

# 27<sup>th</sup> EUROPEAN PEPTIDE SYMPOSIUM

Sorrento (Italy) - August 31<sup>st</sup> - September 6<sup>th</sup>

*With the high patronage of:*

PRESIDENZA DEL CONSIGLIO DEI MINISTRI  
MINISTERO DELL'ISTRUZIONE, DELL'UNIVERSITÀ E DELLA RICERCA  
REGIONE CAMPANIA - ASSESSORATO ALL'UNIVERSITÀ E ALLA RICERCA SCIENTIFICA  
UNIVERSITÀ DI NAPOLI "FEDERICO II"  
PROVINCIA DI NAPOLI  
C.N.R. - CONSIGLIO NAZIONALE DELLE RICERCHE

## PROGRAMME

***All lectures will be held in the "Sala Sirene" auditorium***

SATURDAY, AUG. 31<sup>ST</sup>

8:00 a.m. -8:00 p.m.      **Registration, Convention Center Hall**

### Opening Session

CHAIRS: E. BENEDETTI, R. ROCCHI

6:00 p.m.-6:30 p.m.      **Opening Ceremony**

6:30 p.m.-7:10 p.m.      **"Leonidas Zervas Award"** Lecture :

« Turning virulence on and off in staphylococci »

Tom W. Muir, Lyon J. Gholson, Patricia Mayville, Alessandra Romanelli, Jesse Wright, Richard P. Novick

7:10 p.m.-7:50 p.m.      **"Joseph Rudinger Memorial Award"** Lectures :

« Peptide related drug research at the IDR »

Sandor Bajusz

« Twenty years among opioid peptides »

Kalman Medzihradzky

8:00 p.m.-10:00 p.m.      **Welcome Reception. Sorrento Hilton Hotel - Garden**

## SUNDAY, SEPT. 1<sup>ST</sup> - MORNING SESSION

### Chemistry of amino acids, peptides and pseudopeptides

CHAIRS: C. TONILO, I. SMITH

08:00-08:25 : L1 «Unsaturated non-proteinogenic a-amino acids as versatile synthetic building blocks»

Broxterman Quirinus Bernardus, Blaauw Richard Hendrik, Kaptein Bernard, IJsselstijn Maarten, Schoemaker Hans Egbert, Rutjes Floris Petrus Johannes Theodorus

08:25-08:50 : L2 «Exploring different approaches for the stereoselective synthesis of amino acid-derived 4-alkyl-4-carboxy-2-azetidinones»

González-Muñiz Rosario, Gerona-Navarro Guillermo, Bonache María Angeles, García-Aparicio Carlos, Martín-Martínez Mercedes, García-López María Teresa, Royo Miriam, Albericio Fernando

08:50-09:15 : L3 «Asymmetric synthesis of fully protected (2S, 3R)-N-(1',1'-dimethylallyl)-3-hydroxytryptophan, a new amino acid found in anti-inflammatory cyclic peptide cyclomarin C»

Yao Zhu-Jun, Wen Shi-Jun

09:15-09:40 : L4 «Synthesis of non-proteinogenic amino acids from N-(4-toluenesulfonyl)-dehydroalanine derivatives»

Ferreira Paula M.T., Monteiro Luís S., Maia Hernâni L.S.

09:40-10:05 : L5 «Preparation and application of new amino acids available for oxime ligation»

Hoeg-Jensen Thomas, Spetzler Jane

10:05-10:35 Coffee Break, Exhibits : Convention Center Hall and Garden

### New synthetic approaches

CHAIRS: D. TOURWÉ, J.M. STEWART

10:35-11:00 : L6 «First total synthesis of the nematicidal cyclododecapeptide Omphalotin A containing nine N-methyl amino acids»

Jung Günther, Thern Bernd, Rudolph J.

11:00-11:25 : L7 «Solid-phase synthesis of dehydropeptides»

Nakamura Kazuhiko, Ohnishi Yuki, Horikawa Eiji, Kodaka Masato, Okuno Hiroaki

11:25-11:50 : L8 «Peptide aldehyde reactivity in aqueous solution: influence of the hydrated form studied by electrospray mass spectrometry»

Delmas Agnes, Buré Corinne, Le Falher G., Lelièvre Dominique

11:50-12:15 : L9 «Effects of substrate mimetics on the flexibility of enzymatic peptide synthesis»

Bordusa Frank

12:15-12:40 : L10 «Rigid oligopeptides mimicking the polyproline II helix»

Geyer Armin, Tremmel Peter

12:40-02:45 Lunch break, Exhibits

## SUNDAY, SEPT. 1<sup>ST</sup> - AFTERNOON SESSION

### Peptides and nucleic acids

CHAIRS: C. PEDONE, A. PAIVA

02:45-03:20 : L11 «Chromatin boundaries and the developmental regulation of gene expression»

Felsenfeld Gary, Burgess-Beusse Bonnie, Farrell Catherine, Gaszner Miklos, Litt Michael, Mutskov Vesco, Recillas-Targa Felix, Simpson Melanie, West Adam

03:20-03:45 : L12 «PNA-DNA chimeras as decoy molecules against the transcription factor Sp1»

Romanelli Alessandra, Saviano Michele, Pedone Carlo, Borgatti Monica, Bianchi Nicoletta, Mischiati Carlo, Gambari Roberto

03:45-04:10 : L13 «Ability of bis-intercalators peptide libraries functionalized with 9-amino acridine to block an aggregation of HuPrP106-126 (difficult sequence) in the presence of gc-rich DNA»

Sebestík Jaroslav, Hlaváček Jan, Stibor Ivan

04:10-04:50 Coffee Break, Exhibits : Convention Center Hall and Garden

### Interactions of peptides with biomolecules

CHAIRS: H. KESSLER, R. EPTON

04:50-05:25 : L14 «Cis peptide bonds in proteins and cis/trans isomerases in intracellular parasites»

Hilgenfeld Rolf, Weiss Manfred S., Brandl Maria, Pal Debnath, Riboldi-Tunnicliffe Alan, Fischer Gunter, König Bettina, Vogel André

05:25-05:50 : L15 «Structure and dynamics of membrane-bound hormones as studied by NMR»

Zerbe Oliver, Lerch M., Bader R., Gafner V., Christ B.

05:50-06:15 : L16 «Binding interactions of derived HPK1 Pro-rich peptides to HS1-SH3 domain suggest a possible adapter function of HS1 protein»

Siligardi Giuliano, Hussain Rohanah, Donella-Deana Arianna, Brunati Annamaria, Pinna Lorenzo A., Ruzza Paolo, Calderan Andrea, Borin Gianfranco

06:15-06:40 : L17 «Interaction of β-amyloids with cell membrane proteins and signalization»

Penke Botond, Datki Zsolt, Klement Eva, Soos Katalin, Varga Janos R., Laskay Gabor, Zarandi Marta

06:40-08:00 Poster Session, Exhibits, Social Hours: Convention Center Hall and Garden

## MONDAY, SEPT. 2<sup>ND</sup> - MORNING SESSION

### Peptides and surfaces

CHAIRS: H. GRAS-MASSE, P. T. KORTENAAR

08:00-08:35 : L18 «New linkers for directionally organized assemblies of helical peptides on surfaces»

Fox Marje-Anne

08:35-09:00 : L19 «Protein-detection systems using structure-based peptide libraries and peptide microarrays»

Mihara Hisakazu, Takahashi Mizuki, Usui Kenji, Ojima Tetsunori, Ueno Akihiko, Nokihara Kiyoshi

09:00-09:25 : L20 «Large-scale protein-protein-interaction mapping with synthetic peptide arrays: epitope-targeted proteome analysis»

Frank Ronald, Bialek Krzysztof, Swistowski Andrzej

09:25-09:50 : L21 «Alpha-oxo semicarbazone polypeptide microarrays for the sensitive and specific serodetection of antibodies»

Melnik Oleg, Duburcq Xavier, Olivier Christophe, Urbès Florence, Auriault Claude, Gras-Masse Hélène

09:50-10:15 : L22 «Peptide micro-arrays for kinase substrate profiling»

Schneider-Mergener Jens, Panse Soren, Dong Liying, Schärm Dirk, Osterkamp Frank, Reimer Ulf, Schutkowski Mike

10:15-10:45 Coffee Break, Exhibits: Convention Center Hall and Garden

### Peptides based biomaterials

CHAIRS: E. GIRALT, A. BECK-SICKINGER

10:45-11:10 : L23 «Assembly of membrane-targeted heterotrimers»

Betley Jason Richard, Esser Dirk, Fiedler Lorna Ruth, Sparks Catherine Anne, Rowling Pamela J, Smith Richard Anthony

11:10-11:35 : L24 «Design and synthesis of dendrimers based on poly(Pro) sequences. Exploration of their use as drug-delivery agents»

Royo Miriam, Sanclimens Glòria, Crespo Laia, Pons Miquel, Albericio Fernando, Giralt Ernest

11:35-12:00 : L25 «De novo design and synthesis of quinoproteins for light-induced electron transfer»

Li Wenwu, Sommerhalter Monika, Lubitz Wolfgang, Carell Thomas, Haehnel Wolfgang

12:00-12:25 : L26 «A 16.6 kDa disulfide-linked dimeric 4-helix bundle carboprotein: synthesis, CD spectroscopy, adsorption to Au(III) electrodes, and in situ STM and XPS studies»

Jensen Knud J., Brask Jesper, Wackerbarth H., Zhang J., Andersen J. E. T., Ulstrup J.

12:25-02:30 Lunch break, Exhibits

## MONDAY, SEPT. 2<sup>ND</sup> - AFTERNOON SESSION

### Structural studies

CHAIRS: E. PEGGION, M. MARRAUD

02:30-03:05 : L27 «Common structural principles in protein-protein and protein-DNA recognition»

Janin Joël

03:05-03:30 : L28 «The EGF receptor and Erb B2 crystal structures: a basis for novel drug design for the treatment of cancer»

Nice Edouard Colins, Garret Tom, Jorissen Robert, Ward Colin, Burgess Antony

03:30-03:55 : L29 «Properties of ordered and disordered H-bonds in complex crystalline networks of biological interest from low temperature Infrared Spectroscopy»

Rozenberg Mark

03:55-04:20 : L30 «New chemical tools for mechanism-based discovery and profiling of protein families in functional proteomics»

Sewald Norbert, Hagenstein Miriam, Janssen Kai, Mussnig Jan, Kruse Olaf

04:20-04:50 Coffee Break, Exhibits: Convention Center Hall and Garden

04:50-05:15 : L31 «Extraterrestrial C-a-tetrasubstituted a-amino acids as inducers of homochirality on earth»

Crisma Marco, Moretto Alessandro, Formaggio Fernando, Kaptein Bernard, Broxterman Quirinus B., Toniolo Claudio

05:15-05:40 : L32 «Three-dimensional structure of thermolysin-linearized microcin J25: evidence for an essential role of the 11-16 loop in microcin J25 structure and antimicrobial activity»

Rebuffat Sylvie, Blond Alain, Cheminant Michel, Ségalas-Milazzo Isabelle, Destoumieux-Garzón Delphine, Goulard Christophe, Peduzzi Jean

05:40-06:05 : L33 «Conformational investigations of tri and tetrapeptides containing dehydroalanine and dehydrophenylalanine and their influence on cathepsin C activity»

Latajka Rafal, Lisowski Marek, Makowski Maciej, Panek Jaroslaw, Pawelczak Malgorzata, Picur Boleslaw, Lis Tadeusz, Kafarski Paweł

06:05-06:30 : L34 «The crystal structure of a peptaibol antibiotic trichotoxin A50E»

Chugh Jasveen K, Brueckner Hans, Wallace Bonnie Ann

06:30-08:00 Poster Session, Exhibits, Social Hours: Convention Center Hall and Garden

## TUESDAY, SEPT. 3<sup>RD</sup> - MORNING SESSION

### Celebration of 100<sup>th</sup> Anniversary of EMIL H.FISCHER's first synthesis of a peptide (Part 1)

CHAIRS: M. GOODMAN, J MARTINETZ

08:00-08:30 : L35 « Solid Phase synthesis: peptides, nucleic acids, combichem (a historical perspective)»  
*Marshall Garlad R.*

08:30-09:00 : L36 «Fmoc-based solid phase synthesis. An assessment»  
*Sheppard Robert*

09:00-09:30 : L37 « What to synthesize? From Emil Fischer to peptidomics»  
*Ivanov Vadim T.*

09:30-10:00 : L38 «Molecular machines for protein degradation»  
*Huber Robert*

10:00-10:30 *Coffee Break, Exhibits: Convention Center Hall and Garden*

### Celebration of 100<sup>th</sup> Anniversary of EMIL H.FISCHER's first synthesis of a peptide (Part 2)

CHAIRS: L. MORODER, J. RIVIER

10:30-11:00 : L39 «Synthetic glycopeptides for the development of tumor-selective antigens»  
*Kunz Horst*

11:00-11:30 : L40 «Chemical protein synthesis - new methods, new applications for the new century»  
*Kent Stephen*

11:30-12:00 : L41 «The bold legacy of Emil Fischer»  
*Goodman Murray*

12:00-02:30 *Lunch break, Exhibits*

## FREE AFTERNOON

## WEDNESDAY, SEPT. 4<sup>TH</sup> - MORNING SESSION

### Bioactive peptides: antibiotics and hormones

CHAIRS: D. ANDREU, J. JONES

08:00-08:25 : L42 «Total synthesis and biological activity of human insulin3 and its monobiotinylated analogue»  
*Wade John, Fu Ping, Bathgate Ross, Claasz Antonia, Otvos, Jr. Laszlo, Nice Edouard, Tregear Geoffrey*

08:25-08:50 : L43 «Novel  $\beta$ -defensins: cysteine-rich peptides of the innate and adaptive immune system»

*Adermann Knut, Conejo-Garcia Jose Ramon, Forssmann Ulf, Klüver Enno, Sticht Heinrich, Forssmann Wolf Georg*

08:50-09:15 : L44 «Peptide antagonist and bioactive conformation of Melanin-Concentrating Hormone (MCH), an important regulatory hormone in feeding behavior.»

