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**Minutes of the**

**9<sup>th</sup> STRENDA Meeting**

**September 19, 2013**

Hotel Jagdschloss Niederwald  
Rüdesheim/Rhein, Germany

by Carsten Kettner

**Agenda**

(as approved by the participants)

- New members and additional members
- Information about the STRENDA bookproject
- How to proceed with the STRENDA DB?
- Interaction with other standardization groups
- List 2: Standardization of enzyme assays



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## Participants

(in alphabetical order)

- ◆ Richard N. Armstrong, Vanderbilt University, Dept. of Biochemistry, Nashville, TN, U.S.A., (RA);
- ◆ Barbara Bakker, Department of Pediatrics, University Medical Center Groningen, University of Groningen, Groningen, The Netherlands (BB);
- ◆ Athel Cornish-Bowden, BIP – CNRS, Marseille, France, (ACB);
- ◆ F. Peter Guengerich, Vanderbilt University, Dept. of Biochemistry, Nashville, TN, U.S.A. (FPG);
- ◆ Carsten Kettner, Beilstein-Institut, Frankfurt am Main, Germany (co-ordination), (CK);
- ◆ Thomas S. Leyh, The Albert Einstein College of Medicine, Bronx, NY, U.S.A., (TL);
- ◆ Frank Raushel, Texas A & M University, Department of Chemistry, College Station, TX, U.S.A., (FR);
- ◆ Johann Rohwer, University of Stellenbosch, Dept. of Biochemistry, Stellenbosch, South Africa, (JR);
- ◆ Dietmar Schomburg, Technical University of Braunschweig, Dept. of Bioinformatics and Systems Biology, Braunschweig, Germany, (DS);
- ◆ Karen van Eunen, Department of Pediatrics, University Medical Center Groningen, University of Groningen, Groningen, The Netherlands (BB);
- ◆ Hans Westerhoff, The University of Manchester, Manchester, UK, (HW)

Unfortunately absent with valid excuse:

- ◆ Keith Tipton, Trinity College, Dept. of Biochemistry, Dublin, Ireland, (KT)

## Introduction

The STRENDA Commission, founded 2004 under the auspices of the Beilstein Institut and funded and supported since then, has devised a number of check-lists, called STRENDA guidelines, that define the minimum information which should be provided when enzyme kinetic data are published. These guidelines aim at the improvement of the quality of reporting functional enzyme data to enable researcher to reproduce the data of different laboratories. Additionally, the Commission is developing an electronic data acquisition software system for enzymology data (STRENDA eForm) that serves as a portal (i) to support authors and also journals as an assessment tool on the compliance with the STRENDA guidelines with an emphasis on providing information comprehensively rather than defining acceptance criteria and (ii) to store entered functional data along with the experimental conditions in a database that will be publicly accessible.

Today, more than 30 biochemistry journals recommend authors to consider the STRENDA guidelines when reporting kinetic data. Since BMC, PLoS and *OMICS* recommend the authors to refer to the MIBBI portal for prescriptive check-lists when reporting their research data and since STRENDA is registered at MIBBI that provides information about 35 odd check-lists from diverse bioscience communities, the number of journals is even higher.

The primary objective of this year's short meeting is to discuss how to proceed with the current, redeveloped version of STRENDA DB after major changes and improvements were introduced in the prototype version that was intensively tested and discussed at the previous STRENDA meeting in 2012.

This 9<sup>th</sup> STRENDA meeting took place just for 2 hours during the 6<sup>th</sup> ESCEC Symposium.

## New Members and Additional Members

After two members had announced to leave the Commission at the previous STRENDA meeting it has been decided to appoint at least two new members. BB accepted the invitation to join the Commission early in this year and now not only introduced herself but also presented her interests for devoting some time for STRENDA.

Since two Europeans left the STRENDA Commission there was a general agreement to invite another European scientist and add another representative from Asia. HW suggested Neil Swainston, Manchester, and Ines Thiele, Luxemburg. RA suggested to contact Mindaw Tsai (not sure about the spelling).

Action: CK will contact Dr. Thiele and Dr. Swainston.

