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PERSONAL INFORMATION

Ann Marie Totterman

WORK EXPERIENCE

October 2007–Present

Senior Researcher/Pharmaceutical Assessor

Finnish Medicines Agency (Finland)

Quality assessor of MAA/variations, PDCO member from Dec 2014, PDCO alternate Nov 2008-Nov 2014, PDCO FWG member from Dec 2008; absence during year as national expert on secondment at the EMA Paediatric Section

March 2011–February 2012

National Expert on Secondment, Scientific Administrator, EMA, Paediatric section

EMA/Finnish Medicines Agency (United Kingdom)

Scientific Administrator in paediatrics; PIP-assessment and coordination, support of PDCO FWG activity; scientific support on paediatric formulations

May 2007–June 2007

Consultant

Ipsat Therapies (Finland)

Quality control methodology (Ipsat TM)

July 2005–March 2007

Leading Scientist/E-ADME and Formulation

Faculty of Pharmacy, University of Helsinki (Finland)

Leading scientist, Drug Discovery and Technology Center (DDTC) E-ADME and formulation; in vitro pharmaceutical profiling/ drug delivery of poorly soluble compounds, teaching (in vitro E-ADME; formulation of poorly soluble compounds), supervision of Ph.D. and Master's Thesis projects

January 2001–June 2005

Senior research scientist, E-ADME and Formulation

Faculty of Pharmacy, University of Helsinki (Finland)

Senior scientist, DDTC; in vitro pharmaceutical profiling/ drug delivery of poorly soluble compounds, teaching (in vitro E-ADME and formulation of poorly soluble compounds), supervision of Ph.D. and Master's Thesis projects

January 1999–December 2000

Post-doctoral Research Fellow

Victorian College of Pharmacy, Monash University (Australia)

in vitro lipid digestion methodology; assessment of effects of lipid formulations on the intestinal solubilisation of poorly soluble compounds; in vitro in vivo relevance

September 1990–December 1998

Assistant teacher – Ph.D. Student

Division of Pharmaceutical Technology (Finland)

Teaching; compounding, manufacturing and development of pharmaceutical dosage forms; Ph. D. project; supervision of Master's and Bachelor's Thesis work

EDUCATION AND TRAINING

August 1982–April 1990

M.Sc. Pharm.

Department of Pharmacy, Faculty of Science (Finland)

Major in Pharmaceutical Technology

September 1990–June 1998

Ph.D. Pharm.

Department of Pharmacy, Faculty of Science (Finland)

Major in Pharmaceutical Technology (formulation development; pharmaceutics; biopharmaceutics)

ADDITIONAL INFORMATION

Expertise

Paediatric formulations.

Formulation of poorly soluble compounds; Technologies to improve solubility and dissolution; Lipid based formulations; Cyclodextrin based formulations; Porous materials.

Pharmaceutical profiling in ADME; in vitro technologies; developability assessment.

Publications

Ph.D. (Pharm) Thesis: Neonatal Oral Solutions of Spironolactone Using Water-Soluble b-Cyclodextrin Derivatives. Dissertationes Biocentri Viikki Universitatis Helsingiensis 6/1998. 58 p. + app. ISSN 1239-9469, ISBN 951-45-8116-4.

Peer reviewed papers in scientific journals:

Paediatric formulations / β-cyclodextrins (Ph. D. project):

1. Tötterman, A.M., Luukkonen, P., Riukka, L., Järviluoma, E., Rasilainen, M. and Kristoffersson, E. 1994. Formulation of enteral hydrochlorothiazide suspension for premature infants. Eur. J. Hosp. Pharm. 4(2): 65-72.

2. Tötterman, A.M., Schipper, N.G.M., Thompson, D. and Mannermaa, J-P. 1997. Intestinal safety of water-soluble β-cyclodextrins in paediatric oral solutions of spironolactone: Effects on human intestinal epithelial Caco-2 cells. J. Pharm. Pharmacol. 49: 43-48.

