
THE EUROPEAN PEPTIDE SOCIETY NEWSLETTER



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EPS-27



SORRENTO - ITALY
August 31th - September 6th, 2002

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PEPTIDES IN ITALY

Peptide Science in Italy dates from 1960, when Ernesto Scoffone, after spending a year at the Rockefeller Institute in New York with Stanford Moore and William Stein, came back to Padova and organized a small peptide chemistry group at the Institute of Organic Chemistry, now the Department of Organic Chemistry.



Ernesto Scoffone.

Scoffone and his first associates F Marchiori and R Rocchi embarked on a study of active esters, and soon employed them for the synthesis of biologically important molecules. The first achievement was the synthesis, in solution, of a number of analogues of the S-peptide, the N-terminal eicosapeptide fragment of ribonuclease A which is produced by subtilisin cleavage. These synthetic peptides were used for an extensive investigation on the chemical and structural features required for the non-covalent association of the S-peptide with the rest of the molecule (S-protein), resulting in the full regeneration of catalytic activity. In the sixties other researchers (G Borin, A Fontana, L Moroder, E Peggion, A Scatturin, AM Tamburro, C Toniolo, G Vidali,) joined the group, and the Padua school soon became a significant centre of peptide research.

Rocchi spent a year (1963-64) at Yale University working with F Richards and, in 1970, was promoted full professor, moving to the University of Ferrara. With his associates there, in particular R Tomatis and S Salvadori, he worked on the solution synthesis of the porcine pancreatic trypsin inhibitor and other biologically active peptides. New amino acid active esters were discovered and utilized by the Ferrara group, at that time including also M Guarneri and CA Benassi. In 1975 Tomatis and Salvadori, both now professors in the Ferrara Department of Pharmaceutical Sciences, became involved in a research project dealing with the physiological ligands

of some opioid peptides. Recently, Salvadori and his co-workers became interested in a biological system comprising a new GPCR and its physiological ligand, the heptadecapeptide nociceptin, while Tomatis is active in the field of immunogenic peptides and HIV-1 protease inhibitors. Novel MHC class I/peptide association and the role of specific residues in the T cell activation is being studied with the aim of designing novel peptide epitopes derived from viral and tumor antigens, to be used in new immunotherapy protocols. A systematic evaluation of the structure-activity relationships for HIV inhibitors and anti-HIV activities has led to the delineation of a set of structural features that appear to afford inhibitors with satisfactory pharmacokinetic profiles.

The history of peptide chemistry in Naples began in the early sixties, with work centred initially on conformational studies of polypeptides, and subsequently on studies of natural and synthetic peptides and proteins by theoretical calculations, single crystal X-ray diffraction analyses, and NMR. The visits to the United States at the end of sixties of E Benedetti, and C Pedone (to the Polytechnic Institute of Brooklyn for a scientific collaboration with M Goodman) and of P Temussi and L Paolillo (to leading laboratories in the NMR field) were seminal. In particular, the association with Goodman's group has been very productive for almost forty years now. Benedetti and Pedone, later joined by many younger researchers, and in close collaboration with Toniolo's group at the University of Padua, have made a substantial contribution to the determination of the conformational preferences of non-coded amino acid residues, such as α,α -disubstituted glycines, by solving a very large number of crystal structures of peptides containing these residues. Since these early studies, the scientific involvement has concerned the structure-activity relationships of several natural systems such as gramicidin A, the channel-forming peptaibol antibiotics of the alamethicin family, peptides of the amanita toxin family, and several analogues of aspartame. Presently the researches have achieved a greater diversification with emphasis on the mechanism of action of peptides and proteins. New peptide derivatives able to complex a series of metals are being developed to target receptor sites which are overexpressed in human tumors, and to produce high contrast effects in magnetic resonance imaging and nuclear medicine techniques. Structural studies are also being carried out on proteins endowed with antitumor activity, thermostable proteins of pharmaceutical and biotechnological interest, mutated proteins causing genetic diseases and recombinant enzymatic systems, active on selected molecules. In 1994 Benedetti was appointed Italian representative on the Council of the European Peptide Society.

V Pavone and his associates at the University of Naples have explored over the years, by X-ray crystallography, NMR analysis and theoretical calculations, the conformational properties of cyclic and

bi-cyclic peptides containing β -amino acids. More recently they have focused their efforts on a better understanding of the mechanism of action of metallo-proteins and metallo-enzymes, especially regarding the role played by metal ions in biological processes, such as folding, molecular recognition and substrate activation. These studies have been carried out through the design of miniaturized metallo-proteins, peptide-based synthetic models of natural macromolecular systems providing sufficient size to reproduce their biological functions. Still in Naples (Arco Felice), T Tancredi, now head of the NMR Laboratory of the Istituto di Chimica MIB of the CNR, has been active in the field of conformational investigations on peptides and proteins since 1970. The interests of Tancredi's group have focused on the structures of nucleoproteins, peptide sweeteners, opioid peptides, cytoprotective peptides, and peptide hormones. His current researches deal with the structure determinations on pain-peptide, chemosensory-proteins, BS-RNase and peptide-protein interactions.

