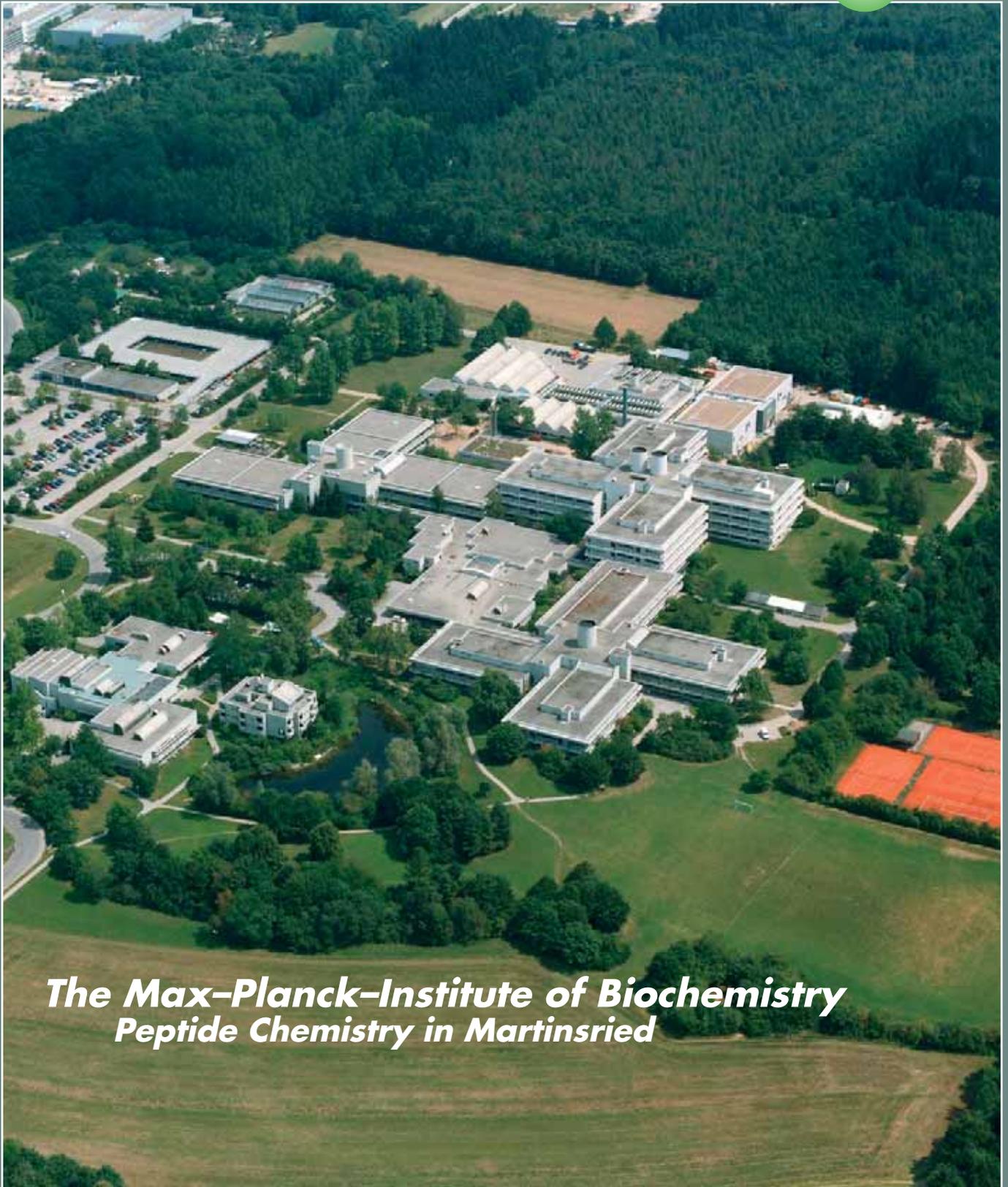


THE EUROPEAN PEPTIDE SOCIETY NEWSLETTER



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***The Max-Planck-Institute of Biochemistry
Peptide Chemistry in Martinsried***

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International Symposium on VIP, PACAP and Related Peptides • Bulgarian Peptide Symposium
• Polish Peptide Symposium • Dutch Peptide Day • Workshop in Berlin

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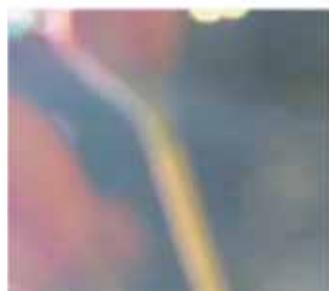
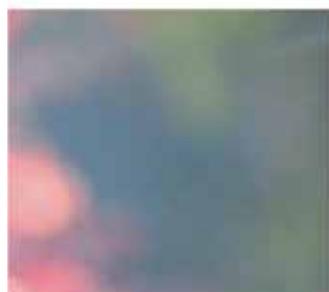
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from the editor

A message



Cover photo: The Max-Planck-Institute of Biochemistry, Martinsried

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Dear Colleagues and Friends,

This issue of the Newsletter is the last of the series of this edition in its present paper-based form. During the Executive Committee meeting of EPS, held at Eötvös University in Budapest on the 5th November 2005, a number of solutions for the future of the printed version of the Newsletter were discussed and different opinions were expressed regarding not only the Newsletter but also the Society’s website reduced visitors count, maybe as a result of this co-existence of different media. As the Newsletter editor I strongly emphasized on the necessity for the Society to have a printed medium and of course I expressed my views on the distinct and not overlapping roles of the printed Newsletter and the web site of EPS.

The EC’s final proposal **package** was communicated to the members of the Council who by email voting accepted that: a) No paper-based Newsletter will be published, b) Newsletter will be produced in electronic form as pdf and will be available for the visitors of the EPS website, c) Newsletter will be combined with the Journal of Peptide Science and published as part of JPS, but under separate editorship: Newsletter part of the issue will be edited by Paul Cordopatis, and the JPS part of the issue will be edited by the editor-in-chief, John Jones.

As a conclusion and also as a commitment from this edition’s editor, I would like to point out my belief that the Newsletter, incorporated to the JPS, will continue to have its distinct presence and will continue to contribute to the promotion and support of the Society’s interests.

Paul Cordopatis

Peptide Chemistry

at the Max–Planck–Institute of Biochemistry, Martinsried

On occasion of the Josef Rudinger Memorial Lecture at the 20th European Peptide Symposium in Tübingen in 1988 Erich Wünsch summarized the history of peptide chemistry from the time of the Kaiser–Wilhelm–Gesellschaft with Max Bergmann’s pioneering personality, a scholar of Emil Fischer, up to the postwar reorganization of these research institutes to form the Max–Planck Society. The directors of the new departments in Max–Planck–Institutes, Theodor Wieland and Erich Wünsch, together with the celebrity chairmen of the academic departments of Organic Chemistry, Helmut Zahn and Ernst Bayer, initiated a strong revival of peptide chemistry in Germany. This revival also inspired intense activities even in industrial laboratories with e.g. Rolf Geiger at Hoechst AG and Johannes Meienhofer at Bayer AG. These laboratories produced a large class of peptide chemists making

chemists from academia and industry of the member countries at the annual meetings.

