

CURRICULUM VITAE

**Heather Mann Wallace
(nee MOYES)**

BSc (Hons); PhD

**Fellow of the Royal College of Pathologists,
Fellow of the British Toxicology Society,
Fellow of the British Pharmacological Society,
Fellow of the Royal Society of Chemistry,
Fellow of the Royal Society of Biology**

**UK Registered Toxicologist
and
European Registered Toxicologist
(ERT)**

Educational Background and Qualifications:

UNIVERSITY: UNDERGRADUATE TRAINING

1972-1976 *University of Glasgow*

1975 Awarded summer training grant to undertake research on toxicity testing of effluents at BP Ltd. Sunbury on Thames
Prize for best project and oral presentation

1976 **Graduated BSc with Honours in Biochemistry 2(i)**

POSTGRADUATE TRAINING

1976-1979 *University of Aberdeen*
MRC Research Studentship
Title of thesis: A study of polyamine metabolism in normal and virus-infected mammalian cells in culture
Supervisor: Professor HM Keir
1979 **Graduated PhD in Biochemistry**

Membership of Professional Bodies and Professional Qualifications:

PROFESSIONAL QUALIFICATIONS: **FRCPath - elected Fellow of the Royal College of Pathologists, 2004**

FBTS - elected Fellow of British Toxicology Society, 2006

ERT - accepted onto UK Register of Toxicologists and designated European Registered Toxicologist (ERT), 2006
Re-registered 2011, 2016

FBPhS – elected Fellow of the British Pharmacological Society, 2012

FRSC – elected Fellow of the Royal Society of Chemistry, 2012

FRSB – elected Fellow of the Royal Society of Biology, 2013

Continuing Professional Development (CPD):

Member of the Royal College of Pathologists (RCPATH) CPD Scheme (2003- present) average 100 credits per year

MEMBERSHIP OF PROFESSIONAL BODIES:

The Biochemical Society (1976)

Member of Council 2010-2012
Member of Executive Committee of Council 2011-2012
Chair of Theme Panel VII 2005 – 2009
Deputy Chair of Theme Panel VII 2002-2005
Member of Council 2006 – 2009
Meeting Board Committee 2005 - 2009

British Toxicology Society (1997)

Nominations Subcommittee 2016 -
Immediate Past President 2016 – 2018
President 2014 – 2016
Vice-President 2012-2014
General Secretary 2008 –2013
Executive committee elected ordinary member 2003-2008
Education sub committee 1999 – 2004
Chairman CPD committee 2003 -
Chairman of Communications Sub Committee 2006 -2008

The British Pharmacological Society (1983)

Affinity Group (Toxicology) Co-Chair 2018 -
Member of the External Affairs Committee, 2013-

British Association for Cancer Research (1984)

European Association for Cancer Research (1995)

European Tissue Culture Society (1985)

EUROTOX (1997)

President of EUROTOX 2018 -
President-Elect of EUROTOX 2016-2018
President of EUROTOX 2014 (Congress)

*Member of the Executive Committee,
2013 - present
BTS Representative on Business Council*

Scottish Society for Experimental Medicine (1986) *Member of Executive 1999 –
2007
Member of Board of Scottish
Medical Journal (2003-2007)*

Founder member of Save British Science

Employment History:

- 2013 -** *Professor of Biochemical Pharmacology and Toxicology –*
Division of Applied Medicine and School of Medical Sciences,
University of Aberdeen. Discretionary award 2014
- 1991-2013** *Senior Lecturer -* Departments of Medicine and Therapeutics
and Biomedical Sciences, University of Aberdeen
Discretionary awards 1995; 2002; 2006; 2012
- 1991-1992** *University Research Fellow,* University of Aberdeen. This
was one year sabbatical to learn new molecular techniques.
- 1984-1991** *"New Blood" Lecturer in Molecular Toxicology -*Departments
of Medicine and Therapeutics and Pharmacology, University of
Aberdeen. *Research areas:* regulation of polyamine
catabolism in normal and cancer cells; identifying new targets
for the design of antitumour agents; oxidant induced injury in
endothelial cells
- 1984-1984** *Wellcome Lecturer -* Department of Therapeutics and Clinical
Pharmacology, University of Aberdeen. *Research areas:* the
role of polyamines in cell growth and function - hepatocytes
and tumour cells
- 1981-1983** *CRC Research Fellow - Title of project:* The function(s) of
acetyl derivatives of polyamines in normal and transformed
mammalian cells in culture
- 1979-1981** *MRC Research Fellow - Title of project:* Characterisation of
spermidine conjugates and their metabolism in normal and
transformed cells in culture

Current roles within the University:

- 2018-** *Head of Industrial Liaison* for School of Medicine, Medical Sciences and Nutrition
- 2014-** *Programme Co-ordinator* Stratified Medicines and Pharmacological Innovation (SMPI: jointly with the University of Glasgow);
- 1986-2017** *MSc programme co-ordinator* for 5 MSc programmes: Clinical Pharmacology, Drug Discovery and Development, Bio-Business and Medical Science, Stratified Medicines and Pharmacological Innovation (SMPI: jointly with the University of Glasgow); MRes Drug Discovery
- 2006 - 2016** *Co-ordinator of Postgraduate Studies*, Graduate School, CLSM.
- 2009 -2016** *Chair of Postgraduate Advisory Group*, Graduate School, CLSM
- 2010 -** *Kosterlitz Centre for Therapeutics* with responsibility for external affairs and research training.
- 2011 - 2013** *Academic Selector for PGT students for CLSM* with responsibility for 7 degree programmes

Bibliography:

Peer Reviewed Original Papers

1. Fewson, CA, Livingstone A and **Moyes HM** (1978). Mutants of *Acinetobacter calcoaceticus* NCIB 8250 constitutive for the mandelate enzymes.
J. Gen. Virol. **106**, 233-239
2. **Wallace, HM**, Baybutt, HN, Pearson, CK & Keir, HM (1980). The effect of polyamines on herpes simplex virus type I DNA polymerase from infected baby hamster kidney cells (BHK-21/C13).
J. Gen. Virol. **49**, 397-400
3. Melvin, MAL, **Wallace, HM** & Keir, HM (1980). Conjugation of polyamines in mammalian cells in culture. *Physiol. Chem. Phys.* **12**, 431-439
4. **Wallace, HM**, Duff, PM, Pearson, CK & Keir, HM (1981). The effect of polyamines on DNA synthesis *in vitro*.
Biochim. Biophys. Acta. **652**, 354-357
5. **Wallace, HM**, Baybutt HN, Pearson, CK & Keir, HM (1981). Effect of spermine on the activity of herpes simplex virus type I DNA polymerase: influence of the template.
FEBS Lett. **126**, 157-160
6. **Wallace, HM** & Keir, HM (1981). Uptake and excretion of polyamines from baby hamster kidney cells (BHK-21/C13): the effect of serum on confluent cell cultures.
Biochim. Biophys. Acta. **676**, 25-30
7. **Wallace, HM** & Keir, HM (1981). Excretion of polyamines from baby hamster kidney cells (BHK-21/C13): effect of infection with herpes simplex virus type I.
J. Gen. Virol. **56**, 251-258
8. **Wallace, HM** & Keir, HM (1982). A comparison of polyamine metabolism in normal and transformed hamster kidney cells.
Biochem. J. **202**, 785-790
9. **Wallace, HM** & Keir, HM (1983). Polyamine key to cell growth.
Spectrum **184**, 2-4
10. **Wallace, HM**, Gordon, AM, Keir, HM & Pearson, CK (1984). Activation of ADP-ribosyl transferase in polyamine-depleted mammalian cells.
Biochem. J. **219**, 211-221
11. Kingsnorth, AN, **Wallace, HM**, Bundred, NJ & Dixon, JMJ (1984). Polyamines in breast cancer.
Brit. J. Surg. **71**, 352-356

12. Kingsnorth, AN, Lumsden, AB & **Wallace, HM** (1984). Polyamines in colorectal cancer.
Brit. J. Surg. **71**, 791-794
13. Kingsnorth, AN & **Wallace, HM** (1985). Elevaton of monoacetylated polyamines in human breast cancers.
Eur. J. Cancer. Clin. Oncol. **21**, 1057-1062
14. **Wallace, HM**, MacGowan, SH & Keir, HM (1985). Polyamine metabolism in mammalian cells in culture. *Biochem. Soc. Trans.* **13**, 329-330
15. **Wallace, HM** & Keir, HM (1986). Factors affecting polyamine excretion from mammalian cells in culture: inhibitors of polyamine biosynthesis.
FEBS Lett. **194**, 60-63
16. **Wallace, HM** & Cameron, GA (1986). Determination of methylglyoxal bis(guanylhydrazone) in cells in culture using high performance liquid chromatography.
J. Chromatogr. **130**, 122-127
17. Nuttall, ME, Scott, AK & **Wallace, HM** (1986). Increased polyamine acetyltransferase activity during pregnancy.
IRCS Med. Sci. **14**, 918
18. **Wallace, HM** (1987). Temperature dependence of polyamine excretion.
Med. Sci. Res. **15**, 141-142
19. **Wallace, HM** (1987). Polyamine catabolism in mammalian cells: excretion and acetylation. *Med. Sci. Res.* **15**, 1437-1440
20. MacGowan, SH, Keir, HM & **Wallace, HM** (1987). Presence of a tissue-type polyamine oxidase activity in mammalian serum.
Med. Sci. Res. **15**, 687
21. Nuttall, ME, Scott, AK & **Wallace, HM** (1987). Acetylator phenotype and polyamine concentrations in hyperthyroid patients before and after treatment.
Br. J. Clin. Pharmacol. **24**, 278-279
22. Duthie, S & **Wallace, HM** (1988). The effect of NSD 1055 and NSD 1024 on polyamine oxidase activity in ruminant serum.
Med. Sci. Res. **16**, 195-196
23. **Wallace, HM**, Nuttall, ME & Robinson, FC (1988). Acetylation of spermidine and methylglyoxal bis(guanylhydrazone) in baby hamster kidney cells (BHK-21/C13)
Biochem. J. **253**, 223-227
24. Brunton, VG, Grant, MH & **Wallace, HM** (1988). Spermine-induced toxicity in BHK-21/C13 cells: dependence on growth status.
Med. Sci Res. **16**, 951-952