A peptide group developed in Rome in the seventies, at the Centre of Pharmaceutical Chemistry (CNR) and at the Department of Pharmaceutical Studies of the University "La Sapienza". G Lucente and G Zanotti were the first leaders of this group, the research themes of which mainly concerned SAR studies on bioactive natural cyclopeptides and structural, conformational and functional investigations on synthetic cyclic and linear peptide models. In collaboration with the Heidelberg group of T Wieland, SAR studies on the lethal cyclopeptide families, amatoxins, phallotoxins and virotoxins were carried out by studying a large series of synthetic analogues. Some synthetic bicyclic peptides were studied as models of the binding site of metal binding proteins. Linear peptides and glycopeptides suitably functionalized on the side chains, have been investigated as models of energy transfer reactions. Several results have been obtained in the field of small ring cyclo-peptides by studying the conformational preferences and the interactions leading to stable tetrahedral adducts structurally related to the peptide portion of the ergot-alkaloids. The conformational properties of sulfonamido-pseudo-peptides and their retro-analogues have been extensively investigated and a variety of approaches suitable to improve metabolic stability, reduce conformational flexibility and enhance potency and selectivity of small, bioactive peptides have been developed. Transition metal-catalyzed reactions have been also used to elaborate α -amino acids.

In the seventies, the Padua group carried on researches on the synthesis of large polypeptide molecules and succeeded in the solution synthesis of fragments spanning the entire sequence of baker's yeast iso-1-cytochrome c and the C-terminal 66-104 sequence of horse heart cytochrome c. At the same time, other aspects of peptide research developed at the Department of Organic Chemistry and at the Biopolymers Research Centre (CNR) and several groups pursued projects dealing with SAR studies on synthetic and natural bioactive peptides.

F Marchiori, G Borin and their co-workers, at the Biopolymers Research Centre, were involved, in different times, in research dealing with the synthesis, conformational analysis and biological properties of protamines, leupeptids and leupeptin analogues and the postulated calcium binding sites I and II of bovine brain calmodulin. Conformational and pharmacological investigations have been also carried out on some synthetic opioid peptides, antamanide derivatives and, in collaboration with E Wünsch and L Moroder at the Max Planck Institute in Munich, on human gastrins I and II. Borin and his associates are currently interested on studying the conformational and pharmacological properties of some synthetic substrates and inhibitors of tyrosine protein kinases and phosphatases, and in aspects of melatonin.

E Peggion, who joined the Scoffone's group in 1963 after four years of work in industry, started to work on the synthesis and conformational characterization of poly- α -amino acids. After spending a year (1965-1966) with Goodman, he worked on the conformational properties of aromatic poly- α -amino acids, using chiroptical methods, and the interaction of metal ions with various peptide systems including calmodulin fragments. In 1975 he was appointed full professor at the University of Padua, and during the ensuing years he was visiting professor at the University of California, San Diego (1979), at the Max-Planck Institute für Biochemie, Martinsried (1980) and at Harvard (1998). In 1985, S Mammi, recently appointed full professor in Padua, after spending three years in San Diego, joined Peggion's group. The research of the group was concentrated on synthesis and conformational analysis of bioactive peptides, glycopeptides, peptide models and proteins, using circular dichroism, 2D-NMR and computer simulations. In particular, the work was dealing with gastrin-related peptides, peptides involved in the modulation of the activity of phospholipase A₂, FABP from chicken liver and hGM-CSF fragments. At present the research interests range from polypeptides forming amphiphilic helices, to analogues of parathyroid hormone peptide (PTH) and PTH-related protein, to GM-CSF and its synthetic analogues, to peptide inhibitors of Gyrase B. The work on PTH is carried out in collaboration with M Rosenblatt and M Chorev (Harvard Medical School, Boston, MA, USA) and D Mierke (Brown University, Providence, RI, USA).

Rocchi returned to Padua in 1975 and his scientific interests were initially devoted to the preparation of series of tuftsin analogues, to the synthesis of the glycopeptide sequence of the human fibronectin defined

by monoclonal antibody FDC 6, and to the preparation of glycosylated poly- α -amino acids as models of antifreeze glycoproteins. Rocchi and his associates are currently interested in glycopeptide synthesis and in investigating the effect of glycosylation on the conformational features and pharmacological properties of bioactive peptides. Specific studies on opioid peptides demonstrated that *O*- and *C*-glycosylation halved the peptide affinity for brain μ opioid receptors (dermorphin) and δ opioid receptors (deltorphin) but enhanced its potency and the glycosylated analogues were more effective than the unmodified peptides in reducing the nociceptive response to radiant heat. In particular the higher blood-brain permeability index allows for a decrease in the peripheral dosage of some opioid peptides. Synthetic and structural studies on peptide antibiotics (drosocin and apidaecin) and linear and cyclic neuropeptides (bradykinin, kallidin, and kinins isolated from insect venoms) have been another of Rocchi's group's long-standing research interests. Productive collaborations have been carried out with T Piek (University of Amsterdam), L Negri (University "La Sapienza", Rome) and R Gennaro (University of Trieste).

C Toniolo, after spending a year (1968) with Goodman at the Polytechnic Institute of Brooklyn, worked on conformational analysis of oligopeptides, and in 1969 he published the first conformational analysis of helical oligopeptides by using a combination of CD and high-resolution NMR. During the ensuing years he continued his collaboration with Goodman on β -sheet forming peptides and opened new collaborations (M Mutter, P Balaram) to investigate the β -sheet breaking properties of Pro, Aib, and D-amino acids and the conformational features of peptides covalently linked to polyethylene glycol. Since the late seventies, Toniolo and his associates have been working on the preferred conformations of backbone modified peptides (containing tetrazolyl-amino acids, γ -lactams, α,β -dehydro-amino acids and α -tetrasubstituted amino acids). A collaboration in this field with Benedetti in Naples resulted in the characterization of the 3_{10} -helix, a novel important element of peptide and protein architecture. Toniolo, who was appointed full professor at Padua in 1980, has been visiting professor in several laboratories in India, USA and Japan and is currently serving as an Editor of the new edition of the Houben-Weyl volumes on "Synthesis of Peptides and Peptidomimetics". His present scientific interests range from the exploitation of rigid helical spacers and templates in molecular recognition, photophysics, catalysis and material science, to the study of the mechanism of membrane activity of peptaibol antibiotics.