As a scholar of Ernesto Scoffone, I left the laboratory of Padua in 1975 to join the Department of Peptide Chemistry of Erich Wünsch at the Max–Planck–Institute of Biochemistry in Martinsried shortly after his publication of the treatise on the state of the art in the field of peptide chemistry with the Houben–Weyl compendium «Methoden der Organischen Chemie: Synthese von Peptiden I/II» (1974). Well aware of the existing efficient methodologies in the field and of many still poorly resolved problems as well as of the emerging new solid phase techniques introduced by Bruce Merrifield, the research of our department in the 70’s was mainly addressing required improvements of synthetic strategies including protection schemes with particular interest devoted to optimized reagents, e.g.

development of highly efficient chromatographic and analytical procedures, of new handles and resins as supports for the solid phase synthesis as well as the discovery of the Fmoc group as the most orthogonal amine protection in combination with tert–butanol derived side chain protections, led already in the 80’s to the skyrocketing of the solid–phase techniques that made peptides of increasing chain lengths synthetically accessible in almost standard manner. These incredibly fast advances in the field allowed the peptide chemistry community to focus on new aspects such as peptidomimetics, combinatorial chemistry, assembly of proteins by new ligation procedures, and regioselective chemistries for post–synthetic modifications to most optimally mimic the natural post–translational modifications. Upon retirement of Erich Wünsch in 1991, with this state of the art in the field, the newly constituted laboratory headed by myself was renamed «Bioorganic Chemistry» to account for the new challenging tasks in peptide and protein chemistry after the incredibly fast advances in automated efficient assembly of polypeptide chains. Consequently, from the synthetic point of view our main interest was centered around the regioselective multiple disulfide pairing procedures and as an alternative on the use of selenocysteine to direct oxidative folding pathways at will and to possibly generate robust isosteric analogues [2,3]. The experience gained served finally for first assemblies of triple polypeptide chains into heterotrimers as models of native collagens and for exploiting native collagen cystine knots in the production of related homotrimeric model peptides [4,5]. This particular research on cysteine–rich peptides, which is intrinsically correlated with the denovo design of folded polypeptide molecules, called for a more robust support from conformational analysis by CD and particularly NMR spectroscopy as well as microcalorimetry, but also for a tight collaboration with the department of Structural Biology headed by Robert Huber in our institute. Instinctive-



The Laboratory of Bioorganic Chemistry at the Max–Planck–Institute of Biochemistry, Martinsried (January 2004)

today’s peptide chemistry community in Germany one of the largest in Europe. Upon the foundation of the Max–Bergmann–Kreis by Erich Wünsch in 1981 for the promotion of peptide chemistry in Germany, Switzerland and Austria, I had the privilege to serve as a scientific council of this society for 24 years. I was excited to personally witness the growth of scientific and personal contacts among peptide and protein

di–tert–butyl dicarbonate, and an expanded protection scheme for cysteine residues with the S–tert–butylthio derivative. Particular attention was also paid to the difficult analytical characterization of synthetic products and identification of side reactions to produce highly homogeneous synthetic replicates of gastrointestinal hormones for biological and immunological studies as reviewed in [1]. The fast worldwide

ly an intensive reciprocal exchange of expertise and knowledge resulted in new research programs involving the structure-based design of mono- and particularly bivalent protease inhibitors to better understand processes of molecular recognition and the principle of multivalent ligand binding, which is ubiquitously applied by nature for selectivity and affinity purposes [6]. Similarly, in common efforts between these two complementary laboratories the synthesis of chalcogen analogues of amino acids and related halogenated derivatives allowed to establish efficient procedures for expanding the genetic code by the selective pressure incorporation (SPI) method to access heavy-atom protein mutants for X-ray crystallography by recombinant techniques, but also to provide tools for engineering of proteins with tailored properties and built-in chemical functionalities for their regioselective artificial posttranslational modifications [3,7]. In addition, such unnatural amino acids proved to be excellent probes for a better understanding of the contribution of single residues to folding/unfolding kinetics as well to the stability of folded synthetic peptides and bioexpressed proteins. To further contribute to the still not fully understood folding kinetics and pathways azobenzene derivatives incorporated into the backbone of polypeptide chains served as light-triggers in model peptides to monitor in real time scales of femto- to-nanoseconds conformational transitions with ultrafast time-resolved spectroscopy [8,9]. But such photoresponsive probes served also as tools for construction of chemical toys such as the first light-driven molecular motor [10]. The success of these research projects, which is well documented by the large number of publications by our laboratory in renowned scientific journals of life science, resulted from excellent collaborations with many colleagues and friends of biophysical, biochemical and biological laboratories all over the world.

It was not only for my personal experience gained in peptide chemistry over decades of research in the field, but primarily for the deep friendship that moved Murray Goodman to ask myself to join Claudio Toniolo, our old friend from Padua since our shared years of university studies, and Arthur Felix in the challenging venture of editing a new compendium on peptide chemistry. After five years of intensive world-

wide collaborative efforts we finally succeeded in the publication of the second Houben-Weyl treatise on «Synthesis of Peptides and Peptidomimetics» Vol. E 22a-E 22e (2003-2004). The close personal and scientific contact with Murray Goodman has been an extraordinarily fulfilling experience, and therefore I am still mourning the unexpected passing of this good friend and Mensch last year during his visit of my laboratory.

The laboratory of Bioorganic Chemistry at the Max-Planck-Institute of Biochemistry, Martinsried (January 2004)

Since the foundation of the laboratory of Bioorganic Chemistry many Ph.D. students from Germany and abroad, and postdocs from various countries contributed to turn imagination and ideas into reality with their skills and enthusiasm, and I feel immensely grateful to all of them. Special gratitude is expressed to Jürgen Musiol and Elisabeth Weyher, the irreplaceable pillars of my laboratory, which both are best known to all who have visited and worked in my laboratory. Both will assist me to realize some small remaining dreams after my retirement. While all the Ph.D. students left for industrial laboratories in Germany and abroad, three research associates Nediljko Budisa, Christian Renner and Norbert Schaschke have selected the challenging path of academic careers following their habilitation [11-13]. As a mentor, I sincerely hope that these young mature scientists will succeed in advancing the research in life science by probing peptide and protein structure/function with chemistry.

A special recognition for the peptide chemistry in Martinsried has been offered at the last European Peptide Symposium in Prague (2004) for the second time, where I myself was awarded the «Joseph Rudinger Lecture» [14]. Receiving this award at the turn in my life for retirement makes me feel deep gratitude for all my research fellows and to the many friends all over the world for their continuous scientific and moral support.