25. Smart, LM, Davidson, RJL, **Wallace, HM** & Thomson, AW (1989). Anti-leukaemic effects of cyclosporin A alone and in combination with α -difluoromethylornithine in the rat.
Transplantation Proc. **21**, 954-955
26. **Wallace, HM** (1989). Changes in polyamine content in primary cultures of adult rat hepatocytes.
Biochem. Pharmacol. **38**, 379-381
27. Coleman, CS & **Wallace, HM** (1989). Comparison of growth and polyamine content of a human colonic carcinoma cell line in different sera.
Med. Sci. Res. **17**, 17-18
28. Bardocz, S, Grant, G, Brown, DS, **Wallace, HM**, Ewen, SWB & Pusztai, A (1989). Effect of α -difluoromethylornithine on Phaseolus vulgaris lectin-induced growth of the rat small intestine.
Med. Sci. Res. **17**, 143-145
29. Smart, LM, McLachlan, G, **Wallace, HM** & Thomson, AW (1989). Influence of cyclosporin A and α -difluoromethylornithine, an inhibitor of polyamine biosynthesis on two rodent T-cell cancers in-vivo.
Int. J. Cancer. **44**, 1069-1073
30. Nuttall, ME & **Wallace, HM** (1989). Acetylation of putrescine and spermine in baby hamster kidney cells (BHK-21/C13).
Med. Sci. Res. **17**, 643-645
31. McLachlan, G, Smart, LM, **Wallace, HM** & Thomson, AW (1990). The potential of cyclosporin A as an anti-tumour agent.
Int. J. Immunopharmacol. **12**, 469-479
32. Brunton, VG, Grant, MH & **Wallace HM** (1990). Spermine toxicity and glutathione depletion in BHK-21/C13 cells.
Biochem. Pharmacol. **40**, 1893-1900
33. **Wallace, HM** & Coleman, CS (1990). Changes in polyamine acetylation in human cancer cells.
Biochem. Soc. Trans. **18**, 1091-1094
34. Nuttall, ME & **Wallace, HM** (1991). Purification of methylglyoxal bis(guanylhydrazone)-induced spermidine N¹-acetyltransferase from baby hamster kidney cells (BHK-21/C13).
Biochem. Pharmacol. **41**, 1090-1092
35. McLachlan, G, Thomson, AW & **Wallace, HM** (1991). Effects of cyclosporin A on growth and polyamine metabolism of MOLT-4 T-lymphoblastic leukaemia cells.
Brit. J. Cancer **64**, 255-258

36. McLachlan, G, Thomson, AW & **Wallace, HM** (1991). Growth inhibition of MOLT-4 T leukaemia cell line: a comparison of CsA and FK506. *Transplant. Proc.* **23**, 2831-2832
37. Brunton, VG, Grant, MH & **Wallace, HM** (1991). Mechanisms of spermine toxicity in baby hamster kidney (BHK) cells: the role of amine oxidases and oxidative stress. *Biochem. J.* **280**, 193-198
38. Twentyman, PR, Wright KA & **Wallace, HM** (1992). Effects of cyclosporin A and a non-immunosuppressive analogue, O-acetyl cyclosporin A, upon the growth of parent and multidrug resistant human lung cancer cells in vitro. *Brit. J. Cancer* **65**, 335-340
39. Pazouki, S, Baty, JD, **Wallace HM** & Coleman, CS (1992). Utilization of extracellular lipids by HT29/219 cancer cells in culture. *Lipids* **27**, 827-834
40. Gray, MR, **Wallace, HM**, Golding, H & Kingsnorth, AN (1993). Mucosal polyamine measurements in the columnar lined oesophagus. *Gut* **34**, 584-587
41. Quick, DM & **Wallace HM** (1993). Induction of spermidine/spermine N¹-acetyltransferase in human breast carcinoma cells - a possible role for calcium. *Biochem. Pharmacol.* **46**, 969-974
42. Brunton, VG, Grant, MH & **Wallace, HM** (1994). Spermine toxicity in BHK-21/C13 cells in the presence of bovine serum: the effect of aminoguanidine. *Toxic. in Vitro* **8**, 337-341
43. **Wallace, HM** & Quick, DM (1994). Regulation of spermidine/spermine N¹-acetyltransferase in human tumour cells. *Biochem. Soc. Trans.* **22**, 870-875
44. Gray, MR, Darnton, SJ, Hunt, JA, Irlam, RW, Nemeth, J. & **Wallace, HM** (1995). Accelerated gastric epithelial proliferation. *Gut* **36**, 522-527
45. Fraser, JHE, Helfrich, MH, **Wallace, HM** & Ralston, SH (1996). Hydrogen peroxide but not superoxide, stimulates bone resorption in mouse calvariae. *Bone* **19**, 223-226
46. **Wallace, HM** (1996). Polyamines in human health. *Proc. Nutr. Soc.* **55**, 351-363
47. Chopra, S & **Wallace, HM** (1998). Induction of spermidine/spermine N¹-acetyltransferase in human cancer cells in response to increased production of reactive oxygen species. *Biochem. Pharmacol.* **55**, 1119-1123

48. Park, MS & **Wallace, HM** (1998). Hyperoxia influences mRNA expression of cytokines in cultured human umbilical vein endothelial cells. *Yonsei Med.J.* **39**, 1-12.
49. Morris, LA, Jaspers, M, Adamson, K, Woods, S & **Wallace, HM** (1998). The capnellenes revisited: new structures and new biological activity. *Tetrahedron* **54**, 12953-12958
50. **Wallace, HM** & Mackarel, AJ (1998). Regulation of polyamine acetylation and efflux in human cancer cells. *Biochem. Soc. Trans.* **26**, 571-575
51. Lindsay, GS & **Wallace, HM** (1999). Changes in polyamine catabolism in HL-60 human promyelogenous leukaemic cells in response to etoposide-induced apoptosis. *Biochem. J.* **337**, 83-87
52. Votyakova, TV, **Wallace, HM**, Dunbar, B & Wilson, SB (1999). The covalent attachment of polyamines to proteins in plant mitochondria. *Eur. J. Biochem.* **260**, 250-257
53. Levadoux, M, Mahon, P, Beattie, JH, **Wallace, HM** & Hesketh, JE (1999). Nuclear import of metallothionein requires its mRNA to be associated with the perinuclear cytoskeleton. *J. Biol. Chem.* **274**, 34961-34966
54. Nairn, LM, Lindsay, GS, Woster, PM & **Wallace, HM** (2000). Cytotoxicity of novel unsymmetrically substituted inhibitors of polyamine biosynthesis in human cancer cells. *J. Cell. Physiol.* **182**, 209-213
55. **Wallace, HM** (2000). The physiological role of the polyamines. *Eur. J. Clin. Invest.* **30**, 1-3
56. Chabanon, H, Persson, L, **Wallace, HM**, Ferrara, M & Brachet, P (2000). Increased translation efficiency and antizyme-dependent stabilisation of ornithine decarboxylase in amino acid-supplemented human colon adenocarcinoma cells, Caco-2. *Biochem. J.* **348**, 401-408
57. **Wallace, HM**, Duthie, J., Evans, DM, Lamond, S, Nicoll, KN & Heys, SD (2000). Alterations in polyamine catabolic enzymes in human breast cancer tissue. *Clin. Cancer Res.* **6 (9)**, 3657-3661
58. Levadoux-Martin, M, Hesketh, JE, Beattie, JH & **Wallace, HM** (2001). Influence of metallothionein-1 localization on its function. *Biochem. J.* **355**, 473-479