3. Kaukonen, A.M., Kilpeläinen, I. and Mannermaa, J-P. 1997. Water-soluble β-cyclodextrins in paediatric oral solutions of spironolactone: Solubilization and stability of spironolactone in solutions of β-cyclodextrin derivatives. Int. J. Pharm. 159: 159-170.

4. Kaukonen, A.M., Vuorela, P., Vuorela, H. and Mannermaa, J-P. 1998. High-performance liquid chromatography methods for the separation and quantitation of spironolactone and its degradation products in aqueous formulations and of its metabolites in rat serum. J. Chromatogr. A. 797(1-2): 271-281.

5. Kaukonen, A.M., Lennernäs, H. and Mannermaa, J-P. 1998. Water-soluble β-cyclodextrins in paediatric oral solutions of spironolactone: Preclinical evaluation of spironolactone bioavailability from solutions of β-cyclodextrin derivatives in rats. J. Pharm. Pharmacol. 50: 611-619.

Drug delivery: lipid formulations

6. Sek, L., Porter, C.J.H., Kaukonen, A.M., Charman, W.N. 2002. Evaluation of the in-vitro digestion profiles of long and medium chain glycerides and the phase behaviour of their lipolytic products. J. Pharm. Pharmacol. 54: 29-41.

7. Kaukonen, A.M., Boyd, B.J., Porter, C.J.H., Charman, W.N. 2004. Drug solubilization behavior during in vitro digestion of simple triglyceride lipid solution formulations. Pharm. Res. 21(2): 245-253.

8. Kaukonen, A.M., Boyd, B.J., Charman, W.N., Porter, C.J.H. 2004. Drug solubilization behavior during in vitro digestion of suspension formulations of poorly water-soluble drugs in triglyceride lipids. Pharm. Res. 21(2):254-260.

9. Porter, C.J.H., Kaukonen, A.M., Taillardat-Bertschinger, A., Boyd, B.J., O'Connor, J.M., Edwards, G.A. and Charman, W.N. 2004. Use of in vitro lipid digestion data to explain the in vivo performance of triglyceride-based oral lipid formulations of poorly water-soluble drugs: Studies with halofantrine. J. Pharm. Sci. 93(5):1110-1121.

10. Porter, C.J.H., Kaukonen, A.M., Boyd, B.J., O'Connor, J.M., Edwards, G.A. and Charman, W.N. 2004. Susceptibility to lipase-mediated digestion reduces the oral bioavailability of danazol after administration as a medium chain lipid-based microemulsion formulation. Pharm. Res. 21(8): 1405-1412.

11. von Bonsdorff-Nikander, A., Christiansen, L., Juntunen, L., Lampi, A.-M., Piironen, V., Yliruusi, J., Kaukonen, A.M. 2005. A comparison of the effect of medium versus long chain triglycerides on the in vitro solubilization of cholesterol and/or phytosterol into mixed micelles. Lipids, 40(2): 181-190.

Drug Delivery: Ion-exchange fibers

12. Hänninen, K., Kaukonen, A.M., Kankkunen, T. and Hirvonen, J. 2003. Rate and extent of ion-exchange process – the effect of physico-chemical characteristics of salicylate anions. J. Control. Rel. 91: 449-463.

13. Hänninen, K., Kaukonen, A.M., Murtomäki, L. and Hirvonen, J. 2005. The effect of ion-exchange fiber structure on the binding and release of model salicylates. J. Pharm. Sci., 94: 1772-1781.

14. Hänninen, K.R., Murtomäki, L.S., Kaukonen, A.M. and Hirvonen, J.T. 2007. The effect of valence on the ion-exchange process: Theoretical and experimental aspects on compound binding/release. J. Pharm. Sci. 96(1): 117-131.