*Danho Waleed, Swistok Joseph, Khan Waijha, Salari Hamid, Greeley David, Fry David, Sun Hongmao, Falcioni Fiorenza*

09:15-09:40 : L45 «Growth hormone secretagogues, synthesis and biological evaluation»

*Fehrentz Jean-Alain, Guerlavais Vincent, Boeglin Damien, Martinez Jean, Deghenghi Romano, Locatelli Vittorio, Ghe Corrado, Ghe Corrado*

09:40-10:05 : L46 «Synthesis and biological activity of a new and highly potent ligand for somatostatin receptors 2, 3 and 5»

*Girn Mihaela, Wild D., Schmitt J. S., Reubi J. C., Waser B., de Jong M., Bernard H. F., Krenning E. P., Mäcke H. R.*

10:05-10:35 *Coffee Break, Exhibits: Convention Center Hall and Garden*

### Peptides and drug design

CHAIRS: M. FRIDKIN, M. FLEGEL

10:35-11:00 : L47 «Discovery and structure-function studies on the cyclotides:applications in drug design»

*Craik David, Daly Norelle, Clark Richard, Jennings Cameron, Anderson Marilyn*

11:00-11:25 : L48 «Discovery of peptido and proteinomimetic drug leads using cyclic peptide spatial libraries»

*Gilon Chaim*

11:25-11:50 : L49 «Determining the pharmacophore structure of substrates of the Mammalian Peptide Transporter (PEPT1) by molecular modeling and 3D-QSAR investigations»

*Thondorf Iris, Gebauer Sabine, Biegel Annelret, Hartrodt Bianca, Knüller Ilka, Brandsch Matthias, Neubert Klaus*

11:50-12:15 : L50 «Identification of GLP-1R-NH<sub>2</sub> (AF9) as a peptide activating C39E6.6, the *C. elegans* GPCR implicated in social behavior in worms»

*Kubiak Teresa M., Larsen Martha J., Nulf Susan C., Zantello Marjorie R., Burton Katherine J., Modric Tomislav, Lowery David E.*

12:15-12:40 : L51 «Synthesis and screening of a positional scanning library based on the Bowman-Birk reactive site»

*Watson Emma Marguerite, Leatherbarrow Robin John, McBride Jeff Daniel*

12:40-02:30 *Lunch break, Exhibits*

## WEDNESDAY, SEPT. 4<sup>TH</sup> - AFTERNOON SESSION

### Peptide libraries/ Peptide delivery

CHAIRS: F. ALBERICIO, C. DEBER

02:30-02:55 : L52 «Combinatorial approaches: a new tool to search for highly structured  $\beta$ -hairpin and monomeric-a-helical peptides»  
*Pérez-Payá Enrique, López de la Paz Manuela, Lacroix Emmanuel, Serrano Luis, Pastor María Teresa*

02:55-03:20 : L53 «Peptides, proteins and PNAs delivery into mammalian cells mediated by the Chariot peptide»

*Chaloin Laurent, Dépollier Julien, Morris May Catherine, Heitz Frédéric, Divita Gilles*

03:20-03:45 : L54 «Conceptual expansion of protein internalization mediated by arginine-rich peptides»

*Futaki Shiroh, Suzuki Tomoki, Nakase Ikuhiko, Niwa Miki, Sugiura Yukio*

03:45-04:10 *Coffee Break, Exhibits: Convention Center Hall and Garden*

### Peptide Pharmacology

CHAIRS: P. CORDOPATIS, J. SLANINOVA

04:15-04:40 : L55 «A glycopeptide detecting autoantibodies in multiple sclerosis: from a diagnostic kit toward a selective therapeutic strategy»  
*Papini Anna Maria, Mulinacci Barbara, Peroni Elisa, Sabatino Giuseppina, Matà Sabrina, Chelli Mario, Carotenuto Alfonso, Rovero Paolo, Pinto Francesco, Lolli Francesco*

04:40-05:05 : L56 «Substance P conversion to bioactive fragments - an important pathway for the neuromodulatory effect of the undecapeptide»  
*Nyberg Fred*

05:05-05:30 : L57 «ITF1697, an agent with novel specific anti-ischemic properties»

*Mascagni Paolo, Leoni Flavio, Fossati Gianluca, Modena Daniela, Monzani Valmen, Pinori Massimo, Bertuglia Silvia*

05:30-07:15 *Poster Session, Exhibits, Social Hours: Convention Center Hall and Garden*

## THURSDAY, SEPT. 5<sup>TH</sup> - MORNING SESSION

### Enzyme inhibitors

CHAIRS: M. MELDAL, K. ROLKA

08:00-08:25 : L58 «Helicomimetic cyclic peptides that inhibit steroid receptor coactivator interactions represent a novel approach for transcriptional regulation»

*Spatola Arno F., Galande Amit, Leduc Anne-Marie, Trent John O., Bramlett Kelli S., Chirgadze Nickolay, Burris Thomas P.*

08:25-08:50 : L59 «Selective inhibition of the chymotrypsin-like activity of the 20S proteasome by 2-aminobenzylstatine derivatives»

*Garcia-Echeverria Carlos, Imbach Patricia, Roesel Johannes, Fuerst Peter, Lang Marc, Guagnano Vito, Noorani Maria, Zimmermann Johann, Furet Pascal*

08:50-09:15 : L60 «Design, synthesis and activity of chloromethyl ketone inhibitors of Gingipains»

*Mucha Artur, Grembecka Jolanta, Bialas Arkadiusz, Oleksy Arkadiusz, Otlewski Jacek, Potempa Jan*

09:15-09:40 : L61 «Inhibitors of aminopeptidase P incorporating  $\beta$ -amino acids»

*Aguilar Mibel, Devi Romila, Branson Kim, Stewart Karen, Lew Rebecca, Harte Michael, Perlmutter Patrick, Smith Ian*

09:40-10:05 : L62 «Miraziridine A: a three-in-one protease inhibitor»

*Schaschke Norbert*

10:05-10:35 *Coffee Break, Exhibits: Convention Center Hall and Garden*

### Enzyme inhibitors

CHAIRS: Y. KISO, S. BAJUSZ

10:35-11:00 : L63 «Novel synthetic approaches to potent HIV-1 protease inhibitors and their prodrugs»

*Kazmierski Wieslaw, Spaltenstein Andrew*

11:00-11:25 : L64 «Structural determinants of antiviral and signaling functions in the CC chemokine RANTES: generation of HIV-1 inhibitory peptides with anti-inflammatory properties»

*Lusso Paolo, Longhi R., Sironi F., Sarmientos Paolo, Rizzi M., Bolognesi M., Pavone V., Nardese V.*

11:25-11:50 : L65 «Rational engineering of a CD4 mimic, powerful inhibitor of HIV-1 infection and potential component of an AIDS vaccine»

*Vita Claudio, Martin Loic, Stricher Francois, Freulon Isabelle, Menez Andre, Barthe Philippe, Roumestand Christian, Veas Francisco, Lusso Paolo*

11:50-12:15 : L66 «Development of focused tyrosine kinase inhibitory library and testing against MDR»

*Kéri György, Orfi László, Bököngyi Györgyi, Hegedüs Tamás, Ullrich Axel, Sarkadi Balázs*

12:15-02:30 *Lunch break, Exhibits*

## THURSDAY, SEPT. 5<sup>TH</sup> - AFTERNOON SESSION

### Peptides in immunology

CHAIRS: F. HUDECZ, K.H. WIESMÜLLER

02:30-02:55 : L67 «Conformationally constrained epitope mimics of the HIV gp41 envelope protein»

*Bianchi Elisabetta, Ingallinella Paolo, Eckert Debra M., Cole James, Bazzo Renzo, Barbato Gaetano, Pessi Antonello*

02:55-03:20 : L68 «Lead structure for active immunisation against Alzheimer's Disease (AD) upon elucidation of a plaque-specific epitope recognised by therapeutically active antisera from transgenic AD mice»

*Przybylski Michael, McLaurin JoAnne, Cecal Roxana Elena, Kierstead Meredith E., Tian Xiaodan, Janus Christopher, Horne Patrick, Westaway David, Fraser Paul E., St George-Hyslop Peter*

03:20-03:45 : L69 «Specific blocking of anti-idiotypic antibodies for unmasking the anti-La/SSB response in Sjogren's syndrome patients»

*Sakarellos-Daitiotis Maria, Routsias John G., Touloupi Eugenia, Dotsika Eleni, Papamatheou Maria, Tsikaris Vassilios, Sakarellos Constantinos, Moutsopoulos Haralampus M., Tzioufas Athanasios G.*

03:45-04:10 : L70 «Matrix-scan as effective tool to map discontinuous epitopes»

*Schaaper Wim M.M., Slootstra Jerry W., Puijk Wouter C., van Dijk Evert, Meloen Rob H.*

04:10-04:35 : L71 «Lipid-core-peptides for vaccination; structure-activity relationship.»

*I. Toth, A. Horváth, R. P. McGahey, C. Olive, M. F. Good*

04:35-06:30 *Poster Session, Exhibits, Social Hours: Convention Center Hall and Garden*

08:30 *Gala Dinner*

## FRIDAY, SEPT. 6<sup>TH</sup> - MORNING SESSION

### Peptide and protein folding

CHAIRS: G. NIKIFOROVICH, L.BALTZER

08:00-08:35 : L72 «Mobility, flexibility and inhibition of peptide bond formation»

*Yonath Ada*

08:35-09:00 : L73 «Oxidative folding process of amaranthus a-amylase inhibitor»

*Cemazar Masa, Zahariev Sotir, Jones Jonathan Alcwyn, Carugo Oliviero, Hore Peter John, Pongor Sandor*

09:00-09:25 : L74 «Chemical shifts, the ultimate test of polypeptide folding cooperativity»

*Andersen Niels H., Barua Bipasha, Euser Anna, Fesinmeyer Matthew R., Hudson Michael F., Kantola Angeline R., Lin Jasper, White George*

09:25-09:50 : L75 «Lipid-bound structure and phospholipid selectivity of mesentericin Y105 a bacteriocin from leuconostoc mesenteroides and its Trp substituted synthetic analogues»

*Dufourcq Jean, Castano Sabine, Desbat Bernard, Delfour Antoine, Dumas J. M., da Silva Alexandra*

09:50-10:15 : L76 «Artificial remodeling of gp41-C34 peptide leads to effective HIV fusion inhibitor with high anti-HIV-1 activity»

*Otaka Akira, Nakamura Miki, Kodama Eiichi, Uchiyama Susumu, Tamamura Hirokazu, Kobayashi Yuji, Matsuoka Masao, Fujii Nobutaka*

10:15-10:45 *Coffee Break, Exhibits: Convention Center Hall and Garden*

10:45-11:10 : L77 «Mechanism of membrane permeabilization by the lipopeptaibol trichogin GA IV and its fluorescent analogues»

*Stella Lorenzo, Mazzuca Claudia, Palleschi Antonio, Venanzi Mariano, Formaggio Fernando, Toniolo Claudio, Moroder Luis, Pispisa Basilio*

11:10-11:35 : L78 «The second extracellular loop E2 of the human NK-1 receptor is photolabelled by photoreactive analogs of Substance P. Photoaffinity labeling and modelisation studies»

*Lavielle Solange, Lequin Olivier, Sachon Emmanuelle, Franck Fabrice, Convert Odile, Girault-Lagrange Sophie, Chassaing Gérard, Sagan Sandrine*

11:35-12:00 *Closing of the Symposium*

## LEONIDAS ZERVAS AWARD:

Tom W. Muir

### “Turning virulence on and off in *Staphylococci*”

**T. W. Muir<sup>(1)</sup>**, G. J. Lyon<sup>(1)</sup>, P. Mayville<sup>(1)</sup>, A. Romanelli<sup>(1)</sup>, J. Wright<sup>(2)</sup>, R. P. Novick<sup>(2)</sup>

1 - *Laboratory of Synthetic Protein Chemistry, The Rockefeller University,  
1230 York Avenue, New York, NY 10021 - U.S.A.*

2 - *Molecular Pathogenesis Program, Skirball Institute of Biomolecular Medicine,  
New York University Medical Center, New York, NY 10016 - U.S.A.*

The emergence of methicillin-resistant and, more recently, vancomycin-resistant strains of *Staphylococcus aureus* represents an enormous threat to public health. Consequently, there is a pressing need to identify new types of antibacterial agents and it has been suggested that interference with the expression of virulence may represent a promising antibacterial modality. Staphylococcal virulence is regulated by a two-component quorum sensing system, *agr*, activated by a self-coded autoinducing peptide (AIP). The *agr* system is widely divergent and is unique in that variant AIPs cross-inhibit *agr* activation in heterologous combinations. Cross-inhibition, but not self-activation, is widely tolerant of structural diversity in the AIPs so that these two processes must involve different mechanisms of interaction with the respective receptors. We have used a combination of molecular genetics, protein chemistry and chemical synthesis to establish that these AIPs from *S. aureus* contain a thiolactone structure, and that this feature is absolutely necessary for full biological activity. Moreover, structure-activity studies have allowed key aspects within the AIP and its histidine-kinase receptor, AgrC, involved in the differential activation and inhibition functions to be identified. This has led to the rational design of global inhibitors of virulence within the Staphylococci as well as the development of a model for receptor agonism and antagonism.

# JOSEPH RUDINGER MEMORIAL LECTURES:

Sandor Bajusz and Kalman Medzihradszky

## “Peptide related drug research at the IDR”

S. Bajusz

*IVAX Drug Research Institute Ltd., Budapest - Hungary*

Research on synthetic peptides of pharmaceutical interest has been pursued in the Institute for Drug Research (IDR) since the mid 50's, when the synthesis of oxytocin was performed. Thereafter IDR's main projects on synthetic peptides and the most significant results achieved were the followings. ACTH: first synthesis of human ACTH. *Hypothalamic hormones*: an LHRH analog (GYKI-14 201), which provided model for Cetrorelix (SB-75), the antagonistic analog, now in clinical use. *Opioid peptides*: the first enkephalin analog (GYKI-14 238) that produces analgesia upon systemic administration. *Antithrombotic peptides*: the prototype of arginal inhibitors of thrombin (GYKI-14 166), a stable anticoagulant (Efegatran, GYKI-14 766), anticoagulants targeting both thrombin and factor Xa (GYKI-66 323), and the first non-covalent inhibitor of thrombin (GYKI-14 525). Of these, I will outline the development of Cetrorelix and the dual acting anticoagulants that can inhibit both thrombin and factor Xa, and not only in solution but also within plasma clots. Some of the latter compounds substantially increase the survival rate of LPS-treated rats, and may be useful for treatment of disseminated intravascular coagulation (DIC), an often fatal syndrome.

## “Twenty Years among Opioid Peptides”

K. Medzihradszky

*Research Group of Peptide Chemistry, Hungarian Academy of Sciences, Budapest - Hungary*

The discovery of the first opioid peptides in the middle of the seventies proved to be a gold-mine for researchers dealing with structure-activity studies and mechanism of action of biologically active polypeptides. The simple structure, the relatively low molecular weight offered an easy object to systematic alteration of the peptide chain, and the wealth of pharmacological and biochemical assays made possible the determination of essential functional groups and steric requirements necessary to efficient ligand-receptor binding.

A selection of the most significant results of the Hungarian research group in this field will be briefly presented. Enkephalin diazomethyl ketones activated with UV light were shown to irreversibly blocking the opioid receptors, halomethyl ketones and halohydrines with different specificity proved to be good inhibitors of the brain receptors. Melphalan could efficiently substitute the N-terminal tyrosine residue of enkephalins, and maleimide derivatives were useful even for topographic mapping of the receptor binding sites. The dream of determination of the primary structure of the binding region of the opioid receptors by the use of radiolabeled affinity labels might come true.

# List of Posters

## Topic A

A1 - New synthetic approaches and strategies

A2 - Chemistry of amino acids, peptides and pseudopeptides

A3 - Peptidomimetics

A4 - Synthesis of large peptides

A5 - Semi-synthesis of peptides and proteins

A6 - Glyco-, lipo-, phospho-peptides

A7 - Solid support chemistry

A8 - Ligation chemistry/protein modification

## A1 - New synthetic approaches and strategies

- P-A1 A Synthetic Strategy Toward Constrained Head-To-Tail Cyclopeptides  
Alcaro Maria C., Sabatino Giuseppina, Ginanneschi Mauro, Chelli Mario, Di Fenza Armida, Rovero Paolo, Papini Anna M.
- P-A2 Controlling the cysteine framework of N to C cyclic analogues of a-Conotoxin ImI  
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- P-A113 Conformational Study of Heteropeptide Prepared from Chiral  $\alpha$ -Ethylated  $\alpha,\alpha$ -Disubstituted  $\alpha$ -Amino Acids  
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- P-A136 Oostatic peptides with <sup>3</sup>H-labeled proline: synthesis, biological activity, binding and distribution studies in the flesh fly *Neobellieria bullata*  
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- P-A143 "Il mondo è bello perché è vario", expanding azabicycloalkanone amino acid diversity.  
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- P-A144 Structural analysis of the  $\beta$ -turn inducing (S)-[3-amino-4-oxo-2,3-dihydro-5H-benzo[b][1,4]thiazepin-5-yl] acetic acid (DBT) motif  
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- P-A198 Ligand Protection Strategies for Contact Point Determinations by Edman Degradation of Photolabeled Peptide Receptors  
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- P-B12 Alamethicin Sequences Reconsidered  
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- P-B15 Structural studies of amyloid  $\beta$ -peptide-(25-35)  
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- P-B18 Structure-activity Relationship Of Lactam Bridge Gomesin Analogues  
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- P-B33 PESCADOR. The peptides in solution conformation database: online resource.  
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- P-B34 Conformational and sequential requirements of interaction between the chemokine SDF-1 and the receptor CXCR4  
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- P-B35 Structure-Function Relationship Studies on Analogs of the 1-34 Fragment of Parathyroid Hormone (PTH) Containing  $\beta$ -Alanine Residues at Positions 18 and 19.  
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- P-B45 Computational Design and Combinatorial Assembly of Synthetic Proteins  
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- P-B46 Convergent molecular modelling of  $\alpha$ -helix- and  $\beta$ -sheet-inducers towards artificial transcription factors of the GCN4 and Met-repressor classes  
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- P-B47 Toward Rationally Designed Glycopeptide Antigens Recognizing Autoantibodies In Multiple Sclerosis Patients  
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## B3 - Molecular design: experimental and computational

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- P-B50 Modelling of bioactive peptides with the inclusion of synthetic amino acids  
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- P-B53 New design of synthetic peptide nanotubes  
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- P-B56 Isolation of casein-derived antibacterial peptides from rabbit milk  
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- P-B57 SP8ca, a peptide enhancing transport of model compounds across Caco-2 cell monolayers  
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## Topic C

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C2 - Peptides in immunology / vaccines

