



Guest editor
Damjana Rozman

Dear Colleagues.

being entrusted the role of the Guest Editor, it is my great pleasure to offer you this special issue of Acta Chimica Slovenica that is dedicated to the *15th International Conference on Cytochromes P450: Biochemistry, Biophysics, Functional Genomics*. The meeting was held at Bled, Slovenia, from June 17th – 21st, 2007. I chaired the meeting as head of the Organizing and Scientific Committee, which was a great honour for me but also a big responsibility. This series of cytochrome P450 meetings started in 1976 at Primosten in the former Yugoslavia, and was since then held every 2–3 years in a different country, first in Europe (Germany, Sweden, Finland, Hungary, Russia, Portugal, Switzerland) and later also in the USA (1997) and Japan (1999). Meetings are now biannual and are alternating between Europe, USA and Japan (2001 France, 2003 Czech Republic, 2005 USA, 2007 Slovenia, 2009 Japan, 2011 UK).

Cytochromes P450 (CYP) belong to a big group of proteins that metabolize a variety of endogenous and exogenous lipophilic compounds in all kingdoms of life, from bacteria, fungi, plants and animals. In mammals, including the human, cytochromes P450 from the families I, II and III perform the phase I of xenobiotic detoxification also known as drug metabolism, while CYPs from other families perform essential reactions of the endogenous metabolism, such as synthesis of cholesterol, steroid hormones, bile acids, vitamin D, prostaglandines, thromboxanes, and metabolism of retinoids. Due to their roles in the human and other organisms, CYPs represent an important target of research for pharmaceutical companies as well as in medical research, biotechnology and biodiversity. The cytochrome P450 field is continuously growing and is becoming more and more interdisciplinary. The *15th International Conference on Cytochromes P450* has provided a state of the art information in traditionally present symposium areas as well as in some new exciting areas and experimental approaches in the field, such as nanotechnology, functional genomics and systems biology. The meeting consisted of 4 plenary, 10 parallel and 2 poster sessions. It was attended by 310 registered participants from 32 countries of all continents, with 60 invited speakers from 15 countries, with one third of the invited speakers being female.

The tradition of these conferences is to dedicate each to an active scientist in recognition of the achievements and contributions to the advancement of research on Cytochrome P450 enzymes. The International Scientific Board offered me a once-in-a-life-time opportunity to dedicate the Bled conference to my post-doctoral mentor Prof. Dr. Michael R. Waterman from Vanderbilt University, Nashville, Tennessee, USA.

In addition to his scientific accomplishments, he is a great mentor, who has trained many pre-doctoral and over 50 post-doctoral students. Many of his former students, including myself, are active and quite successful scientists in the field of cytochrome P450 research today. To honor Dr. M.R. Waterman, we have organized a special scientific plenary session entitled »P450s in endogenous/exogenous metabolism and in drug discovery». Speakers of this session were all former students of Mike Waterman from different generations of his periods in Dallas (B. Clark, U. Zanger, J. Lund) and Nashville (I. Pikuleva, M. Sewer), together with his longtime friend and closest collaborator E. R. Simpson.

As a chairperson of the Scientific Board I had an overview on the presented works at the conference. I have invited some authors with prominent works and bibliographies to submit original manuscripts to ACSi. The selection of invited papers and the reviewing process were not easy at all. All manuscripts have undergone a regular ACSi peer-review process with strict quality and proof of originality requirements. I wish to use this opportunity to thank all contributors as well as all reviewers that co-operated with me in a timely way, allowing us to put together this special issue of Acta Chimica Slovenica. The issue starts with the article »**Steps along the path from microsomal FEx to 6500 cytochromes P450**« which originates from the closing lecture presented at the 15th International Conference on Cytochrome P450. Dr. Waterman guides us through his 46-year research career, at the same time acknowledging key events in P450 research which have had particular impact on his research. The issue continues by 5 reviews (pg. 1-52), 4 minireviews (pg. 53-74) and 4 scientific papers (pg.75–110) of invited talks or presentations from different sessions of the meeting: **P450s in endogenous/exogenous metabolism and in drug discovery** (M. Sewer, U. Zanger), **Heme thiolate proteins** (T. Shimizu), **P450 structure and function** (P. Anzenbacher), **New mechanisms of P450 reactions** (F. P. Guengerich, P. O. de Montellano), **Biotechnology & bioinformatics** (S.L. Kelly, R. Komel), **P450 cross talks and interactions** (K. Monostory and J. M. Pascussi), **Transcriptional Regulation** (A. Anderson) and **Functional Genomics** (M. Fink, S. Horvat).

I believe that this issue of ACSi will offer the readers an exciting experience in learning more about one of the growing and inter-disciplinary fields in biochemistry – the superfamily of the cytochrome P450 proteins.

Prof. Dr. Damjana Rozman