59. **Wallace, HM & Caslake, R.** (2001). Polyamines and colon cancer. *European Journal of Gastroenterology and Hepatology* **13(9)**, 1033-1039
60. Turchanova,L, Shvetsov, AS, Demin, AV, Khomutov, AR, **Wallace, HM**, Stein,J & Milovic, V (2002)
Insufficiently charged isosteric analogue of spermine: interaction with polyamine metabolism and uptake, and effect on Caco-2 cell growth *Biochem. Pharmacol.* **64**, 649-655
61. Fraser, AV, Woster, PM & **Wallace, HM** (2002). Induction of apoptosis in human leukaemic cells by IPENSpm, a novel polyamine analogue and anti-metabolite *Biochem. J.* **367**, 307-312
62. Aubel, C, Chabanon, H, Carraro, V, **Wallace, HM** & Brachet, P. (2003). Expression of spermidine/spermine N¹-acetyltransferase in HeLa cells is regulated by amino acid sufficiency *Int. J. Biochem. Cell Biol.* **35(9)**, 1388-1398
63. **Wallace, HM** & Fraser, AV (2003). Polyamine analogues as anti-cancer drugs. *Biochem. Soc. Trans.* **31**, 393-396
64. Hughes, A., Smith, NI & **Wallace, HM** (2003). Polyamines reverse non steroidal anti-inflammatory drug induced toxicity *Biochem. J.* **374**, 481-488
65. **Wallace, HM**, Fraser, AV & Hughes, A (2003). A perspective of polyamine metabolism *Biochem. J.* **376**, 1-14
66. Fraser, AV & **Wallace, HM** (2004). Inhibitors of polyamine metabolism *Amino Acids* **26(4)**, 353-365
67. Beattie, JH, Owen, HLH, Wallace,SM, Arthur,JR, Kwun,I-S, Hawksworth, GM & **Wallace, HM** (2005). Metallothionein overexpression and resistance to toxic stress. *Toxicology Letters* **157**, 69-78
68. **Wallace, HM** & Niiranen, K (2007). Polyamine analogues – an update. *Amino Acids* **33(2)**, 261-265
69. **Wallace, HM** (2007). Health Implications of Dietary Amines: an overview of COST Action 922 (2001-2006) *Biochem. Soc. Trans.* **35(2)**, 293-294
70. Saunders, FR & **Wallace, HM** (2007). Polyamine Metabolism and cancer prevention. *Biochem. Soc Trans.* **35(2)**, 364-368
71. **Wallace, HM** (2007). Targeting polyamine metabolism: a viable

- therapeutic/preventative solution for cancer?
Expert Opinion on Pharmacotherapy **8(13)**, 2109-2116
72. Brown, I, Halliday, S, Grieg, H, Heys,SD, **Wallace, HM** & Schofield, AC (2009). Genetic polymorphism in ornithine decarboxylase and risk of breast cancer
Familial Cancer **8(2)**, 307-311
 73. Palmer, AJ, Abdul Ghani, R, Kaur, N, Phanstiel, O & **Wallace, HM** (2009). A putrescine-anthracene conjugate: a paradigm for selective drug delivery
Biochemical Journal **424**, 431-438
 74. Palmer, AJ & **Wallace, HM** (2010). The polyamine transport system as a target for anticancer drug development
Amino Acids **38(2)**, 412-422
 75. Saunders, FR & **Wallace, HM** (2010). On the natural chemoprevention of cancer.
Plant Physiology and Biochemistry **48(7)**, 621-626
 76. Rato, C, Amirova, S, Bates, DG, Stansfield, I & **Wallace, HM** (2011). Translational recoding as a feedback controller: systems approaches reveal polyamine-specific effects on the antizyme ribosomal frameshift
Nucleic Acids Research **39(11)**, 4587-97
 77. **Wallace, HM** (2011). Risk perception: Part II Toxicology must be the solution not the problem
Toxicological Sciences **121(1)**, 7-10
 78. Shankar, PS, Sani,M, Saunders, FR, **Wallace, HM** & Zanda, M (2011). Total synthesis and cytotoxicity evaluation of and oxazole analogue of tubulysin U.
SYNLETT **12**, 1673-1676
 79. Traquete, R & **Wallace, HM** (2012) Targeting tumours: developing vector systems
The Biochemist **34(1)**, 22-25
 80. Hughes, A, Saunders, FR & **Wallace, HM** (2012) Naproxen causes cytotoxicity and induces changes in polyamine metabolism independent of cyclo oxygenase expression.
Toxicol. Res., **1(2)**, 108-115
 81. Traquete, R, Abdul Ghani, R & **Wallace, HM** (2013) Short and long term effects of polyamine anthracene conjugate (Ant 4,4) on human leukaemia cells.
Amino Acids **44 (4)**, 1193-1203
 82. Perone, S, Usai, M, Lazzari, P, Tucker, SJ, **Wallace, HM** & Zanda,M (2013) Efficient Cell Transfection with Melamine-Based Gemini Surfactants
Bioconjugate Chem **24 (2)**, 176–187

83. Abdulhussein, A & **Wallace, HM** (2014) Polyamines and membrane transporters
Amino Acids **46(3)**, 655-660
84. Silva, TM, Cirenajwis H, **Wallace, HM**, Oredsson, S. & Persson, L (2015) A role for antizyme inhibitor in cell proliferation.
Amino Acids **47(7)**, 1341-52
(DOI) 10.1007/s00726-015-1957-6
85. Seeley, A & **Wallace, HM** (2015) Anticancer drug delivery: hitting the mark.
European Biopharmaceutical Review **72**, 20-24
86. Li, J, Cameron, GA & **Wallace, HM** (2015) Decreased sensitivity to aspirin is associated with altered polyamine metabolism in human prostate cancer cells.
Amino Acids **48(4)**, 1003-1012
DOI: 10.1007/s00726-015-2143-6
87. Penny, LK & **Wallace, HM** (2015) The Challenges for Cancer Chemoprevention
Chemical Society Reviews **44**, 8836 – 8847
DOI: 10.1039/C5CS00705D
88. **Wallace HM**, Roberts R, Corsini E, Bonefeld-Jorgensen E, Orhan H, Mach M, Weiser T, Carvalho F, Iscan M, Tsatsakis A. (2016) Toxicology as an academic discipline in European Universities.
Toxicol Lett. **254**, 63.
DOI: 10.1016/j.toxlet.2016.04.024.
89. Martin F. Wilks^a, Bas J. Blaauboer^b, Rolf Schulte-Hermann^c, **Heather M. Wallace^d**, Corrado L. Galli^e, Marie Haag-Grönlund^f, Vesna Matović^g, Joao Paulo Teixeira^h, Johanna Zilliacusⁱ, Nursen Basaran^j, Eva Cecilie Bonefeld-Jørgensen^k, Philippe Bourrinet^l, Werner Brueller^m, Nancy Claudeⁿ, Joana P. Miranda^o, Ursula Gundert-Remy^p, Helen Håkanssonⁱ, Leda Kovatsi^q, Jyrki Liesivuori^r, Brigitte Lindeman^s, Dominique Lison^t, Isabelle Leconte^u, Emma Martínez-López^v, Marek Murias^w, Cécile Michel^x, Paul T.J. Scheepers^y, Lesley Stanley^z, Aristidis Tsatsakis^A (2016) The European Registered Toxicologist (ERT): Current status and prospects for advancement.
Toxicol Lett in press
DOI: <http://dx.doi.org/10.1016/j.toxlet.2016.06.014>

Books

1. **Wallace, HM** & Hughes, A (Editors) (2004) *Health Implications of dietary Amines: Vol I*, EC Publication, Luxembourg
2. **Wallace, HM** (Editor) (2009). *Essays in Biochemistry Vol 46 Polyamines in the Omics era*, Portland Press Ltd., Colchester

Book Chapters and Reviews

1. **Wallace, HM & Keir, HM** (1985). Polyamine acetylation and excretion by mammalian cells in culture.
In: *Recent Progress in Polyamine Research*. (Selmecci, L, Brosnan, ME & Seiler N., eds.) **pp. 297-304** VNU, The Netherlands.
2. Kinsnorth, AN & **Wallace, HM** (1985). Elevation of primary polyamine levels in human colorectal cancers.
In: *Recent Progress in Polyamine Research*. (Selmecci, L, Brosnan, ME & Seiler, N., eds.) **pp. 441-448**. VNU, The Netherlands
3. Puztai, A, de Oliveria, JTA, Bardocz, S, Grant, G & **Wallace, HM** (1988). Dietary kidney bean lectin-induced hyperplasia and increased polyamine content of the small intestine.
In *Lectins - Biology, Biochemistry, Clinical Biochemistry*, **6**, 117-120
Sigma Chemical Company.
4. **Wallace, HM**, Nuttall, ME & Coleman, CS (1988). Polyamine recycling enzymes in human cancer cells.
In *Biochemical and Clinical Research* (Zappia, V ed); **pp331-344**, Plenum Press Co Ltd, London
5. **Wallace, HM**, Ball, DE & Coleman, CS (1992). Evidence for a cytosolic N⁸-spermidine acetyltransferase in human colonic carcinoma cells.
In *Polyamines and the gastrointestinal tract*, (Dowling, HR, Folsch, LR & Loser, Chr eds.) **pp 87-93**, Kluwer Academic Press, UK.
6. Morgan, DLM & **Wallace, HM** (1994). Polyamines in clinical and basic science.
Biochem. Soc. Trans. **22**, 845-846
7. **Wallace, HM & Evans, DM** (1998). Measurement of spermidine/spermine N¹-acetyltransferase activity. Ch 6, pp 59-68
In *Methods in Molecular Biology: Polyamine Protocols* (Morgan, DML ed.), Humana Press Inc., New Jersey, USA.
8. **Wallace, HM & Mackarel, AJ** (1998). Measurement of polyamine efflux from human cells. Ch 19, pp157-165
In *Methods in Molecular Biology: Polyamine Protocols* (Morgan, DML ed.), Humana Press Inc., New Jersey, USA.
9. **Wallace, HM & Lindsay, GS** (1998). The roles of polyamine acetylation and oxidation in apoptosis.
In *Biogenically Active Amines in Food: Vol 2*, pp 41-47 (Bardocz, S., Hajos, Gy. & White, A. eds.) EC Publication, Luxembourg. (ISSN 1018-5593)
10. **Wallace, HM** (1998). Polyamines: specific metabolic regulators or multifunctional polycations? *Biochem. Soc. Trans.* **26**, 569-571