C3 - Membrane active-antibiotics and neurotoxins

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- P-C2 Clot permeable peptide inhibitors of thrombin and factor Xa  
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- P-C3 Synthetic antidotes against snake neurotoxins  
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- P-C4 p21(WAF1)-Derived octapeptide inhibitors of CDK-cyclin complex: the effect of structural variants of the C-terminal Phe residue  
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- P-C5 N-Methylated peptides as inhibitors of  $\beta$ -amyloid aggregation: a potential therapeutic strategy for the treatment of Alzheimer's Disease  
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- P-C6 Derivatives of the native antibacterial peptide pyrrhocoricin exhibit desirable pharmacological properties *in vitro* and *in vivo*  
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- P-C7 Synthetic Peptides Mapped on Angiostatin K4 Domain Inhibit Endothelial Cell Migration  
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- P-C8 Furin-mediated cleavage of natural and modified gp160 peptides  
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- P-C9 Human glucagon-like peptide-1 amide (hGLP-1(7-36)NH<sub>2</sub>) is cleaved by plasma enzymes not only at the N-terminus but also at the C-terminus development of novel GLP-1 analogs which are highly resistant to enzymatic degradation  
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- P-C10 Analogues of a potent oxytocin antagonist with truncated C-terminus or shorter side chain of the basic amino acid in position 8  
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- P-C11 Bicyclic analogues of a potent oxytocin antagonist  
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- P-C12 A journey from bradykinin peptide antagonists to peptide and peptidomimetic antineoplastics  
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- P-C13 Design of Psychotropic Dipeptides Starting from the Chemical Structures of Nonpeptide Drugs  
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- P-C14 Synthesis and Evaluation of Prolylisoxazoles as Inhibitors of Prolyl Oligopeptidase  
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- P-C15 Synthesis and characterization of new quinazolyl amino acid derivates as potential bioavailable antitumor agents  
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- P-C17 Development of lead compounds focusing on prevention of infective endocarditis using combinatorial peptide libraries  
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- P-C18 Inhibition of Islet Amyloid Polypeptide (IAPP) amyloid formation and cytotoxicity via structure-based, selective N-methylation of amide bonds of amyloid core sequences  
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- P-C19 Biological Activity of the Immunomodulatory Peptide SCV-07 Against Murine Tuberculosis  
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- P-C20 The Power of Attraction: Dmt as the Universal Opioid Determinant  
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- P-C21 Potentiating effect of distant sites in cyclic peptide antagonists of the Grb2-SH2 domain  
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- P-C22 Identification of peptidomimetic HTLV-1 protease inhibitors containing allophenylnorstatine as a transition-state isostere  
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- P-C26 A bactericidal domain of lysozyme with helix-loop-helix structure presents a strong antimicrobial activity  
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- P-C27 Innovative biocompatible immunoadsorbents containing immobilized selective glycopeptide antigens for multiple sclerosis therapy  
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- P-C28 Bicyclic guanidinium derivatives as dimerization inhibitors of HIV-1 protease  
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- P-C29 Synthetic RGD Peptides Incorporating Salicylic Acid Derivatives Show Antiplatelet Activity in vitro  
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- P-C30 The design and analysis of novel substrate-based peptidomimetic peptidase inhibitors: applications for blood pressure regulation and blood brain barrier permeability.  
Smith Ian, Norman Ursula, Lew Rebecca, Evans Roger, Hickey Michael
- P-C31 Spontaneously regenerable water-soluble prodrugs: application to HIV protease inhibitors and anti-cancer drug paclitaxel  
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- P-C33 Vascular Endothelial Growth Factor Receptor 2 Binding Peptide: Targeting Vascular Endothelial Cells  
Stewart John M., Taraseviciene-Stewart Laimute, Gera Lajos, Tuder Rubin M., Voelkel Norbert F.
- P-C34 Fluorescently Labelled Peptides as Tools for Probing the Structure and Function of a Non-Viral Gene Delivery Vector  
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- P-C35 Synthetic antimicrobial peptides designed from sequence templates  
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- P-C36 Profiles of bivalent ligands toward  $\mu$ -opioid receptor  
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- P-C37 Structure-activity studies of novel D-Ser<sup>8</sup>-cyclosporine a derivatives as potential anti-HIV drugs  
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- P-C38 New synthetic peptides related to laminin YIGSR fragment  
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- P-C40 Reduction of Mouse Fertility by Antibody against P12 in Females  
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- P-C41 An allergy vaccine based on solvent-exposed non-anaphylactic peptides of the major birch pollen allergen, Bet v 1  
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- P-C42 Encapsulation of New Biologically Active Peptides Into Liposomes and Their Immunoadjuvant Effect  
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- P-C43 Antibody recognition of synthetic antigens from MUC1  
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- P-C44 Synthesis and *in vitro* T cell immunogenicity of oligopeptides corresponding to the 91-110 region of 16 kDa protein of *Mycobacterium tuberculosis*  
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- P-C45 Enhanced immunogenicity of single-dose antigen based on nanospheres with antigen presenting cell-targeting function  
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- P-C46 MSP-1 pseudopeptides as a possible malaria vaccine component  
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- P-C48 Design, Synthesis and Conformational Properties of Linear Analogues Based on Human Myelin Basic Protein Epitope MBP1-11.  
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- P-C49 Preparation of synthetic antigens and bioconjugates containing oligo-tuftsin carrier molecule  
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- P-C50 A Stimulatory Monoclonal Antibody That Induces G-CSF Release From Macrophages  
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- P-C51 Antimicrobial activity of N-terminal fragments of Bac7, a cathelicidin-derived PR-rich peptide  
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- P-C52 Synthesis and Biological Activity of N-(tert-Butyloxycarbonyl)-(Adamant-2-yl)-DL-Glycyl-Peptidoglycan Monomer  
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- P-C53  $\beta$  amino acid peptides elicit a spectrum of T cell responses  
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- P-C54 Constrained Peptide Mimetics and Virus-like Particles in Synthetic Vaccine Design  
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- P-C55 Immunogenic properties of the main T-cell epitopes of gp63 anchored to the Sequential Oligopeptide Carrier Soc4  
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- P-C56 The Ro60KD zinc-finger motif: design, synthesis and molecular interactions  
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- P-C57 Antipeptide antibodies to develop diagnostic tests for bacterial toxins  
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- P-C58 Identification of T-cell epitopes using Spot synthesised peptides  
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- P-C59 Specificity in the P1 pocket of the human class II MHC protein HLA-DR1  
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- P-C60 Study on structure activity relationship of the immunosuppressive fragment of ubiquitin  
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- P-C61 The motif for prediction of protein fragments able to induce antibody formation in mice  
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- P-C62 Synthetic peptides for causative therapy of dilated cardiomyopathy  
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- P-C63 Synthesis of longer, multiply phosphorylated peptides on solid phase applying the H-phosphonate method  
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Uray Katalin, Tugyi Regina, Schlosser Gitta, Hudecz Ferenc
- P-C65 Mice antipeptide antibodies for detection of protease resistant PrP isoform  
Volkova Tatyana D., Zhmak M. N., Oboznaya M. B., Titova M. A., Korov D. O., Rybakov S. S., Egorov A. A., Volpina O. M., Ivanov Vadim T.
- P-C66 The effect of non-native flanking sequences on antibody recognition and solution conformation of PTGTQ epitope from mucin-2  
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- P-C68 Structural features, antimicrobial and membrane properties of microcin E492  
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- P-C69 Polymyxin B nonapeptide analogs: biological evaluation and molecular modeling  
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- P-C70 *In vitro* activity of cathelicidin peptides against fungal clinical isolates  
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- P-C71 Interaction of antimicrobial peptides with liposomes containing simple analogues of lipid A  
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- P-C72 Biological activities of amino acids and peptide-functionalized cholic acid derivatives  
Grueva Ekaterina S., Milkova Tsenna S., Pajpanova Tamara I.
- P-C73 Design And Synthesis Of Indolicidin Analogues With Enhanced Positive Net Charge And Amphipathicity  
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- P-C74 Amphiphiles containing steroid lipophilic groups  
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- P-C75 Antimicrobial Activity Of SMAP-29 against Clinically Relevant Anaerobic Bacteria  
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- P-C76 Thionins from *Pyrularia pubera*: Synthetic and Structural Studies  
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- P-C77 Sequence Specificity of The Serine Protease, Factor Xa  
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- P-C78 Down regulation of T-cell activation by synthetic dipeptidyl peptidase IV inhibitors with the N-terminal MXP sequence  
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- P-C79 Design and characterization of a synthesized hybrid inhibitory miniprotein  
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- P-C80 Peptide-Based Protease Inhibitors of the Hepatitis C Virus Full-Length NS3 Protein (Protease-Helicase/NTPase)  
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- P-C81 Synthesis of TMC-95A analogs as reversible inhibitors of eukaryotic proteasome  
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- P-C82 Structure-based design and synthesis of cathepsin K inhibitors  
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- P-C83 Chemical synthesis and kinetic study of the smallest naturally occurring trypsin inhibitor SFTI-1 isolated from sunflower seeds and its analogues  
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- P-C84 Peptidomimetic aspartic protease inhibitors: general use of the hydroxymethylcarbonyl scaffold as a transition-state isostere  
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- P-C85 Identification of the angiotensin IV receptor as insulin-regulated aminopeptidase: enzyme inhibition by AT<sub>4</sub> ligands  
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- P-C86 Bioactive peptides as potential substrates for enteropeptidase  
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- P-C87 The synthesis of aminomethyl substituted azaphenylalanine derivatives as thrombin inhibitors  
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- P-C88 New renin inhibitors with pseudodipeptide unit in P1-P1 prim and P2 prim-P3 prim positions  
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- P-C89 Thrombin inhibitors with an azaphenylalanine scaffold: Potency enhancements  
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- P-C90 Diastereoselective synthesis of RXP 407, a potent pseudopeptidic inhibitor of ACE-I, able to differentiate between its two active sites  
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- P-C92 The Interaction of dDAVP Analogues with Human Platelet Vasopressin Receptors  
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- P-C93 *In vivo* activity of some nociceptin analogues containing mercapto acids  
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- P-C94 Anorectic and antiobesic properties of a new CCKA-agonist in rodents  
Bickel Martin, Jaehne Gerhard, Gossel Matthias
- P-C95 Human Coupling Factor-6 precursor (55-108)-NH<sub>2</sub> is the active fragment of Coupling Factor-6  
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- P-C96 Fluorescent Form of the Oxytocin Inhibitor Atosiban  
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- P-C97 Synthesis and Structural Studies of New Analogues of the Decapeptide Luteinizing Hormone-Releasing Hormone (LHRH)  
Cordopatis Paul, Zompra Aikaterini A., Spyroulias Georgios A., Magafa Vassiliki
- P-C98 Pitfalls of neurotoxicity investigation of  $\beta$ -amyloid 1-42 peptide *in vitro* and *in vivo*  
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- P-C99 New Analogues of Arginine Vasopressin with Prolonged Inhibition of Vasopressor Responses to this Hormone  
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- P-C100 Pituitary Adenylate Cyclase Activating Polypeptide Inhibited the  $\beta$ -Amyloid-induced Neurotoxicity and Activation of Caspase-3  
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- P-C101 Somatostatin (srif) analogs that contain  $\beta$ -methyl-2-naphthyl-alanine in position 8 selectively bind to human SST<sub>4</sub>  
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- P-C102 Synthesis and *in vitro* opioid activities of cyclic dermorphin analogues containing a carbonyl bridge  
Filip Katarzyna, Pawlak Danuta, Wójcik Jacek, Chung Nga N., Schiller Peter W., Izdebski Jan
- P-C103 Effects Produced By Alterations In The Cyclic Portion Of The Vasoactive Peptide, Urotensin-II  
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- P-C104 Two neuropeptides from invertebrates - allatostatin and proctolin modulate spontaneous neurotransmitter release in mouse neuromuscular junction  
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- P-C105 Potent and Selective Peptide Agonist/Antagonist Analogues at Human Melanocortin Receptor-4  
Grieco Paolo, Cai Minying, Trivedi Dev, Hruby Victor J.
- P-C106 New Potent GH-RH Analogues Containing Homoarginine Residues  
Izdebski Jan, Witkowska Ewa, Kunce Danuta, Orlowska Alicja, Baranowska Boguslawa, Radzikowska Małgorzata, Smoluch Marek
- P-C107 Analogues of Arginine Vasopressin Modified in Position 2 or 3 with 1-aminocyclohexane-1-carboxylic acid  
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- P-C108 Conformationally constrained analogues of neuropeptide Y bind to the NPY Y1-receptor  
Koglin Norman, Zorn Chiara, Reiser Oliver, Beck-Sickinger Annette G.
- P-C109 Glutamic acid-10: a key-residue for the structural stability and vasoactive activity of endothelin agonists specific to ET-A receptor  
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- P-C111 Synthesis, biological activity and conformational study of new oxytocin analogues  
Manessi-Zoupa Evi, Fragiadaki Maria, Koumentakos Stamatis, Spyroulias Georgios A., Slaninova Jirina, Magafa Vassiliki, Cordopatis Paul
- P-C112 Design and synthesis of vasopressin agonists with high affinities and selectivities for the human V1b receptor  
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- P-C113 Cox17p, a novel mammalian copper trafficking peptide  
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- P-C114 A new generic caspase substrate for fluorescence-based assays  
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- P-C115 Tetraamine functionalized neuropeptides labeled with  $^{99m}\text{Tc}$  with potential application in the diagnosis of tumours  
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- P-C116 Delta sleep inducing peptide (DSIP) prevented hypoxia-induced reduction of respiratory activity in rat brain mitochondria  
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- P-C117 Galanin and its new analogues; synthesis and biological activity in rat isolated gastric smooth muscles  
Ruczynski Jaroslaw, Konstanski Zdzislaw, Korolkiewicz Roman, Rekowski Piotr
- P-C118 Proliferative products of *in vivo* hemoglobin proteolysis as tissue growth promoters  
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- P-C119 Mammalian copper chaperone Cox17p is indispensable for cellular respiration and embryonic development  
Takahashi Yoshinori, Kako Koichiro, Inada Yoshiko, Arai Hidenori, Munekata Eisuke
- P-C120 The Somatostatin Receptor type 1: Chemical synthesis and conformational studies of the 56-residues N-terminal fragment  
Tesauro Diego, De Luca Stefania, Digilio Giuseppe, Pedone Carlo, Morelli Giancarlo
- P-C121 New endomorphin analogues using  $\beta$ -amino acids as proline mimetics in position 2  
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- P-C122 [Dmt1]DALDA: preparation of a tritiated analogue and structural modifications in positions 1, 3 and 4 of the peptide sequence  
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- P-C123 Pseudopeptide Foldamers. The Homo-oligomers of Pyroglutamic Acid and trans-(4S,5R)-4-Carboxy-5-methyl Oxazolidin-2-one  
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- P-C124 Targeting VEGF receptors using designed polypeptides  
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- P-C125 Synthetic mimicry of conformationally defined protein binding sites through nonlinear and scaffolded peptides and peptide libraries  
Eichler Jutta, Doll Christian, Hunke Cornelia, Overwin Heike
- P-C126 A peptide template as an allosteric supramolecular catalyst for the cleavage of phosphate esters  
Formaggio Fernando, Toniolo Claudio, Scarso Alessandro, Scheffer Ute, Göbel Michael, B. Broxterman Quirinus, Kaptein Bernard, Scrimin Paolo
- P-C127 Probing structural requirements of fMLP receptor: an amphiphilic residue at position 1 of the tripeptide  
Formaggio Fernando, Toniolo Claudio, Falzarano Maria S., Spisani Susanna, Witkowska Renata, Zabrocki Janusz
- P-C128 Conformational preferences of peptides containing reverse-turn mimetic  $\gamma$ -lactams  
Galeazzi Roberta, Mobbili Giovanna, Orena Mario
- P-C129 Potent Cyclic Angiotensin II Analogues Confirm the Ring Cluster Conformation: Implications in the Design of AT1 Non-Peptide Antagonists  
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- P-C130 Enantiopure N,N'-Linked Oligoureas as Foldamers  
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- P-C131 *De novo* design of artificial peroxidases  
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- P-C132 Novel peptide nucleic acids that contain pyrrolidine rings of various stereoisomers  
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- P-C133 Peptide mimics of subunit B of DNA-gyrase in interactions studies with coumarin drugs  
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- P-C134 Template-directed ligation enhanced by complementary interaction using nucleobase amino acids  
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- P-C140 Dendritic poly(L-lysine)s combining clusters of zinc(II)-porphyrins and methyl viologens for a photoinduced electron transfer system  
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- P-D54 Modelling of protein P2 from *Haemophilus influenzae*: the role of surface exposed loops on MEK1/MEK2/MAPK cascade activation  
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- P-D55 Analysis of functional domains in glycoprotein H of Herpes Simplex Virus type 1  
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- P-D89 Htc Residue As Useful Tool In The Synthesis Of Selective Tyrosine Kinase Substrates  
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- P-D92 Evaluation of the GPIIb/IIIa regions participating in the platelets aggregation  
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- P-D93 Peptide analogues of the GPIIb 313-332 region of the GPIIb/IIIa receptor: design, synthesis and antithrombotic activity  
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## **D6 - The structure of peptides and their interaction with biomolecules**