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Contributed by Luis Moroder

7th International Symposium on VIP, PACAP and Related Peptides

Rouen, 11–15 September 2005

The 7th International Symposium on VIP, PACAP and Related Peptides was held in Rouen, France on September 11–14, 2005, under the auspices of the New York Academy of Sciences and was followed by a satellite Workshop entitled «Signaling Mechanisms of VIP, PACAP and Related Peptides: Contribution of Genomics, Proteomics and Bioinformatics» on September 15, 2005. The Symposium was organized by Hubert Vaudry, INSERM U413, European Institute for Peptide Research, University of Rouen and Marc Laburthe, INSERM U683, Bichat–Beaujon Biomedical Research Center, University Paris 7, and the Workshop was organized by Youssef Anouar (University of Rouen), Lee E. Eiden (NIMH, NIH, Bethesda) and David Vaudry (University of Rouen) with the support of Science stke. Over 300 registered participants from all continents attended the Symposium and/or the satellite Workshop. Also were present Affymetrix, Applied Biosystems, Bachem, Elsevier, Promega and VWR which had booths at these meetings.

Vasoactive intestinal polypeptide (VIP) was discovered in 1971 by Sami Said, while he was working in the laboratory of the famous peptide chemist Victor Mutt, at the Karolinska Institute (Science 169:1217–1218) and pituitary adenylate cyclase-activating polypeptide (PACAP) was identified in 1989 by Akira Arimura and his co-workers at Tulane University, Belle–Chasse, LA (Biochem. Biophys. Res. Commun. 173: 1271–1279). At the opening ceremony, the President of the University of Rouen awarded the Medal of Rouen University to Akira Arimura and Sami Said. During the Symposium, Akira Arimura gave the opening lecture on the potential of PACAP for the treatment of renal failure associated with

multiple myeloma while Sami Said, who is now working at the State University of New York, gave the closing lecture on the potential of VIP for the treatment of disorders of the lungs and the pulmonary circulation. It was actually rewarding to see that the «fathers» of VIP and PACAP are still conducting outstanding research at the forefront of this rapidly expanding field. Gabriel Rosselin, a pioneer of gastrointestinal peptide research, who had organized the first Symposium of this series in Strasbourg (Bischenberg), France, September 19–23, 1993, was the guest of honour of the 7th International Symposium on VIP, PACAP and Related Peptides.

VIP, PACAP and related peptides (i.e. secretin, glucagon, glucagon like peptide–1 and growth hormone–releasing hormone) are undoubtedly among the most fascinating regulatory peptides. They belong to the largest family of bioactive peptides and thus provide a unique model for investigating the processes of molecular evolution that have led to the diversification of multigene families. VIP and PACAP are clearly implicated in a large array of physiological processes including development, growth, neuronal, endocrine, cardiovascular, respiratory, reproductive and digestive functions, immune responses and circadian rhythms. There is also evidence that VIP and PACAP exert remarkable trophic and antiproliferative activities on normal and tumoral cells.

Five plenary lectures were given by prominent specialists, originating from all continents, working on various members of the VIP/PACAP family: Akemichi Baba, Osaka, Japan; Bill K.C. Chow, Hong Kong, China; Patricia Brubaker, Toronto, Canada; Rosa P. Gomariz, Madrid, Spain; and Patrick Sexton, Melbourne, Australia.

11 state-of-the-art lectures, 26 oral communications and 96 poster presentations have addressed the mechanisms of action and the physiological relevance of VIP, PACAP and related peptides in neuronal development and neuroprotection, immunity and inflammation, endocrine functions, glucose homeostasis, etc..., as well as the therapeutical value of agonists and antagonists of these peptides in various pathological states including heart failure, ischemia, asthma, immune deficiency and cancer.

The satellite Workshop held after the Symposium was dedicated to the molecular mechanisms signaling by VIP, PACAP and related peptides, with special emphasis on novel approaches to the study of signal transduction. The goal of this Workshop was to compare and discuss different pathways and transcriptional programs regulated by VIP, PACAP and related peptides in various models pertaining to growth, cell survival, adhesion/motility, secretion and expression of differentiated phenotypes. The program of the Workshop included keynote presentations by leading experts on transcriptional expression profiling and phosphoproteomic approaches applied to study signaling mechanisms, as well as several short communications and posters to illustrate the various molecular pathways involved in the pleiotropic effects of VIP, PACAP and related peptides.

The abstracts of the Symposium and satellite Workshop have been published in a special issue of *Regulatory Peptides* (vol. 130, pp 105 to 188). The proceedings of the 7th International Symposium on VIP, PACAP and Related Peptides will be published as a volume of the *Annals of the New York Academy of Sciences*. The studies

presented and discussed during the satellite Workshop will form the basis of a Meeting Report for Science's stke which will be published in the Perspectives section of the stke website (www.stke.org).

The Symposium was held in the Halle aux Toiles, a historical building located in the heart of the old town of Rouen, next to the famous Cathedral. Rouen, the capital of Normandy, is one of the major cities in France with the largest number of old and historic buildings with streets of half-timbered houses, and with a rich selection of monuments. Not just the Cathedral, but the equally spacious churches of Saint-Ouen or Saint-Maclou, veritable jewels in stonework, make Rouen the center of flamboyant Gothic architecture. Rouen is also famous for its Gros-Horloge archway, the Renaissance Law Courts and its wealth of original museums dedicated to Joan of Arc, Corneille, Flaubert, as well as for its arts, wrought ironwork, ceramics and antiquities.

All participants and accompanying persons had a taste of Normand hospitality with a get-together party on Sunday September 11, a cheese-and-wine party during the poster session and a concert at the Cathedral on Monday September 12, a half-day excursion to Etretat and a banquet at the Château de Villequier (the village where Victor Hugo has written some of his famous poems) on Tuesday September 13, and a spectacular lights show of the Cathedral (Monet aux Pixels) every evening. On Friday September 16, all participants were invited to join a post-congress tour to Mont-Saint-Michel, a major testimony of Normand history and architecture.

We would like to take this opportunity to thank all our colleagues and coworkers who have contributed to the organization of the Symposium and satellite Workshop, in particular Youssef Anouar, Catherine Beau, Lee E. Eiden, Bruno Gonzalez, Jérôme Leprince, Marie-Christine Tonon and David Vaudry. The organization of the Symposium and Workshop would not have been

possible without the generous support of the European Peptide Society, the Conseil Régional de Haute-Normandie, the Agglomération de Rouen, the European Institute for Peptide Research, INSERM, the Municipalité de Rouen, Science Action Haute-Normandie, The Technopole Chimie-Biologie Santé, Universities of Rouen and Paris 7. We also acknowledge the financial support of various private companies including Bachem, Beaufour IPSEN Pharma, Ciphergen, Debiopharm, Dutcher, Elsevier, Euroscreen, Institut de Recherches Internationales Servier, Johnson & Johnson, Leica, Promega, Sigma and WVR.