## STRENDA Book Project

The Book project is now rather well in progress; the articles will be published in a special issue of Perspectives in Science (<http://www.journals.elsevier.com/perspectives-in-science/>) an open-access online journal published by Elsevier. CK is currently in discussion with Elsevier about the contract which will be signed soon by the Beilstein-Institut.

### **Carsten Kettner (Beilstein) and Athel Cornish-Bowden**

Introductory remarks : *DONE (but probably will need some revision when all the chapters are in)*

### **Robert Goldberg** (National Institute of Standards and Technology)

Standards in Biothermodynamics : *DONE (long ago!)*

### **Dietmar Schomburg** (Technical University Braunschweig)

Standards in Enzymology – Data Integration in the World's Enzyme Information System  
BRENDA : *DONE*

### **Minoru Kanehisa** et al. (Kyoto University)

Predictive Genomic and Metabolomic Analysis for the Standardization of Enzyme Data :  
*DONE*

### **Hans Bisswanger**

Enzyme Assays : *DONE*

### **Douglas Auld** (Novartis, Cambridge, MA, USA)

High-throughput assays : *DONE*

### **Athel Cornish-Bowden**

Current IUBMB Recommendations on Enzyme Nomenclature and Kinetics *DONE*

### **Octavio Monasterio** (University of Chile)

Magnetic resonance : *DONE*

### **Barbara Bakker and Karen van Eunen** (University of Groningen)

The importance and challenges of in vivo-like enzyme kinetics - to be expected in November

### **Munishwar Gupta et al** (Indian Institute of Technology)

Measurement and Reporting of Data in Applied Biocatalysis - *DONE*

### **Amnon Kohen and Kevin Francis** (University of Iowa)

Isotope effects - *DONE*

### **Keith Tipton et al.**

STRENDA recommendations - *DONE*

All the articles will be critically reviewed and edited by ACB and CK. End of January 2014 they will be submitted to the journal which will publish them as special issue in May 2014.

## How to Proceed with STRENDA DB?

The pre-final version of STRENDA DB was presented during the regular program of the ESCEC Symposium. At this STRENDA meeting the Commission took the opportunity to discuss the next steps that need to be taken before the official release of the system. After a short discussion there was a general agreement on the following time plan:

September 2013:	Beilstein internal bug fixing and tests;
October, 1 <sup>st</sup> - 20 <sup>th</sup> , 2013:	detailed user alpha tests and reports by the STRENDA members. subsequent bug fixing in the second half of October;
November 2013:	selection of outstanding researchers outside of STRENDA for a combined user beta test and entry of real data for inclusion for permanent storage of already published data. This data will be the first stock for querying the database. In addition, this will enable the Commission to gather valuable comments from external users which could be used in future discussion with journals.
December 2013:	final bug fixing and making the system ready of release
latest by end of January 2014:	official release of version 1.0 of STRENDA DB to the scientific community

The Commission plans to publish a white paper on STRENDA DB after this release that also includes first comments from users.

## Interaction with other Standardization Groups

HW was wondering about the progress of STRENDA with regards to the interaction with other initiatives and groups that are working on standardization issues. CK introduced in the connections of STRENDA with other groups (such as YSBN, PSI, DIN etc.) which, however, are less tight than might be useful for concerted synchronized activities with regards of proposing guidelines and approaching publishers and funding bodies.

HW suggested to increase this number of connections by contacting representatives of CASyM (Coordinating Action Systems Medicine ) and ISBE (Infrastructure for Systems Biology Europe). The Commission agreed with this.

## List 2: Standardization of Enzyme Assays

BB recalled that the standardization of the experimental conditions is still active on the agenda of STRENDA, the so-called list 2. The efforts have been temporarily terminated since the Commission recognized that additional expertise would be required when working on this list in detail. In addition, the Commission did not feel certain about the feasibility of such a list since too many parameters need to be kept in mind and this could be considered an intervention in the freedom of research when designing experiments. BB suggested to provide a list of protocols as proof-of-principle recommendations rather than as requirements which could derive from already published papers such as the *FEBS J.* papers on yeast glycolysis and *E. coli*. The Commission did not make a general agreement but accepted the suggestion from RA first to compile a document on the issue of uniform experimental conditions to enable the Commission to discuss the list of standard assays.

Unfortunately, no action has been taken.