GM Bonora, a former associate of Toniolo, now a professor in Trieste, has shifted his interest to polynucleotides and nucleic acids.

But there is more to say about Padua. C Di Bello, after initial studies concerning racemization problems and amino terminal-protection in peptide chemistry, carried out research in solid phase peptide synthesis and strategies for semi-synthesis of biologically important molecules. After his appointment in the Faculty of Engineering, he became interested in the development of innovative monitoring systems and of control algorithms for the full automation of SPPS. At present Di Bello and his associates are involved in studies concerning the structure-bioactivity of peptides fundamental for the pathogenesis of the HIV virus and for tissue engineering.

In the seventies and eighties, several researchers belonging originally to Scoffone's group (see above) moved from Padua to other Universities. Scatturin was appointed professor at the University of Ferrara, and was mainly involved in biological and conformational studies on synthetic bioactive peptides. Since 1984, his group has been working on agonist and antagonist chemotactic peptides. In the late eighties he developed an increasing interest in α -aminoisobutyric acid containing peptides and investigated the conformation of the peptide antibiotic Leucinistatin A, both in solution and in the solid state. Recently his interest has been focused on a new class of *N*-protected amino acids and peptide ligands, able to bind Re(V) and Tc(V), in order to obtain potential radiopharmaceutical compounds. Tamburro became professor in Potenza, where he continued to develop his research on the structure of collagen-like peptides and on the stereoselective synthesis of unnatural amino acids. In the mid-seventies, Moroder moved to the Max Planck Institute in Martinsried. Vidali spent many years at the Rockefeller Institute in New York before moving to Genoa, where he sadly died prematurely a few years ago. Fontana remained as full professor in Padua, but turned his attention to protein chemistry and biotechnology.

A peptide group is presently active in Ancona at the Department of Materials Sciences, where M Orena is involved in the stereoselective synthesis of unnatural and conformationally restricted amino acids to be used for the preparation of peptide and peptidomimetic systems (GABA analogues, dipeptides containing a γ -lactam ring). The group regularly uses molecular modeling methods for investigating the peptide secondary structures and ligand-receptor interactions. In the late eighties a laboratory of peptide chemistry was started in Firenze at the Department of Organic Chemistry. This group, led by AM Papini, is active in the design, synthesis and immunological activity of modified peptides, particularly glyco- and lipopeptides. It recently moved to the new "Polo Scientifico" of the University of Firenze and was implemented thanks to the joint venture with a biotech company interested in the field of multiple sclerosis.

The pharmacology of bioactive peptides is actively investigated in Rome at the Institute of Medical Pharmacology, University "La Sapienza" where P Melchiorri and L Negri are continuing the tradition of Erspamer's group, and at the Department of Biochemistry, Biophysics and Macromolecular Chemistry of the University of Trieste, where the group of R Gennaro studies the pharmacological properties of antimicrobial peptides.

Among Italian industrial laboratories, the pharmaceutical company Farmitalia (then Farmitalia Carlo Erba), in Milan, became an important centre of peptide research in the early sixties. The activity of the Farmitalia group can be divided into two periods. The first one, the golden age, spanning about a quarter of a century, was characterised by the collaboration with Erspamer. A number of peptides, identified by Erspamer in extracts of marine invertebrate and amphibian skin, were isolated, sequenced and synthesised. Hundreds of analogues of tachykinins, bradykinins, CCK- or gastrin-like peptides, bombesin-like peptides, sauvagin-like peptides and opioid peptides were prepared for structure-activity studies. The discovery of these non-mammalian peptides contributed greatly to the understanding of the physiological role of the analogous peptides in mammals (hormones, neurotransmitters, neuromodulators) and to the knowledge of their structural requirements. In the second period the attention of the group was focused both on the synthesis of a number of analogues of mammalian peptides (endothelin, thymic humoral factor) and the search of bombesin-receptor antagonists for antitumor activity. The development and production of a few peptides for marketing (eledoisin and caerulein) or clinical studies (thymic humoral factor) were also accomplished. Among the people involved, in different times and ways, A Anastasi, L Bernardi, R de Castiglione, M Galantino, L Gozzini, PC Montecucchi and G Perseo are all worthy of note.

The first nucleus of peptide chemistry in a chemical industry in Rome dates back to 1970 when A Verdini established himself on the premises of ENIRICERCHE, the research division of the petrol group ENI. During the seventies and eighties the size of the group kept growing including among others E Bianchi, F Bonelli, V Cacciagli, A Pessi, M Pinori, A Sisto and G Viscomi, all of whom are still active in the field. The scientific interest of the group, initially devoted to the study of collagen-like polymers, shifted to the study of biologically active peptides with potential pharmacological applications. In 1989-1990, the reduced interest of the ENI group in pharmaceutical research prompted many of the members of the group to leave and to establish their own laboratories.