The 8th International Symposium on VIP, PACAP and Related Peptides, organized by Dr Victor May, is planned for September 4th – 8th, 2007 and will be held at The Equinox Resort and Spa at Manchester Village, Vermont, USA, with Satellite Symposia on the University of Vermont Medical College Campus.

*Contributed by Hubert Vaudry
and Marc Laburthe*



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4th Bulgarian Peptide Symposium

Dolna Bania, 19 – 21 September 2005



Delegates, 4th Bulgarian Peptide Symposium

The Bulgarian Peptide Society organized the 4th Bulgarian Peptide Symposium, that took place in Rila mountain resort Dolna Bania, September 19–21, 2005. The Symposium aimed to bring together peptide researchers and scientists early in their careers and to give them a common forum to present and discuss their work. There were 45 registered participants from different Bulgarian universities and laboratories and 6 from abroad. The financial support from the European Peptide Society, IRIS Biotech GmbH, Bulgarian Society for Organic and Organometallic Chemistry, University of Chemical Technology and Metallurgy and Bulgarian Peptide Society, allowed us to invite several distinguished scientist and enable participation of more than 20 young scientists and students.

During the three days 13 lectures and 36 posters were presented. The national representative of Bulgarian peptide researchers in EPS, Prof. L. Vezenkov, and Prof. E. Naydenova, officially opened the Symposium on Monday evening. The first lecture was delivered by Prof. J. Martinez (CNRS, Montpellier, France) and concerned «Genome as a source for the discovery of new peptide hormones. Synthesis and pharmacological characterization of new active peptides». Other lectures were presented by Dr. J. Slaninova (CzAS); Prof. T. Barth (CzAS); Prof. J. Miravet (Jaume I, Castellon, Spain); Prof. G. Dibo (Eötvös University, Budapest); Prof. B. Tchorbanov (BAS); Prof. T. Pajpanova (BAS); Prof. I. Stoineva (BAS); Prof. I. Devedjiev (BAS); Dr. D. Danalev (UCTM); DR. V. Lozanov (MA); Ph. D. student I. Minchev (UCTM) and Ph. D. student P. Todorov (UCTM), covering different topics in peptide research. We were very pleased that one third of the short oral communications were given by graduate students.

The scientific program also included posters session and a round-table discussion. The lectures (13) and posters (36), covered topics such as structure–activity studies on bioactive peptides (6), peptidomimetics (22), physiological studies on bioactive peptides (8), synthesis and physiological studies of modified amino acids (7) and structural analysis of peptides (7), isolation and biological activity of natural peptides (7), synthesis of glycopeptides, kinetic investigation and theoretical studies on peptide mimetics (5).

*Contributed by Lyubomir Vezenkov
and Emilia Naydenova*

18th Polish Peptide Symposium

Wroclaw, 4 – 8 September 2005



Participants of the 18PPS

The biennial Polish Peptide Symposium (PPS) is a focal point of the Polish peptide chemists, bringing together a diverse consortium of scientists interested in peptide chemistry, biology, technology and medicine. The interdisciplinary nature of PPS presents a unique opportunity for exchange of information and promotes both collaborative and personal relationships among its participants. The Symposium provides first-hand opportunity to report advancements and innovations in a highly critical and stimulating environment. The Polish Peptide Symposium emphasizes the educational mission and commitment of the Polish peptide chemists to nurture the interest of our students and young scientists in peptide science. Through the opportunity to present research and interact with established scientists, the Polish Peptide Symposium enables the development of new generations of scientists that share in the mission

of our Society and contribute to the advancement of peptide science.

The 18th Polish Peptide Symposium took place on September 4–8, 2005 at the Faculty of Chemistry, University of Wroclaw. The Symposium was organized by members of Chemistry and Stereochemistry of Peptides and Proteins Research Group of the Faculty of Chemistry, University of Wroclaw: Zbigniew Szewczuk, chairman; Piotr Stefanowicz, vice-chairman; Marek Cebzat, secretary; Alicja Kluczyk, treasurer; Monika Biernat; Hubert Bartosz–Bechowski; Marek Lisowski and Anna Staszewska. The conference was attended by over 200 registered participants, including 22 colleagues from Canada, Czech Republic, France, Germany, Greece, Hungary, Lithuania, Russia, Serbia, South Africa, Switzerland, UK, and US. Official languages of the Symposium were both Polish and English. Most speakers presented their lectures in English. All writ-

ten and presented materials (abstracts, posters, manuscripts and slides) were in English.

Following the opening ceremony, Krzysztof Rolka from Gdańsk, Poland presented In Memoriam of Prof G. Kupryszewski, the outstanding scientist, one of the nestors of the Polish peptide chemistry, who died 15.07.2005.

The 47 lectures (12 main lectures, 35 short lectures) were presented in 12 sessions. The main lectures were given by J. Martinez from Montpellier, France; V.J. Hruby from Tuscon, USA; M. Przybylski from Konstanz, Germany; A. Lipkowski from Warsaw, Poland; R. Andruszkiewicz from Gdańsk, Poland; F. Hudecz from Budapest, Hungary; C. Sakarellos from Ioannina, Greece; M. Sakarellos–Daitsiotis from Ioannina, Greece; M. Zimecki from Wroclaw, Poland; M. Kańska from Warsaw, Poland; B. Kolesińska from Łódź, Poland; I.Z. Siemion from Wroclaw, Poland.

18th Polish Peptide Symposium

The Monday evening session was devoted to Prof. I.Z. Siemion on occasion of 50 years of his scientific activity, with contributions of D. Konońska, Z. Grzonka, J. Izdebski, P. Kafarski, J. Silberring, and H. Kozłowski.

In addition to the lectures, there were three poster sessions with over 120 posters, most of them of remarkable quality. Prizes for five outstanding poster contributions of PhD students were awarded to Jolanta Janiszewska, Warszawa; Agnieszka Skwierawska, Gdansk; Anna Staszewska, Wrocław; Magdalena Wysocka, Gdansk; and Ewa Zablotna, Gdansk. Agnieszka Skwierawska's poster entitled «Conformation study of short peptides corresponding to secondary structure elements of proteins» was also chosen by participants of 18 PPS as the best poster presented during the Symposium. The awards were sponsored by: Dean of Faculty of Chemistry, Wrocław Technical University; Dean of Faculty of Chemistry, University of Wrocław; FQS Poland – Fujitsu; and Kubicz – Wydawnictwa Importowane.