11. **Wallace, HM**, Pearson, SJ & Smith, NI (2000). Non-steroidal anti-inflammatory drugs, chemoprevention of cancer and polyamines. In *Biogenically Active Amines in Food: Vol 4*, pp 159-166, (Morgan, DML, White, A., Sanchez-Jimenez, F. & Bardocz, S. eds.) EC Publication, Luxembourg.
12. **Wallace, HM**, Hughes, A & Thompson, K (2002). The potential chemotherapeutic and chemopreventative benefits of modulating polyamine biosynthesis. In *Biogenically Active Amines in Food: Vol 5*, pp 29-36 (Bardocz, S., Milovic, V. & Stein, J. eds.) EC Publication, Luxembourg.
13. **Wallace, HM** (2003). Polyamines and their role in human disease - an introduction. *Biochem Soc. Trans.* **31**, 354-355
14. **Wallace, HM** (2004). Health Implications of Dietary Amines (COST 922). In *Health Implications of dietary Amines: Vol I*, pp3-12, (**Wallace, HM** & Hughes, A eds.) EC Publication, Luxembourg.
15. **Wallace, HM** (2004). Nutritional and metabolic intervention in amine metabolism: issues for work group 2b. In *Health Implications of dietary Amines: Vol I*, pp82-88 (Wallace, HM & Hughes, A eds.) EC Publication, Luxembourg.
16. **Wallace, HM** & Hughes, A (2006) *Protective effects of polyamines on NSAID-induced injury and apoptosis*. In Polyamine Cell Signalling: Physiology, Pharmacology and Cancer Research (Wang, J-Y & Casero, RA, eds), Ch 15, pp 267-278, Humana Press, New York.
17. Oommen, M, Saunders, FR & Wallace, HM (2009). *Cancer Chemoprevention and polyamines*. In Biological aspects of biogenic amines, polyamines and conjugates. Ch 12, (Dandrifosse, G ed.), Research Signpost, Kerala, India
18. **Wallace, HM** (2009). *Polyamines: past, present and future*. In Essays in Biochemistry, **Vol 46, Ch 1**, pp1-9
19. Archeampong, P, Macleod, MJ & **Wallace, HM** (2011). Procedure to evaluate the importance of dietary polyamines. In *Methods in Molecular Biology: Polyamines Vol 720*, Ch 22, 349-364 (Pegg, AE and Casero, RA, eds), Springer Science
20. **Wallace, HM** (2013). Basic mechanisms of carcinogenicity and mutagenicity. In *Oxford Desk Reference: the Textbook of Clinical Toxicology, 2014*, (Bateman, ND, Vale, JA, Jefferson, RA eds) Oxford University Press.

21. **Wallace, HM & Pye, KR** (2015) Necrosis in Encyclopaedia of Cancer (Manfred Schwab, *ed*) Springer-Verlag, Berlin Heidelberg
22. **Wallace, HM, Hergenrother, PJ and Sadler, PJ** (2015) Molecular medicine and cancer
Chemical Society Reviews DOI: 10.1039/C5CS90123E
23. **Damiani, E & Wallace, HM** (2017) Polyamines and cancer (review) in Protocols on Polyamines (Alcazar, R & Tuburcio, A *ed*) Springer *in press*

EFSA OPINIONS

2015

Risks for human and animal health related to the presence of phorbol esters in Jatropha kernel meal

EFSA Journal;13(12):4321 [80 pp.] doi: 10.2903/j.efsa.2015.4321

Panel members: Jan Alexander, Lars Barregard, Margherita Bignami, Sandra Ceccatelli, Bruce Cottrill, Michael Dinovi Lutz Edler, Bettina Grasl-Kraupp, Christer Hogstrand, Laurentius (Ron) Hoogenboom, Helle Katrine Knutsen, Carlo Stefano Nebbia, Isabelle Oswald, Annette Petersen, Vera Maria Rogiers, Alain-Claude Roudot, Tanja Schwerdtle, Christiane Vleminckx, Günter Vollmer, **Heather Wallace**.

2016

Acute health risks related to the presence of cyanogenic glycosides in raw apricot kernels and products derived from raw apricot kernels

EFSA Journal 2016;14(4): 4424 [47pp] doi:10.2903/j.efsa.2016.4424

Panel members: Jan Alexander, Lars Barregard, Margherita Bignami, Sandra Ceccatelli, Bruce Cottrill, Michael Dinovi Lutz Edler, Bettina Grasl-Kraupp, Christer Hogstrand, Laurentius (Ron) Hoogenboom, Helle Katrine Knutsen, Carlo Stefano Nebbia, Isabelle Oswald, Annette Petersen, Alain-Claude Roudot, Tanja Schwerdtle, Christiane Vleminckx, Günter Vollmer, **Heather Wallace**.

Appropriateness to set a group health-based guidance value for zearalenone and its modified forms

EFSA Journal 2016;14(4): 4425 [46pp] doi:10.2903/j.efsa.2016.4425

Panel members: Jan Alexander, Lars Barregard, Margherita Bignami, Sandra Ceccatelli, Bruce Cottrill, Michael Dinovi Lutz Edler, Bettina Grasl-Kraupp, Christer Hogstrand, Laurentius (Ron) Hoogenboom, Helle Katrine Knutsen, Carlo Stefano Nebbia, Isabelle Oswald, Annette Petersen, Alain-Claude Roudot, Tanja Schwerdtle, Christiane Vleminckx, Günter Vollmer, **Heather Wallace**.

Risks for human health related to the presence of 3- and 2-monochloropropanediol (MCPD), and their fatty acid esters, and glycidyl fatty acid esters in food

EFSA Journal 2016;14(5): 4426 [159pp] doi: 10.2903/j.efsa.2016.4426

Panel members: Jan Alexander, Lars Barregard, Margherita Bignami, Sandra Ceccatelli, Bruce Cottrill, Michael Dinovi Lutz Edler, Bettina Grasl-Kraupp, Christer Hogstrand, Laurentius (Ron) Hoogenboom, Helle Katrine Knutsen, Carlo Stefano Nebbia, Isabelle Oswald, Annette Petersen, Alain-Claude Roudot, Tanja Schwerdtle, Christiane Vleminckx, Günter Vollmer, **Heather Wallace**.

Presence of microplastics and nanoplastics in food, with particular focus on seafood

EFSA Journal 2016;14(6): 4501 [30pp] doi: 10.2903/j.efsa.2016.4501

Panel members: Jan Alexander, Lars Barregard, Margherita Bignami, Sandra Ceccatelli, Bruce Cottrill, Michael Dinovi Lutz Edler, Bettina Grasl-Kraupp, Christer Hogstrand, Laurentius (Ron) Hoogenboom, Helle Katrine Knutsen, Carlo Stefano Nebbia, Isabelle Oswald, Annette Petersen, Alain-Claude Roudot, Tanja Schwerdtle, Christiane Vleminckx, Günter Vollmer, **Heather Wallace**.

Erucic acid in food and feed

EFSA Journal 2016;14(11):4593 [173 pp.] doi: 10.2903/j.efsa.2016.4593

Panel members: Jan Alexander, Lars Barregard, Margherita Bignami, Sandra Ceccatelli, Bruce Cottrill, Michael Dinovi Lutz Edler, Bettina Grasl-Kraupp, Christer Hogstrand, Laurentius (Ron) Hoogenboom, Helle Katrine Knutsen, Carlo Stefano Nebbia, Isabelle Oswald, Annette Petersen, Alain-Claude Roudot, Tanja Schwerdtle, Christiane Vleminckx, Günter Vollmer, **Heather Wallace**.

2017

The evaluation of substances as acceptable previous cargoes for edible fats and oils

EFSA Journal 2017: 15(1): 4656 DOI: 10.2903/j.efsa.2017.4656

Panel members: Jan Alexander, Lars Barregard, Margherita Bignami, Sandra Ceccatelli, Bruce Cottrill, Michael Dinovi Lutz Edler, Bettina Grasl-Kraupp, Christer Hogstrand, Laurentius (Ron) Hoogenboom, Helle Katrine Knutsen, Carlo Stefano Nebbia, Isabelle Oswald, Annette Petersen, Alain-Claude Roudot, Tanja Schwerdtle, Christiane Vleminckx, Günter Vollmer, **Heather Wallace**.

Appropriateness to set a group health based guidance value for T2 and HT2 toxin and its modified forms

EFSA Journal 2017 15(4): 4751 [25pp] DOI: 10.2903/j.efsa.2017.4751

Panel members: Jan Alexander, Lars Barregard, Margherita Bignami, Sandra Ceccatelli, Bruce Cottrill, Michael Dinovi Lutz Edler, Bettina Grasl-Kraupp, Christer Hogstrand, Laurentius (Ron) Hoogenboom, Helle Katrine Knutsen, Carlo Stefano Nebbia, Isabelle Oswald, Annette Petersen, Alain-Claude Roudot, Tanja Schwerdtle, Christiane Vleminckx, Günter Vollmer, **Heather Wallace**.

Risks to public health related to the presence of tetrodotoxin (TTX) and TTX analogues in marine bivalves and gastropods

EFSA Journal 2017 15(4): 4752 [65pp] DOI: 10.2903/j.efsa.2017.4752

Panel members: Jan Alexander, Lars Barregard, Margherita Bignami, Sandra Ceccatelli, Bruce Cottrill, Michael Dinovi Lutz Edler, Bettina Grasl-Kraupp, Christer Hogstrand, Laurentius (Ron) Hoogenboom, Helle Katrine Knutsen, Carlo Stefano Nebbia, Isabelle Oswald, Annette Petersen, Alain-Claude Roudot, Tanja Schwerdtle, Christiane Vleminckx, Günter Vollmer, **Heather Wallace**.

Risks for animal health related to the presence of zearalenone and its modified forms in feed EFSA Panel on Contaminants in the Food Chain

DOI: 10.2903/j.efsa.2017.4851

Panel members: Helle-Katrine Knutsen, Jan Alexander, Lars Barregard, Margherita Bignami, Beat Bruschweiler, Sandra Ceccatelli, Bruce Cottrill, Michael Dinovi, Lutz Edler, Bettina Grasl-Kraupp, Christer Hogstrand, Laurentius (Ron) Hoogenboom, Carlo Stefano Nebbia, Annette Petersen, Martin Rose, Alain-Claude Roudot, Tanja Schwerdtle, Christiane Vleminckx, Günter Vollmer, **Heather Wallace**, Chiara Dall'Asta, Sven Danicke, Gunnar-Sundstøl Eriksen, Andrea Altieri, Ruth Roldan-Torres and Isabelle P Oswald

Assessment of a decontamination process for dioxins and dioxin-like PCBs in fish oil by physical filtration with activated carbon EFSA Panel on Contaminants in the Food Chain

DOI: 10.2903/j.efsa.2017.4961

Panel members: Helle Katrine Knutsen, Jan Alexander, Lars Barregård, Margherita Bignami, Beat Bruschweiler, Sandra Ceccatelli, Bruce Cottrill, Michael Dinovi, Lutz Edler, Bettina Grasl-Kraupp, Laurentius (Ron) Hoogenboom, Carlo Stefano Nebbia, Isabelle P. Oswald, Annette Petersen, Martin Rose, Alain-Claude Roudot, Tanja Schwerdtle, Christiane Vleminckx, Gunter Vollmer, **Heather Wallace**, Anne-Katrine Lundebye, Manfred Metzler, Paolo Colombo and Christer Hogstrand

Risks for human health related to the presence of pyrrolizidine alkaloids in honey, tea, herbal infusions and food supplements EFSA Panel on Contaminants in the Food Chain

DOI: 10.2903/j.efsa.2017.4908

Panel members: Helle Katrine Knutsen, Jan Alexander, Lars Barregård, Margherita Bignami, Beat Bruschweiler, Sandra Ceccatelli, Bruce Cottrill, Michael Dinovi, Lutz Edler, Bettina Grasl-Kraupp, Christer Hogstrand, Laurentius (Ron) Hoogenboom, Carlo Stefano Nebbia, Isabelle P. Oswald, Annette Petersen, Martin Rose, Alain-Claude Roudot, Tanja Schwerdtle, Christiane Vleminckx, Gunter Vollmer, **Heather Wallace**, José Ángel Ruiz Gomes and Marco Binaglia

Presence of free gossypol in whole cottonseed EFSA Panel on Contaminants in the Food Chain

DOI: 10.2903/j.efsa.2017.4850

Panel members: Helle Katrine Knutsen, Lars Barregård, Margherita Bignami, Beat Bruschweiler, Sandra Ceccatelli, Michael Dinovi, Lutz Edler, Bettina Grasl-Kraupp, Christer Hogstrand, Laurentius (Ron) Hoogenboom, Carlo Stefano Nebbia, Isabelle P Oswald, Annette Petersen, Martin Rose, Alain-Claude Roudot, Tanja Schwerdtle, Christiane Vleminckx, Gunter Vollmer, Heather Wallace, Jan Alexander, Bruce Cottrill and Karen Mackay

Risk to human and animal health related to the presence of 4,15-diacetoxyscirpenol in food and feed

Helle Katrine Knutsen, Jan Alexander, Lars Barregård, Margherita Bignami, Beat Bruschweiler, Sandra Ceccatelli, Bruce Cottrill, Michael Dinovi, Bettina Grasl-Kraupp, Christer Hogstrand, Laurentius (Ron) Hoogenboom, Carlo Stefano Nebbia, Isabelle P Oswald, Annette Petersen, Martin Rose, Alain-Claude Roudot, Tanja Schwerdtle, Christiane Vleminckx, Gunter Vollmer, **Heather Wallace**, Sarah De Saeger, Gunnar Sundstøl Eriksen, Peter Farmer, Jean-Marc Fremy, Yun Yun Gong, Karsten Meyer, Dominique Parent-Massin, Hans van Egmond, Andrea Altieri, Paolo Colombo, Zsuzsanna Horvath, Sara Levorato and Lutz Edler

doi: 10.2903/j.efsa.2018.5367

Update: methodological principles and scientific methods to be taken into account when establishing Reference Points for Action (RPAs) for non-allowed pharmacologically active substances present in food of animal origin

Helle Katrine Knutsen, Jan Alexander, Lars Barregård, Margherita Bignami, Beat Bruschweiler, Sandra Ceccatelli, Bruce Cottrill, Michael Dinovi, Lutz Edler, Bettina Grasl-Kraupp, Christer Hogstrand, Carlo Stefano Nebbia, Isabelle P Oswald, Annette Petersen, Martin Rose, Alain-Claude Roudot, Tanja Schwerdtle, Gunter Vollmer, Christiane Vleminckx, **Heather Wallace**, Metka Filipic, Peter Furst, Michael O'Keefe, Andre Penninks,

Rolaf Van Leeuwen, Katleen Baert and Laurentius (Ron) Hoogenboom

doi: 10.2903/j.efsa.2018.5332

Risks for animal health related to the presence of fumonisins, their modified forms and hidden forms in feed

Helle-Katrine Knutsen, Jan Alexander, Lars Barregard, Margherita Bignami, Beat Bruschweiler, Sandra Ceccatelli, Bruce Cottrill, Michael Dinovi, Lutz Edler, Bettina Grasl-Kraupp, Christer Hogstrand, Laurentius (Ron) Hoogenboom, Carlo Stefano Nebbia, Annette Petersen, Martin Rose, Alain-Claude Roudot, Tanja Schwerdtle, Christiane Vleminckx, Gunter Vollmer, **Heather Wallace**, Chiara Dall'Asta, Gunnar-Sundstøl Eriksen, Ionelia Taranu, Andrea Altieri, Ruth Roldan-Torres and Isabelle P Oswald

doi: 10.2903/j.efsa.2018.5242

Update of the Scientific Opinion on opium alkaloids in poppy seeds

Helle Katrine Knutsen, Jan Alexander, Lars Barregard, Margherita Bignami, Beat Bruschweiler, Sandra Ceccatelli, Bruce Cottrill, Michael Dinovi, Lutz Edler, Bettina Grasl-Kraupp, Christer Hogstrand, Laurentius (Ron) Hoogenboom, Carlo Stefano Nebbia, Isabelle P Oswald, Annette Petersen, Martin Rose, Alain-Claude Roudot, Tanja Schwerdtle, Gunter Vollmer, **Heather Wallace**, Diane Benford, Girolamo Calo, Albert Dahan, Birgit Dusemund, Patrick Mulder, Eva Nemeth-Zamborine, Davide Arcella, Katleen Baert, Claudia Cascio, Sara Levorato, Marijke Schutte and Christiane Vleminckx

doi: 10.2903/j.efsa.2018.5243

Risks to human and animal health related to the presence of moniliformin in food and feed