15. Hänninen, K.R., Kaukonen, A.M., Hirvonen, J.T. 2007. Mechanistic evaluation of factors affecting compound loading into ion-exchange fibers. Eur. J. Pharm. Sci. 31: 306-317.

Drug delivery: Porous silicon

16. Salonen, J., Laitinen, L., Kaukonen, A.M., Tuura, J., Björkqvist, M., Heikkilä, T., Vähä-Heikkilä, K., Hirvonen, J. and Lehto, V.-P. 2005. Mesoporous silicon microparticles for oral drug delivery: Loading and release of five model drugs. J. Control. Rel. 108: 362-374.

17. Heikkilä, T., Salonen, J., Tuura, J., Hamdy, M.S., Mul, G., Kumar, N., Salmi, T., Murzin, D. Y., Laitinen, L., Kaukonen, A.M., Hirvonen, J., Lehto, V-P. 2007. Novel Mesoporous Material TUD-1 as a Drug Delivery System. Int. J. Pharm. 331(1):133-138.

18. Kaukonen, A.M., Laitinen, L., Salonen, J., Tuura, J., Heikkilä, T., Hirvonen, J., Lehto, V-P. 2007. Enhanced In Vitro Permeation of Furosemide Loaded in Thermally Carbonized Mesoporous Silicon (TCPSi) Microparticles. Eur. J. Pharm. Biopharm. 66(3): 348-356.

19. Heikkilä, T., Salonen, J., Tuura, J., Kumar, N., Salmi, T., Murzin, D.Yu., Hamdy, M.S., Mul, G., Laitinen, L., Kaukonen, A.M., Hirvonen, J., Lehto V-P. 2007. Evaluation of mesoporous TCPSi, MCM-41, SBA-15 and TUD-1 materials as API carriers for oral drug delivery. Drug Delivery 14: 337-347.

20. Limnell, T., Riikonen, J., Salonen, J., Kaukonen, A.M., Laitinen, L., Hirvonen, J., Lehto, V-P. 2007. Surface chemistry and pore size affect carrier properties of mesoporous silicon microparticles. Int. J. Pharm. 343(1-2): 141-147.

21. Salonen, J., Kaukonen, A.M., Hirvonen, J., Lehto, V-P. 2008 (review). Mesoporous silicon in drug delivery applications. J. Pharm. Sci. 97(2): 632–653.

In vitro ADME properties /screening

22. Laitinen, L., Kangas, H., Kaukonen, A.M., Hakala, K., Kotiaho, T., Kostiainen, R., Hirvonen, J. 2003. N-in-one permeability studies of heterogeneous sets of compounds across Caco-2 cell monolayers. Pharm. Res. 20(2): 187-197.

23. Hakala, K.S., Laitinen, L., Kaukonen, A.M., Hirvonen, J., Kostiainen, R. and Kotiaho, T. 2003. Development of fast LC/MS/MS methods for cocktail dosed Caco-2 samples using atmospheric pressure photoionization and electrospray ionization. Anal. Chem. 75(21): 5969-5977.

24. Sipilä, J., Nurmi, H., Kaukonen, A.M., Hirvonen, J., Taskinen, J. and Yli-Kauhaluoma, J. 2005. A Modification of the Hammett Equation for Predicting Ionization Constants of p-Vinyl Phenols. Eur. J. Pharm. Sci., 25: 417-425.

25. Koljonen, M., Tuula Ahtola-Sätilä, Hakala, K., Leena Laitinen, Kotiaho, T., Kostiainen, R., Kaukonen, A.M., and Hirvonen, J. 2006. Evaluation of cocktail approach to standardise Caco-2 permeability experiments. Eur. J. Pharm. Biopharm.64: 379-387.

26. Laitinen, L., Takala, E., Wennberg, T., Vuorela, H., Kaukonen, A.M., Marvola, M. 2007. Anthranoid laxatives influence the absorption of poorly permeable drugs in human intestinal cell culture model (Caco-2). Eur. J. Pharm. Biopharm. 66(1): 135–145.