One of the main goals of the Organizing Committee was to make the Symposium affordable to young scientists – graduate and postgraduate students. By keeping the costs of the symposium significantly low (with the student fee of 130 Euro), this group constituted nearly half of the Symposium participants. This was possible only thanks to the financial and material support from the University of Wrocław, European Peptide Society, and many generous industrial and institutional sponsors: Anchem, Bioton, Bruker Polska, Candela, FQS Poland – Fujitsu, IRIS Biotech, Linegal Chemicals, Merck/Nov-



PhD students awarded for the best posters presented during the Symposium

abiochem, Municipality of Wrocław, Sigma–Aldrich, Unipap, and Waters. Nine companies were present as exhibitors during the Symposium, thus also helping in the financing of the 18th Polish Peptide Symposium.

The Welcome Reception took place on Sunday evening in the Main Hall of the Faculty of Chemistry, University of Wrocław, and the Symposium Dinner was organized in the Botanic Garden and included a presentation of the historical dance ensemble.

All information concerning the Symposium (including Book of Abstracts and hundreds of photos) is available on the website: <http://www.-18pps.uni.wroc.pl>. The next 19th Polish Peptide Symposium will be organized in Warsaw by Aleksandra Misicka (Warsaw University).

Contributed by Zbigniew Szewczuk and Marek Cebrat

Dutch Peptide Day

Nijmegen, 29 April 2005

On Friday 29 April 2005 the 12th Dutch Peptide Day was held in Nijmegen, in the new buildings of the Department of Sciences of the Radboud University Nijmegen. The one day symposium was attended by over 140 registered participants and displayed a mix of industrial and academic speakers, not only from the Netherlands but also from Germany and Switzerland all presenting in English.

The annual Dutch Peptide Symposium has become a meeting point for peptide chemists where topics are discussed varying from the synthesis of amino acids to small peptides to conjugation of whole proteins onto dendrimers. After the opening by Dennis Löwik (Radboud University Nijmegen), the organizer of the symposium, the following speakers gave a presentation:

- * Eugen Eichenberger (Merck): The C-terminal labeling of peptides using NovaTag
- * Remco Merx (Utrecht University): Highly efficient coupling of beta-substituted aminoethane sulfonyl azides with thio acids, toward a new chemical ligation reaction.
- * Jaap-Willem Back (University of Amsterdam): breaking the bond.
- * Rob Hoen (Groningne University): Rhodium-catalyzed asymmetric hydrogenation: An efficient route to β 2 amino acids.
- * Sander van Berkel (Raboud University Nijmegen): Synthesis and Evaluation of a Water Soluble Tripeptide and its Application in Thrombin Generation Testing.
- * Hinke Malda (Eindhoven University): Multivalent Peptide Dendrimers in Biomedical Applications; Native Chemical Ligation as a tool.
- * Ivo Eggen (Diosynth): DIORASSP® – Diosynth rapid solution synthesis of peptides.
- * Jutta Eichler (German Research Centre for Biotechnology, Germany): Synthetic Mimicry of Discontinuous Protein Binding Sites for the Exploration and Modulation of Protein Function.
- * Gert Mol (Biomade): Enzymatic introduction of monosulfide bridges and dehydroresidues in peptides: enhanced stability and modulated activities.
- * Harm-Anton Klok (Ecole Polytechnique Fédérale de Lausanne, Switzerland): Peptides from a polymer chemistry perspective: controlling structure formation and introducing biological functionality.

Additionally John Kruijtzter from Utrecht University made a short appeal to initiate a discussion forum to be able to quickly share new developments and a practicalities in peptide chemistry for which there seemed to be ample enthusiasm. Second, Wim Schaaper (Pepscan, EPS) briefly pointed at the possibility to become a member of the European Peptide Society (EPS).

Finally, it needs to be mentioned that the symposium had a very low financial threshold for its participants, by keeping the costs of the symposium significantly low, which was possible only thanks to the financial support from the European Peptide Society the main sponsor, and generous industrial sponsors: Novabiochem and Biosolve B.V. In all it was a very successful and interesting day. Next year the Dutch Peptide Day will be held in Maastricht. Information can be obtained with T. Hackeng (Cardiovascular Research Institute Maastricht).

Contributed by Dennis Löwik

NEW

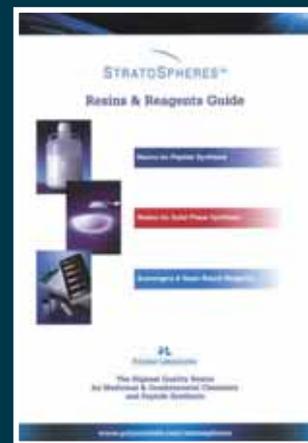
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Workshop

«Biophysics of Membrane – Permeabilizing and Membrane – Translocating Peptides»

Berlin, 13–16 April 2005



In the spring of this year, the Institute of Molecular Pharmacology (FMP), located in Berlin–Buch, organized the workshop on «Biophysics of Membrane–Permeabilizing and Membrane–Translocating Peptides». Margitta Dathe, head of the Research Group «Peptide–Lipid Interactions» was managing both the scientific program, assisted by Alfred Blume, Halle and Andreas Herrmann and Michael Bienert, Berlin, and the local organization of the three–day meeting. The workshop was attended by about 80 participants from Sweden, Switzerland, Portugal, The Netherlands, Italy, Slovenia, Japan, Austria, Estonia, USA and Germany. The meeting was financially supported by the Institute of Molecular Pharmacology, Deutsche Forschungsgemeinschaft, European Peptide Society, Schering (Berlin), Biochrom AG (Berlin), Merck (Darmstadt), Jasco (Groß–Umstadt), Jerini AG (Berlin) and JPT Peptide Technologies GmbH (Berlin).

The 25 lectures and oral communications were presented in five sessions (Biophysical Aspects of Membrane Processes, Membrane–Translocating Peptides, Biophysics of Amyloid Peptides, Antimicrobial Peptides, Peptide Structure and Membrane Dynamics); additionally, 25 posters were presented. Five invited speaker summarized their recent results in excellent main lectures: Ben de Kruiff, Utrecht, summarized the knowledge on the mechanisms of lipid translocation across *E. coli* inner membranes and concluded that phospholipid translocation is protein–mediated, but not dependent on ATP. A model was discussed, how transmembrane segments of membrane proteins can facilitate phospholipid translocation, and in which way cholesterol interferes with this process. In a second lecture, Ben de Kruiff presented studies focussed on the elucidation of the antibiotic activity of lantibiotics. His group was able to



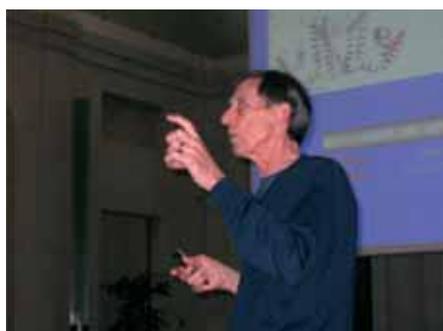
Top: The Gendarmenmarkt in Berlin
Above: A view in the Leibniz Hall during the meeting



Joachim Seelig



Astrid Gräslund



Stephen H. White

demonstrate the docking of the N–terminal part of nisin on the pyrophosphate unit of Lipid II, after which nisin becomes inserted into the membrane and assembles together with Lipid II, forming a transmembrane pore. Stephen H. White, Irvine, summarized shortcomings in the prediction of 3D structures of membrane proteins and concluded that a detailed understanding of the thermodynamic stability of proteins in the complex environment of the lipid bilayer and rules for the recognition of TM segments by the translocon are required. Together with Gunnar von Heijne's group an *in vitro* system based on the cotranslational insertion of model proteins into microsomal preparations has been established, resulting in the first true “biological” hydrophobicity scale. Joachim Seelig, Basel, addressed the question, how cell–penetrating peptides (CPPs) cross cell membranes. He demonstrated that cationic cell penetrating peptides bind strongly to anionic lipids, however, they leave the bilayer intact, and NMR studies demonstrate that lipids are not involved in membrane crossing. Interestingly, CPPs bind 100 times better to heparin sulphate than to anionic lipids, and probably the very fast cellular uptake of fluorescent CPP derivatives is mediated by heparin sulphate. Katsumi Matsuzaki, Kyoto, presented evidences that lipid rafts, especially GM1–rich domains, act as a platform for the conformational alteration and the aggregation of Alzheimer amyloid β –peptides. Fluorescent A β –peptide was found to colocalize with GM1–rich domains on cell membranes of PC12 cells. Cholesterol depletion significantly reduced A β accumulation. Alfred Blume, Halle, analyzed the interaction of cationic peptides with lipid bilayers, using ITC, DSC and FT–IR spectroscopy in order to understand the binding process on a molecular level. The combina-

4th International Conference on Arthropods:

Chemical, Physiological and Environmental Aspects

Stefan Kopeć Memorial Conference
Białka Tatrzańska (Poland), 18 – 23 September 2005

tion of calorimetry with FT-IR yielded information on changes in hydration at the lipid bilayer surface. Employing molecular dynamics simulation approaches, Andreas Herrmann, Berlin, unravelled the conformation of membrane-bound viral fusion peptides and used these informations to understand, how those peptides destabilize the bilayer topology. The results indicate that the average hydrophobic thickness of the lipid phase close to the N-terminus of the fusion peptide is considerably reduced.

Although not mentioned here in detail, the short oral communications and the poster contributions had high quality and helped to have a successful meeting, interesting both for the specialists in peptide biophysics and for newcomers in this field. All sessions took place in the recently reconstructed Leibniz Hall of the Berlin-Brandenburg Academy of Sciences, located on the Gendarmenmarkt, one of the most beautiful places in Germany. No symposium without Symposium Dinner! Thus, the dinner was organized in the famous surrounding of the Königin-Luise-Saal in the Opernpalais, a building located in the street Unter den Linden.

Many participants of the meeting suggested to continue in the accomplishment of such specialized workshops, focussed on peptide-lipid biophysics. Thus, the next workshop on «Biophysics of Membrane-Permeabilizing and Membrane-Translocating Peptides» will be held in Lisbon, Portugal, in April 2007, organized by Dr. Miguel Castanho, Email: castanho@fc.ul.pt.

*Contributed by Margitta Dathe
and Michael Bienert*



Participants, 4th International Conference on Arthropods

The 4th International Conference on Arthropods: Chemical, Physiological and Environmental was held in September 18 – 23, 2005 in Białka Tatrzańska near Zakopane, Poland.

Local Organizing Committee: D. Konopińska (chair), S. Ignatowicz, J. Nawrot, R. Olszak, A. Plech, G. Rosiński, E. Tegowska, C. Wawrzyńczyk, Dr M. Kuczer, Mrs D. Lombarska-Śliwińska, Dr A. Bahyrycz, Mr S. Grodecki, Mrs K. Szymanowska, and Prof. A.B. Hendrich.

Scientific Committee: D. Konopińska, A. DeLoof (Belgium), G. Gäde (South Africa), J. Giebuhtowicz (USA), G. Goldsworthy (UK), C.J.P. Grimmelikhuijzen (Denmark), R.J. Nachman (USA), D. Nässel (Sweden), J. Nawrot (Poland), R. Olszak (Poland), I. Orchard (Canada), G. Rosiński (Poland), F. Sehnal (Czech Rep.), K. Slama (Czech Rep.), I. Ujvary (Hungary), C. Wawrzyńczyk (Poland)

The Conference was attended by 100 scientists from 21 countries representing chemistry and biology of arthropodal hormones as well as peptide hormones. Younger chemists and biologists, PhD-students and students also participated. This event was supported by the Polish Ministry of Education, the Wrocław University, the A. Mickiewicz University in Poznań, Companies Fujitsu and Polgen (Gliwice) as well as the European Peptide Society.

The Conference was dedicated in memory of Stefan Kopeć, pioneer in the field of insect hormones and hormonal systems.

During the Conference 7 plenary lectures were given by: G. Goldsworthy (UK) Old hormones: new tricks (Stefan Kopeć Memorial lecture), G. Baggermann (Belgium), J. Giebuhtowicz (USA), C. Grimmelikhuijzen (Denmark), A. Handler (USA), G. King (USA), R. Olszak (Poland).

Selected papers presented in the Conference will be published in the journal «Pesticides» in 2006.

Contributed by Danuta Konopińska

URGENT REQUESTS FROM THE SECRETARY YEAR 2005 AWARDS EPS–29, GDANSK SEPTEMBER 2006

All members of the Society are invited to send to the Secretary their nominations for the following Awards. Closing date for nominations **1st March 2006**.

For consulting previous award winner please visit the website of our Society: <http://www.pep-soc.com>

JOSEF RUDINGER MEMORIAL LECTURE

Sponsored by PolyPeptide Laboratories

This award is presented «in commemoration of Josef Rudinger's role in the foundation of the European Peptide Symposia and of the diverse contributions he made to peptide chemistry». There is no restriction as to the nationality, age or position of those nominated. Nominations must be supported by evidence of the distinction of the candidate in research on the chemistry, biochemistry or biology of peptides.

LEONIDES ZERVAS AWARD

Sponsored by Bachem AG Switzerland

This award is presented «to the scientist who has, in the opinion of the Council of the Society, made the most outstanding contribution to the chemistry, biochemistry, or biology of peptides in the five years preceding the date of selection». There is no restriction as to the nationality or position of the candidate, but the regulations give preference to younger candidates. Nominations must be supported by evidence of the suitability of the candidate, including a curriculum vitae and a list of publications (with copies of the most important references).

Send nominations by post, e-mail or fax, to Dr Ferenc Hudecz, Research Group of Peptide Chemistry at Eötvös L. University Hungarian Academy of Sciences, BUDAPEST 112

POB 32, H–1518, Hungary, (E-mail: fhudecz@ludens.elte.hu, Tel: 36 1 372 2828, Fax: 36 1 372 2620) by 1st March 2006.