- P-D95 Virtual high throughput screening using LigandFit as an accurate and very fast tool for docking, scoring, and ranking  
Lim-Wilby Marguerita, Jiang Jeff, Waldman Marvin, Venkatachalam C. M.
- P-D96 The bioactivity of sugar - amino acid / peptide interaction products  
El-Massry Khaled F., El-Ghorab A. H., Farouk A.

## Topic E

E1 - Peptide delivery approaches

E2 - Peptide libraries and molecular diversity

E3 - Peptides in diagnostics, pharmacology and biotechnology

E4 - Role of peptides in genomics and proteomics

## **E1 - Peptide delivery approaches**

- P-E1 Cell Penetration by primary amphipathic peptides: A) structural properties and interactions with lipids  
Deshayes Sébastien, Chaloin Laurent, Le Grimellec Christian, Heitz Frédéric, Van Mau Nicole
- P-E2 Cell penetration by primary amphipathic peptides : B) Targeting subcellular compartments.  
Chaloin Laurent, Deshayes Sébastien, Van Mau Nicole, Heitz Frédéric
- P-E3 Development of a new derivative of vasoactive intestinal peptide and its novel administration system, dry powder inhalation  
Endo Kosuke, Onoue Satomi, Amikawa Satoko, Matsumoto Asami, Waki Yoshihiro, Yamanaka Masaya, Kondo Masaaki, Hamanaka Kazuya, Suitani Yoshihiko, Kashimoto Kazuhisa
- P-E4 Cellular Internalisation of Calcitonin derived Carrier Peptides- Investigation of Mechanism and Applications  
Krauss Ulrike, Beck-Sickinger Annette G.
- P-E5 Enhanced Intracellular PNA concentration and Antisense Activity mediated by a Cell-penetrating Amphipathic Model Peptide  
Oehlke Johannes, Wallukat Gerd, Ehrlich Angelika, Berger Hartmut, Bienert Michael
- P-E6 A Novel Immunoadjuvant Carrier System for Synthetic Vaccines  
Schubert Aniko H., Olive Colleen, Good Michael F., Toth Istvan
- P-E7 Efficient Intracellular Delivery of Proteins and Low Molecular Weight Substances via Polyoma Virus-Like Particles (PVLP)  
Stark Christoph, Abbing Andrea, Blaschke Ulrich, Dirnecker Diemuth, Grein Swen, Kretschmar Michael, Thies Michael, Weigand Martina, Reiser Christian, Bertling Wolf