Helle Katrine Knutsen, Jan Alexander, Lars Barregard, Margherita Bignami, Beat Bruschweiler, Sandra Ceccatelli, Bruce Cottrill, Michael Dinovi, Bettina Grasl-Kraupp, Christer Hogstrand, Laurentius (Ron) Hoogenboom, Carlo Stefano Nebbia, Isabelle P Oswald, Annette Petersen, Martin Rose, Alain-Claude Roudot, Tanja Schwerdtle, Christiane Vleminckx, Gunter Vollmer, **Heather Wallace**, Sarah De Saeger, Gunnar Sundstøl Eriksen, Peter Farmer, Jean-Marc Fremy, Yun Yun Gong, Karsten Meyer, Hanspeter Naegeli, Dominique Parent-Massin, Hans van Egmond, Andrea Altieri, Paolo Colombo, Mari Eskola, Mathijs van Manen and Lutz Edler

doi: 10.2903/j.efsa.2018.5082

Assessment of a decontamination process for dioxins and PCBs from fish meal by hexane extraction and replacement of fish oil

Helle Katrine Knutsen, Jan Alexander, Lars Barregard, Margherita Bignami, Beat Bruschweiler, Sandra Ceccatelli, Bruce Cottrill, Michael Dinovi, Lutz Edler, Bettina Grasl-Kraupp, Laurentius (Ron) Hoogenboom, Carlo Stefano Nebbia, Isabelle P Oswald, Annette Petersen, Martin Rose, Alain-Claude Roudot, Tanja Schwerdtle, Christiane Vleminckx, Gunter Vollmer, **Heather Wallace**, Anne-Katrine Lundebye, Manfred Metzler, Paolo Colombo and Christer Hogstrand

doi: 10.2903/j.efsa.2018.5173

Effect on public health of a possible increase of the maximum level for 'aflatoxin total' from 4 to 10 µg/kg in peanuts and processed products thereof, intended for direct human consumption or use as an ingredient in foodstuffs

Helle Katrine Knutsen, Jan Alexander, Lars Barregard, Margherita Bignami, Beat Bruschweiler, Sandra Ceccatelli, Bruce Cottrill, Michael Dinovi, Lutz Edler, Bettina Grasl-Kraupp, Christer Hogstrand, Laurentius (Ron) Hoogenboom, Carlo Stefano Nebbia, Isabelle P Oswald, Martin Rose, Alain-Claude Roudot, Tanja Schwerdtle, Christiane Vleminckx, Gunter Vollmer, **Heather Wallace**, Peter Furst, Katleen Baert, Jos € e Corti nas Abrahantes, Bruno Dujardin, ~ Krizia Ferrini and Annette Petersen

doi: 10.2903/j.efsa.2018.5175

Update of the risk assessment on 3-monochloropropane diol and its fatty acid esters

Helle Katrine Knutsen, Jan Alexander, Lars Barregard, Margherita Bignami, Beat Bruschweiler, Sandra Ceccatelli, Bruce Cottrill, Michael Dinovi, Lutz Edler, Bettina Grasl-Kraupp, Laurentius (Ron) Hoogenboom, Carlo Stefano Nebbia, Isabelle P Oswald, Annette Petersen, Martin Rose, Alain-Claude Roudot, Tanja Schwerdtle, Christiane Vleminckx, Gunter Vollmer, **Heather Wallace**, Alfonso Lampen, Ian Morris, Aldert Piersma, Dieter Schrenk, Marco Binaglia, Sara Levorato and Christer Hogstrand

doi: 10.2903/j.efsa.2018.5083

Assessment of decontamination processes for dioxins and dioxin-like PCBs in fish oil by physical filtration with activated carbon

Helle Katrine Knutsen, Jan Alexander, Lars Barregard, Margherita Bignami, Beat Bruschweiler, Sandra Ceccatelli, Bruce Cottrill, Michael Dinovi, Lutz Edler, Bettina Grasl-Kraupp, Laurentius (Ron) Hoogenboom, Carlo Stefano Nebbia, Isabelle P. Oswald, Annette Petersen, Martin Rose, Alain-Claude Roudot, Tanja Schwerdtle, Christiane Vleminckx, Gunter Vollmer, **Heather Wallace**, Anne-Katrine Lundebye, Manfred Metzler, Paolo Colombo and Christer Hogstrand

doi: 10.2903/j.efsa.2017.5081

Risks for public health related to the presence of furan and methylfurans in food

Helle Katrine Knutsen, Jan Alexander, Lars Barregard, Margherita Bignami, Beat Bruschweiler, Sandra Ceccatelli, Bruce Cottrill, Michael Dinovi, Lutz Edler, Bettina Grasl-Kraupp, Christer Hogstrand, Laurentius (Ron) Hoogenboom, Carlo Stefano Nebbia, Isabelle P Oswald, Annette Petersen, Martin Rose, Alain-Claude Roudot, Tanja Schwerdtle, Christiane Vleminckx, Gunter Vollmer, Kevin Chipman, Bruno De Meulenaer, Michael Dinovi, Wim Mennes, Josef Schlatter, Dieter Schrenk, Katleen Baert, Bruno Dujardin and **Heather Wallace**

doi: 10.2903/j.efsa.2017.5005

Assessment of a decontamination process for hydrocyanic acid in linseed intended for use in animal feed

Helle Katrine Knutsen, Jan Alexander, Lars Barregard, Margherita Bignami, Beat Bruschweiler, Sandra Ceccatelli, Bruce Cottrill, Michael Dinovi, Lutz Edler, Bettina Grasl-Kraupp, Laurentius (Ron) Hoogenboom, Carlo Stefano Nebbia, Isabelle P. Oswald, Annette Petersen, Martin Rose, Alain-Claude Roudot, Tanja Schwerdtle, Christiane Vleminckx, Gunter Vollmer, **Heather Wallace**, Anne-Katrine Lundebye, Manfred Metzler, Paolo Colombo and Christer Hogstrand

doi: 10.2903/j.efsa.2017.5004

Risks to human and animal health related to the presence of deoxynivalenol and its acetylated and modified forms in food and feed

Helle Katrine Knutsen, Jan Alexander, Lars Barregard, Margherita Bignami, Beat Bruschweiler, Sandra Ceccatelli, Bruce Cottrill, Michael Dinovi, Bettina Grasl-Kraupp, Christer Hogstrand, Laurentius (Ron) Hoogenboom, Carlo Stefano Nebbia, Isabelle P Oswald, Annette Petersen, Martin Rose, Alain-Claude Roudot, Tanja Schwerdtle, Christiane Vleminckx, Gunter Vollmer, **Heather Wallace**, Sarah De Saeger, Gunnar Sundstøl Eriksen, Peter Farmer, Jean-Marc Fremy, Yun Yun Gong, Karsten Meyer, Hanspeter Naegeli, Dominique Parent-Massin, Ivonne Rietjens, Hans van Egmond, Andrea Altieri, Mari Eskola, Petra Gergelova, Luisa Ramos Bordajandi, Bistra Benkova, Barbara Dorr, Athanasios Gkrillas, Nicklas Gustavsson, Mathijs van Manen and Lutz Edler

doi: 10.2903/j.efsa.2017.4718

Risks for animal health related to the presence of zearalenone and its modified forms in feed

Helle-Katrine Knutsen, Jan Alexander, Lars Barregard, Margherita Bignami, Beat Bruschweiler, Sandra Ceccatelli, Bruce Cottrill, Michael Dinovi, Lutz Edler, Bettina Grasl-Kraupp, Christer Hogstrand, Laurentius (Ron) Hoogenboom, Carlo Stefano Nebbia, Annette Petersen, Martin Rose, Alain-Claude Roudot, Tanja Schwerdtle, Christiane Vleminckx, Gunter Vollmer, **Heather Wallace**, Chiara Dall'Asta, Sven Danicke, Gunnar-Sundstøl Eriksen, Andrea Altieri, Ruth Roldan-Torres and Isabelle P Oswald

doi: 10.2903/j.efsa.2017.4851

Assessment of a decontamination process for dioxins and dioxin-like PCBs in fish oil by physical filtration with activated carbon

Helle Katrine Knutsen, Jan Alexander, Lars Barregard, Margherita Bignami, Beat Bruschweiler, Sandra Ceccatelli, Bruce Cottrill, Michael Dinovi, Lutz Edler, Bettina Grasl-Kraupp, Laurentius (Ron) Hoogenboom, Carlo Stefano Nebbia, Isabelle P. Oswald, Annette Petersen, Martin Rose, Alain-Claude Roudot, Tanja Schwerdtle, Christiane Vleminckx, Gunter Vollmer, **Heather Wallace**, Anne-Katrine Lundebye, Manfred Metzler, Paolo Colombo and Christer Hogstrand

doi: 10.2903/j.efsa.2017.4961

RESEARCH

My current research is based on targeting the polyamine pathway as a means of developing new, improved cancer therapies for chemotherapy, chemoprevention and selective drug delivery. Several approaches are being used to target the polyamine metabolism in cancer cells: direct inhibition of biosynthesis using polyamine analogues; selective drug delivery using the polyamines as vectors to deliver anticancer drugs to cancer cells specifically and understanding the role of polyamine metabolism in chemoprevention using non steroidal drugs such as aspirin and naproxen.

