DMDG past Open and Joint meeting programmes

Open Meeting 2015

16th - 18th September 2015 - Robinson College, Cambridge, UK

Wednesday 16 September 2015

13.30-14.00 **Chairman's Opening Address**

Dr Peter Kilford

14.00-15.00 **DMDG Opening Lecture.**

Professor Bernard Testa

Bernard Testa studied pharmacy because he was unable to choose between medicine and chemistry. Because he was incapable of working in a community pharmacy, he undertook a Ph.D. thesis on the physicochemistry of drug-macromolecule interactions. Because he felt himself ungifted for the pharmaceutical industry, he went for two full years (1971-72) to Chelsea College, University of London, for postdoctoral research under the supervision of the late Prof. Arnold H. Beckett. And because these were easy times, he was called as assistant professor to the University of Lausanne, Switzerland, to become full professor and Head of Medicinal Chemistry in 1978. He then tried to repay his debts by fulfilling a number of local and international commitments, e.g. Dean of the Faculty of Sciences (1984-86), Director of the Geneva-Lausanne School of Pharmacy (1994-96 and 1999-2001), and President of the University Senate (1998-2000). He has (co)authored 6 books, (co)edited 32 others, and (co)authored over 500 research and review articles in the fields of drug design and drug metabolism. During the years 1994-98, he was the Editor-Europe of *Pharmaceutical Research*, the flagship journal of the American Association of Pharmaceutical Scientists (AAPS), and he is now a senior editor for *Chemistry & Biodiversity*. He is or was a member of the Editorial Board of several leading journals (e.g., *Biochemical Pharmacology*, *Chirality*, *Drug Metabolism Reviews*, *European Journal of Medicinal Chemistry*, *Helvetica Chimica Acta*, *International Journal of Pharmaceutics, Journal of Medicinal Chemistry*, *Journal of Pharmacy and Pharmacology*, *Medicinal Research Reviews*, *Pharmaceutical Research*, *Xenobiotica*). He holds Honorary Doctorates from the Universities of Montpellier, Parma and Milan, and was the 2002 recipient of the Nauta Award on Pharmacochemistry given by the European Federation for Medicinal Chemistry. He was elected a Fellow of the AAPS, and is or was a member of a number of scientific societies such as the Swiss Chemical Society, the French Academy of Pharmacy, the Royal Academy of Medicine of Belgium, the Royal Society of Chemistry (Fellow), the European Society of Biochemical Pharmacology, the American Chemical Society, and the International Society for the Study of Xenobiotics (ISSX, Charter member). His Emeritus status has freed him from administrative duties and gives him more time for writing, editing and collaborating in research projects.

15.30-17.00 **Session 1. Beyond P450**

Chair. Michelle Gleave

As our understanding of cytochrome P450-mediated metabolism expands and chemical design is often able to effectively modulate P450-driven clearance of small molecules, our focus turns to other enzymes and their impact on clearance, safety, IVIVC and efficacy. Concurrently, oligonucleotides, ADCs, proteins and peptides become ever more common as prospective therapeutics, whilst small molecule chemical space continues to evolve. This leaves us facing new challenges, encountering new routes of metabolism, asking "how can we understand this?" and "how can we predict that?"

This session will explore.

- Non-P450 metabolism (e.g. UGT, SULT, FMO, AO and CES), including substrate specificities, species differences, polymorphisms and predictions
- Metabolite characterisation for non-traditional therapeutics
- Case histories and strategies used to identify unusual routes and enzymes

17.00-17.45 **Poster Blitz**

Chair Alex McCormick

The poster blitz at the DMDG Open Meeting provides a perfect opportunity for postgraduate students to achieve additional recognition. Postgraduate students are invited to provide an oral summary of their poster in a very short format. Presentations should be a maximum of

5 minutes and use a maximum of 3 slides. Use of any other visual / oral approaches to present the data will be welcomed.

19.30-22.00 **Poster Session**

Chair Alex McCormick

The poster session at the DMDG Open Meeting provides a perfect opportunity to showcase your work. Providing the subject is of relevance to a drug metabolism or pharmacokinetic audience, there are no restrictions on what you may choose to present. Posters may encompass all areas including small or large molecules, non-clinical or clinical, data derived from *in silico, in vitro* or *in vivo* approaches or perhaps an idea you'd like to discuss and have challenged.

