UNIVERSITA' DEGLI STUDI DI ROMA
Tor Vergata Università

La Sapienza
Università degli Studi di Roma

8th International Congress on Amino Acids and Proteins

Rome (Italy) 5-9 September 2003

www.uniroma2.it/eventi/aminoacids

Organizing Committee

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Final Program

8th INTERNATIONAL CONGRESS ON AMINO ACIDS AND PROTEINS
Rome, September 5th to 9th, 2003
http://www.uniroma2.it/eventi/aminoacids

Congress venue:

University of Rome "La Sapienza"
P.le A. Moro 5
00185 Rome (Italy)

Honorary President:
Gert Lubec (Austria)

President and Organizer:
Simone Beninati (Italy)

Conference Presidents:
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Kazuei Igarashi (Japan)

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Final Program

Welcome to the 8th Amino Acid Meeting!

Registration: on Friday September 5th, 2003, from 15:00 to 19:00, at the registration desk located at the Aula Magna–Rectorate. From Saturday September 6th, starting at 8:30, the registration desk will be located at the Department of Pharmaceutical Chemistry.

Lecture Halls (see on the map): Lecture Halls **A** , **B** and **C** are located at Department of Pharmaceutical Chemistry; lecture Halls **D**, **E** and **F** are located at Department of Biochemical Sciences.

Power Point CD /Slides / Transparencies: should be handed over to the corresponding Chairman prior to the Session.

Posters: sessions are distributed into two main groups, and located at the Rectorate building.
The 1st Group has to exhibit the posters on 6th and 7th September, and it includes the following sessions: Transglutaminases – Amine Oxidases – Neurobiology – Taurine – Amino Acid and Protein Oxidation – No/Arginine – Plant Amino Acids – Metabolism and Nutrition – Amino Acid Synthesis and Medicinal Chemistry – D-Amino Acids and Racemization.
The 2nd Group has to exhibit the posters on 8th and 9th September, and it includes the following sessions:
Polyamines – Proteomics – Analysis – Amino Acid Transport – Selenocysteine – Modification of Amino Acids and Proteins - Glutathione and Glutathione-S-Transferases in Toxicology – Sport and Exercise.
Posters should be fixed at your earliest convenience. The timing of the individual poster sessions will be announced by the chairpersons. Poster size is max 120 x 200 cm. (pins and adhesives are available at the registration desk).

Abstracts: In the Congress wallets you can find the abstract book, that is an issue of the journal *AMINO ACIDS* .

Lunch buffets are available from 6th to 9th September, between 13:00 and 14:00. One site is located at the Department of Pharmaceutical Chemistry, and the second one at the Department of Biochemical Sciences.

Bus excursion and gala dinner: Tuesday 9th September, at 18:00 the buses leave from Piazzale Aldo Moro (in front of the main entrance of the University "La Sapienza") to visit the historical center of the city. The excursion will end in a typical roman restaurant. The gala dinner will take place at about 21:00. After dinner, participants will be taken back to Piazzale Aldo Moro.

Participation at the bus excursion and at the gala dinner has to be confirmed at the registration desk not later than Saturday 6th September.

Travel, housing, Roma tours, accomodation and social activities information is given by AMATOUR Viaggi. The desk will be located at the Department of Pharmaceutical Chemistry from September 6th to 9th.

Please, show your payment information or proof of a waived registration at the registration desk. Please, wear the badge with your name during the meeting.

8th International Congress on Amino Acids and Proteins

Rome, Italy 5-9 September 2003

Friday September 5th, 2003

(Aula Magna - Rectorate)

15:00 Registration
17:00 Opening Ceremony **S. Beninati and E. Agostinelli**
17:10 **Opening Lecture E.R. Stadtman (USA)**
18:00 **Opening Lecture K. Igarashi (Japan)**
19:00 Welcome buffet

Saturday September 6th, 2003

9:00 – 9:45 **Lecture S.I. Chung (South Korea)** (Lecture Hall A, Dept. Pharmaceutical Chemistry)
-TRANSGLUTAMINASES (Lecture Hall A, Dept. Pharmaceutical Chemistry)
-AMINE OXIDASES (Lecture Hall E, Dept. Biochemical Sciences)
-NEUROBIOLOGY (Lecture Hall C, Dept. Pharmaceutical Chemistry)
-TAURINE (Lecture Hall B, Dept. Pharmaceutical Chemistry)
-AMINO ACID AND PROTEIN OXIDATION (Lecture Hall D, Dept. Biochemical Sciences)
-NO /ARGININE (Lecture Hall F, Dept. Biochemical Sciences)

Sunday September 7th, 2003

9:00 – 9:45 **Lecture A. Ichinose (Japan)** (Lecture Hall A, Dept. Pharmaceutical Chemistry)
9:00 – 9:45 **Lecture Lecture B. Larkins (USA)** (Lecture Hall C, Dept. Pharmaceutical Chemistry)
9:00 – 9:45 **Lecture S. Hanessian (Canada)** (Lecture Hall F, Dept. Biochemical Sciences)
-TRANSGLUTAMINASES (Lecture Hall A, Dept. