

CURRICULUM VITAE

NAME Professor Marc B. Brown B.Sc.(Hons), Ph.D., CChem FRSC.

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EDUCATION AND QUALIFICATIONS

1986 - 1990	Loughborough University of Technology B.Sc.(Hons) in Medicinal and Pharmaceutical Chemistry. Class 2.1 with a Diploma in Industrial Studies
1990 - 1993	Loughborough University of Technology Ph.D. entitled 'The use of long wavelength fluorescence in the study of ligand-protein interactions.'

PRESENT POSITIONS

2018 – present **Founder, owner and Managing Director MLBT Investments and Consultancy (www.mlbtinvestments.com)**

Founded in 2018 MLBT focuses on providing consultancy services and investments within the Pharmaceutical Development realm, catering to both start-ups and established pharmaceutical companies and investment institutions.

2024 – present **Founder and Director , Heparin Therapeutics Ltd**

Founded in 2024, Heparin Therapeutics Ltd is a UK based pre-seed funded company developing respiratory formulations for the treatment of airway disease

2011 - present **Visiting Professor of Pharmaceutics, School of Pharmacy, University of Reading**

2017 - present	Visiting Professor of Pharmaceutics, Institute of Pharmaceutical Sciences, KCL
2018 - present	Visiting Professor of Toxicology, University of Hertfordshire
2019 - present	Visiting Professor of Pharmaceutics, De Montfort University
2022 - present	Professor Emeritus, University of Hertfordshire

PREVIOUS POSITIONS

2022 – 2025	Mosanna Therapeutics AG, Chief Scientific Officer, Chair of Scientific Advisory Board
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Mosanna is a Swiss Biotech company based in Basel currently in clinical evaluation of MOS-118 in the form of a locally delivered nasal spray to treat Metabolic Obstructive Sleep Apnoea and an oral dosage form for local delivery to treat dysphagia. In 2024 I was part of the executive team who secured \$80 million of series A funding to advance the sleep apnoea project to Phase II clinical testing at which point the company moved to the USA and I stepped down.

1999 – 2023	MedPharm Limited, MedPharm Holding Co. Ltd Co-founder, Chief Scientific Officer (1999-2020), CEO (2015-2018) Board Director (1998-2023) Chair of the Scientific Advisory Committee (2018 -2023)
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My industrial experience and the subsequent success of my academic collaborations with industry led to me co-founding a spin-out company named MedPharm Ltd. The company is a contract research organisation which specialises in the formulation and development of topical and transdermal drug delivery systems and devices for application to the skin, nail, wounds, airways and other mucosal membranes. During my tenure MedPharm grew to 60,000 square feet of GLP, GMP and commercial accredited facilities in Guildford, UK and North Carolina, USA, employed 160 people and had collaborations with companies in the US, Australia, Japan, Asia and Europe. In addition, I was directly involved in the development of approximately 80 products and devices which gained regulatory approval in the US, Europe and RoW. Until I sold my final tranche of shares in 2023 my responsibilities included:

- Board Member
- Chair of the Scientific Advisory Committee
- Member of the remuneration committee
- Design and oversight of all pharmaceutical development programs
- Key member of the regulatory team for meetings with FDA, MHRA, EMA etc
- Attendance & contributions to FDA Pre-IND, pre-NDA meetings and scientific advice meetings at the MHRA and EMA
- Management of internal & external research programs in topical and transdermal drug delivery and devices

- Intellectual property development, sourcing and review
- Provision of technical support to commercial partnering activities
- External supervisor for PhD students
- Business Development

2006- 2018 F/T then P/T Chair in Pharmaceutics, School of Pharmacy, University of Hertfordshire.

From 2010-2018 , as Head of the Research Centre in Topical Drug Delivery and Toxicology I built this Centre of Excellence into a team of 12 academic staff generating more than £2 million of annual research revenue.

Research

My key research areas of interest could be defined as follows:

- Transdermal/dermal drug delivery and formulation development.
- Development of in silico and in vitro models for topical and transdermal drug delivery.
- Protection against the dermal exposure of certain chemicals.
- Drug delivery via the airway.
- Mucoadhesive drug delivery.
- Drug delivery to the eye.

Other responsibilities included:

- Chair of the School's Research Board, University of Hertfordshire.
- Chair of the School of Pharmacy Ethics Committee with Delegated Authority.
- Member of the University of Hertfordshire Ethics Committee.

Teaching

Teaching responsibilities included:

- Lectures, tutorials and laboratory classes on drug formulation and design, physical pharmacy, pharmaceutical analysis, mathematics, microbiology, mucoadhesion, polymers, modified release injections, solubilisation, gene delivery, skin physiology, transdermal and dermal drug delivery, carbobohydrates, biological membranes and drug absorption and drug delivery via the lymphatic system.
- The supervision of many undergraduate and MSc projects.
- Member of the School Management Executive.
- Member of the MSc internal validation Board.

2019 - 2022 Governor of St Helen's School

2019 - 2022 Director, St. Helen's Enterprises Ltd

2017 -2019 Member of the AAPS/FDA Q3 working group and Performance Testing Committee member

2016 - 2018	Founder and Director Topical Pharma Ltd
2008 - 2016	Founder and Director of TaliPharm Consultancy Ltd
2007 - 2017	Member of the Scientific Advisory Committee of Futura Medical PLC
2015 - 2016	Member of the Scientific Advisory Board for Novartis
2013 - 2016	Founder, Director and CEO of BethPharm Ltd
2011 - 2015	Honorary Professor of Pharmaceutics, Dermatology and Genetic Medicine Division of Molecular Medicine, University of Dundee
2012 - 2013	Member of the Scientific Advisory Board of NuFormix Ltd
2010 - 2013	Member of the Wellcome Trust Technology Transfer Challenge Committee
2002 - 2006	Senior Lecturer in Pharmaceutics, Department of Pharmacy, KCL (1995-2002, Lecturer in Pharmaceutics, Department of Pharmacy, KCL)

I was appointed to the academic staff as a Lecturer in the Pharmacy Department at King's College London in 1995 having spent approximately 18 months as a research fellow working under the guidance of Chris Marriott and Gary Martin. The Lectureship was industrially funded and consequently, I divided my time between the College and working as Director of Pharmaceutical Development for Hyal Pharmaceutical Corporation which was based in Toronto, Canada. In 1997, I took up a position as a full-time member of academic staff and developed other areas of interest in the field of drug delivery.

Teaching responsibilities included:

- Lectures, tutorials and laboratory classes on drug formulation and design, physical pharmacy, pharmaceutical analysis, mathematics, microbiology, mucoadhesion, polymers, modified release injections, solubilisation, gene delivery, skin physiology, transdermal and dermal drug delivery, biological membranes and drug absorption and drug delivery via the lymphatic system.
- The supervision of many undergraduate and MSc projects.
- Examiner on MPharm and MSc courses
- Course leader for MPharm IV electives Drug Delivery and Science of Dosage Form Design
- Member of Departmental Executive
- Member of the School Executive
- Former Postgraduate Tutor
- Intercollegiate MSc examiner

Other responsibilities included:

- Member of the Pharmaceutical Sciences Research Division Executive
- Member of the Centre for Ultrastructural Imaging Executive

2003 - 2006 Academic Business Fellow, KCL Enterprises

In May 2003 I was appointed to the position of Academic Business Fellow at KCL. My role was to use the experience I had gained in industry and my entrepreneurial skills to identify spin-out opportunities within KCL, prepare a business plan, secure funding and ensure that they had the best chance of success. To achieve these objectives I worked closely with IP2IPO and other venture capitalists, business angels and funding institutions.

2003 - 2004 London Technology Network Business Fellow

I was appointed as a London Technology Network (LTN) Business Fellow in January of 2003. The aim of the LTN is to help technology-intensive companies be more effective and efficient in their knowledge acquisition from London's universities. The network has the support of the Department of Trade and Industry (DTI); Invest UK; Business Link London; Government Office for London, and the London Development Agency. Specifically, LTN's four main objectives are to:

- work with its network of large and small companies to map their short-, medium- and long-term technology needs.
- help universities respond to industry's need for technology-related knowledge acquisition.
- match the technology needs of client companies to London's world-class researchers and teachers.
- support technology-focused special interest groups and encourage better and more frequent interaction between companies and universities.

1995 – 1996 Director of Pharmaceutical Development, Hyal Pharmaceutical Corporation, Toronto, Canada.

The position involved the management of all pharmaceutical and product development projects in the company. One such formulation has recently received a Product Licence from the FDA, MCA, HPB and various European regulatory authorities. I also ensured that the laboratory, comprising 15 people, was run according to GLP and GMP.

Work performed in the facility was divided into four main areas:

- In house pharmaceutical development and study of novel topical formulations for the targeting of xenobiotics to the pathological site.
- Development of validated and stability indicating assays for the testing and study of these formulations.
- Raw material analysis, product manufacture and QA/QC testing of finished product prior to release for use in Phase I, II & III clinical trials and as EDR.
- To ensure all data is acceptable for submission to the relevant Regulatory Authority for licensing approval.

1993 - 1995 Post-Doctoral Research Fellow, Pharmaceutics Section, Dept. of Pharmacy, King's College London**1988 - 1989 Chemist, Goodyear Tyre and Technical Centre, Luxembourg**

RESEARCH HISTORY AND EXPERTISE

Invited Lectures

- IL1. Third International Symposium on Pharmaceutical and Biomedical Analysis. Boston, Massachusetts, USA (April 1991). *Biomedical applications of very near infra-red fluorescence spectrometry*
- IL2. Royal Society of Chemistry Autumn Meeting and Pre-Doctoral Chemistry Symposium. Trinity College, Dublin, Ireland (September 1992). *Novel instrumentation and biomedical applications of very near infra-red fluorescence*
- IL3. 5th International Symposium on Quantitative Luminescence Spectrometry in Biomedical Sciences. University of Ghent, Belgium (May 1993). *Long wavelength fluorescence and its biomedical applications*
- IL4. Euroanalysis VII. University of Edinburgh, Scotland (September 1993). *Novel developments in instrumentation for long wavelength fluorescence*
- IL5. 2nd International Workshop on Hyaluronan in Drug Delivery. Toronto, Canada (May 1994). *A study of the mechanism of the drug delivery properties of hyaluronan*
- IL6. 6th Interscience World Conference on Inflammation, Antirheumatics, Analgesia and Immunomodulators 1995. Geneva, Switzerland (March 1995). *The effect of hyaluronan on the in vitro deposition of diclofenac within the skin*
- IL7. 3rd International Workshop on Hyaluronan in Drug Delivery. Nyon, Switzerland (April 1995). 1) *A study of the transdermal drug delivery properties of hyaluronan*; 2) *An in vitro investigation of the mode of action of hyaluronan as drug delivery vehicle using circular dichroism*; 3) *A preliminary study of the effect of hyaluronan on the deposition of diclofenac within human skin using autoradiography*
- IL8. Dermatology Update 1995. Montreal, Canada (October 1995). *Topical formulations of drugs - How to penetrate the skin barrier*
- IL9. 7th International Seminar on the Treatment of Rheumatic Diseases. Tel Aviv, Israel (December 1995). *Hyaluronan, A transdermal drug delivery system: An in vitro investigation*
- IL10. International Society for Rheumatic Therapy. 5th Biennial Congress, Paris, France (May 1996). *Referred analgesia: Topical Hyanalgesic-D. Delivery to the skin*
- IL11. 4th International Workshop on Hyaluronan in Drug Delivery. Paris, France (May 1996). 1) *The diffusion of diclofenac from hyaluronan and other polysaccharide formulations through human skin in vitro*; 2) *The determination of the viscosity-average molecular weight of hyaluronan by capillary viscometry*; 3) *An in vitro study of the effect of hyaluronan on diclofenac binding to human serum albumin*; 4) *Hyaluronan delivery of cyclosporin*
- IL12. Clinical Dermatology 2000 - Improving Drug Delivery Technology, University of British Columbia, Vancouver, Canada (June 1996). *Hyaluronan: A targeting agent for diclofenac*
- IL13. Cancer Drug Development. Hannover, Germany (March 1997). *The use of the glycosaminoglycan hyaluronan to target chemotherapeutic drugs to breast carcinoma*

- IL14. 6th International Symposium on Hyaluronan. Toronto, Canada (June 1997). *Hyaluronan Improved Liposome Technology*
- IL15. Aerosol Society: Drug Delivery to the Lungs IX, London, UK (December 1998). *The effect of chirality on the fine particle fractions of DPI formulations of mandelic acid and lactose monohydrate mixtures*
- IL16. Hyaluronan 2000, Wrexham, UK (September 2000). *The use of hyaluronan in topical drug delivery*
- IL17. 50th Anniversary Conference of the American Society of Tropical Medicine and Hygiene, Atlanta, USA (November 2001). *A topical prophylaxis for the Schistosomiasis (Nominated for entry into Young Investigator Award Competition)*
- IL18. British Society for Parasitology, Spring Meeting, Salford, UK (April 2002). *A topical prophylaxis for the Schistosomiasis in travellers*
- IL19. Aerosol Society: Drug Delivery to the Lungs XIII, London, UK (December 2002). *An in vitro investigation of the aerodynamic performance of spray-dried stabilized protein particles*
- IL20. London Technology Network launch meeting, London, UK (December 2002). *Technology vs biology – what does the industry need?*
- IL21. London, School of Pharmacy, London, UK (January 2003). *Academic parasites II*
- IL22. Pfizer, Ann Arbor, USA (February 2003). *Formulation optimisation for percutaneous and perungual delivery*
- IL23. St. Thomas' Hospital, Dept of Dermatology, London, UK (February 2003). *Skin delivery systems: Getting under your skin*
- IL24. BBSRC sponsored 'Intellectual Property Masterclass', London, UK (April 2003). *MedPharm, a daydream, a dalliance or a dilemma*
- IL25. SYMPHONEC sponsored 'Entrepreneurship and Innovation', London, UK (May 2003). *Winning with the entrepreneurial venture*
- IL26. British Pharmaceutical Conference 2003. Harrogate, UK (September 2003). *Spinning-out in academia: MedPharm*
- IL27. Thermal analysis and skin, TMG, London, UK (November 2003). *Skin deep*
- IL28. BBSRC sponsored 'Practical Issues for Commercialising Research Masterclass', London, UK (April 2004). *Mind to market: Commercialisation from a researchers perspective*
- IL29. RSC Analytical Sciences meeting 'Advances in Bioanalysis', (May 2004). *The Application of Analytical Methods in Drug Delivery and Deposition*
- IL30. 5th Annual Meeting of Skin Forum, Portsmouth, UK (July 2004) *Academic parasites: topical inhibition or enhancement*
- IL31. American Chemical Society 228th National Meeting, Philadelphia, USA (August 2004). *Investigations into the mode of action of hyaluronan as a topical drug delivery system*
- IL32. UK Podiatric Dermatology Conference, Coventry, UK (September 2005). *Topical pharmacology: localised drug delivery*

- IL33. British Pharmaceutical Conference 2005. Manchester, UK (September 2005). *Does involvement in start-up companies dilute academic research?*
- IL34. 2nd EUFEPS Conference on Optimising Drug Delivery and Formulation. Palais de Congres, Versailles, France (November 2005). *Evaluation models for dermal and ungual drug delivery*
- IL35. 3rd Annual Drug Delivery Systems Conference, London, UK (November 2006). *Ungual and dermal drug delivery: In vitro models in formulation development*
- IL36. Inaugural Nail Forum, London, UK (April 2007). *In vitro modelling of ungual drug delivery: As hard as nails*
- IL37. Diabetes UK Satellite Symposium, St. Albans, UK (October 2007). *From pig to powder: Developments in the delivery of insulin*
- IL38. DTI/EEDA/EEI Life Sciences in the East of England Conference, Cambridge, UK (October 2007). *A new presentation for topical drug delivery*
- IL39. 14th UKICRS Conference on Predicting Drug Delivery: Opportunities and Challenges, London, UK (January 2008). *In vitro models for optimising ungual drug delivery*
- IL40. 11th International Perspectives in Percutaneous Penetration, La Grande Mott, France (March 2008). *Thermoenhancement of dermal drug delivery*
- IL41. 9th Annual Meeting of Skin Forum, London UK (June 2008). *Ungual formulation development: Can it be nailed*
- IL42. Drug Delivery to the Lung XIX, Edinburgh, UK (December 2008). *Contract research and academia: Symbiotic or parasitic*
- IL43. British Society for Investigative Dermatology Annual Meeting, Cirencester, UK (March 2009). *Skin drug delivery: the naked truth*
- IL44. International Pachyonychia Congenita Cosortia Meeting, Montreal, Canada (May 2009) *(Trans)dermal Gene Delivery: To Be or Not To Be?*
- IL45. BPC2009, Manchester, UK (September 2009). *VC or SC: How to mitigate the risk of failure in start-ups*
- IL46. 5th Annual Drug Delivery systems Conference, London, UK (2010). *Innovations in trans(dermal) drug delivery*
- IL47. Wellcome Trust Division of Molecular Medicines, Dundee, Scotland (2010). *The (trans)dermal delivery of biologics: Will you be getting needed?*
- IL48. APS UK Pharm Sci 2012 - The Science of Medicines, Nottingham, UK (2012). *The Topical Treatment of Onychomycosis: As Hard as Nails*
- IL49. AGAH 5th Dermatological Product Development Conference, Munich, Germany (2013). *In vitro Performance Testing in Topical formulation Development: Fact or Fiction*
- IL50. GSK/Stiefel RTP, North Carolina, USA (2013). *The Lost Art of Topical Formulation Science*
- IL51. APS UKPharmSci 2014 Conference, Hatfield, UK (2014). *The Role of Universities in Open Innovation Research: Academic Entrepreneurship or Industrial Exploitation*

- IL52. GSK Stevenage, UK (2015). *The Lost Art of Topical Formulation Science: The Tortoise and the Hare*
- IL53. AGAH 6th Dermatological Product Development Conference, London, UK (2015). *Reducing the risk of topical formulation development: the optimal route from drug candidate selection to proof of concept studies*
- IL54. 5th Anniversary, Centre for Dermal Research, Rutgers University- Innovations in Dermatological Sciences, Delivery of Actives to the Skin, Iselin NJ, USA (, 2016). *Dermal formulation development: Pitfalls, impedements and Opportunities*
- IL55. Pfizer, Boston USA (2016). *Strategies for de-risking dermal product development*
- IL56. AGAH 7th Dermatological Product Development Workshop Washington, USA (2017) . *Strategies for derisking dermal formulation development*
- IL57. Pfizer Cambridge, USA (2017). *Developing NCE based medicines for the treatment of skin disease*
- IL58. FDA, Washington D.C. USA (2017). *Transungual in vitro and ex vivo Performance Testing Models*
- IL59. Dermatology Drug Development Summit, Boston, USA (2017). *Dermal formulation development workshop*
- IL60. MRC Showcase inTherapeutic Innovation, Bath, UK (2018). *Maximising the chances of success in topical dermatological product development*
- IL61. Pachyonychia congenital Patient Support Meeting, London, UK (2018). *The role of the disease, the medicine and the patient in the lost art of formulation science*
- IL62. Innovations in Dermatological Sciences Conference - Future of Dermatologicals & Cosmeceuticals, New Jersey, USA (2018). *Future innovations in Dermal Product Development: Its more than just delivery*
- IL63. EUFEPS Annual Meeting 2019 - Personalized Medcines, Targeted Therapies, Precision Drug Delivery, Frankfurt, Germany (2019). *In vitro Performance Testing in De-risking Topical Formulation Development*
- IL64. EUFEPS Open Discussion Forum 2019 – Revised European Guideline on quality and equivalence of topical products, Bonn, Germany (2019). *In-vitro skin permeation studies testing (IVPT): The current guideline requirements translated into practice*
- IL65. Controlled Release Society Annual Meeting and Exposition 2019 - Controlled and Enhanced Drug Delivery Into and Through the Skin, Valencia, Spain (2019). *New Therapies and Tools in Topical Drug Product Development*
- IL66. CannMed 2019, Pasadena, USA (2019). *The Evolution of New Cannabis Based Topical Therapies*
- IL67. CRS Italy Steering Clinical Translation of Delivery Systems for Drugs and Health Products, Catania, Italy (2019). *The Challenges and Opportunities of Drug Delivery to the Eye*
- IL68. FDD UK Congress, London, UK (2021). *Topical Medicines Development for the Treatment of Inflammatory Skin Disease: Complexities, Risks & Opportunities*
- IL69. Plenary Lecture APGI 6th Symposium, Current Challenges in Skin Formulation, Nantes, France (2023). *Risk mitigation in Topical Product Development: Orthodoxy, Automation and Innovation*

- IL70. Topical Product development, Department of Pharmacy, University of Lisbon, Portugal, 2024
- IL71. Orthodoxy, Automation and Risk Mitigation in Topical Product Development, Faculty of Pharmacy University of Coimbra, Portugal 2024

Books

The Art and Science of Dermal Formulation Development. M.B. Brown and A.C. Williams, 2019, CRC Press, New York

Contributions to book chapters/edited works

- C1. M.B. Brown, J.N. Miller and S. Summerfield. Chapter 14 in "*Fluorescence spectroscopy: new applications and methods*" O. Wolfbeis (Ed) (1992), Springer-Verlag, pp189-196.
- C2. M.B. Brown, C. Marriott and G.P. Martin, '*A study of the mechanism of the drug delivery properties of hyaluronan*'. Hyaluronan in drug delivery. Vol. II, D.A. Willoughby (Ed) (1994), Royal Society of Medicine Press, Series 36, pp29-44.
- C3. M.B. Brown, C. Marriott and G.P. Martin, '*A study of the transdermal drug delivery properties of hyaluronan*'. Hyaluronan in drug delivery. Vol. III, D.A. Willoughby (Ed), (1995), Royal Society of Medicine Press, Series 40, pp53-71.
- C4. M.B. Brown, G.Siligardi, C. Marriott, A. Drake and G.P. Martin, '*An in vitro investigation of the mode of action of hyaluronan as a drug delivery vehicle using circular dichroism*'. Hyaluronan in drug delivery Vol. III, D.A. Willoughby (Ed) (1995), Royal Society of Medicine Press, Series 40, pp41-47.
- C5. M.B. Brown, S. Ingham, A. Moore, C. Marriott and G.P. Martin, '*A preliminary study of the effect of hyaluronan on the deposition of diclofenac within human skin using auto-radiography*'. Hyaluronan in drug delivery. Vol. III, D.A. Willoughby (Ed), (1995), Royal Society of Medicine Press, Series 40, pp48-52.
- C6. C. Marriott G.P. Martin and M.B. Brown, '*The use of hyaluronan in transdermal drug delivery: physiological barriers and regulatory issues*'. Hyaluronan in drug delivery. Vol. III, D.A. Willoughby (Ed), (1995), Royal Society of Medicine Press, Series 40, pp37-40.
- C7. F.C. Bennett, M.B. Brown, C. Marriott and G.P. Martin. '*The diffusion of diclofenac from hyaluronan and other polysaccharide formulations through human skin in vitro*'. Hyaluronan in drug delivery. Vol. IV, D.A. Willoughby (Ed), (1996), Royal Society of Medicine Press, Series 45, pp91-101.
- C8. S. Karim, M.B. Brown, S. Ingham, C. Marriott and G.P. Martin. '*The determination of the viscosity-average molecular weight of hyaluronan by capillary viscometry*'. Hyaluronan in drug delivery. Vol. IV, D.A. Willoughby (Ed), (1996), Royal Society of Medicine Press, Series 45, pp102-112.
- C9. M.B. Brown, G. Siligardi, S. Karim, S. Bennett, G.P. Martin, A. Drake and C. Marriott. '*An in vitro study of the effect of hyaluronan on diclofenac binding to human serum albumin*'. Hyaluronan in drug delivery. Vol. IV, D.A. Willoughby (Ed), (1996), Royal Society of Medicine Press, Series 45, pp84-90.
- C10. M.B. Brown and A. Moore. '*The effects of a novel formulation of cyclosporin on antibody and cell-mediated immune reactions in the pleural cavity of rats*'. Hyaluronan in drug delivery. Vol IV, D.A. Willoughby (Ed), (1996), Royal Society of Medicine Press, Series 45, pp121-131.

- C11. M.B. Brown, B. Forbes, M. Hanpanitcharoen and G.P. Martin. 'The use of hyaluronan in topical drug delivery'. In Hyaluronan: biomedical, medical and clinical aspects. Vol II, J. F. Kennedy, G.O. Phillips, P.A. Williams and V. Hascall (Eds), (2002), Woodhead Publishers, Cambridge, pp249-256.
- C12. M.B. Brown, S.A. Jones, W. He and G.P. Martin. 'Investigations into the mode of action of hyaluronan in topical drug delivery'. In Polysaccharides in Drug Delivery and Pharmaceutical Applications. R. H. Marchessault (Ed), (2005) ACS Press., New York, pp141-154
- C13. S.T. Lim, B. Forbes, M.B. Brown and G.P. Martin 'Physiological factors affecting nasal drug delivery' in Enhancement in Drug Delivery Touitou E. and Barry B.W. (Eds), (2005), CRC Press Boca Raton, pp353-372.
- C14. M.B. Brown, F.K. Akomeah and M.J. Traynor. 'Transdermal drug delivery devices: Skin perturbation systems' in Drug delivery Systems, K.K. Jain (Ed), (2007) Human Press, New York, pp119-140
- C15. Y. Sun, G.P. Moss, M. Prapopoulou, R. Adams, M.B. Brown, and N. Davey. Predictions of Skin Penetration Using Machine Learning Methods', Proceedings of 8th IEEE International Conference on Data Mining, (2008), Pisa, Italy. Edited by F. Giannotti, D. Gunopulos, F. Turini, C. Zaniolo, N. Ramakrishnan, X.D. Wu. ISBN 978-0-7695-3502-9.
- C16. Y. Sun, L.T. Lam, G.P. Moss, M. Prapopoulou, R. Adams, M.B. Brown, and N. Davey. Predicting drug absorption rates through human skin, Proceedings of 10th IEEE International Conference on Data Mining, (2010), Pisa, Italy. Edited by F. Giannotti, D. Gunopulos, F. Turini, C. Zaniolo, N. Ramakrishnan, X.D. Wu. ISBN 978-0-7695-3502-9.
- C17. Y. Sun, G.P. Moss, M. Prapopoulou, R. Adams, M.B. Brown and N. Davey. The Application of Gaussian Processes in the Prediction of Percutaneous Absorption for Mammalian and synthetic Membranes. Proceedings of ESANN, European Symposium on Artificial Neural Networks, 2010
- C18. M.B. Brown and S.T. Lim. 'Topical product development' in Transdermal and Topical Drug Delivery: Principles and Practice. H. Benson and A.C. Watkinson (Eds.). (2012) Wiley, New Jersey, pp255-286, ISBN 978-0-470-45029-1.
- C19. S.S. Shetage, M.B. Brown, R.P. Chilcott, M.J. Traynor. Collection and Characterisation of Residual Skin Surface Components Obtained from Sebum, Sweat and Epidermal Lipids. Advances in Dermatological Sciences. R. Chilcott and K. Brain (Eds). (2013), RSC Publishing, Cambridge, p26-36, ISBN:978-1-84973-398-4
- C20. A. Baraldi, R. Khengar, S. Murdan, S.A. Jones, M.J. Traynor, M.B. Brown. The effect of Disulfide Bond Disruption on the Barrier Integrity of the Human Nail. Advances in Dermatological Sciences. R. Chilcott and K. Brain (Eds). (2013), RSC Publishing, Cambridge, p101-112, ISBN:978-1-84973-398-4
- C21. C.A. Stewart, R.B. Turner, M.B. Brown, M.J. Traynor Classification of irritant/ non-irritant and corrosive chemicals using excised human skin in vitro. Advances in Dermatological Sciences. R. Chilcott and K. Brain (Eds). (2013), RSC Publishing, Cambridge, p308-320, ISBN:978-1-84973-398-4
- C22. M.J. Traynor, S.S. Shetage, D. Wood, M.B. Brown. Is IVRT Alone Sufficient to demonstrate sameness of Generic Products? Advances in Dermatological Sciences. R. Chilcott and K. Brain (Eds). (2013), RSC Publishing, Cambridge, p321-334, ISBN:978-1-84973-398-4
- C23. M.B. Brown, Dermal Formulation Development. Advances in Dermatological Sciences. R. Chilcott and K. Brain (Eds). (2013), RSC Publishing, Cambridge, p77-87, ISBN:978-1-84973-398-4.
- C24. A. Edwards, F. Liu, M.B. Brown and W.J. McAuley Evaluation of Methylphenidate Permeation from Daytrana™ patches. Advances in Dermatological Sciences. R. Chilcott and K. Brain (Eds). (2013), RSC Publishing, Cambridge, p370-375, ISBN:978-1-84973-398-4

- C25. F. Caserta, D.G. Wood, M.B. Brown and W.J. McAuley. The Effect of Heat on Diclofenac Permeation through Human Skin. *Advances in Dermatological Sciences*. R. Chilcott and K. Brain (Eds). (2013), RSC Publishing, Cambridge, p157-168, ISBN:978-1-84973-398-4
- C26. W.J. McAuley, M.J. Traynor, M.B. Brown. Formulating for Children III, Non-Oral Routes – Topical and transdermal in *Paediatric Formulations: A Roadmap*. Daniel Bar-Shalom & Klaus Rose (Eds) 2014 AAPS/ Springer pp219-238
- C27. Formulating for Children I, Oral Routes – Buccal and Sublingual drug delivery for the paediatric population in *Paediatric Formulations: A Roadmap*. Daniel Bar-Shalom & Klaus Rose (Eds) 2014 AAPS/ Springer, pp205-218 also in 2nd addition, 2024
- C28. D. Murnane, M.B. Brown Formulating for Children III, Non-Oral Routes – The challenges of paediatric pulmonary drug delivery. *Paediatric Formulations: A Roadmap*. Daniel Bar-Shalom & Klaus Rose (Eds) 2014 AAPS/ Springer, pp 253-272 also in 2nd addition, 2024
- C29. M.B. Brown, J. Lenn, C.G.R. Evans and S.T. Lim, Commercial and Regulatory Considerations in Dermal and Transdermal Medicines Development in *Novel Delivery Systems for Transdermal and Intradermal Drug Delivery*. R. Donnerly and S. Thakur (Eds) 2015, Wiley, pp243-254
- C30. M.B. Brown and V. Patel, Buccal and Sublingual Drug Delivery in *Drug Delivery and Targeting 2nd Edition*. A. Hillery, A. Lloyd and J. Swarbrick (Eds), 2016, CRC/Taylor and Francis, Boca Raton., USA, pp201-214, also in 2nd addition, 2024
- C31. L. Raghavan, M. Brown, B. Michniak, S. Ng and S. Sammeta. In Vitro Release & Permeation Tests as Critical Quality Attributes in Topical Product Development in *The Role of Microstructure in Topical Product Development*. N. Langley, B. Michniak and D. Osborne (Eds). 2020, AAPS Series 36/Springer, pp47-88
- C32. M.B. Brown, C. Evans, R. Guy. Common deficiencies in generic drug product development. Chapter in *Time-proof perspectives on bioequivalence* Carla Vitorino, Joao Jose Sousa, Antonio Jose Almeida, Margarida Miranda (eds) 2023 Nova Science Publishers, pp 139-170

Refereed Papers in Scientific Journals.

- M1. *Biomedical applications of near infra-red fluorescence spectrometry*. M.B. Brown, J.N. Miller, D.P. Riley & N.J. Seare. *Anal. Proc.*, (1993), 30 (3): 157-161.
- M2. *Novel instrumentation and biomedical applications of very near infra-red fluorescence*. M.B. Brown, J.N. Miller, D.P. Riley and N.J. Seare. *Analyst*, (1993), 118 (4): 407-410.
- M3. *An investigation of the use of nile red as a long wave-length fluorescent probe for the study of 1-acid glycoprotein:drug interactions*. M.B. Brown, J.N. Miller, and N.J. Seare. *J. Pharm. Biomed. Anal.*, (1995), 13: 1011-1117.
- M4. *The effect of hyaluronan on the in vitro deposition of diclofenac within the skin*. M.B. Brown, C. Marriott and G.P. Martin. *Int. J. Tissue Reac.*, (1995), XVII: 133-140.
- M5. *An in vitro study of the effect of hydrocolloid patch occlusion on the penetration of triamcinolone acetonide through human skin*. D. Ladenheim, C. Marriott, G.P. Martin, D.A. Hollingsbee and M.B. Brown. *J. Pharm. Pharmacol.*, (1996), 48: 806-811

- M6. *Hyaluronan: a transdermal drug delivery system* M.B. Brown, F. Bennett, C. Marriott and G.P. Martin. Prog. Rheumatol., (1996), VI: 59-66.
- M7. *High performance liquid chromatography of a cyclosporin a formulation on a porous graphitic carbon column.* T. Nazir, L.A. Gould, C. Marriott, G.P. Martin and M.B. Brown. Chromatographia. (1997), 46: 628-636.
- M8. *The effect of chirality on the fine particle fractions of DPI formulations of mandelic acid and lactose monohydrate mixtures.* S. Nowaseb, M.B. Brown and C. Marriott (1998), Drug Delivery to the Lung, IX:76-80
- M9. *An in vitro study of the diclofenac delivery properties of hyaluronan in human skin.* F.C. Bennett, M.B. Brown, C. Marriott and G.P. Martin, (1999), Drug Del., 6: 39-43.
- M10. *The influence on hydrocolloid patch composition on the bioavailability of triamcinolone acetonide in humans.* G.P. Martin, D. Ladenheim, C. Marriott, D.A. Hollingsbee and M.B. Brown. Ind. Pharm. Drug Devel., (2000), 26: 35-43.
- M11. *The infection of human skin by schistosome cercariae: Studies using Franz cells.* Bartlett, M.B. Brown, C. Marriott, and P.J. Whitfield. Parasitology (2000), 121: 49-54.
- M12. *Preparation and evaluation of mucoadhesive and in vitro drug release properties of novel microspheres of hyaluronan and chitosan.* S.T. Lim, G.P. Martin, D.J. Berry and M.B. Brown, J. Control. Rel. (2000), 66: 281-292.
- M13. *Mitigation of surfactant erythrocyte toxicity by egg phosphatidylcholine.* L.A. Gould, A.B. Lansley, G.P. Martin B. Forbes and M.B. Brown, J. Pharm. Pharmacol., (2000), 52: 1203-1209.
- M14. *Activation of clindamycin phosphate by human skin.* S. K. Amr, M.B. Brown, G.P. Martin and B. Forbes, J. Appl. Micro., (2001), 90: 550-554.
- M15. *Turbidimetric and HPLC assays for the determination of formulated lysozyme activity.* Y-H. Liao, M.B. Brown, G.P. Martin, J. Pharm. Pharmacol., (2001), 53: 549-554.
- M16. *Comparison of the effect of hyaluronan and other polysaccharides on drug skin partitioning.* M.B. Brown and G.P. Martin, Int. J. Pharm., (2001), 225: 113-121.
- M17. *Dimethicone barrier cream prevents infection of human skin by schistosome cercariae: evidence from Franz cell studies.* R.J. Ingram, A. Bartlett, M.B. Brown, C. Marriott, and P.J. Whitfield. J. Parasitol, (2002), 88: 399-402.
- M18. *Evaluation of microparticulate delivery systems for the nasal delivery of gentamycin in rabbits.* S.T. Lim, G.P. Martin, D.J. Berry and M.B. Brown, Int. J. Pharm. (2002), 231: 73-82.
- M19. *In vivo and in vitro characterisation of novel microparticulates based on hyaluronan and chitosan.* S.T. Lim, G.P. Martin, B.J. Forbes and M.B. Brown, PharmSciTech. (2001), 2: 1-14.
- M20. *An in vitro technique for evaluating inhaled nasal delivery systems.* B. Forbes, S.T. Lim, G.P. Martin, M.B. Brown, S.T.P. Pharma Sciences (2002), 12: 75-79.
- M21. *Protective mechanism of stabilising excipients against dehydration in the freeze-drying of proteins.* Y-H. Liao, M.B. Brown, and G.P. Martin, Pharm Res. (2002), 19: 1854-1861.
- M22. *Effects of sucrose and trehalose on the preservation of the native structure of spray-dried lysozyme.* Y. Liao, M.B. Brown and G.P. Martin. Pharm Res (2002), 19: 1862-1866.

- M23. *An in vitro investigation of the aerodynamic performance of spray-dried stabilized protein particles.* Y.H Liao, M.B. Brown, A. Quader and G.P. Martin. *Drug Delivery to the Lungs* (2002), 13: 244-247.
- M24. *Delayed tail loss during skin invasion by schistosome cercariae.* P.J. Whitfield, A. Bartlett, N.Khammo, M.B. Brown, C. Marriott and R. Clothier. *Parasitology* (2003), 126: 135-140.
- M25. *Penetration of human skin by the cercariae of Schistosoma mansoni: An Investigation of the Effect of Multiple Cercarial Applications.* R.J.Ingram, A. Bartlett, M.B. Brown, C. Marriott, and P.J. Whitfield, and J. *Helminthology* (2003), 77: 27-31.
- M26. *Skin invasion by schistosome cercariae: insights gained from studies with human skin explants.* P. J. Whitfield, A. Bartlett, M.B. Brown and C. Marriott *Trends in Parasitology* , (2003), 19: 339-340.
- M27. *Investigation of the physical properties of spray-dried stabilised protein particles.* Y.H Liao, M.B Brown, A. Quader and G.P Martin. *J. Pharm. Pharmacol.* (2003), 55: 1213-1221.
- M28. *Simulated Lung Fluid to investigate the biopharmaceutics of inhaled drugs.* B.T.S. Yff, P. G. Royall, B. Forbes, M.B. Brown and G.P. Martin, *Drug Delivery to the Lungs* (2003), 14: 156-159.
- M29. *An investigation of calibration methods for solution calorimetry.* B.T.S. Yff, P.G. Royall, M.B. Brown and G.P. Martin. *Int. J. Pharm.*, (2004), 269: 361-372.
- M30. *Effect of heat on the percutaneous penetration and epidermal retention of three model penetrants.* F.K. Akomeah, G.P. Martin and M.B. Brown, *Eur. J. Pharm Sci.*(2004), 21: 337-345.
- M31. *Determination of polyvinyl alcohol using gel filtration liquid chromatography.* S. Jones, M.B. Brown and G.P. Martin, *Chromatographia*, (2004), 59: 43-46.
- M32. *Determination of polyvinylpyrrolidone using high performance liquid chromatography.* S. Jones, M.B. Brown and G.P. Martin. *J.Pharm. Biomed. Anal.*, (2004), 35: 621-624.
- M33. *Investigation of the stabilisation of freeze-dried lysozyme and the physical properties of the formulations.* Y.H Liao, M.B. Brown and G.P. Martin. *Eur. J. Pharm. Biopharm.*(2004), 58: 15-24
- M34. *Development of a rapid preformulation screen for suspension metered dose inhalers.* S. Jones, G.P. Martin and M.B. Brown. *Respiratory Drug Delivery*, (2004), IX: 529-532.
- M35. *A comparison of topical formulations for the prevention of human schistosomiasis.* E. Cooper, A. Iqbal, A. Bartlett, C. Marriott, P.J. Whitfield and M.B. Brown. *J. Pharm. Pharmacol.*, (2004), 56: 1-6
- M36. *Hyaluronic acid: a unique topical vehicle for the localised delivery of drugs to the skin.* M.B. Brown and S.A. Jones. *J. Eur. Acad. Derm. Vener.*, (2005), 19: 308-318
- M37. *Inter-laboratory variation of in vitro diffusion cell measurements: An international multi-centre study using quasi-standardised methods and materials.* R.Chilcott, M.B. Brown et al, *J. Pharm. Sci.*, (2005), 94: 632-638
- M38. *High-pressure aerosol suspensions – a novel laser diffraction particle sizing system for hydrofluoroalkane metered dose inhalers.* S. Jones, G.P. Martin and M.B. Brown, *Int. J. Pharm.*, (2005), 302: 154-165
- M39. *Hyaluronan: pharmaceutical characterisation and drug delivery.* Y.H. Liao, S.A. Jones, B. Forbes, G.P Martin and M.B. Brown. *Drug Delivery*, (2005), 12: 1-16

- M40. *The affects of polvinyl alcohol on the physical stability of spray-dried proteinparticles within surfactant-free HFA 134a based metered dose formulations* Y.H. Liao, M.B. Brown, S.A. Jones, T. Nazir and G.P. Martin. *Int. J. Pharm.*, (2005), 304: 29-39
- M41. *Biocompatible polymer blends: the effects of physical processing on the molecular interaction of polyvinyl alcohol and polyvinylpyrrolidone.* S.A. Jones, G.P. Martin, P.G. Royall and M.B. Brown. *J. Appl. Polymer Sci.*, (2005), 98: 2290-2299
- M42. *The effect of unsaturated fatty acids in benzyl alcohol on the percutaneous permeation of three model penetrants.* G.R. Nanayakkara, A. Bartlett, B. Forbes, C. Marriott, P.J. Whitfield, M.B. Brown. *Int. J. Pharm.*, (2005), 301: 129-139
- M43. *Transdermal drug delivery systems.* M.B. Brown, S.A. Jones, F.K. Akomeah and G.P. Martin. *Drug Delivery.*, (2005), 12: 327-42
- M44. *The development of DMA for the detection of amorphous content in pharmaceutical powdered materials.* P. G. Royall, C-Y. Huang, S-W. J. Tang, J. Duncan, G. Van-de-Velde and M.B. Brown. *Int. J. Pharm.*, (2005), 301: 181-191
- M45. *Stabilisation of deoxyribonuclease in hydrofluoroalkane using miscible vinyl polymers.* S. Jones, G.P. Martin and M.B. Brown. *J. Cont. Rel.*, (2006), 115: 1-8
- M46. *In vitro & in vivo studies on a topical formulation of sitamaquine for cutaneous leishmaniasis.* T. Garnier, M.B. Brown, J. Lawrence and S. Croft. *J. Pharm. Pharmacol.*, (2006), 58: 1043-1054
- M47. *Manipulation of beclomethasone-hydrofluoroalkane interactions using biocompatible macromolecules.* S. Jones, G.P. Martin and M.B. Brown, *J. Pharm. Sci.*, (2006), 95: 1060-1074
- M48. *Applicability of a novel dynamic rheological technique as an indicator of stability for a milled respiratory drug.* S-W. J. Tang, J. Duncan, G. Van-de-Velde, M.B. Brown and P.G. Royall. *Respiratory Drug Delivery*, (2006), X: 634-649
- M49. *Variability in human skin permeability in vitro:comparing penetrants with different physicochemical properties.* F.K. Akomeah, G.P. Martin and M.B. Brown. *J. Pharm. Sci.*, (2007), 96: 824-834
- M50. *In vivo studies on the antileishmanial activity of buparvaquone and its prodrugs.* T. Garnier, A. Mäntylä, T. Järvinen, J. Lawrence, M.B. Brown and S. Croft. *J. Antimicrobial. Chemo*, (2007), 60: 802–810
- M51. *Topical buparvaquone for the treatment of cutaneous leishmaniasis.* T.Garnier, A. Mäntylä, T. Järvinen, J. Lawrence, M.B. Brown and S. Croft. *J. Pharm. Pharmacol.*, (2007), 59: 41-49
- M52. *Nail swelling as a pre-formulation screen for the selection and optimisation of unguat penetration enhancers.* R. Khengar, S.A. Jones, R.B. Turner, B. Forbes and M.B. Brown. *Pharm. Res.*, (2007), 24: 2207-2212.
- M53. *Effect of abrasion induced by a rotating brush on the skin permeation of solutes with varying physicochemical properties.* F.K. Akomeah, G.P. Martin, A.G. Muddle and M.B. Brown. *European Journal of Pharmaceutics and Biopharmaceutics* (2008), 68: 724-734
- M54. *Potency of Δ^9 -THC and other cannabinoids in cannabis in the UK in 2005: - Implications for psychoactivity and pharmacology.* D.J. Potter, M.B. Brown and P.K. Clark. *J. Forensic Sci.*, (2008), 53: 90-94
- M55. *Transdermal drug delivery systems : skin perturbation devices.* M.B. Brown, F.K. Akomeah and. M.J. Traynor. *Methods in molecular Biology*, (2008), 437: 119-139

- M56. *An investigation into solvent-membrane interactions when assessing drug release from organic vehicles using regenerated cellulose membranes.* M.L. Reid, S.A. Jones and M.B. Brown. J. Pharm. Pharmacol., (2008), 60: 1139-1147
- M57. *An investigation into the influence of binary drug solutions upon diffusion and partition processes in model membranes.* S. Fiala, M.B. Brown, S. A. Jones. J Pharm. Pharmacol., (2008), 60: 1615-1624
- M58. *Manipulation of corticosteroid release from a transiently supersaturated topical metered dose aerosol using a residual miscible co-solvent.* M.L. Reid, M.B. Brown and S.A. Jones. Pharm. Res., (2008), 25: 2573-2580
- M59. *Influence of alcohol on the release of Tramadol from twenty-four hour controlled release formulations during in vitro dissolution experiments.* M.J. Traynor, A. Pannala, P. Beck, G.P. Martin and M.B. Brown. Drug Development and Industrial Pharmacy (2008), 34: 885-889
- M60. *Determining the degree of saturation after application of transiently supersaturated metered dose aerosols for topical delivery of corticosteroids.* M. Reid, S. A. Jones and M. B. Brown. J.Pharm Sci., (2009), 98: 543-554
- M61. *Short-term (post)iontophoretic transport of model penetrants across excised human epidermis.* F.K. Akomeah, G.P. Martin and M.B. Brown. International Journal of Pharmaceutics (2009), 367: 162-168
- M62. *Overcoming the nail barrier: A systematic investigation of unequal chemical penetration enhancement.* R. Khengar, M.B. Brown, M.J. Traynor, R.B. Turner and S.A. Jones, International Journal of Pharmaceutics, (2009), 370: 61-67
- M63. *The application of Gaussian processes in the prediction of percutaneous absorption.* G. P. Moss, Y. Sun, M. Prapopoulou, N. Davey, R. Adams, W.J. Pugh and M.B. Brown. J. Pharm. Pharmacol., (2009), 61: 1147-1153
- M64. *A dynamic topical hydrofluoroalkane foam to induce nanoparticle modification and drug release in situ.* Y. Zhao, M. Moddarese, S.A. Jones and M.B. Brown. Eur. J. Biopharm. Pharm., (2009), 72: 521-528
- M65. *Engineering novel topical foams using HFA emulsions stabilised with pluronic surfactants.* Y. Zhao, M.B. Brown and S.A. Jones. Eur. J. Pharm. Sci., (2009), 37: 370-377
- M66. *Transient supersaturation using a topically applied metered dose aerosol to enhance drug delivery of corticosteroids.* S.A. Jones, M. Reid, M.B. Brown. J. Pharm. Sci. (2009), 2: 543-553.
- M67. *An investigation into the effects of transient drug supersaturation kinetics on the release of beclomethasone dipropionate from rapidly drying films.* M. Reid, S.A. Jones and M.B. Brown. Int. J. Pharm., (2009), 371: 114-119.
- M68. *The effects of lipid nanocarriers in skin performance of topical vehicles.* M. Moddarese, M.B. Brown, S. Turmbric, S.A. Jones and S. Williams. J. Cosmetic. Sci., (2009), 8: 136-143
- M69. *The effects of particle properties on nanoparticle drug retention and release in dynamic minoxidil foams.* Y. Zhao, M.B. Brown and S.A. Jones. Int. J. Pharm., (2010), 383: 277-284
- M70. *The Topical Delivery of Benzoyl Peroxide Using Elegant Dynamic Hydrofluoroalkane Foams.* Y. Zhao, M.B. Brown and S.A. Jones. J. Pharm. Sci., (2010), 99: 1384-1397.

- M71. *Tocopheryl acetate disposition in porcine and human skin when administered using lipid nanocarriers.* M. Moddarsi, M.B. Brown, S. Turmbric and S.A. Jones. *Journal. Pharm. Pharmacol.*, (2010), 62: 762-769.
- M72. *A fundamental investigation into the effects of eutectic formation on transmembrane transport.* S. Fiala, M.B. Brown and S.A. Jones. *Int. J. Pharm.*, (2010), 393: 68-73
- M73. *Pharmaceutical Foams: Are They the Answer to the Dilemma of Topical Nanoparticles?* Y. Zhao, M.B. Brown and S.A. Jones. *Nanomedicine* (2010), 6: 227-236
- M74. *Dynamic foams in topical drug delivery.* Y.Zhao, S A. Jones and M.B. Brown. *J. Pharm. Pharmacol.*, (2010), 62: 678-684.
- M75. *Effect of a novel penetration enhancer on the unguinal permeation of two antifungal agents* M.J. Traynor, R.B. Turner, C.R.G. Evans, R.H. Khengar, S.A. Jones and M.B. Brown. *J. Pharm. Pharmacol.*, (2010), 62: 730-737
- M76. *The application of feature selection in the development of Gaussian process models for percutaneous absorption.* L.T. Lam, Y. Sun, N. Davey, R. Adams, M.B. Brown and G.P. Moss. *J. Pharm. Pharmacol.*, (2010), 62: 738-749
- M77. *Free radical facilitated damage of unguinal keratin.* R. Khengar, M.B. Brown, M.J. Traynor, R.B. Turner, K.B. Holt and S.A. Jones. *Free Radical Biology and Medicine* (2010), 49: 865-871
- M78. *The Application of Stochastic Machine Learning Methods in the Prediction of Skin Penetration.* Y. Sun, M.B. Brown, M. Propapopolou, N. Davey, R. Adams, and G.P. Moss. *Applied Soft Computing.* (2011) , 11: 2367-2375
- M79. *Recovering Ga(III) from coordination complexes using pyridine 2,6-dicarboxylic acid chelation ion chromatography.* K. Staff, M.B. Brown. R.C. Hider, P. Friden and S.A. Jones. *Biomedical Chromatography*, (2010), 24(9): 1015-1022
- M80. *Controlling barrier penetration via exothermic iron oxidation.* D. Wood, M.B. Brown and S.A. Jones. *Int. J. Pharm.*, (2011), 404: 42-48
- M81. *The role of vehicle-nanoparticle interactions in topical drug delivery.* M. Moddarsi, M.B. Brown, S. Turmbric and S.A. Jones. *Int. J. Pharm.*, (2010), 400: 176-82
- M82. *Vinyl polymer-coated lorazepam particles for drug delivery to the airways.* M.J. Traynor, Y. Zhao, M.B. Brown and S.A. Jones. *Int J Pharm.*, (2011), 410: 9-16
- M83. *Ga(III) complexes - The effect of metal coordination on potential systemic absorption after topical exposure.* K. Staff, M.B. Brown, R.P. Chilcott, R.C. Hider, S.A. Jones and X.L. Kong. *Toxicol Lett.*, (2011), 202: 155-160
- M84. *The application of stochastic machine learning methods in the prediction of skin penetration.* Y. Sun, M.B. Brown, M. Prapopoulou, N. Davey, R.G. Adams and G.P. Moss. *Applied Soft Computing*, (2011), 11: 2367-2375
- M85. *Advances in oral transmucosal drug delivery.* V.F. Patel, F. Liu and M.B. Brown. *J Control Release*, (2011), 153: 106-116
- M86. *Characterization of Latent Heat-Releasing Phase Change Materials for Dermal Therapies.* D. Wood, M.B. Brown, S. Jones and D. Murnane, *J. Phys. Chem.*, (2011), 115: 8369-8375

- M87. *The application and limitations of mathematical modelling in the prediction of permeability across mammalian skin and polydimethylsiloxane membranes.* G.P. Moss, Y. Sun, S.C. Wilkinson, N. Davey, R. Adams, G.P. Martin, M. Prapopopolou and M.B. Brown. *J. Pharm.Pharmacol.*, (2011), 63: 1411–1427
- M88. *Dynamic in-situ eutectic formation for topical drug delivery.* S. Fiala, S.A. Jones and M.B. Brown. *J.Pharm.Pharmacol.*, (2011), 63: 1428–1436
- M89. *Revisiting the General Solubility Equation: in silico prediction of aqueous solubility incorporating the effect of topographical polar surface area.* J. Ali, P. Camilleri, M.B. Brown, A.J. Hutt, and S.B. Kirton, *Journal of Chemical Information and Modelling*, (2012), 52: 420-428
- M90. *An evaluation of the potential of linear and nonlinear skin permeation models for the prediction of experimentally measured percutaneous drug absorption.* M.B. Brown, S.T. Lim, Y. Sun, N. Davey, G.P.J. Moss, S-H. Yoo, C. De Muynckan. *J. Pharm. Pharmacol.*, (2012), 64:5 66-577
- M91. *Pharmacokinetic Evaluation of Intranasally Administered Vinyl Polymer-Coated Lorazepam Microparticles in Rabbits.* Y.J. Zhao, M.B. Brown, R.H. Khengar, M.J. Traynor, P. Barata, S.A. Jones, *AAPS Journal*, (2012), 14 (2) : 218-224
- M92. *Understanding heat facilitated drug transport across human epidermis.* D.G. Wood, M.B. Brown and S.A. Jones, *Eur. J. Pharm. Biopharm.*, (2012), 81: 642-9
- M93. *In Vitro And In Vivo Evaluations Of Buccal Drug Delivery Systems.* V.F. Patel, F. Lui and M.B. Brown, *Modelling The Oral Cavity*, *Journal of Controlled Release*, (2012), 161: 746-756.
- M94. *Triggered In Situ Drug Supersaturation and Hydrophilic Matrix Self-Assembly.* F. Benaouda, M.B. Brown, G.P. Martin and S.A. Jones. *Pharm Res.*, (2012), 29: 3434-3442
- M95. *Discriminating the Molecular Identity and Function of Discrete Supramolecular Structures in Topical Pharmaceutical Formulations.* F. Benaouda, M.B. Brown, S. Ganguly, S.A. Jones and G.P. Martin. *Molecular Pharmaceutics* (2012), 9: 2505-2512.
- M96. *The influence of self-assembling supramolecular structures on the passive membrane transport of ion-paired molecules.* F. Benaouda, M.B. Brown, B. Shah, G.P. Martin and S.A. Jones, *Int. J. Pharm.*, (2012), 439: 334– 341
- M97. *In Silico Prediction of Aqueous Solubility using Simple QSPR Models: The importance of Phenol and Phenol-like Moieties.* J. Ali, P. Camilleri, M.B Brown, A.J. Hutt and S.B. Kirton. *J.Chem Inf. Model* (2012), 52: 2950-2957
- M98. *Topical corticosteroid delivery into human skin using hydrofluoroalkane metered dose aerosol sprays.* M.L. Reid, F. Benaouda, R.H. Khengar, S.A. Jones and M.B. Brown. *Int J Pharm.*, (2013), 452: 157-65.
- M99. *Efficacy, Tolerability and Consumer Acceptability of Terbinafine Topical Spray versus Terbinafine Topical Solution: A Phase IIa, Randomised, Observer-Blind, Comparative Study.* M.B. Brown, C.G Evans, A.G. Muddle, R.B. Turner, S.T. Lim, J. Reed and M.J. Traynor. *Am. J. Clin. Dermatol.*, (2013), 14: 413-419
- M100. *In situ self assembly of soft diclofenac loaded microparticles in superstructured fluids.* F. Benaouda, Z. Bachoo, M.B. Brown, G.P. Martin and S.A. Jones. *Soft Matter* (2013), 9 (42): 10165-10173
- M101. *Topical corticosteroid delivery into human skin using hydrofluoroalkane metered dose aerosol sprays.* M.L. Reid, F. Benaouda, R.H. Khengar, S.A. Jones, M.B. Brown, *Int. J. Pharm.*, (2013), 452: 157-165

- M102. *Effect of Ethnicity, Gender and Age on the Amount and Composition of Residual Skin Surface Components Derived from Sebum, Sweat and Epidermal Lipids.* S.S. Shetage, M.J. Traynor, M.B. Brown, M. Raji, D.G. Kalio, R.P. Chilcott. *Skin Research and Technology* (2014), 20: 97-107
- M103. *Human Nail Plate Modifications Induced by Onychomycosis: Implications for Topical Therapy.* A. Araldi, S.A. Jones, S. Guesné, M.J. Traynor, W.J. McAuley, M.B. Brown and S. Murdan. *Pharm Res.*, (2015), 32(5): 1626-1633
- M104. *Interaction of Formulation and Device Factors Determine the In Vitro Performance of Salbutamol Sulphate Dry Powders for Inhalation.* J. Muddle, D. Murnane, I. Parisini, M.B. Brown, C. Page and B.J. Forbes. *Journal of Pharmaceutical Sciences*, (2015), 104 (11): 3861–3869
- M105. *New insights into eutectic cream skin penetration enhancement.* S. Fiala, M. Roman, R. Inacio, S. Mashal, M.B. Brown and S.A. Jones. *Int J Pharm.* (2016), 499:403-11
- M106. *Localized Epidermal Drug Delivery Induced by Supramolecular Solvent Structuring.* F. Benaouda, S.A. Jones, G.P. Martin and M.B. Brown. *Mol Pharm.*, (2016), 13: 65-72
- M107. *A novel vehicle for enhanced drug delivery across the human nail for the treatment of onychomycosis.* R.B. Turner, S. Weaver, F. Caserta, M.B. Brown. *Int J. Pharm. Compounding*, (2016), 20: 71–80
- M108. *In Vitro Cell Models for Ophthalmic Drug Development Applications.* S. Shafaie, V. Hutter, M.T. Cook, M.B. Brown and D.Y. Chau, *Biores Open Access*. (2016), 5:94-108
- M109. *An investigation of how fungal infection influences drug penetration through onychomycosis patient's nail plates.* W.J. McAuley, S.A. Jones, M.J. Traynor, S. Guesné, S. Murdan and M.B. Brown. *Eur. J. Pharm. Biopharm.*, (2016), 102: 178-84.
- M110. *Short Cationic Antimicrobial Peptides Display Superior Antifungal Activities toward Candidiasis and Onychomycosis in Comparison with Terbinafine and Amorolfine.* W. Stensen, R.B. Turner, M.B. Brown, N. Kondori, J.S. Svendsen and J. Svenson. *Mol. Pharmaceutics*, *Mol. Pharm.*, (2016), 13(10): 3595-3600.
- M111. *Using Salt Counterions to Modify β_2 -Agonist Behavior in Vivo.* A. Patel, S.D. Keir, M.B. Brown, R.J. Hider, S.A. Jones and C.P. Page. *Mol. Pharmaceutics*, (2016), 13: 3439–3448
- M112. *Design, synthesis and characterization of linear unnatural amino acids for skin moisturization.* N.R. Arezki, A.C. Williams, A.J.A. Cobb and M.B. Brown. *International Journal of Cosmetic Science*, (2016), 1–11
- M113. *Rationalising polymer selection for supersaturated film forming systems produced by an aerosol spray for the transdermal delivery of methylphenidate.* A. Edwards, S. Qi, F. Liu, M.B. Brown, and W.J. McAuley. *European journal of pharmaceutics and biopharmaceutics*, (2017), 114: 164-174
- M114. *Evaluation of the Ability of a Novel Miconazole Formulation to Penetrate Nail Using Three Nail In Vitro Models.* L. Christensen, R.B. Turner, S. Weaver, F. Caserta, L. Long, M. Ghannoumand M.B. Brown. *Antimicrob Agents Chemother.* (2017), 61: e02554-16
- M115. *Predicting the Fine Particle Fraction of Dry Powder Inhalers Using Artificial Neural Networks.* J. Muddle, S.B. Kirton, I. Parisini, A.G. Muddle, D. Murnane, J. Ali, M.B. Brown, C. Page, B.J. Forbes. *J Pharm Sci.* (2017), 106(1): 313-321.

- M116. *Application of sebumomics for the analysis of residual skin surface components to detect potential biomarkers of type-1 diabetes mellitus*. S.S. Shetage, M.J. Traynor, M.B. Brown, T.M. Galliford and R.P. Chilcott. *Nature: Scientific Report*. (2017), 7: 8999 | doi:10.1038/s41598-017-09014-6
- M117. *Influence of surface geometry on the culture of human cell lines: A comparative study using flat, round-bottom and v-shaped 96 well plates*. S. Shafaie, V. Hutter, M.B. Brown, M.T. Cook, and D. Y.S. Chau. *PLoS One*. (2017), Oct 30;12(10):e0186799. doi: 10.1371/journal.pone.0186799. eCollection 2017
- M118. *RNA aptamer delivery through intact human skin*. J.D. Lenn, J. Neil, C. Donahue, K. Demock, C.V. Tibbetts, J. Cote-Sierra, S.H. Smith, D. Rubenstein, J.P. Therrien, P.S. Pendergrast, J. Killough, M.B. Brown and A.C. Williams. *J Invest Dermatol*. (2018), 138(2): 282-290
- M119. *In vitro efficacy of tavaborole topical solution, 5% after penetration through nail polish on ex vivo human fingernails*. A.K. Gupta, T. C. Vlahovic, K. A. Foley, N. Gellings Lowe, R.B. Turner, M.B. Brown and S. Hall. *Journal of Dermatological Treatment* (2018), 29: 633-636,
- M120. *Polymeric gels for intravaginal drug delivery*. M.T. Cook and M.B. Brown. *J Control Release*. (2018), 270: 145-157
- M121. *Diffusion through the ex vivo vitreal body - Bovine, porcine, and ovine models are poor surrogates for the human vitreous*. S. Shafaie, V. Hutter, M.B. Brown, M.T. Cook, D.Y.S Chau. *Int. J. Pharm.*, :550: 207-215.
- M122. *Sebumic identification of sex- and ethnicity-specific variations in residual skin surface components (RSSC) for bio-monitoring or forensic applications*. S. Shetage, M.J. Traynor, M.B. Brown, R.P. Chilcott. *Lipids Health Dis*. (2018), Aug 21;17(1): 194
- M123. *Use of in vitro performance models in the assessment of drug delivery across the human nail for nail disorders*. M.B. Brown, R.B. Turner, S.R. Wevrett, *Expert Opin. Drug Deliv*. (2018), 15: 983-989
- M124. *The use of heat and chemical penetration enhancers to increase the follicular delivery of erythromycin to the skin*. F. Caserta, M.B. Brown, W.J. McAuley. *European Journal of Pharmaceutical Sciences*, (2019), 132: 55-6
- M125. *Heat Enhanced Follicular Delivery of Isotretinoin to the Skin*. H.A. Farah, M.B. Brown and W.J. McAuley. *Pharm Res*, (2019), 36: 80-124. doi: 10.1007/s11095-019-2659-7
- M126. *Validation of an analytical method to quantify the permeation and penetration of flurbiprofen into human pharynx tissue*. R.B. Turner, S.R. Weverett, S. Edmunds, M.B. Brown, R. Atkinson, T. Shea. *Wiley, Biomedical Chromatography*, (2019), doi: 10.1002/bmc.4499
- M127. *Ex vivo (human skin) and in vivo (minipig) penetration and permeation of propylene glycol applied as topical crisaborole ointment, 2%*. A. Thombre, S. Tse, T. Yeoh, R. Chen, R. North, and M.B. Brown. *International Journal of Pharmaceutics*, (2020), 576: 118847
- M128. *Determination of the Permeation and Penetration of Flurbiprofen into Cadaveric Human Pharynx Tissue*. R.B. Turner, S.R. Wevrett, S. Edmunds, M.B. Brown, R. Atkinson, O. Adegoke, A. Kulasekaran, T. Shea. *Clinical Pharmacology, Advances and Applications*, (2020), 12: 13-20
- M129. *Enhanced Follicular Delivery of Finasteride to Human Scalp Skin Using Heat and Chemical Penetration Enhancers*. H. Farah, M.B. Brown, W. McAuley. *Pharmaceutical Research* (2020), 37: 112, doi.org/10.1007/s11095-020-02822-y

- M130. *An In Vitro Bioassay for Evaluating the Effect of Inhaled Bronchodilators on Airway Smooth Muscle.* M.B. Brown, V. Kanabar, J. Muddle, C. Page, B. Forbes. *Pulmonary Pharmacology & Therapeutics*, (2020), 63: 101943 doi.org/10.1016/j.pupt.2020.101943
- M131. *Skin permeation and penetration of crisaborole when coapplied with emollients.* Draelos ZD, Ports WC, Vlahos B, Yeoh T, Wu-Linhares D, Brown MB, Lenn J, Thombre AG. *J Am Acad Dermatol.* 2020 Dec;83(6):1801-1803. doi: 10.1016/j.jaad.2020.03.114. Epub 2020 Oct 14. PMID: 33069458
- M132. *Human skin explant model for the investigation of topical therapeutics.* Neil JE, Brown MB, Williams AC. *Sci Rep.* 2020 Dec 3;10(1):21192. doi: 10.1038/s41598-020-78292-4. PMID: 33273665
- M133. *Topical bioequivalence: Experimental and regulatory considerations following formulation complexity.* M. Miranda, C. Veloso, M.B. Brown, A.C.C. Pais, C. Cardoso, C. Vitorino. *International Journal of Pharmaceutics* 28 March 2022, 121705 doi.org/10.1016/j.ijpharm.2022.121705
- M134. *A new ex vivo skin model for mechanistic understanding of putative anti-inflammatory topical therapeutics* Jessica J. E. Neil, M.B. Brown, J.D. Lenn, A.C. Williams. *International Journal of Pharmaceutics* 5 April 2022, 617:121610. doi.org/10.1016/j.ijpharm.2022.121610
- M135. *Accelerating topical formulation development for inflammatory dermatoses; an ex vivo human skin culture model consistent with clinical therapeutics.* J. E. Neil, M.B. Brown, J.D. Lenn, A.C. Williams. *International Journal of Pharmaceutics* 2022 Apr 25;618:121648. doi: 10.1016/j.ijpharm.2022.121648. Epub 2022 Mar 8
- M136. *The effect of dilution of fusidic acid cream and betamethasone dipropionate cream in complex extemporaneous mixes on formulation performance.* M.T. Beebejaun, M.B. Brown, V. Hutter, L. Kravitz, W.J. McAuley. *International Journal of Pharmaceutics* 25 August 2022, 624:121988. doi.org/10.1016/j.ijpharm.2022.121988
- M137. *Skin permeation and penetration of mometasone furoate in the presence of emollients: An ex vivo evaluation of clinical application protocols* M.T. Beebejaun, M.B. Brown, V. Hutter, L. Kravitz, W.J. McAuley, *Skin Health and Disease* 2023 Jan 20;3(3):e215. doi: 10.1002/ski2.215.
- M138. *Reduced skin permeation and penetration of clobetasol propionate when Dermovate cream is applied at short time intervals with emollients* M.T. Beebejaun, M.B. Brown, V. Hutter, L. Kravitz, W.J. McAuley, *JEADV Clin Pract.* 2023;2:718–726.
- M139. *The Plant Defensin Ppdef1 Is a Novel Topical Treatment for Onychomycosis.* van der Weerden NL, Parisi K, McKenna JA, Hayes BM, Harvey PJ, Quimbar P, Wevrett SR, Veneer PK, McCorkelle O, Vasa S, Guarino R, Poon S, Gaspar YM, Baker MJ, Craik DJ, Turner RB, Brown MB, Bleackley MR, Anderson MA. *J Fungi (Basel).* 2023 Nov 17;9(11):1111. doi: 10.3390/jof9111111.
- M140. *Drilling down the bioequivalence assessment of topical antifungal products: Microstructure and release.* Miranda M, Cardoso C, Pais AACC, Brown M, Vitorino C. *Eur J Pharm Biopharm.* 2023 Apr;185:94-106. doi: 10.1016/j.ejpb.2023.02.006. Epub 2023 Feb 19.
- M141. *In vitro studies into establishing therapeutic bioequivalence of complex topical products: Weight of evidence.* Miranda M, Volmer Z, Cornick A, Goody A, Cardoso C, Pais AACC, Brown M, Vitorino C. *Int J Pharm.* 2024 May 10;656:124012. doi: 10.1016/j.ijpharm.2024.124012. Epub 2024 Mar 25
- M142. *Topically Applied therapies for the treatment of skin disease : Past Present and Future.* Brown M, Williams A, Chilcott RP, Brady B, Lenn J, Evans C, Allen L, McAuley WJ, Beebejaun M, Haslinger J, Beuttel C, Vieira R, Guidali F, Miranda M. *Pharmacol Rev.* 2024 Jun 24:PHARMREV-AR-2021-000549. doi: 10.1124/pharmrev.123.000549. Online ahead of print.

- M143. *Mechanistic insight into heat enhanced permeation of diclofenac and piroxicam in combination with chemical penetration enhancers across skin.* F. Caserta, M.B. Brown, W.J. McAuley. European Journal of Pharmaceutical Sciences. 2024, Volume 203, 106933

Patents

Inventions

- D1. Hyaluronic drug delivery system by M.B. Brown, C. Marriott and G.P. Martin. PCT/GB1997/002665, WO9813024
- D2. Stable aerosol formulations of peptides and protein with non-cfc propellants by Y-H. Liao, M.B. Brown and G.P. Martin. (0226274.9). PCT GB2003/004836, WO2004043442
- D3. Topically Administrable Pharmaceutical Compositions Y-H. Liao, M.B. Brown, T. Nazir and G.P. Martin. (0327744.9)
- D4. Metered dose inhalation preparations of drugs by S. Jones, M.B. Brown and G.P. Martin. (0328630.9). PCT GB2004/005172, WO2005055985
- D5. Dermal Drug Delivery System M.B. Brown. PCT/GB2004/005274, WO2005058226
- D6. Metered dose inhalation preparations by S. Jones, M.B. Brown and G.P. Martin. (0328629.1) PCT GB2004/005206, WO2005056037
- D7. Topical ungual formulations M.B. Brown, S. Jones and R.B. Turner. (0405197.5) PCT GB2006/002064, WO2006131721
- D8. Topical formulations M.B. Brown and S. Jones. (0518769.5) PCT/GB2006/003408; WO2007031753
- D9. Therapeutic compositions M.B. Brown, T. Nazir, M. Crothers and P. Welburn. PCT/GB2006/004739, WO2007068963
- D10. Topical formulations Y-J. Zhao, S.A. Jones and M.B. Brown. (UK patent application 0715646.6)
- D11. Use of pyrroloquinoline compounds to kill cinically latent organisms P.B. Beck, M.B. Brown, D.E. Clark, A. Coates, H.J. Dyke, Y. Hu, D.J. Londesborough, K. Mills, T.D. Pallin, G.P. Reid, G. Stoddart. (UK patent application 0522715.2). PCT/GB2006/004178, WO2007054693
- D12. Topical Formulations P.B. Beck, M.B. Brown, A. Coates, Y. Hu, G. Stoddart. PCT/GB2007/004268, WO2008056151;
- D13. Pharmaceutical Formulations for Iontophoretic Delivery of Gallium. P.M. Friden, H. Kim, K. Staff, M. B. Brown and S.A. Jones. (4035.3007 US). US2013/0072899
- D14. Novel skin enhancer. M.B. Brown, S. Lim and R.B. Turner. PCT/GB2010/001929
- D15. Novel skin enhancer. M.B. Brown, S. Lim and R.B. Turner. PCT/GB2010/001928
- D16. Drug delivery formulations' M.B. Brown, D.G. Wood and S.A. Jones. PCT/GB2012/051473, WO2012175996

- D17. Treatment of hyperproliferative conditions. B. Bymose, E. de Darko, J. Hyldgaard, P.B. Beck, S.T. Lim, H.M.T. Griffith, M.B. Brown. PCT/DK2010/050179, WO2011006504
- D18. Gel compositions of oxymetazoline and methods of use. S.D. Shanler, C. Powala, M.B. Brown, S.T. Lim, and C. R.G. Evans. PCT/US2012/046547, WO2013010032
- D19. Heat patches' M.B. Brown, D.G. Wood, C.M. Brown. PCT/GB2012/052545, WO2013054138
- D20. Improved toenail treatment'. M.B. Brown, R.B Turner, S. Lim. 12735P1 UK Patent application no. GB1206294.9.
- D21. Formulation used to treat skin condition e.g. rosacea, erythematotelangiectatic rosacea, papulopustular rosacea, ocular rosacea and erythematous rosacea, comprises imidazoline alpha agonist (e.g. oxymetazoline) and excipient'. S.D. Shanler, C. Powala, M.B. Brown, S.T. Lim, and C. R.G. Evans. WO2013010032
- D22. Dermal compositions containing unnatural hygroscopic amino acids. N. Arezeki, A. Cobb, A.C. Williams, M.B. Brown. WO 2014072747.
- D23. Hypoosmotic solutions for lymph node delivery. A. P. Shawcross, J. Gonzalez-Carvajal, M.B. Brown and R.B. Turner. PCTGB2014/050698, WO 2014/140543.
- D24. Use of pyrroloquinoline compounds to kill clinically latent microorganisms. Petra Helga Beck; Marc Barry Brown; David Edward Clark; Anthony Coates; Hazel Joan Dyke; Yanmin Hu; Derek John Londesbrough; Keith Mills; Thomas David Pallin; Gary Patrick Reid; Gerlinda Stoddart, 2017, US2017/0258784 A1
- D25. PEROXIDE FORMULATIONS AND METHODS AND APPLICATORS FOR USING THE SAME. Stuart D . Shanler ; Christopher Powala; Christopher Phillips; Brian Beger; Charles Rodney Greenaway Evans; Sian Tiong Lim; Marc Barry Brown;. Thomas Nagler 2018; US 2018/ 9, 980,983 B2
- D26. ANYHYDROUS COMPOSITIONS OF mTOR INHIBITORS AND METHODS OF USE. Wesley Harton Kaupinen , Braham Shroot , Simon David Betson , Charles Rodney Greenaway Evans , Marc Barry Brown 2018, US 2018/0193320 A1, US 10,722,499 B2
- D27. Cerdulatinib-containing topical skin pharmaceutical compositions and uses. M.B. Brown, C.R.G. Evans, C.R Stevenson. PCT/IB2019/000017 WO2019138291A2
- D28. Anhydrous Formulations for JAK 1/2 Inibitors with Vitamin D3 Analogs and Methods for Treatment of Skin Diseases. Application number 63/365,964 Filing Date 7 June 2022
- D29. Topical Formulations of Ruxolitinib with an Organic Amine PH adjusting agent for Teatment of Skin Diseases. Application number 63/365,973 Filing Date 7 June 2022
- D30. Topical formulations for delivery of hedgehog inhibitor compounds and use thereof. Marc Barry Brown; Cameron Robert Stevenson; Charles Rodney Greenaway Evans. US2020/ 0383975 A1
- D31. Isotretinoin formulations and uses and methods thereof. Zachary Rome; Charles Rodney Greenaway Evans; Marc Barry Brown; Francesco Caserta. US2022/ 0362148 A1
- D32. Intranasal Formulations for treating Obstructive Sleep Apnoea. Application number 63/586254 Filing date 28th September 2023
- D33. Compositions and dosage forms for oral delivery. Ping Chang; Marc Brown; Charles Evans. US 2024/0358674 A1

Expert/Factual Witness roles

2011 United States district court, New Jersey in the case of Graceway Pharmaceuticals and 3M Innovative Properties Co. v Nycomed US, Inc; Civil Action No. 10-937. I acted as an expert witness for Graceway and 3M in a case involving a challenge to the validity of U.S. Pat. No. 7,655,672.

2014 English Patent Court in the case of Leo v Teva [2014] EWHC 3096 (Pat). I acted as an expert witness for Leo Pharma A/S and Leo Laboratories Limited in a case involving the treatment of psoriasis using an ointment comprising a combination of a corticoid and a vitamin D analogue.

2015 English Patent Court in the case of Novartis v various; HP-2013-000011 (Focus Pharmaceuticals UK Limited, Actavis Group PTC EHF and Actavis UK Limited) and HP-2013-000012 (Teva Limited). I acted as an expert witness for Novartis AG, Novartis Pharmaceuticals UK Limited and LTS Lohmann Therapie-Systeme AG in a case involving a challenge to the validity of European Patent (UK) 2 292 219.

2016 United States district court, Delaware in the cases of Purdue Pharma L.P. v. Watson Labs., Inc., Civil Action No. 14-1227; Purdue Pharma L.P. v Watson Labs., Inc., Civil Action No. 14-1410; Purdue Pharma L.P. v. Actavis Labs. UT, Inc., Civil Action No. 15-192. I acted as an expert witness for Purdue in a case involving a challenge to the validity of U.S. Pat. Nos. RE41,408, RE41,489, and RE41,571.

2016 United States district court, Delaware in the cases of Purdue Pharma L.P. v Alvogen Pine Brook LLC, Civil Action No. 15-1077. I acted as an expert witness for Purdue in a case involving a challenge to the validity of U.S. Pat. Nos. RE41,408, RE41,489, and RE41,571

2017 English Patent court in the case of Leo Pharma v Sandoz, EP 2, 450,043. I acted as an expert witness for Leo Pharma A/S and Leo Laboratories Limited in a case involving non-aqueous pharmaceutical compositions for dermal use to treat psoriasis wherein the relevant composition is applied once daily.

2017 United States district court, Delaware in the cases of Leo Pharma. v Perrigo, Civil Action No. 16-00430. I acted as a fact witness for a patent family of which I am a co-inventor.

2021 I acted as an expert witness on behalf of Dermavant in the USPTO patent prosecution of Application No. 16/229,080 'Topical Pharmaceutical Compositions' pursuant to 37 C.F.R. § 1.132

2023 United States district court, Delaware I acted as an expert witness for UCB/LTS in the case UCB, Inc. et al v. Mylan Technologies Inc., 2:22-cv-00216-cr, Docket Number 45

2024 I acted as an expert witness on behalf of Madera Pharmaceuticals in the USPTO patent prosecution of Application No. 17508951 'Transdermal Treatment for Erectile Dysfunction' pursuant to 37 C.F.R. § 1.132

Present Currently, I am involved in EU (Topical dermatology) and US (Nasal) patent cases as an expert witness.

Editorials and Articles

- E1. *New developments in transdermal drug delivery systems.* M.B. Brown and F.K. Akomeah. Pharmaceutical Managing and Packing Sourcer, (2004), Spring, 55-58
- E2. *New developments in transdermal drug delivery systems II.* M.B. Brown and F.K. Akomeah. Pharmaceutical Managing and Packing Sourcer, (2004), Summer, 59-63
- E3. *The evolution of transdermal drug delivery systems.* S.A. Jones and M.B. Brown. Pharmaceutical Formulation & Quality, (2005), August/September, 36-41
- E4. *It is not a molecule you give to a patient but a medicine, the lost of science of formulation development.* M.B. Brown. Editorial in Drug Discovery Today, (2005), **10**:1405-1407
- E5. *Not to be sniffed at.* M.B. Brown. Pharmaceutical Technology Today, (2005), December, 82.
- E6. *Treatment of nail fungal infections.* M.B. Brown and M.J. Traynor. Drug Delivery Report, (2007) Spring/September, 50-52
- E7. *MedSpray: The next generation in topical drug delivery.* M.B. Brown, Drug Delivery Report, (2008) Winter, 24-26
- E8. *Ungual drug delivery.* M.B. Brown, UKICRS Newsletter (2008), 3:10-12
- E9. *Topical and transdermal drug delivery-have we only just scratched the surface.* ONdrugDelivery M.B. Brown (2013)
- E10. *Artificial neural networks & tissue models for inhaled formulation screening, selection & bioequivalence testing.* M.B. Brown. Muddle and C. Page. ONdrugDelivery, (2014)
- E11. *Aquarmed™: transdermal delivery using novel components derived from natural moisturising factor (nmf).* M.B. Brown and A.C. Williams. ONdrugDelivery, (2015)
- E12. *New research tools for topical and transdermal development.* M.B. Brown and R.B. Turner ONdrugDelivery, (2016)
- E13. *Cost-effective approaches for successful generic dermal drug product authorisations.* M.B. Brown, J. Lenn and J. Drummond. ONdrugDelivery, (2018)
- E14. *MedPharm's Perspective on the Topical Delivery of Macromolecules.* M.B. Brown and J. Lenn, Pharmaceutical Technology (2018)
- E15. *Process Development Best Practices for Topical Drug Products.* M.B. Brown, C. Harrison, S. Pratt, Pharmaceutical Technology (2019)
- E16. *Topical Development: Fast Tracking Your Way to Success.* M.B. Brown. J. Lenn and J. Drummond, Drug Development and Delivery. (2018)
- E17. *The Challenges and Opportunities of Drug Delivery Through a Complex Barrier.* M.B. Brown, J. Volmer, J. Drummond. ONdrugDelivery (2019)
- E18. *Innovation and Automation in Topical Formulation Development.* M.B. Brown, J. Lenn, C. Evans. ONdrugDelivery (2020) August (110) 44-48
- E19. *Derisking topical formulation development with multifactorial disease models.* M.B. Brown, J. Lenn. Manufacturing Chemist (2021) April, Volume 92 Number 4, 32-34

- E20. *Assessing the Nasal Drug Delivery Landscape*. M.B. Brown, J. Lenn, J. Volmer. *ONdrugDelivery* (2021) May (11) 37-40
- E21. *The Fourth Industrial Revolution – Robotics and the Laboratory*. M.B. Brown, J. Lenn. *ONdrugDelivery* (2021) August (123) 40-42
- E22. *Multifactorial Disease Models: Their Role in De-risking Topical Formulation Development*. M.B. Brown, J. Lenn. *IPI Media World* (2021) Volume 13 (2)
- E23. *Bioequivalence in Topical Generics*. M.B. Brown, J. Lenn, C. Evans. *Contract Pharma*, 11.09.21
- E24. *The Enigma of Topical Biologics Development*. M.B. Brown, J. Lenn. *International Pharmaceutical Industry* (2022) Spring, Volume 14 Issue 1
- E25. *Inhalation Formulation Development – Predicting API Behavior*. M.B. Brown, C. Evans. *Pharmaceutical Technology* May 2022, Volume 46, Issue 5 – pages 22-25
- E26. *Topical Formulation in Pharma—Balancing Form and Function*. L Allen. *Pharmaceutical Technology*, May 2022, Volume 46, Issue 5 – Pages 28-31
- E27. *Regulatory and Developmental Complexities Around Demonstrating Bioequivalence for a Topical Generic Product*. M.B. Brown, J. Lenn. *International Pharmaceutical Industry* (2022) Winter, Volume 14 Issue 4

PhD Student Supervision

- PD1. Zhoujing Zhou (completed August. 2000; Chinese Government funded). *Spray-dried peptide formulations for transdermal powdered delivery*
- PD2. Manita Hanpanitcharoen (completed September 2000; Thailand Government funded). *Hyaluronan induced targeting of drugs to the epidermis*
- PD3. Tahir Nazir (P/T, Completed August 2004; Industrially funded). *The dermal delivery and localisation of drugs*
- PD4. Shahira Amr (completed May 2002; Self funded). *An investigation of novel vesicle type formulations for intradermal drug delivery*
- PD5. Sian Lim (completed February 2001; Self funded). Winner of the EMI Graduate Student Outstanding Manuscript Award at AAPS 2001. *An investigation of novel microparticulate mucoadhesive formulations for nasal drug delivery*
- PD6. Francesca Rytlewski (completed September 2002, EPSRC funded). *Pharmaceutically engineered systems for transdermal absorption*
- PD7. Yong-Hong Liao (completed November 2002; Industrially and ORS funded). *Pharmaceutical development of protein/peptide powder formulations*
- PD8. Rebecca Ingram (completed March 2003; KCLA studentship). *A novel topical approach for the treatment of schistosomiasis*
- PD9. Abdul Quadir (completed October 2004; EPSRC studentship). *Spray dried formulations for the pulmonary delivery of peptides and proteins*

- PD10. Tracey Garnier (completed September 2004; Sir Halley Stewart Trust funded). *Novel approaches to the topical treatment of cutaneous leishmoniasis*
- PD11. Stuart Jones (completed April 2005; MedPharm and KCL funded). *Protein/peptide formulations for pulmonary delivery*
- PD12. Weijiang He (completed October 2005; KCL funded). *An investigation into the mode of action of hyaluronan in topical formulations*
- PD13. Franklyn Akomeah (completed October 2005; Industrially funded). *Development of novel transdermal drug delivery devices*
- PD14. Barbara Jff (completed September 2005; EPSRC funded). *Investigating the dissolution of amorphous and semi-amorphous particles in simulated lung fluid*
- PD15. Fergus Manford (completed February 2006; Industrially funded). *Drug targeting to the lung*
- PD16. Emily Cooper (completed November 2005; Sir Halley Stewart funded). *The use of imaging technology to investigate the inhibition of schistosome cercarial penetration of human skin*
- PD17. Gihan Nananyakkara (completed March 2006; MedPharm and KCL funded). *Development of novel topical penetration enhancers*
- PD18. Marlise Santos (completed February 2006; Brazilian Space Agency funded). *Nasal drug delivery in zero gravity*
- PD19. See Wah Tang (completed July 2008; EPSRC/RSC funded). *The use of dynamic mechanical analysis for the detection and quantification of amorphous content in pharmaceutical powders*
- PD20. Maria Prapadopolou (P/T completed May 2012; self funded). *Mathematical modelling of drug absorption across the skin*
- PD21. David Potter (P/T completed July 2009; industrially funded). *The development of cannabis based medicinal products*
- PD22. Mark Lakeram (completed March 2007; EPSRC funded). *Novel topical formulations for drug delivery to the skin*
- PD23. Rajeshree Khengar (completed November 2009; industrially funded). *Novel topical formulations for unguat drug delivery*
- PD24. Mojgan Moddaresi (completed July 2010; Institute of Cosmetic Science funded). *The assessment of some cosmetic formulations*
- PD25. Monica Reid (completed July 2009; industrially funded). *The development of novel MDA systems for topical drug delivery*
- PD26. Yanjun Zhao (completed November 2009, Dorothy Hodgkin funded). *Novel nanoformulations*
- PD27. Hadjer Nacer (completed October 2009; Algerian Government funded). *Nanoparticulate nasal formulations*
- PD28. Kirsten Staff (completed June 2010; Industrially funded). *The development of novel topical formulations for wound healing*

- PD29. Sarah Fila (completed March 2010; Algerian Government funded). *Eutectic topical formulation development*
- PD30. Daniel Wood (completed September 2010; EPSRC funded). *Development of thermoregulating topical drug delivery systems*
- PD31. Iris Palmer (completed December 2011; SoP funded). *Novel particulate formulations for the treatment of skin infection*
- PD32. Faiza Benouda (completed September 2010; Algerian Government funded). *Dermal formulations and supersaturated residual drug activity*
- PD33. Charles Evans (completed January 2018; Industrially funded). *A novel dynamic spray formulation for the treatment of Athlete's foot*
- PD34. Yousef Al-Ebini (completed February 2014; EPSRC funded). *Nanoparticle drug delivery to the eye*
- PD35. Vanessa Viegas (F/T completed September 2015; HPA funded). *The use of sebum in hot zone assessment*
- PD36. Satyajit Shetage (P/T completed September 2015; Industrially funded). *The role of sebum in disease diagnosis and treatment*
- PD37. Aateka Patel (EPSRC Case funded, completed September 2012). *Ion-pairs in pulmonary drug delivery*
- PD38. Andrew Edwards (Industrially funded, completed September 2014). *Novel film forming transdermal devices to prevent illicit drug use*
- PD39. Francesca Caserta (Industrially funded, completed October 2015). *Development of thermoregulating topical drug delivery systems*
- PD40. Irene Parsini (Industrially funded, completed January 2018). *Improving inhalation flow rate dependence for device performance in chronic lung conditions*
- PD41. Natasha Ball (MRC Case funded, completed November 2015). *Un-natural amino acids as novel skin moisturisers*
- PD42. Hassan Farah (Industrially funded, completed June 2018). *Thermophoretic drug delivery*
- PD43. Jo Muddle (EPSRC Case funded, completed March 2017). *In vitro modelling of pulmonary drug delivery*
- PD44. Jon Lenn (Industrially funded, completed January 2016). *Biologic delivery to the skin*
- PD45. Mubinah Beebeejaun (Industrially funded, completed October 2020). *Investigations into the oapplication of topical steroids and emollients*
- PD46. Cidalia Pereira (EPSRC Case funded, completed October 2018). *Dermal drug delivery systems*
- PD47. Jessica Neil (Industrially funded, P/T completed September 2022). *Novel ex vivo human skin inflammatory pathway models for use in the development of topical medicines for the treatment of autoimmune dermatological disease*
- PD48. Peter Haddow (QR funded, completed October 2020). *Temperature responsive materials for topical drug delivery*

Refereed Communications

- R1. *An in vitro investigation of the interaction of diclofenac with hyaluronan.* M.B. Brown, C. Marriott and G.P. Martin. J. Pharm. Pharmacol., (1994), **46**, 1049.
- R2. *An in vitro investigation of the transdermal drug delivery properties of hyaluronan.* M.B. Brown, C. Marriott and G.P. Martin. J. Pharm. Pharmacol., (1995), **47**, 1122.
- R3. *A study of the effect of hyaluronan on the binding of diclofenac to serum albumin using circular dichroism.* M.B. Brown, G. Siligardi, C. Marriott, G.P. Martin and A. F. Drake. J. Pharm. Pharmacol., (1995), **47**, 1123.
- R4. *Rheological and molecular weight studies of hyaluronan.* S. Karim, M.B. Brown, S. Ingham, C. Marriott and G.P. Martin. Eur. J. Pharm. Sci., (1996), **4**, S175.
- R5. *An investigation of the effect of hyaluronan on drug-protein binding using circular dichroism.* G. Siligardi, M.B. Brown, S. Karim, F.C. Bennett, A. Drake, C. Marriott and G.P. Martin. Eur. J. Pharm. Sci., (1996), **4**, S164.
- R6. *Franz cell studies of hyaluronan as a drug delivery agent.* M.B. Brown, F. Bennett, C. Marriott and G.P. Martin. Pharm. Res., (1996), **13**, s374.
- R7. *The effect of hyaluronan on diclofenac binding to albumin.* G. Siligardi, M.B. Brown, S. Karim, C. Marriott and G.P. Martin. Pharm. Res., (1996), **13**, s256.
- R8. *Rheological and viscosity-average molecular weight studies of hyaluronan.* S. Karim, M.B. Brown, S. Ingham, G.P. Martin and C. Marriott. Brit. Soc. Rheol. Bull., (1996), **39**, 80.
- R9. *Improved chromatography of cyclosporin a using a porous graphitic carbon stationary phase.* T. Nazir, L.A. Gould, C. Marriott, G.P. Martin and M.B. Brown. J. Pharm. Pharmacol., (1997), **49**, 90.
- R10. *Hyaluronan antioxidant activity within liposomal systems.* L.A. Gould, M.B. Brown, G.P. Martin and C. Marriott. Pharm. Res., (1997), **14**, s45.
- R11. *A rheological study, including the effect of heat, on the viscosity average molecular weight of the drug targeting agent hyaluronan.* S. Karim, M.B. Brown, G.P. Martin and C. Marriott. Pharm. Res., (1997), **14**, s45.
- R12. *Intradermal localisation of diclofenac using a hyaluronan-containing topical vehicle.* F.C. Bennett, M.B. Brown, G.P. Martin and C. Marriott. Pharm. Res. (1997), **14**, s116.
- R13. *Improved chromatography of cyclosporin analogues using a highly temperature stable porous graphitic carbon stationary phase.* T. Nazir, M.B. Brown, G.P. Martin and C. Marriott. Pharm. Res., (1997), **14**, s569.
- R14. *The role of glycosaminoglycans in the skin partitioning of ibuprofen.* M. Hanpanitcharoen, M.B. Brown and G.P. Martin. J. Pharm. Pharmacol., (1998), **50**, 182.
- R15. *The effect of hyaluronan on the binding of diclofenac to human albumin using equilibrium dialysis.* S. Karim, F.C. Bennett, M.B. Brown, C. Marriott and G.P. Martin. J. Pharm. Pharmacol., (1998), **50**, 197.
- R16. *The role of glycosaminoglycans in the skin partitioning of diclofenac.* M. Hanpanitcharoen, M.B. Brown and G.P. Martin. Eur. J. Pharm. Sci., (1998), **6**, s62

- R17. *The effect of hyaluronan on the binding of diclofenac to human albumin: equilibrium dialysis studies.* S. Karim, F.C. Bennett, M.B. Brown, C. Marriott and G.P. Martin. Eur. J. Pharm. Sci., (1998), **6**, s62.
- R18. *The influence of glycosaminoglycans on dermal partitioning of NSAIDs.* M. Hanpanitcharoen, M.B. Brown and G.P. Martin. PharmSci., (1998), **1**:s383.
- R19. *Evaluation of the mucociliary clearance of microspheres.* S.T. Lim, M.B. Brown and G.P. Martin. J. Pharm. Pharmacol., J. Pharm. Pharmacol., (1999) **51**:S177.
- R20. *Activity of clindamycin phosphate and clindamycin against organisms of the skin microflora and pilosebaceous isolates.* S.K. Amr, M.B. Brown, G.P. Martin and B. Forbes. J.Pharm. Pharmacol., (1999), **51**:S237.
- R21. *The effect of liposome composition and size on the skin partitioning of ciclosporin.* A.Z. Zhu, T. Nazir and M.B. Brown and G.P. Martin. J. Pharm. Pharmacol., (1999), **51**:S336.
- R22. *The mucoadhesive potential of novel hyaluronan and chitosan microspheres.* S.T. Lim, M.B. Brown and G.P. Martin. Proc. Mill. Cong. Pharm. Sci., (2000), A60.
- R23. *The effect of homogenised skin on the activity of lincosamide antibiotics.* S.K. Amr, M.B. Brown, G.P. Martin and B. Forbes. Proc. Mill. Cong. Pharm. Sci., (2000) A80.
- R24. *Biological and chemical assays for the determination of formulated lysozyme activity.* Y-H. Liao, M.B. Brown and G.P. Martin. J.Pharm.Pharmacol., (2000), **52**, S139.
- R25. *Nasal delivery of gentamycin: in vivo evaluation of novel microparticles.* S.T.Lim, M.B. Brown, B. Forbes and G.P. Martin. British Pharmaceutical Conference Science Proceedings (2001), Pharmaceutical Press (ISBN 0 85369 312 1), London, p.76.
- R26. *The effects of hyaluronan and other polymers on the dermal diffusion in vitro of NSAID drugs.* M.B. Brown, S.T. Lim, M. Hanpanitcharoen and G.P.Martin. British Pharmaceutical Conference Science Proceedings (2001), Pharmaceutical Press (ISBN 0 85369 312 1), London, p.67.
- R27. *The role of stabilising excipients in preserving the structure of globular proteins during dehydration.* Y. Liao, M.B. Brown and G.P. Martin. British Pharmaceutical Conference Science Proceedings (2001), Pharmaceutical Press (ISBN 0 85369 312 1), London, p.153.
- R28. *Dermal delivery of cyclosporin A entrapped liposomal gels – preformulation Franz cell diffusion studies using silastic membranes.* T. Nazir, G.P. Martin, and M.B. Brown. PharmSci., (2001) **3** (Suppl.), abstract 1429.
- R29. *The effect of hyaluronan and other glycosaminoglycans on the biodisposition of diclofenac and ibuprofen when applied topically.* M.B. Brown, S.T. Lim, and G.P. Martin. PharmSci., (2001), **3** (Suppl.), abstract 1427.
- R30. *A novel method to deliver dry powdered formulations onto cell monolayers.* S.T. Lim, M. Donaldson, B. Forbes, G.P. Martin and M.B. Brown. PharmSci., (2001), **3** (Suppl.), abstract 1999.
- R31. *Protective mechanism of stabilising excipients in the freeze-drying of proteins.* Y. Liao, M.B. Brown and G.P. Martin. PharmSci., (2001), **3** (Suppl.), abstract 769.
- R32. *Localisation of tight junction proteins in human skin and LSE.* F. Rytlewski, M. Donaldson, B. Forbes and M.B. Brown. PharmSci., (2001), **3** (Suppl.), abstract 1974.

- R33. *Loop interaction of the tight junction protein occludin*. M. Donaldson, B. Forbes and M.B. Brown. PharmSci., (2001), **3** (Suppl.), abstract 1975.
- R34. *A topical prophylaxis for the Schistosomiasis*. R.J. Ingram, A. Bartlett, M.B. Brown, C. Marriott and P.J. Whitfield. American Journal of Tropical Medicine and Hygiene, (2001) **65**(3): 41.
- R35. *Investigation of the temporal dynamics of S. Mansoni penetration of different skin layers*. R.J. Ingram, A. Bartlett, M.B. Brown, C. Marriott, and P.J. Whitfield. American Journal of Tropical Medicine and Hygiene, (2001), **65**(3): 670.
- R36. *A topical prophylaxis for the Schistosomiasis in travellers*. R.J. Ingram, A. Bartlett, M.B. Brown, C. Marriott, and P.J. Whitfield. Proceedings of the Spring Meeting of the British Society of Parasitology, (2002), **113**: 39.
- R37. *Characterisation of processing induced changes in morphology by solution calorimetry*. P. Royall, G.P. Martin, M.B. Brown, H. Larhrib, B. Guiziou, C. Andreou, A. Minet and A. Bakri. Thermometric AB, Application note 2225-02, August 2002.
- R38. *An in vitro investigation of a topical prophylaxis for schistosomiasis*. R.J. Ingram, A. Bartlett, M.B. Brown, C. Marriott And P.J. Whitfield. J.Pharm. Pharmacol., (2002), **54**:S37
- R39. *Investigation of protein denaturation upon spray-drying by differential scanning calorimetry*. Y-H. Liao, M.B. Brown, T. Nazir, A. Quader and G.P. Martin. J.Pharm. Pharmacol., (2002), **54**:S26
- R40. *Temperature and modulated differential scanning calorimetry of a spray-dried model protein: catalase*. A. Quader, Y-H. Liao, M.B. Brown, G.P. Martin, P. Royall and B. Forbes. J.Pharm. Pharmacol., (2002), **54**:S34.
- R41. *Racial differences in the temporal dynamics of schistosoma mansoni cercarial skin penetration*. R. Ingram, A. Bartlett, M.B. Brown, C. Marriott and P.J. Whitfield. AAPSPPharmSci., (2002), **4**, Abstract M1224.
- R42. *Thermal analysis of spray-dried protein formulations*. A. Quader, Y-H. Liao, M.B. Brown, G.P. Martin, P. Royall and B. Forbes. AAPSPPharmSci., (2002), **4**, Abstract T2128.
- R43. *The effects of excipients on the stabilisation of spray-dried proteins*. Y-H. Liao, M.B. Brown, T. Nazir, A. Quader and G.P. Martin. AAPSPPharmSci., (2002), **4**, Abstract W5101.
- R44. *An in vitro investigation of a topical prophylaxis for schistosomiasis*. R. Ingram, A. Bartlett, M.B. Brown, C. Marriott and P.J. Whitfield. AAPSPPharmSci., (2002), **4**, Abstract W5101.
- R45. *Test materials for solution calorimetry*. B.T.S. Yff, P.G. Royall G.P. Martin and M.B. Brown. J.Pharm. Pharmacol., (2003), **55**:S35.
- R46. *An in-vitro study of the effect of heat on the percutaneous absorption of three model penetrants*. F.K. Akomeah, G.P. Martin and M.B. Brown. J. Pharm. Pharmacol., (2003), **55**:S35.
- R47. *The effect of heat on the percutaneous absorption and epidermal retention of methyl paraben, butyl paraben and caffeine: An in vitro study*. F.K. Akomeah, T. Nazir, G.P. Martin and M.B. Brown. AAPSPPharmSci., (2003), **5**, Abstract T2171.
- R48. *Effect of molecular weight and concentration of hyaluronan on the in vitro release characteristics of diclofenac and ibuprofen across cellulose membrane*. W.J. He, M.B. Brown and G.P. Martin. J.Pharm.Pharmacol., (2004), **56**:S13

- R49. *Stabilisation and delivery of deoxyribonuclease within pressurised hydrofluoroalkane metered dose inhaler formulations.* S.A. Jones, G.P. Martin and M.B. Brown. The AAPS Journal, (2004), **6**, W5052
- R50. *An evaluation of simulated lung fluids using solute partitioning.* B. Yff, M.B. Brown, B. Forbes, G.P. Martin and P.G. Royall, (2004) The AAPS Journal **6**, R6056
- R51. *The development of powder pocket dynamic mechanical analysis for the detection of amorphous content in salbutamol sulphate:a feasibility study.* S.J. Tang, J. Duncan, G. Van-de-Velde, M.B. Brown and P.G. Royall. J. Pharm.Pharmacol., (2005), **57**:S60
- R52. *Manipulation of beclomethasone-hydrofluoroalkane interactions using miscible blends of biocompatible macromolecules.* S.A. Jones, G.P. Martin and M.B. Brown. The AAPS Journal, (2005) **7**, Abstract W5074
- R53. *In vitro efficacy of a non-alcoholic antibacterial cleansing lotion as a potential routine hand disinfectant.* R.B. Turner, S. Lim, B. Forbes and M.B. Brown. J. Pharm.Pharmacol., (2006), **58**:A33
- R54. *Vitamin E nanoparticles for dermal application.* M. Moddaresi, S. Tamburic, S. Jones and M.B. Brown. J.Pharm.Pharmacol., (2006), **58**:A13
- R55. *Schistosome cercarial interactions with human keratinocytes and langerhan cells.* G.R. Nanayakkara, A. Bartlett, P.J. Whitfield, M.B. Brown and R. Groves. J. Investigative Dermatology, (2007), **126**:110-110 Suppl. 3.
- R56. *Immunomodulatory effects of shistosome cercarial interactions with human keratinocytes and Langerhan cells.* G.R. Nanayakkara, A. Bartlett, P.J. Whitfield, M.B. Brown and R. Groves. British Journal of Dermatology, (2007), **156**:1113-1113.
- R57. *A novel permeation enhancer designed to increase the permeation of currently marketed nail lacquers through human nail.* M.J. Traynor, R.B. Turner, C.R.G. Evans, L.R.H. Khengar, L. Zhang, S.A. Jones and M.B. Brown in Perspectives in Percutaneous Penetration. K.R. Brain and K.A. Walters (Eds), (2008), Volume 11, STS Publishing, Cardiff , pp90
- R58. *The use of statistical design to optimise a heat generating topical formulation.* D.G. Wood, M.B. Brown and S.A. Jones in Perspectives in Percutaneous Penetration. K.R. Brain and K.A. Walters (Eds) (2008), Volume 11, STS Publishing, Cardiff , pp14
- R59. *A novel franz cell method to assess the permeation of benzoyl peroxide across silicone membrane.* Y. Zhao, S.A. Jones and M.B. Brown in Perspectives in Percutaneous Penetration. K.R. Brain and K.A. Walters (Eds) (2008), Volume 11, STS Publishing, Cardiff , pp51
- R60. *Prediction of skin penetration using machine learning methods.* M. Prapadopolou, Y. Sun, R.G. Adams, N. Davey, M.B. Brown and G.P.J. Moss in Perspectives in Percutaneous Penetration. K.R. Brain and K.A. Walters (Eds) (2008), Volume 11, STS Publishing, Cardiff , pp59
- R61. *The development of a eutectic lidocaine-prilocaine spray formulation.* S. Fiala, M.B. Brown and S.A. Jones in Perspectives in Percutaneous Penetration. K.R. Brain and K.A. Walters (Eds) (2008), Volume 11, STS Publishing, Cardiff , pp70
- R62. *An investigation into the mechanism by which thioglycolic acid and urea-hydrogen peroxide enhance terbinafine permeation through human nail plate.* L.R.H. Khengar, M.B. Brown, M.J. Traynor, R.B. Turner, and S.A. Jones in Perspectives in Percutaneous Penetration. K.R. Brain and K.A. Walters (Eds) (2008), Volume 11, STS Publishing, Cardiff , pp71

