

Confirmed Minutes

IUPAC Division of Chemistry and Human Health Subcommittee on Medicinal Chemistry and Drug Development August 30-31st, 2008, Vienna, Austria

Meeting Attendees:, Eli Breuer (30th), Derek Buckle (30th), Noel De Souza (31st), Janos Fischer, Robin Ganellin, Giovanni Gaviraghi, Per Lindberg, Tom Perun (31st), Ferran Sanz (30th, in part), Joerg Senn-Bilfinger, Henk Timmerman (31st, in part), Camille Wermuth (30th).

The meeting was split across two days (Saturday 2-6 pm and Sunday 9am-1 pm) in order to accommodate the different travel schedules of some members and to mitigate a clash with the meeting times of the EFMC Committee, since some of our members had to attend both meetings. This allowed us to increase the number of attendees to 12.

Apologies for being unable to attend were received from: David Alker, John Bremner, Mukund Chorghade, Paul Erhardt, Toshi Kobayashi, Antonio Monge, Mario Varasi.

1. Introductions, Opening Remarks, and Minutes of the Previous Meeting in Turin.

The minutes from the previous meeting in Pittsburgh (June, 2008), were accepted. They will be confirmed and submitted for display on the IUPAC web site.

2. Matters arising from the Minutes

2.1. IUPAC-Richter Prize

Jan Heeres, (Janssen, retired), received the Prize for his outstanding contributions to the invention of ketoconazole and the conazole class of antifungal agents. He has subsequently worked on various other projects, including Rilpivirine, an antiviral agent that is currently being assessed in Phase 3 clinical trials for the treatment of AIDS. The award was presented to him during a special awards session at the ACS 31st National Medicinal Chemistry Symposium on June 18th 2008, in Pittsburgh, where Jan received his plaque and cheque, and gave the IUPAC - Richter Award Lecture entitled: "Progress in the Development of Non-nucleoside Reverse Transcriptase Inhibitors: From TIBO to Rilpivirine". He was joined by Professor Edward Arnold (Rutgers University) who lectured on "High-Resolution Structures of HIV-I RT / Rilpivirine complexes."

He repeated his lecture in the antiviral session of the XXth International Symposium on Medicinal Chemistry (Vienna) 2nd September, and another lecture is planned for the 2nd Coast to Coast Medicinal and Synthetic Chemistry Symposium (Torquay, UK) in October 2008.

We are grateful to all the conference organizers for providing sponsorship covering travel expenses to the award winner. It was suggested that the five outstanding nominees should be encouraged to reapply for the 2010 Award.

2.2 IUPAC Emeritus Fellows

After discussion of this topic at the Secretariat it was recommended that the name should be changed to IUPAC Distinguished Fellow Award. The Award recognizes those that have significantly contributed to IUPAC affairs and the Subcommittee intends to recognize the service of Camille Wermuth, John Topliss, Les Mitscher and Naofumi Koga with the award of a suitably engraved plaque at the Divisional Meeting of the IUPAC Congress in Glasgow, Scotland, August 2009. This recognition could be linked to the medicinal chemistry technical session at the Congress, perhaps with the awardees chairing the session.

Robin is to send appropriate letters of support to the Divisional President.

This proposal has to be ratified at the Division Committee level, but this should be done electronically because the DC does not meet again until the General Assembly in Glasgow.

3. Membership

Prof Peter Matyus (Hungary) and Noël J. de Souza (Mumbai, India) and Yvonne Martin (USA) have accepted invitations to join the Subcommittee. John Bremner (Australia) was enthusiastic, but commented that it would be too far to come to attend meetings. Stefan Jaroch has resigned from the Subcommittee due to pressure of work at his recently merged Company.

4. Projects / Working Parties

4.1. Nomenclature and Terminology

4.1.2. Glossary of Combinatorial Chemistry Terms (A. Ganesan)

IUPAC Project 2003-044-1-700

No additional information.

4.1.4. Glossary on Drug Metabolism Terms (Paul Erhardt)

IUPAC Project 2000-009-1-700

Adjustment of formatting to IUPAC requirements is ongoing. Completion of the Glossary is still targeted for the end 2008, with publication in PAC as part of a thematic issue on "Metabolism Issues in Drug Design".

4.1.5. Compendium of Glossaries (Robin Ganellin)

IUPAC Project 2002-001-1-700

There was continuing debate on whether to publish a collection of Glossaries in book form given the growing use of internet resources for information retrieval and the delayed availability of new glossaries. It was suggested that this collection of Glossaries is provided online, rather than as a published manuscript.