The poster session welcomes posters from the most junior colleague to senior executives. Poster boards will be landscape

Thursday 17 September 2015

09.00-10.30 **DMDG Fellowship Lecture**

Professor Ian Wilson

Ian D Wilson obtained his PhD at the University of Keele in Staffordshire and then pursued postdoctoral work at University College Hospital Medical School in London, then moving into the pharmaceutical industry, where he worked in drug metabolism and bioanalysis for ca. 36 years. His industrial career began with Hoechst Pharmaceuticals, based in Milton Keynes and then he moved to Cheshire and joined ICI Pharmaceuticals Division which first became Zeneca and most recently at AstraZeneca. In 2012 he moved to Imperial College (London) where, as Professor of Drug Metabolism and Molecular Toxicology he undertakes research in hyphenated techniques in chromatography, bioanalysis, drug metabolism, systems toxicology and metabonomics.

11.00-12.30 **Session 2. Sampling Methods**

Chair. Olivier Heudi

- Patient-friendly sampling methods for drug analysis
- Alternative sampling matrices for the pharmacokinetic assessment in preclicinal and clinical studies
- Different format of microsampling techniques including blood microsampling, dried Blood Spotting Device

14.00-15.30 **Session 3. Parallel Sessions**

- **Large Molecule Drug Discovery and Development – what do we need to do?** – *Graeme Clark*
  - The characterisation of small molecule metabolic fate is a well understood and mature discipline. Application of hyphenated and off-line analytical techniques such as LC-(UV)-MS(/MS), NMR and radiolabelling have long been the standard approaches in these studies. With the ever increasing number of biotherapeutic programs in the pharmaceutical industry the need to characterise the metabolic (or catabolic) fate puts increasing demands on these technologies. This session looks to include (but not limited to). approaches in supporting biotherapeutic metabolism/catabolism, improvements in software algorithms to aid in the detection of drug related material and advances in biotherapeutic disposition studies. Please contact Graeme Clark (e-mail above) to discuss potential podium presentations.

- **Need for radiolabelled metabolism studies in humans? When do we need them?** – *Ian Wilson*
  - The need for radiolabelled studies to fully define the human DMPK of candidate drugs, and if such studies are still needed at what stage of the development cycle should they be performed, is a contentious one. Often this question is expressed in black or white terms, with one side arguing that that such studies are no longer needed as modern analytical techniques have rendered them obsolete, whilst others retort that they are pretty much a regulatory requirement and are non-negotiable. Both views have some merit, but reality requires a more carefully graduated view of the world. This session seeks to explore topics such as what IS the regulatory position?, and does it need to be updated?, what are the alternatives to labelled studies? And under what

circumstances is it reasonable to say that such studies are either essential or serve little or no benefit? Please contact Ian Wilson (email above) to discuss potential podium presentations.

- **DMPK – Tales of the Unexpected**
  Rakesh Lad and Geert Mannans
  - DMPK Science seems to have a knack of throwing up unexpected results. Chemical & Biochemical systems sometimes do not behave as we may expect – and the anomalies often occur at the most inopportune moment! However, the chance to investigate can be a bonus in some respects as it can often provide new perspectives that can be applied to future problems. This "Parallel Session" showcases interesting work across our DMPK community.

16.00-17.30 **Session 4. Breakout sessions** – Same as above

- Regulatory expectations for large molecule bioanalysis/metabolism
- Further discussions on the need for radiolabelled studies
- Unexpected DMPK outcomes – what have we learnt?

17.30-18.00 **DMDG Annual Business Meeting** Main Lecture Theatre
Join the committee to review and agree on the 2014 Committee summary and accounts, and vote upon potential rule changes proposed by the committee. This gives you a greater insight into the workings of the DMDG and helps shape the future of the society

Friday 18 September 2015

09.00-10.30 **Session 5. Free Communications**
Chair Alan Wilson
The Free Comms session enables presenters to share their intriguing work with the DMDG community which would otherwise not fit into the other sessions. If you have an interesting and thought-provoking talk you want to share, and can't see where this fits with the rest of the agenda, then this session is the right place.

11.00-12.30 **Session 6. Bioanalytics. Trials and Tribulations**
Chair. Sufyan Maqbool
Development of bespoke methods for upcoming large or small molecules can represent unique challenges that require novel approaches to assay development. It is also vital to assess the performance and impact of both LC-MS/MS and ligand binding assay platforms when operated side by side in an analytical setting. This will facilitate successful method development overcoming bioanalytical challenges. In the current bioanalytical space such challenges remain unsolved; it is necessary to evaluate and implement fit for purpose assays accordingly, which may need to be more elaborate than traditional methods. Therefore consideration needs to be given to the molecule's potential to adapt to bioanalytical methods/strategies to overcome any regulatory hurdles.
This session will include, but not necessarily be limited to, the following proposed topics

- Challenging assays for large molecules(ADCs)/peptides – MetID/PPB requirements
- Large Molecules . LCMSMS/ELISA how do these operate alongside each other in BioA strategy
- High throughput methods for BioA – direct analysis

12.30-12.40 **Closing remarks. Incoming Chairwoman**
Suzanne Iverson