- R63. *Novel powder formulation for topical delivery of miconazole nitrate and clotrimazole.* I.A. Palmer, M.B. Brown, S.A. Jones, G.P.J. Moss and M.J. Traynor in Perspectives in Percutaneous Penetration. K.R. Brain and K.A. Walters (Eds) (2008), Volume 11, STS Publishing, Cardiff, pp72
- R64. *The use of residual solvents to delay dose depletion in novel metered dose aerosols for topical drug delivery.* M.L. Reid, S.A. Jones and M.B. Brown in Perspectives in Percutaneous Penetration. K.R. Brain and K.A. Walters (Eds) (2008), Volume 11, STS Publishing, Cardiff, pp86
- R65. *The influence of delivery vehicle on the permeation of lidocaine and prilocaine through silicone membrane.* PBB, Barcelona 2008. S Fiala, M.B. Brown, S.A. Jones.
- R66. *The effect of complex coordination on gallium determination using ion chromatography.* K. Staff, M.B. Brown, H. Nacer, R.C. Hider, P. Friden, S.A. Jones. J.Pharm.Pharmacol., (2008), **60**, A31-A32
- R67. *The effect of temperature on the diffusion of lidocaine base.* D.G. Wood, M.B. Brown. S.A. Jones. J.Pharm.Pharmacol., (2008), **60** A22-A22
- R68. *Effect of propylene glycol on in vitro membrane transport of ionised diclofenac diethylamine from saturated binary cosolvent mixtures.* F. Benaouda, S.A. Jones, M.B. Brown, G.P. Martin. J.Pharm.Pharmacol., (2008), **60**, A57-A57
- R69. *Polar Water/Propylene Glycol Co-Solvent Vehicles Facilitate Optimum Ion-Pair Membrane Permeation.* F. Benaouda, S.A. Jones, M.B. Brown, G.P. Martin. Skin Forum. Versailles, France: 81-063 (2009).
- R70. *The effect of amorphous and crystalline forms of clotrimazole for topical drug delivery.* I. Palmer, M. B. Brown, S.A. Jones, D. Murnane, G. Moss and M.J. Traynor. Skin Forum. Versailles, France: 83-071 (2009).
- R71. *The utility of machine learning methods to quantify percutaneous absorption.* L.T. Lam, M.B. Brown, M. Prapopoulou, N. Davey, M.J. Traynor, Y.Sun and G.P. Moss. Skin Forum. Versailles, France: 83-071 (2009).
- R72. *Topical delivery of Ga(III) complexes – the effect of metal coordination upon human skin permeation.* K. Staff, M.B. Brown, P. Friden, S.A. Jones. Skin Forum. Versailles, France: 100-119 (2009).
- R73. *Dynamic hydrofluoroalkane metered dose aerosols for topical delivery of diclofenac.* F. Benaouda, S.A. Jones, M.B. Brown, G. P. Martin., PharmSciFair Abstract (2009).
- R74. *Enhancement of membrane permeation of diclofenac diethylamine using supersaturation.* F. Benaouda, S.A. Jones, M.B. Brown, G. P. Martin. BPC (2009).
- R75. *Controlling the deposition of gallium complexes in human skin iontophoresis.* K. Staff. S.A. Jones, and M.B. Brown in Perspectives in Percutaneous Penetration, K.R. Brain and K.A. Walters (Eds), (2010), Volume 12, STS Publishing, Cardiff, pp30
- R76. *The correlation between in vitro and in vivo skin permeation models of a novel diclofenac formulation.* E.G. Van Eyssen, M.B. Brown, D. Davies and A. Davies in Perspectives in Percutaneous Penetration. K.R. Brain and K.A. Walters (Eds), (2010), Volume 12, STS Publishing, Cardiff, pp51
- R77. *The use of a eutectic/penetration enhancer combination for percutaneous drug absorption.* J.K. Gorae, A.L. Gwynn and M.B. Brown, in Perspectives in Percutaneous Penetration. K.R. Brain and K.A. Walters (Eds), (2010), Volume 12, STS Publishing, Cardiff, pp52

- R78. *MedTherm: A novel strategy for transdermal drug delivery.* D.G. Wood, M.B. Brown and S.A. Jones, in Perspectives in Percutaneous Penetration. K.R. Brain and K.A. Walters (Eds), (2010), Volume 12, STS Publishing, Cardiff , pp62
- R79. *The application of machine learning and feature selection methods to the prediction of percutaneous absorption.* S.T. Lim, M.B. Brown, N. Davey, W.J. Pugh, Y.Sun and G.P. Moss, in Perspectives in Percutaneous Penetration. K.R. Brain and K.A. Walters (Eds), (2010), Volume 12, STS Publishing, Cardiff , pp89
- R80. *The application of Gaussian processes in the prediction of absorption across mammalian skin and synthetic membranes.* Y. Sun, M.B. Brown, M. Prapopoulo, R. Adams, N. Davey and G.P. Moss, in Perspectives in Percutaneous Penetration. K.R. Brain and K.A. Walters (Eds), (2010), Volume 12, STS Publishing, Cardiff , pp90
- R81. *Transiently supersaturated solutions from the dissolution of amorphous powders for topical drug delivery.* I.A. Palmer, S.A. Jones, P.J. Moss, M.B. Brown and M.J. Traynor, in Perspectives in Percutaneous Penetration. K.R. Brain and K.A. Walters (Eds), (2010), Volume 12, STS Publishing, Cardiff , pp98
- R82. *Development of a novel phase separating nail lacquer for the treatment of onychomycosis.* R. Makvana, M.B. Brown, and W.J. McAuley, in Perspectives in Percutaneous Penetration. K.R. Brain and K.A. Walters (Eds), (2010), Volume 12, STS Publishing, Cardiff , pp99
- R83. *MedNail:Effect of a novel penetration enhancer on the unequal permeation of two antifungal agents.* H.M.T. Griffith, M.J. Traynor, R.B. Turner, C.R.G. Evans, R.H. Khengar, S.A. Jones and M.B. Brown, in Perspectives in Percutaneous Penetration. K.R. Brain and K.A. Walters (Eds), (2010), Volume 12, STS Publishing, Cardiff , pp100
- R84. *A Phase II study of the efficacy, tolerability and consumer acceptability of topical MedSpray 1%w/w/ terbinafine (TerbiMed) versus Lamisil Once in the treatment of Tinea pedis.* C.R.G. Evans, M.J. Traynor, S.T. Lim, R.J. Turner and M.B. Brown, in Perspectives in Percutaneous Penetration K.R. Brain and K.A. Walters (Eds), (2010), Volume 12, STS Publishing, Cardiff , pp101
- R85. *Effect of a novel penetration enhancer on the unequal permeation of two antifungal agents.* H.M.T. Griffith, M.J. Traynor, R.B. Turner, C.R.G. Evans, R.H. Khengar, S.A. Jones and M.B. Brown. J. Pharm.Pharmacol., (2010), 62:805
- R86. *Controlling the deposition of gallium complexes in human skin iontophoresis.* K. Staff, S.A. Jones, and M.B. Brown. J. Pharm.Pharmacol., (2010) 62:807
- R87. *The correlation between in vitro and in vivo skin permeation models of a novel diclofenac formulation.* E.G. Van Eyssen, M.B. Brown, D. Davies and A. Davies. J. Pharm.Pharmacol., (2010), 62:802
- R88. *The use of a eutectic/penetration enhancer combination for percutaneous drug absorption.* J.K. Gorae, A.L. Gwynn and M.B. Brown. J. Pharm.Pharmacol., (2010), 62:795-796
- R89. *A novel strategy for enhancing transdermal drug delivery.* D.G. Wood, M.B. Brown and S.A. Jones. J. Pharm. Pharmacol., (2010), 62:790-791
- R90. *The application of machine learning and feature selection methods to the prediction of percutaneous absorption.* S.T. Lim, M.B. Brown, N. Davey, W.J. Pugh, Y. Sun, and G.P. Moss. J. Pharm. Pharmacol., (2010), 62:802

- R91. *The application of Gaussian processes in the prediction of absorption across mammalian skin and synthetic membranes.* Y. Sun, M.B. Brown, M. Prapopoulo, R. Adams, N. Davey, and G.P. Moss. J. Pharm. Pharmacol., (2010); 62:802
- R92. *Transiently supersaturated solutions from the dissolution of amorphous powders for topical drug delivery.* I.A. Palmer, S.A. Jones, P.J. Moss, M.B. Brown and M.J. Traynor. J. Pharm. Pharmacol., (2010), 62:795
- R93. *Development of a novel phase separating nail lacquer for the treatment of onychomycosis.* R. Makvana, M.B. Brown and W.J. McAuley. J. Pharm. Pharmacol., (2010), 62:799
- R94. *Effect of a novel penetration enhancer on the ungual permeation of two antifungal agents.* H.M.T. Griffith, M.J. Traynor, R.B. Turner, C.R.G. Evans, R.H. Khengar, S.A. Jones and M.B. Brown. J. Pharm. Pharmacol., (2010), 62:805
- R95. *A Phase II study of the efficacy, tolerability and consumer acceptability of topical MedSpray 1%w/w terbinafine versus Lamisil Once in the treatment of Tinea pedis.* C.R.G. Evans, M.J. Traynor, S.T. Lim, R.B. Turner and M.B. Brown. J. Pharm. Pharmacol., (2010), 62:805
- R96. *A novel phase separating nail lacquer for the treatment of onychomycosis.* R. Makvana, M.B. Brown and W.J. McAuley. Skin Forum, 11th Annual Meeting, 2010:P5
- R97. *The effect of depilation on the percutaneous penetration of aluminium from antiperspirant.* K. Anjum, K. Staff, J. Owen, M.B. Brown and G.P. Moss. Skin Forum, 11th Annual Meeting, 2010:P8
- R98. *The effect of occlusion on the the percutaneous penetration of aluminium from antiperspirant.* K. Anjum, K. Staff, J. Owen, M.B. Brown and G.P. Moss. Skin Forum, 11th Annual Meeting, 2010: P9
- R99. *Controlling the delivery of gallium complexes to human skin using iontophoresis.* K. Staff, M.B. Brown and S. Jones. Skin Forum, 11th Annual Meeting, 2010: P11
- R100. *The use of heat to enhance drug delivery across the skin.* D.G. Wood, M.B. Brown and S. A. Jones. Skin Forum, 11th Annual Meeting, 2010: P21
- R101. *The effect of the solid state on transiently supersaturated solutions from the dissolution of powders for topical delivery.* I.A. Palmer, S.A. Jones, M.B. Brown, M.J. Traynor, G.P.J. Moss and D. Murnane. Skin Forum, 11th Annual Meeting, 2010: P50
- R102. *Ionised Salbutamol Transport In The Presence Of Counter Ions.* A. Patel, C.P. Page, M.B. Brown, S.A. Jones. J. Pharm. Pharmacol., (2010), 62:1283
- R103. *Collection and characterisation of residual skin surface components.* S. Shetage, M.B. Brown, R.P. Chilcott and M.J. Traynor. UKPharmSci., 2011, 63:
- R104. *Polymer coated lorazepam particles for airway administration.* Y. Zhao, M.J. Traynor, M.B. Brown, S.A. Jones. UKPharmSci., 2011, 63:
- R105. *The use of excised human skin in the in vitro prediction of dermal chemical irritation.* C. Stewart, R.B. Turner, M.B. Brown, M. Traynor. The Toxicologist CD—An official Journal of the Society of Toxicology, Volume 126, Issue 1, March 2012
- R106. *Identification of skin irritants using keratinocytes in culture.* M. Traynor, C. Stewart, R.B. Turner, M.B. Brown. The Toxicologist CD—An official Journal of the Society of Toxicology, Volume 126, Issue 1, March 2012

- R107. *Variations in residual skin surface components based on age, gender and ethnicity.* S.S. Shetage; M.B. Brown, R.P. Chilcott and M.J. Traynor. *Int. J. Cosmetic Science*, (2012) Abstract 099; **34**:385-385
- R108. *An investigation into salbutamol sulphate ion pair interactions and their influence on transport across a hydrophilic membrane.* A. Patel, C.P. Page, M.B. Brown, S.A. Jones. *Journal of Aerosol Medicine and Pulmonary Drug Delivery*, (2013), 26(5): A25
- R109. *Assessment of a cyclone-type spacer device for use in dry powder inhalation.* I. Parisini, S.J. Cheng, D.D. Symons, M.B. Brown, M. B, Kostrzewski. *A. Journal of Aerosol Medicine and Pulmonary Drug Delivery*, (2013), 26(5): A240,
- R110. *A comparison of the physical properties of onychomycotic and healthy nails. The Academy of Pharmaceutical Sciences.* A. Baraldi, S. Guesné, S.A. Jones, W.J. McAuley, M.B. Brown, S. Murdan, M.J. Traynor. Available at: <https://www.ukpharmsci.org/2014ResourcePack/Default.asp>
- R111. *Identifying Patient Specific Preferences for Drug Delivery Systems in Parkinson's Disease.* K. Lefteri, F. Liu, M.B. Brown., Available at: <https://www.ukpharmsci.org/2014ResourcePack/Default.asp>

Grants Awarded - Available upon request

MEMBERSHIP OF PROFESSIONAL BODIES AND SOCIETIES

CChem FRSC Membership of the Royal Society of Chemistry (1993)

Member of the Academy of Pharmaceutical Scientists

Member of the Controlled Release Society

Member of EUFEPS

Member of the Royal Pharmaceutical Society of Great Britain Academic Pharmacy Group

ADDITIONAL INFORMATION

- Named on the Medicine Maker Power list of 2023 and 2024 for my work on the development and commercialisation of over 50 small molecular weight drug products.
- Member of the EPSRC Peer Review College 2006-
- Founding member and committee member of the EPSRC Drug Delivery Research Network.
- Member of the FDA sponsored Q3 working group and committee on Performance Testing.
- Member of the executive organising committee of the international meeting Perspectives in Percutaneous Permeation that occurs biennially in France.
- Member of the organising committee and session chair for the AGAH international workshops in topical product development.
- Grant referee for the Research and Development Office of Northern Ireland, Austrian Science Fund, the Scottish Research and Development Office and STW, the Dutch Technology Foundation; The Wellcome Trust, the US National Institute of Occupational Safety and Health and the National Institute of Health Research.
- Intercollegiate examiner for the London School of Pharmacy.
- One of my former students (Sian Lim) was awarded the EMI Graduate Student Outstanding Manuscript Award in Pharmaceutical Technology at AAPS 2001.
- Awarded the EMI faculty supervisor of the year in Pharmaceutical Technology at AAPS 2001 for supervision of Sian Lim.
- Invitations to visit and work at the Hospital for Sick children, Toronto Canada and the Lyons Eye Institute, Perth, Australia.