example 7 (which Dr. Bihovsky also changed).

70. In my opinion, Dr. Bihovsky's changes to the ratios of ingredients in Liu's examples would be considered by a POSITA to be significant deviations from Liu's disclosures. For example, using the cake analogy I presented above (§49), changes in the ratio of yeast and flour, or changes in the ratio of sugar and salt, can completely change the texture, taste, and appearance of the final cake.

71. Similarly, here, changing the ratios of Liu's ingredients would have potentially created different reactions than those present in Liu's experiments, which would have potentially produced intermediate and final products with different impurity types and amounts, which in turn would create the potential for different polymorphic forms of the final crystalline material to be created. In fact, it was well known in the art as of the priority date of the '151 patent invention date that changes in the ratios of ingredients in manufacturing processes can result in significant changes in the final outcome. A POSITA would have been aware that the volume of each ingredient used in the preparation of the final material is a key factor that can impact the final polymorph that results (and it would have required performing Liu's actual experiments to rule out the possibility that Dr. Bihovsky's changes affected those results). *See* EX2041, 2 ("In the classical scheme polymorph selection is thus determined by the correct combination of polymorph-specific thermodynamic (e.g., temperature, pressure, **volume**) and kinetic (i.e., timeline or rate) factors which lower the nucleation energy barrier to crystal formation"). A POSITA would likewise have understood that changes to the ratio of the ingredients would cause changes to "the degree of supersaturation" of the intermediate mixture and that this is another factor that could have impacted the final polymorph that resulted. EX 2040, 6 ("Other factors which [] also affect the polymorphism and the factors are agitation, **supersaturation** and growth rate dispersion"); EX2038, 5 ("In

addition, heating and cooling rates, crystallization temperature, evaporation rate, *the degree of supersaturation*, the rate of agitation, pH of the media are variables which can affect crystallization process and thus, polymorphs formed.”); EX2035, 2 (“The factors affecting the rate and mechanisms by which crystals are formed are: solubility, *supersaturation*, rate at which supersaturation and desupersaturation occur, temperature, and the reactivity of surfaces towards nucleation.”). Thus, a POSITA would have understood that Dr. Bihovsky’s changes to the ratios of each ingredient are significant changes that may have altered the final polymorph that he obtained. EX2033, 100:7-17.

72. Dr. Bihovsky testified that a key difference between a large-scale reaction (such as Liu’s) and a smaller reaction (such as Dr. Bihovsky’s) is that it takes a larger-scale reaction longer to heat up and to cool down and this difference affected the outcome of his experiments. EX2033, 79:13-82:12; *see also* EX2033, 125:6-126:7 (discussing other differences between Liu’s large-scale reaction and Dr. Bihovsky’s experiments), 184:8-185:14.

73. Thus, in my opinion, Dr. Bihovsky’s changes in the ratios of the ingredients are significant deviations from Liu’s experimental protocol that likely significantly altered the outcome of Dr. Bihovsky’s experiments.

74. In addition to his changes to the ratios between Liu’s ingredients, Dr. Bihovsky’s attempted recreation of Liu at a significantly smaller scale would have

also made it significantly easier to control the temperature of the various reactions performed by Dr. Bihovsky and would have made stirring more efficient by making the mixture homogenous faster. In my opinion, these changes in the experimental conditions would have resulted in a more homogenous mixture than that of Liu, which would have created further potential differences between Liu's and Dr. Bihovsky's final products because of the potential for different impurities to be present and different reactions to occur in different portions of a non-homogenous mixture.

2. Dr. Bihovsky's Multiple Changes to Liu's Reaction Temperatures and Dissolving Instead of Suspending Liu's Reactants Also Potentially Altered Liu's Results

75. Dr. Bihovsky also made changes to Liu's reaction temperatures (and other associated changes) to multiple examples of Liu. These changes would have potentially created new reactions rather than recreating Liu's reactions.

76. In my opinion, it was well known, and a POSITA would have known, that raising reaction temperatures, as Dr. Bihovsky did, speeds up all reactions (not just the reactions of interest) and risks starting new reactions that would not have started at lower temperatures and thus affects polymorphism. *See* EX2041, 2 ("In the classical scheme polymorph selection is thus determined by the correct combination of polymorph-specific thermodynamic (e.g., *temperature*, pressure, volume) and kinetic (i.e., timeline or rate) factors which lower the nucleation energy

barrier to crystal formation”); EX2040, 6 (“One of the predominant and generally considered as operational factors *is Temperature* that affect nucleation, growth and transformation of polymorphs. The effect of *temperature* on nucleation has both thermodynamic and kinetic inferences, predominantly for enantiotropic polymorphs.”); EX2038, 5 (“In addition, *heating and cooling rates, crystallization temperature*, evaporation rate, the degree of supersaturation, the rate of agitation, pH of the media are variables which can affect crystallization process and thus, polymorphs formed.”); EX2035, 2 (“The factors affecting the rate and mechanisms by which crystals are formed are: solubility, supersaturation, rate at which supersaturation and desupersaturation occur, *temperature*, and the reactivity of surfaces towards nucleation.”); EX2039, 1 (“The prevailing crystal structure of a solid depends on the temperature, external pressure, and the kinetics of the transformation”). As discussed in detail below (¶¶83-84), the Arrhenius equation teaches that the rate of reactions increase as temperature increases and a POSITA would have been aware of the general rule of thumb regarding this equation that for every 10-degree increase in temperature the rate of the reaction doubles. EX2034, 1-2 (published in April 1982 in a regularly published journal (Journal of Chemical Education), with which a POSITA would have been familiar). Moreover, these additional reactions can introduce new impurities that would not be present in the original, lower-temperature reaction, which can in turn yield different crystalline

forms and differing purity of those forms. *See* EX2038, 3 (“additives or structurally related impurities [may] inhibit or enhance nucleation/growth process of parent crystals additives or structurally related impurities inhibit or enhance nucleation/growth process of parent crystals”); EX2036, 1 (“For reproducible production of polymorphs, a critical issue may be the presence or absence of **key impurities in the material used to make the polymorphs**”); EX2037, 1 (“Many drug substances are synthesized through many reactions... Therefore, **it is important to understand the effects of the impurities on appearance of crystal polymorphs.**”).

77. Here, Dr. Bihovsky raised the reaction temperature of his version of Liu Example 2 by 20 degrees Celsius in one experiment (EX1033, ¶51) and by 25 degrees Celsius in another experiment (EX1033, p.81, “75°” internal temperature; EX2033, 144:1-146:15). He also admitted that he drew material for his Example 3 from both of these experiments. EX2033, 186:6-188:3.

78. Thus, in my opinion, a POSITA would have understood that Dr. Bihovsky’s experiments cannot be relied on as representative of the natural results obtained by following Liu’s explicit disclosures and a POSITA would not have viewed Dr. Bihovsky’s results as evidence that Liu inherently discloses the claimed Form I polymorph. Instead, a POSITA would have had to perform Liu’s actual experiments (not Dr. Bihovsky’s) to determine what results Liu’s experiments would have yielded. I discuss each of Dr. Bihovsky’s changes below.

a) Liu Example 2

79. As to Liu Example 2, Dr. Bihovsky first tried and failed four times to reproduce Liu Example 2. EX1033, ¶51. Dr. Bivhosky explained that during his first attempt to perform his scaled-down version of Liu he “observed that the reaction was incomplete by [thin layer chromatography]” because he obtained “mostly starting material.” EX1033, ¶51; *id.* at p.79 (“Ex 2 x 1/1000”); EX2033, 153:16-155:10.

80. Dr. Bihovsky then tried recreate Liu’s Example 2 three more times. EX1033, pp.80-81; EX2033, 167:11-168:3, 168:6-8, 174:5-12, 175:12-15, 176:19-177:7, 179:18-180:5. Each time, he made additional changes to Liu’s procedures and concluded that the material produced by one of his attempts was so poor that it was not even worth determining the yield of that attempt. EX2033, 174:5-12, 178:4-179:17; EX1033, ¶51; *id.* at p.80-81.

81. On his fifth attempt, Dr. Bihovsky scaled his prior 1/1000th versions of Liu up by a factor of nine (but, as discussed above in Section IX.A.1, did not do so properly). EX1033, p.82 (“scale up 15-22-2 x9”); EX2033, 182:14-183:3 (“Now that I thought I had a reasonable procedure, I could carry those out on -- on a larger scale”). In this new experiment, rather than perform the reaction at “40-50°C... without heating” as disclosed by Liu, Dr. Bihovsky instead “heated [the mixture] to 68 to 70 °C over 1 hour, then stirred at 70 °C (internal temperature) for 5 more hours”

until chromatography showed that the reaction “was mostly complete.” EX1033, ¶51; *id.* at p.82. He relied on the material produced from this experiment, as well as a prior preliminary experiment conducted at 75 degrees Celsius, to provide material for Liu’s next step (Example 3). EX2033, 61:21-62:8, 184:8-185:14; *see also* EX1033, p.81.

82. In my opinion, the change in temperature from Liu’s disclosed 40-50°C to Dr. Bihovsky’s 68-70°C and 75°C is a significant change that would result in (1) at least doubling or more than doubling the rate of all reactions (not just the reactions of interest) and (2) potentially starting reactions that would not otherwise have started at lower temperatures. *See* EX2041, 2; EX2040, 6; EX2038, 5; EX2035, 2. This has significant potential to introduce new impurities to Dr. Bihovsky’s reaction that were not present in Liu’s disclosed reactions. EX2041, 2; EX2040, 6; EX2038, 5; EX2035, 2. These impurities, in turn, could have affected the crystallization of material in later steps, including its polymorphic form and the purity of those forms. *See* EX2038, 3; EX2036, 1; EX2037 at 1. This change could have also allowed the reaction to overcome the activation barrier necessary for a reaction to occur and thus allowed the reaction to proceed.

83. Well before the priority date of the ’151 patent, it was well known that temperature variations can profoundly influence the speed at which chemical reactions occur, either enhancing or inhibiting the reaction rates depending on the

conditions and substances involved. For example, a POSITA would have been aware of the Arrhenius equation which is a mathematical expression first published in 1899 that describes the effect of temperature on the velocity of a chemical reaction, and it predicts that a small increase in reaction temperature will produce a marked increase in the magnitude of the reaction-rate constant. *See* EX2034, 2.

84. Based on the Arrhenius equation, a POSITA would have understood that Dr. Bihovsky's changes in temperature would have resulted in significant changes in the frequency at which atoms and molecules collide in a way that leads to a reaction, which could lead to a significant difference in the overall reaction. *See* EX2034, 2. A POSITA would have also understood that some systems do not contain enough energy for collisions to overcome the activation energy barrier and in such cases, no reaction occurs. *See* EX2034, 2. In such cases, the Arrhenius equation demonstrates that increases in temperature can overcome the activation barrier in those systems, causing the reaction to proceed. *Id.*

85. In addition, a POSITA would understand that in the case of Dr. Bihovsky's experiments, one possible reason his first three initial reactions were incomplete is because the temperatures described in Liu were insufficient to overcome the activation barrier necessary for a reaction to occur. *See* EX2034, 2; *see also* EX2041, 2; EX2040, 6; EX2038, 5; EX2035, 2. A POSITA would have further understood that increasing the temperature of his reaction beyond what Liu

specified could have allowed the reaction to overcome the activation barrier and allowed the reaction to proceed.

86. In my opinion, Dr. Bihovsky's changes to Liu's temperature would have likely affected the final results he obtained, including the polymorphic form and purity of his final product.

b) Liu Example 6

87. Liu Example 6 requires that the (E)- and (Z)-endoxifen starting material be "suspended" in isopropyl acetate and that the "*suspension* [be] heated at 85°C for two hours." EX1003, ¶0073.

88. Dr. Bihovsky did not perform this example as written, but instead used "*refluxing*" (*i.e.*, boiling liquid in which vapor is collected and returned to the liquid; EX2033, 84:1-85:2, 85:19-86:5) isopropyl acetate (the reflux temperature of isopropyl acetate is 89°C) and *dissolved* (instead of suspended) the endoxifen in the isopropyl acetate. EX1033, ¶66 ("I *dissolved* the endoxifen precipitate... in *refluxing [isopropyl acetate] for 4 hours.*"); EX2033, 270:3-271:6, 271:14-21. Dr. Bihovsky's temperature change and dissolving (as opposed to suspending) the endoxifen at this step is yet another departure from Liu's experimental procedures, that could have further impacted not only the purity of the final material, but its polymorphic form. EX2041, 2; EX2040, 6; EX2038, 5; EX2035, 2; EX2033, 86:17-87:21 (using a hot mixture as opposed to a refluxing mixture would affect the

experiment or results by changing the rate of reaction), 90:18-91:16 (“higher temperatures could lead to other side products, which would be categorized as impurities”), 107:15-108:18, 109:6-19. Additionally, Dr. Bihovsky admitted, and I agree, that suspensions and solutions are different than one another and it was likely there was undissolved (E)-isomer in Liu’s suspension which could have seeded the crystallization steps in Liu such that Liu produced more (E)-endoxifen than it would have had Liu’s (E)-endoxifen been fully dissolved as Dr. Bihovsky’s was. EX2033, 130:5-20, 131:22-133:1, 272:22-273:9, 276:19-277:9, 277:11-278:1. Dr. Bihovsky avoided this potential problem by dissolving all of his (E)-endoxifen.

89. Dr. Bihovsky’s description of this experiment in his declaration does not acknowledge these changes. EX1033, ¶66.

90. Dr. Bihovsky also doubled Liu’s Example 6 reaction time from two to four hours, which would have affected the outcome of the reaction. Dr. Bihovsky’s discussion of his experiment cites to Liu paragraph 46 (EX1033, ¶66), but Liu paragraph 46 is a different embodiment of Liu describing a different experiment than the one described in Example 6. Moreover, the additional time spent in a “refluxing” mixture—which is boiling and thus further physically mixing Dr. Bihovsky’s ingredients—could have further altered Liu’s results.

91. Dr. Bihovsky’s increase to the temperature of the solvent (isopropyl acetate) and the use of a solution instead of a suspension could have changed the

final polymorphic form and purity of Dr. Bihovsky's final product. As discussed above (§76), the changes that Dr. Bihovsky made to Example 6 would have changed the reaction rates from those present in Liu which may have introduced impurities not present in the reactions performed according to the explicit disclosures of Liu. Based on these changes, a POSITA would not have viewed Dr. Bihovsky's results as evidence of what would result when performing Liu's processes without those modifications.

92. Additionally, Liu discloses that the endoxifen was "suspended" in isopropyl acetate but Dr. Bihovsky instead dissolved (to create a solution) the endoxifen in the isopropyl acetate. A suspension (e.g., sand in water) differs from a solution (e.g., salt water) in several key ways that are relevant to the chemical reaction that Dr. Bihovsky was performing here. First, a suspension is heterogenous (non-uniform) whereas a solution is homogenous (uniform). In a suspension such as the one described in Liu Example 6 it is possible that different portions of the mixture will have different concentrations of (Z)- and (E)-endoxifen isomers and different concentrations and types of impurities, which can lead to different reactions and different experimental products including products with differing ratios of (E) to (Z)-endoxifen isomers. Moreover, in a suspension such as the one described in Liu Example 6, the undissolved endoxifen material can seed the crystallization process and can result in the formation of different crystals depending on what

material has dissolved and what has not. *See* EX2039, 1 (“Certain conditions are known to stimulate [polymorphic] nucleation through mechanisms that reduce the activation energy. Two important conditions for preferential solid-state nucleation are: i) *the presence of heterogeneous sites in the material* and ii) the existence of structural relationships or special crystallographic orientation relationships (OR’s) between the two crystal structures.”) (published in August 2016 in a regularly published journal (Nature Scientific Reports), a journal with which a POSITA would have been familiar); EX2038, 3 (“topographic structure, lattice parameters at ledge sites, symmetry constraints, and molecular composition play a major role in determining the nucleation of organic crystals on substrates.”). For example, if more (Z)-endoxifen (which is more soluble than (E)-endoxifen) dissolved than (E)-endoxifen (leaving the (E)-endoxifen suspended in the mixture) in Liu’s Example 6 suspension, the undissolved (E)-endoxifen would seed the crystallization process and the outcome would be a product with a greater amount of (E)-endoxifen, different impurities, and different forms of the other isomer ((Z)-endoxifen) due to these differences. EX2038, 3 (“the initial polymorphs formed, the growth rate, the nucleation rate, thermodynamic stability, defects, lattice matching, crystallographic orientation, and formation of interfacial transition layers all play major roles in inducing cross nucleation”); *see also* EX2041, 2; EX2040, 6; EX2038, 5; EX2036, 1; EX2037, 1.

93. Dr. Bihovsky's solution, on the other hand, would not have these issues, and thus there is a significant possibility that by dissolving instead of suspending the (E)- and (Z)-endoxifen mixture, Dr. Bihovsky altered Liu's reaction to preferentially create more (Z)-endoxifen isomer than would have otherwise been produced by Liu as written. Dr. Bihovsky does not account for this possibility, which a POSITA would have considered yet another meaningful deviation from Liu and would thus not consider Dr. Bihovsky's experiments to be a reproduction of Liu.

3. Dr. Bihovsky's Additional Scratching, Stirring, and Filtering While Performing Liu's Example 7 Crystallization Step Potentially Further Altered the Final Crystalline Form and Purity of Dr. Bihovsky's Products

94. Liu's Example 7, entitled "Recrystallization of an Endoxifen Mixture Enriched in Z Isomer" is the final example disclosed by Liu. EX1003, ¶¶0076-0077. Dr. Bihovsky states that he followed Example 7 "extremely closely," and that his changes to Examples 1-6 (which I address throughout my discussion of Ground 1) do not matter because "the polymorphic form that a crystal adopts is driven by the final crystallization of the material." EX1033, ¶47. As discussed throughout my analysis of Ground 1, I disagree with Dr. Bihovsky in this regard, and I have explained in detail why and how Dr. Bihovsky's modifications to Liu's other examples could have altered the outcome of Dr. Bihovsky's experiments.

95. But even if Dr. Bihovsky were correct (he is not) that his modifications to Examples 1-6—which carried through all of his experiments to the material he used to perform Example 7—would have had no effect on the final polymorphic form of his synthesized material, it is my opinion that Dr. Bihovsky did change Liu's Example 7 in both his sequential recrystallization experiment and his isomerization followed by sequential recrystallization experiment by adding additional stirring, scratching, and purification not disclosed by Liu. EX1033, ¶¶61, 70. Dr. Bihovsky did this even though stirring and the presence of trace impurities were known to

affect polymorphism and even though he admitted that without scratching the flask in his experiments his mixture may not have crystallized. EX 2040, 6; EX2037, 1; EX2033, 110:15-111:10.

a) Dr. Bihovsky's Additional Stirring and Scratching Steps

96. Liu Example 7 discloses 40 hours of stirring in its first recrystallization step without any scratching of the flask. EX1003, ¶0076 (“The resulting solution was cooled and stirred for 40 hours at 1 to 5 °C.”). Despite this, Dr. Bihovsky added one full day of additional stirring and stirred for 64 hours in his sequential recrystallization experiment at this step of Liu. EX1033, ¶61 (“At this stage, a small amount of precipitate was observed. The flask was scratched to increase crystallization and stirred at 4 °C for 24 more hours.”); *id.* at p.94 (“scratch, total 64h”). And in his isomerization followed by sequential recrystallizations experiment, Dr. Bihovsky stirred for 88 hours at this step of Liu. EX1033, ¶70 (“I dissolved this material... then cooled and stirred for 88 hours at 4 °C.”); *id.* at p.95 (“88h”).

97. In my opinion, these additional scratching and stirring steps—which Dr. Bihovsky added to address the problem that he observed only a “small amount of precipitate” (EX1033, ¶61) while claiming to follow Liu’s disclosed procedures (EX2033, 112:17-115:9) could change both the purity and polymorphic form of the

final crystalline product (in addition to being the only reason that Dr. Bihovsky was even able to continue his reactions and obtain final products). EX2033, 118:2-11.

98. POSITA would have understood that by adding additional scratching and stirring to both his sequential recrystallization experiment and his isomerization followed by sequential recrystallizations experiment, Dr. Bihovsky altered the crystallization process, and thus potentially the polymorphs that could have formed by that process. EX2038, 5 (“In addition, heating and cooling rates, crystallization temperature, evaporation rate, the degree of supersaturation, *the rate of agitation*, pH of the media are variables which can affect crystallization process and thus, polymorphs formed.”); EX2040, 6 (“Other factors which [] also affect the polymorphism and the factors are *agitation*, supersaturation and growth rate dispersion”).

99. Additionally, by stirring for 64 hours and 88 hours in his sequential recrystallization and isomerization followed by sequential recrystallization experiments, respectively, Dr. Bihovsky kept his mixtures homogenous across the whole reaction vessel for an additional 24-48 hours beyond what is disclosed in Liu. By contrast, a POSITA following Liu’s disclosures would have stopped stirring after 40 hours and as a result the concentrations of the materials in Liu’s reaction vessels would no longer be homogenous after that point, which could have affected the results of those reactions, as discussed above (¶73). As with Dr. Bihovsky’s other

changes, this can affect the purity and polymorphic form of the final product. Dr. Bihovsky also testified that in his attempted recreation of Liu Example 3 he was only able to stir his mixture for five minutes, whereas Liu disclosed stirring for six hours. EX1033, ¶54; EX2033, 198:9-200:21.

100. For example, as discussed above (¶¶92-93), if (Z)-endoxifen dissolved faster than (E)-endoxifen (leaving the (E)-endoxifen suspended in the mixture) in Liu's suspension, the undissolved (E)-endoxifen would seed the crystallization reaction and the outcome would be a product with a greater amount of (E)-endoxifen, different impurities, and different forms of other isomers (such as (Z)-endoxifen) due to these differences. EX2038, 3; *see also* EX2041, 2; EX2040, 6; EX2038, 5; EX2036, 1; EX2037, 1.

101. A POSITA would understand that Dr. Bihovsky's stirring for an additional 24-48 hours beyond what is disclosed in Liu may have reduced some or all of these potential effects, and therefore, a POSITA would not consider Dr. Bihovsky's results to be representative of the natural results of following Liu's explicit disclosures.

102. In addition, a POSITA would have understood that scratching the flask as Dr. Bihovsky did is a technique that can cause nucleation of crystals to allow crystallization to occur. EX2038, 5; EX2040, 6. Absent this scratching step (not disclosed by Liu), Dr. Bihovsky would not have been able to continue his reaction

and thus would not have obtained any results, further showing that the claimed Form I (Z)-endoxifen is not the natural result of following Liu's procedures.

103. Dr. Bihovsky (again without explanation) attempts to justify these changes by citing to Liu paragraph 26. EX1033, ¶¶61, 70. But Liu paragraph 26 does not address Example 7 and instead lists different embodiments that Dr. Bihovsky does not claim to follow. EX1003, ¶0026 (listing acetone but also solvents other than acetone and providing exemplary temperatures other than the temperatures specified in Example 7). In fact, Dr. Bihovsky admitted (and I agree) that paragraph 26 gives exemplary conditions that are "broader" than those in Example 7 and that it would be possible to follow the broader parameters of paragraph 26 and not be within Example 7's more specific parameters and still obtain the material described in Example 7. EX2033, 289:1-13, 290:15-19.

104. I understand that for anticipation, mixing and matching from different embodiments of a prior-art reference is not permitted. Thus, I understand it is improper for Dr. Bihovsky to cite to a paragraph discussing one step of Liu's method regarding "recrystallizing... in a second solvent" to justify his changes to every step of Liu's method in Example 7. Even if it were proper for Dr. Bihovsky to use the procedures of paragraph 26, the statement from paragraph 26 that Dr. Bihovsky quotes ("[T]he resulting solution is... held at the second temperature for 0.5 hours to 10 days or 2 to 72 hours. In some cases longer holding times at the second

temperature may be required”) would not be understood by a POSITA to disclose that additional stirring can or should be performed. Instead, it states that “longer *holding* times may be required,” which a POSITA would understand to mean that the solution is simply held at that second temperature, not that any additional stirring or other manipulation is or should be performed. EX1003, ¶0026; EX2033, 290:20-291:22.

105. As to Dr. Bihovsky’s added scratching step, Dr. Bihovsky admitted that the purpose of scratching a flask is “to induce the mixture to yield crystals if it is, one might say, reluctant to do so,” and that it is possible that in some situations the addition of flask scratching is necessary to cause a compound to crystalize. EX2033, 110:15-111:10. I agree.

106. Dr. Bihovsky also admitted that without his additional stirring and scratching steps either it would not have been possible, or at most, “maybe it would have been possible” to proceed to the next step of Example 7. EX2033, 116:12-117:5. Thus, according to Dr. Bihovsky, one possible outcome of Liu’s procedure, as written, is an experiment that could not have been completed. I agree.

b) Dr. Bihovsky’s Additional Purification Steps

107. It was known that “[p]olymorphism is often affected by a trace amount of impurities.” EX2037, 1. Despite this, Dr. Bihovsky also added another filtration step to his version of Example 7’s sequential recrystallization experiment: “This

precipitate... was then dissolved in refluxing acetone (2.2 mL), *filtered while hot to remove a slight precipitate*, then cooled and stirred for 50 hours at 4 °C.” EX1033, ¶62; EX2033, 293:20-294:21. Dr. Bihovsky does not explain whether or how this additional removal of material affected his final results. Instead, he testified that “did not characterize” the material he removed, agreed that what he removed was “something other than Z-endoxifen,” and agreed that it was “probably” impurities. EX2033, 294:22-295:22. He also testified that had he followed Liu as written, those impurities would have been present in the final product that he synthesized following Liu Example 7 and that by doing so he likely prevented contamination of that product. EX2033, 296:10-297:2

108. In my opinion, by removing this precipitate on the very last recrystallization step he performed, Dr. Bihovsky potentially altered the final composition of the material he obtained. A POSITA would have understood that additional filtration, like the type that Dr. Bihovsky performed, could alter the final composition by eliminating solid impurities that otherwise would have remained in the mother liquor. Those solid impurities may have resulted in a different purity and polymorph at the end of the experiment, and a POSITA would have understood that performing Liu’s experiments as written would be needed to confirm that these impurities did not actually result in a different purity and polymorph at the end of

Dr. Bihovsky's experiments. *See* EX2038, 4-5; *see also* EX2041, 2; EX2040, 6; EX2036, 1; EX2037, 1.

109. For example, it was well known in the art that “for reproducible production of polymorphs, a critical issue may be the presence or absence of key impurities in the material used to make the polymorphs,” and a POSITA would have understood that, by changing the impurity profile, Dr. Bihovsky may have changed the final polymorph that resulted. EX2036, 1.

110. It was also well established by the September 2017 priority date of the '151 patent that “[i]mpurity is one of the important factors in control of crystal polymorphism. Polymorphism is often affected by a trace amount of impurities.” *See* EX2037, 1 (“Many drug substances are synthesized through many reactions... Therefore, it is important to understand the effects of the impurities on appearance of crystal polymorphs.”). Thus, a POSITA would not have considered the results of Dr. Bihovsky's experiments, where Dr. Bihovsky added steps that are *intended* to alter the impurity profile of the intermediate, to be representative of the natural results of following Liu's explicit disclosures.

* * *

111. Thus, far from following Liu's Example 7 “extremely closely” Dr. Bihovsky deviated from Liu's procedures in at least three significant ways, and made no attempt to explain whether or how those deviations affected the very experimental

step that Dr. Bihovsky contends drives “the polymorphic form that a crystal adopts.” EX1033, ¶47. As I discuss above (¶¶96-110), however, a POSITA would have understood that Dr. Bihovsky’s additional stirring, scratching, and purification potentially affected the end result that a POSITA would have naturally obtained by following Liu by prolonging the time during which the mixture was homogenous in the reaction vessel, limiting the potential for uneven isomerization, promoting nucleation, and potentially impacting how the final substance crystalized (and a POSITA would have understood that confirming that Dr. Bihovsky’s changes did not alter Dr. Bihovsky’s end results would have required performing Liu’s experiments, as written). Moreover, Dr. Bihovsky’s additional purification step potentially removed impurities that would be present when following Liu’s explicit disclosures and that may have changed the final crystal form that resulted. As discussed, a POSITA would have understood that even a minor change in the impurity profile from Dr. Bihovsky’s additional filtration step may have led to a significant change in the final polymorph that resulted. A POSITA would therefore not consider Dr. Bihovsky’s experiments to represent the natural results that a POSITA would have obtained following Liu’s explicit disclosures.

4. Dr. Bihovsky's Other Additional Purification and Filtration Steps In Other Examples Potentially Further Altered The Outcome of his Experiments

112. In addition to the purification step added to Example 7 (discussed in the preceding section), Dr. Bihovsky added additional purification and filtration steps to Liu's other examples. As I discuss above (§110), a POSITA would have known that "[p]olymorphism is often affected by a trace amount of impurities." EX2037, 1. Thus, each of Dr. Bihovsky's additional purification and filtration steps—and certainly these steps taken together—would have impacted the purity and polymorphic form of Liu's final product for the reasons that I have discussed above (§§107-110). As discussed above (§§107-110), each purification and filtration step has the potential to remove impurities from the intermediate that would have resulted in the final composition being a different polymorph than what Dr. Miller observed by XRPD, and a POSITA would have been well aware of this as of the September 2017 priority date of the '151 patent. *See* EX2036, 1; EX2037, 1.

a) Example 2

113. Dr. Bihovsky added an additional purification step by employing column chromatography during his attempted recreation of Example 2. EX1033, ¶52 ("The product was purified by column chromatography...") & n.4 ("Liu does not expressly describe using chromatography in [0062]..."); EX2033, 62:9-63:15

(“that was necessary that I do chromatography so that I could get the pure compound out that I thought was the product”), 173:8-174:1.

114. Dr. Bihovsky testified that his added column chromatography step “generally [] will give purer product” than Liu’s disclosed washing step. EX2033, 67:9-12, 67:16-68:9; *see also* EX2033, 92:9-93:4, 165:2-12. He also testified that determining whether he “would have gotten some of the desired product” from Example 3 using unpurified product from his first attempt to recreate Liu Example 2 “would be kind of speculation” and “you wouldn’t know until you try it.” EX2033, 69:1-71:5. He also testified that the purification step he added to Example 2 allowed him to avoid ending up “with an inseparable mess at the end of the synthesis process.” EX2033, 165:12-166:11. This testimony further supports my opinion, discussed below (¶¶113-118), that this purification step could have altered the polymorphic form and purity of Dr. Bihovsky’s final product. In addition, Dr. Bihovsky performed his additional chromatography step in both versions of Example 2 from which he produced material to use in his Example 3, further confirming that his changes to Example 2 affected the later steps of his purification process. EX2033, 72:2-18, 73:6-75:16; EX1033, 84 (“sm [starting material] (15-22-2A + 15-23-1a),” denoting starting material from the Example 2 versions on pages 22 and 23 of Dr. Bihovsky’s lab notebook).

115. Additionally, Dr. Bihovsky's explanation of his experiments did not mention that his Example 3 starting material included material from two separate versions of Example 2, which used different temperatures than one another (and Liu) and included this additional chromatography step. EX2033, 186:15-188:3, 189:18-190:12. And Dr. Bihovsky also failed to acknowledge that for the acetone recrystallization portion of Example 4 (EX1033, ¶71) he used material from two different attempts to perform the initial portions of Example 4, despite saying in his declaration that he had only used material from a single attempt. EX1033, ¶71 (showing material 15-27-1 used for Example 4's acetone recrystallization step); EX2033, 220:12-221:20 (admitting that he used both 15-27-1 and 15-27-2 for this portion of Example 4). This combining of materials from multiple different experiments with different conditions is yet another reason why a POSITA would not have understood Dr. Bihovsky to have recreated Liu. And further a POSITA would not have assumed that the results would have been the same using these two different sets of materials, which Liu does not disclose doing.

116. In my opinion, this extra purification step—performed during the first step of Dr. Bihovsky's purification scheme—significantly changes the entire purification process and could have caused Liu's final crystal product, which depends on the products produced in each of Liu's earlier steps (including Example 2), to differ in purity and polymorphic form. In fact, Dr. Bihovsky confirmed that,

as a result of his added column chromatography step, “[i]t’s possible” that the impurities in Liu’s Example 3 material and in his material were different. EX2033, 74:20-76:4; *see also* EX2033, 166:5-167:10 (discussing the fact that Dr. Bihovsky’s chromatography step removed an “unknown” impurity), 200:22-201:15 (“one possibility is that my chromatography in the previous step removed other impurities”). He also admitted that this chromatography step affected the intermediate material obtained from Example 2 and the purity of the material he obtained from Liu Example 7 and that it would require “speculation” to determine what would have happened he followed Example 2 as written. EX2033, 65:1-66:3.

117. As I discuss above (§110), it was well known in the prior art that “[p]olymorphism is often affected by a trace amount of impurities,” and a POSITA would have understood that the changes in impurity profile that would have resulted from Dr. Bihovsky’s additional purification step—as compared to the profile a POSITA following Liu’s explicit disclosures would have obtained—had significant potential to affect the final polymorph that resulted at the end of the process. EX2037, 1; *see also* EX2038, 4-5; EX2041, 2; EX2040, 6; EX2038, 5; EX2036, 1. By purifying the intermediate material Dr. Bihovsky generated from Example 2, he removed excess starting material that remained in his final product. This starting material could have affected future reactions, including Liu’s Example 7 final recrystallization procedure, by potentially yielding other products that could not be

removed by crystallization. This could change both the purity and polymorph of the final product.

118. Dr. Bihovsky points to chromatography used in Liu's Example 3 (EX1033, ¶52 n.4) and opines that chromatography "would have been a commonly used purification strategy that could be employed at this stage." EX1033, ¶52 n.4. But Dr. Bihovsky acknowledges that it is "often desirable to minimize the number of chromatography steps." EX1033, ¶52 n.4. And although Dr. Bihovsky points to another example of Liu which did use chromatography, he ignores Liu's statement that Liu's process "avoids the use of chromatography in the separation of the Z-and E-isomers." EX1003, ¶0005. Although this statement refers to a different step of Liu, in my opinion it would have dissuaded a POSITA from unnecessarily adding column chromatography steps to Liu simply because it "could" be done.

119. Separately, Dr. Bihovsky chose to use Celite in his version of Example 2 despite the fact that Liu does not use Celite at this step. EX1033, ¶52 n.3 ("While Liu states that the mixture is filtered, Liu does not explicitly state to use Celite at this step."). Dr. Bivhosky's use of Celite is yet another change to Liu that could have influenced not only the outcome of Example 2, but also Liu's later Example 7 recrystallization step for the same reasons that I have discussed in detail above (¶¶107-110) regarding Dr. Bihovsky's addition of the other filtration steps (*e.g.*, Celite could have filtered out different impurities than other filtration methods that

Liu could have used). Dr. Bihovsky does not even attempt to explain whether the use of Celite at this step, as compared to another available filtration method, would have altered Liu's results. EX1033, ¶52 n.3. And a POSITA would have understood that Celite can filter different impurities (*e.g.*, based on the size of those impurities (EX2033, 123:10-124:15) than other filtration methods, and thus could have altered the crystallization process. *See* EX2036, 1; EX2037, 1.

b) Example 4

120. Dr. Bihovsky also added a centrifugation step not present in Liu's Example 4. EX1033, ¶59 & n.6 ("I note that centrifugation is a minor deviation from Liu's procedure, which isolated the solid via filtration. Centrifugation was simply a more practical approach given the scale of the recrystallization I conducted in my laboratory."). This is yet another step that could have impacted the material produced by Example 4 (which was later used in Liu's final recrystallization step, EX1033, ¶71 (showing Dr. Bihovsky's purification scheme)) by removing impurities that would not have been removed by Liu's expressly disclosed filtration.

121. As I discuss above (¶110), a POSITA would have been aware that even "trace amounts" of impurities can affect the crystallization process, and that removing impurities that would have been generated by following Liu's disclosures (as opposed to Dr. Bihovsky's modified version of Liu) may have a significant impact on the final polymorph that resulted. EX1003, ¶0070 ("The resulting

crystalline material was collected by filtration...”); *see* EX2036, 1; EX2037, 1; EX2038, 3-5; EX2041, 2; EX2040, 6; EX2036, 1.

122. Dr. Bihovsky attempts to explain this change by citing to Liu paragraph 21, which provides a list of different exemplary embodiments that Dr. Bihovsky does not purport to follow and does not even mention centrifugation. EX1003, ¶0021 (listing multiple solvents for carrying out Liu’s recrystallization procedure and providing alternative separation methods, which Dr. Bihovsky opines would include centrifugation). But paragraph 21 does not address the portion of Example 4 that Dr. Bihovsky modified by adding an additional centrifuging step. Instead, paragraph 21 provides a list of exemplary embodiments that Dr. Bihovsky does not claim that he follows. EX1003, ¶0021 (providing multiple solvents and providing alternative separation methods). I understand that mixing and matching from different embodiments, as Dr. Bihovsky attempts here, is not permitted for anticipation, and a POSITA would not view Dr. Bihovsky’s reliance on a different portion of Liu as supporting his opinion that he followed Liu’s Example 4.

123. Accordingly, in my opinion, Dr. Bihovsky’s additional purification and filtration steps provide another basis for finding that Dr. Bihovsky failed to reproduce Liu’s experiments.

5. Dr. Bihovsky's Additional Drying Step Is a Further Departure from Liu

124. In attempting to recreate Liu's Example 2, Dr. Bihovsky performed a drying step not disclosed by Liu: "Prior to using, I dried the zinc bromide at 230 °C. *While Liu does not specify how the zinc bromide was dried*, Liu does state that '[t]he reagents and solvents used were commercial anhydrous grade.'" EX1033, ¶51 n.1 (citing EX1003, ¶0060). Dr. Bihovsky does not explain whether and how his drying procedure, as compared to the various procedures that could have been used to dry the anhydrous material used by Liu (which does not specify which procedure was used), would have changed Liu's results (which could be affected by the extent to which Liu's materials were dried). And thus Dr. Bihovsky does not show that his drying procedure would have resulted in the

125. In my opinion, the degree to which the zinc bromide is dried may affect, for example, whether water remains in the zinc bromide and whether that water would turn into a substance which could interfere with the reaction. In fact, as Dr. Bihovsky testified, the degree to which the zinc bromide starting material was dried can affect whether water remains in the zinc bromide. EX2033, 157:11-158:18. This water "would actually turn some of that into zinc hydroxide, which would interfere with the reaction" and the water could also turn into hydrobromic acid, which also could interfere with the reaction. EX2033, 157:11-158:18. This could

have affected the outcome of Example 2, as well as subsequent steps using Example 2's material.

126. Thus, a POSITA would have understood that using Dr. Bihovsky's drying procedure (as opposed to the various drying procedures that Liu could have used) may have resulted in a composition with a different impurity profile than what Dr. Bihovsky obtained from his experiment, which included an additional drying step intended to remove such impurities (and Dr. Bihovsky has not shown that the various ways in which Liu's zinc bromide was dried would have resulted in the claimed Form I). Moreover, for the reasons I discuss above (§§107-110), a POSITA would have understood that changes in the impurity profile such as this may have impacted the final polymorph that results. EX2036, 1; EX2037, 1. Thus, for this additional reason a POSITA would not consider Dr. Bihovsky's experiments to represent the natural results that a POSITA would have obtained had she followed Liu's explicit disclosures.

B. Dr. Bihovsky, Following Liu, Did Not Always Produce the Claimed Form I at the Claimed Purity

127. Claim 1 of the '151 patent requires, among other things, "at least 90% by weight of the compound of Formula (III) in the composition is (Z)-isomer, and wherein the crystalline form of the (Z)-isomer is Form I." EX1001, cl.1.

128. As I discuss above (¶¶40-41), it was known that (Z)-endoxifen has multiple polymorphic forms (as confirmed by Dr. Bihovsky's own results in which he got "97% Z – Not Form I" (EX1033, p.91)), and thus it is not always the case that (Z)-endoxifen will be Form I. EX2033, 238:22-240:19 ("that was before XRPD, and that was also not Form 1, even though it was 97 percent pure Z.... So again, recrystallizing from acetone gives you Form 1; recrystallizing from isopropyl acetate gives you a different form."); EX1001, Figs.11-12 (showing XRPD for Form II), Fig.13 (showing XRPD for Form III).

129. Dr. Bihovsky's lab notebook, as confirmed by his testimony, shows that Dr. Bihovsky did not always get the claimed Form I (Z)-endoxifen at the claimed at least 90% purity when following Liu Example 7. Instead, he obtained at least one sample (15-32-2P) which was "88% Z" despite the fact that he followed Liu Example 7 (EX1033, p.91):

10/24/23	15-30-3P (98 mg) in 1.00 ml acetone	
	cool to 20° → 4° (stirring) for 1 day - crystals	
	vac filter + dry → 54 mg off white solid	15-32-2P
	88% Z - XRPD = Form I	
	Polysorb filtrate → 31 mg v. lt. pink foam	-25
	63% Z -	

130. Dr. Bihovsky testified at his deposition that in this experiment he was following Liu Example 7's recrystallization procedure:

Q. So the three times you [tried] Liu's Example 7, all three times you got Form 1 of (Z)-endoxifen, one of the times it was 88 percent pure, one of the times it was 93 or 94 percent pure, and one of the times it was 100 percent pure; is that correct?

A. I think that's correct.

EX2033, 262:16-263:1 (objection omitted); *see also* EX2033, 259:16-260:4 ("Q. Okay. So what you found in performing Liu's example seven recrystallization procedure, you got (Z)-endoxifen, which was 88 percent pure, right? A. Yes. 88 percent Z, 22 percent E, Form 1.") (objection omitted).

131. Additionally, Dr. Bihovsky testified that had he recrystallized this sample again that he "would still get Form 1 and a higher percentage of Z than 88 percent." EX2033, 253:10-255:1. But Dr. Bihovsky did not do so, and thus has not shown that recrystallizing this sample would have resulted in higher purity or that it would have been Form I.

132. Thus, it is clear that following Liu does not always result in the claimed Form I (Z)-endoxifen at the claimed purity.

C. Dependent Claims 2-6, 18, and 21 Are Not Anticipated

133. As discussed above (§§IX.A-IX.B), in my opinion Dr. Bihovsky has failed to show that Liu inherently anticipates claim 1 of the '151 patent.

134. Because claims 2-6, 18, and 21 depend on claim 1, for these same reasons Dr. Bihovsky has failed to show that Liu inherently anticipates these claims.

135. Thus, in my opinion, Dr. Bihovsky has failed to show that claims 2-6 are anticipated by Liu.

X. Liu and Ahmad in View of a POSITA's Knowledge of the Art Fail to Render Obvious Claims 1-21 (Ground 2)

A. Claims 1 and 16

136. It is my opinion that Dr. Bihovsky and Dr. McConville have not shown any claims are obvious under Ground 2 because Dr. Bihovsky has failed to show that Liu inherently discloses Form I for the reasons I discuss above with respect to Ground 1 above (§IX).

137. In addition, Dr. Bihovsky and Dr. McConville do not explain (1) which disclosures in Liu would need to be modified to achieve Form I at the requisite purity (2) why a POSITA would have been motivated to make those modifications, or (3) why a POSITA would have reasonably expected those modifications to result in the claimed invention. I understand that each of these are required to demonstrate obviousness.

138. Dr. Bihovsky opines “although Liu discloses every element of claims 1-6, 16, and 18 of the 151 patent (as discussed above), each of the elements of these claims were also separately known and obvious in view of the knowledge of a POSA” (EX1033, ¶88) and “arriving at the invention claimed in the 151 patent from Liu would have involved simply utilizing known, conventional, and predictable

processes, and a POSA would have had a reasonable expectation of success in doing so” (EX1033, ¶90).

139. I disagree that a motivation to simply “utilize[] known, conventional, and predictable processes” would have been sufficient for a POSITA to arrive at the claimed inventions. Instead, a POSITA would have required specific motivation to depart from Liu’s teachings at several key points, knowing that those modifications were likely to impact the final polymorphic results, yet Dr. Bihovsky offers no specific explanation as to why a POSITA would have been motivated to depart from Liu at all, and does not explain why a POSITA would have expected those departures to successfully result in the claimed invention.

140. Moreover, Dr. McConville states that “[a]lthough Liu provides sufficient knowledge to a POSA to” “synthesize highly-pure (Z)-endoxifen,” “a POSA would have also been able to draw on teachings in the art available before the time of the invention, such as, for example Fauq (Ex. 1005) and Milroy (Ex. 1022) to arrive at the claimed invention.” EX1032, ¶67. Dr. McConville does not explain what specific claim limitations he believes Fauq and Milroy are relevant to, does not identify any disclosures of Fauq or Milroy, or explain why a POSITA would have been motivated to use any disclosures of Fauq and Milroy to arrive at the claimed inventions. Additionally, if Dr. Bihovsky or Dr. McConville later attempt to rely on

any opinions regarding Fauq as to claim 21, I disagree that claim 1 would be obvious based on Fauq for the reasons I discuss below with respect to claim 21 (¶155).

B. Claims 2-15 and 17-21: Petitioner Fails to Establish that the Prior Art Discloses Additional Dependent Claim Elements

141. As with claim 1, in my opinion, Dr. Bihovsky has failed to show that Liu renders obvious claims 2-15 and 17-21 of the '151 patent because he has failed to show that Liu discloses or renders obvious the claimed Form I of (Z)-endoxifen for the reasons I discuss above in Ground 1 and Ground 2 (§§IX, X.A) and because Dr. Mayo's XRPD testing is not based on a reliable methodology (as I discuss below, §XI).

142. In addition, in many cases Dr. Bihovsky and Dr. McConville do not explain why a POSITA would have been motivated to combine Liu with Ahmad or the knowledge of a person of ordinary skill in the art or why a POSITA would have had a reasonable expectation of success in doing so to arrive at the claimed invention. Thus, in my opinion, Dr. Bihovsky and Dr. McConville have failed to show that dependent claims 2-15 and 17-21 of the '151 patent are obvious.

143. I discuss my additional opinions as to certain dependent claims below.

1. Claims 2-6

144. For the same reasons I discuss with respect to claims 1 and 21 (§§140, 155), a POSITA would not be motivated to use Fauq’s or Milroy’s teachings of HPLC to arrive at the inventions of claims 2-6 of the ’151 patent. EX1032, ¶67.

2. Claims 10-12 and 15

145. Claim 11 requires “[t]he composition of claim 1, formulated as an oral dosage form comprising 1 mg to 200 mg per unit dose of the composition, and wherein daily administration of the oral dosage form achieves in a subject treated with the composition one or more of: a steady state plasma level of the compound of Formula (III) within 7 to 21 days; a steady state plasma level of the compound of Formula (III) ranging from 25 nM to 300 nM; a steady state plasma level of the compound of Formula (III) greater than 30 nM; or maximal plasma levels of the compound of Formula (III) within 2 to 10 hours after administering.” EX1001, cl.11.

146. Dr. McConville opines that “the pharmacokinetics recited in claim 11 are merely the inherent property of dosing a patient with the 90% (Z)-endoxifen taught by Liu in a dosage form at 1-200 mg as taught by Ahmad.” EX1032, ¶87. But Dr. McConville testified that pharmacokinetic properties such as the T_{max} and C_{max} of a drug can both be affected by how a drug is formulated and by impurities in the drug, and thus are not inherent properties. EX2032, 17:11-18:9, 20:15-21:15,

23:4-14, 24:11-25:12, 27:2-16, 42:17-43:7; *see also* EX1027, 47 (showing different pharmacokinetic parameters including $C_{\max}$, $T_{\max}$, elimination rate constant, and AUC(0-infinity) for different tested formulations of 600mg aspirin).

147. Claim 10 requires “[t]he composition of claim 7, wherein a mean half-life of the compound of Formula (III) in a subject treated with the composition is between 30 hours to 60 hours.”

148. Claim 12 requires “[t]he composition of claim 11, wherein a mean half-life of the compound of Formula (III) in the subject is between 40 hours to 55 hours.”

149. Claim 15 requires “[t]he composition of claim 11, having a mean area under the curve extrapolated to time infinity ($AUC_{0-\infty}$) of the compound of Formula (III) of 200 hr*ng/mL to 10000 hr*ng/mL.”

150. In my opinion, for the same reasons as discussed with respect to claim 11, Dr. McConville has failed to show that claims 10, 12, and 15 would have been obvious based on Liu in view of Ahmad and the knowledge of a POSITA. EX1032, ¶¶84-86, 92-94.

151. In addition, for each of these claims, Dr. McConville asserts that a “POSA would have been aware of the target pharmacokinetics expected to be efficacious for (Z)-endoxifen compositions and could have optimized a formulation to achieve them with a reasonable expectation of success.” EX1032, ¶¶86, 90, 94.

Dr. McConville does not explain why a POSITA would have been motivated to do so, and thus has not shown these claims would have been obvious.

3. Claim 21

152. Claim 21 requires “[t]he composition of claim 1, wherein the composition is stable for at least 9 months at 5°C. and 60% relative humidity or at 25° C. and 60% relative humidity.” EX1001, cl.21.

153. Neither Dr. Bihovsky nor Dr. McConville provide 9 months of stability testing of the material synthesized by Dr. Bihovsky. EX1032, ¶¶95-96; EX1033, ¶¶91-98 (providing only a 10-day stability test). Instead, Dr. Bihovsky asserts that because Liu discloses the claimed Form I (Z)-endoxifen, it inherently discloses the claimed stability requirements. As discussed above with respect to claim 1 in Grounds 1 and 2 (§§IX.A, IX.B, X.A), I disagree that Liu discloses the claimed Form I (Z)-endoxifen, and thus I disagree that Liu inherently discloses the stability requirements of claim 21.

154. In addition, Dr. Bihovsky admits that the purity of a compound affects its stability (EX1033, ¶¶92, 95), and that the (Z)-endoxifen he produced contains 1 weight % of residual acetone and that his attempt to remove it only reduced it to 0.6 weight %. EX1033, ¶97. Dr. Bihovsky also states that “to the extent any impurities arose during the course of synthesis that negatively impacted stability, a POSA would have been motivated to use well-known purification techniques to eliminate

impurities to improve the stability of the compound,” and points to Fauq’s chromatography as one possible way of purifying (Z)-endoxifen to increase its stability. EX1033, ¶95.

155. Neither Dr. Bihovsky nor Dr. McConville provide any explanation as to why a POSITA would have been motivated to modify Liu to use Fauq’s disclosures of separating (E)- and (Z)-endoxifen isomers using high performance liquid chromatography (HPLC) in view of Liu’s express disclosure that its process “avoids the use of chromatography in the separation of the Z- and E-isomers” of endoxifen. EX1003, ¶0005. In my opinion, this statement would have dissuaded a POSITA from adding Fauq or Milroy’s high performance liquid chromatography to Liu’s process and a POSITA would not have been motivated to do so because Liu lists avoiding the use of chromatography at this step as one of the benefits of its disclosures. And in fact, as Dr. McConville admitted at his deposition although “[m]anufacturing is not completely my area of expertise[,] I would imagine it would be better not to use HPLC if you could.” EX2032, 58:8-59:11; *see also id.* at 59:12-61:15 (“I’ve said it is not really my area of expertise, a scaleup, and I assume that using chromatography is more expensive, but maybe there’s benefits to it that I’m - - that go beyond the cost, I don’t know.”), 63:12-21 (“I think Liu is potentially cheaper on paper, but what do I know? I’ve never scaled anything up. So I can’t say yes or no to your question.”). Thus, in my opinion, Dr. Bihovsky and Dr.

McConville have not shown that claim 21 is obvious based on Fauq, Milroy, or any other “teachings in the art.” EX1032, ¶67.

156. Dr. Bihovsky also cites Elkins (EX1026) and asserts that Elkins discloses stability studies of a different sample of (Z)-endoxifen (i.e., not the sample synthesized by Dr. Bihovsky). EX1033, ¶93. But Dr. Bihovsky has not shown that Elkins’s (Z)-endoxifen has the same impurity profile as the (Z)-endoxifen he synthesized and thus cannot show that Elkins’s disclosures are applicable to his (Z)-endoxifen.

* * *

157. Thus, in my opinion, Dr. Bihovsky and Dr. McConville have not shown that claims 1-21 are obvious because Dr. Bihovsky has not established that Liu inherently discloses Form I, and because Dr. Bihovsky and Dr. McConville have failed to demonstrate that the prior art renders obvious the additional claim limitations of the dependent claims I discuss above (§X.B).

XI. POSITA Would Not Consider Dr. Mayo’s Opinions to Be Based on Reliable Methodology

158. Dr. Mayo’s declaration refers to an “Appendix B,” which Dr. Mayo says contains “[t]he experimental test and analysis conditions used for the XRPD testing” performed by Dr. Miller. EX1038, ¶ 23. The “experimental test and analysis conditions” used by Dr. Miller and relied on by Dr. Mayo are not present

anywhere else Dr. Mayo's declaration (and because Appendix B is not present in the declarations of Dr. Miller and Dr. Mayo I have not reviewed it), and thus a POSITA is unable to assess the reliability of Dr. Mayo's relied-upon XRPD testing, which Dr. Mayo testified could be affected by the very testing parameters and conditions missing from his declaration. *E.g.*, EX2031, 30:15-31:19, 32:14-20, 34:2-35:19, 49:19-51:8, 73:11-74:12, 76:6-78:6; 78:12-79:1.

159. For example, information regarding numerous sample preparation parameters is missing from Dr. Mayo's declaration. Dr. Mayo agreed that these parameters, including "the way the sample is made into a powder and put into the sample holder can affect the quality of the data," and whether that has occurred "depends upon the details of the material, and the particular sample holder and the instrument" (EX2031, 23:16-24:5), but that information regarding the sample holder is not part of his declaration here (EX2031, 24:21-25:7). Dr. Mayo also claimed that he knew that the materials sent to Dr. Miller by Dr. Bihovsky were powders because they were "prepared by precipitation" (EX2031, 74:13-76:2), however, this is inconsistent with Liu's disclosure of producing the final resulting crystalline solids by crystallization. EX1003, ¶¶0075, 0077 ("All portions of mother liquor were... [evaporated] to a solid and dried to a constant weight").

160. Dr. Mayo also agreed that milling of a sample and "preparation of the powdered material and the mounting of the specimen in a suitable holder can greatly

affect the quality of the data to be collected in the XRPD analysis” (EX2031, 40:2-41:8, 46:2-12, 51:9-54:16), and admitted that information about the holder is not in his declaration (EX2031, 49:4-8), and milling information is also not in his declaration. *See also* EX1031 (“controlling document for XRPD testing of various materials” (EX2031, 43:21-44:6), cited by Dr. Mayo detailing “critical steps” that “can greatly affect the quality of data to be collected” including “mounting of the specimen in a suitable holder” (EX1031, 7)).

161. Dr. Mayo also admitted that he did not know how Dr. Bihovsky’s samples were isolated and prepared for shipment and that his declaration contained no information as to how the samples received from Dr. Bihovsky were stored after being received. EX2031, 73:11-74:12, 76:6-78:6; *see id.*, 30:15-31:19 (testifying that changes to sample temperature should be avoided “[b]ecause we do not want to introduce any changes to the sample”). Indeed, it was well known that temperature, humidity, and storage conditions were factors that affected polymorphism. EX2040, 5 (“Temperature and humidity: Storage conditions affect physicochemical reaction which are accelerated at higher temperature”).

162. Dr. Mayo also admitted that other testing conditions and parameters could affect the quality or reliability of XRPD results (but these are not addressed in his declaration): (1) the degree of alignment or misalignment of the testing instrument (EX2031, 49:19-51:8; EX1031, 8); (2) equipment calibration procedures

(EX2031, 34:2-4); (3) which instrument was used to test the samples (EX2031, 32:14-20, 34:7-35:19 (admitting that some instruments are “notoriously inaccurate”); and (4) the temperature at which Dr. Miller’s analysis was performed (EX2031, 30:15-31:19, 77:4-20, 78:12-79:1). None of this information is present in Dr. Mayo’s declaration.

163. Instead, Dr. Mayo testified that it would have been “foolish not to follow the [standard operating procedure]” because by doing so his testing laboratory (H&M Analytical Services) “risk[s] losing its FDA certification.” EX2031, 20:20-22:2. Dr. Mayo also admitted that neither H&M’s standard operating procedure nor any information regarding H&M’s purported FDA certification is mentioned anywhere in his declaration. EX2031, 20:7-22:15, 59:6-60:7.

164. Dr. Mayo also admitted that he “gleaned” the experimental conditions from the reported results and that he “ha[s] a pretty good idea of what the testing conditions were” based on his prior work at H&M and his “muscle memory” from writing H&M’s standard operating procedures, but that none of that information is in his declaration. EX2031, 82:11-83:19, 113:18-114:9.

165. Without this information, a POSITA cannot assess the reliability and accuracy of Dr. Mayo’s relied-upon XRPD testing and thus would not find that XRPD testing to be reliable and accurate and would not rely on that testing to

determine whether Dr. Bihovsky's material meets the additional XRPD pattern and other requirements of the claims of the '151 patent.

XII. Conclusion

166. In summary, for the reasons described above, it is my opinion that each of the Challenged Claims are not invalid as anticipated under 35 U.S.C. § 102(a) in light of the prior art reference discussed above and are not obvious under 35 U.S.C. § 103 in light of the prior art references discussed above and the knowledge of a POSITA.

167. I reserve the right to supplement my opinions in the future and to respond to any arguments that Petitioner or its expert(s) may raise and to take into account any new information as it becomes available to me.

168. I have been warned that willful false statements and the like are punishable by fine or imprisonment, or both. I make this declaration of my own personal knowledge, and all statements made of my own knowledge are true. All statements made on information and belief are believed to be true. If called to testify as to the truth of the matters stated herein, I could and would testify competently.

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

Executed on January 26, 2026.



Stephen Graham Davies, DPhil

APPENDIX A

PROFESSOR STEPHEN GRAHAM DAVIES

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Date of Birth: 24.02.50 (Birmingham, UK) **Age:** 75

Education:

School: Berkhamsted 1963 - 1968

University of Oxford B.A. Chemistry 1973
Thesis entitled "Benzene Oxide and Related Compounds"
D.Phil. 1975 (Supervisor: Dr G.H. Whitham)
Thesis entitled "Studies on Epoxides"

University of Paris D.Sc. (Docteur ès Sciences) 1980
Thesis entitled "Contribution a La Chimie des Epoxydes"

Honorary Degrees:

2013 Doctor Honoris Causa, University of Salamanca, Spain
(*The University of Salamanca is one of the oldest in the world and only awards three "Doctor Honoris Causa" per annum*)

Positions Held:

1975 - 1977 I.C.I. Postdoctoral Fellow, Dept. of Inorganic Chemistry, Oxford.
(Professor M.L.H. Green, FRS)

1977 - 1978 N.A.T.O. Postdoctoral Fellow, I.C.S.N., C.N.R.S., Gif-sur-Yvette,
Paris. (Professor Sir Derek Barton, FRS)

1978 -1980 Attache de Recherche, C.N.R.S., I.C.S.N., C.N.R.S., Gif-sur-Yvette, Paris

1980 -1996 Lecturer in Organic Chemistry, Dyson Perrins Laboratory, Oxford.
Fellow of New College, Oxford

1996 - 2004 Professor of Chemistry, Dyson Perrins Laboratory, Oxford
Fellow of New College, Oxford

2004 - 2006 Professor of Chemistry, Chemistry Research Laboratory, Oxford
Fellow of New College, Oxford

2006 - 2020 Waynflete Professor of Chemistry, University of Oxford
Fellow of Magdalen College, Oxford (*The Waynflete Chair is the oldest and only named chair in Organic Chemistry at Oxford*)

2006- 2011 Chairman of Chemistry, University of Oxford
(*Full responsibility for all teaching, research, financial and managerial matters for one of the largest Chemistry Departments in the world*)

Awards:

1984: Hickinbottom Fellowship
 1985: Pfizer Award for Chemistry
 1986: Corday Morgan Medal (1984): Royal Society of Chemistry
 1987: Royal Society of Chemistry Award for Organometallic Chemistry
 1988: Pfizer Award for Chemistry
 1989: Royal Society of Chemistry Bader Award
 1996: Tilden Lecture Award, Royal Society of Chemistry
 1997: Royal Society of Chemistry Award in Stereochemistry
 1998: Prize Lectureship of the Society of Synthetic Organic Chemistry, Japan
 2008: Distinguished Technopreneur Award, Singapore
 2011: Royal Society of Chemistry Perkin Prize for Organic Chemistry
 2021: Royal Society London Mullard Award

Publications: 632 publications (h index 64, 18,879 cites, Feb 2025)

URL for publications: <http://davies.chem.ox.ac.uk/publications.aspx>

Membership of Committees

1986 -1992 Society of the Chemical Industry: Fine Chemicals Committee
 1990 -1993 Society of the Chemical Industry: Awards and Academic Relations Committee
 1987 -1990 Royal Society of Chemistry: Perkin Council
 1988 -1991 SERC - Organic Chemistry Subcommittee
 1991 -1992 SERC - Clean Technology Directorate
 1991 -1992 EPSRC Clean Technology Panel
 1994 -1995 Academic Secretary, Sub-Faculty of Chemistry.
 1994 -1995 Physical Sciences Board, Oxford University
 1995 - 2000 Technology Transfer Advisory Group, Oxford University.
 1998 - 2010 Conflict of Interest Committee, Oxford University.
 1997 - 2020 RSC Oxford/Cambridge International Synthesis Meeting Organising Committee
 (Chair 2001, 2005, 2009, 2013 and 2017)
 2000 - 2020 Intellectual Property Advisory Group, Oxford University
 2002 - 2014 Board of Electors of the Newton Abraham Visiting Professorship
 2006 – 2007 Medical Sciences Divisional Board
 2006 - 2011 MPLS Divisional Board
 2006 - 2011 MPLS General Purposes Committee
 2006 - 2010 Begbroke Science Park Strategy Group

Editorial Appointments

1989 - 1992	J. Chem. Soc. Perkin Transactions:	Editorial Board Member
1989 -	"Oxford Chemistry Primers", OUP	Founding Editor and Editor of Organic Series
1995 -	"Oxford Chemistry Masters", OUP	Founding Editor and Editor of Organic Series
1990 - 2017	Tetrahedron:	Executive Editorial Board Member
1990 - 2017	Tetrahedron: Asymmetry	Founder and Editor in chief
2005 -	"On Chemistry" Books	Founder and Editor

Companies Founded and Directorships

1992 - 1998	Oxford Asymmetry Limited; Founder and Director (<i>Asymmetric Synthesis</i>)
1995 - 1998	Oxford Diversity Limited; Founder and Research Director (<i>Combinatorial Chemistry</i>)
1998 - 2000	Oxford Asymmetry International plc; Founder and Director (<i>Drug Discovery Services</i>)
2003 - 2004	VASTox Limited; Founder and Non-executive Chairman (<i>Orphan Drug Discovery</i>)
2004 - 2006	VASTox plc; Founder and Non-executive Chairman (<i>Orphan Drug Discovery</i>)
2004 -	SciInk Limited; Founder and Non-executive Chairman (<i>Not for profit Undergraduate text publisher</i>)
2006 - 2013	Summit Corporation plc (formerly VASTox plc); Founder and Non-executive Director (<i>Pharmaceuticals</i>)
2006 - 2009	Oxray Limited; Founder and Non-executive Director (<i>Crystallography Software Developer</i>)
2011 - 2022	OxStem Limited; Founder and Non-executive Director (<i>Regenerative Medicine via endogeneous control of cell differentiation</i>)
2011 - 2014	MuOx Ltd. (Acquired by Summit Therapeutics plc); Founder and Non-executive Chairman (<i>Drug Discovery for Orphan Muscle Diseases</i>)
2014 - 2018	Summit Therapeutics plc; Non-executive Director (2003 London AIM SUMT: 2015 NASDAQ SUMM) (<i>Drug Development for Duchenne Muscular Dystrophy and Antibiotic against Clostridium difficile</i>)
2017 - 2022	Oxstem Neuro Ltd., Oxstem Cardio Ltd., Oxstem Ocular Ltd., Oxstem Oncology Ltd., Oxstem Beta Ltd. and Oxstem Immuno Ltd. (<i>Regenerative Medicine</i>)
2021 -	Raphael Laboratories Ltd.; Founder and Non-executive Director (<i>Prophylactics against viral respiratory infections</i>)
2022-	OxReGen Inc.; Founder and Non-executive Director (AI and zebrafish for drug discovery)

Directorships:

2007 - 2009	Oxeco plc; Non-executive Director (<i>IP commercialisation</i>)
2008 - 2021	Oxford University Innovation Ltd; Non-executive Director (<i>Oxford University's IP commercialisation company</i>)
2010 - 2011	Scientific Research Capital Limited; Non-executive Chairman (<i>IP commercialisation</i>)
2018 -	Serox Ltd. Non-executive Director (<i>Non-invasive wine, urine and blood analysis</i>)

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1. *trans*-Cycloalkenes. Part IV. Some aspects of the chemistry of *trans*-cyclo-octene
K. T. Burgoine, **S. G. Davies**, M. J. Peagram and G. H. Whitham, *J. Chem. Soc., Perkin Trans. 1*, **1974**, 2629
2. Carbon-13 nuclear magnetic resonance spectra of some epoxides
S. G. Davies, G. H. Whitham, *J. Chem. Soc., Perkin Trans. 2*, **1975**, 861
3. A convenient synthesis of β,γ -unsaturated carboxylic acids and esters. The isomeric 5-t-butylcyclohex-2-enecarboxylic acids
S. G. Davies, G. H. Whitham, *J. Chem. Soc., Perkin Trans. 1*, **1976**, 2279
4. Inorgano-Grignard Reagents: Preparation, Reactions and X-ray Crystal Structure of Bis-(η -cyclopentadienyl)-hydridomolybdenum[bromo(bis-tetrahydrofuran)magnesium]
S. G. Davies, M. L. H. Green, K. Prout, A. Coda and V. Tazzoli, *Chem. Commun.*, **1977**, 135
5. Stereoselectivity in the Epoxidation of $\beta\gamma$ -Unsaturated Carboxylic Acids
S. G. Davies, G. H. Whitham, *J. Chem. Soc., Perkin Trans. 1*, **1977**, 572
6. Benzene Oxide-Oxepin. Oxidation to Muconaldehyde
S. G. Davies, G. H. Whitham, *J. Chem. Soc., Perkin Trans. 1*, **1977**, 1346
7. *trans*-Cycloalkenes Part 7. Variable Temperature ^{13}C Nuclear Magnetic Resonance Studies on *cis,trans*-Cyclo-octa-1,5-diene and Related Compounds
S. G. Davies, P. F. Newton, G. H. Whitham, *J. Chem. Soc., Perkin Trans. 2*, **1977**, 1371
8. Rules for Predicting the Regioselectivity of Nucleophilic Attack on 18-Electron Organotransition Metal Cations Containing Polyene Ligands
S. G. Davies, M. L. H. Green, D. M. P. Mingos, *Nouveau Journal de Chimie*, **1977**, 1, 445
9. Photoinduced Synthesis of Binuclear Molybdenocene and Tungstenocene Derivatives: Catalytic Deoxygenation of Epoxides by Metallocenes
M. Berry, **S. G. Davies**, M. L. H. Green, *J. Chem. Soc., Chem. Commun.*, **1978**, 99
10. Nucleophilic addition to organotransition metal cations containing unsaturated hydrocarbon ligands: a survey and interpretation
S. G. Davies, M. L. H. Green, D. M. P. Mingos, *Tetrahedron*, **1978**, 34, 3047
11. Inorgano-Grignard Reagents. Preparations and Reactions of [Bromobis(tetrahydrofuran)-magnesium]bis(η -cyclopentadienyl)-hydridomolybdenum.
S. G. Davies, M. L. H. Green, *J. Chem. Soc., Dalton*, **1978**, 1510
12. Indane 3a,4-Oxide: Formation by Isomerisation of Indane-3a,7a-Oxide and Confirmation of Structure by an Alternative Synthesis.
S. G. Davies, G. H. Whitham, *J. Chem. Soc., Perkin Trans. 1*, **1978**, 1479
13. Chromium Hexacarbonyl Isomerisation of Ergosterol and Related Dienes
D. H. R. Barton, **S. G. Davies**, W. B. Motherwell, *Synthesis*, **1979**, 265
14. Stepwise Oxidative Decarbonylations of Organometallic Cations of Iron.
S. G. Davies, *J. Organometal. Chem.*, **1979**, 179, C5
15. Thermally Induced Formation of Neoergosteryl Benzoate and Ergosta-8(14)-22-dienyl Benzoate from Ergosteryl Benzoate Iron Tricarbonyl.
A. F. Mateos, **S. G. Davies**, *Anales de Quimica*, **1979**, 75, 385
16. Hydride Reduction of the Cation [$(\eta^5\text{-C}_5\text{H}_5)\text{Fe}(\text{triphos})$] PF₆ : Direct Nucleophilic Attack on the Metal and Hydrogen Exchange in the Product Hydride ($\eta^5\text{-C}_5\text{H}_5\text{FeH}(\text{triphos})$). (triphos = Ph₂PCH₂CH₂PPhCH₂CH₂PPh₂)
S. G. Davies, H. Felkin, O. Watts. *Chem. Commun.*, **1980**, 159
17. Chemistry of ($\eta^5\text{-C}_5\text{H}_5$)Ru(Ph₂PCH₂CH₂PPh₂)Cl: Preparation of Cationic Ruthenium Olefin Complexes.
S. G. Davies, F. Scott, *J. Organometal. Chem.*, **1980**, 188, C41