Polyamines are essential for the growth of all living cells and continuous synthesis is required. Rapidly growing cells and cancer cells require increased amounts of polyamines within the cell and these elevated concentrations are necessary to maintain the transformed state. Specific inhibitors have been designed by several companies to prevent polyamine biosynthesis and these are also potent antiproliferative compounds *in vitro*. However, *in vivo* these agents have been disappointing mainly due to a compensatory increase in polyamine uptake from the gut. An alternative strategy to inhibiting individual enzymes in the biosynthetic pathway is to use analogues of the polyamines that will affect polyamine metabolism at several sites. My laboratory is investigating currently a number of novel polyamine analogues as potential antitumour agents in collaboration with Professor P Woster (University of South Carolina, USA), Professors A Minarini and V Tumatati (University of Bologna) and Professor O Phanstiel (University of Central Florida, USA). Initial studies on the asymmetrically substituted spermine analogues show them to be potent antiproliferative compounds with IC₅₀ values similar to the topoisomerase inhibitor, etoposide, used in many chemotherapeutic regimens. Preliminary studies indicate that the analogues induce the cytochrome c, mitochondrial pathway as opposed to the receptor-mediated CD95, Fas/Fas ligand pathway. We have established a new cell line overexpressing the anti-apoptotic protein, Bcl-2, and we are using these cells to confirm our hypothesis regarding the apoptotic pathway used by the analogues. Another class of analogue currently being investigated is the conformationally restricted polyamine analogues that are completely novel compounds. Initial studies indicate these compounds fall into three categories, highly toxic, moderately toxic and non-toxic in human cancer cells. Analogues from the first two categories are being investigated further in order to determine their mechanism of action.

These studies are important as the polyamine pathway has been identified as a target for chemotherapeutic intervention and these novel analogues may provide a new class of antiproliferative agent that will revolutionise cancer chemotherapy.

Cytotoxic drug delivery using the polyamine transporter is novel and productive area of research. We are attempting to target known cytotoxic drugs specifically to cancer cells using these toxic cargoes attached to a variety of polyamine tails. The polyamine moiety delivers the drug to the tumour as the tumour cells have a more active polyamine transporter than normal cells. This provides selective delivery to cancer cells, the holy grail of cancer chemotherapy. Our first study in collaboration with Professor O Phanstiel IV is now complete and 2 peer reviewed papers and a review article are published and 3 further publications are in preparation from this

work. This research has also produced one successful PhD and one successful MSc by research.

It is now well accepted that the non-steroidal anti-inflammatory drugs (NSAIDs) can decrease the incidence of colorectal cancer in man. Although the obvious mechanism of this chemoprevention would be inhibition of cyclo-oxygenase (COX) we have shown that cells completely devoid of COX transcripts are still responsive to the cytotoxic effects of NSAIDs. Preliminary investigations have indicated that NSAIDs deplete intracellular polyamine content and our hypothesis is that NSAIDs exert their chemopreventative effects via modulation of the polyamine pathway. Our plan is to develop a cell culture model of transformation that will facilitate testing of this hypothesis. Initial work on transfecting cells with ornithine decarboxylase (ODC), the first enzyme of the polyamine pathway, has shown some promise with enforced ODC overexpression resulting in a transformed phenotype. The next stage is to determine whether NSAIDs can prevent the transformation process in these cells.

If my hypothesis holds these studies may lead to the development of a new class of chemopreventative agents directed to the polyamine pathway. Such compounds would have enormous benefits over the NSAIDs that are well known for their unwanted side effects on the gastrointestinal tract.

A exciting research collaboration involves a systems biology approach to translational frameshifting using antizyme, the regulator of ornithine decarboxylase degradation, as the model for frameshifting. This project uses the yeast, *Saccharomyces cerevisiae*, which has been mutated such that it cannot make or interchange polyamines. We have manipulated the system to provide data which is then used to develop our mathematical model to predict interactions and responses. The publications from this work will form the basis of the next grant application.

PAEDAGOGICAL RESEARCH

One of my major goals is to ensure that our graduates are trained and developed to secure the best possible jobs post University. It is clear that in the last 5-10 years that science and biomedical science in particular has become more commercially focused and so it is vital that we develop our graduates to be more business orientated. This led me to develop the degree programmes in Bio-Business. Before I started this however I undertook some basic research as to whether such courses and programmes were likely to be successful. This research found that there was a market for Bio-Business and as a result I have secured funding for the Bio-Business Continuing Professional Development (CPD) from BioSKAPE, organised and delivered 3 successful CPD courses and have undergraduate programmes running at levels 1 or 2, 3, 4 and 5. The Bio-Business model has been presented at the University's best practice fair. Bio-business will also form part of the new MSc in Translational Medicine which is part of the new Stratified Medicines Initiative involving the Universities of Aberdeen, Dundee, Edinburgh and Glasgow.

In order to evaluate our intercalated Bachelor's degree for medical students (BSc Med Sci) I undertook a project entitled "Is a BSc Med Sci an asset?". With the help of an intercalating student we surveyed students with and without an intercalated

degree and monitored their careers over 10 years post graduation. We also surveyed consultants for their views on the value of the degree. We found that overall those graduates with an intercalated degree were more likely to be in academic posts and to have more research and better publications. Consultants felt it was valuable, particularly to get the student “noticed” as having more on their CV. This work has been presented orally at a National Conference sponsored by the Health Foundation and as a poster on 3 occasions.

There is much debate currently about the loss of skills, particularly *in vivo* skills, in both Toxicology and Pharmacology graduates. As part of this debate with the pharmaceutical industry and the professional learned Societies (British Toxicology Society and the British Pharmacological Society) I have been involved in high level discussions as to how this loss can be reversed. One of the outcomes of this was I was asked to write a commentary on Risk Perception and Toxicology providing support for the Toxicology perspective. This was published in Toxicological Sciences in 2011.

As part of my work with the Royal College of Pathologists I have been involved in raising the profile of Toxicology as a sub specialty of the College. This has required presentations to the College Council, Reports for the President of the College and for the College Annual Review. I have developed the curriculum for the subspecialty of Biochemical Toxicology and am an examiner for the Fellowship of the College (FRCPath) examinations. The curriculum is published on the College website and is available in printed form internationally. As Chair of Specialty Advisory Committee (SAC) for Toxicology I was responsible for all our trainees in Toxicology and ensuring their development and mentoring.

KOSTERLITZ CENTRE FOR THERAPEUTICS

The Kosterlitz Centre is one of the most exciting developments within the IMS aiming to bring together all the very best of our research ideas within Medicine and Medical Sciences and help find seed funding or provide expertise in commercialisation of the most appropriate ideas. I am part of the management team of KCT with specific responsibility for external affairs and training. In this role I have established a new Masters of Research degree in Drug Discovery which is associated specifically with KCT projects and I have brought together an internationally renowned Advisory Board. I organised the first Advisory Board Meeting which was held in November 2011. The KCT team is currently working towards securing funding and my role is to establish a studentship fund in collaboration with the Development Trust. We are currently in discussion with a number of potential sponsors and donors.

INTERNATIONAL RECOGNITION

Invited lectures and presentations:

More than 40 lectures and seminars have been delivered at International Meetings in UK, Europe, Japan, India and USA. Details of recent presentations are listed below under Conference Presentations.

Chairman of COST Action 922:

COST Action 922 is a collaboration of participants from 17 countries in Europe and its associated member states to investigate the “Health Implications of Dietary Amines”. In November 2001 I was elected unanimously chair of the Action and I was responsible for running this action on behalf of the EC for the next 5 years. This involved interaction with both EC commissioners and relevant industrial and food safety agencies.

Chairman Gordon Research Conference on Polyamines (1999-2001):

Elected the chair of the prestigious Gordon Research Conference on Polyamines held in the USA. As a result of the success of the meeting held under my chairmanship the conference has been guaranteed for a further 4 years. This is unusual as normally only 2 years are guaranteed in advance. Invited discussion leader at 12 other Gordon Research Conferences

Conference Organisation:

I have organised 6 International Meetings, 4 in collaboration with the Biochemical Society, and 2 National Meetings.

I have been a member of the Scientific Advisory Board of 9 International Conferences.

INTERNATIONAL RECRUITMENT

I have visited India on 6 occasions on behalf of CLSM working with the International Office to increase recruitment of particularly postgraduate students. These visits have been increasingly successful with more students being interviewed and more offers being made every time. On my latest visit I delivered a number of seminars at IIT Madras, University of Central Hyderabad and University of Pune. In addition, I spoke to the Deans of 5 further institutes and visited 8 major cities and interviewed more than 140 students. International recruitment for MSc in Clinical Pharmacology remains relatively buoyant against a generally falling market with 23 students on this programme currently. The MSc programme for which I am responsible brings in more than £220,000 per year in international student fees and have done so for more than 15 years.

COLLABORATIONS

Current collaborations include **Dr PM Woster** at Wayne State University, USA, **Professor LJ Marton**, Progen, Australia and **Dr O Phanstiel**, University of Central Florida, USA on 3 projects related to polyamine analogues and their use as anticancer agents. European collaborative projects are ongoing with **Dr Alex Khomutov**, Russia and **Professors L Persson, S Oredsson and O Heby**, Sweden. National collaborations include one ITTP student with **Professor M MacFarlane** (MRC Toxicology Unit, Leicester) and **Professor M Wright** (Newcastle).