27. Siissalo, S., Laitinen, L., Vellonen, K-S., Kortejärvi, H., Urtti, A., Hirvonen, J., Kaukonen, A.M. 2007. Effect of Cell Differentiation and Passage Number on the Expression of Efflux Proteins in Wild Type and Vinblastine Induced Caco-2 Cell Lines. Eur. J. Pharm. Biopharm. 67(2): 548-554.

28. Koljonen, M., Rousu, K., Cierny, J., Kaukonen, A.M., Hirvonen, J. 2008. Transport evaluation of salicylic acid and structurally related compounds across Caco-2 cell monolayers and artificial PAMPA membranes. Eur. J. Pharm. Biopharm. 70(2): 531-538.

29. Siissalo, S., Zhang, H., Stilgenbauer, H., Kaukonen, A.M., Hirvonen, J., Finel, M. 2008. Most UDP-glucuronosyltransferase (UGT) isoforms are induced during Caco-2 cell differentiation, while UGT1A6 is also highly expressed in undifferentiated cells. DMD 36(11): 2331-2336.

30. Siissalo, S., Hannukainen, J., Kolehmainen, J., Hirvonen, J., Kaukonen, A.M. 2009. A Caco-2 Cell Based Screening Method for Compounds Interacting with MRP2 Efflux Protein. Eur. J. Pharm. Biopharm. 71(2): 332-338.

31. Soikkeli, A., Sempio, C., Kaukonen, A.M., Urtti, A., Hirvonen, J., Yliperttula,M. 2010. Feasibility evaluation of 3 automated cellular screening assays on a robotic workstation. J. Biomol. Screen. 15(1): 31-41.

Paediatric medicine:

32. Lindkvist, J., Airaksinen, M., Kaukonen, A.M., Klaukka, M., Hoppu, K. (2011). Evolution of paediatric off-label use after new significant medicines become available for adults – a study on triptans in Finnish children 1994-2007. Br. J. Clin. Pharmacol. 76(6): 929-935.

33. Laine, N., Kaukonen, A.M., Hoppu. K., Airaksinen, M., Saxen, H. (2017): Off-label use of antimicrobials in neonates in a tertiary children's hospital. Eur J Clin Pharmacol. 73(5):609-614.

34. Batchelor, H., Kaukonen, A.M., Klein, S., Davit, B., Ju, R., Ternik, R., Heimbach, T., Lin, W., Wang, J., Storey, D. (2017): Food effects in paediatric medicines development for products Co-administered with food. Int. J. Pharm. 536(2): 530-535.

Other research areas:

35. Saesmaa, T. ja Tötterman, A.M. 1990. Dissolution studies on ampicillin embonate and amoxycillin embonate. J. Pharm. Biomed. Anal. 8: 61-65.

36. Zharkovsky, A., Tötterman, A.M., Moisio, J. ja Ahtee, L. 1993. Concurrent nimodipine attenuates the withdrawal signs and the increase of cerebraldihydropyridine binding after chronic morphine treatment in rats. Naynyn-Schmiedeberg's Arch. Pharmacol. 347: 483-486.

37. Shawesh, A.M., Kaukonen, A.M., Kallioinen, S., Antikainen, O., Yliruusi, J. 2003. Development of indomethacin Carbopol ETD 2001 gels and the influence of storage time and temperature on their stability. Pharmazie 58: 130-135.

38. Vihola, H., Marttila, A-K., Pakkanen, J.S., Andersson, M., Laukkanen, A., Kaukonen, A.M., Tenhu, H. and Hirvonen, J. 2007. Cell-polymer interactions of fluorescent polystyrene latex particles coated with thermosensitive poly(N-isopropylacrylamide) and poly(N-vinylcaprolactam) or grafted with poly(ethylene oxide)-macromonomer. Int. J. Pharm. 343(1-2): 238-246.

Projects

Memberships

Other Relevant Information