18. Synthesis of 10 (*S*)-Methyl-Codeine and 10 (*S*)-Methyl-Morphine
H. B. Arzeno, D. H. R. Barton, **S. G. Davies**, X. Lusinchi, B. Meunier, C. Pascard, *Nouveau J. Chimie*, **1980**, 4, 369
19. Synthesis and Reactions of Alkyl- and Aryl-substituted Metallacyclobutane Derivatives of Molybdenum and Tungsten
G. A. Adam, **S. G. Davies**, M. Ephritikine, K. A. Ford, M. L. H. Green, P. F. Todd, *J. Molecular Catal.*, **1980**, 8, 15
20. Epoxide Opening with Organocuprates and Grignard Reagents in the Presence of Chiral Ligands
S. G. Davies, S. Wollowitz, *Tetrahedron Lett.*, **1980**, 21, 4175
21. Hydride Reduction of the Cations $\{(\eta^5\text{-C}_5\text{H}_5)\text{Fe}[(\text{Ph}_2\text{PCH}_2)_3\text{CMe}]\}\text{PF}_6$, $\{(\eta^5\text{-C}_5\text{H}_5)\text{Ru}[(\text{Ph}_2\text{PCH}_2\text{CH}_2)_2\text{-PPh}]\}\text{PF}_6$ and $\{(\eta^5\text{-C}_5\text{H}_5)\text{Ru}[(\text{Ph}_2\text{PCH}_2)_3\text{CMe}]\}\text{PF}_6$: Regioselectivity and Mechanism
S. G. Davies, H. Felkin, T. Fillebeen-Khan, F. Tadj, O. Watts, *Chem. Commun.*, **1981**, 341
22. Stereochemical and Mechanistic Aspects of the Nickel Complex Catalysed Formation of Olefins from Allylic Alcohols and Grignard Reagents.
H. Felkin, M. Joly-Goudket, **S. G. Davies**, *Tetrahedron Lett.*, **1981**, 22, 1157
23. Reactivity of the Inorgano-Grignard $(\eta^5\text{-C}_5\text{H}_5)(\text{Ph}_2\text{PCH}_2\text{CH}_2\text{PPh}_2)\text{FeMgBr}$ Towards Halogenogermanes.
N. Aktogu, **S. G. Davies**, J. Dubac, P. Mazerolles, *J. Organomet. Chem.*, **1981**, 212, C13
24. Asymmetric Synthesis in the Nickel Complex Catalysed Formation of Olefins from Allyl Alcohols and Grignard Reagents.
M. Cherest, H. Felkin J. D. Umpleby, **S. G. Davies**, *Chem. Commun.*, **1981**, 681
25. Intramolecular General Acid Catalysis in the Binding Reactions of α_2 -Macroglobulin and Complement Components C3 and C4
S. G. Davies, R. B. Sim, *Bioscience Reports*, **1981**, 1, 461
26. 2-Substituted Bicyclo[3. 1.0]hexanes: Determination of Stereochemistry.
S. G. Davies, *J. Chem. Res. S.*, **1982**, 197
27. Hydride reduction of the cation $[(\eta^5\text{-C}_5\text{H}_5)\text{Fe}(\text{Ph}_2\text{PCH}_2\text{CH}_2\text{PPh}_2)\text{CO}]\text{PF}_6$; formation of $(\eta^5\text{-C}_5\text{H}_5)\text{FeH}(\text{CO})(\text{Ph}_2\text{PCH}_2\text{CH}_2\text{PPh}_2)$ and elimination of H_2 from $[(\eta^5\text{-C}_5\text{H}_5)\text{FeH}(\text{CO})]_2(\text{Ph}_2\text{PCH}_2\text{CH}_2\text{PPh}_2)$
S. G. Davies, J. Hibberd, S. J. Simpson, O. Watts *J. Organomet. Chem.*, **1982**, 238, C7
28. Organotransition Metal Chemistry: Applications to Organic Synthesis.
S. G. Davies, Pergamon Press, Nov. **1982**, 1
29. Preparation and Reactivity of the Anion $[(\eta^5\text{-C}_5\text{H}_5)\text{Fe}(\text{CO})(\text{PPh}_3)(\text{COCH}_2)]\text{Li}$.
N. Aktogu H. Felkin, **S. G. Davies**, *Chem. Commun.*, **1982**, 1303
30. Evidence for the Iron Formyl $(\eta^5\text{-C}_5\text{H}_5)\text{Fe}(\text{Ph}_2\text{PCH}_2\text{CH}_2\text{PPh}_2)(\text{CHO})$.
S. G. Davies, S. J. Simpson, *J. Organomet. Chem.*, **1982**, 240, C48
31. Disproportionation of the Iron Carbonyl Hydride $(\eta^5\text{-C}_5\text{H}_5)\text{Fe}(\text{CO})\text{H}(\text{Ph}_2\text{PCH}_2\text{CH}_2\text{PPh}_2)$ to the Iron Methyl $(\eta^5\text{-C}_5\text{H}_5)\text{Fe}(\text{Ph}_2\text{PCH}_2\text{CH}_2\text{PPh}_2)\text{Me}$
S. G. Davies, J. Hibberd, S. J. Simpson, *Chem. Commun.*, **1982**, 1404
32. Hydride Reduction of the Cation $[(\eta^5\text{-C}_5\text{H}_5)\text{Fe}(\text{Ph}_2\text{PCH}_2\text{CH}_2\text{PPh}_2)\text{CO}]\text{PF}_6$; Formation of $(\eta^5\text{-C}_5\text{H}_5)\text{-FeH}(\text{CO})(\text{Ph}_2\text{PCH}_2\text{CH}_2\text{PPh}_2)$ and Elimination of H_2 from $[(\eta^5\text{-C}_5\text{H}_5)\text{FeH}(\text{CO})]_2(\text{Ph}_2\text{PCH}_2\text{CH}_2\text{PPh}_2)$
S. G. Davies, J. Hibberd, S. J. Simpson, O. Watts, *J. Organomet. Chem.*, **1983**, 241, C31
33. Fragmentation of $(\eta^5\text{-C}_5\text{H}_5)\text{Fe}(\text{CO})(\text{PPh}_3)(\text{COCH}_2\text{COR})$ Complexes to the Cation $[(\eta^5\text{-C}_5\text{H}_5)\text{Fe}(\text{CO})_2\text{-(PPh}_3)]^+$
S. G. Davies, O. Watts, N. Aktogu, H. Felkin, *J. Organometal. Chem.*, **1983**, 243, C51
34. Regioselectivity of Hydride Addition to $[(\eta^5\text{-C}_5\text{H}_5)\text{Fe}(\text{Ph}_2\text{PCH}_2\text{CH}_2\text{PPh}_2)\text{CO}]\text{PF}_6$ and Rearrangement of $(\eta^5\text{-C}_5\text{H}_5)\text{Fe}(\text{Ph}_2\text{PCH}_2\text{CH}_2\text{PPh}_2)(\text{CO})\text{H}$ to $(\eta^4\text{-C}_5\text{H}_6)\text{Fe}(\text{Ph}_2\text{PCH}_2\text{CH}_2\text{PPh}_2)\text{CO}$
S. G. Davies, J. Hibberd, S. J. Simpson, *J. Organometal. Chem.*, **1983**, 246, C16
35. Electron-rich Cations: Preparation and Hydride Reductions of the Cations $[\text{Fe}(\eta^5\text{-C}_5\text{H}_5)\text{-[PhP}(\text{CH}_2\text{CH}_2\text{PPh}_2)_2]]^+$, $[\text{Fe}(\eta^5\text{-C}_5\text{H}_5)[\text{MeC}(\text{CH}_2\text{PPh}_2)_3]]^+$ and $[\text{Fe}(\eta^5\text{-C}_5\text{H}_5)[\text{C}(\text{CH}_2\text{-PPh}_2)_4]]^+$
S. G. Davies, S. J. Simpson, H. Felkin, F. Tadj, O. Watts, *J. Chem. Soc., Dalton*, **1983**, 981

36. Disubstituted Vinylidene Complexes of Iron and Ruthenium: Nucleophilic Properties of η^1 -Acetylide Ligands.
S. Abbott, **S. G. Davies**, P. Warner, *J. Organometal. Chem.*, **1983**, 246, C65
37. Electron-rich cations: Preparation and Hydride Reductions of the Cations $\{(\eta^5\text{-C}_5\text{H}_5)\text{Ru}[\text{MeC}-(\text{CH}_2\text{PPh}_2)_3]\}^+$ and $\{(\eta^5\text{-C}_5\text{H}_5)\text{Ru}[\text{PhP}(\text{CH}_2\text{CH}_2\text{PPh}_2)_2]\}^+$.
S. G. Davies, S. J. Simpson, H. Felkin, T. Fillebeen-Khan, *Organometallics*, **1983**, 2, 539
38. Stereoselective Elaboration of the Acyl Ligand in $(\eta^5\text{-C}_5\text{H}_5)\text{Fe}(\text{CO})(\text{PPh}_3)(\text{COCH}_2\text{R})$ via the Alkylation of the Anions $[(\eta^5\text{-C}_5\text{H}_5)\text{Fe}(\text{CO})(\text{PPh}_3)(\text{COCHR})]\text{Li}$ (R=Me, Et).
G. J. Baird, **S. G. Davies**, *J. Organometal. Chem.*, **1983**, 248, C1
39. Stereochemistry of 5-Substituted η^4 -Cyclopentadiene Transition-metal Complexes
S. G. Davies, S. D. Moon, S. J. Simpson, S. E. Thomas, *J. Chem. Soc., Dalton*, **1983**, 1805
40. Preparation and Hydride Reduction of the Electron-Rich Cations $[(\text{Me}_5\text{C}_5)\text{Fe}(\text{CO})_2\text{L}]^+$ (L=CO, PPh₃, PMe₃) and $[(\text{Me}_5\text{C}_5)\text{Fe}(\text{CO})(\text{Ph}_2\text{PCH}_2\text{CH}_2\text{PPh}_2)]^+$
S. G. Davies, S. J. Simpson, S. E. Thomas, *J. Organometal. Chem.*, **1983**, 254, C29
41. Stereochemical Control and Mechanistic Aspects of the Alkylation of $(\eta^5\text{-C}_5\text{H}_5)\text{Fe}(\text{L})(\text{CO})(\text{COCHR})\text{Li}^+$ (L=PPh₃, PPh₂NEt₂; R=Me, Et): X-Ray Crystal Structure of $[(\eta^5\text{-C}_5\text{H}_5)\text{Fe}(\text{PPh}_3)(\text{CO})\{\text{COCH}(\text{Me})\text{Et}\}]$.
G. J. Baird, J. A. Bandy, **S. G. Davies**, K. Prout, *Chem. Commun.*, **1983**, 1202
42. $(\eta^5\text{-C}_5\text{H}_5)\text{Ru}(\text{PPh}_3)_3\text{H}_3$: A Stable Ruthenium (IV) Trihydride.
S. G. Davies, S. D. Moon, S. J. Simpson, *Chem. Commun.*, **1983**, 1278
43. Elaboration of α -Substituted Benzyl Ethers and Sulphides by Suppression of the Wittig and Related Rearrangements.
S. G. Davies, N. J. Holman, C. A. Laughton, B. E. Mobbs *Chem. Commun.*, **1983**, 1316
44. Elaboration of Acyl Ligands: Preparation and Reactivity of the Anion $[(\eta^5\text{-C}_5\text{H}_5)\text{Fe}(\text{CO})(\text{PPh}_3)(\text{COCH}_2)]^-$.
S. G. Davies, N. Aktogu, H. Felkin, G. J. Baird, O. Watts, *J. Organometal. Chem.*, **1984**, 262, 49
45. Electron-Rich η^1 -Cyano Complexes of Iron and Ruthenium: Preparation and Nucleophilic Properties.
G. J. Baird, **S. G. Davies**, *J. Organometal. Chem.*, **1984**, 262, 215
46. The Rate and Activation Parameters for the Cleavage of the Metal-Metal Bond of the Anion Radical of a Di-iron Carbonyl Complex.
S. G. Davies, S. J. Simpson, V. D. Parker, *Chem. Commun.*, **1984**, 352
47. Stereoselective Preparation of β -Amino-Acyl Iron Complexes for β -Lactam Synthesis.
K. Broadley, **S. G. Davies**, *Tetrahedron Lett.*, **1984**, 25, 1743
48. Carbon Monoxide Reduction: $[\text{Fe}(\eta^5\text{-C}_5\text{H}_5)(\text{Ph}_2\text{PCH}_2\text{CH}_2\text{PPh}_2)(\text{CO})\text{H}]$; Reactions and Formation by Reduction of the Complex $[\text{Fe}(\eta^5\text{-C}_5\text{H}_5)(\text{Ph}_2\text{PCH}_2\text{CH}_2\text{PPh}_2)(\text{CO})]\text{PF}_6$.
S. G. Davies, J. Hibberd, S. J. Simpson, S. E. Thomas, O. Watts, *J. Chem. Soc., Dalton*, **1984**, 701
49. Rules Governing Asymmetric Synthesis with Organotransition Metal Complexes.
S. G. Davies, J. I. Seeman, *Tetrahedron Lett.*, **1984**, 25, 1845
50. Hydride addition to the Cations $[(\eta^5\text{-C}_5\text{H}_5)\text{Ru}(\text{L})_2\text{CO}]^+$. (L = PPh₃, L₂ = Ph₂PCH₂CH₂PPh₂)
S. G. Davies, S. D. Moon, S. J. Simpson, *Nouveau J. Chimie*, **1984**, 8, 139
51. A Convenient Synthesis of $[\text{Ru}(\eta\text{-C}_5\text{H}_5)(\text{PPh}_3)(\text{CO})\text{Cl}]$ and the Cations $[\text{Ru}(\eta\text{-C}_5\text{H}_5)(\text{PPh}_3)\text{L}(\text{CO})]^+$ [L=CO, PMe₃, or P(OPh)₃]
S. G. Davies, S. J. Simpson, *J. Chem. Soc., Dalton*, **1984**, 993
52. Stereoselective Synthesis of *Erythro*- β -Hydroxy Carboxylic Acids via Iron Acyl Complexes.
S. G. Davies, I. M. Dordor, J. C. Walker, P. Warner, *Tetrahedron Lett.*, **1984**, 25, 2709
53. Stereoselective Carbon-Carbon Bond Formation via Alkylation of $[(\eta^5\text{-C}_5\text{H}_5)\text{Fe}(\text{PPh}_3)(\text{CO})(\text{COMe})=\text{CHR}]$ (R = Me, Prⁿ, Ph): X-Ray Crystal Structure of (Z)- $[(\eta^5\text{-C}_5\text{H}_5)\text{Fe}(\text{PPh}_3)(\text{CO})(\text{COMe})=\text{CHMe}]$.
G. J. Baird, **S. G. Davies**, R. H. Jones, K. Prout, P. Warner, *Chem. Commun.*, **1984**, 745

54. Stereoselective Synthesis of Quaternary Carbon Atoms
P. J. Curtis, **S. G. Davies**, *Chem. Commun.*, **1984**, 747
55. Reductions of the Cations $[(\eta^5\text{-C}_5\text{H}_5)\text{Fe}(\text{L})_2\text{CO}]^+$ (L=tertiary phosphine): Product Control by Variation of Phosphine Ligands.
S. G. Davies, S. J. Simpson, *J. Organometal. Chem.*, **1984**, 268, C53
56. Chiral Acetate Enolate Equivalent for the Synthesis of β -Hydroxy Acids.
S. G. Davies, I. M. Dordor, P. Warner, *Chem. Commun.*, **1984**, 956
57. Conformational Analysis for the Alkyl Ligands (R) in Complexes of the Type $(\eta^5\text{-C}_5\text{H}_5)\text{Fe}(\text{CO})(\text{PPh}_3)\text{R}$.
J. I. Seeman, **S. G. Davies**, *Chem. Commun.*, **1984**, 1019.
58. Stereoselective Additions to the Alkoxycarbene Cations $[(\eta^5\text{-C}_5\text{H}_5)\text{Fe}(\text{CO})(\text{PPh}_3)(=\text{CROMe})]^+$ (R=H, Et).
G. J. Baird, **S. G. Davies**, T. R. Maberly, *Organometallics*, **1984**, **3**, 1764.
59. Titanium Catalysed Reduction of 1,2-Dibromides to Olefins.
S. G. Davies, S. E. Thomas, *Synthesis*, **1984**, 1027.
60. Stereocontrolled Tandem Alkylations: Michael Additions and Subsequent Alkylations of α,β -Unsaturated Acyl Ligands bound to $[(\eta^5\text{-C}_5\text{H}_5)\text{Fe}(\text{CO})(\text{PPh}_3)]$.
S. G. Davies, J. C. Walker, *Chem. Commun.*, **1985**, 209
61. Stereoselective Synthesis of Cyclic Ethers via Bromine Assisted Epoxide Ring Expansion.
S. G. Davies, M. E. C. Polywka, S. E. Thomas, *Tetrahedron Lett.*, **1985**, **26**, 1461
62. Chiral Propionate Enolate Equivalents for the Stereoselective Synthesis of *Threo*- or *Erythro*- α -Methyl- β -Hydroxy Acids.
S. G. Davies, I. M. Dordor-Hedgecock, P. Warner, *Tetrahedron Lett.*, **1985**, **26**, 2125.
63. Chiral Propionate Enolate Equivalent for Stereoselective Additions to Symmetrical Ketones.
P. W. Ambler, **S. G. Davies**, *Tetrahedron Lett.*, **1985**, **26**, 2129.
64. 4-Substituted *N*-Methyl-1,2,3,4-tetrahydroisoquinolines: Synthesis *via* Stereoselective Substitution of Tricarbonyl-(*N*-methyl-1,2,3,4-tetrahydroisoquinoline)chromium.
J. Blagg, **S. G. Davies**, B. E. Mobbs, *Chem. Commun.*, **1985**, 619.
65. Chiral Acetate Enolate Equivalent for the Synthesis of β -Hydroxy Acids and Esters: X-Ray Crystal Structure of *RR,SS*- $[(\eta^5\text{-C}_5\text{H}_5)\text{Fe}(\text{CO})(\text{PPh}_3)(\text{COCH}_2\text{CH}(\text{OH})\text{CH}_2\text{CH}_3)]$.
S. G. Davies, I. M. Dordor-Hedgecock, P. Warner, R. H. Jones, K. Prout, *J. Organomet. Chem.*, **1985**, 285, 213.
66. Stereospecific Conversion of *N,N*-Dimethylamphetamine into *N*-Methylpseudoephedrine.
J. Blagg, **S. G. Davies**, *Chem. Commun.*, **1985**, 653.
67. Bimetallic Cyano-bridged Cations: Preparation and Hydride Reduction of $[(\eta^5\text{-C}_5\text{H}_5)_2\text{L}_2\text{Ru}(\mu\text{-CN})\text{ML}'_2(\eta^5\text{-C}_5\text{H}_5)\text{PF}_6]$ [$\text{L}_2, \text{L}'_2 = (\text{PPh}_3)_2$; $\text{Ph}_2\text{PCH}_2\text{CH}_2\text{PPh}_2$; M = Ru or Fe]. Formation of $[\text{Ru}(\eta^5\text{-C}_5\text{H}_5)(\text{PPh}_3)_3\text{H}_3]$ and X-ray Crystal Structure of $[(\eta^5\text{-C}_5\text{H}_5)(\text{Ph}_2\text{PCH}_2\text{CH}_2\text{PPh}_2)\text{Ru}(\mu\text{-CN})\text{Ru}(\text{PPh}_3)_2(\eta^5\text{-C}_5\text{H}_5)]\text{PF}_6^-$
G. J. Baird **S. G. Davies**, S. D. Moon, S. J. Simpson, R. H. Jones, *J. Chem. Soc., Dalton*, **1985**, 1479
68. Base Promoted Rearrangements of Cyclopentadienylacyl and Carboxyalkyl-metal Complexes.
S. Abbott, G. J. Baird, **S. G. Davies**, I. M. Dordor-Hedgecock, T. R. Maberley, J. C. Walker, P. Warner, *J. Organometal. Chem.*, **1985**, **289**, C13
69. Chiral Discrimination in the Reactions of the Enolate $\text{E}-[(\eta^5\text{-C}_5\text{H}_5)\text{Fe}(\text{CO})(\text{PPh}_3)\text{COCHMe}]^- \text{Li}^+$ with *cis*- and *trans*-But-2-ene oxides in the presence of $\text{BF}_3\text{-OEt}_2$.
S. G. Davies, P. Warner, *Tetrahedron Lett.*, **1985**, **26**, 4815
70. Chiral discrimination in the Reaction of the Enolate $[(\eta^5\text{-C}_5\text{H}_5)\text{Fe}(\text{CO})(\text{PPh}_3)(\text{COCH}_2)]^- \text{Li}^+$ with Monosubstituted Epoxides: X-Ray Crystal Structure of *(RS,SR)*- $[(\eta^5\text{-C}_5\text{H}_5)\text{Fe}(\text{CO})(\text{PPh}_3)\{\text{COCH}_2\text{CH}_2\text{CH}(\text{OH})\text{Me}\}]$
S. L. Brown, **S. G. Davies**, P. Warner, R. H. Jones, K. Prout, *Chem. Commun.*, **1985**, 1446

71. Conformational-Reactivity Relationships for the Organotransition-Metal Complexes $(\eta^5\text{-C}_5\text{H}_5)\text{Fe}(\text{CO})(\text{PPh}_3)\text{R}$ and $(\eta^5\text{-C}_5\text{H}_5)\text{Re}(\text{NO})(\text{PPh}_3)\text{R}$ (R=Alkyl and Aryl)
J. I. Seeman, **S. G. Davies**, *J. Am. Chem. Soc.*, **1985**, 107, 6522
72. Mechanism of the Formation of Methyliron Complexes by Protonation of Methoxymethyliron Complexes.
S. G. Davies, T. R. Maberly, *J. Organomet. Chem.*, **1985**, 296, C37.
73. Synthesis of α,β -Unsaturated Acyl Ligands bound to the Chiral Auxiliary $[(\eta^5\text{-C}_5\text{H}_5)\text{Fe}(\text{CO})(\text{PPh}_3)]$.
S. G. Davies, R. J. C. Easton, J. C. Walker, P. Warner, *J. Organomet. Chem.*, **1985**, 296, C40.
74. Conformational Analysis of Compounds of the Type $[\text{Fe}(\eta^5\text{-C}_5\text{H}_5)(\text{CO})(\text{PPh}_3)(\text{CH}_2\text{R})]$ (R=Alkyl or aryl).
S. G. Davies, J. I. Seeman, *J. Chem. Soc., Dalton*, **1985**, 2691.
75. Resynthesis of Histone Peptide Bonds on a DNA Matrix.
S. G. Davies, I. O. Walker, P. N. Schofield, in "Chromosomal Proteins and Gene Expression", Eds. G. R. Reeck, G. H. Goodwin and P. Puigdomenech, NATO-ASI Series Plenum, New York, **1985**, 101, 17.
76. Reductive Polymerisation of Carbon Monoxide: Synthesis of Entirely CO-derived Pentanoic Acid.
S. L. Brown, **S. G. Davies**, *Chem. Commun.*, **1986**, 84.
77. Conformational Analysis of the Iron Acetyl Complex $[(\eta^5\text{-C}_5\text{H}_5)\text{Fe}(\text{CO})(\text{PPh}_3)\text{COCH}_3]$.
S. G. Davies, J. I. Seeman, I. H. Williams, *Tetrahedron Lett.*, **1986**, 27, 619.
78. Improved Stereochemical Control and Mechanistic Aspects of the Alkylation of Enolates Derived from $[(\eta^5\text{-C}_5\text{H}_5)\text{Fe}(\text{CO})(\text{PPh}_3)\text{COCH}_2\text{R}]$.
S. L. Brown, **S. G. Davies**, D. F. Foster, J. I. Seeman, P. Warner, *Tetrahedron Lett.*, **1986**, 27, 623.
79. Synthesis and Characterisation of E and Z α,β -Unsaturated Acyl Complexes $[(\eta^5\text{-C}_5\text{H}_5)\text{Fe}(\text{CO})(\text{PPh}_3)\text{-(COCH=CHR)}]$ (R=H, Me, Et, *n*-Bu, *t*-Bu, Ph, vinyl, 2-furyl).
S. G. Davies, R. J. C. Easton, J. C. Walker, P. Warner, *Tetrahedron*, **1986**, 42, 175.
80. The Stereoselective Synthesis of (-)-(8*R*)-Methylcanadine via Selective Monocomplexation of Canadine to Chromium Tricarbonyl.
J. Blagg, **S. G. Davies**, *Chem. Commun.*, **1986**, 492
81. Stereoselective Synthesis of Quaternary Carbon Centres
S. G. Davies, J. C. Walker, *Chem. Commun.*, **1986**, 495
82. Determination of the Absolute Configuration and Optical Purity of $[(\eta^5\text{-C}_5\text{H}_5)\text{Fe}(\text{CO})(\text{PPh}_3)\text{COMe}]$; X-Ray Crystal Structure of (*R*)- $[(\eta^5\text{-C}_5\text{H}_5)\text{Fe}(\text{CO})(\text{PPh}_3)\text{COCH}_2\text{CH}_2\text{O}[(R)\text{-menthyl}]]$.
S. G. Davies, I. M. Dordor-Hedgcock, K. H. Sutton, J. C. Walker, C. Bourne, R. H. Jones, K. Prout, *Chem. Commun.*, **1986**, 607
83. Asymmetric Diels-Alder Reactions: (*S*)-(+)- $[(\eta^5\text{-C}_5\text{H}_5)\text{Fe}(\text{CO})(\text{PPh}_3)\text{COCH=CH}_2]$ as a Chiral Acrylate Dienophile Equivalent.
S. G. Davies, J. C. Walker, *Chem. Commun.*, **1986**, 609
84. Bromo(η^5 -cyclopentadienyl)[1,2-ethanediylbis(diphenylphosphine)]iron and Bromo(η^5 -cyclopentadienyl)[1,2-ethanediylbis(diphenylphosphine)]bis(tetrahydrofuran)ironmagnesium. (*Fe-Mg*)
S. G. Davies, H. Felkin, O. Watts, *Inorganic Syntheses*, **1986**, 24, 170
85. Synthesis of Cyclic Ethers via Bromine Assisted Epoxide Ring Expansion.
S. G. Davies, M. E. C. Polywka, S. E. Thomas, *J. Chem. Soc., Perkin Trans. 1*, **1986**, 1277
86. Chiral Dienolates: Stereoselective Formation and α -Alkylation of the Lithium Dienolates Derived from (RS)-Z- $[(\eta^5\text{-C}_5\text{H}_5)\text{Fe}(\text{CO})(\text{PPh}_3)\text{COCH=CHCH}_2\text{R}]$ (R=Me, Et, *n*-Pr) and (RS)- $[(\eta^5\text{-C}_5\text{H}_5)\text{Fe}(\text{CO})(\text{PPh}_3)\text{-(COCH=CMe}_2)]$.
S. G. Davies, R. J. C. Easton, A. Gonzalez, S. C. Preston, K. H. Sutton, J. C. Walker, *Tetrahedron*, **1986**, 42, 3987
87. Organometallics in Synthesis: Part I: The Transition Elements,
S. G. Davies, S. E. Thomas, *SPR Gen. and Synth. Methods.*, Ed. G. Pattenden, **1986**, 8, 312.

88. The Asymmetric Synthesis of β -Lactams. Stereocontrolled Asymmetric Tandem Michael Additions and Alkylations of α,β -Unsaturated Acyl Ligands Bound to the Chiral Auxiliary $[(\eta^5\text{-C}_5\text{H}_5)\text{Fe}(\text{CO})(\text{PPh}_3)]$.
S. G. Davies, I. M. Dordor-Hedgecock, K. H. Sutton, J. C. Walker, *Tetrahedron Lett.*, **1986**, 27, 3787
89. Stereoselective Synthesis via Arene Chromium Tricarbonyl Complexes
S. G. Davies, *Chem. and Ind.*, **1986**, 506
90. Homogeneous Reduction of Carbon Monoxide.
S. L. Brown, **S. G. Davies**, S. J. Simpson, S. E. Thomas, *Applied Catalysis*, **1986**, 25, 87
91. Regioselective Nucleophilic Additions to $(\eta^6\text{-Benzyl alcohol})\text{tricarbonylchromium}$: Isolation and X-Ray Crystal Structure of the Intermediate $(\eta^6\text{-5-Methylene-6-exo-t-butylcyclohexa-1,3-diene})\text{tricarbonylchromium}$.
J. Blagg, **S. G. Davies**, C. L. Goodfellow, K. H. Sutton, *Chem. Commun.*, **1986**, 1283
92. Elaboration of α -Substituted Benzyl Alkyl Ethers and Sulphides by Suppression of the Wittig and Related Rearrangements *via* Complexation to Tricarbonylchromium.
J. Blagg, **S. G. Davies**, N. J. Holman, C. A. Laughton, B. E. Mobbs, *J. Chem. Soc., Perkin Trans. 1*, **1986**, 1581
93. The Asymmetric Synthesis of β -Lactams. Stereocontrolled Asymmetric Tandem Michael Additions and Subsequent Alkylations of $\text{E}-[(\eta^5\text{-C}_5\text{H}_5)\text{Fe}(\text{CO})-(\text{PPh}_3)\text{COCH}=\text{CHMe}]$. X-Ray Crystal Structure of $(\text{RS})\text{-E}-[(\eta^5\text{-C}_5\text{H}_5)\text{Fe}(\text{CO})(\text{PPh}_3)\text{COCH}=\text{CHMe}]$.
S. G. Davies, I. M. Dordor-Hedgecock, K. H. Sutton, J. C. Walker, R. H. Jones, K. Prout, *Tetrahedron*, **1986**, 42, 5123
94. Stereoselective Reduction of $(\text{R},\text{S})\text{-}[(\eta^5\text{-C}_5\text{H}_5)\text{Fe}(\text{CO})(\text{PPh}_3)(=\text{COCH}_2\text{CH}_2\text{CMe}_2)]^+$ and Complete Epimerisation of the Kinetic (RR,SS) -Diastereoisomer to the Thermodynamic (RS,SR) -Diastereoisomer of the Product $[(\eta^5\text{-C}_5\text{H}_5)\text{Fe}(\text{CO})(\text{PPh}_3)\{\text{C}(\text{H})\text{OCH}_2\text{CO}_2\text{CMe}_2\}]$.
A. P. Ayscough, **S. G. Davies**, *Chem. Commun.*, **1986**, 1648
95. Tetrahydroisoquinolines Part 2. Synthesis of 4-Substituted *N*-Methyl-1,2,3,4-tetrahydroisoquinolines *via* Regio- and Stereo-selective Elaboration of Tricarbonyl(*N*-methyl-1,2,3,4-tetrahydroisoquinoline)chromium
J. Blagg, S. J. Coote **S. G. Davies**, B. E. Mobbs, *J. Chem. Soc., Perkin Trans. 1*, **1986**, 2257
96. Conformational Analysis and X-ray Crystal Structure of $[(\eta^5\text{-C}_5\text{H}_5)\text{Fe}(\text{CO})(\text{PPh}_3)\text{CH}_2\text{CH}_3]$.
S. G. Davies, I. M. Dordor-Hedgecock, K. H. Sutton, M. Whittaker, *J. Organometal. Chem.*, **1987**, 320, C19.
97. Chiral Dienolates: Formation and Stereoselective α -Alkylation of the Lithium Dienolate Derived from $(\text{Z})\text{-}[(\eta^5\text{-C}_5\text{H}_5)\text{Fe}(\text{CO})(\text{PPh}_3)\text{COCH}=\text{CHMe}]$. X-Ray Crystal Structure of $(\text{RS})\text{-}(\text{Z})\text{-}[(\eta^5\text{-C}_5\text{H}_5)\text{Fe}(\text{CO})(\text{PPh}_3)\text{COCH}=\text{CHMe}]$.
S. G. Davies, R. J. C. Easton, K. H. Sutton J. C. Walker, R. H. Jones, *J. Chem. Soc., Perkin Trans. 1*, **1987**, 489
98. Tetrahydroisoquinolines. Part 3. Stereoselective Synthesis of *cis*- and *trans*-1,4-Disubstituted *N*-Methyl-1,2,3,4-tetrahydroisoquinolines as their Tricarbonylchromium Complexes.
J. Blagg, S. J. Coote, **S. G. Davies**, D. Middlemiss, A. Naylor, *J. Chem. Soc., Perkin Trans. 1*, **1987**, 689
99. Conformational Analysis and X-ray Crystal Structure of $[(\eta^5\text{-C}_5\text{H}_5)\text{Fe}(\text{CO})(\text{PPh}_3)\text{CH}_2\text{SiMe}_3]$.
S. G. Davies, I. M. Dordor-Hedgecock, K. H. Sutton, M. Whittaker, *Chem and Ind.*, **1987**, 338.
100. Organometallics in Synthesis: Part I "The Transition Elements".
J. Blagg, **S. G. Davies**, P. F. Gordon, *SPR Gen. and Synth. Methods*. Ed. G. Pattenden, **1987**, 9, 398.
101. An Approach to the Stereoselective Synthesis of α -Hydroxycarboxylic Acids.
S. G. Davies, M. Wills, *J. Organometal. Chem.*, **1987**, 328, C29
102. The Diastereoselective Functionalisation of Arene Tricarbonylchromium Complexes Containing a Benzylic Heteroatom Substituent.
J. Blagg, **S. G. Davies**, C. L. Goodfellow, K. H. Sutton, *J. Chem. Soc., Perkin Trans. 1*, **1987**, 1805.
103. Synthesis and Stereoselective Reactions of α,β -Unsaturated Acyl Ligands Bound to the Chiral Auxiliary $[(\eta^5\text{-C}_5\text{H}_5)\text{Fe}(\text{CO})(\text{PPh}_3)]$: A review.
S. G. Davies, I. M. Dordor-Hedgecock, R. J. C. Easton, S. C. Preston, K. H. Sutton, J. C. Walker, *Bull. Soc. Chim. Fr.*, **1987**, 608.

104. Conformational Analysis of $[(\eta^5\text{-C}_5\text{H}_5)\text{Fe}(\text{CO})(\text{PPh}_3)\text{CH}_2\text{OMe}]$: Solvent Dependence of Conformer Populations.
B. K. Blackburn, **S. G. Davies**, M. Whittaker, *Chem. Commun.*, **1987**, 1344
105. Conformational Analysis for the Pseudooctahedral Complexes $(\eta^5\text{-C}_5\text{H}_5)\text{Fe}(\text{CO})(\text{PPh}_3)\text{CH}_2\text{R}$ [R=Me, Et, *i*-Pr, *t*-Bu, SiMe₃, (PMe₃)⁺, (PPh₃)⁺, Mesityl, Ph, vinyl, 1-Naphthyl]: X-Ray Crystal Structures of $(\eta^5\text{-C}_5\text{H}_5)\text{Fe}(\text{CO})(\text{PPh}_3)\text{CH}_2\text{R}$ (R = Me, SiMe₃)
S. G. Davies, I. M. Dordor-Hedgcock, K. H. Sutton, M. Whittaker, *J. Am. Chem. Soc.*, **1987**, 109, 5711
106. The Highly Stereoselective Conversion of *N,N*-Dimethylamphetamine into *N*-Methylpseudoephedrine; a Mimic of the Enzyme Mediated Stereospecific Benzylic Hydroxylation of 2-Arylethylamines.
J. Blagg, **S. G. Davies**, *Tetrahedron*, **1987**, 43, 4463
107. Nucleophilic Attack on Unsaturated Hydrocarbons Coordinated to Transition Metals.
S. G. Davies, M. L. M. Green, D. M. P. Mingos in "Reactions of Coordinated Ligands" Ed. P. S. Braterman, Plenum, New York, **1986**, 1, 897
108. Stereospecificity of the Rearrangement of the α -Alkoxy Iron Acyl $[(\eta^5\text{-C}_5\text{H}_5)\text{Fe}(\text{CO})(\text{PPh}_3)\text{COCH}_2\text{OCH}_2\text{Ph}]$ to the α -Metalla-ester $[(\eta^5\text{-C}_5\text{H}_5)\text{Fe}(\text{CO})(\text{PPh}_3)\text{CH}_2\text{CO}_2\text{CH}_2\text{Ph}]$.
S. G. Davies, M. Wills, *Chem. Commun.*, **1987**, 1647
109. The Asymmetric Synthesis of (-)-Captopril utilising the Iron Chiral Auxiliary $[(\eta^5\text{-C}_5\text{H}_5)\text{Fe}(\text{CO})(\text{PPh}_3)]$.
G. Bashiardes, **S. G. Davies**, *Tetrahedron Lett.*, **1987**, 28, 5563
110. Substituted 4*H*-1-Benzopyran-4-ones (Chromones): Synthesis *via* Palladium Catalysed Coupling of their Halogeno Derivatives with Alkenes
S. G. Davies, B. E. Mobbs, C. J. Goodwin, *J. Chem. Soc., Perkin Trans. 1*, **1987**, 2597
111. The Stereospecific Synthesis of (-)-(8*R*) and (-)-(8*S*)-Methylcanadine.
P. D. Baird, **S. G. Davies**, J. Blagg, K. H. Sutton, *Tetrahedron*, **1988**, 44, 171
112. Asymmetric Synthesis via the Iron Chiral Auxiliary $[(\eta^5\text{-C}_5\text{H}_5)\text{Fe}(\text{CO})(\text{PPh}_3)]$.
S. G. Davies, *Pure and Applied Chemistry*, **1988**, 60, 13
113. Asymmetric Synthesis of (1*R*,8*S*)- and (1*S*,8*S*)-1-Hydroxypyrrolizidin-3-ones from Boc-L-Proline and (S)- and (R)- $[(\eta^5\text{-C}_5\text{H}_5)\text{Fe}(\text{CO})(\text{PPh}_3)(\text{Ac})]$, respectively.
R. P. Becket, **S. G. Davies**, *Chem. Commun.*, **1988**, 160
114. Stereoselective Synthesis of Arenechromium Tricarbonyl Complexes: Origins of the Benzylic Oxygen Directing Effects for 1-Tetralol Derivatives
S. G. Davies, C. L. Goodfellow, *J. Organometal. Chem.*, **1988**, 340, 195
115. Stereochemical Studies on Marine Cyclic Peroxides: An Unequivocal Assignment of Absolute Stereochemistry by Asymmetric Synthesis.
R. J. Capon, J. K. Macleod, S. J. Coote, **S. G. Davies**, G. L. Gravatt, I. M. Dordor-Hedgcock, M. Whittaker, *Tetrahedron*, **1988**, 44, 1637
116. Complementary Stereoselective Cyclisations of *N*-(3,4-Dimethoxy-benzyl)ephedrine and its Chromium Tricarbonyl Complex to *trans*- and *cis*-2,3-Dimethyl-4-phenyl-6,7-dimethoxy-1,2,3,4-tetrahydroisoquinolines Respectively.
S. J. Coote, **S. G. Davies**, *Chem. Commun.*, **1988**, 648
117. Tetrahydroisoquinolines. Part 4. Enantioselective Conversion of (+)-Amphetamine into (+)-(1*R*,3*S*,4*S*)- and (-)-(1*S*,3*S*,4*R*)-1,2,3,4-Tetramethyl-1,2,3,4-tetrahydroisoquinoline *via* Tricarbonyl(arene)chromium Methodology.
S. J. Coote, **S. G. Davies**, K. H. Sutton, *J. Chem. Soc., Perkin Trans. 1*, **1988**, 1481
118. Asymmetric Synthesis of Phenyl Alkyl Sulphoxides *via* the Non-destructive Mediation of the Chiral Iron Acyl $[(\eta^5\text{-C}_5\text{H}_5)\text{Fe}(\text{CO})(\text{PPh}_3)\text{COCH}_2\text{Me}]$.
S. G. Davies, G. L. Gravatt, *Chem. Commun.*, **1988**, 780
119. "Organometallics in Synthesis: I: The Transition Elements"
S. G. Davies, *SPR: General and Synthetic Methods*, **1988**, 10, 320

120. Preparation and Characterisation of Organotransition Metal Langmuir-Blodgett Films.
T. Richardson, G. G. Roberts, M. E. C. Polywka, **S. G. Davies**, *Thin Solid Films*, **1988**, 160, 231
121. A Conformational Analysis of Transition Metal η^1 -Acyl Complexes: Steric Interactions and Stereoelectronic Effects
B. K. Blackburn, **S. G. Davies**, K. Sutton, M. Whittaker, *Chem. Soc. Rev.*, **1988**, 17, 147
122. Asymmetric Synthesis via Chiral Transition Metal Auxiliaries.
S. G. Davies, G. Bashiardes, R. P. Beckett, S. J. Coote, Isabelle M. Dordor-Hedgecock, C. L. Goodfellow, G. L. Gravatt, J. P. McNally, M. Whittaker. *Phil. Trans. R. Soc. Lond. A*, **1988**, 326, 619.
123. "Organometallic Chemistry and Organic Synthesis", Ed.
S. G. Davies, M. L. H. Green, *The Royal Society, London*, **1988**.
124. "Organometallic Chemistry: The Transition Elements"
S. G. Davies, I. M. Dordor-Hedgecock, *Ann. Reports B*, **1987**, 211.
125. The Asymmetric Synthesis of (-)-Actinonin using the Iron Chiral Auxiliary $[(\eta^5\text{-C}_5\text{H}_5)\text{Fe}(\text{CO})(\text{PPh}_3)]$.
G. Bashiardes, **S. G. Davies**, *Tetrahedron Lett.*, **1988**, 29, 6509
126. The Asymmetric Synthesis of *cis*-substituted cyclopropanecarboxylic Acid Derivatives.
P. W. Ambler, **S. G. Davies**, *Tetrahedron Lett.*, **1988**, 29, 6979
127. The Asymmetric Synthesis of *trans*-substituted Cyclopropanecarboxylic Acid Derivatives.
P. W. Ambler, **S. G. Davies**, *Tetrahedron Lett.*, **1988**, 29, 6983
128. Chiral Recognition in the Reaction of the Enolate Derived from $[(\eta^5\text{-C}_5\text{H}_5)\text{Fe}(\text{CO})(\text{PPh}_3)\text{COCH}_2\text{OCH}_2\text{Ph}]$ with *cis*- and *trans*-2,3-Epoxybutane: The Stereoselective Synthesis of *cis*- and *trans*- $\beta\gamma$ -Disubstituted- γ -lactones.
S. G. Davies, D. Middlemiss, A. Naylor, M. Wills, *Tetrahedron Lett.*, **1989**, 30, 587
129. Asymmetric Synthesis of α -Substituted o-Methoxybenzyl Alcohols via Stereoselective Additions to Kinetically Resolved o-Anisaldehyde(tricarbonyl)chromium.
S. G. Davies, C. L. Goodfellow. *J. Chem. Soc., Perkin Trans. 1*, **1989**, 192
130. Synthesis of l-Substituted Derivatives of Codeine from l-Bromocodeine via Palladium Catalysed Coupling Reactions.
S. G. Davies, D. Pyatt, *Heterocycles*, **1989**, 28, 163
131. Asymmetric Synthesis - Meeting the Challenge.
S. G. Davies, J. M. Brown, G. W. J. Fleet, A. J. Pratt *Chem. in Brit.*, **1989**, 259
132. Chiral Auxiliaries.
S. G. Davies, *Chem. in Brit.*, **1989**, 268
133. Asymmetric Synthesis of Differentially Protected α -alkyl Succinates.
G. Bashiardes, S. P. Collingwood, **S. G. Davies**, S. C. Preston. *J. Organometal. Chem.*, **1989**, 364, C29.
134. Chiral Succinate Enolate Equivalents for the Asymmetric Synthesis of α -Alkyl Succinic Acid Derivatives.
G. Bashiardes, S. P. Collingwood, **S. G. Davies**, S. C. Preston, *J. Chem. Soc., Perkin Trans. 1*, **1989**, 1162.
135. Asymmetric Synthesis of N-Acetyl-1-Phenylethylamine.
S. G. Davies, R. F. Newton, J. M. J. Williams, *Tetrahedron Lett.*, **1989**, 30, 2967
136. Application of the Iron Acyl Complex $(R)\text{-}(-)\text{-}[(\eta^5\text{-C}_5\text{H}_5)\text{Fe}(\text{CO})(\text{PPh}_3)\text{COCH}_2\text{O}(\{1R,2S,5R\}\text{Menthyl})]$ as a Homochiral Formyl Anion Equivalent.
S. G. Davies, D. Middlemiss, A. Naylor, M. Wills, *Tetrahedron Lett.*, **1989**, 30, 2971
137. Asymmetric synthesis of *R*- α -methyl-o-methybenzyl methyl ether via the diastereoselective functionalisation of $(+)\text{-}(o\text{-methoxybenzyl methyl ether})\text{chromium tricarbonyl}$.
S. G. Davies, C. L. Goodfellow, *J. Organometal. Chem.*, **1989**, 370, C5
138. Enantiospecific Synthesis of $(+)\text{-}(R)\text{-}1\text{-Phenyl-3-methyl-1,2,4,5-Tetrahydrobenz[d]azepine}$ from $(+)\text{-}(S)\text{-}N\text{-Methyl-1-Phenyl Ethanolamine (Halostachine)}$ via Arene Chromium Tricarbonyl Methodology.
S. J. Coote, **S. G. Davies**, D. Middlemiss, A. Naylor, *Tetrahedron Lett.*, **1989**, 30, 3581

139. Preparation and Reactivity of η^6 -Pyridine Tricarbonyl Chromium Complexes.
S. G. Davies, M. R. Shipton, *Chem. Commun.*, **1989**, 995.
140. Conformational Analysis for the Ligands CH₂OR (R=Me, CH₂Ph, and Menthyl) and CH₂SR (R=Me, Et, CH₂Ph, and Ph) Attached to the Iron Chiral Auxiliary [(C₅H₅)Fe(CO)(PPh₃)].
B. K. Blackburn, L. Bromley, **S. G. Davies**, M. Whittaker, R. H. Jones, *J. Chem. Soc., Perkin Trans. 2*, **1989**, 1143.
141. Asymmetric Synthesis of α -Substituted Benzyl Alcohols *via* the Stereoselective Addition of Nucleophiles to Homochiral Tricarbonyl(η^6 -*o*-triisopropylsilylbenzaldehyde)chromium(0).
S. G. Davies, C. L. Goodfellow, *Synlett*, **1989**, 1, 59.
142. Conformational Analysis for Ligands Bound to the Chiral Auxiliary [(C₅H₅)Fe(CO)(PPh₃)].
S. G. Davies, B. K. Blackburn, M. Whittaker, "Stereochemistry of Organometallic and Inorganic Compounds", Ed. I. Bernal, Elsevier, Amsterdam, **1989**, 3, 141.
143. Stereoselective α -Methylation of *N*-Methyl Benzylamine *via* a Combination of Chromium Tricarbonyl and Chiral Formamidine Methodologies.
J. Albert, **S. G. Davies**, *Tetrahedron Lett.*, **1989**, 30, 5945.
144. Pyroelectric Organometallic Langmuir-Blodgett films.
R. Colbrook, B. Holcroft, G. G. Roberts, M. E. C. Polywka, **S. G. Davies**, *Ferroelectrics*, **1989**, 92, 381.
145. Chemical Asymmetric Synthesis.
J. M. Brown, **S. G. Davies**, *Nature*, **1989**, 342, 631.
146. Enantiospecific Synthesis of (+)-(*R*)-6,7-Dimethoxy-2-methyl-4-phenyl-1,2,3,4-tetrahydroisoquinoline from (+)-(*S*)-2-Methylamino-1-phenyl-ethanol (Halostachine)
S. J. Coote, **S. G. Davies**, D. Middlemiss, A. Naylor, *J. Chem. Soc., Perkin Trans. 1*, **1989**, 2223.
147. Tricarbonylchromium(0) Promoted Stereoselective Cyclisations of the *N*-3,4-Dimethoxyphenethyl Derivatives of the 1-Phenyl Ethanolamines Halostachine, Ephedrine and Pseudoephedrine to 1-Phenyl-*N*-Methyl-7,8-Dimethoxy-1,2,4,5-Tetrahydrobenzazepines.
S. J. Coote, **S. G. Davies**, D. Middlemiss, A. Naylor, *Tetrahedron: Asymmetry*, **1990**, 1, 33.
148. "Organometallic Chemistry: The Transition Elements"
S. G. Davies, I. M. Dordor-Hedgecock, *Ann. Reports B*, **1988**, 225.
149. Stereoselective synthesis of *cis*-1,3-disubstituted-1,3-dihydroisobenzofurans *via* arene chromium tricarbonyl methodology.
S. J. Coote, **S. G. Davies**, D. Middlemiss, A. Naylor, *J. Organometal. Chem.*, **1989**, 379, 81
150. Asymmetric Synthesis with Transition Metals
S. G. Davies, G. Bashiardes, S. J. Coote, C. L. Goodfellow, J. P. McNally, "New Aspects of Organic Chemistry" ed. Z. Yoshida, T. Shiba, Y. Ohshiro, V. C. H. Basel, **1990**, 1, 81
151. Asymmetric Synthesis of Alpha Substituted Benzyl Alcohols *via* the Stereoselective Addition of Nucleophiles to Homochiral Tricarbonyl(η^6 -*o*-trialkylsilylbenzaldehyde)chromium(0) Complexes
S. G. Davies, C. L. Goodfellow, *J. Chem. Soc., Perkin Trans. 1*, **1990**, 393
152. The Characterisation of Organoruthenium Complexes.
T. Richardson, G. G. Roberts, M. E. C. Polywka, **S. G. Davies**, *Thin Solid Films*, **1989**, 179, 405
153. Regioselective Nucleophilic Additions to Tricarbonyl(η^6 -arene)chromium(0) complexes: Electronic vs. Chelation Control.
J. Blagg, **S. G. Davies**, C. L. Goodfellow, K. H. Sutton, *J. Chem. Soc., Perkin Trans. 1*, **1990**, 1133
154. The Use of [Fe(CO)₃NO]⁻ for the Carbonylation of primary, secondary and allylic halides.
S. G. Davies, A. Ibbotson, A. J. Smallridge, *J. Organometal Chem.*, **1990**, 386, 195
155. Assignment of the Absolute Configuration to Winterstein's Acid, R-3-Dimethylamino-3-phenyl Propionic Acid, by the Asymmetric Synthesis of Homochiral (*S*)-(+)-Ethyl 3-Dimethylamino-3-phenyl Propionate.
S. G. Davies, J. Dupont, R. J. C. Easton, *Tetrahedron: Asymmetry*, **1990**, 1, 279

156. Chemistry of the Cyclopentadienyl Bisphosphine Ruthenium Auxiliary.
S. G. Davies, J. P. McNally, A. J. Smallridge, *Adv. in Organometal. Chem.*, **1990**, 30, 1
157. Synthesis of 6-substituted-3,4-dihydro-2H-1-benzopyran-2-ones (dihydrocoumarins) via palladium catalysed coupling reactions.
S. G. Davies, D. Pyatt, C. Thomson, *J. Organometal. Chem.*, **1990**, 387, 381
158. Chiral organometallic NADH mimics: Preparation of homochiral (*R*)-(-)-[(η^5 -C₅H₅)Fe(CO)(PPh₂O-(*l*)-menthyl)]-1-methyl-1,4-dihydronicotinoyl and asymmetric reduction of ethyl benzoylformate.
S. G. Davies, R. T. Skerlj, M. Whittaker, *Tetrahedron Lett.*, **1990**, 31, 3213
159. Chiral Recognition in the Reaction of the Enolate Derived from [(η^5 -C₅H₅)Fe(CO)(PPh₃)COCH₂OCH₂Ph] with 1-Phenylethyl Bromide.
S. G. Davies, D. Middlemiss, A. Naylor, M. Wills, *Chem. Commun.*, **1990**, 797
160. Asymmetric Synthesis of 2,4-disubstituted Butyrolactones Using the Iron Chiral Auxiliary [(η^5 -C₅H₅)Fe(CO)(PPh₃)]
S. G. Davies, R. Polywka, P. Warner, *Tetrahedron*, **1990**, 46, 4847
161. Chiral Recognition in the S_N2 Reaction of t-Butyl 2-Bromopropionate with the Enolate derived from [(η^5 -C₅H₅)Fe(CO)CPh₃]COCH₃
S. P. Collingwood, **S. G. Davies**, S. C. Preston, *Tetrahedron Lett.*, **1990**, 31, 4067
162. The Chiral Auxiliary [(C₅H₅)Fe(CO)(PPh₃)] For Asymmetric Synthesis
S. G. Davies, *Aldrichimica Acta*, **1990**, 23, 31
163. The Stereoselective reaction of sodium cyanide with the cationic ruthenium vinylidene complex [(η^5 -C₅H₅)-(PMe₃)₂Ru=C=C(Me)Ph]⁺.
S. G. Davies, A. J. Smallridge, *J. Organometal Chem.*, **1990**, 395, C39
164. Chiral Organometallic NADH mimics: Stereoselective reduction of ethyl benzoylformate utilising the homochiral auxiliary [(η^5 -C₅H₅)Fe(CO)(PPh₃)].
S. G. Davies, R. T. Skerlj, M. Whittaker, *Tetrahedron: Asymmetry*, **1990**, 1, 725
165. Chirality Recognition in Synthesis.
S. G. Davies in "Chirality in Drug Design and Synthesis": Ed. C. Brown, Academic Press, London, **1990**, 181
166. Chiral Recognition in the Michael Addition Reaction between Lithium *N*-3,4-Dimethoxybenzyl α -Methyl-benzylamide and the Chiral Iron Crotonoyl Complex [(C₅H₅)Fe(CO)(PPh₃)(COCH=CHMe)].
S. G. Davies, O. Ichihara, *Chem. Commun.*, **1990**, 1554
167. Conformational Analyses for Acetyl and Formyl Ligands Bound to Transition Metal Auxiliaries.
S. G. Davies, A. J. Smallridge, *J. Organometal Chem.*, **1990**, 397, C13
168. Pyroelectric Organo-ruthenium Langmuir-Blodgett Superlattices.
R. Colbrook, T. Richardson, M. W. Poulter, G. G. Roberts, M. E. C. Polywka, **S. G. Davies**, *Materials Science and Engineering*, **1990**, B7, 189
169. Tricarbonylchromium(0) Promoted Stereoselective Transformations of Ephedrine and Pseudoephedrine Derivatives
S. J. Coote, **S. G. Davies**, C. L. Goodfellow, K. H. Sutton, D. Middlemiss, A. Naylor, *Tetrahedron: Asymmetry*, **1990**, 1, 817.
170. Chiral Organometallic NADH Mimics: Stereoselective Reduction of Ethyl Benzoylformate utilising the homochiral auxiliary [(η^5 -C₅H₅)Fe(CO)(PPh₃)] at C-3 and a chiral β -hydroxy-carboxamide derived from valinol at C-5.
V. A. Burgess, **S. G. Davies**, R. T. Skerlj, *Chem. Commun.*, **1990**, 1759
171. Pyridine Chromium Tricarbonyl Complexes: Completely Stereoselective α,α -Dialkylation of 2-Methylpyridine Tricarbonylchromium
S. G. Davies, M. R. Shipton, *Chem. Commun.*, **1990**, 1780
172. Stereocontrolled synthesis of *N*-methyl-1,2,3,4-tetrahydroisoquinoline derivatives via chromium tricarbonyl methodologies,
S. G. Davies, *J. Organometal Chem.*, **1990**, 400, 223

173. Pyridine Chromium Tricarbonyl Complexes: Completely Stereoselective Aldol-Type Reactions Between 2-Ethylpyridine Chromium Tricarbonyl and Non-Enolisable Aldehydes,
S. G. Davies, M. R. Shipton, *Synlett*, **1991**, 25
174. The Preparation of novel ruthenium complexes for use in Langmuir-Blodgett films.
S. G. Davies, A. J. Smallridge, R. Colbrook, T. Richardson, G. G. Roberts *J. Organometal Chem.*, **1991**, 401, 181.
175. Stereoselective Synthesis of Homochiral Alpha Substituted *o*-Methoxybenzyl Alcohols *via* Nucleophilic Additions to Kinetically Resolved Homochiral Tricarbonyl (η^6 -*o*-anisaldehyde)chromium(0).
L. A. Bromley, **S. G. Davies**, C. L. Goodfellow, *Tetrahedron: Asymmetry*, **1991**, 2, 139
176. Self Recognition by the iron chiral auxiliary [$(\eta^5$ -C₅H₅)Fe(CO)(PPh₃)] in the formation of (*RR*,*SS*)-[$(\eta^5$ -C₅H₅)Fe(CO)(PPh₃)COCH₂]₂CH₂.
G. J. Bodwell, **S. G. Davies**, S. C. Preston, *J. Organometal. Chem.*, **1991**, 402, C56
177. Preparation of Tricarbonyl(η^6 -pyridine)chromium(0) Complexes.
S. G. Davies, M. R. Shipton, *J. Chem. Soc., Perkin Trans. 1*, **1991**, 501
178. Asymmetric Synthesis of (*R*)- β -Amino Butanoic Acid and (*S*)- β -Tyrosine: Homochiral Lithium Amide Equivalents for Michael Additions to α,β -Unsaturated Esters
S. G. Davies, O. Ichihara, *Tetrahedron: Asymmetry*, **1991**, 2, 183
179. Tricarbonyl(pyridine)chromium Complexes: Conversion into Tricarbonyl(dihydropyridine)chromium Complexes *via* Regio- and Stereo-selective Nucleophilic Addition Reactions.
S. G. Davies, M. R. Shipton, *J. Chem Soc., Perkin Trans. 1*, **1991**, 757
180. Conformational Analysis and Dynamics of the Triphenylphosphine Ligand in [$(\eta^5$ -C₅H₅)Fe(CO)(PPh₃)COCH₃]
S. G. Davies, A. E. Derome, J. P. McNally, *J. Am. Chem. Soc.*, **1991**, 113, 2854
181. Tricarbonylpyridinechromium Complexes: Stereoselective Alkylations and Aldol type Reactions involving α -Carbanions Derived from η -Tricarbonyl(2-alkylpyridine)chromium Complexes.
S. G. Davies, A. J. Edwards, M. R. Shipton, *J. Chem. Soc., Perkin Trans. 1*, **1991**, 1009
182. Stereoselective and Regioselective Functionalisation of Protopine Alkaloids: The Synthesis of 1-Substituted *O*-Methyldihydrocryptopines
S. G. Davies, C. L. Goodfellow, J. M. Peach, A. Waller, *J. Chem. Soc., Perkin Trans. 1*, **1991**, 1019
183. Chiral Organometallic NADH Mimics: Preparation and X-ray Crystal Structure of Racemic (*RS*)-[Fe(η^5 -C₅H₅)(CO)(PPh₃)(1-methyl-1,4-dihydronicotinoyl)] and Homochiral (*R*)-(-)-[Fe(η^5 -C₅H₅)(CO){PPh₂(*O*-[(*-*)-menthyl $\dagger$])}(1-methyl-1,4-dihydronicotinoyl)] and Asymmetric Redution of Ethyl Benzoylformate.
S. G. Davies, A. J. Edwards, R. T. Skerlj, K. H. Sutton, M. Whittaker, *J. Chem. Soc., Perkin Trans. 1*, **1991**, 1027
184. Metallacyclobutanes from Nucleophilic Attack on π -Allyl-Metal Complexes.
S. G. Davies in *Inorganic Reactions and Methods*. Eds. J. J. Zuckerman and A. P. Hagan, VCH Publishers Inc., **1991**, 12a, 132
185. NADH Mimics for the Stereoselective Reduction of Benzoylformates to the Corresponding Mandelates
V. A. Burgess, **S. G. Davies**, R. T. Skerlj, *Tetrahedron: Asymmetry*, **1991**, 2, 299
186. Kinetic Resolution Strategies I: Enhanced Product Enantiomeric Excesses and Yields in Sharpless Epoxidations
S. M. Brown, **S. G. Davies**, J. A. A. de Sousa, *Tetrahedron: Asymmetry*, **1991**, 2, 511
187. Synthetic Applications of Chromium Tricarbonyl Stabilised Benzylic Carbanions.
S. J. Coote, **S. G. Davies**, C. L. Goodfellow, *Advances in Metal-Organic Chemistry*, **1991**, 2, 1-57. Ed. L. S. Liebeskind, JAI Press, London.
188. Organometallic Langmuir-Blodgett Multilayers: Pyroelectric and Dielectric Properties.
M. W. Pouler, T. Richardson, G. G. Roberts, A. Smallridge, **S. G. Davies**, *Proc. Int. Symp. on Applied Ferroelectrics*, IEEE Proc., (CH2 800-1), **1990**, 90, 395.

189. The Stereoselective Nucleophilic Addition of Cyanide to the Cationic Ruthenium Complexes $[(\eta^5\text{-C}_5\text{H}_5)\text{-L}_2\text{Ru}=\text{C}=\text{C}(\text{Me})\text{Ph}]^+$ ($\text{L}_2 = (\text{PMe}_3)_2$ or $(\text{PPh}_2\text{CH}_2)_2$)
S. G. Davies, A. J. Smalridge, *J. Organometal Chem.*, **1991**, 413, 313
190. Bifunctional Chiral Auxiliaries 1: The Aldol Reaction between Dialkylboron Enolates of 1,3-Dipropionyl-*trans*-4,5-tetramethyleneimidazolidin-2-one and Aldehydes.
S. G. Davies, A. A. Mortlock, *Tetrahedron Lett.*, **1991**, 32, 4787
191. Bifunctional Chiral Auxiliaries 2: The Synthesis of 1,3-Diacylimidazolidin-2-ones from 1,2-Diamines.
S. G. Davies, A. A. Mortlock, *Tetrahedron Lett.*, **1991**, 32, 4791
192. Towards the Optimisation of Pyroelectric Organo-Metallic Superlattices.
R. Colbrook, R. Richardson, G. G. Roberts, A. Smalridge, **S. G. Davies**, *Ferroelectrics*, **1991**, 118, 209
193. Stereoselective Alkylations of Enolates Derived from Ligands Attached to the Indenyl Iron Chiral Auxiliary $[(\eta^5\text{-C}_9\text{H}_7)\text{Fe}(\text{CO})(\text{PPh}_3)]$: X-ray Crystal Structure and Conformational Analysis of $[(\eta^5\text{-C}_9\text{H}_7)\text{Fe}(\text{CO})(\text{PPh}_3)\text{COCH}_3]$
S. G. Davies, K. S. Holland, K. H. Sutton, J. P. McNally, *Israel J. Chem.*, **1991**, 31, 25
194. Bifunctional Chiral Auxiliaries 3: Synthesis of Homochiral 1,3-Diols *via* Asymmetric Aldol Reactions of Dialkylboron Enolates of 1,3-Dipropionyl-*trans*-4,5-diphenylimidazolidin-2-one and Aldehydes.
S. G. Davies, A. A. Mortlock, *Tetrahedron: Asymmetry*, **1991**, 2, 1001
195. Asymmetric Syntheses of Ethyl (S)-(+)-2-Methylhept-4-ynoate Using Both Enantiomers of the Chiral Iron Auxiliary $[(\eta^5\text{-C}_5\text{H}_5)\text{Fe}(\text{CO})(\text{PPh}_3)]$.
G. J. Bodwell, **S. G. Davies**, *Tetrahedron: Asymmetry*, **1991**, 2, 1075
196. Asymmetric Synthesis of Homochiral β -Lactones *via* the Iron Chiral Auxiliary $[(\eta^5\text{-C}_5\text{H}_5)\text{Fe}(\text{CO})(\text{PPh}_3)]$.
S. C. Case-Green, **S. G. Davies**, C. J. R. Hedgecock, *Synlett*, **1991**, 779
197. Asymmetric Synthesis of (-)-Tetrahydrolipstatin.
S. C. Case-Green, **S. G. Davies**, C. J. R. Hedgecock, *Synlett*, **1991**, 781
198. Asymmetric Synthesis of 2-Aryl Tetrahydropyrans *via* Arene Chromium Tricarbonyl Methodology 1: *cis*-2-aryl-4-Chloro-Tetrahydropyrans
S. G. Davies, T. J. Donohoe, M. A. Lister, *Tetrahedron: Asymmetry*, **1991**, 2, 1085
199. Asymmetric Synthesis of 2-Aryltetrahydropyrans *via* Arene Chromium Tricarbonyl Methodology 2: 2-Aryl-3-Ethyl-4-Chloro-Tetrahydropyrans.
S. G. Davies, T. J. Donohoe, M. A. Lister, *Tetrahedron: Asymmetry*, **1991**, 2, 1089
200. A Study of the Aldol Reaction between Enolates derived from the Iron Acetyl Complex $[(\eta^5\text{-C}_5\text{H}_5)\text{Fe}(\text{CO})(\text{PPh}_3)\text{COCH}_3]$ and 2,3-O-Isopropylidene-D-glyceraldehyde
G. J. Bodwell, **S. G. Davies**, A. A. Mortlock, *Tetrahedron*, **1991**, 47, 10077
201. Stoichiometric Chiral Auxiliaries - Potential for Large Scale Synthesis.
M. E. C. Polywka, **S. G. Davies**, *Pharm. Manuf. Rev.*, **1991**, 3, 13
202. Asymmetric Synthesis of (1*R*,8*S*)- and (1*S*,8*S*)-1-hydroxypyrrolizidin-3-ones *via* the aldol reaction between N-Boc-(*S*)-prolinal and chiral acetate enolate equivalents derived from (*S*)- and (*R*)- $[(\eta^5\text{-C}_5\text{H}_5)\text{Fe}(\text{CO})(\text{PPh}_3)\text{COCH}_3]$.
R. P. Beckett, **S. G. Davies**, A. A. Mortlock, *Tetrahedron: Asymmetry*, **1992**, 3, 123
203. Bifunctional Chiral Auxiliaries 4: Alkylation of Enolates Derived from 1,3-Diacyl-*trans*-4,5-tetramethyleneimidazolidin-2-one.
S. G. Davies, A. A. Mortlock, *Tetrahedron Lett.*, **1992**, 33, 1117
204. Stereoselective manipulation of acetals derived from *o*-substituted benzaldehyde chromium tricarbonyl complexes.
S. G. Davies, T. J. Donohoe, J. M. J. Williams, *Pure and Applied Chem.*, **1992**, 64, 379
205. Asymmetric Synthesis *via* Homochiral *o*-Anisaldehyde Chromium Tricarbonyl.
S. G. Davies, T. J. Donohoe, in "Selective Reactions of Metal-Activated Molecules". Eds: H. Werner, A. G. Griesbeck, W. Adam, G. Bringmann and W. Kiefer, Vieweg, Braunschweig, **1992**, 9.

206. Pyroelectric organo-ruthenium Langmuir-Blodgett films.
M. W. Poulter, G. G. Roberts, J. F. Costello, **S. G. Davies**, A. J. Edwards, *Thin Solid Films*, **1992**, 210/211, 427
207. Chiral organometallic NADH mimics: Highly stereoselective reductions of ethyl benzoylformate with a 1,4-dihydronicotinoyl fragment attached to the homochiral auxiliary $[(\eta^5\text{-C}_5\text{H}_5)\text{Fe}(\text{CO})(\text{PPh}_3)]$ and possessing a homochiral β -hydroxy-carboxamide at C-5.
V. A. Burgess, **S. G. Davies**, R. T. Skerlj, M. Whittaker, *Tetrahedron: Asymmetry*, **1992**, 3, 871
208. Asymmetric Synthesis of (*R*)-(+)- α -Methyl-*o*-methoxybenzyl Methyl Ether via the Stereoselective Benzylic Elaboration of Tricarbonyl (η^6 -*o*-methoxybenzyl methyl ether)chromium(0).
S. G. Davies, C. L. Goodfellow, K. H. Sutton, *Tetrahedron: Asymmetry*, **1992**, 3, 1303
209. Organometallic Photoelectrochemistry: The Photo-Oxidation of an (Arene)Chromium Tricarbonyl System.
R. G. Compton, R. Barghout, J. C. Eklund, A. C. Fisher, **S. G. Davies**, M. R. Metzler, *J. Chem. Soc., Perkin Trans. 2.*, **1993**, 39
210. Asymmetric Synthesis of (-)-Actinonin and (-)-*epi*-Actinonin.
G. Bashiardes, G. J. Bodwell, **S. G. Davies**, *J. Chem. Soc., Perkin Trans. 1*, **1993**, 459
211. Photolabilisation of the Triphenylphosphine Ligand in the Aminocarbene Complex $[(\eta^5\text{-C}_5\text{H}_5)\text{Fe}(\text{CO})(\text{PPh}_3)=\text{C}(\text{NHCH}_2\text{Ph})\text{CH}_3]^+\text{BF}_4^-$.
S. G. Davies, M. R. Metzler, K. Yanada, R. Yanada, *Chem. Commun.*, **1993**, 658
212. Arene Chromium Tricarbonyl Stabilised Benzylic Carbocations.
S. G. Davies, T. J. Donohoe, *Synlett*, **1993**, 323
213. Advanced Technologies for Asymmetric Synthesis.
S. G. Davies, M. E. C. Polywka. *Pharm. Manuf. Int.*, **1993**, 133
214. Kinetic Resolution Strategies II: Enhanced Enantiomeric Excesses and Yields for the Faster Reacting Enantiomer in Lipase Medicated Kinetic Resolutions.
S. M. Brown, **S. G. Davies**, J. A. A. de Sousa, *Tetrahedron: Asymmetry*, **1993**, 4, 813
215. Asymmetric Synthesis with Stoichiometric Chiral Auxiliaries.
M. E. C. Polywka, **S. G. Davies**, *Pharm. Tech. Int.*, **1993**, 5, 28
216. Bifunctional Chiral Auxiliaries 5: The Synthesis of 1,3-Diacylimidazolidine-2-thiones and 1,3-Diacylimidazolidin-2-ones from 1,2-Diamines.
S. G. Davies, A. A. Mortlock, *Tetrahedron*, **1993**, 49, 4419
217. Stereoselective Formation of 4-Substituted-1,4-Dihydronicotinoyl Complexes Utilizing the Chiral Auxiliary $[(\eta^5\text{-C}_5\text{H}_5)\text{Fe}(\text{CO})(\text{PPh}_3)]$.
R. P. Beckett, V. A. Burgess, **S. G. Davies**, M. Whittaker, *Tetrahedron Lett.*, **1993**, 34, 3617
218. Photolabilisation of Phosphine Ligands Bound to Iron: Photofragmentation Voltammetry Analysis,
S. G. Davies, M. R. Metzler, C. Watkins, R. G. Compton, J. Booth, J. C. Eklund, *J. Chem Soc., Perkin Trans. 2*, **1993**, 1005
219. Asymmetric Synthesis of (*S*)-(-)-Methyl Tropinate: Application of the Iron Acyl Complex (*S*)-(+)- $[(\eta^5\text{-C}_5\text{H}_5)\text{Fe}(\text{CO})(\text{PPh}_3)\text{COCH}_2\text{Ph}]$ as a Homochiral Phenylacetate Enolate Equivalent.
T. M. Baker, G. J. Bodwell, **S. G. Davies**, A. J. Edwards, M. R. Metzler, *Tetrahedron*, **1993**, 49, 5635
220. Resolution of the Chiral Iron Acetyl Complex $[(\text{C}_5\text{H}_5)\text{Fe}(\text{CO})(\text{PPh}_3)\text{COCH}_3]$
R. W. Baker, **S. G. Davies**, *Tetrahedron: Asymmetry*, **1993**, 4, 1479
221. An Expeditious Asymmetric Synthesis of (-)-(1*R*,2*S*)-Cispentacin.
S. G. Davies, O. Ichihara, I. A. S. Walters, *Synlett*, **1993**, 461
222. Asymmetric Syntheses of β -Phenylalanine, α -Methyl- β -phenylalanines and Derivatives.
S. G. Davies, N. M. Garrido, O. Ichihara, I. A. S. Walters, *Chem. Commun.*, **1993**, 1153

223. Asymmetric Synthesis of Homochiral *syn* and *anti*-3-Phenylisoserine Derivatives: A Practical Strategy for the synthesis of the Taxol C-13 Side Chain.
M. E. Bunnage, **S. G. Davies**, C. J. Goodwin, *J. Chem. Soc., Perkin Trans. 1*, **1993**, 1375
224. Stereoselective Synthesis of (3*R*,4*S*)-Statine Utilising the Iron Acetyl Complex $[(\eta^5\text{-C}_5\text{H}_5)\text{Fe}(\text{CO})(\text{PPh}_3)\text{COMe}]$ as a Chiral Acetate Enolate Equivalent.
J. W. B. Cooke, **S. G. Davies**, A. Naylor, *Tetrahedron*, **1993**, 49, 7955
225. Photofragmentation Voltammetry Studies of the Aminocarbene Complexes $[(\eta^5\text{-C}_5\text{H}_5)\text{Fe}(\text{CO})(\text{L})\text{-}\{\text{C}(\text{NHR}^1)(\text{R}^2)\}]\text{BF}_4$ [L = PPh₃, P(*p*Tol)₃; R¹ = Me, CH₂Ph; R² = Me, Bu].
S. G. Davies, M. R. Metzler, W. C. Watkins, R. G. Compton, J. Booth, J. C. Eklund, *J. Chem. Soc., Perkin Trans. 2*, **1993**, 1603
226. Asymmetric Synthesis of Allophenylnorstatine.
M. E. Bunnage, **S. G. Davies**, C. J. Goodwin, *Synlett*, **1993**, 731
227. Kinetic Resolution of the Chiral Iron Acetyl $[(\text{Fe}(\eta^5\text{-C}_5\text{H}_5)(\text{CO})(\text{PPh}_3)\text{COMe}]$
S. C. Case-Green, J. F. Costello, **S. G. Davies**, N. Heaton, C. J. R. Hedgecock, J. C. Prime, *Chem. Commun.*, **1993**, 1621
228. Synthesis and Reactivity of the Pentamethylcyclopentadienyl Iron Acetyl Complex $[(\eta^5\text{-C}_5\text{Me}_5)\text{Fe}(\text{CO})(\text{PPh}_3)\text{COMe}]$.
J. -P. Barras, **S. G. Davies**, M. R. Metzler, A. J. Edwards, V. M. Humphries, K. Prout, *J. Organometal. Chem.*, **1993**, 461, 157
229. Base induced C-5 Epimerisation of 4-Methyl-5-phenyl Oxazolidinones: Chiral Auxiliaries Derived from Norephedrine and Norpseudoephedrine
S. G. Davies, G. J. -M. Doisneau, *Tetrahedron: Asymmetry*, **1993**, 4, 2513
230. Photoelectrochemistry of some Organochromium Carbonyl Compounds
R. G. Compton, R. Barghout, J. C. Eklund, A. C. Fisher, **S. G. Davies**, M. R. Metzler, A. M. Bond, R. Colton, J. N. Walker, *J. Chem. Soc., Dalton*, **1993**, 3641
231. Asymmetric Michael Additions of Homochiral Magnesium Amides
M. E. Bunnage, **S. G. Davies**, C. J. Goodwin, I. A. S. Walters, *Tetrahedron: Asymmetry*, **1994**, 5, 35
232. A Succinct Asymmetric Synthesis of (2*S*,3*R*)-2-Methyl-3-aminopentanoic Acid Hydrochloride.
S. G. Davies, O. Ichihara, I. A. S. Walters, *Synlett*, **1994**, 117
233. Asymmetric Synthesis of (2*S*,3*R*)-3-Amino-2-Hydroxydecanoic Acid: The Unknown Amino Acid Component of Microgenin.
M. E. Bunnage, A. J. Burke, **S. G. Davies**, C. J. Goodwin, *Tetrahedron: Asymmetry*, **1994**, 5, 203
234. Contrasting Ligand Photolabilisations in the Acetyl Complexes $[(\eta^5\text{-C}_5\text{R}_5)\text{Fe}(\text{CO})(\text{PPh}_3)\text{COMe}]$ (R=H, Me).
S. G. Davies, W. C. Watkins, *Chem. Commun.*, **1994**, 491
235. Synthesis of 5-substituted-3,3-Dimethyl-2-Pyrrolidinones: "Quat" Chiral Auxiliaries.
S. G. Davies, G. J. -M. Doisneau, J. C. Prodger, H. J. Sanganee, *Tetrahedron Lett.*, **1994**, 35, 2369
236. Asymmetric Aldol and Alkylation Reactions Mediated by the "Quat" Chiral Auxiliary (*R*)-(-)-5-Methyl-3,3-Dimethyl-2-Pyrrolidinone.
S. G. Davies, G. J. -M. Doisneau, J. C. Prodger, H. J. Sanganee, *Tetrahedron Lett.*, **1994**, 35, 2373
237. An Expeditious Asymmetric Synthesis of Allophenylnorstatine.
M. E. Bunnage, **S. G. Davies**, C. J. Goodwin, O. Ichihara, *Tetrahedron*, **1994**, 50, 3975
238. Bifunctional Chiral Auxiliaries 6: Alkylations of Enolates Derived from 1,3-Diacylimidazolidine-2-thiones and 1,3-Diacylimidazolidin-2-ones.
S. G. Davies, G. B. Evans, A. A. Mortlock, *Tetrahedron: Asymmetry*, **1994**, 5, 585
239. Kinetic Resolution of the Chiral Iron Acetyl Complexes $[\text{Fe}(\text{CO})(\eta^5\text{C}_5\text{H}_5)(\text{L})\text{COCH}_3]$ [L=PPh₃, P(*p*-tolyl)₃] *via* Aldol Reactions with Camphor.
S. C. Case-Green, J. F. Costello, **S. G. Davies**, N. Heaton, C. J. R. Hedgecock, V. M. Humphries, M. R. Metzler and J. C. Prime, *J. Chem. Soc., Perkin Trans. 1*, **1994**, 933

240. Asymmetric Synthesis of anti- α -Alkyl- β -amino Acids.
S. G. Davies, I. A. S. Walters, *J. Chem. Soc., Perkin Trans. 1*, **1994**, 1129
241. Asymmetric Synthesis of syn- α -Alkyl- β -amino Acids.
S. G. Davies, O. Ichihara, I. A. S. Walters, *J. Chem. Soc., Perkin Trans. 1*, **1994**, 1141
242. Bifunctional Chiral Auxiliaries 7: Aldol Reactions of Enolates Derived from 1,3-Diacylimidazolidine-2-thiones and 1,3-Diacylimidazolidin-2-ones.
S. G. Davies, A. J. Edwards, G. B. Evans, A. A. Mortlock, *Tetrahedron*, **1994**, 50, 6621
243. Asymmetric Synthesis of (-)-(1*R*,2*S*)-Cispentacin and Related *cis*- and *trans*-2-Amino Cyclopentane- and its Cyclohexane-1-carboxylic Acid.
S. G. Davies, O. Ichihara, I. Lenoir, I. A. S. Walters, *J. Chem. Soc., Perkin Trans. 1*, **1994**, 1411
244. Bifunctional Chiral Auxiliaries 8: Utilisation of Tartaric Acid Derived Auxiliaries in Aldol and Alkylation Reactions.
S. G. Davies, G. B. Evans, S. Pearce, *Tetrahedron*, **1994**, 50, 7521
245. A Novel One-pot Synthesis of Homochiral (*R*)-(-) and (*S*)-(+)-Fe(CO)(η^5 -C₅H₅)(PPh₃)COCH₃.
S. J. Cook, J. F. Costello, **S. G. Davies**, H. T. Kruk, *J. Chem. Soc., Perkin Trans. 1*, **1994**, 2369
246. Asymmetric Synthesis of β -Amino- α -Hydroxy Acids via Diastereoselective Hydroxylation of Homochiral β -Amino Enolates.
M. E. Bunnage, A. N. Chernega, **S. G. Davies**, C. J. Goodwin, *J. Chem. Soc., Perkin Trans. 1*, **1994**, 2373
247. Asymmetric Synthesis of the Taxol and Taxotère C-13 Side Chains.
M. E. Bunnage, **S. G. Davies**, C. J. Goodwin, *J. Chem. Soc., Perkin Trans. 1*, **1994**, 2385
248. Origins of the High Stereoselectivity in the Conjugate Addition of Lithium (α -methylbenzyl) benzylamide to *t*-butyl Cinnamate.
J. F. Costello, **S. G. Davies**, O. Ichihara, *Tetrahedron: Asymmetry*, **1994**, 5, 1999
249. Opening of Carbohydrate 5,6-Epoxydes with Chiral Acetate and Propionate Enolate Equivalents Attached to the Iron Chiral Auxiliary [(C₅H₅)Fe(CO)(PPh₃)].
S. G. Davies, H. M. Kellie, R. Polywka, *Tetrahedron: Asymmetry*, **1994**, 5, 2563
250. How to sugar the pill
J. M. Brown, **S. G. Davies**, *Nature*, **1994**, 370, 418
251. Asymmetric Synthesis of the *N*-terminal component of Microginin: (2*S*,3*R*)-3-Amino-2-Hydroxydecanoic Acid, (2*R*,3*R*)-Epimer and (3*R*)-3-Aminodecanoic Acid.
M. E. Bunnage, A. J. Burke, **S. G. Davies**, C. J. Goodwin, *Tetrahedron: Asymmetry*, **1995**, 6, 165
252. α -Stereoselective Tandem Additions to (*ortho*-Methoxystyrene)Chromium Tricarbonyl
S. G. Davies, O. M. L. R. Furtado, D. Hepworth, T. Loveridge, *Synlett*, **1995**, 69
253. Asymmetric Synthesis of the Enantiomers of the Diarylcarbinol (1*R*)- and (1*S*)-1-(1-Hydroxyphenylmethyl)-2-hydroxybenzene.
S. G. Davies, W. E. Hume, *Chem. Commun.*, **1995**, 251
254. Enantiospecific Conversion of (*S*)-Alanine to (*R*)- α -Methyl Phenylalanine.
F. Alonso, **S. G. Davies**, *Tetrahedron: Asymmetry*, **1995**, 6, 353
255. 4-Substituted-5,5-Dimethyl Oxazolidin-3-ones as Effective Chiral Auxiliaries for Enolate Alkylations and Michael Additions
S. G. Davies, H. J. Sanganee, *Tetrahedron: Asymmetry*, **1995**, 6, 671
256. Smiles Rearrangements Promoted by Complexation to Chromium Tricarbonyl
S. G. Davies, W. E. Hume, *Tetrahedron Lett.*, **1995**, 36, 2673
257. A Stereocontrolled Approach to 1 β -Methylcarbapenem
S. G. Davies, C. J. R. Hedgcock, J. M. McKenna, *Tetrahedron: Asymmetry*, **1995**, 6, 827

258. Regioselective *ortho* Substitution of Diphenyl Sulfoxide Chromium Tricarbonyl: Complementary Stereoselectivities for the Mono- and Di-anions.
S. G. Davies, T. Loveridge, J. M. Clough, *Chem. Commun.*, **1995**, 817
259. Voltammetry Under High Mass Transport Conditions: A High Speed Channel Electrode for the Study of Ultra-fast kinetics.
N. V. Rees, R. A. W. Dryfe, J. A. Cooper, B. A. Coles, R. G. Compton, **S. G. Davies**, T. McCarthy, *J. Phys. Chem.*, **1995**, 99, 7096
260. Asymmetric Synthesis of anti- α -Alkyl- β -Amino Carboxamides.
S. G. Davies, Alison J. Edwards, I. A. S. Walters, *Recl. Trav. Chim. Pays-Bas*, **1995**, 114, 175
261. Lithium (α -Methylbenzyl)allylamide: A Differentially Protected Chiral Ammonia Equivalent for the Asymmetric Synthesis of β -Amino Acids and β -Lactams.
S. G. Davies, D. R. Fenwick, *Chem. Commun.*, **1995**, 1109
262. An Asymmetric Synthesis of *N*-Protected β -Amino Aldehydes and β -Amino Ketones.
S. G. Davies, T. D. McCarthy, *Synlett*, **1995**, 700
263. A Formal Total Asymmetric Synthesis of (+)-Thienamycin
S. G. Davies, C. J. R. Hedgecock, J. M. McKenna, *Tetrahedron: Asymmetry*, **1995**, 6, 2507
264. Transition Metal Arene Complexes: Side-chain Activation and Control of Stereochemistry
S. G. Davies, T. D. McCarthy, *Comprehensive Organometallic Chemistry II*, Pergamon Press, Oxford, **1995**, 12, 1039
265. Asymmetric Synthesis of (*R*)-Hexane-1,5-diol and (*R*)-Hex-3-ene-1,5-diol via a Tandem Asymmetric Conjugate Addition/Stereospecific Meisenheimer Rearrangement Protocol.
S. G. Davies, G. D. Smyth, *Tetrahedron: Asymmetry*, **1996**, 7, 1001
266. Asymmetric Synthesis of (*R*)-Sulcatol
S. G. Davies, G. D. Smyth., *Tetrahedron: Asymmetry*, **1996**, 7, 1005
267. Asymmetric Synthesis of Methyl α -L-Daunosaminide Hydrochloride.
S. G. Davies, G. D. Smyth., *Tetrahedron: Asymmetry*, **1996**, 7, 1273
268. A Formal Synthesis of (-)-Pumiliotoxin C.
S. G. Davies, G. Bhalay, *Tetrahedron: Asymmetry*, **1996**, 7, 1595
269. Asymmetric Synthesis of (+)-Negamycin
S. G. Davies, O. Ichihara, *Tetrahedron: Asymmetry*, **1996**, 7, 1919
270. Asymmetric Synthesis of Moiramide B
D. J. Dixon, **S. G. Davies**, *Chem. Commun.*, **1996**, 1797
271. Asymmetric Synthesis of benzaldehyde- and o-Anisaldehyde-methyl isopropyl acetals.
S. G. Davies, L. M. A. R. B. Correia, *Chem. Commun.*, **1996**, 1803
272. Asymmetric Synthesis of (2*S*,3*S*)- and (2*R*,3*S*)-2,3-Diaminobutanoic Acids, Non-Protein Amino-Acid Diastereomers Found in a Number of Peptide Antibiotics.
A. J. Burke, **S. G. Davies**, C. J. R. Hedgecock, *Synlett*, **1996**, 621
273. Voltammetry under high mass transport conditions. The application of the high speed channel electrode to the reduction of pentafluoronitrobenzene
B. A. Coles, R. A. W. Dryfe, N. V. Rees, R. G. Compton, **S. G. Davies**, T. D. McCarthy, *J. Electroanalytical Chem.*, **1996**, 411, 121
274. Asymmetric Synthesis of (*R*)-Hexane-1,5-diol, (*R*)-Hex-3-ene-1,5-diol and (*R*)-6-Methylhept-5-en-2-ol (Sulcatol) Employing a Tandem Asymmetric Conjugate Addition and Stereospecific Meisenheimer Rearrangement Protocol.
S. G. Davies, G. D. Smyth, *J. Chem. Soc., Perkin Trans. 1*, **1996**, 2467

275. Application of the Chiral Auxiliary $[(\eta^5\text{-C}_5\text{H}_5)\text{Fe}(\text{CO})(\text{PPh}_3)]$ to the Stereoselective Formation of 4-Substituted-1,4-dihydronicotinoyl complexes.
R. P. Beckett, V. A. Burgess, **S. G. Davies**, G. Y. Krippner, K. H. Sutton, M. Whittaker, *Inorg. Chim. Acta*, 1996, 251, 265
276. Structure of Organoruthenium-Derived Langmuir Monolayers at the Air-Water Interface: A Molecular Modelling Approach
J. F. Costello, **S. G. Davies**, R. M. Highcock, M. E. C. Polywka, M. W. Poulter, T. Richardson, G. G. Roberts, *J. Chem. Soc., Dalton*, **1997**, 105
277. Asymmetric Synthesis of β -Amino Acids via the Michael Addition of Chiral Metal Amides
S. G. Davies, O. Ichihara, *Yuki Gosei Kagaku Kyokaishi (J. Synth. Org. Chem. Jpn.)*, **1997**, 55, 26
278. Stereoselective Methodology for 1-Aryl-1-alkyl Epoxides via Chromium Tricarbonyl Complexes
S. G. Davies, T. Loveridge, J. M. Clough, *Synlett*, **1997**, 66
279. Use of Lithium (α -methylbenzyl)allylamide for a Formal Asymmetric Synthesis of Thienamycin.
S. G. Davies, D. R. Fenwick, *Chem. Commun.*, **1997**, 565
280. Ultrasound-assisted Electrochemical Reduction of Emulsions in Aqueous Media.
F. Marken, R. G. Compton, S. D. Bull, **S. G. Davies**, *Chem. Commun.*, **1997**, 995
281. Homogeneous and heterogeneous catalytic redox processes: solution and solid state voltammetry of lead complexes at carbon electrodes.
W. F. Leslie, R. G. Compton, M. G. Maloney, E. Sanders, **S. G. Davies**, S. D. Bull, *J. Electroanalytical Chem.*, **1997**, 424, 25
282. Asymmetric Synthesis of (*R*)- and (*S*)-methyl (2-methoxycarbonylcyclopent-2-enyl)acetate and (*R*)- and (*S*)-2-(2-hydroxymethyl-cyclopent-2-enyl)ethanol.
J. G. Urones, N. M. Garrido, D. Diez, S. H. Dominguez, **S. G. Davies**, *Tetrahedron: Asymmetry*, **1997**, 8, 2683
283. Electrolysis in the presence of ultrasound: cell geometries for the application of extreme rates of mass transfer in electrosynthesis.
F. Marken, R. G. Compton, **S. G. Davies**, S. D. Bull, T. Thiemann, M. L. Sa e Melo, A. C. Neves, J. Castillo, C. G. Jung, A. Fontana, *J. Chem. Soc., Perkin Trans. 2*, **1997**, 2055
284. The use of lithium (α -methylbenzyl)allylamide for the asymmetric synthesis of unsaturated β -amino acid derivatives.
S. G. Davies, D. R. Fenwick, O. Ichihara, *Tetrahedron: Asymmetry*, **1997**, 8, 3387
285. Redox processes in microdroplets studied by voltammetry, microscopy and ESR spectroscopy: Oxidation of *N,N,N',N'*-tetrahexylphenylene diamine deposited on solid electrode surfaces and immersed in aqueous electrolyte solution.
F. Marken, R. D. Webster, S. D. Bull, **S. G. Davies**, *J. Electroanal. Chem.*, **1997**, 437, 209
286. Enantiospecific alkylations of alanine
F. Alonso, **S. G. Davies**, A. S. Elend, J. L. Haggitt, *J. Chem. Soc., Perkin Trans. 1*, **1998**, 257
287. A Highly Acid Labile Silicon Linker for Solid Phase Synthesis.
N. D. Hone, **S. G. Davies**, N. J. Devereux, S. L. Taylor, A. D. Baxter, *Tetrahedron Lett.*, **1998**, 39, 897
288. Practical Synthesis of Schollkopf's bis-lactim ether chiral auxiliary: (3*S*)-3,6-dihydro-2,5-dimethoxy-3-isopropyl-pyrazine.
S. D. Bull, **S. G. Davies**, W. O. Moss, *Tetrahedron: Asymmetry*, **1998**, 9, 321
289. Chiral relay auxiliary for the synthesis of enantiomerically pure α -amino acids
S. D. Bull, **S. G. Davies**, S. W. Epstein, J. V. A. Ouzman, *Chem. Commun.*, **1998**, 659
290. Photoinduced Configurational Instability at Iron in the Aminocarbene Complexes $[(\text{C}_5\text{H}_5)\text{Fe}(\text{CO})(\text{L})\{\text{C}(\text{NHR}^2)\text{-(CH}_2\text{R}^1)\}]^+\text{BF}_4^-$
S. Jones, **S. G. Davies**, M. R. Metzler, K. Yanada, R. Yanada, *J. Chem. Soc., Perkin Trans. 2*, **1998**, 1147
291. A Practical Procedure for the Multigram Synthesis of the SuperQuat Chiral Auxiliaries.
S. D. Bull, **S. G. Davies**, S. Jones, M. E. C. Polywka, R. S. Prasad, H. J. Sanganee, *Synlett*, **1998**, 519

292. Chiral relay effects influence the facial selectivity of *N*-alkylated 5-phenylmorpholin-2-one enolates.
S. D. Bull, **S. G. Davies**, D. J. Fox, T. G. R. Sellers, *Tetrahedron: Asymmetry*, **1998**, 9, 1483
293. Synthesis and reactivity of a range of 2-ferrocenyl-3-pivaloyl-1,3-oxazolidin-5-ones
F. Alonso, **S. G. Davies**, C. A. P. Smethurst, *J. Organometal. Chem.*, **1998**, 553, 463
294. Synthesis and Characterisation of the aminocarbene complexes $[(C_5H_5)Fe(CO)(L)\{=C(NHR^2)-(CH_2R^1)\}]^+BF_4^-$. [$R^1 = H, Me$ or Pr ; $R^2 = H, Me, Et, CHMe_2, CH_2Ph, CH(Me)Ph, CH_2CH=CH_2$ or CH_2CH_2OH]
S. G. Davies, A. J. Edwards, S. Jones, M. R. Metzler, K. Yanada, R. Yanada, *J. Chem. Soc., Dalton*, **1998**, 1587
295. The Conformational Analysis of Phosphine Ligands in Organometallic Complexes. Part 1. Triphenylphosphine Coordinated to an Achiral Metal Centre.
J. F. Costello, **S. G. Davies**, *J. Chem. Soc., Perkin Trans. 2*, **1998**, 1683
296. Mechanisms of nucleophilic substitutions of acetals
S. D. Bull, L. M. A. R. B. Correia, **S. G. Davies**, *J. Chem. Soc., Perkin Trans. 1*, **1998**, 2231
297. The Biosynthetic Origin of Diketopiperazines Derived from D-proline.
S. D. Bull, **S. G. Davies**, R. M. Parkin, F. Sanchez-Sancho, *J. Chem. Soc., Perkin Trans. 1*, **1998**, 2313
298. A Chiral Relay Auxiliary for the Synthesis of Homochiral α -Amino Acids.
S. D. Bull, **S. G. Davies**, S. W. Epstein, M. A. Leech, J. A. V. Ouzman, *J. Chem. Soc., Perkin Trans. 1*, **1998**, 2321
299. Selective Deprotection Strategies to *N*-(α -methylbenzyl)- β -amino esters and derived β -lactams
S. G. Davies, O. Ichihara, *Tetrahedron Lett.*, **1998**, 39, 6045
300. Asymmetric Synthesis of (2*R*,5*R*)-2,5-Diamino-1,6-dioic Acid
S. D. Bull, A. N. Chernega, **S. G. Davies**, W. O. Moss, R. M. Parkin, *Tetrahedron*, **1998**, 54, 10379
301. Deracemisation of α -amino acids – (*R*)- and (*S*)-phenylalanine from the same enantiomer of a homochiral auxiliary.
S. G. Davies, S. D. Bull, S. W. Epstein, J. A. V. Ouzman, *Tetrahedron: Asymmetry*, **1998**, 9, 2795
302. First asymmetric synthesis of the Kelatorphan-like enkephalinase inhibitor (1*S*,2*R*,2'*S*)-2-[2'-(*N*-hydroxycarbonylmethyl)-3'-phenylpropionylamino]cyclohexane-1-carboxylic acid.
S. G. Davies, D. J. Dixon, *J. Chem. Soc., Perkin Trans. 1*, **1998**, 2629
303. Asymmetric syntheses of moiramide B and andrimid.
S. G. Davies, D. J. Dixon, *J. Chem. Soc., Perkin Trans. 1*, **1998**, 2635
304. *N*-Acyl 'Quat' Pyrrolidinone Auxiliary as a Chiral Amide Equivalent *via* Direct Aminolysis.
S. G. Davies, D. J. Dixon, *Synlett*, **1998**, 963
305. A novel [2,3] intramolecular rearrangement of *N*-benzyl-*O*-allylhydroxylamines.
S. G. Davies, S. Jones, M. A. Sanz, F. C. Teixeira, J. F. Fox, *Chem. Commun.*, **1998**, 2235
306. Stereoselective conjugate addition of organocuprates to a dehydroalanine derived diketopiperazine.
S. D. Bull, **S. G. Davies**, M. D. O'Shea, *J. Chem. Soc., Perkin Trans. 1*, **1998**, 3657
307. Anion Detection by Electro-Insertion into *N,N,N',N'*-Tetrahexylphenylenediamine (THPD) Microdroplets Studied by Voltammetry, EQCM and SEM Techniques.
F. Marken, R. G. Compton, C. H. Goeting, J. S. Foord, S. D. Bull, **S. G. Davies**, *Electroanalysis*, **1998**, 10, 821
308. Chiral Relay Auxiliaries.
S. D. Bull, **S. G. Davies**, D. J. Fox, A. C. Garner, T. G. R. Sellers, *Pure & Appl. Chem.*, **1998**, 70, 1501
309. Asymmetric Synthesis of *N*-protected *syn* and *anti* (*E*)-3-amino-2-hydroxy-4-hexenoate: A Practical Method for the C- α Epimerisation of *anti* β -amino- α -hydroxy acids.
I. Brackenridge, **S. G. Davies**, D. R. Fenwick, O. Ichihara, M. E. C. Polywka, *Tetrahedron*, **1999**, 55, 533
310. Asymmetric alkylations using SuperQuat auxiliaries – an investigation into the synthesis and stability of enolates derived from 5,5-disubstituted oxazolidin-2-ones.
S. D. Bull, **S. G. Davies**, S. Jones, H. J. Sanganee, *J. Chem. Soc., Perkin Trans. 1*, **1999**, 387

311. The SuperQuat (*R*)-4-Phenyl-5,5-Dimethyl Oxazolidin-2-one as an Effective Chiral Auxiliary for Conjugate Additions: Asymmetric Synthesis of (-)-Aplysillamide B
S. G. Davies, H. J. Sanganee, P. Szolcsanyi, *Tetrahedron*, **1999**, 55, 3337
312. The conformational analysis of phosphine ligands in organometallic complexes. Part 2. Triphenylphosphine coordinated to achiral and prochiral octahedral metal complexes.
J. F. Costello, **S. G. Davies**, D. McNally, *J. Chem. Soc., Perkin Trans. 2*, **1999**, 465
313. Phosphine photolabilisation studies of (η^5 -C₅H₅)Fe(PPh₃)(CO)COR (R = Me, Ph, 2,6-C₆H₃F₂) and (C₅Me₅)Fe(PPh₃)-(CO)COR (R = Me, 2,6-C₆H₃F₂) utilising NMR, laser desorption FT ICR MS and photofragmentation voltammetry analysis
R. T. Aplin, J. Booth, R. G. Compton, **S. G. Davies**, S. Jones, J. P. McNally, M. R. Metzler, W. C. Watkins, *J. Chem. Soc., Perkin Trans. 2*, **1999**, 913
314. Conjugate addition to (α,β)(α',β')-diendioate esters by lithium (α -methylbenzyl)benzylamide: tandem addition-cyclisation versus double addition
J. G. Urones, N. M. Garrido, D. Diez, S. H. Dominguez, **S. G. Davies**, *Tetrahedron: Asymmetry*, **1999**, 10, 1637
315. *N*-Acyl-5,5-dimethyl-oxazolidin-2-ones as latent aldehyde equivalents
J. Bach, S. D. Bull, **S. G. Davies**, R. L. Nicholson, H. J. Sanganee, A. D. Smith, *Tetrahedron Lett.*, **1999**, 40, 6677
316. A simple desymmetrisation approach to unsymmetric *N,N'*-disubstituted ureas.
S. P. Bew, S. D. Bull, **S. G. Davies**, J. Eames, A. D. Baxter, J. Mykytiuk, *Tetrahedron Lett.*, **1999**, 40, 7143
317. Sulfide accumulation and sensing based on electrochemical processes in microdroplets of *N*¹-[4-(dihexylamino)phenyl]-*N*¹,*N*⁴,*N*⁴-triethyl-1,4-phenylenediamine.
F. Marken, A. Blythe, R. G. Compton, S. D. Bull, **S. G. Davies**, *Chem. Commun.*, **1999**, 1823
318. A highly diastereoselective [2,3]-sigmatropic N,O-rearrangement
S. D. Bull, **S. G. Davies**, S. Jones, J. V. A. Ouzman, A. J. Price, D. J. Watkin, *Chem Commun.*, **1999**, 2079
319. Syntheses of derivatives of L-Daunosamine and its C-3 epimer employing as the key step the asymmetric conjugate addition of a homochiral lithium amide to tert-butyl (E,E)-hexa-2,4-dienoate
S. G. Davies, G. D. Smyth, A. M. Chippindale, *J. Chem. Soc., Perkin Trans. 1*, **1999**, 3089
320. Asymmetric synthesis of β -lactams and pseudopeptides via stereoselective conjugate additions of lithium (α -methylbenzyl)allylamide to α,β -unsaturated iron acyl complexes
S. G. Davies, N. M. Garrido, P. A. McGee, J. P. Shilvock, *J. Chem. Soc., Perkin Trans. 1*, **1999**, 3105
321. Asymmetric synthesis of a highly functionalised β -amino acid: the key amino acid of sperabillins B and D
S. G. Davies, O. Ichihara, *Tetrahedron Lett.*, **1999**, 40, 9313
322. Asymmetric synthesis of sulfinyl substituted arene chromium tricarbonyl complexes
S. G. Davies, T. Loveridge, M. F. C. C. Teixeira, J. M. Clough, *J. Chem. Soc., Perkin Trans. 1*, **1999**, 3405
323. Stereoselective Michael addition of benzylamines to homochiral methylenebutanedioates
A. N. Chernaga, **S. G. Davies**, C. N. Lewis, R. S. Todd, *J. Chem. Soc., Perkin Trans. 1*, **1999**, 3603
324. Sonoelectrochemical and sonochemical effects of cavitation: correlation with interfacial cavitation induced by 20 kHz ultrasound
J. L. Hardcastle, J. C. Ball, Q. Hong, F. Marken, R. G. Compton, S. D. Bull, **S. G. Davies**, *Ultrasonics Sonochemistry*, **2000**, 7, 7
325. Chemoselective oxidative debenzoylation of tertiary *N*-benzylamines
S. D. Bull, **S. G. Davies**, G. Fenton, A. W. Mulvaney, R. S. Prasad, A. D. Smith, *Chem. Commun.*, **2000**, 337
326. Kinetic Resolution of α -Acetoxy Carboxylic Acids with Homochiral SuperQuats
S. P. Bew, **S. G. Davies**, S.-I. Fukuzawa, *Chirality*, **2000**, 12, 483
327. Asymmetric synthesis of homochiral Baylis-Hillman products employing (*R*)-*N*-methyl-*N*- α -methylbenzylamide
S. G. Davies, C. A. P. Smethurst, A. D. Smith, G. D. Smyth, *Tetrahedron: Asymmetry*, **2000**, 11, 2437