Once received, the nominations will be passed on to the Scientific Sub-Committee, which will select candidates from the nominations, and can if necessary add names to the list. After discussion with the Executive Committee, the Secretary will organise the Council ballot on the nominations.

For consulting previous award winner please visit the website of our Society: <http://www.pep-soc.com>

TRAVEL AWARDS FOR EPS–29

We once again appreciate contributions from the ESCOM Science Foundation and European Peptide Society to enable the Prague Symposium Organisers to arrange travel bursaries for EPS–29 participants. Applications for all these grants have a deadline of **1st March 2006** and should be made to the Chairman of the Organising Committee at the same time as an abstract is submitted for oral or poster presentation.

The ESCOM Foundation Travel Grants awardees should be 30 years or younger at the time of the Symposium and may be PhD students or young post-docs accepted to give poster or lecture presentations at Gdansk, within the field of biomedical research or related to drug discovery.

The European Peptide Society Travel Grants are open to young participants below 35 years of age. Preference will be given to participants who have to travel long distances, and will be restricted to one participant per country, unless funds remain for further allocations. Pre-Doc-toral applicants must send a recommendation from their supervisor.

ELECTION OF NATIONAL REPRESENTATIVES TO THE COUNCIL OF EPS

National Representatives on Council are elected every four years. Election to the Council is for a period of four years, but a member may be re-elected for one further period of four years. It is now time for us to organise the elections for

National Representatives for the period 2006–2010.

The following are the current National Representatives:

Austria: H Ahorn
Belgium: D Tourwe*
Bulgaria: L Vezenkov
Croatia: B Vranesic
Czech Republic: J Slaninova
Denmark: M Meldal*
Finland: H. Lankinen**
France: H Gras–Masse*
Germany: L Moroder*
Greece: P Cordopatis
Hungary: F Hudecz*
Israel: C Gilon
Italy: C. Toniolo
Latvia: U Kalejs*
Netherlands: WMM Schaaper
Norway: O Rekdal
Poland: K Rolka*
Portugal: HLS Maia
Russian Federation: AY Surovoy*
Slovakia: S Zorad*
Slovenia: P Pristovsek
Spain: E Giralt
Sweden: L Baltzer
Switzerland: G. Tuchscherer
United Kingdom: BM Austen

Those marked with * have already served for eight years and are not eligible for re-election in the present round. The National Representative of Finland (**) will stay in office until 2008. Nomination from Belarus and the Ukraine are expected.

Members are invited to nominate their National Representatives using the enclosed form of by letter or by e-mail. Nominees must have given their consent in advance. All nominations must be received by the Secretary not later than **1st March 2006**. If more than one nomination is received from any Country, the Secretary will organise a postal/e-mail ballot among the members who are resident in that Country.

Ferenc Hudecz — EPS Secretary

BOOK Reviews

4th Hellenic Forum on Bioactive Peptides

P.A. Cordopatis, E. Manessi-Zoupa and G. Pairas (Eds)

Typorama Patras, Greece, 410 pp. 2005

ISBN: 960-7620-31-3

This volume comprises the proceedings of the 4th Hellenic Forum on Bioactive Peptides (HFBP), held at the Conference and Cultural Center of the University of Patras, under the aegis of the European Peptide Society, the "Leonidas Zervas" Foundation and the University of Patras. The volume is dedicated to the Memory of Dimitrios Theodoropoulos, Professor of Organic Chemistry of the University of Patras, Chairman of the "Leonidas Zervas" Foundation and for many years the Greek representative in the European Peptide Society.

The content of this volume, the fourth in the series, is based on the scientific contributions presented during the Forum works, among them 16 lectures delivered by both Greek and foreign invited speakers, 9 short oral presentations by young Greek researchers and 33 selected posters. These 58 well documented and presented research articles, cover a wide range of the latest developments in peptide science, including synthetic procedures, structural analysis and their application and/or potential use in pharmacology, immunology and drug development.

Thus, this lavishly printed volume, will be very useful and therefore is warmly recommended to scientists involved in the peptides field and to any peptide-oriented library.

Contributed by Chryssa Tzougraki



New Products

New Autosampler for GPC/SEC

Polymer Laboratories' enhanced PL-GPC 50 integrated GPC/SEC platform now features an optional new autosampler for automated sample handling and increased sample throughput, the PL-AS RT Autosampler.

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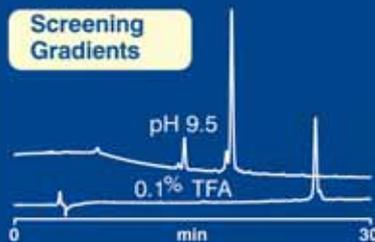
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Polymer Laboratories (PL) has launched a new SPE product line for the effective removal of metal species from organic solutions.

Part of PL's StratoSpheres Σ product range, the metal scavenging series is specially functionalised polymeric SPE devices which are highly effective at removing charged and uncharged metal species from a variety of organic solvents and analytical mixtures. New products include PL-Urea MP SPE, PL-Thiourea MP SPE and PL-Guanidine MP SPE, plus the recently introduced PL-Thiol MP SPE product. After just one pass through the SPE device, metals such as platinum, palladium, tin, lead and ruthenium can be reduced down to trace, or even zero, levels.

If the metal species being sequestered is highly coloured, then in most cases the SPE device will be self indicating, showing the user when the device is nearing its capacity.

This metal removal SPE product line is based around a monodisperse macroporous polymeric SPE material offering a higher loading compared to conventional functionalised silica SPE media. PL's StratoSpheres SPE products are compatible with all polar and non-polar, protic and aprotic, solvents and can be used from pH 1-14.

For further information, contact Polymer Laboratories or visit our website at www.polymerlabs.com/stratospheres/spe.

New Resin for the Solid Phase Synthesis of Resin-Bound Unnatural Amino Acids

Polymer Laboratories has launched a new resin for the solid phase synthesis of resin-bound unnatural amino acids, one of the most commonly used intermediates in combinatorial chemistry, and peptides and peptidomimetics. This resin, PL-BIG-W Resin (the Benzophenone Imine of Gly-Wang), is an addition to Polymer Laboratories' high quality, value for money, StratoSpheresTM product range.

The development of Benzophenone Imine of Gly-Wang has been pioneered by Professors William Scott and Martin O'Donnell from Indiana University Purdue University Indianapolis (IUPUI) for a concept they call 'Distributed Drug Discovery'. One of the principles behind 'Distributed Drug Discovery' is that many potential drug molecules can be produced by simple techniques, using inexpensive solid phase equipment, readily available starting materials and robust synthetic procedures.

Polymer Laboratories' PL-BIG-W Resin is the commercial source of the starting resin used by Professors Scott and O'Donnell. PL's StratoSpheres resins are manufactured with exceptional batch to batch reproducibility, optimized particle sizes and very high loadings for improved yield, economy and speed of operation. These product characteristics contribute to a very high degree of product purity. In the example of 'Distributed Drug Discovery', students conduct reactions six at a time, in a combinatorial 3x2 grid (3 alkylating agents and 2 acylating agents), with simple, inexpensive 'Bill-BoardTM' solid phase equipment from Leads Metal Products. Starting with PL-BIG-W Resin, each student carries out a control synthesis (alkylation with benzyl bromide and acylation with Fmoc chloride) in one of these six positions. Using the PL-BIG-W Resin from Polymer Laboratories, they routinely obtain the final product with an LC/MS analytical purity of 90-98%.



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Polymer Laboratories (PL) has launched a new SPE product for effective removal of Palladium species from organic solutions, PL-Thiol MP SPE.

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16 March, 2006

For further information please contact:

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E-mail: peptides@bioch.unimaas.nl

5th HELLENIC FORUM ON BIOACTIVE PEPTIDES

Patras, Greece

14–16 May, 2006

For further information please contact:

Prof. Paul Cordopatis

Department of Pharmacy

University of Patras

GR–26500 Patras, Greece

Tel.: +30 2610 997713, +30 2610 969 934

Fax: +30 2610 997714

E-mail: pacord@upatras.gr

Website: www.pharmacy.upatras.gr/peptide_forum_2006

10th NAPLES WORKSHOP ON BIOACTIVE PEPTIDES

Naples, Italy

11–14 June, 2006

For further information please contact:

Prof. Ettore Benedetti

C.I.R.Pe.B. and Dipartimento delle

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1st INTERNATIONAL SYMPOSIUM FOOD, VETERINARY AND MEDICAL APPLICATIONS OF ANTIMICROBIAL PEPTIDES

Nantes, France

21–23 June, 2006

For further information please contact:

Dr. Djamel Drider

LMAI – ENITIAA

Rue de la Géraudière, BP 82225

44322 Nantes cedex, France

Tel.: +33251785542;

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Email: drider@enitiaa-nantes.fr

Website: www.enitiaa-nantes.fr/ampm/

9th CHINESE INTERNATIONAL PEPTIDE SYMPOSIUM

Shanghai, China

3–6 July, 2006

For further information please contact:

Prof. Hongyan Xu

Shanghai Institute of Organic Chemistry

Chinese Academy of Sciences

354 Fenglin Rd

Shanghai 200032, China

Tel: 0086–21–54915326

Fax: 0086–2164189186

Email: xhongyan@mail.sioc.ac.cn

Website: www.glschina.com/cps/home.htm

1st FECS EUROPEAN CHEMISTRY CONGRESS

Budapest, Hungary

27–31 August, 2006

For further information please contact:

Prof. Gábor Náray–Szabó

Department of Theoretical Chemistry

Eötvös Loránd University

H–1117 Budapest, Hungary

Email: naraysza@para.chem.elte.hu

Website: www.chemsoc.org/fecs

29th EUROPEAN PEPTIDE SYMPOSIUM

Gdansk, Poland

3–8 September, 2006

For further information please contact:

29th EPS Secretariat,

Faculty of Chemistry,

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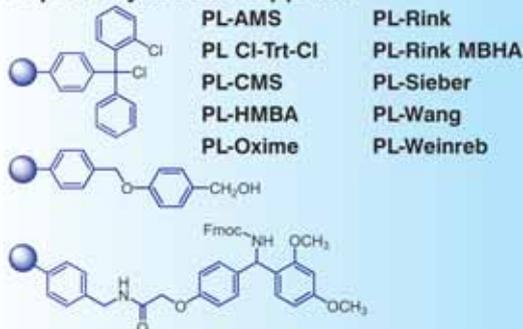
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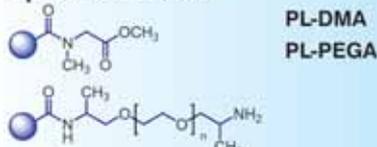
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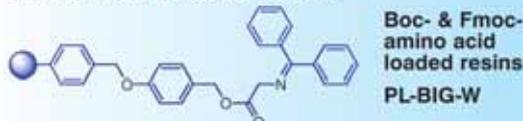
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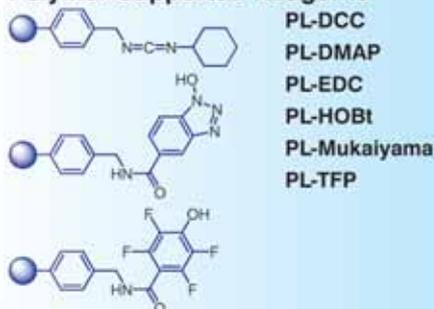
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PEPscreen™: Custom Peptide Libraries

High-throughput peptide solution for generating fast leads in screening applications

Sigma-Genosys has developed a proprietary peptide synthesis platform using state-of-the-art technology. This technology allows the fastest and most efficient high-throughput parallel synthesis of milligram quantities of peptide libraries. The PEPscreen service provides researchers the ability to order large numbers of extremely affordable custom peptides delivered within 14 days.

Features and Benefits

- Compatible with robotic automation for resuspension and dispensing in screening applications
- Ideal for performing solution-phase assays
- Suitable for robotic production of peptide microarrays
- N-terminal modifications and non-standard residue availability allows for maximum flexibility in project design
- Delivery of product within 14 working days allows for faster target identification

Product Specifications

- Quantity: 0.5-2 mg
- Length: 6-20 residues
- Purity: ~70% (based on 15 residues)
- Analysis: MALDI-TOF mass spectroscopy on 100% of peptides
- Format: Lyophilised in 96-well format (2-D bar-coded tubes)
- Shipped with electronic PDF files of QC data and peptide sequence map
- Minimum order size is 48 peptides

Modifications Available

- N-terminal Acetylation
- N-terminal Biotin
- N-terminal Fluorescein
- D-amino acids
- Non-standard residues
- Phosphorylated residues
- C-terminal acid or amide

Pricing

- €47 per peptide
- N-terminal Acetylation: No additional fee
- N-terminal Biotin: €10 in addition to base peptide price
- N-terminal Fluorescein: €14 in addition to base peptide price
- D-amino acid incorporation: €5 in addition to base peptide price
- Non-standard residue incorporation: dependant on residue
- Phosphorylated residues (pSer, pThr, pTyr): €10 in addition to base peptide price
- C-terminal acid or amide: No additional fee



Ordering Information

For more information refer to www.sigma-genosys.eu.com/peptides

For technical inquiries please contact customerservices@sigma-genosys.co.uk

Please format sent orders by listing sequences in an 8-channel orientation (peptide #1 = A1, peptide #2 = B1, peptide #8 = H1, peptide #9 = A2, etc.)

Prices are subject to change without notification.