## **E2 - Peptide libraries and molecular diversity**

- P-E8 Specificity of PDZ interaction investigated by NMR spectroscopy and synthetic peptide libraries  
Boisguerin Prisca, Volkmer-Engert Rudolf, Schneider-Mergener Jens, Oschkinat Hartmut
- P-E9 Peptide chemistry: the source of combinatorial methods  
Furka Árpád
- P-E10 Automated, parallel synthesis of a guanidino-carbonyl pyrrole receptor library for stereoselective complexation of small peptides and amino acid carboxylates in aqueous solutions  
Giovannoni Jerome, Schmuck Carsten, Heil Martin, Dechantsreiter Michael, Hackler Ulrich
- P-E11 The library of p-nitrophenyl esters immobilized on cellulose membrane. Synthesis and degradation by tissue homogenates of Lewis lung carcinoma bearing mice  
Kaminski Zbigniew J., Kolesinska Beata, Kinash Ryszard W., Wietrzyk Joanna, Opolski Adam
- P-E12 Evolution of Puumala virus neutralization site mimic  
Lankinen Hilkka, Heiskanen Tuomas, Hepojoki Jussi, Vaheri Antti
- P-E13 Binding specificity of 42 synthetic WW domains  
Otte Livia, Oschkinat Hartmut, Wiedemann Urs, Volkmer-Engert Rudolf, Schneider-Mergener Jens
- P-E14 Modification of secondary structures by combinatorial chemistry: a new solid phase based screening test for protein folding detection  
Pastor Jose J., Fernández Irene, Rabanal Francesc, Giralt Ernest
- P-E15 Investigation of heterospecific coiled coil interactions by means of synthetic peptide libraries  
Portwich Michael, Kramer Achim, Otte Livia, Töpert Florian, Knaute Tobias, Volkmer-Engert Rudolf, Schneider-Mergener Jens

## **E2 - Peptide libraries and molecular diversity**

- P-E16 Selection of Peptides Homing to Angiogenic Vessels and the Application of the Novel Peptides to the Anti-neovascular Therapy  
Taki Takao, Asai Tomohiro, Watanabe Koh, Kuromi Koichi, Kurohane Kohta, Ogino Koichi, Ishikawa Dai, Tanaka Michinori, Tsukada Hideo, Nakayama Jun, Oku Naoto
- P-E17 A Constrained  $\alpha$ -Helical Library  
Triplet Brian P., Hodges Robert S.
- P-E18 Solid-phase Tryptophan Modification: Use of a Rational Combinatorial Chemistry Approach to Develop New Analgesic Drugs  
Zaccaro Laura, García-López M.Teresa, González Muñiz Rosario, Royo Miriam, Albericio Fernando

## **E3 - Peptides in diagnostics, pharmacology and biotechnology**

- P-E19 Comparison of fragment condensation and stepwise approaches to the synthesis of synaptobrevin peptides  
Burov Sergey V., Pavlotzkaya Anna V., Dorosh Marina Y., Shkarubskaya Zoya P., Salehi Mohammad-Bagher, Tavallae Mahmoud, Mousavi Seyyed Jafar, Ebrahimi Firoz
- P-E20 Angiotensin I-converting enzyme inhibitory properties of an equine casein tryptic digest and characterisation of some active peptides  
Campagna Sylvie, Egito Antonio Silvio, Haussard Murielle, Poirson Chantal, Girardet Jean-Michel, Miclo Laurent, Gaillard Jean-Luc
- P-E21 Preparation of a radiolabeled peptide-PNA conjugate for imaging oncogene expression  
Gallazzi Fabio, Wang Yi, Shenoy Nalini, Z. Lever Susan Z., Lewis Michael R., Jia Fang
- P-E22 Synthetic peptides based biosensors in the immunodiagnosis of hepatitis G infection  
Haro Isabel, Rojo Núria, Alsina M. Asunción, Ercilla Guadalupe
- P-E23 A point-of-care test using a heptapeptide IgG epitope for diagnosis human parvovirus B19  
Kaikkonen Leena, Kuronen Ilpo, Hokynar Kati, Hedman Lea, Söderlund-Venermo Maria, Lankinen Hilkka, Hedman Klaus
- P-E24 Development and preliminary evaluation of immunoglobulins Y against thymosin peptides  
Klimentzou Persefoni, Neokosmidi Afroditi, Paravatou-Petsotas Maria, Vassiliadou Irene, Livaniou Evangelia, Czarnecki Jan, Ithakissios Dionyssis S., Evangelatos Gregory P.
- P-E25 Introduction of Lanthanide(III) Chelates to Oligopeptides on Solid Phase  
Peuralahti Jari, Hakala Harri, Mukkala Veli-Matti, Loman Kristiina, Hovinen Jari
- P-E26 Long acting derivatives of the GLP-1 agonist exhibit high potency and extended pharmacokinetics when bioconjugated to albumin *in vivo*  
Robitaille Martin, J. Carette, Bakis P., Arya N., Sonoc I., Beaupre C., L'Archeveque B., Pham N., Leger R., Van Wyk P., Sekhon D., Quraishi O., Thibaudeau K., Jette L., Benquet C., St-Jean M., Paradis V., Bousquet-Gagnon N., Pham K., Tremblay S.

## **E4 - Role of peptides in genomics and proteomics**

- P-E27 Proteomics scale protein interaction studies facilitated by high throughput synthesis of phosphopeptides  
Chen Lin, Hu Hai, Lian Lubing, Korenstein Brian, James Michael, Becker Karen I., Carter John M., Herrero J.
- P-E28 High throughput synthesis of small protein domains  
Chen Lin, Columbus John, James Michael, Korenstein Brian, Carter John M., Herrero J.

## **E4 - Role of peptides in genomics and proteomics**

- P-E29 Combining combinatorial chemistry and affinity chromatography protocols for systematically probing protein-ligand interactions: application to the development of highly selective phosphinic inhibitors of human betaine: homocysteine S-methyltransferase  
Collinsová Michaela, Garrow Timothy A., Castro Carmen, Dive Vincent, Yiotakis Athanasios, Jirácek Jiří
- P-E30 Mechanism-based detection and activity-profiling of protein kinases  
Hagenstein Miriam, Mußgnug Jan, Kruse Olaf, Sewald Norbert
- P-E31 Peptides as Tools for the Discovery and Activity-Profiling of Matrix Metalloproteinases  
Jenssen Kai, Stembera Katharina, Sewald Norbert
- P-E32 Towards the delivery of double stranded nucleic acids: synthesis and biological studies  
Vives Eric, Richard Jean-Philippe, Debart Franáoise, Michel Thibault, Vasseur Jean-Jacques, Lebleu Bernard
- P-E33 Design of inhibitors of plasmepsins based on combinatorial specificity studies  
Dunn Ben M., Rubin Jamie, Beyer Bret B.