Curriculum Vitae

Personal information

Ann Marie Totterman

Work experience

1. Employer: Finnish Medicines Agency
   - Start date: 102007
   - End date:
   - Position: Senior Researcher/Pharmaceutical Assessor
   - Activities: Quality assessor of MAA/variations/Scientific Advice; PDCO PFOEG (prev. FWG) member from Dec 2008; previous PDCO member 2015_2020, PDCO alternate Nov 2008_Feb 2011; April 2012_Nov 2014
   - Country: Finland
2. Employer: Finnish Medicines Agency
   - Start date: 032011
   - End date: 022012
   - Position: National Expert on Secondment, Scientific Administrator, European Medicines Agency, Paediatric section
   - Activities: Scientific Administrator in paediatrics; PIP_assessment and coordination, support of PDCO FWG activity; scientific support on paediatric formulations
   - Country: Finland
3. Employer: Ipsat Therapies
   - Start date: 052007
   - End date: 062007
   - Position: Consultant
   - Activities: Quality control methodology
   - Country: Finland
4. Employer: Faculty of Pharmacy, University of Helsinki
   - Start date: 072005
   - End date: 032007
   - Position: Leading Scientist/E_ADME and Formulation
   - Activities: Leading scientist, Drug Discovery and Technology Center (DDTC) E_ADME and formulation; in vitro pharmaceutical profiling/ drug delivery of poorly soluble compounds, lecturing, Ph.D. and Master's Thesis supervision
   - Country: Finland
5. Employer: Faculty of Pharmacy, University of Helsinki
   - Start date: 012001
   - End date: 062005
   - Position: Senior research scientist, E_ADME and Formulation
   - Activities: Senior scientist, DDTC; in vitro pharmaceutical profiling/ drug delivery of poorly soluble compounds, lecturing, Ph.D. and Master's Thesis supervision
   - Country: Finland
6. Employer: Victorian College of Pharmacy, Monash University
   - Start date: 011999
   - End date: 122000
   - Position: Post_doctoral Research Fellow
   - Activities: in vitro lipid digestion, lipid formulations, intestinal solubilisation of poorly soluble compounds; in vitro in vivo relevance
   - Country: Australia
7. Employer: Division of Pharmaceutical Technology
   - Start date: 091990
   - End date: 121998
   - Position: Assistant teacher – Ph.D. Student
   - Activities: Teaching; compounding, manufacturing and development of pharmaceutical dosage forms; Ph. D. project; supervision of Master's and Bachelor's Thesis work
   - Country: Finland

Education and training

1. Subject: Department of Pharmacy, Faculty of Science
   - Start date: 081982
   - End date: 041990
   - Qualification: M.Sc. Pharm.
   - Organisation: Major in Pharmaceutical Technology
   - Country: Finland
2. Subject: Department of Pharmacy, Faculty of Science
   - Start date: 091990
   - End date: 061998
   - Qualification: Ph.D. Pharm.
   - Organisation: Major in Pharmaceutical Technology (formulation development; pharmaceutics; biopharmaceutics)
   - Country: Finland

Additional information

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. 2

6. 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. (2018): Food effects in paediatric medicines development for products Co_administered with food. Int. J. Pharm. 536(2): 530_535.

35. Nordenmalm, S., Kimland, E., Ligas, F., Lehmann, B., Claverol, J., Nafria B., Tötterman, A.M., Pelle, B. (2019) Children’s views on taking medicines and participating in clinical trials. Arch. Dis. Child. 104:900_905

36. Lepola P, Wang S, Tötterman AM, et al. Does the EU’s Paediatric Regulation work for new medicines for children in Denmark, Finland, Norway and Sweden? A cross_sectional study BMJ Paediatrics Open 2020;4:

Other research areas:
37. Saesmaa, T. ja Tötterman, A.M. 1990. Dissolution studies on ampicillin embonate and amoxycillin embonate. J. Pharm. Biomed. Anal. 8: 61_65.
38. 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.
39. 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.
40. 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.
41. Hänninen K., Ahtiainen H.K., Suvikas_Peltonen E.M., Tötterman A.M. Automated unit dose dispensing systems producing individually packaged and labelled drugs for inpatients: a systematic review. Eur. J. Hosp. Pharm. 2021 Nov 18:ejhpharm_2021_003002.

Projects

Memberships

Other Relevant Information