4.1.6. Glossary of Terms in Pharmaceuticals (Eli Breuer)

IUPAC Project 2001-049-2-700

The draft glossary was circulated to twenty referees and many of the suggestions returned were incorporated into the document. Problems continue with formatting issues and the need to show tracked changes in the finished document but finalization is imminent.

4.1.7. Glossary of Terms in Pharmaceutical Process Chemistry (Mukund Chorghade)

IUPAC Project 2001-049-2-700

Mukund has recently submitted this glossary to the USP and asked them to review the terms.

4.1.8. Prototype Analysis of Molecular Biomarkers in Cancer (Michael Liebmann)

IUPAC Project 2005-050-0-700

No new information. JP will organize an internet conference with Michael and Robin to discuss this project.

4.1.10. Glossary of terms for Biomolecular Screening (John Proudfoot)

IUPAC Project 2004-019-3-700

A draft version of the glossary containing 152 terms, has been reviewed by members of the Society for Biological Screening and it has been adjusted to IUPAC formatting requirements.

Publication as a joint recommendation from IUPAC, SBS and IUPHAR is proposed.

4.1.11x Glossary of Terms in Medicinal Chemistry (Derek Buckle)

IUPAC Project 2008-010-1-700

This project was approved in June with Derek Buckle as project leader and Robin Ganellin, Joerg Senn-Bilfinger, Paul Erhardt, Toshi Kobayashi, Tom Perun and John Proudfoot as task group members. Some 90 additional terms were collated and discussed and will be further explored. Derek will circulate an updated list and contact key medicinal chemistry editors for further suggestions.

4.2. Training and Development**4.2.1. Research and Training in Medicinal Chemistry in Latin America.** (Antonio Monge)

Antonio has provided medicinal chemistry courses in Puerto Rico and Peru.

Antonio has expressed an interest in setting up a global network to promote the study of new drugs for the treatment of neglected diseases. A project submission form to accommodate this is being drafted by Robin and Antonio.

Giovanni Gaviraghi and Noel De Souza are interested in participating in this project.

4.2.2. Research and Training in Medicinal Chemistry in the Indian Subcontinent. (Mukund Chorghade)

IUPAC Project 2001-048-2-700

A short course on medicinal chemistry is being planned to be held in India.
No new information.

4.2.5. Practical Studies for Medicinal Chemistry Students (Antonio Monge)

IUPAC Project 2004-028-1-700

www.iupac.org/publications/cd/medicinal_chemistry/

A printed version of the book will be produced by Dra Rosa Cattana, Universidad Nacional de Rio Cuarto, Cordoba, Argentina. It will be dedicated to Prof. Dr. Liliana Giacomelli who was a co-author of exercises (I.6, I.7, and VI.2) and who, sadly, died in an accident at work last December.

4.3. New Technologies and Special Topics

4.3.2. Human Drug Metabolism Database (Paul Erhardt)

IUPAC Project 2000-010-1-700

A prototype of the drug metabolism database has been assembled. Paul is pursuing opportunities for public funding to complete the project through the end of this year. One company from the private sector has expressed an interest in the database and discussions are ongoing.

4.3.3. Natural Products with Medicinal and Nutritional Value

(Mukund Chorghade)

IUPAC Project 2001-050-2-700

No new information, editing is ongoing and the final article is planned for publication in PAC.

4.3.4. Latin American Plants as Sources for Functional Foods

(Antonio Monge)

IUPAC Project 2005-031-2-700

The initial plan for an article covering plants from Uruguay, Peru and Mexico has been modified. The current intention is to generate three individual articles, each concentrating on a single country. The first article, which is general and will act as an introduction, is completed and is ready for submission. The collection of the articles generated by this project could be combined eventually into a book.

An announcement of progress in the project is in preparation for Chemistry International.

Henk discussed the medicinal chemistry aspects of this project.

An article is under preparation to be published in Chemistry International.

Robin will send a draft to Henk to be reviewed.

4.3.5 Analogue-based Drug Discovery Vol. II. (Janos Fischer)

Project 2008-013-1-700 Janos summarized the status of the second volume of Analogue-based Drug Discovery.

