

Confirmed Minutes
IUPAC Division of Chemistry and Human Health
Subcommittee for Medicinal Chemistry and Drug Development

August 31, 2002
Barcelona, Spain

Meeting Attendees: Pierre Bost, Eli Breuer, Janos Fischer, Robin Ganellin, Giovanni Gaviraghi, Nao Koga (AFMC representative), Per Lindberg, Antonio Monge, John Proudfoot, Joerg Senn-Bilfinger, Henk Timmerman (EFMC representative), Camille Wermuth

1. Robin welcomed everyone to this second meeting of the Subcommittee. He particularly welcomed the attendance of new faces: Pierre Bost (NR from France), John Proudfoot and Joerg Senn-Bilfinger (introduced by Janos Fischer), and Henk Timmerman (representing EFMC in place of Edmond Differding who was unable to attend). He especially thanked Antonio Monge and Professor Ferran Sanz for making the excellent arrangements for our meeting venue in the IMIM Building (Instituto Municipal de Investigacion Medica).

A lively discussion followed as to why IUPAC has dropped the words "Medicinal Chemistry" as a Section or even in the naming of the Subcommittee. This action was held to be incomprehensible to the new attendees. Indeed, Henk Timmerman who had served on the former Medicinal Chemistry Section Committee and had worked hard to establish its presence considered this to be a totally retrograde step.

Post meeting note: several world figures in medicinal chemistry present at the following international Symposium on Medicinal Chemistry (Barcelona, September 1-5) voiced their disquiet and wondered how IUPAC could possibly have decided to write off Medicinal Chemistry as a chemical discipline. Discussion at the subsequent meeting of the Division Committee in Brussels on 6 December 2002 led to the suggestion to rename us as the Subcommittee for Medicinal Chemistry and Drug Development and this has been confirmed by John Jost.

2. **Minutes** of the previous Subcommittee meeting held in Orlando (6 April 2002) were approved. It was proposed that a direct link should be made on the web between IUPAC (our Subcommittee) and the EFMC and AFMC.

Post meeting note: AFMC do not yet have a home page.

3. **Membership.** It was noted that we still need a Secretary for the Subcommittee.

Post meeting note: Dr John Proudfoot, Distinguished Scientist at Boehringer Ingelheim Pharmaceuticals, Ridgefield, Connecticut, USA, has offered to be the next Secretary and has been accepted without dissent. John's appointment has been approved by the Division Committee at their meeting in Brussels, 6 December 2002, and he has also been appointed as an Associate Member of IUPAC.

4.1.1 Legal Implications of Patenting Virtual Libraries. (Paul Erhardt)

An article on this issue has been written by Paul Erhardt and published in Chemistry International 2002, 24, N°4, p16, entitled "On the Reality of Virtual Libraries". One of the aims was to limit the assignment of Chemical Abstracts registry numbers to real compounds. What then is the attitude of Chem. Abstr. to virtual compounds? Per Lindberg accepted to contact Paul Erhardt over reconstituting the Working Party with a view to establishing a Project on this topic. Interest in joining such a project was declared by Pierre Bost and Joerg Senn-Bilfinger.

4.1.2 Glossary of Combinatorial Chemistry Terms. (Derek Maclean)

Derek provided a written report suggesting that the Glossary is under constant revision as the field develops. He has received an approach from Dr. S.S. Langer, Royal Society of Chemistry (UK) suggesting that the Glossary needed to be revised up to date. Dr. A. Ganesan from Southampton University (UK) was keen to assist. Derek has agreed to reconstitute a Project Team which will include Dr. Ganesan to revise the Glossary and maintain an electronic version.

4.1.3 Generic Structures. (Derek Maclean)

Derek has written a draft document together with Eric Martin (of Chiron Corp.) "On the Representation of Combinatorial Libraries". He has also recently invited Drs Eric Gordon and Per Lindberg to contribute and become co-authors. An electronic version is available. Please contact Derek, or Per, or Robin if you would like to see it (currently 21 pages). This should become formalised as a project.

4.1.4 Glossary of Drug Metabolism Terms. (Paul Erhardt)

In Paul's absence it was suggested that it would be helpful if the glossary were to be distributed to Subcommittee members before the next meeting.

4.1.5 Compendium of Glossaries. (Robin Ganellin)

This has now been officially approved as a project entitled "IUPAC Compendium of Terms for Chemists Applied to Drug Development", Number 2002-001-1-700. Due to end December 2003.

Paul Erhardt's secretary, Pam, has now entered 7 of the 10 selected glossaries into a master listing having a single electronic format.

4.1.6 Glossary of Terms in Pharmaceutical Technology. (Eli Breuer)

This has now been officially approved as a project, Number 2001-049-2-700. Due to end December 2003. The glossary which has approximately 140 terms (co-authored by Eli Breuer, Gershon Golomb and Janos Fischer) has

been completed and is ready for submission to outside experts. It will also be distributed to the Subcommittee members.

4.1.7 Glossary of Terms in Pharmaceutical Process Chemistry.

(Mukund Chorgade)

This shares the same project number as 4.1.6 above i.e. 2001-049-2-700. No further news.

4.2.1 Research and Training in Medicinal Chemistry in Latin America.

(Antonio Monge)

A "Latin American Symposium on Research, Development and Innovation of New Drugs and Related Compounds for the Treatment of Cancer" is being held by CIF of La Antigua, Guatemala, September 16-20, 2002 with 40 attendees from 15 different countries. Because of the limitation to 40 attendees it may be necessary to repeat the course in another place.

There is also a course on Project Management in R&D being held 19-26 October 2002 in Lima, Peru.

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

This project is described on the IUPAC web site and has the reference number 2001-048-2-700. No further news.