Other collaborations are with **Professor S D Heys** (GUHT funded), **Dr Phil Cash** (proteomics), **Dr John Beattie**, Rowett Research Institute, **Dr Stefan Hoppler**, **Dr E Collie-Duguid**, **Dr R Petty** (Wnt signaling in cancer), **Professor Ian Stansfield** (antizyme frameshifting).

EXTERNAL EXAMINER

Postgraduate

External examiner of 19 PhDs from Sweden, Ireland, USA, Australia as well as UK.
I have examined one MSc by research

External examiner for MRes in Toxicology, University of Newcastle (2015-)
External examiner for all MRes programmes at University of Newcastle (2016-)
External examiner for MSc in Drug Toxicology and Safety Pharmacology, University of Bradford (2015-)
External examiner for MSc Molecular Pathology and Toxicology, University of Leicester (2012 - 2014)
External examiner for the University of Surrey MSc in Toxicology (2006 - 2010)

Undergraduate

External examiner for BSc Pharmacy, Royal College of Surgeons Ireland (2011-2014)
External examiner for BSc Med Sci University of Glasgow (2008 - 2012)

INTERNAL EXAMINER

Internal examiner for 18 PhD theses within the University of Aberdeen

SUCCESSFUL RESEARCH STUDENTS

18 PhD students completed successfully (1984-2017); **1 MPhil** (with distinction); **15 MSc by research** (3 with distinction) completed successfully (1986-2002); **3 MD** completed successfully.

I was the only supervisor in 15 of these PhDs and one of 2 supervisors in 2 and one of 3 supervisors in one.

Funding for my research students has been: 3 MRC; 2 CRC; 1 Wellcome Trust; 4 University; 3 NHS Endowments; 1 overseas government and 2 self funded.

Current students: 2 PhD students

2 partially supported PhD students

Teaching

My teaching duties are mainly to postgraduate students (PhD, MRes, MSc) in Clinical Pharmacology, Drug Discovery and Development and Bio-Business and Medical Science and to 3rd and 4th year undergraduate students in Biomedical Science, undergraduate medical students. Teaching includes lectures, tutorials and practical classes. My areas of teaching include:

- Receptor-effector coupling and intracellular signaling and the effects of pharmacological agents on this process
- Molecular biology and pharmacological biotechnology
- Anticancer chemotherapy
- Drug resistance
- Carcinogenesis
- Chemoprevention
- Regulation of cell growth and metabolism including apoptosis
- Mechanisms of cell death including apoptosis
- Toxicity *in vitro*
- Toxicity of pesticides
- Bioassay and analytical techniques including spectroscopy (visible and fluorescence), HPLC, enzyme assays and radioisotope tracer studies
- Methods of measurement in clinical pharmacology
- Anti-inflammatory drugs
- Cell culture techniques
- Presentation skills
- Working in teams

I have recently added Bio-Business to my teaching portfolio at all levels from 1-5. I also organise and teach on CPD courses in Bio-Business

Co-ordination (degree, programme and course):

I am the **Degree co-ordinator** for 1 Masters programme and for undergraduate Bio-Business programme.

In addition, I co-ordinate 3 undergraduate courses and 2 postgraduate courses.

CONFERENCE PRESENTATIONS

- 2017:** Invited workshop leader at Gordon research Conference on Polyamines, Waterville Valley, USA
- 2016:** Invited speaker at 5th International Conference on Polyamines, Rome, Italy.
- 2015:** Invited discussion leader at Gordon research Conference on Polyamines, Waterville Valley, USA
- 2014:** Invited speaker in Rome.
- 2013:** Invited speaker at FEBS, St Petersburg, Russia, July.
- 2013:** Invited speaker at EUROTOX, Interlaken, Switzerland, September.

2012: Invited speaker at International Congress on Polyamines, Istanbul, Turkey

Oral presentations have been made at international conferences in Italy, Finland, Sweden, France, Germany, Hungary, Spain, Belgium, Austria, Australia, USA, Oxford and London.

Recent presentations include

2016: 5th International Conference on Polyamines, Rome. Insights into polyamine transport.

2015: Gordon Research Conference on Polyamines, USA. Role of polyamine transporters in disease.

2014: 4th International Conference on Polyamines, Rome. Delivery of anticancer drugs via the polyamine transport system

2013: Gordon Research Conference on Polyamines, USA. Polyamine transporters

2011: International Congress on Polyamines, Trento, Italy. Targeting the polyamine pathway for cancer therapy – the major plenary talk

2011: Invited seminar at Istanbul Kultur University, Turkey. Polyamines and cancer.

2011: Invited talk at Sichuan Peoples University and Hospital, Chendu, China. Towards personalized medicine - pharmacogenomics

2010: International Conference on Polyamines, Gotemba Village, Tokyo, Japan. Polyamine regulation of antizyme frameshifting in yeast

2010: International Congress on Amino Acids and Proteins, Vienna, Austria. Polyamine conjugates induce apoptosis in human leukaemic cells

Oral and poster presentations have been made at Biochemical Society, British Pharmacological Society, British Toxicological Society, Nutrition Society and British Association for Cancer Research Meetings in the UK.

BOOK AND SOFTWARE REVIEWS

14 book reviews and 3 reviews of software have been published.

Grants awarded

I am the Principal Investigator of all of the grants listed below except where specifically stated otherwise. Where there is another name in brackets this is a co applicant.

Total grant funding awarded to date ~**£2,500,000**

Other Activities:

International Responsibilities: *Chairman of COST Action 922* 2001 - 2007

Chairman of Gordon Research Conference on Polyamines 1999-2001

Vice Chairman 1997-1999

Associate Editor (formally Deputy Chair) of the Biochemical Journal (2004 –)

Editorial Board member of Toxicological Research (2011-)

Editor of the Biochemical Journal (1997 - 2003)

Expert Evaluator for the European Commission Directorate General XII (FP5 and FP6)

Assessor for Enterprise Ireland Biomedical Research Panel (2002 - 2005)

National Responsibilities:

Member of CONTAM panel at European Food Safety Authority (2018-) appointed Vice Chair

Member of CONTAM panel at European Food Safety Authority (2015-2018)

Member of Herbal Medicines Advisory Committee (HMAC) at MHRA (2013-)

Member of the Committee on Carcinogenesis of Chemicals in Foods, Consumer Products and the Environment (COC) (2012 -)

Member of the Accreditation Panel for “in vivo” degrees for the Society of Biology (2010 - 2016)

Expert Advisor for EAG Paediatric Medicines at MHRA (2008 -)

CPD Advisor for the Royal College of Pathologists for Toxicology (2004 -)

Chair of Specialty Advisory Committee for Toxicology for the Royal College of Pathologists (2008 - 2011)
Committee member (2004 -)

Royal College of Pathology Examiner in Toxicology (2005 - 2014)

Chairman of Theme Panel VII for the Biochemical Society (2005 -2009)

Chairman of Continuing Professional Development Committee for British Toxicology Society (2003 – 2013)

Member of the Executive of Scottish Society for Experimental Medicine (1999 - 2007)

Member of Board of Management of Scottish Medical Journal (2003 - 2007)

Member of Education Sub Committee for British Toxicology Society (1999 - 2003)

Deputy Chairman of Theme Panel VII for Biochemical Society (2002 - 2005)

Colloquium/symposium organiser at Biochemical Society Meetings

University of Aberdeen:

Degree programme co-ordinator for

BSc Medical Sciences, the intercalated degree for medical students (1990 - 2006)

BSc Bio-Business (2009 -)

Degree programme co-ordinator for

MSc Clinical Pharmacology (1986 - 2017).

MSc Drug Development (2006 - 2017)

MSc Drug Discovery and Development (2006-2017)

MSc Bio-business and Medical Sciences (2009-2017)

Convenor of Bursaries and Endowments Committee, Faculty of Medicine and Medical Sciences (2001 -)

Convenor Technical Regrading Panel (2004 - 2006)

Technical Regrading Panel member (2001 - 2006)

COMMITTEES

Local

Foresterhill Teaching Facilities Committee	2006 - 2017
Graduate School	2004 - 2016
Teaching and Learning Committee CLSM	2003 - 2016

Teaching Committee (BMS)	1996 -
Postgraduate Taught Course Committee	2001 - 2016
	(Chair)
PGT Advisory Group	2010 - 2016
	(Chair)
MSc Clinical Pharmacology Committee	1986 -
	(Chair)
Industrial Liaison Group (CLSM) - Chair	2008 - 2010
Immigration Working Group	2008 - 2010
Academic and Pastoral Support for Students	2008 - 2009
Heads of Schools Committee	2004 - 2005
Student/Staff Liaison Committee (MBChB)	1995 - 2006
Quality Steering Group	1996 - 2006
Evaluation Committee	1996 - 2006
Senatus Academicus	1996 - 2012
University Disciplinary committee	2000 - 2008
Curriculum Committee (Medicine)	1998 - 2006
BSc Med Sci Committee	1990 - 2006
	(Convenor)
Faculty Teaching Committee	1996 - 2000
(undergraduate degrees)	
University Safety Committee	1995 - 1998
Departmental Safety Advisor	1995 - 1998

Regent for the Faculty and have 6 medical students currently under my care and supervision.

Referees:

Available on request.