The book chapters and the team members are as follows :

I. Introduction

II. General Aspects

1. Optimizing Therapy by Analogues (J. Fischer, EM. Alapi) [S]
2. Analogues and Standalone Drugs (J. Fischer, R. Ganellin, Ganesan, J. Proudfoot) [S]
3. Lead and Drug Optimization (J. Fischer) [S]
4. Molecular Modeling in ABDD (G. Ferenczy) [S]
5. The Impact of Natural Products upon Modern Drug Discovery (Ganesan) [S]
6. Monoterpenoid Indole Alkaloids (Nemes) [S]
7. Paclitaxel analogue (Erhardt) [S]
8. Issues for Patenting of Analogues (Smith) [S]

III. Analogue Classes

1. Beta2 agonists (Gaviraghi) [S]
2. M3 muscarinic antagonists (expert from Boehringer-Ingelheim or Almirall)
3. SSRIs (Rotella and Childers) [S]
4. Progestogens (Tuba) [S]
5. DPP-IV inhibitors (Peters and Mattei) [S]
6. PDE5 inhibitors (Haning and Bischoff) [S]
7. Serotonin and norepinephrine reuptake inhibitors (Abou-Gharbia)
8. HIV protease inhibitors (Thaisrivongs, Strohbach, Turner)
9. Anthracyclines (Arcamone)

IV. Case Studies

1. Eplerenone (Kalvoda and De Gasparo)
2. Lapatinib (Lackey) [S]
3. Dasatinib (Das) [S]
4. Conazoles (Heeres, Lewi and Meerpoel) [S]
5. Clevudine (Chu)
6. Rasagiline (Youdim) [S]
7. Liraglutide (Lotte Bjerre Knudsen) [S]
8. Ramelteon (expert from Takeda)

[S] synopsis provided

Further invitations:

1. CB1 antagonists (Carpino and Griffith)
2. epothilones (Wessjohann)
- 3.. eribulin (coworker of Eisai)
- 4.. dabigatran (Wienen)

The chapters and the authors should be finalized within a few weeks and then the Publisher (Wiley-VCH) can prepare contracts with the authors and the editors and IUPAC. There is a good chance that an interesting book will be published in 2010.

About 60-70 important drugs will be described in the book, whose authors come from 10 countries. It is especially noteworthy that a great number of the authors played a key role in the discovery of the drugs.

4.3.6 Stand-alone Drugs

Project 2005-032-2-700 (Janos Fischer)

A preliminary short communication about this was sent to Chemistry International last July.

Only about 5 % of the Top 400 drugs belong to this category. A review article and a chapter in the book Analogue-based Drug Discovery II will be produced by the project group.

4.3.7 Biological Context by Text Datamining.

Project 2005-049-1-700 (Michael Liebmann)

No new information.

4.3.8 Trends in patenting Drug-related Technologies (Paul Erhardt, Per Lindberg)

This topic is terminated. No project proposal is planned.

4.3.9. Working Party on Chemistry for Biology (Robin Ganellin)

IUPAC Project 2005-042-1-300

The project belongs to the Division on Organic Chemistry.

No new information.

4.3.10. Introduction to Computer-Assisted Drug Design (Yvonne Martin, Tom Perun)

IUPAC Project 2007-006-1-700

Work on this project is slated to begin in this September, with a timeframe for completion of 18 months. However, since Yvonne already had a signed contract in place with Wiley prior to project approval, the status of this project (which carries no funding allotment) is being reconsidered.

4.4. New Projects

Per mentioned a journal article from a Chemistry Journal in Sweden. The article investigated the role of activity coefficients in medicinal chemistry. Per will prepare a project proposal based on this article.

5. Division Committee

Tom is collecting proposals for nominations of new members as part of the election procedure. He needs to receive these by the end of September 2008.

6. EFMC

The next EFMC European Federation for Medicinal Chemistry (XXIst) International Symposium on Medicinal Chemistry will be organized in Brussels, Belgium, 5-9 September, 2010. Janos and Robin participate as members of the International Scientific Committee.

It will be important to integrate the IUPAC-Richter Prize 2010 into the Symposium as soon as possible. Robin has already contacted EFMC about this.

7. AFMC (Asian Federation for Medicinal Chemistry)

AIMECS 09 will take place in Cairns, Australia from August 23 to 27, 2009.

AIMECS 11 will be in Tokyo, Japan.

8. Other Business

The next meetings will be in Salt Lake City, Utah, USA, adjoining the ACS National meeting, March 2009, and then in Glasgow, Scotland, August 2009, during the IUPAC General Assembly.