4.2.3. Medicinal Chemistry in the Development of Societies. Biodiversity and Natural Products. (Antonio Monge)

A new project is to be formed to provide a listing of the pharmaceutical and nutraceutical materials derived from plant byproducts. Antonio has accepted to co-ordinate this but a project team has to be assembled. To make it global we also require investigators to represent Asia, Africa and Australia.

4.2.4. Patents and Contracts for Medicinal Chemistry in Developing Countries. (Antonio Monge)

No further discussion.

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

Antonio outlined his ideas for producing a manual of practical studies for medicinal chemistry students in less advanced countries. The critical issues are to maintain low cost experiments using accessible materials and to make the manual freely available on the web. One aspect is to base experiments on local natural products. Something along these lines is being started in Brazil. He seeks contributions and contributors. This should become formalised as a project.

4.3.1 Natural and Synthetic Substances Related to Human Health.

(John Topliss)

The manuscript has been accepted for Pure and Applied Chemistry and is due to be published in the October issue. It has appeared in Vol. 74, N° 10, 1957-1985 (2002); the authors are J.G. Topliss, A.M. Clark, E. Ernst, C.D.

Hufford, G.A.R. Johnston, J.M.Rimoldi and B.J. Weimann. The next phase of the project, that is its popularization, will be continued with Tom Perun assisted by Jim McAlpine and Paul Erhardt.

4.3.2 **Human Drug Metabolism Database.** (Paul Erhardt)

A student has been assisting with writing the JAVA programmes for this ORACLE database mounted on a dual server system interfaced to the internet for use in a non-profit manner. A prototype is presently being mounted which will allow the user to search for the metabolism of at least one of two entered drugs. A major issue is to be able to view the resulting metabolic tree in a mode that is user-friendly and includes ready access to chemical structures. The next stage will be to fund a dedicated individual having some expertise in chemoinformatics.

4.3.3 **Natural Products with Medicinal and Nutritional Value.**

(Mukund Chorghade)

The project is described on the IUPAC web site and has the reference number 2001-050-2-700.

No further news.

4.3.4 **Biomarkers for Therapeutic and Diagnostic Effectiveness.**

Giovanni Gaviraghi will produce a position paper for a "glossary of terms for chemical biomarkers for therapeutic and diagnostic use". Robin to ask BK what he had in mind.

4.3.5 **Analogue Research in Drug Discovery.** (Janos Fischer)

The project proposal has been redrafted and will now be submitted to IUPAC for approval. The other task group members are Eli Breuer, Giovanni Gaviraghi, John Proudfoot and Joerg Senn-Bilfinger.

Janos reminded us that he was prompted to start this project as a result of reading in SCRIP, N° 2512, dated 9 February 2000, the statement that 35 new substances marketed in Germany in 1998 were classified as: 12 as "novel", 9 as "improvements of existing therapeutic principles" and 14 as "me-toos".

The question now arises as to how to define a drug analogue. A group of drugs may be considered to consist of compounds of similar chemical structure, therapeutic field and mechanism of action, or drugs can be subdivided into chemical analogues, pharmacophore-based analogues, and pharmacological analogues (which have no chemical analogy).

4.3.6 **IUPAC and Industry Letter** (Robin Ganellin)

The content of this letter has been published in the September 2002 issue of Chemistry International (Vol 24, N°5, pages 8-10) under the title "Medicinal Chemistry in IUPAC: Accomplishments During the Past Decade and Relationships with Industry". It follows an article by Paul Erhardt (page 4-7) on "Medicinal Chemistry in the New Millennium". So this issue of CI gives Medicinal Chemistry and our Subcommittee a very good exposure within IUPAC.

4.3.7 **Bioinformatics** (Michael Liebman)

Not discussed.

5. **European Federation of Medicinal Chemistry (EFMC)**

Henk Timmerman asked whether the interaction between IUPAC and the EFMC could be intensified. Links should be made on the web. Also, there should be an IUPAC representative to EFMC. Giovanni Gaviraghi volunteered to do this.

Following on from the XVIIth International Symposium in Medicinal Chemistry here in Barcelona, the next Symposia will be in Copenhagen/Malmø (2004) and Istanbul (2006). The next EFMC Business meeting will be in September 2003 possibly in Camerino or Cambridge.

The EFMC have also produced a new Directory of National Medicinal Chemistry Societies.

6. **Asian Federation of Medicinal Chemistry (AFMC)**

The 5th AIMECS International Symposium will be held in Kyoto, Japan on October 14-17, 2003. The best airport for access to Kyoto is Osaka rather than Tokyo. Robin received 100 copies of the first circular which were made available to the EFMC Symposium in Barcelona.

The management and office of AFMC was officially moved in May this year from Peter Andrews' office in Brisbane, to Toshi Kobayashi in Tokyo which is located in the Pharmaceutical Society of Japan.

There have been two binational symposia:

Australia/Japan in May at Nara, Japan with 350 participants.

Korea/Japan in May in Seoul, Korea with 300 participants.

The Chemical Society in Taipei (Taiwan) has joined the AFMC as the 10th member society.

7. **Links with Other Bodies**

Giovanni Gaviraghi mentioned EUPHEPS who meet twice a year and aim to cover all aspects of the pharmaceutical field. He is able to act as a contact.

8. **Other Business**

We were very kindly invited by Dr Jordi Frigola, Director of Chemistry Research at Laboratorios Esteve to attend a dinner at Restaurant La Venta. This was indeed a very pleasant occasion.

Next Meeting

The next meeting of the Subcommittee for Medicinal Chemistry and Drug Development will be on Saturday, March 22, 2003 in New Orleans just prior to the National meeting of the ACS.

CRG 04.05.03