Verdini with M Pinori and P Mascagni introduced peptide chemistry to the pharmaceutical company Italfarmaco (Milan). Retro-inverso peptides, cardiovascular peptides, GPCR antagonists and kinase inhibitors are among the research interest of the group. In 1996, M. Pinori set up to build in CHEMI (part of the Italfarmaco group) a laboratory for bulk peptide production, aimed at the pharmaceutical market. In particular C Viscomi, now at the Apha-Wasserman (Bologna) applied for the first time in Italy the non-linear (displacement) chromatographic mode for large-scale peptide purification. The CHEMI peptide laboratory, which is still unique in Italy, was successful and is currently active in bulk manufacturing of both custom and generic peptides.

In 1990 Pessi and Bianchi joined the newly inaugurated IRBM (Istituto di Ricerche di Biologia Molecolare) which was established in Pomezia (Rome) as a joint venture between the Italian SIGMA TAU and the American pharmaceutical giant Merck, and is now fully owned by the latter. Together with A Wallace, they have pioneered combinatorial peptide chemistry in Italy. Their contributions to the field include inhibitors of farnesyl-protein transferase as anticancer agents, novel opioids from a β -turn library, and several inhibitors of the protease of the Hepatitis C virus, a field where IRBM is now considered a world leader. In 1999 Pessi was among the founders of the European Society for Combinatorial Sciences. A continuing interest of the laboratory is the use of small protein templates to prepare conformationally constrained peptides and peptide libraries. Also of general interest for the peptide community, the group has recently developed the first method for Fmoc solid-phase synthesis of peptide thioesters, the key intermediates in chemoselective ligation. This body of work was recognized by the European Peptide Society with the Leonidas Zervas Prize, awarded to Pessi during EPS-26.

In 1986 in Florence, the Research Department of Menarini Pharmaceuticals launched a peptide synthesis laboratory, initially established and managed by P Rovero, who in 1999 moved to the University of Salerno. The research activity of this small group was focused on structure-activity relationship studies of peptide neurotransmitters, particularly tachykinins and kinins, and the development of pharmaceutical relevant antagonists. At present L Quartara, CA Maggi and their colleagues are interested in the lipophilic modification and structural characterisation of kinin analogues. In Menarini's Rome base, A Sisto pursues the design of peptidomimetic GPCR antagonists, both through computer-aided modelling and combinatorial chemistry, and V Cacciagli has developed highly sophisticated process-scale procedures for the flow SPPS of peptide mimetics.

*Contributed by Raniero Rocchi
EPS Chairman*

BIOLOGICALLY ACTIVE PEPTIDES VII



BAP-7 participants.

In April (25th-27th) this year, the Institute of Organic Chemistry and Biochemistry of the Academy of Sciences of the Czech Republic hosted the 7th National Peptide Conference, entitled Biologically Active Peptides VII, BAP-7. More than fifty Czech and Slovak peptide researchers assembled, together with five distinguished invited guests from abroad. The Conference was opened by the director of the Institute, Dr A Holý, who briefly greeted the guests: Professor F Hudecz from Budapest, Secretary of the EPS; Dr Š Zórad, from Bratislava, representative of Slovakia; Professor L Vezekov from Sofia, representing Bulgarian peptide scientists; and Dr M Flegel from Prague, representative of Czech peptide researchers. Dr Milan Zaoral, of Desmopressin fame, and Nestor of peptide research in the Czech Republic, who only a few days later celebrated his 75th birthday, was welcomed as special honoured guest of the Conference.



Dr M Zaoral and his lady at BAP-7.

Plenary lectures were delivered by Dr Flegel (PolyPeptide Laboratories, Prague) on peptide production and connected matters; Professor Hudecz (Hungarian Academy of Science, Budapest) on the immunorecognition of epitope peptides; Dr A Mucha (Wrocław University, Poland) on the synthesis of phosphoramidate and phosphinic dipeptide analogues – inhibitors of leucine aminopeptidase; and Professor A Aubry (Nancy University, France) on pseudopeptides as structural tools for biochemical investigations. There were some forty further lecture and poster contributions, of which we would like to single out for special mention the nice lecture on fluorescent labelled amino acids for peptide synthesis, given by the youngest participant, A Cencialová, aged only 21. All the contributions will be published in English as short communications in the Collection *Symposium Series*.

Sponsor contributions enabled a get-together party which was greatly enlivened by Professor Patočka's reading of his alliteration on the letter P, about Prague peptide researchers.

We believe that the meeting was successful, and that peptide research in the Czech Republic and Slovakia is continuously developing. We were happy to see many young scientists at our Conference. We hope that their interest in peptides will survive. The next meeting in the series should take place in April 2003.

Contributed by Jiřina Slaninová

POLISH PEPTIDE SYMPOSIUM

The 16th Polish Peptide Symposium was held 1-4 September 2001 in the Polonia Institute of the Jagiellonian University located near Krakow. The meeting was held under patronage of the Rectors of the Jagiellonian University and the auspices of the European Peptide Society, and was partially supported by the European Commission. The symposium was organized by Jerzy Silberring (Chairman), Piotr Laidler (Vice-Chairman), Marek Smoluch (Secretary) and Krzysztof Rolka (Chairman of the Scientific Committee). A Dubin, M Kowalczyk, P Mak, A Sciubisz, and P Suder also substantially contributed to the organization. The aim of this bi-annual meeting was to discuss the present achievements in peptide research and their potential application in pharmacology/medicine (peptidergic drugs), chemistry (synthesis including combinatorial synthesis, conformational studies, structure-activity-relationships) and physiology (new functions in drug addiction, pain and neurodegenerative disorders (Alzheimer's and Parkinson's diseases, etc). The conference was the sixteenth meeting under the title Polish Peptide Symposium, but for several reasons it was also a first for us. For the first time it was hosted by the research community of Krakow as a recognition of the research and introduction of the biological mass spectrometry in neuropeptide research in Poland. It was the first meeting of this series in the new Millennium, and, for the first time, it was truly international.



The opening ceremony, PPS-16.

***J Silberring (Chairman, standing), J Jedlinski (Deputy President of Krakow),
M Nowakowska (Deputy Rector of the Jagiellonian University),
L Proniewicz (Deputy Dean of the Faculty of Chemistry, Jagiellonian University).***

After welcome greetings by Maria Nowakowska (Deputy Rector of the Jagiellonian University) and J Jedlinski (Deputy President of Krakow), the most important event of the opening ceremony was a fascinating lecture "The Dynamic Brain" given by Willem Hendrik Gispen. The programme was divided into eight sessions; one of them was a European Peptide Society Session: "Enzymes - their substrates and inhibitors". Also, "Future perspectives of peptides" and a Round Table discussion headed by Jerzy Vetulani are worth noting (participants: D Desiderio, H-U Demuth, R Ekman, G Kupryszewski, M Leplawy). Several plenary keynotes given by top researchers will be long remembered. Dominic Desiderio (USA)

showed, in very elegant and clear language, the possibilities for using advanced mass spectrometry to study human neuropeptidergic systems. This topic was further strengthened by Jonas Bergquist (Sweden) describing ultrasensitive techniques to identify peptidomics in clinical neuroscience. Hans-Ulrich Demuth (Germany) described how biotechnology company develops potential drugs to treat diabetic patients. Wladyslaw Lason (Poland) presented pharmacological aspects of testing peptide bioactivity. M Bednarek (USA) and P Kafarski (Poland) delivered lectures on the synthesis of novel and selective ligands and phosphopeptides. Z Grzonka (Poland) described structural studies of cysteine protease inhibitors, and K Janota (USA) presented advantages of the LC/MS from the industrial point of view. An overview of the conformational studies of peptides was given by A Bierzyński (Poland), and M Macht (Germany) presented a complete strategy for the identification of cyclic peptides. U Hellman (Sweden) and J-P Chervet (The Netherlands) gave very elegant and detailed overviews on microtechniques for peptide mass fingerprinting and alternatives to 2-D gels in proteome research. V Torchilin (USA) told about carriers for imaging agents, R Ekman (Sweden) described a novel insight on the peptides and their origin in the cell nuclei, and F Nyberg (Sweden) presented possibilities of manipulation of enzymatic activities cleaving neuropeptides, as a possible pharmacological tool to treat pain, psychiatric disorders and drug addiction.

The intention of the Organizing and Scientific Committees was to promote this meeting among younger scientists. An opportunity to have direct contact with internationally recognized scientists, short oral presentations, and discussions in English gave a perfect chance for young researchers. The Conference had, for the first time, an interdisciplinary profile, gathering together chemists, biochemists, physicists, immunologists and pharmacologists. The lectures and posters were arranged to give a balanced overview of all aspects of modern peptide science. According to the participants, the meeting was very successful with a very high scientific impact.

Contributed by Jerzy Silberring

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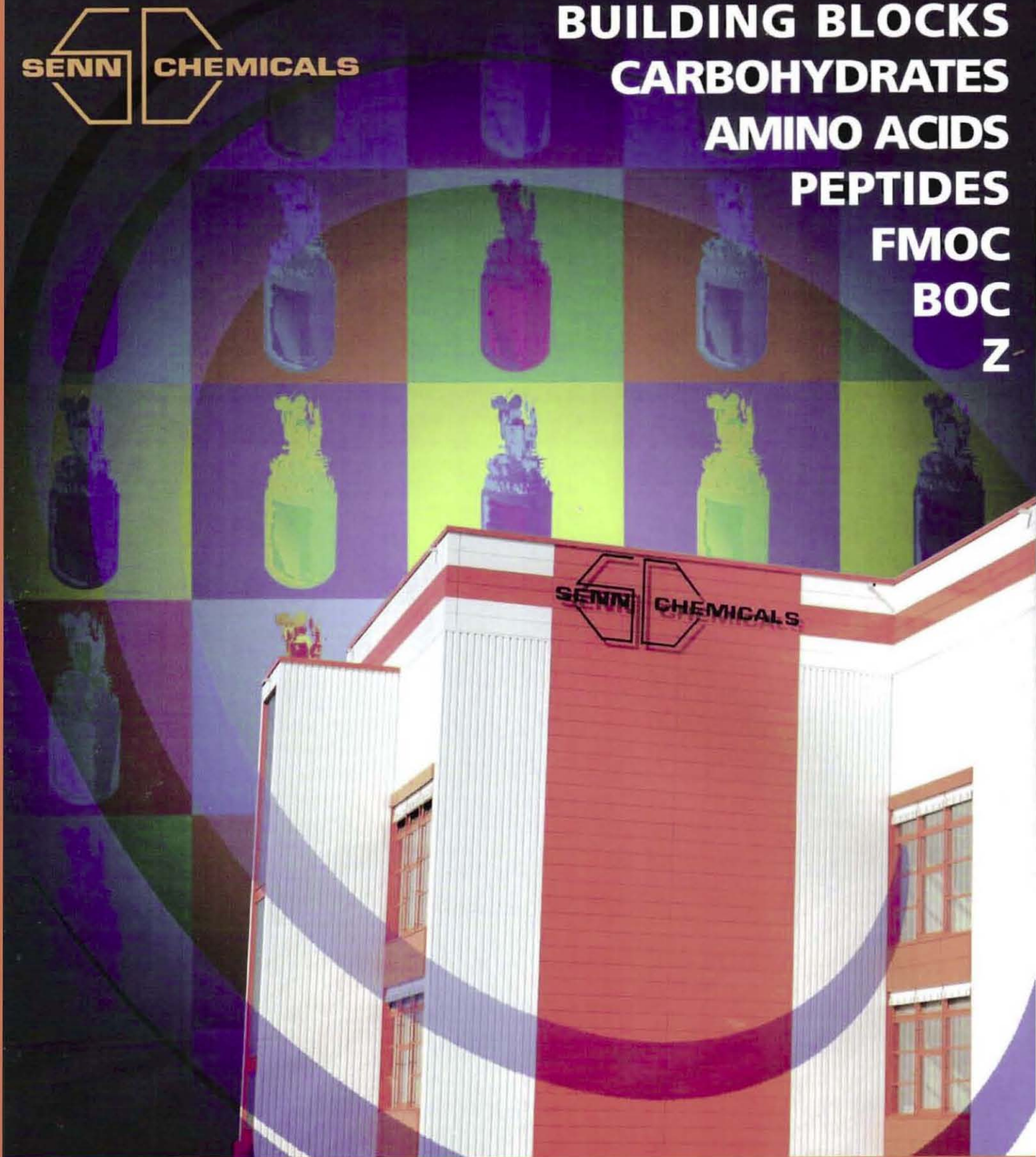
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PEPTIDOMIMETICS