328. Novel synthesis of indazoles from (η^6 -arene)tricarbonylchromium complexes
M. R. G. da Costa, M. J. M. Curto, **S. G. Davies**, M. T. Duarte, C. Resende, F. C. Teixeira, *J. Organometal. Chem.*, **2000**, 604, 157
329. Photochemical and electrochemical behaviour of thiophene-S-oxides
T. Thiemann, D. Ohira, K. Arima, T. Sawada, S. Mataka, F. Marken, R. G. Compton, S. D. Bull, **S. G. Davies**, *J. Phys. Org. Chem.*, **2000**, 13, 648
330. The asymmetric synthesis of β -haloaryl- β -amino acid derivatives
S. D. Bull, **S. G. Davies**, S. Delgado-Ballester, G. Fenton, P. Kelly, A. D. Smith, *Synlett*, **2000**, 1257
331. Conformational control in the SuperQuat chiral auxiliary 5,5-dimethyl-4-*iso*-propyloxazolidin-2-one induces the *iso*-propyl group to mimic a *tert*-butyl group
S. D. Bull, **S. G. Davies**, M-S. Key, R. L. Nicholson, E. D. Savory, *Chem. Commun.*, **2000**, 1721
332. Polymer supported oxazolidin-2-ones derived from L-serine – a cautionary tale
S. P. Bew, S. D. Bull, **S. G. Davies**, *Tetrahedron Lett.*, **2000**, 41, 7577
333. Voltammetry of electroactive oil droplets. Part II: comparison of experimental and simulation data for coupled ion and electron insertion processes and evidence for microscale convection
J. C. Ball, F. Marken, Q. Fulian, J. D. Wadhawan, A. N. Blythe, U. Schroder, R. G. Compton, S. D. Bull, **S. G. Davies**, *Electroanalysis*, **2000**, 12, 1017
334. SuperQuat, (*S*)-4-benzyl-5,5-dimethyl-oxazolidin-2-one for the asymmetric synthesis of α -substituted aldehydes
S. D. Bull, **S. G. Davies**, R. L. Nicholson, H. J. Sanganee, A. D. Smith, *Tetrahedron: Asymmetry*, **2000**, 11, 3475
335. Cardiac chloride channels: physiology, pharmacology and approaches for identifying novel modulators of activity
A. W. Mulvaney, C. I. Spencer, S. Culliford, J. J. Borg, **S. G. Davies**, R. Z. Kozlowski, *Drug Discovery Today*, **2000**, 5, 492
336. Chemoselective debenzoylation of *N*-benzyl tertiary amines with ceric ammonium nitrate
S. D. Bull, **S. G. Davies**, G. Fenton, A. W. Mulvaney, R. S. Prasad, A. D. Smith, *J. Chem. Soc., Perkin Trans. 1*, **2000**, 3765
337. Voltammetry of electroactive liquid redox systems: anion insertion and chemical reactions in microdroplets of *para*-tetrakis(6-methoxyhexyl)phenylenediamine, *para*- and *meta*-tetrahexylphenylenediamine
F. Marken, **S. G. Davies**, A. N. Blythe, J. D. Wadhawan, R. G. Compton, S. D. Bull, R. T. Aplin, *J. Solid State Electrochem.*, **2001**, 5, 17
338. Sono-emulsion electrosynthesis: electrode-insensitive Kolbe reactions
J. D. Wadhawan, F. Marken, R. G. Compton, S. D. Bull, **S. G. Davies**, *Chem. Commun.*, **2001**, 87
339. Fast electrochemical triple-interface processes at boron-doped diamond electrodes
F. Marken, R. G. Compton, C. H. Goeting, J. S. Foord, S. D. Bull, **S. G. Davies**, *J. Solid State Electrochem.*, **2001**, 5, 88
340. A practical asymmetric synthesis of homochiral α -arylglycines
C. Mellin-Morliere, D. J. Aitken, S. D. Bull, **S. G. Davies**, H-P. Husson, *Tetrahedron: Asymmetry*, **2001**, 12, 149
341. Electrochemically driven ion insertion processes across liquid/liquid boundaries: neutral versus ionic redox liquids
U. Schroder, R. G. Compton, F. Marken, S. D. Bull, **S. G. Davies**, S. Gilmour, *J. Phys. Chem. B*, **2001**, 105, 1344
342. The asymmetric synthesis of (2*R*,3*R*)- and (2*R*,3*S*)-3-methyl-aspartates via an enantiodiscrimination strategy
S. D. Bull, **S. G. Davies**, A. C. Garner, N. Mujtaba, *Synlett*, **2001**, 781
343. Photochemically driven processes at the *N,N,N',N'*-tetrahexylphenylenediamine microdroplet/electrode/aqueous electrolyte triple interface
J. D. Wadhawan, R. G. Compton, F. Marken, S. D. Bull, **S. G. Davies**, *J. Solid State Electrochem.*, **2001**, 5, 301
344. Palladium-catalysed elaboration of codeine and morphine
S. G. Davies, C. J. Goodwin, D. Pyatt, A. D. Smith, *J. Chem. Soc., Perkin Trans. 1*, **2001**, 1413

345. Conformational diastereoisomers of PPh₃ co-ordinated to stereogenic metal centres as molecular optical switches
A. P. Ayscough, J. F. Costello, **S. G. Davies**, *Tetrahedron: Asymmetry*, **2001**, 12, 1621
346. Asymmetric synthesis of α -amino carbonyls (aldehydes, ketones and acids) using lithium (*R*)-*N*-benzyl-*N*- α -methylbenzylamide
S. G. Davies, S. W. Epstein, O. Ichihara, A. D. Smith, *Synlett*, **2001**, 1599
347. Emulsion electrosynthesis in the presence of power ultrasound biphasic Kolbe coupling processes at platinum and boron-doped diamond electrodes
J. D. Wadhawan, F. J. D. Campo, R. G. Compton, J. S. Foord, F. Marken, S. D. Bull, **S. G. Davies**, D. J. Walton, S. Ryley, *J. Electroanal. Chem.*, **2001**, 507, 135
348. Low-temperature sonoelectrochemical processes Part 2: Generation of solvated electrons and Birch reduction processes under high mass transport conditions in liquid ammonia
F. J. D. Campo, A. Neudeck, R. G. Compton, J. S. Foord, F. Marken, S. D. Bull, **S. G. Davies**, *J. Electroanal. Chem.*, **2001**, 507, 144
349. Synthesis of (*R*)-{ η^6 -[*O*-methyl-*N*-(α -methylbenzyl)hydroxyamino]benzene} chromium tricarbonyl *via* nucleophilic aromatic substitution of (η^6 -fluorobenzene) chromium tricarbonyl
M. R. G. da Costa, M. J. M. Curto, **S. G. Davies**, J. Sanders, F. C. Teixeira, *J. Chem. Soc., Perkin Trans. 1*, **2001**, 2850
350. Asymmetric synthesis of β -amino acid scaffolds
S. D. Bull, **S. G. Davies**, A. D. Smith, *J. Chem. Soc., Perkin Trans. 1*, **2001**, 2931
351. Orthogonal *N,N*-deprotection strategies of β -amino esters
S. D. Bull, **S. G. Davies**, P. M. Kelly, M. Gianotti, A. D. Smith, *J. Chem. Soc., Perkin Trans. 1*, **2001**, 3106
352. Asymmetric synthesis of β -haloaryl β -amino acid derivatives
S. D. Bull, **S. G. Davies**, S. Delgado-Ballester, P. M. Kelly, L. J. Kitchie, M. Gianotti, M. Laderas, A. D. Smith, *J. Chem. Soc., Perkin Trans. 1*, **2001**, 3112
353. Conjugate additions of organocuprates to a 3-methylene-6-isopropylidiketopiperazine acceptor for the asymmetric synthesis of homochiral α -amino acids
S. D. Bull, **S. G. Davies**, A. C. Garner, M. D. O'Shea, *J. Chem. Soc., Perkin Trans. 1*, **2001**, 3281
354. Asymmetric synthesis of a homochiral differentially protected pseudo-*meso* bis- β -amino acid scaffold
S. D. Bull, **S. G. Davies**, A. D. Smith, *Tetrahedron: Asymmetry*, **2001**, 12, 2941
355. Synthesis and utility of the 3,3-dimethyl-5-substituted-2-pyrrolidinone 'Quat' chiral auxiliary
S. G. Davies, D. J. Dixon, G. J. -M. Doisneau, J. C. Prodder, H. J. Sanganeer, *Tetrahedron: Asymmetry*, **2002**, 13, 647
356. Asymmetric synthesis of homochiral differentially protected bis- β -amino acid scaffolds
S. D. Bull, **S. G. Davies**, P. M. Roberts. E. D. Savory, A. D. Smith, *Tetrahedron*, **2002**, 58, 4629
357. Ring-closing metathesis for the asymmetric synthesis of (*S*)-homopiperic acid, (*S*)-homoproline and (*S*)-coniine
S. G. Davies, K. Iwamoto, C. A. P. Smethurst A. D. Smith, H. Rodríguez-Solla, *Synlett*, **2002**, 1146
358. The [2,3]-sigmatropic rearrangement of *N*-benzyl-*O*-allylhydroxylamines
S. G. Davies, J. F. Fox, S. Jones, A. J. Price, M. A. Sanz, T. G. R. Sellers, A. D. Smith, F. C. Teixeira, *J. Chem. Soc., Perkin Trans. 1*, **2002**, 1757
359. Asymmetric synthesis of β -pyridyl- β -amino acid derivatives
S. D. Bull, **S. G. Davies**, D. J. Fox, M. Gianotti, P. M. Kelly, C. Pierres, E. D. Savory, A. D. Smith, *J. Chem. Soc., Perkin Trans. 1*, **2002**, 1858
360. *N*-Acyl 'Quat' pyrrolidinone auxiliary as a chiral amide equivalent *via* direct aminolysis
S. G. Davies, D. J. Dixon, *J. Chem. Soc., Perkin Trans. 1*, **2002**, 1869
361. Asymmetric synthesis of α -amino carbonyl derivatives using lithium (*R*)-*N*-benzyl-*N*- α -methylbenzylamide
S. G. Davies, S. W. Epstein, A. C. Garner, O. Ichihara, A. D. Smith, *Tetrahedron: Asymmetry*, **2002**, 13, 1555

362. Diastereoselective [2,3]-sigmatropic rearrangements of lithium *N*-benzyl-*O*-allylhydroxylamides bearing a stereogenic centre adjacent to the migration terminus
S. D. Bull, **S. G. Davies**, S. H. Domingez, S. Jones, A. J. Price, T. G. R. Sellers, A. D. Smith, *J. Chem. Soc., Perkin Trans. 1*, **2002**, 2141
363. The asymmetric synthesis of D-galactose via an iterative *syn*-glycolate aldol strategy
S. G. Davies, R. L. Nicholson, A. D. Smith, *Synlett*, **2002**, 1637
364. Chiral glycine cation equivalents: *N*-acyliminium species derived from diketopiperazines
S. D. Bull, **S. G. Davies**, A. C. Garner, M. D. O'Shea, E. D. Savory, E. J. Snow, *J. Chem. Soc., Perkin Trans. 1*, **2002**, 2442
365. Rearrangements and racemisation during the synthesis of L-serine derived oxazolidin-2-ones
S. P. Bew, S. D. Bull, **S. G. Davies**, E. D. Savory, D. J. Watkin, *Tetrahedron*, **2002**, 58, 9387
366. Asymmetric synthesis of (1*R*,2*S*,3*R*)- γ -methyl-*cis*-pentacin by a kinetic resolution protocol
S. Bailey, **S. G. Davies**, A. D. Smith, J. M. Withey, *Chem. Commun.*, **2002**, 2910
367. Phosphine incorporation and exchange in mononuclear η^5 -cyclopentadienyl iron carbonyl complexes
S. G. Davies, S. Jones, A. D. Smith, *Trends in Organometallic Chemistry*, **2002**, 4, 59
368. An Approach to Identifying Novel Substrates of Bacterial Arylamine *N*-Acetyltransferases
E. W. Brooke, **S. G. Davies**, A. W. Mulvaney, F. Pompeo, E. Sim, R. J. Vickers, *Bioorg. Med. Chem.*, **2003**, 11, 1227
369. Asymmetric synthesis of cyclic β -amino acids and cyclic amines via sequential diastereoselective conjugate addition and ring closing metathesis
A. M. Chippendale, **S. G. Davies**, K. Iwamoto, R. M. Parkin, C. A. P. Smethurst, A. D. Smith, H. Rodríguez-Solla, *Tetrahedron*, **2003**, 59, 3253
370. *N*-Acyl-5,5-dimethyloxazolidin-2-ones as latent aldehyde equivalents
J. Bach, S. D. Bull, **S. G. Davies**, R. L. Nicholson, P. D. Price, H. J. Sanganee, A. D. Smith, *Org. Biomol. Chem.*, **2003**, 1, 2001
371. Synthesis and in vitro evaluation of novel small molecule inhibitors of bacterial arylamine *N*-acetyltransferases (NATs)
E. W. Brooke, **S. G. Davies**, M. Okada, F. Pompeo, E. Sim, R. J. Vickers, I. M. Westwood, *Bioorg. Med. Chem. Lett.*, **2003**, 13, 2527
372. Asymmetric synthesis of substituted 1-aminocyclopropane-1-carboxylic acids via diketopiperazine methodology
E. Buñuel, S. D. Bull, **S. G. Davies**, A. C. Garner, E. D. Savory, A. D. Smith, R. J. Vickers, D. J. Watkin, *Org. Biomol. Chem.*, **2003**, 1, 2531
373. SuperQuat *N*-acyl-5,5-dimethyloxazolidin-2-ones for the asymmetric synthesis of α -alkyl and β -alkyl aldehydes
S. D. Bull, **S. G. Davies**, R. L. Nicholson, H. J. Sanganee, A. D. Smith, *Org. Biomol. Chem.*, **2003**, 1, 2886
374. Total asymmetric synthesis of sperabillins B and D
S. G. Davies, R. J. Kelly, A. J. Price-Mortimer, *Chem. Commun.*, **2003**, 2132
375. Double diastereoselective [3,3]-sigmatropic aza-Claisen rearrangements
S. G. Davies, A. C. Garner, R. L. Nicholson, J. Osborne, E. D. Savory, A. D. Smith, *Chem. Commun.*, **2003**, 2134
376. Oxidative functionalisation of SuperQuat enamides: asymmetric synthesis of homochiral 1,2-diols
S. G. Davies, H. Rodríguez-Solla, H. J. Sanganee, E. D. Savory, A. D. Smith, M-S. Key, *Synlett*, **2003**, 1659
377. Preparation of methyl (1*R*,2*S*,5*S*)- and (1*S*,2*R*,5*R*)-2-amino-5-*tert*-butyl-cyclopentane-1-carboxylates by parallel kinetic resolution of methyl (*RS*)-5-*tert*-butyl-cyclopentene-1-carboxylate
S. G. Davies, D. Díez, M. M. El Hammouni, A. C. Garner, N. M. Garrido, M. J. C. Long, R. M. Morrison, A. D. Smith, M. J. Sweet, J. M. Withey, *Chem Commun*, **2003**, 2410
378. Asymmetric synthesis of (1*R*,2*S*,3*R*)-3-methylcispentacin and (1*S*,2*S*,3*R*)-3-methyltranspentacin by kinetic resolution of *tert*-butyl ($\pm$)-3-methylcyclopentene-1-carboxylate
S. G. Davies, M. E. Bunnage, A. M. Chippendale, R. M. Parkin, A. D. Smith, J. M. Withey, *Org. Biomol. Chem.*, **2003**, 1, 3698

379. Asymmetric synthesis of *anti*-(2*S*,3*S*)- and *syn*-(2*R*,3*S*)-diaminobutanoic acid
S. G. Davies, M. E. Bunnage, A. J. Burke, N. L. Millican, R. L. Nicholson, P. M. Roberts, A. D. Smith,
Org. Biomol. Chem., **2003**, 1, 3708
380. Iodine-mediated ring closing alkene iodoamination with *N*-debenzylation for the asymmetric synthesis of polyhydroxylated pyrrolidines
S. G. Davies, R. L. Nicholson, P. D. Price, P. M. Roberts, A. D. Smith, *Synlett*, **2004**, 901
381. Asymmetric synthesis of the stereoisomers of 2-amino-5-carboxymethyl-cyclopentane-1-carboxylate
S. G. Davies, J. G. Urones, N. M. Garrido, D. Diez, M. M. El Hammoumi, S. H. Dominguez, J. A. Casaseca, A. D. Smith, *Org. Biomol. Chem.*, **2004**, 2, 364
382. Double asymmetric induction as a mechanistic probe: conjugate addition for the asymmetric synthesis of a pseudotripeptide
S. G. Davies, G. J. Hermann, M. J. Sweet, A. D. Smith, *Chem. Commun*, **2004**, 1128
383. Asymmetric synthesis and applications of β -amino Weinreb amides: asymmetric synthesis of (*S*)-coniine
S. G. Davies, A. J. Burke, A. C. Garner, T. D. McCarthy, P. M. Roberts, A. D. Smith, H. Rodríguez-Solla, R. J. Vickers,
Org. Biomol. Chem., **2004**, 2, 1387
384. Asymmetric synthesis of (4*R*,5*R*)-cytoxazone and (4*R*,5*S*)-*epi*-cytoxazone
S. G. Davies, D. G. Hughes, R. L. Nicholson, A. D. Smith, A. J. Wright, *Org. Biomol. Chem.*, **2004**, 2, 1549
385. Cyclic voltammetry at microdroplet modified electrodes. A comparison of the reaction of vicinal dibromides with vitamin B₁₂ at the liquid/liquid interface with the corresponding homogeneous process: evidence for polar-solvent effects at the liquid/liquid interface
S. G. Davies, T. J. Davies, A. C. Garner, R. G. Compton, *J. Electroanal. Chem.*, **2004**, 570, 171
386. *N*- α -Benzyloxyacetyl derivatives of (*S*)-4-benzyl-5,5-dimethyloxazolidin-2-one for the asymmetric synthesis of differentially protected α,β -dihydroxyaldehydes
S. G. Davies, I. A. Hunter, R. L. Nicholson, P. M. Roberts, E. D. Savory, A. D. Smith, *Tetrahedron*, **2004**, 60, 7553
387. Asymmetric synthesis of 3,4,5,6-tetrasubstituted piperidin-2-ones by three component coupling
S. G. Davies, A. D. Smith, A. R. Cowley, *Synlett*, **2004**, 1957
388. Asymmetric total synthesis of sperabillins B and D via lithium amide conjugate addition
S. G. Davies, J. R. Haggitt, O. Ichihara, R. J. Kelly, M. A. Leech, A. J. Price Mortimer, P. M. Roberts, A. D. Smith, *Org. Biomol. Chem.*, **2004**, 2, 2630
389. Asymmetric synthesis of the *cis*- and *trans*-stereoisomers of 4-aminopyridine-3-carboxylic acid and 4-aminotetrahydrofuran-3-carboxylic acid
S. G. Davies, M. E. Bunnage, P. M. Roberts, A. D. Smith, J. M. Withey, *Org. Biomol. Chem.*, **2004**, 2, 2763
390. Diastereoselective conjugate reduction with samarium diiodide: asymmetric synthesis of methyl (2*S*,3*R*)-*N*-acetyl-2-amino-2,3,-dideuterio-3-phenyl propionate
S. G. Davies, H. Rodríguez-Solla, J. A. Tamayo, A. C. Garner, A. D. Smith, *Chem. Commun.*, **2004**, 2502
391. Kinetic resolution of *tert*-butyl (*RS*)-3-alkylcyclopentene-1-carboxylates for the synthesis of homochiral 3-alkyl-cispentacin and 3-alkyl-transpentacin derivatives
S. G. Davies, M. E. Bunnage, R. M. Parkin, P. M. Roberts, A. D. Smith, J. M. Withey,
Org. Biomol. Chem., **2004**, 2, 3337
392. Parallel kinetic resolution of *tert*-butyl (*RS*)-3-alkylcyclopentene-1-carboxylates for the asymmetric synthesis of 3-alkylcispentacin derivatives
S. G. Davies, A. C. Garner, M. J. C. Long, A. D. Smith, M. J. Sweet, J. M. Withey, *Org. Biomol. Chem.*, **2004**, 2, 3355
393. Double diastereoselective SuperQuat glycolate aldol reactions: application to the asymmetric synthesis of polyfunctionalised lactones
S. G. Davies, R. L. Nicholson, A. D. Smith, *Org. Biomol. Chem.*, **2004**, 2, 3385

394. Stereoselective conjugate addition reactions of lithium amides to α,β -unsaturated chiral iron acyl complexes $[(\eta^5\text{-C}_5\text{H}_5)\text{Fe}(\text{CO})(\text{PPh}_3)(\text{COCH}=\text{CHR})]$
S. G. Davies, J. Dupont, R. J. C. Easton, O. Ichihara, J. M. McKenna, A. D. Smith, J. A. A. de Sousa, *J. Organometal. Chem.*, **2004**, 689, 4184
395. Asymmetric synthesis of 2-alkyl- and 2-aryl-3-aminopropionic acids (β^2 -amino acids) from (*S*)-*N*-acryloyl-5,5-dimethyloxazolidinone SuperQuat derivatives
S. G. Davies, J. E. Beddow, A. D. Smith, A. J. Russell, *Chem. Commun.*, **2004**, 2778
396. 2-Halo-diketopiperazines as chiral glycine cation equivalents
S. G. Davies, S. D. Bull, A. C. Garner, E. D. Savory, E. J. Snow, A. D. Smith, *Tetrahedron: Asymmetry*, **2004**, 15, 3989
397. A SuperQuat glycolate aldol approach to the asymmetric synthesis of hexose monosaccharides
S. G. Davies, R. L. Nicholson, A. D. Smith, *Org. Biomol. Chem.* **2005**, 3, 348
398. Cyclic β -amino acid derivatives: synthesis via lithium amide promoted tandem asymmetric conjugate addition–cyclisation reactions
S. G. Davies, D. Diez, S. H. Dominguez, N. M. Garrido, D. Kruchinin, P. D. Price, A. D. Smith, *Org. Biomol. Chem.*, **2005**, 3, 1284
399. Asymmetric conjugate reductions with samarium diiodide: asymmetric syntheses of (2*S*,3*R*)- and (2*S*,3*S*)-[2-²H,3-²H]-leucine-(*S*)-phenylalanine dipeptides and (2*S*,3*R*)-[2-²H,3-²H]-phenylalanine methyl ester
S. G. Davies, H. Rodríguez-Solla, J. A. Tamayo, A. R. Cowley, C. Concellon, A. C. Garner, A. L. Parkes, A. D. Smith, *Org. Biomol. Chem.*, **2005**, 3, 1435
400. Kinetic resolution and parallel kinetic resolution of methyl ($\pm$)-5-alkyl-cyclopentene-1-carboxylates for the asymmetric synthesis of 5-alkyl-cispenitacin derivatives
S. G. Davies, A. C. Garner, M. J. C. Long, R. M. Morrison, P. M. Roberts, A. D. Smith, M. J. Sweet, J. M. Withey, *Org. Biomol. Chem.*, **2005**, 3, 2762
401. Highly enantioselective organocatalysis of the Hajos-Parrish-Eder-Sauer-Wiechert reaction by the β -amino acid cispenitacin
S. G. Davies, R. L. Sheppard, A. D. Smith, J. E. Thomson, *Chem. Commun.*, **2005**, 3802
402. The conjugate addition of enantiomerically pure lithium amides as homochiral ammonia equivalents: scope, limitations and synthetic applications
S. G. Davies, A. D. Smith, P. D. Price, *Tetrahedron: Asymmetry*, **2005**, 16, 2833
403. A comparative electrochemical study of diffusion in room temperature ionic liquid solvents versus acetonitrile
R. G. Evans, O. V. Klymenko, P. D. Price, **S. G. Davies**, C. Hardacre, R. G. Compton, *Chem. Phys. Chem.*, **2005**, 6, 526
404. Ammonium directed dihydroxylation of *N,N*-dibenzylaminocyclohex-2-ene: metal free syntheses of the diastereoisomers of 3-benzylamino-1,2-dihydroxycyclohexane
S. G. Davies, M. J. C. Long, A. D. Smith, *Chem. Commun.*, **2005**, 4536
405. Insights into the role of the liquid-liquid interface in biphasic reactions: the reaction of vitamin B12s(aq) with vicinal dibromides(oil)
T. J. Davies, A. C. Garner, **S. G. Davies**, R. G. Compton, *Chem. Phys. Chem.*, **2005**, 6, 2633
406. Asymmetric synthesis of α -mercapto- β -amino acid derivatives: application to the synthesis of polysubstituted thiomorpholines
J. I. Candela-Lena, **S. G. Davies**, P. M. Roberts, B. Roux, A. J. Russell, E. M. Sanchez-Fernandez, A. D. Smith, *Tetrahedron: Asymmetry*, **2006**, 17, 1135
407. Lithium amide conjugate addition for the asymmetric synthesis of 3-aminopyrrolidines
S. G. Davies, A. C. Garner, E. C. Goddard, D. Kruchinin, P. M. Roberts, H. Rodríguez-Solla, A. D. Smith, *Chem. Commun.*, **2006**, 2664
408. Oxazinanones as chiral auxiliaries: synthesis and evaluation in enolate alkylations and aldol reactions
S. G. Davies, A. C. Garner, P. M. Roberts, A. D. Smith, M. J. Sweet, J. E. Thomson, *Org. Biomol. Chem.*, **2006**, 4, 2753

409. Enantiodiscrimination of racemic electrophiles by diketopiperazine enolates: asymmetric synthesis of methyl 2-amino-3-aryl-butanoates and 3-methyl-aspartates
S. D. Bull, **S. G. Davies**, S. W. Epstein, A. C. Garner, N. Mujtaba, P. M. Roberts, E. D. Savory, A. D. Smith, J. A. Tamayo, D. J. Watkin, *Tetrahedron*, **2006**, 62, 7911
410. SuperQuat 5,5-dimethyl-4-*iso*-propyl-oxazolidin-2-one as a mimic of Evans 4-*tert*-butyl-oxazolidin-2-one
S. D. Bull, **S. G. Davies**, A. C. Garner, D. Kruchinin, M. -S. Key, P. M. Roberts, E. D. Savory, A. D. Smith, J. E. Thomson, *Org. Biomol. Chem.*, **2006**, 4, 2945
411. Homochiral lithium amides for the asymmetric synthesis of β -amino acids
S. G. Davies, N. M. Garrido, D. Kruchinin, O. Ichihara, L. J. Kotchie, P. D. Price, A. J. Price Mortimer, A. J. Russell, A. D. Smith, *Tetrahedron: Asymmetry*, **2006**, 17, 1793
412. Asymmetric synthesis of pent-3-yl (*R*)-6-methyl-cyclohex-1-ene carboxylate
N. M. Garrido, D. Diez, S. H. Dominguez, M. Garcia, M. R. Sanchez, **S. G. Davies**, *Tetrahedron: Asymmetry*, **2006**, 17, 2183
413. Structure and mechanism of arylamine *N*-acetyltransferases
I. M. Westwood, A. Kawamura, E. Fullam, A. J. Russell, **S. G. Davies**, E. Sim, *Current Topics in Medicinal Chemistry*, **2006**, 6, 1641
414. On the origins of diastereoselectivity in the alkylation of diketopiperazine enolates
S. D. Bull, **S. G. Davies**, A. C. Garner, A. L. Parkes, P. M. Roberts, T. G. R. Sellers, A. D. Smith, J. A. Tamayo, J. E. Thomson, R. J. Vickers, *New J. Chem.*, **2007**, 31, 486
415. Inhibition of mycobacterial arylamine *N*-acetyltransferase contributes to anti-mycobacterial activity of *Warburgia salutaris*
V. E. Madikane, S. Bhakta, A. J. Russell, W. E. Campbell, T. D. W. Claridge, B. G. Elisha, **S. G. Davies**, P. Smith, E. Sim, *Bioorg. Med. Chem.*, **2007**, 15, 3579
416. Asymmetric three- and [2 + 1]-component conjugate addition reactions for the stereoselective synthesis of polysubstituted piperidinones
S. G. Davies, P. M. Roberts, A. D. Smith, *Org. Biomol. Chem.*, **2007**, 5, 1405; **S. G. Davies**, P. M. Roberts, A. D. Smith, *Org. Biomol. Chem.*, **2007**, 5, 3717.
417. Asymmetric synthesis of 4-amino- γ -butyrolactones via lithium amide conjugate addition
E. Abraham, J. W. B. Cooke, **S. G. Davies**, A. Naylor, R. L. Nicholson, P. D. Price, A. D. Smith, *Tetrahedron*, **2007**, 63, 5855
418. Asymmetric synthesis of β -substituted Baylis-Hillman products via lithium amide conjugate addition
A. Chernega, **S. G. Davies**, D. L. Elend, C. A. P. Smethurst, P. M. Roberts, A. D. Smith and G. D. Smyth, *Tetrahedron*, **2007**, 63, 7036
419. Asymmetric synthesis of 3,4-*anti*- and 3,4-*syn*-substituted aminopyrrolidines via lithium amide conjugate addition
S. G. Davies, A. C. Garner, E. C. Goddard, D. Kruchinin, P. M. Roberts, A. D. Smith, H. Rodríguez-Solla, J. E. Thomson, S. M. Toms, *Org. Biomol. Chem.*, **2007**, 5, 1961
420. Diastereoselective synthesis of quaternary α -amino acids from diketopiperazine templates
S. G. Davies, A. C. Garner, J. V. A. Ouzman, P. M. Roberts, A. D. Smith, E. J. Snow, J. E. Thomson, J. A. Tamayo, R. J. Vickers, *Org. Biomol. Chem.*, **2007**, 5, 2138
421. Asymmetric synthesis of β^2 -amino acids: 2-substituted-3-aminopropanoic acids from *N*-acryloyl SuperQuat derivatives
J. E. Beddow, **S. G. Davies**, K. B. Ling, P. M. Roberts, A. J. Russell, A. D. Smith, J. E. Thomson, *Org. Biomol. Chem.*, **2007**, 5, 2812
422. Parallel synthesis of homochiral β -amino acids
S. G. Davies, A. W. Mulvaney, A. J. Russell, A. D. Smith, *Tetrahedron: Asymmetry*, **2007**, 18, 1554
423. Evaluating β -amino acids as enantioselective organocatalysts of the Hajos-Parrish-Eder-Sauer-Wiechert reaction
S. G. Davies, A. J. Russell, R. L. Sheppard, A. D. Smith, J. E. Thomson, *Org. Biomol. Chem.*, **2007**, 5, 3190

424. Electrochemical Kinetics of Ag|Ag⁺ and TMPD|TMPD^{•+} in the Room-Temperature Ionic Liquid [C4mpyrr][NTf₂]; toward Optimizing Reference Electrodes for Voltammetry in RTILs
E. I. Rogers, D. S. Silvester, S. E. Ward Jones, L. Aldous, C. Hardacre, A. J. Russell, **S. G. Davies**, R. G. Compton, *J. Phys. Chem. C*, **2007**, *111*, 13957
425. Diastereoselective Simmons-Smith cyclopropanations of allylic amines and carbamates
S. G. Davies, K. B. Ling, P. M. Roberts, A. J. Russell, J. E. Thomson, *Chem. Commun.*, **2007**, 4029
426. Asymmetric synthesis of β -amino- γ -substituted- γ -butyrolactones: double diastereoselective conjugate addition of homochiral lithium amides to homochiral α,β -unsaturated esters
T. Cailleau, J. W. B. Cooke, **S. G. Davies**, K. B. Ling, A. Naylor, R. L. Nicholson, P. D. Price, P. M. Roberts, A. J. Russell, A. D. Smith, J. E. Thomson, *Org. Biomol. Chem.*, **2007**, *5*, 3922
427. Asymmetric synthesis of *N,O,O,O*-tetra-acetyl *D*-lyxo-phytosphingosine, jaspine B (pachastrissamine) and its C(2)-epimer
E. Abraham, J. I. Candela-Lena, **S. G. Davies**, M. Georgiou, R. L. Nicholson, P. M. Roberts, A. J. Russell, E. M. Sánchez-Fernández, A. D. Smith, J. E. Thomson, *Tetrahedron: Asymmetry*, **2007**, *18*, 2510
428. An oxidatively-activated safety catch linker for solid phase synthesis
S. G. Davies, D. A. B. Mortimer, A. W. Mulvaney, A. J. Russell, H. Skarphedinsson, A. D. Smith, R. J. Vickers, *Org. Biomol. Chem.*, **2008**, *6*, 1625
429. Asymmetric synthesis of vicinal amino alcohols: xestoaminol C, sphinganine and sphingosine
E. Abraham, **S. G. Davies**, N. L. Millican, R. L. Nicholson, P. M. Roberts and A. D. Smith, *Org. Biomol. Chem.*, **2008**, *6*, 1655
430. Asymmetric synthesis of *N,O,O,O*-tetra-acetyl *D*-lyxo-phytosphingosine, jaspine B (pachastrissamine), 2-*epi*-jaspine B, and deoxoprosopphylline *via* lithium amide conjugate addition
E. Abraham, E. A. Brock, J. I. Candela-Lena, **S. G. Davies**, M. Georgiou, R. L. Nicholson, J. H. Perkins, P. M. Roberts, A. J. Russell, E. M. Sánchez-Fernández, P. M. Scott, A. D. Smith, J. E. Thomson, *Org. Biomol. Chem.*, **2008**, *6*, 1665
431. Parallel kinetic resolution of *tert*-butyl (*RS*)-3-oxy-substituted cyclopent-1-ene-carboxylates for the asymmetric synthesis of 3-oxy-substituted cispentacin and transpentacin derivatives
Y. Aye, **S. G. Davies**, A. C. Garner, P. M. Roberts, A. D. Smith, J. E. Thomson, *Org. Biomol. Chem.*, **2008**, *6*, 2195
432. Jaspine B (pachastrissamine) and 2-*epi*-jaspine B: synthesis and structural assignment
E. Abraham, **S. G. Davies**, P. M. Roberts, A. J. Russell, J. E. Thomson, *Tetrahedron: Asymmetry*, **2008**, *19*, 1027
433. Parallel kinetic resolution of methyl (*RS*)-5-tris(phenylthio)methyl-cyclopent-1-ene-carboxylate for the asymmetric synthesis of (1*R*,2*S*,5*S*)- and (1*S*,2*R*,5*R*)-5-methyl-cispentacin
E. Abraham, **S. G. Davies**, A. J. Docherty, K. B. Ling, P. M. Roberts, A. J. Russell, J. E. Thomson, S. M. Toms, *Tetrahedron: Asymmetry*, **2008**, *19*, 1356
434. Stereoselective functionalisation of SuperQuat enamides: asymmetric synthesis of homochiral 1,2-diols and α -benzyloxy carbonyl compounds
C. Aciro, **S. G. Davies**, A. C. Garner, Y. Ishii, M. -S. Key, K. B. Ling, R. S. Prasad, P. M. Roberts, H. Rodríguez-Solla, C. O'Leary-Steele, A. J. Russell, H. J. Sanganee, E. D. Savory, A. D. Smith, J. E. Thomson, *Tetrahedron*, **2008**, *64*, 9320
435. Ammonium directed dihydroxylation of 3-amino-cyclohex-1-enes: development of a metal-free dihydroxylation protocol
C. Aciro, T. D. W. Claridge, **S. G. Davies**, P. M. Roberts, A. J. Russell, J. E. Thomson, *Org. Biomol. Chem.*, **2008**, *6*, 3751
436. Ammonium directed dihydroxylation: metal-free synthesis of the diastereoisomers of 3-amino-cyclohexane-1,2-diol
C. Aciro, **S. G. Davies**, P. M. Roberts, A. J. Russell, A. D. Smith, J. E. Thomson, *Org. Biomol. Chem.*, **2008**, *6*, 3762
437. "Pure by NMR"?
T. D. W. Claridge, **S. G. Davies**, M. E. C. Polywka, P. M. Roberts, A. J. Russell, E. D. Savory, A. D. Smith, *Org. Lett.*, **2008**, *10*, 5433