The 4th Symposium on Design, Synthesis and Function of Peptido- and Proteinomimetics was held again at the Sol Cress Holiday Resort in Spa 9-14 September 2001. As before it was very successful. The weather was so rainy that most of the participants attended the lectures and oral communications very assiduously.

Although the organisers had planned a meeting with many opportunities to meet and discuss, the programme included 16 invited lectures, 12 oral communications and 24 poster presentations.

As usual, the audience was very international, with participants from Europe and the USA, but also from Canada, Russia, Israel and Australia. There was also a good mixture of academic and industrial scientists. Bertrand Castro delivered the introductory lecture. He illustrated very well the industrial constraints to peptidomimetics as seen by a former academic. The subject of the chirality of drugs was discussed. Most of the lectures dealt with the various approaches to generate the mimics: either by synthesis of backbone- or stereochemically-modified natural molecules, and subsequently looking to their agonist or antagonist properties or by using the many available cloned receptor molecules to select suitable structures from product libraries, existing ones or generated by combinatorial synthesis. Many talks were devoted to synthetic methods, including "classical" organic chemistry, combinatorial chemistry, enzymatic synthesis and very accurate and selective electrochemical methods. New applications of peptide analogues linked to radionuclides are producing new radiopharmaceuticals for the detection as well as radiotherapy of tumours. Very impressive results were shown. This time, conformational aspects including NMR or X-rays were less present during the talks and appeared at the poster presentations, but the development of computer programs is in full progress.

Following tradition, there was a Wednesday evening concert, by the Sine Nomine Orchestra conducted by Veronique Flammang. This musical illustration of our culture was very welcome after the shock felt by all the participants the day before (September 11), when the news of the aggression to our civilisation had hit us.

We are grateful to the companies who sponsored the Symposium and /or promoted their products at exhibition booths. They contributed very much to the finances of this modest Symposium.

Contributed by Georges Van Binst

7th EPTON SPS SYMPOSIUM

Roger Epton's 7th Symposium "Innovation and Perspectives in Solid Phase Synthesis and Combinatorial Libraries" took place at the University of Southampton 18-22 September 2001, under the auspices of the Society as usual. And, also as usual, it was a great success despite the dark shadow cast by the catastrophic terrorist attack of 11 September. Some expected delegates from the other side of the Atlantic understandably could not come, but the number of absentees was small, and had no noticeable effect on the



The Advanced ChemTech booth at SPS-7.

Symposium, which was truly international with many familiar faces from distant parts. Around Southampton, in fact, the Boat Show seemed

to be the greater perturbation – delegates who had hoped to be sybaritic in an hotel were unlucky unless they had booked a very long time in advance. There was an excellent and full scientific programme, an interesting exhibition, T-shirt largesse by our Sponsors ACT, and the social events were fully subscribed. Carry on Epton!



John Wade (tall) and John Jones (short) at SPS-7.

Contributed by the Editor



JOURNAL OF PEPTIDE SCIENCE



During 2001, many Members will have had the advantage of a free subscription to *J. Peptide Science*, which is our Society's Official Journal, because a free subscription for the year 2001 was part of the registration package for EPS-26 at Montpellier. Hopefully, many in that happy position will be continuing for 2002 as subscribers at the privileged Members' rate of only \$95 – not least because that will ensure that they get the Abstracts for EPS-27, whether they can attend in Sorrento or not.

An imminent highlight of the Journal is a valuable review by Albert Loffet, former Secretary of the Society, giving an overview of the state and prospects of the peptide drug market.

A trawl in the ISI Journal Citation Reports for journals with the title keyword Peptide finds four journals, whose impact factors for the last two years (the first in which our journal appears in the lists) are as follows:-

	2000	1999
<i>J. Peptide Research</i>	1.439	1.638
<i>J. Peptide Science</i>	1.471	1.311
<i>Letters in Peptide Science</i>	0.351	0.700
<i>Protein and Peptide Letters</i>	0.468	0.557

We want to continue to build on our increasing lead in the field, but can only do that if Members send us their papers, and especially their best papers. Review contributions are especially welcome.

One caveat concerns attention to editorial and publishing requirements. It is I think a whinge of journal editors and publishers the world over that authors often fail to conform to simple requirements and make unnecessary work – as well as causing delays. So please will Members preparing papers for the Journal read the *Instructions for Authors*? The main points are:

- overall structure and style (especially of reference citation) should follow the Journal's conventions – study a recent issue!
- illustrations are encouraged and should be of high quality
- in addition to hard copies, send a copy on disc or by e-mail
- send a completed copyright transfer form when the paper is submitted
- strict adherence to guidance on abbreviations (*J Peptide Science* 1999, **5**, 465-471, is not mandatory, but is strongly encouraged).

All these points will help me and the staff at John Wiley & Sons to process things efficiently. I will gladly send a pack of *Instructions to Authors*, guidance on abbreviations, copyright transfer form, etc to any potential author. Just e-mail me john.jones@balliol.ox.ac.uk

And finally, I am very willing personally to help Members whose mother tongue is not English by reading and correcting drafts.

It's your Journal, dear Members - help me make it flourish!

John Jones
Editor-in-Chief, *J Peptide Science*

HAS PEPTIDE COMMITTEE ANNUAL MEETING



HAS Peptide Committee delegates.

The Annual Meeting of the Peptide Committee of the Hungarian Academy of Science [HAS] was held between 30 May-1 June, 2001 in the Guest House of Chemical Works of Gedeon Richter Ltd by Lake Balaton in Balatonszemes. The scientific programme of the Meeting contained 38 lectures presented by colleagues working as chemists, biochemists, pharmacologists, medical doctors or immunologists in Budapest, Szeged and Debrecen. A special round table session was dedicated to a discussion of the impact of the successful completion of the human genome programme on peptide science. Members of the conference celebrated the 70th birthday of Professor Sándor Bajusz (Chairman of the Peptide Committee of HAS, Institute of Drug Research Ltd, Budapest). His outstanding contribution to the field was highlighted in the greetings delivered by Professor Kálmán Medzihradzky. The Meeting also received the Report of the Foundation of Hungarian Peptide and Protein Research which was established in 1997.

Contributed by Ferenc Hudecz

BRIEF BOOK REVIEWS

PA Cordopatis (Ed). *2nd Hellenic Forum on Bioactive Peptides*. Typorama, 2001. ISBN 960-7620-15-1.

This handsome volume - nicely designed and bound, and printed on classy paper - comprises the proceedings of a symposium held in April 2000 in the Greek city of Patras, under the auspices of the Municipality and University there, and of the Leonidas Zervas Foundation. It was the second of what promises to become a regular series - the third Hellenic Forum is already scheduled for April 2002 (see below). Some of the presentations were given in Greek (with a translation service), but at least six countries were represented among the delegates, and all the lectures and posters published in this volume are in English. A wide range of peptide science appears in it, the greater part of course originating in Greece, but the names of many leading lights from the wider Europe are among the credits - Rocchi, Martinez, Benedetti, Eberle, Roques, Giralt, for example - and any peptide library (many peptide libraries, by the way, contain books) with ambitions of comprehensive coverage ought to have a copy:

Contributed by the Editor

MISCELLANEOUS NOTES AND NEWS IN BRIEF



Max Brenner at EPS-1, 1958.

- The invitation – challenge really – to produce historic photographs from the early days of European peptide science stimulated Alex Eberle to report that he had several in his possession, including the striking one of Max Brenner at EPS-1 in Prague, 1958, which is reproduced.
- Polymer Laboratories (PL), a faithful and valued Advertising Sponsor of the Society, was pleased to announce in August 2001 that Peter J Brown has been appointed to the board of directors as Business Development Director – Clinical Diagnostics. He heads up Polymer Laboratories' Clinical and Diagnostics Particles Group, which is a primary developer and manufacturer of particles for bioscience applications. PL is creating polymer technologies to set the standard in HTS, Drug Discovery, Pharmaco-genomics, Diagnostics and Genomics and Proteomics. The Group's activities are currently expanding, with the addition of further technical staff and an additional 25,000 sq ft [i.e. square feet – sic in the press release – some things in England still resist metrication] production building nearing completion. Peter joined PL from Dynal (Oslo) in 1999, and has fifteen years' experience in international technology commercialisation and business development at senior management level.



**Peter Brown
of Polymer
Laboratories.**



EPS representatives at APS-17(IPS-2).

- The 17th American Peptide Symposium, which was also the 2nd International Peptide Symposium, took place at San Diego 9-14 June 2001. At the time of writing, much information about what transpired there, including the Abstracts Book, is still available at <http://www.5z.com/aps>

- Conrad Schneider has recently celebrated his seventieth birthday on which we congratulate him. The Society owes him a special debt of gratitude for organising EPS at Interlaken so splendidly and for launching *J. Peptide Science*, the Society's official journal, as Founding Editor-in-Chief.
- The 4th Australian Peptide Conference took place very successfully
- 7-12 October 2001; EPS Chairman Raniero Rocchi attended and has kindly agreed to provide a brief report for the next Newsletter.
- Danuta Konopinska reports that the 3rd International Conference on Arthropods: Chemical, Physiological and Environmental Aspects, took place in Poland 23-28 September 2001, with 71 participants from 12 countries. The Proceedings (which included 8 plenary lectures, 7 section lectures, 17 oral communications and 37 posters) will be published as *Arthropods 2001*.
- Paul Cordopatis writes that The 3rd Hellenic Forum on Bioactive Peptides will take place at the Conference and Cultural Centre of the University of Patras 11-14 April 2002, under the aegis of the Leonidas Zervas Foundation and the University of Patras. The Forum will comprise plenary lectures delivered by both Greek and foreign invited speakers, short oral presentations by young Greek researchers and poster contributions. In addition, two workshops will be offered, while a large area in the Conference Centre will be devoted to the posters and company exhibits. Official languages are both Greek and English with cross translation facilities. The Proceedings will be published as previously in English (Crete University Press 1997, typorama 2001). Participation is expected to reach 300 persons. Additional information about all relevant events can be found at the Forum web site: http://www.pharmacy.upatras.gr/peptide_forum_2002



Conrad Schneider at EPS-22, 1992.

NEW PUBLICATION NOTICES

Information has been received on the following new books, journals, conference proceedings etc. which may be of interest to Members. Notices will be repeated in a future issue if it is necessary to correct them or desirable to provide fuller information. Suggestions for future entries in this section should be sent to the Editor, who will welcome them: full data should be provided, including the ISBN or ISSN.

AN INTRODUCTION TO MEDICINAL CHEMISTRY
2nd Edition.
GL Patrick.
xxiii + 622pp, 2001. Oxford University Press.
ISBN 0-19-850533-7.

2nd HELLENIC FORUM ON BIOACTIVE PEPTIDES
For a brief review and details, see above.

INNOVATION AND PERSPECTIVES IN SOLID PHASE SYNTHESIS AND COMBINATORIAL LIBRARIES 2000
Collected papers from the 6th International Symposium held at York in September 1999.
Ed. R Epton.
xxv + 414pp, 2001. Mayflower Worldwide Ltd.
ISBN 0-9515375-3-5.

INTRODUCTION TO PROTEIN ARCHITECTURE
AM Lesk.
xii + 347pp, 2001. Oxford University Press.
ISBN 0-19-850474-8.

MYELOPEPTIDES
RV Petrov, AA Mikhailova, LA Fonina, and RN Stepanenko.
156pp, 1999.
ISBN 981-02-3507-0.

ROITT'S ESSENTIAL IMMUNOLOGY
10th edition.
IM Roitt and PJ Delves.
xi + 481pp, 2001. Blackwell Science Ltd.
ISBN 0-632-05902-8

SOCIETY NEWS

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).

Please 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 15 February 2002.

Nominations will be passed to the Scientific Sub-Committee, which will select candidates, and may add names to the list. After discussion with the Executive Committee, the Secretary will organise a Council.

ELECTION OF NATIONAL REPRESENTATIVES TO COUNCIL

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 2002-2006. The following are the current National Representatives:-

Austria: MF Andreae[°]

Belgium: D Tourwé

Bulgaria: D Petkov

Croatia: S Horvat[°]

Czech Republic: M Flegel[°]

Denmark: M Meldal

France: H Gras-Masse

Germany: L Moroder

Greece: C Sakarellos[°]

Hungary: F Hudecz

Israel: M Fridkin[°]

Italy: E Benedetti[°] Latvia: U Kalejs

Netherlands: PBW Ten Kortenaar[°]

Norway: O Rekdal

Poland: K Rolka

Portugal: L Rodrigues

Russian Federation: AY Surovoy

Slovakia: S Zorad

Slovenia: J Kidrič

Spain: D Andreu[°]

Sweden: G Westin-Sjödahl[°]

Switzerland: AN Eberle[°]

United Kingdom: A Dutta

Those marked with [°] have already served for eight years and are not eligible for re-election in the present round and Dr Dutta has resigned. Belarus, Finland and the Ukraine are also expected to make nominations. Members are invited to nominate their National Representatives using the form enclosed with this Newsletter or 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 31 March 2002. 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.

TRAVEL AWARDS FOR EPS-27

We once again appreciate contributions from Bachem AG Switzerland, and the ESCOM Science Foundation to enable the Sorrento Symposium Organisers to arrange travel bursaries for EPS-27 participants. The Society itself has also allocated a sum of money to the Symposium Organisers to support Travel grants. Applications for all these grants have a deadline of *1 February 2002* 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 **Bachem 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-Doctoral applicants must send a recommendation from their supervisor.

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 Sorrento, within the field of biomedical research or related to drug discovery.

The **European Peptide Society Travel Grants** will be administered under the same rules and principles as the Bachem Travel Grants.

Ferenc Hudecz *EPS Secretary*

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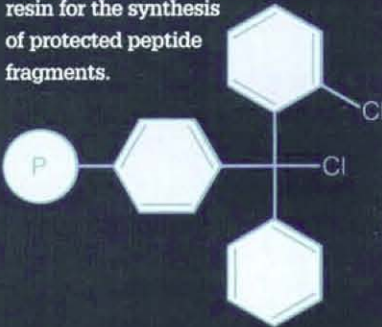
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