438. Highly (*E*)-selective Wadsworth-Emmons reactions promoted by methylmagnesium bromide
T. D. W. Claridge, **S. G. Davies**, J. A. Lee, R. L. Nicholson, P. M. Roberts, A. J. Russell, A. D. Smith, S. M. Toms, *Org. Lett.*, **2008**, 10, 5437
439. Asymmetric synthesis of tetrahydrolipstatin and valilactone
S. C. Case-Green, **S. G. Davies**, P. M. Roberts, A. J. Russell, J. E. Thomson, *Tetrahedron: Asymmetry*, **2008**, 19, 2620
440. Parallel kinetic resolution of *tert*-butyl (*RS*)-6-alkyl-cyclohex-1-ene-carboxylates for the asymmetric synthesis of 6-alkyl-substituted cishexacin and transhexacin derivatives
S. G. Davies, M. J. Durbin, S. J. S. Hartman, A. Matsuno, P. M. Roberts, A. J. Russell, A. D. Smith, J. E. Thomson, S. M. Toms, *Tetrahedron: Asymmetry*, **2008**, 19, 2870
441. Kinetic and thermodynamic control in the stereoselective formation of *trans*- and *cis*-2-ferrocenyl-3-pivaloyl-4-alkyl-1,3-oxazolidin-5-ones
F. Alonso, **S. G. Davies**, A. S. Elend, A. D. Smith, *Org. Biomol. Chem.*, **2009**, 7, 518
442. Stereoselective functionalisation of *cis*- and *trans*-2-ferrocenyl-3-pivaloyl-1,3-oxazolidin-5-ones: asymmetric synthesis of (*R*)- and (*S*)-2-alkyl-2-aminopent-4-enoic acids and (2*R*,3*S*)-2-amino-2-methyl-3-hydroxy-3-phenylpropanoic acid
F. Alonso, **S. G. Davies**, A. S. Elend, M. A. Leech, P. M. Roberts, A. D. Smith, J. E. Thomson, *Org. Biomol. Chem.*, **2009**, 7, 527
443. Doubly diastereoselective conjugate addition of homochiral lithium amides to homochiral α,β -unsaturated esters containing *cis*- and *trans*-dioxolane units
S. G. Davies, M. J. Durbin, E. C. Goddard, P. M. Kelly, W. Kurosawa, J. A. Lee, R. L. Nicholson, P. D. Price, P. M. Roberts, A. J. Russell, P. M. Scott, A. D. Smith, *Org. Biomol. Chem.*, **2009**, 7, 761
444. Selective small molecule inhibitors of the potential breast cancer marker, human arylamine *N*-acetyltransferase 1, and its murine homologue, mouse arylamine *N*-acetyltransferase 2
A. J. Russell, I. M. Westwood, M. H. J. Crawford, J. Robinson, A. Kawamura, C. Redfield, N. Laurieri, E. D. Lowe, **S. G. Davies**, E. Sim, *Bioorg. Med. Chem.*, **2009**, 17, 905
445. Carbon Nanotube-Ionic Liquid Composite Sensors and Biosensors
R. T. Kachoosangi, M. M. Musameh, I. Abu-Yousef, J. M. Yousef, S. M. Kanan, L. Xiao, **S. G. Davies**, A. J. Russell, R. G. Compton, *Anal. Chem.*, **2009**, 81, 435
446. Highly diastereoselective *anti*-dihydroxylation of 3-*N,N*-dibenzylamino-cyclohex-1-ene *N*-oxide
C. Aciro, **S. G. Davies**, W. Kurosawa, P. M. Roberts, A. J. Russell, J. E. Thomson, *Org. Lett.*, **2009**, 11, 1333
447. A tandem conjugate addition/cyclisation protocol for the asymmetric synthesis of 2-aryl-4-aminotetrahydroquinoline-3-carboxylic acid derivatives
S. G. Davies, N. Mujtaba, P. M. Roberts, A. D. Smith, J. E. Thomson, *Org. Lett.*, **2009**, 11, 1959
448. Syntheses of the racemic jaborandi alkaloids pilocarpine, isopilocarpine and pilosinine
S. G. Davies, P. M. Roberts, P. T. Stephenson, J. E. Thomson, *Tetrahedron Lett.*, **2009**, 50, 3509
449. Iodine-mediated ring closing iodoamination with concomitant *N*-debenzylation for the asymmetric synthesis of polyhydroxylated pyrrolidines
S. G. Davies, R. L. Nicholson, P. D. Price, P. M. Roberts, E. D. Savory, A. D. Smith, J. E. Thomson, *Tetrahedron: Asymmetry*, **2009**, 20, 758
450. Doubly diastereoselective [3,3]-sigmatropic aza-Claisen rearrangements
S. G. Davies, A. C. Garner, R. L. Nicholson, J. Osborne, P. M. Roberts, E. D. Savory, A. D. Smith, J. E. Thomson, *Org. Biomol. Chem.*, **2009**, 7, 2604
451. A structural study of the interaction between the Dr haemagglutinin DraE and derivatives of chloramphenicol
D. M. Pettigrew, P. Roversi, **S. G. Davies**, A. J. Russell, S. M. Lea, *Acta Cryst. D*, **2009**, D65, 513
452. Hedgehog and Bmp Polarize Hematopoietic Stem Cell Emergence in the Zebrafish Dorsal Aorta
R. N. Wilkinson, C. Pouget, M. Gering, A. J. Russell, **S. G. Davies**, D. Kimelman, R. Patient, *Developmental Cell*, **2009**, 16, 909

453. The chiral auxiliary *N*-1-(1'-naphthyl)ethyl-*O*-*tert*-butylhydroxylamine: a chiral Weinreb amide equivalent
A. N. Chernega, **S. G. Davies**, C. J. Goodwin, D. Hepworth, W. Kurosawa, P. M. Roberts, J. E. Thomson
Org. Lett., **2009**, *11*, 3254
454. The dienolate aldol reaction of (*E*)-*N*-crotonoyl C(4)-isopropyl SuperQuat: asymmetric synthesis of α -vinyl- β -hydroxycarboxylic acid derivatives and conversion to α -ethylidene- β -hydroxyesters (β -substituted Baylis-Hillman products)
S. G. Davies, D. L. Elend, S. Jones, P. M. Roberts, A. D. Smith, J. E. Thomson, *Tetrahedron*, **2009**, *65*, 7837
455. A practical and scaleable total synthesis of the jaborandi alkaloid (+)-pilocarpine
S. G. Davies, P. M. Roberts, P. T. Stephenson, H. R. Storr, J. E. Thomson, *Tetrahedron*, **2009**, *65*, 8283
456. Ammonium-directed oxidation of cyclic allylic and homoallylic amines
C. W. Bond, A. J. Cresswell, **S. G. Davies**, A. M. Fletcher, W. Kurosawa, J. A. Lee, P. M. Roberts, A. J. Russell, A. D. Smith, J. E. Thomson, *J. Org. Chem.*, **2009**, *74*, 6735
457. Asymmetric synthesis of *Sedum* alkaloids via lithium amide conjugate addition
S. G. Davies, A. M. Fletcher, P. M. Roberts, A. D. Smith, *Tetrahedron*, **2009**, *65*, 10192
458. Abrogation of E-cadherin mediated cell-cell contact in mouse embryonic stem cells results in reversible LIF-independent self-renewal
F. Soncin, L. Mohamet, D. Eckardt, S. Ritson, A. M. Eastham, H. Spencer, N. Bobola, A. J. Russell, **S. G. Davies**, R. Kemler, C. L. R. Merry, C. M. Ward, *Stem Cells*, **2009**, *27*, 2069
459. An oxidation and ring-contraction approach to the synthesis of ($\pm$)-1-deoxynojirimycin and ($\pm$)-1-deoxyaltronojirimycin
S. K. Bagal, **S. G. Davies**, J. A. Lee, P. M. Roberts, A. J. Russell, P. M. Scott, J. E. Thomson, *Org. Lett.*, **2010**, *12*, 136
460. On the origins of diastereoselectivity in the alkylation of enolates derived from *N*-1-(1'-naphthyl)ethyl-*O*-*tert*-butylhydroxamates: chiral Weinreb amide equivalents
S. G. Davies, C. J. Goodwin, D. Hepworth, P. M. Roberts, J. E. Thomson, *J. Org. Chem.*, **2010**, *75*, 1214
461. Enantiospecific stereodivergent synthesis of *trans*- and *cis*-*N*(2),3-dimethyl-4-phenyl-1,2,3,4-tetrahydroisoquinolines
S. J. Coote, **S. G. Davies**, A. M. Fletcher, P. M. Roberts, J. E. Thomson, *Chem. Asian J.*, **2010**, *5*, 589
462. Asymmetric synthesis piperidines and octahydroindolizines
S. G. Davies, D. G. Hughes, P. D. Price, P. M. Roberts, A. J. Russell, A. D. Smith, J. E. Thomson, O. M. H. Williams, *Synlett*, **2010**, 567
463. Small Molecule Colorimetric Probes for Specific Detection of Human Arylamine *N*-Acetyltransferase 1, a Potential Breast Cancer Biomarker
N. Laurieri, M. H. J. Crawford, A. Kawamura, I. M. Westwood, J. Robinson, A. M. Fletcher, **S. G. Davies**, E. Sim, A. J. Russell, *J. Am. Chem. Soc.*, **2010**, *132*, 3238
464. Alkylation and aldol reactions of acyl derivatives of *N*-1-(1'-naphthyl)ethyl-*O*-*tert*-butylhydroxylamine: asymmetric synthesis of α -alkoxy-, α -substituted- β -alkoxy- and α,β -dialkoxyaldehydes
A. N. Chernega, **S. G. Davies**, A. M. Fletcher, C. J. Goodwin, D. Hepworth, R. S. Prasad, P. M. Roberts, E. D. Savory, A. D. Smith, J. E. Thomson, *Tetrahedron*, **2010**, *66*, 4167
465. Conjugate addition of lithium *N*-*tert*-butyldimethylsilyloxy-*N*-(α -methylbenzyl)amide: asymmetric synthesis of $\beta^{2,2,3}$ -trisubstituted amino acids
S. A. Bentley, **S. G. Davies**, J. A. Lee, P. M. Roberts, A. J. Russell, J. E. Thomson, S. M. Toms, *Tetrahedron*, **2010**, *66*, 4604
466. β -Fluoroamphetamines via the stereoselective synthesis of benzylic fluorides
A. J. Cresswell, **S. G. Davies**, J. A. Lee, P. M. Roberts, J. E. Thomson, M. J. Tyte, *Org. Lett.*, **2010**, *12*, 2936
467. Syntheses of *trans*-SCH-A and *cis*-SCH-A via a stereodivergent cyclopropanation protocol
K. Csatajová, **S. G. Davies**, J. A. Lee, K. B. Ling, P. M. Roberts, A. J. Russell, J. E. Thomson, *Org. Lett.*, **2010**, *12*, 3152

468. Doubly diastereoselective conjugate addition of enantiopure lithium amides to enantiopure *N*-enoyl oxazolidin-2-ones: a mechanistic probe
S. G. Davies, A. M. Fletcher, G. J. Hermann, G. Poce, P. M. Roberts, A. D. Smith, M. J. Sweet, J. E. Thomson
Tetrahedron: Asymmetry, **2010**, 21, 1635
469. A systematic study of the solid state and solution phase conformational preferences of β -peptides derived from transpentacin
E. Abraham, C. W. Bailey, T. D. W. Claridge, **S. G. Davies**, K. B. Ling, B. Odell, T. L. Rees, P. M. Roberts, A. J. Russell, A. D. Smith, L. J. Smith, H. R. Storr, M. J. Sweet, A. L. Thompson, J. E. Thomson, G. E. Tranter, D. J. Watkin, *Tetrahedron: Asymmetry*, **2010**, 21, 1797
470. The stereodivergent aziridination of allylic carbamates, amides and sulfonamides
S. G. Davies, K. B. Ling, P. M. Roberts, A. J. Russell, J. E. Thomson, P. A. Woods,
Tetrahedron, **2010**, 66, 6806
471. The stereodivergent asymmetric synthesis of a range of 2-(1'-hydroxyalkyl)phenols
S. G. Davies, W. E. Hume, P. M. Roberts, J. E. Thomson, *Tetrahedron*, **2010**, 66, 8076
472. Chemo- and diastereoselective cyclopropanation of allylic amines and carbamates
K. Csatajová, **S. G. Davies**, J. A. Lee, K. B. Ling, P. M. Roberts, A. J. Russell, J. E. Thomson,
Tetrahedron, **2010**, 66, 8420
473. One-pot conversion of olefins to cyclic carbonates and secondary allylic and homoallylic amines to cyclic carbamates
S. G. Davies, A. M. Fletcher, W. Kurosawa, J. A. Lee, G. Poce, P. M. Roberts, J. E. Thomson, D. M. Williamson
J. Org. Chem., **2010**, 75, 7745
474. Syntheses of the enantiomers of 1-deoxynojirimycin and 1-deoxyaltronojirimycin via chemo- and distereoselective olefinic oxidation of unsaturated amines
S. K. Bagal, **S. G. Davies**, J. A. Lee, P. M. Roberts, P. M. Scott, J. E. Thomson, *J. Org. Chem.*, **2010**, 75, 8133
475. Identification of arylamine N-acetyltransferase inhibitors as an approach towards novel anti-tuberculars
I. M. Westwood, S. Bhakta, A. J. Russell, E. Fullam, M. C. Anderton, A. Kawamura, A. W. Mulvaney, R. J. Vickers, V. Bhowruth, G. S. Besra, A. Lalvani, **S. G. Davies**, E. Sim, *Protein & Cell*, **2010**, 1, 82
476. Lithium amides as homochiral ammonia equivalents for Michael additions to α,β -unsaturated esters: asymmetric synthesis of (*S*)- β -leucine
S. G. Davies, A. M. Fletcher, P. M. Roberts, *Org. Synth.*, **2010**, 87, 143
477. Ammonium-directed oxidation of cyclic allylic and homoallylic amines
W. Kurosawa, P. M. Roberts, **S. G. Davies**, *Yuki Gosei Kagaku Kyokaishi (J. Synth. Org. Chem. Jpn.)*, **2010**, 68, 1295
478. Concise and selective asymmetric synthesis of acosamine from sorbic acid
S. K. Bagal, **S. G. Davies**, A. M. Fletcher, J. A. Lee, P. M. Roberts, P. M. Scott, J. E. Thomson, *Tetrahedron Lett.*, **2011**, 52, 2216
479. Asymmetric syntheses of (+)-negamycin, (+)-3-*epi*-negamycin and sperabillin C via lithium amide conjugate addition
S. G. Davies, O. Ichihara, P. M. Roberts, J. E. Thomson, *Tetrahedron*, **2011**, 67, 216
480. A systematic study of the solid state and solution phase conformational preferences of β -peptides derived from C(3)-alkyl substituted transpentacin derivatives
E. Abraham, T. D. W. Claridge, **S. G. Davies**, B. Odell, P. M. Roberts, A. J. Russell, A. D. Smith, L. J. Smith, H. R. Storr, M. J. Sweet, A. L. Thompson, J. E. Thomson, G. E. Tranter, D. J. Watkin, *Tetrahedron: Asymmetry*, **2011**, 22, 69
481. Asymmetric synthesis of polyhydroxylated pyrrolizidines via transannular iodoamination with concomitant *N*-debenzylation
E. A. Brock, **S. G. Davies**, J. A. Lee, P. M. Roberts, J. E. Thomson, *Org. Lett.*, **2011**, 13, 1594
482. Chemical Biology of Stem Cell Modulation in *New Frontiers in Chemical Biology: Enabling Drug Discovery*
S. G. Davies, A. J. Russell; The Royal Society of Chemistry, Cambridge, UK, **2011**, pp. 97-150

483. Stereochemical assignment of substituted 2-aminobicyclo[3.1.0]hexane and 2-aminobicyclo[5.1.0]octane derivatives via single crystal X-ray diffraction
K. E. Christensen, K. Csatajová, **S. G. Davies**, J. A. Lee, P. M. Roberts, A. L. Thompson, J. E. Thomson, *J. Chem. Crystallogr.*, **2011**, 41, 1007
484. Highly diastereoselective and stereodivergent dihydroxylations of acyclic allylic amines: application to the asymmetric synthesis of 3,6-dideoxy-3-amino-L-talose
K. Csatajová, **S. G. Davies**, J. A. Lee, P. M. Roberts, A. J. Russell, J. E. Thomson, D. L. Wilson, *Org. Lett.*, **2011**, 13, 2606
485. Conjugate addition of lithium *N*-phenyl-*N*-(α -methylbenzyl)amide: application to the asymmetric synthesis of (*R*)-(-)-angustureine
S. A. Bentley, **S. G. Davies**, J. A. Lee, P. M. Roberts, J. E. Thomson, *Org. Lett.*, **2011**, 13, 2544
486. Ring opening hydrofluorination of α - and β -amino epoxides by HBF₄: application to the asymmetric synthesis of (*S,S*)-3-deoxy-3-fluorosafingol
A. J. Cresswell, **S. G. Davies**, J. A. Lee, M. J. Morris, P. M. Roberts, J. E. Thomson, *J. Org. Chem.*, **2011**, 76, 4617
487. Double asymmetric induction as a mechanistic probe: the doubly diastereoselective conjugate addition of enantiopure lithium amides to enantiopure α,β -unsaturated esters and enantiopure α,β -unsaturated hydroxamates
S. G. Davies, J. A. Lee, P. M. Roberts, J. E. Thomson, J. Yin, *Tetrahedron*, **2011**, 67, 6382
488. Asymmetric synthesis of *syn*- and *anti*- α -deuterio- β^3 -phenylalanine derivatives
S. G. Davies, E. M. Foster, C. R. McIntosh, P. M. Roberts, T. E. Rosser, A. D. Smith, J. E. Thomson
Tetrahedron: Asymmetry, **2011**, 22, 1035
489. Analysis of β -amino alcohols as inhibitors of the potential anti-tubercular target N-acetyltransferase
E. Fullam, A. Abuhammad, D. L. Wilson, M. C. Anderton, **S. G. Davies**, A. J. Russell, E. Sim
Bioorg. Med. Chem. Lett., **2011**, 21, 1185
490. Novel small-molecule inhibitors of arylamine N-acetyltransferases: drug discovery by high throughput screening
I. M. Westwood, A. Kawamura, A. J. Russell, S. Sandy, **S. G. Davies**, E. Sim
Combinatorial Chemistry & High Throughput Screening, **2011**, 14, 117
491. Crystal structures of dipeptides derived from (1*R*,2*S*)-2-aminocyclopentanecarboxylic acid and (1*S*,2*R*,3*S*)-2-amino-3-methylcyclopentane-carboxylic acid
E. Abraham, **S. G. Davies**, P. M. Roberts, J. E. Thomson, *J. Chem. Crystallogr.*, **2011**, 41, 1722
492. Concise, efficient and highly selective asymmetric synthesis of (+)-(3*S*,4*R*)-cisapride
S. G. Davies, R. Huckvale, T. J. A. Lorkin, P. M. Roberts, J. E. Thomson, *Tetrahedron: Asymmetry*, **2011**, 22, 1591
493. Asymmetric synthesis of (-)-codonopsinine
S. G. Davies, J. A. Lee, P. M. Roberts, J. E. Thomson, C. J. West, *Tetrahedron Lett.*, **2011**, 52, 6477
494. Asymmetric synthesis of piperidines and octahydroindolizines using a one-pot ring-closure/*N*-debenzylation procedure
S. G. Davies, A. M. Fletcher, D. G. Hughes, J. A. Lee, P. D. Price, P. M. Roberts, A. J. Russell, A. D. Smith, J. E. Thomson, O. M. H. Williams, *Tetrahedron* **2011**, 67, 9975
495. Parallel kinetic resolution of acyclic γ -amino- α,β -unsaturated esters: application to the asymmetric synthesis of 4-aminopyrrolidin-2-ones
S. G. Davies, J. A. Lee, P. M. Roberts, J. E. Thomson, J. Yin, *Org. Lett.*, **2012**, 14, 218
496. Asymmetric synthesis of (-)-(*S,S*)-homaline
S. G. Davies, J. A. Lee, P. M. Roberts, J. P. Stonehouse, J. E. Thomson, *Tetrahedron Lett.*, **2012**, 53, 1119
497. Asymmetric synthesis of 3,4-*syn*- and 3,4-*anti*-4-amino-3-alkylpiperidines and 4-hydroxy-3-alkylpiperidines: application to the asymmetric synthesis of (+)-(3*S*,4*R*)-cisapride
S. G. Davies, R. Huckvale, J. A. Lee, T. J. A. Lorkin, P. M. Roberts, J. E. Thomson *Tetrahedron*, **2012**, 68, 3263
498. Polysubstituted piperidines via iodolactonisation: application to the asymmetric synthesis of pseudodistomin D
S. G. Davies, A. M. Fletcher, J. A. Lee, P. M. Roberts, A. J. Russell, R. J. Taylor, A. D. Thomson, J. E. Thomson, *Org. Lett.*, **2012**, 14, 1672

499. The asymmetric synthesis of (–)-(R)-sitagliptin
S. G. Davies, A. M. Fletcher, L. Lv, P. M. Roberts, J. E. Thomson, *Tetrahedron Lett.*, **2012**, 53, 3052
500. Ring-closing iodoamination of homoallylic amines for the synthesis of polysubstituted pyrrolidines: application to the asymmetric synthesis of (–)-codonopsinine
S. G. Davies, J. A. Lee, P. M. Roberts, J. E. Thomson, C. J. West, *Tetrahedron*, **2012**, 68, 4302
501. An electrochemical thermometer: voltammetric measurement of temperature and its application to amperometric gas sensing
L. Xiong, A. M. Fletcher, S. Ernst, **S. G. Davies**, R. G. Compton, *Analyst*, **2012**, 137, 2567
502. On the origins of diastereoselectivity in the conjugate additions of the antipodes of lithium *N*-benzyl-*N*-(α -methylbenzyl)amide to enantiopure *cis*- and *trans*-dioxolane containing α,β -unsaturated esters
S. G. Davies, E. M. Foster, A. B. Frost, J. A. Lee, P. M. Roberts, J. E. Thomson, *Org. Biomol. Chem.*, **2012**, 10, 6186
503. Tuning solute redox potentials by varying the anion component of room temperature ionic liquids
L. Xiong, A. M. Fletcher, **S. G. Davies**, S. E. Norman, C. Hardacre, R. G. Compton, *Chem. Commun.*, **2012**, 48, 5784
504. The asymmetric synthesis of β -fluoroaryl- β -amino acids
S. G. Davies, A. M. Fletcher, L. Lv, P. M. Roberts, J. E. Thomson, *Tetrahedron: Asymmetry*, **2012**, 23, 910
505. Asymmetric synthesis of the tropane alkaloid (+)-pseudococaine via ring-closing iodoamination
E. A. Brock, **S. G. Davies**, J. A. Lee, P. M. Roberts, J. E. Thomson, *Org. Lett.*, **2012**, 14, 4278
506. Asymmetric syntheses of the homalium alkaloids (–)-(S,S)-homaline and (–)-(R,R)-hopromine
S. G. Davies, J. A. Lee, P. M. Roberts, J. P. Stonehouse, J. E. Thomson, *J. Org. Chem.*, **2012**, 77, 7028
507. (–)-(S)-Nakinadine B: first asymmetric synthesis
S. G. Davies, J. A. Lee, P. M. Roberts, R. S. Shah, J. E. Thomson, *Chem. Commun.*, **2012**, 48, 9236
508. Ammonium-directed olefinic oxidation: kinetic and mechanistic insights
M. B. Brennan, T. D. W. Claridge, R. G. Compton, **S. G. Davies**, A. M. Fletcher, M. C. Henstridge, D. S. Hewings, W. Kurosawa, J. A. Lee, P. M. Roberts, A. K. Schoonen, J. E. Thomson, *J. Org. Chem.*, **2012**, 77, 7241
509. Diastereodivergent hydroxyfluorination of allylic amines: application to the synthesis of 4-deoxy-4-fluoro-phytosphingosines
A. J. Cresswell, **S. G. Davies**, J. A. Lee, M. J. Morris, P. M. Roberts, J. E. Thomson, *J. Org. Chem.*, **2012**, 77, 7262
510. The conjugate addition of enantiomerically pure lithium amides as chiral ammonia equivalents part II: 2005–2011
S. G. Davies, A. M. Fletcher, P. M. Roberts, J. E. Thomson, *Tetrahedron: Asymmetry*, **2012**, 23, 1111
511. Interview with Steve Davies
ChemComm Profile, *Chem. Commun.*, **2012**, 10068
512. Absolute configuration assignment by asymmetric syntheses of the homalium alkaloids (–)-(R,R,R)-hoprominol and (–)-(4'S,4''R,2'''R)-hopromalinol
S. G. Davies, J. A. Lee, P. M. Roberts, J. P. Stonehouse, J. E. Thomson, *J. Org. Chem.*, **2012**, 77, 9724
513. A simultaneous voltammetric temperature and humidity sensor
L. Xiong, A. M. Fletcher, **S. G. Davies**, S. E. Norman, C. Hardacre, R. G. Compton, *Analyst*, **2012**, 137, 4951
514. Piperidinols that show anti-tubercular activity as inhibitors of arylamine *N*-acetyltransferase: an essential enzyme for mycobacterial survival inside macrophages
A. Abuhammad, E. Fullam, E. D. Lowe, D. Staunton, A. Kawamura, I. M. Westwood, S. Bhakta, A. C. Garner, D. L. Wilson, P. T. Seden, **S. G. Davies**, A. J. Russell, E. F. Garman, E. Sim, *PLoS One*, **2012**, 7, e52790
515. Asymmetric synthesis of (–)-absoulone
S. G. Davies, A. M. Fletcher, C. Lebé, P. M. Roberts, J. E. Thomson, J. Yin, *Tetrahedron*, **2013**, 69, 1369
516. Asymmetric syntheses of APTO and AETD: the β -amino acid fragments within microscleodermins C, D and E
S. G. Davies, A. M. Fletcher, E. M. Foster, J. A. Lee, P. M. Roberts, J. E. Thomson, *J. Org. Chem.*, **2013**, 78, 2500
517. Asymmetric syntheses of (–)-1-deoxymannojirimycin and (+)-1-deoxyallonojirimycin via a ring-expansion approach
S. G. Davies, A. L. A. Figuccia, A. M. Fletcher, P. M. Roberts, J. E. Thomson, *Org. Lett.*, **2013**, 15, 2042

518. Asymmetric synthesis of (–)-martinellic acid
S. G. Davies, A. M. Fletcher, J. A. Lee, T. J. A. Lorkin, P. M. Roberts, J. E. Thomson, *Org. Lett.*, **2013**, 15, 2050
519. Polyhydroxylated pyrrolizidine alkaloids from transannular iodoaminations: application to the asymmetric syntheses of (–)-hyacinthacine A1, (–)-7a-*epi*-hyacinthacine A1, (–)-hyacinthacine A2 and (–)-1-*epi*-alexine
 E. A. Brock, **S. G. Davies**, J. A. Lee, P. M. Roberts, J. E. Thomson, *Org. Biomol. Chem.*, **2013**, 11, 3187
520. Design, synthesis and structure-activity relationships of 3,5-diaryl-1*H*-pyrazoles as inhibitors of arylamine N-acetyltransferase
 E. Fullam, J. Talbot, A. Abuhammed, I. Westwood, **S. G. Davies**, A. J. Russell, E. Sim, *Bioorg. Med. Chem. Lett.*, **2013**, 23, 2759
521. Stereochemical aspects of nucleophilic addition reactions to alkoxycarbene cations of the iron chiral auxiliary [(η⁵-C₅H₅)Fe(CO)(PPh₃)]
S. G. Davies, A. M. Fletcher, T. R. Maberly, J. E. Thomson, *New J. Chem.*, **2013**, 37, 3406
522. Asymmetric syntheses of enantiopure C(5)-substituted transpentacins via diastereoselective Ireland-Claisen rearrangements
S. G. Davies, A. M. Fletcher, P. M. Roberts, J. E. Thomson, C. M. Zammit, *Chem. Commun.*, **2013**, 49, 7037
523. Solution phase structures of enantiopure and racemic lithium *N*-benzyl-*N*-(α-methylbenzyl)amide in THF: low temperature ⁶Li and ¹⁵N NMR spectroscopic studies
 T. D. W. Claridge, **S. G. Davies**, D. Kruchinin, B. Odell, P. M. Roberts, A. J. Russell, J. E. Thomson, S. M. Toms, *Tetrahedron: Asymmetry*, **2013**, 24, 947
524. Synthesis and crystal structures of *N*-aryl-*N*-methylaminocyclohexanols
 A. J. Cresswell, **S. G. Davies**, D. S. Hewings, W. Kurosawa, J. A. Lee, M. J. Morris, P. M. Roberts, J. E. Thomson, *J. Chem. Crystallogr.*, **2013**, 43, 646
525. Asymmetric syntheses of dihydroxyhomoprolines via doubly diastereoselective lithium amide conjugate addition reactions
S. G. Davies, E. M. Foster, J. A. Lee, P. M. Roberts, J. E. Thomson, *Tetrahedron*, **2013**, 69, 8680
526. Trading *N* and *O*: asymmetric syntheses of β-hydroxy-α-amino acids via α-hydroxy-β-amino esters
S. G. Davies, A. M. Fletcher, A. B. Frost, J. A. Lee, P. M. Roberts, J. E. Thomson, *Tetrahedron*, **2013**, 69, 8885
527. Direct asymmetric syntheses of chiral aldehydes and ketones via *N*-acyl chiral auxiliary derivatives including chiral Weinreb amide equivalents
S. G. Davies, A. M. Fletcher, J. E. Thomson, *Chem. Commun.*, **2013**, 49, 8586
528. Asymmetric synthesis of the marine alkaloid (–)-(*S*)-nakinadine C
S. G. Davies, P. M. Roberts, R. S. Shah, J. E. Thomson, *Tetrahedron Lett.*, **2013**, 54, 6423
529. A diastereodivergent strategy for the synthesis of (–)-martinellic acid and (–)-4-*epi*-martinellic acid
S. G. Davies, A. M. Fletcher, J. A. Lee, T. J. A. Lorkin, P. M. Roberts, J. E. Thomson, *Tetrahedron*, **2013**, 69, 9779
530. Asymmetric syntheses of methyl *N,O*-diacetyl-D-3-*epi*-daunosaminide and methyl *N,O*-diacetyl-D-ristosaminide
 K. Csatajová, **S. G. Davies**, J. G. Ford, J. A. Lee, P. M. Roberts, J. E. Thomson, *J. Org. Chem.*, **2013**, 78, 12397
531. Synthesis and crystal structures of (*RS,RS,RS*)- and (*1RS,2RS,3SR*)-3-(*N*-methylamino)cyclohexane-1,2-diol
S. G. Davies, D. S. Hewings, J. A. Lee, W. Kurosawa, P. M. Roberts, A. L. Thompson, J. E. Thomson, *J. Chem. Crystallogr.*, **2014**, 44, 30
532. Asymmetric syntheses of (–)-isoretronecanol and (–)-trachelantamidine
 M. Brambilla, **S. G. Davies**, A. M. Fletcher, P. M. Roberts, J. E. Thomson, *Tetrahedron*, **2014**, 70, 204
533. Regio- and stereoselective derivatisation of an aporphine scaffold
 J. D. M. Atkinson, **S. G. Davies**, J. E. Thomson, *Heterocycles*, **2014**, 88, 765
534. Extending the Curtin-Hammett principle: the relative rates of intramolecular cyclisation versus intermolecular processes
 M. C. Henstridge, **S. G. Davies**, J. E. Thomson, R. G. Compton, *Tetrahedron Lett.*, **2014**, 55, 1886
535. Asymmetric and enantiospecific syntheses of 1-hydroxymethyl pyrrolizidine alkaloids
 M. Brambilla, **S. G. Davies**, A. M. Fletcher, J. E. Thomson, *Tetrahedron: Asymmetry*, **2014**, 25, 387

536. Doubly diastereoselective conjugate additions of the antipodes of lithium *N*-benzyl-*N*-(α -methylbenzyl)amide to enantiopure ϵ -*O*-protected α,β -unsaturated esters derived from D-ribose
S. G. Davies, E. M. Foster, J. A. Lee, P. M. Roberts, J. E. Thomson, *Tetrahedron: Asymmetry*, **2014**, 25, 534
537. (–)-(2*S*,3*R*,*Z*)-Nakinadine A: first asymmetric synthesis and absolute configuration assignment
S. G. Davies, A. M. Fletcher, P. M. Roberts, R. S. Shah, A. L. Thompson, J. E. Thomson, *Org. Lett.*, **2014**, 16, 1354
538. The synthesis and crystal structure of Cbz-[(1*R*,2*S*)-ACPC]₃-OH: a tripeptide derived from the β -amino acid (1*R*,2*S*)-cispentacin
S. G. Davies, E. Siddall, A. L. Thompson, J. E. Thomson, *J. Chem. Crystallogr.*, **2014**, 44, 205
539. Asymmetric syntheses of methyl *N*-Boc-2-deoxy-2-amino-L-erythroside, methyl *N*-Boc-2-deoxy-2-amino-D-threoside and methyl *N*-Boc-2,3-dideoxy-3-amino-L-arabinopyranoside
M. Brambilla, **S. G. Davies**, A. M. Fletcher, L. Hao, L. Lv, P. M. Roberts, J. E. Thomson, *Tetrahedron*, **2014**, 70, 3491
540. Diastereoselective Ireland–Claisen rearrangements of substituted allyl β -amino esters: applications in the asymmetric synthesis of C(5)-substituted transpentacins
S. G. Davies, A. M. Fletcher, J. A. Lee, P. M. Roberts, M. Y. Souleymanou, J. E. Thomson, C. M. Zammit, *Org. Biomol. Chem.*, **2014**, 12, 2702
541. Asymmetric syntheses of the methyl glycosides of 2-deoxy-2-aminohexoses: D-allosamine, D-mannosamine, D-idosamine and D-talosamine
S. G. Davies, A. M. Fletcher, E. M. Foster, J. A. Lee, P. M. Roberts, J. E. Thomson, M. A. Waul, *Tetrahedron*, **2014**, 70, 7016
542. Asymmetric syntheses of 2,5-dideoxy-2,5-imino-D-glucitol [(+)-DGDP] and 1,2,5-trideoxy-1-amino-2,5-imino-D-glucitol [(+)-ADGDP]
S. G. Davies, A. L. A. Figuccia, A. M. Fletcher, P. M. Roberts, J. E. Thomson, *Tetrahedron*, **2014**, 70, 3601
543. Hydrogen bond directed epoxidation: diastereoselective olefinic oxidation of allylic alcohols and amines
S. G. Davies, A. M. Fletcher, J. E. Thomson, *Org. Biomol. Chem.*, **2014**, 12, 4544
544. Trading *N* and *O*. Part 2: Exploiting aziridinium intermediates for the synthesis of β -hydroxy- α -amino acids
S. G. Davies, A. M. Fletcher, A. B. Frost, P. M. Roberts, J. E. Thomson, *Tetrahedron*, **2014**, 70, 5849
545. An efficient asymmetric synthesis of (–)-lupinine
S. G. Davies, A. M. Fletcher, E. M. Foster, I. T. T. Houlsby, P. M. Roberts, T. M. Schofield, J. E. Thomson, *Chem. Commun.*, **2014**, 50, 8309
546. Stereospecific cyclisation strategies for α,ϵ -dihydroxy- β -amino esters: asymmetric syntheses of 1-deoxyimino and 1-deoxyamino sugars
S. G. Davies, E. M. Foster, J. A. Lee, P. M. Roberts, J. E. Thomson, *J. Org. Chem.*, **2014**, 79, 9686
547. Stereoselective syntheses of substituted succinic acid derivatives of the iron chiral auxiliary [(η^5 -C₅H₅)Fe(CO)(PPh₃)]
G. Bashiardes, G. J. Bodwell, S. P. Collingwood, J. F. Costello, **S. G. Davies**, A. M. Fletcher, A. Garner, S. C. Preston, J. E. Thomson, *Tetrahedron*, **2014**, 70, 8938
548. The asymmetric syntheses of pyrrolizidines, indolizidines and quinolizidines via two sequential tandem ring-closure/*N*-debenzylation processes
S. G. Davies, A. M. Fletcher, E. M. Foster, I. T. T. Houlsby, P. M. Roberts, T. M. Schofield, J. E. Thomson, *Org. Biomol. Chem.*, **2014**, 12, 9223
549. The synthesis and crystal structures of two hydrogen-bonded *N*-oxides
E. A. Brock, **S. G. Davies**, D. S. Hewings, J. A. Lee, A. L. Thompson, J. E. Thomson, *J. Chem. Crystallogr.*, **2014**, 44, 548
550. Asymmetric syntheses of (–)-3-*epi*-fagomine, (2*R*,3*S*,4*R*)-dihydroxypipelicolic acid and several polyhydroxylated homopipelicolic acids
K. Csatayová, **S. G. Davies**, A. M. Fletcher, J. G. Ford, D. J. Klauber, P. M. Roberts, J. E. Thomson, *J. Org. Chem.*, **2014**, 79, 10932
551. Selective electrochemical determination of cysteine with a cyclotricatechylene modified carbon electrode
P. T. Lee, J. E. Thomson, A. Karina, C. Salter, C. Johnston, **S. G. Davies**, R. G. Compton, *Analyst*, **2014**, 140, 236

552. The homalium alkaloids: isolation, synthesis and absolute configuration assignment
S. G. Davies, J. E. Thomson, In *The Alkaloids: Chemistry and Biology*; H.-J. Knölker, Ed.; Elsevier: London, U.K., 2015; Vol. 74, pp 121–158
553. Beyond the Balz-Schiemann reaction: the growing utility of tetrafluoroborates and boron trifluoride as nucleophilic fluorine sources
A. J. Cresswell, **S. G. Davies**, P. M. Roberts, J. E. Thomson, *Chem. Rev.*, **2015**, *115*, 566
554. Epoxidation of *trans*-4-aminocyclohex-2-en-1-ol derivatives: competition of hydroxyl-directed and ammonium-directed pathways
M. B. Brennan, **S. G. Davies**, A. M. Fletcher, J. A. Lee, P. M. Roberts, A. J. Russell, J. E. Thomson, *Aust. J. Chem.*, **2015**, *68*, 610
555. Concise total asymmetric syntheses of (–)-fagomine, two of its epimers, and two seven-membered ring congeners
K. Csatajová, **S. G. Davies**, A. M. Fletcher, J. G. Ford, D. J. Klauber, P. M. Roberts, J. E. Thomson, *Tetrahedron*, **2015**, *71*, 7170
556. Pinacoloboron fluoride (pinBF): an efficient fluorine transfer agent for the synthesis of benzylic fluorides
A. J. Cresswell, **S. G. Davies**, A. L. A. Figuccia, A. M. Fletcher, D. Heijnen, J. A. Lee, M. J. Morris, A. M. R. Kennett, P. M. Roberts, J. E. Thomson, *Tetrahedron Lett.*, **2015**, *56*, 3373
557. Stemistry: The Control of Stem Cells in Situ Using Chemistry
S. G. Davies, P. D. Kennewell, A. J. Russell, P. T. Seden, R. Westwood, G. M. Wynne, *J. Med. Chem.*, **2015**, *58*, 2863
558. Diastereoselective conjugate additions to alkoxycarbene cations of the iron chiral auxiliary
[(η^5 -C₅H₅)Fe(CO)(PPh₃)=C(OMe)CH=CHR]⁺
S. G. Davies, R. J. C. Easton, J. M. McKenna, M. E. C. Polywka, J. E. Thomson, *J. Organomet. Chem.*, **2015**, *792*, 66
559. Conformational analysis of triphenylphosphine ligands in stereogenic monometallic complexes: tools for predicting the preferred configuration of the triphenylphosphine rotor
J. F. Costello, **S. G. Davies**, E. T. F. Gould, J. E. Thomson, *Dalton Trans.*, **2015**, *44*, 5451
560. Asymmetric syntheses of nakinadine D, nakinadine E and nakinadine F: confirmation of their relative (*RS*,*SR*)-configurations and proposal of their absolute (*2S*,*3R*)-configurations
S. G. Davies, A. M. Fletcher, R. S. Shah, P. M. Roberts, J. E. Thomson, *J. Org. Chem.*, **2015**, *80*, 4017
561. Asymmetric synthesis of substituted *anti*- β -fluorophenylalanines
S. G. Davies, A. M. Fletcher, A. B. Frost, P. M. Roberts, J. E. Thomson, *Org. Lett.*, **2015**, *17*, 2254
562. Enantiopure 3-amino substituted 1-indanones, 1-tetralones and 1-benzosuberones via Friedel-Crafts cyclisation of ω -aryl- β -benzamido acids
S. G. Davies, E. C. Goddard, P. M. Roberts, A. J. Russell, J. E. Thomson, *Synlett*, **2015**, *26*, 1541
563. Syntheses of dihydroconduramines ($\pm$)-B-1, ($\pm$)-E-1 and ($\pm$)-F-1 via diastereoselective epoxidation of *N*-protected 4-aminocyclohex-2-en-1-ols
M. B. Brennan, K. Csatajová, **S. G. Davies**, A. M. Fletcher, W. D. Green, J. A. Lee, P. M. Roberts, A. J. Russell, J. E. Thomson, *J. Org. Chem.*, **2015**, *80*, 6609
564. Second-generation compound for the modulation of utrophin in the therapy of DMD
S. Guiraud, S. E. Squire, B. Edwards, H. Chen, D. T. Burns, N. Shah, A. Babbs, **S. G. Davies**, G. M. Wynne, A. J. Russell, D. Elsey, F. X. Wilson, J. M. Tinsley, K. E. Davies, *Hum. Mol. Genet.*, **2015**, *24*, 4212
565. Synthesis and crystal structures of 2-azido-4-aminocyclohexane-1,3-diols
M. B. Brennan, **S. G. Davies**, J. A. Lee, A. L. Thompson, J. E. Thomson, *J. Chem. Crystallogr.*, **2015**, *45*, 401
566. Asymmetric syntheses of polysubstituted homoprolines and homoprolinols
K. Csatajová, **S. G. Davies**, A. L. A. Figuccia, A. M. Fletcher, J. G. Ford, J. A. Lee, P. M. Roberts, H. Song, J. E. Thomson, *Tetrahedron*, **2015**, *71*, 9131
567. Syntheses of (*R*)-sitagliptin
S. G. Davies, A. M. Fletcher, J. E. Thomson, *Tetrahedron: Asymmetry*, **2015**, *26*, 1109

568. Asymmetric syntheses of the methyl 3-deoxy-3-amino-glycosides of D-*glycero*-L-*gulo*-heptose, D-*glycero*-D-*galacto*-heptose, D-*glycero*-L-*allo*-heptose and D-*glycero*-D-*allo*-heptose
M. Brambilla, **S. G. Davies**, W. T. Diment, A. M. Fletcher, J. A. Lee, P. M. Roberts, J. E. Thomson, M. A. Waul, *Tetrahedron: Asymmetry*, **2016**, 27, 31
569. The asymmetric synthesis of enantiopure C(5)-substituted transpentacins via diastereoselective conjugate additions to a β -amino- α,β -unsaturated ester
S. G. Davies, A. M. Fletcher, P. M. Roberts, J. E. Thomson, C. M. Zammit, *Tetrahedron: Asymmetry*, **2016**, 27, 208
570. Asymmetric synthesis of *N,O*-diacetyl-3-*epi*-xestoaminol C: structure and absolute configuration confirmation of 3-*epi*-xestoaminol C
S. G. Archer, K. Csatajová, **S. G. Davies**, A. M. Fletcher, P. M. Roberts, J. E. Thomson, *Tetrahedron Lett.*, **2016**, 57, 1270
571. Trading N and O. Part 3: Synthesis of 1,2,3,4-tetrahydroisoquinolines from α -hydroxy- β -amino esters
S. G. Davies, A. M. Fletcher, A. B. Frost, M. S. Kennedy, P. M. Roberts, J. E. Thomson, *Tetrahedron*, **2016**, 72, 2139
572. Strategies for the construction of morphinan alkaloid AB-rings: regioselective Friedel-Crafts-type cyclisations of γ -aryl- β -benzoylamido acids with asymmetrically substituted γ -aryl rings
S. G. Davies, E. C. Goddard, P. M. Roberts, A. J. Russell, A. D. Smith, J. E. Thomson, J. M. Withey, *Tetrahedron: Asymmetry*, **2016**, 27, 274
573. Asymmetric syntheses of (+)-preussin B, the C(2)-epimer of (–)-preussin B, and 3-deoxy-(+)-preussin B
M. Buchman, K. Csatajová, **S. G. Davies**, A. M. Fletcher, I. T. T. Houlsby, P. M. Roberts, S. Rowe, J. E. Thomson, *J. Org. Chem.*, **2016**, 81, 4907
574. Asymmetric syntheses of (–)-hastanecine, (–)-turneforcidine and (–)-platynecine
M. Brambilla, **S. G. Davies**, A. M. Fletcher, P. M. Roberts, J. E. Thomson, *Tetrahedron*, **2016**, 72, 4523
575. Asymmetric syntheses of (–)-ADMJ and (+)-ADANJ: 2-deoxy-2-amino analogs of (–)-1-deoxymannojirimycin and (+)-1-deoxyallonojirimycin
S. G. Davies, A. L. A. Figuccia, A. M. Fletcher, P. M. Roberts, J. E. Thomson, *J. Org. Chem.*, **2016**, 81, 6481
576. Pyrrolizidines, indolizidines and quinolizidines via a double reductive cyclisation protocol: concise asymmetric syntheses of (+)-trachelanthamidine, (+)-tashiromine and (+)-epilupinine
M. Brambilla, **S. G. Davies**, A. M. Fletcher, P. M. Roberts, J. E. Thomson, D. Zimmer, *Tetrahedron*, **2016**, 72, 7417
577. Asymmetric syntheses of the 1-hydroxymethyl-2-hydroxy substituted pyrrolizidines (–)-macronecine, (–)-petasinecine, (–)-1-*epi*-macronecine, (+)-1-*epi*-petasinecine and (+)-2-*epi*-rosmarinecine
M. Brambilla, **S. G. Davies**, A. M. Fletcher, P. M. Roberts, J. E. Thomson, *Tetrahedron*, **2016**, 72, 7449
578. (–)-Pseudodistomin E: first asymmetric synthesis and absolute configuration assignment
S. G. Davies, A. M. Fletcher, P. M. Roberts, J. E. Thomson, D. Zimmer, *Org. Lett.*, **2017**, 19, 1638
579. Thiazolidine derivatives as potent and selective inhibitors of the PIM kinase family
C. J. R. Bataille, M. B. Brennan, S. Byrne, **S. G. Davies**, M. Durbin, O. Fedorov, K. V. M. Huber, A. M. Jones, S. Knapp, G. Liu, A. Nadali, C. E. Quevedo, A. J. Russell, R. G. Walker, R. Westwood, G. M. Wynne, *Bioorg. Med. Chem.*, **2017**, 25, 2657
580. Asymmetric synthesis of the tetraopenerine alkaloids
S. G. Davies, A. M. Fletcher, I. T. T. Houlsby, P. M. Roberts, J. E. Thomson, *J. Org. Chem.*, **2017**, 82, 6689
581. Asymmetric synthesis of pyrrolizidines, indolizidines and quinolizidines via a double reductive cyclisation protocol
S. G. Davies, A. M. Fletcher, P. M. Roberts, J. E. Thomson, *Synlett*, **2017**, 28, 2697
582. Regenerative Medicine
S. G. Davies, P. D. Kennewell, A. J. Russell, L. Silpa, R. Westwood, G. M. Wynne, In *Comprehensive Medicinal Chemistry, III*; Chackalamannil, S.; Rotella, D.; Ward, S. Eds.; Elsevier: London, U.K., 2017; 3rd Edn., pp 379–435
583. Asymmetric *ortho*-deprotonation of (η^6 -arene) chromium tricarbonyl complexes substituted with a chiral hydroxylamine
M. R. G. da Costa, M. J. M. Curto, **S. G. Davies**, F. C. Teixeira, J. E. Thomson, *Tetrahedron*, **2017**, 73, 5411

584. Solid state conformations of α,β -unsaturated hydroxamates derived from the 'chiral Weinreb amide' auxiliary (S)-N-1-(1'-naphthyl)ethyl-O-tert-butylhydroxylamine
S. G. Davies, J. A. Lee, P. M. Roberts, J. E. Thomson, J. Yin, *Tetrahedron: Asymmetry*, **2017**, 28, 1337
585. Tetrafluoroborate salt fluorination for preparing alkyl fluorides
S. G. Davies, Roberts P. M. In *Synthetic Organofluorine Chemistry. Fluorination*; Hu, J.; Umemoto, T., Eds.; Springer, 2017; in press
586. Structural revision of the Hancock alkaloid (-)-galipeine
S. G. Davies, A. M. Fletcher, I. T. T. Houlsby, P. M. Roberts, J. E. Thomson, *J. Org. Chem.*, **2017**, 82, 10673
587. Probing competitive and co-operative hydroxyl and ammonium hydrogen-bonding directed epoxidations
M, Brambilla, M. B. Brennan, K. Csatajová, **S. G. Davies**, A. M. Fletcher, A. M. R. Kennett, J. A. Lee, P. M. Roberts, A. J. Russell, J. E. Thomson, *J. Org. Chem.*, **2017**, 82, 10297
588. Asymmetric synthesis of the N-terminal α -hydroxy- β -amino acid components of microginins 612, 646 and 680
S. G. Davies, A. M. Fletcher, A. R. Hanby, P. M. Roberts, J. E. Thomson, *Tetrahedron: Asymmetry*, **2017**, 28, 1756
589. Asymmetric syntheses of 3-deoxy-3-aminosphingoid bases: approaches based on parallel kinetic resolution and double asymmetric induction
K. Csatajová, **S. G. Davies**, A. M. Fletcher, T. R. Fowler, M. S. Kennedy, P. M. Roberts, J. E. Thomson, *J. Org. Chem.*, **2017**, 82, 12447
590. The conjugate addition of enantiomerically pure lithium amides as chiral ammonia equivalents part III: 2012-2017
Davies, S. G.; Fletcher, A. M.; Roberts, P. M.; Thomson, J. E. *Tetrahedron: Asymmetry*, **2017**, 28, 1842
591. Stereoselective ammonium-directed epoxidation in the asymmetric syntheses of dihydroconduramines (-)-A-2, (-)-B-2, (-)-C-3 and (+)-F-3
S. Da Silva Pinto, **S. G. Davies**, A. M. Fletcher, P. M. Roberts, J. E. Thomson, *Synthesis*, **2018**, 50, 64
592. Trading N and O. Part 4: Asymmetric synthesis of *syn*- β -substituted- α -amino acids
S. G. Davies, A. M. Fletcher, C. J. Greenaway, M. S. Kennedy, C. Mayer, P. M. Roberts, J. E. Thomson, *Tetrahedron*, **2018**, 74, 5049
593. Asymmetric syntheses of (2*R*,3*S*)-3-hydroxyproline and (2*S*,3*S*)-3-hydroxyproline
S. G. Davies, A. M. Fletcher, S. M. Linsdall, P. M. Roberts, J. E. Thomson, *Org. Lett.*, **2018**, 20, 4135
594. Diastereoselective ammonium-directed epoxidation in the asymmetric syntheses of dihydroconduramines (+)-C-2, (-)-C-2, (+)-D-2, (+)-E-2, (+)-F-2 and (-)-F-2
S. Da Silva Pinto, **S. G. Davies**, A. M. Fletcher, P. M. Roberts, J. E. Thomson, *J. Org. Chem.*, **2018**, 83, 9939
595. Asymmetric synthesis of secondary benzylic alcohols via arene chromium tricarbonyl complexes
M. R. G. da Costa, M. J. M. Curto, **S. G. Davies**, F. C. Teixeira, J. E. Thomson, *Tetrahedron*, **2018**, 74, 5965
596. The Dimroth rearrangement as a probable cause for structural misassignments in imidazo[1,2-*a*]pyrimidines: a ¹⁵N-labelling study and an easy method for the determination of regiochemistry
M. Chatzopoulou, R. F. Martínez, N. J. Willis, T. D. W. Claridge, F. X. Wilson, G. M. Wynne, **S. G. Davies**, A. J. Russell, *Tetrahedron*, **2018**, 74, 5280
597. The Hancock alkaloids (-)-cuspareine, (-)-galipinine, (-)-galipeine and (-)-angustureine: asymmetric syntheses and corrected ¹H and ¹³C NMR data
S. G. Davies, A. M. Fletcher, I. T. T. Houlsby, P. M. Roberts, J. E. Thomson, D. Zimmer, *J. Nat. Prod.*, **2018**, 81, 2731
598. Asymmetric synthesis of D-fagomine and its diastereoisomers
S. G. Davies, A. M. Fletcher, M. S. Kennedy, P. M. Roberts, J. E. Thomson, *Tetrahedron*, **2018**, 74, 7261596.
599. Rapid stereoselective syntheses of heteroarene-fused azacycles via diastereoselective conjugate addition of heteroaryl substituted lithium amides
S. G. Davies, A. M. Fletcher, K. E. Holder, P. M. Roberts, J. E. Thomson, D. Zimmer, *Heterocycles*, **2019**, 99, 919
600. SuperQuat chiral auxiliaries: design, synthesis, and utility
S. G. Davies, A. M. Fletcher, P. M. Roberts, J. E. Thomson, *Org. Biomol. Chem.*, **2019**, 17, 1322

601. Lithium amides as homochiral ammonia equivalents for conjugate additions to α,β -unsaturated esters: asymmetric synthesis of (*S*)- β -leucine
S. G. Davies, A. M. Fletcher, P. M. Roberts, J. E. Thomson, *Org. Synth.* **2019**, 96, 53
602. The Hancock alkaloids angustureine, cuspareine, galipinine and galipeine a review of their isolation, synthesis and spectroscopic data
S. G. Davies, A. M. Fletcher, P. M. Roberts, J. E. Thomson, *Euro. J. Org. Chem.*, **2019**, 5093
603. *N*-Acetylcolchicinol methyl ether – a natural product: suhailamine – a phantom natural product
S. G. Davies, A. M. Fletcher, P. M. Roberts, J. E. Thomson, A. Yeung, *J. Nat. Prod.*, **2019**, 82, 2659
604. Synthesis of (–)-conduramine A1, (–)-conduramine A2 and (–)-conduramine E2 in six steps from cyclohexa-1,4-diene
S. Da Silva Pinto, **S. G. Davies**, A. M. Fletcher, P. M. Roberts, J. E. Thomson, *Org. Lett.*, **2019**, 21, 7933
605. Asymmetric synthesis of the allocolchicinoid natural product *N*-acetylcolchicinol methyl ether (suhailamine), solid state and solution phase conformational analysis
S. G. Davies, A. M. Fletcher, P. M. Roberts, J. E. Thomson, A. Yeung, *Tetrahedron*, **2019**, 75, 130694
606. The asymmetric synthesis of (*S,S*)-methylphenidate hydrochloride via ring-opening of an enantiopure aziridinium intermediate with phenylmagnesium bromide
S. G. Davies, A. M. Fletcher, M. E. Peters, P. M. Roberts, J. E. Thomson, *Tetrahedron*, **2019**, 75, 130713
607. Isolation, structural identification, synthesis, and pharmacological profiling of 1,2-*trans*-dihydro-1,2-diol metabolites of the utrophin modulator ezutromid
M. Chatzopoulou, T. D. W. Claridge, K. E. Davies, **S. G. Davies**, D. Elsey, E. Emer, A. M. Fletcher, S. Harriman, N. Robinson, J. Rowley, A. J. Russell, J. Tinsley, R. Weaver, I. Wilkinson, N. Willis, F. Wilson, G. M. Wynne, *J. Med. Chem.*, **2020**, 63, 2547
608. Asymmetric syntheses of fagomine and its stereoisomers
S. G. Davies, A. M. Fletcher, P. M. Roberts, J. E. Thomson, *Tetrahedron*, **2019**, 76, 130727
609. Chemical proteomics and phenotypic profiling identifies the aryl hydrocarbon receptor as a molecular target of the utrophin modulator ezutromid
I. V. L. Wilkinson, K. J. Perkins, H. Dugdale, L. Moir, A. Vuorinen, M. Chatzopoulou, S. E. Squire, S. Monecke, A. Lomow, M. Geese, P. D. Charles, P. Burch, J. M. Tinsley, G. M. Wynne, **S. G. Davies**, F. X. Wilson, F. Rastinejad, S. Mohammed, K. E. Davies, A. J. Russell, *Angew Chem. Int. Ed.*, **2020**, 59, 2
610. Synthesis of SMT022357 and its enantiomers and in vivo evaluation in mdx mice
A. Babbs, A. Berg, M. Chatzopoulou, K. E. Davies, **S. G. Davies**, B. Edwards, D. Elsey, E. Emer, A. L. A. Figuccia, A. M. Fletcher, S. Guiraud, S. Harriman, L. Moir, N. Robinson, J. A. Rowley, A. J. Russell, S. Squire, J. E. Thomson, J. M. Tinsley, F. X. Wilson, G. M. Wynne, *Tetrahedron*, **2020**, 76, 130819
611. A semiautomated, phenotypic, in vitro scratch assay for assessing retinal pigment epithelial cell wound healing
T. Storm, I. Wilson, R. Campbell, A. Bolinches-Amorós, A. J. Russell, **S. G. Davies**, A. R. Barnard, R. E. MacLaren, *J. Ocul. Pharmacol. Ther.*, **2020**, 36, 257
612. 2-Arylbenzo[d]oxazole phosphinate esters as second-generation modulators of utrophin for the treatment of duchenne muscular dystrophy
A. Babbs, A. Berg, M. Chatzopoulou, K. E. Davies, **S. G. Davies**, B. Edwards, D. J. Elsey, E. Emer, S. Guiraud, S. Harriman, C. Lecci, L. Moir, D. Peters, N. Robinson, J. A. Rowley, A. J. Russell, S. E. Squire, J. M. Tinsley, F. X. Wilson, G. M. Wynne, *J. Med. Chem.*, **2020**, 63, 7880
613. Aminothiazolones as potent, selective and cell active inhibitors of the PIM kinase family
C. E. Quevedo, C. J. R. Bataille, S. Byrne, M. Durbin, J. Elkins, A. Guillermo, A. M. Jones, S. Knapp, A. Nadali, R. G. Walker, I. V. L. Wilkinson, G. M. Wynne, **S. G. Davies**, A. J. Russell, *Bioorg. Med. Chem.*, **2020**, 28, 115724
614. Decreasing HepG2 cytotoxicity by lowering the lipophilicity of benzo[d]oxazolephosphinate ester utrophin modulators
M. Chatzopoulou, E. Emer, C. Lecci, J. A. Rowley, A.-S. Casagrande, L. Moir, S. E. Squire, **S. G. Davies**, S. Harriman, G. M. Wynne, F. X. Wilson, K. E. Davies, A. J. Russell, *ACS Med. Chem. Lett.*, **2020**, 11, 2421

615. Microconine [*N*-methyl-2-methyl-3-methoxy-6-(deca-1',3',5'-trienyl)piperidine, an alkaloid from *Microcos paniculata*]: synthesis, stereochemistry and spectroscopic data
S. G. Davies, A. M. Fletcher, P. M. Roberts, C. E. Taylor, J. E. Thomson, *Tetrahedron*, **2020**, 79, 131860
616. Short asymmetric syntheses of sphinganine [(2*S*,3*R*)-2-aminooctadecane-1,3-diol] and its C(2)-epimer
S. Da Silva Pinto; **S. G. Davies**, A. M. Fletcher, S. K. Newton, P. M. Roberts, J. E. Thomson, *Tetrahedron Lett.*, **2021**, 66, 152743
617. Mutual kinetic resolution: probing enantiorecognition phenomena and screening for kinetic resolution with racemic reagents
S. G. Davies, A. M. Fletcher, P. M. Roberts, J. E. Thomson, *Org. Biomol. Chem.*, **2021**, 19, 2847
618. Microcosamine A, Microgrewlapine B: three homochiral alkaloids?
S. G. Davies, A. M. Fletcher, P. M. Roberts, C. E. Taylor, J. E. Thomson, *Tetrahedron*, **2021**, 89, 132056
619. Discovery and Mechanism of Action Studies of 4,6-diphenylpyrimidine-2-carbohydrazides as Utrophin Modulators for the Treatment of Duchenne Muscular Dystrophy
A. Vuorinen, I.V.L. Wilkinson, M. Chatzopoulou, B. Edwards, S.E. Squire, R.J. Fairclough, N.A. Bazan, J.A. Milner, D. Canole, J.R. Donald, N. Shah, N.J. Willis, R.F. Martinez, F.X. Wilson, G.M. Wynne, **S.G. Davies**, K.E. Davies, A.J.Russell, *Eur.J. Med. Chem.*, **2021**, 10.1016/j.ejmech.2021.113431
620. A Phenotypic Screen Identifies a Compound Series That Induces Differentiation of Acute Myeloid Leukemia Cells In Vitro and Shows Antitumour Effects In Vivo
L. Josa-Cullere, K.S. Madden, T.J. Cogswell, T.R. Jackson, T.S. Carter, D.Z. Zhang, G. Trevitt, **S.G. Davies**, P. Vyas, G.M.Wynne, T.A. Milne, A.J. Russell, *J. Med. Chem.*, **2021**, 64, 15608.
621. Synthesis and Configuration of *O*-Acetyl Microgrewiapipe A: Phantomisation of *O*-Acetyl 6-epi- Microgrewiapipe A
S. G. Davies, A. M. Fletcher, P. M. Roberts, C. E. Taylor, J. E. Thomson, *J. Nat. Prod.*, **2021**, 85, 306.
622. Identification and Preliminary Structure-Activity Relationship Studies of 1,5-Dihydrobenzo[*e*][1,4]oxazepin-2(3*H*)-ones That Induce Differentiation of Acute Myeloid Leukemia Cells In Vitro
L. Josa-Cullere, T.J. Coswell, I. Georgiou, M. Jay-Smith, T.R. Jackson, C.J.R. Bataille, **S.G. Davies**, P. Vyas, T.A. Milne, G.M. Wynne, A.J. Russell, *Molecules*, **2021**, 26, 6648.
623. Structure-activity relationships of 2-pyrimidinecarbohydrazides as utrophin modulators for the potential treatment of Duchenne muscular dystrophy
M. Chatzopoulou, D. Conole, E. Emer, J.A. Rowley, N.J. Willis, S.E. Squire, B. Gill, S. Brough, F.X. Wilson, G.M. Wynne, **S.G. Davies**, K.E. Davies, A.J. Russell, *Bio. Med. Chem.*, **2022**, 69, 116812.
624. Microgrewiapipe C: Asymmetric Synthesis, Spectroscopic Data and Configurational Assignment
S.G. Davies, A. M. Fletcher, P. M. Roberts, C. E. Taylor, J. E. Thomson, *J. Nat. Prod.*, **2022**, 85, 1872
625. Evaluating the efficacy and safety of a novel prophylactic nasal spray in the prevention of SARS-CoV-2 infection: A multi-centre, double blind, placebo-controlled, randomised trial
D. Balmforth, J.A. Swales, L. Silpa, A. Dunton, K.E. Davies, **S.G. Davies**, A. Kamath, J. Gupta, S. Gupta, M.A. Masood, A. McKnight, D. Rees, A.J. Russell, M. Jaggi, R. Uppal, *J. Clin. Virology*, **2022**, 155, 105248.
626. A tubulin binding molecule drives differentiation of acute myeloid leukemia cells
T.R. Jackson, A. Vuorinen, L. Josa-Cullere, K.S. Madden, D. Comcole, T.J. Cogswell, I.V.L. Wilkinson, L.M.Ketty, D. Zhang, A. O'Mahony, D. Gracias, L. McCall, R. Westwood, G.C. Terstappen, **S.G. Davies**, E.W. Tate, G.M. Wynne, P. Vyas, A.J. Russell, T.A. Milne, *iScience*, **2022**, 25, 104787.
627. General Approach to Enantiopure 1-Aminopyrrolizidines: Application to the Asymmetric Synthesis of the Loline Alkaloids.
S.G.Davies, A.M.Fletcher, S.M.Linsdall, P.M.Roberts and J.E.Thomson, *J. Org. Chem.*, **2023**, 88, 8093
628. Phenotypic screening identifies a trisubstituted imidazo[1,2- α]pyridine series that induces differentiation in multiple AML cell lines.
L.Josa-Cullere, S.R.G.Galan, T.J.Cogswell, T.R.Jackson, M.Jay-Smith, L.Mola, C.R.Greaves, T.S.Carter, K.S.Madden, S.Trott, D.Zhang, C.J.R.Bataille, **S.G.Davies**, P.Vyas, T.A.Milne, A.Naylor, G.M.Wynne,A.J.Russell, *Eur. J. Med. Chem.*, **2023**, 258, 115509.

- 629 Development Expression of the cell Cycle Regulator p16^{INK4a} in Retinal Glial Cells: A Novel Marker of Immature Ocular Astrocytes?
De la Camara, T. Storm, A. Salman, T. Burgoyne, M.Q. Rasmussen, H.O. Orlans, A.J. Russell, **S.G.Davies**, A.R. Barnard and R.E. MacLaren, *J. Hist. Cytochem.*, **2023**, 71, 301.
- 630 β -Peptides incorporating polyhydroxylated cyclohexane β -aminoacid: Synthesis and conformational study.
D. Reza, R. Balo, J.M. Otero, A.I. Fletcher, R. Garcoa-Fandino, V.M. Sanchez-Pedregal, **S.G.Davies**, R.J.Estevez, and J.C. Estevez, *Org. Biomol. Chem.*, **2023**, 21, 8535.
- 631 Lead optimisation of OXS007417: in vivo PK profile and hERG liability modulation to optimise a small molecule differentiation agent for the potential treatment of acute myeloid leukaemia.
T.J. Cogswell, L. Josa-Cullere, D. Zimmer, S.R.G. Galan, M. Jay-Smith, K.S. Harris, C.J.R. Bataille, T.R. Jackson, D. Zhang, **S.G. Davies**, P. Vyas, T.A. Milne, G.M. Wynne, and A.J. Russell, *RSC Med. Chem.*, **2024**, 15, 3495.
- 632 Spontaneous Immortalised Nonhuman Primate Muller Glia Cell Lines as Source to Explore Retinal Reprogramming Mechanisms for Cell Therapies.
A. Salman, A. Bolinches-Amoros, T. Storm, D. Moralli, P. Bryika, A.J.Russell, **S.G. Davies**, A.R. Barnard, and R.E.MacLaren, *J. Cell Phys.*, **2025**, 240, e31482. <https://doi.org/10.1002/jcp.31482>

APPENDIX B

Exhibit	Description
	Petition for Inter Partes Review of U.S. Patent No. 11,261,151 (Pap.2)
EX1001	U.S. Patent No. 11,261,151
EX1002	File History for U.S. Patent No. 11,261,151
EX1003	WO 2017/070651
EX1004	USPN 9,333,190
EX1005	Fauq, A.H., et al., A convenient synthesis of (Z)-4-hydroxy-Ndesmethyltamoxifen (endoxifen), 20 BIOORGANIC MED. CHEM. LETT. 3036-3038 (2010)
EX1006	Ahmad, A. et al., Endoxifen, a New Cornerstone of Breast Cancer Therapy: Demonstration of Safety, Tolerability and Systemic Bioavailability in Healthy Human Subjects, 88(6) CLIN. PHARMACOLOGY & THERAPEUTICS 814-817 (2010)
EX1007	Ahmad, A. et al., Endoxifen for breast cancer: Multiple-dose, dose-escalation study characterizing pharmacokinetics and safety in metastatic breast cancer patients, ASCO MEETING LIBRARY, presented June 4, 2012
EX1011	Bunaciu, A. et al., X-ray Diffraction: Instrumentation and Applications, 45 CRITICAL REVIEWS IN ANALYTICAL CHEM. 289-99 (May 21, 2015)
EX1022	Milroy, L. et al., A multi-gram-scale stereoselective synthesis of Z-endoxifen, 28 BIOORGANIC MED. CHEM. LETT. 1352-1356 (2018)
EX1027	SHARGEL, LEON & YU, ANDREW, APPLIED BIOPHARMACEUTICS & PHARMACOKINETICS (7th ed. 2016)
EX1031	USP 941
EX1032	Expert Declaration of Jason McConville, Ph.D.
EX1033	Expert Declaration of Ron Bihovsky, Ph.D.
EX1038	Expert Declaration of William Mayo, Ph.D.
EX2018	<i>Intas Pharmaceuticals, Limited v. Atossa Therapeutics, Inc.</i> , PGR2023-00043, Pap.1 (Aug. 18, 2023)
EX2031	Transcript of January 9, 2026 Deposition of William Mayo, Ph.D.
EX2032	Transcript of January 16, 2026 Deposition of Jason McConville, Ph.D.
EX2033	Transcript of January 20, 2026 Deposition of Ron Bihovsky, Ph.D.
EX2034	S.R. Logan, <i>The Origin and Status of the Arrhenius Equation</i> 4 J. CHEM. ED. 279 (1982)
EX2035	Edina Vranić, <i>Recent Advances in the Identification and Prediction of Polymorphs</i> 3 BOSNIAN J. OF BASIC MED. SCIENCES 32 (2003)
EX2036	Trevor Laird, <i>Polymorphism and Impurities</i> 8 ORGANIC PROCESS RESEARCH & DEVELOPMENT 301 (2004)

Exhibit	Description
EX2037	Masaki Okamoto, et al., <i>The Effects of Impurities on Crystallization of Polymorphs of a Drug Substance AE1-923</i> , 37 J. OF CHEM. ENGINEERING OF JAPAN 1224 (2004)
EX2038	Eun Hee Lee, <i>A Practical Guide to Pharmaceutical Polymorph Screening & Selection</i> , 9 ASIAN JOURNAL OF PHARMACEUTICAL SCIENCES 164 (2014)
EX2039	H. Sharma et al., <i>Preferential Nucleation during Polymorphic Transformations</i> , NATURE SCIENTIFIC REPORTS (2016)
EX2040	Priyanka Maurya et al., <i>Pharmaceutical Polymorphism: The Phenomenon Affecting the Performance of Drug and an Approach to Enhance Drug Solubility, Stability and Bioavailability</i> , WORLD JOURNAL OF PHARMACEUTICAL SCIENCES (2016)
EX2041	John Spencer Evans, <i>Polymorphs, Proteins, and Nucleation Theory: A Critical Analysis</i> , 7 MINERALS 62 (2017)
EX2042	International Patent Application No. WO 2023/137044A2
EX2050	William E. Brown & Margareth R. Marques, <i>USP and Dissolution—20 Years of Progress</i> , DISSOLUTION TECHNOLOGIES (2014)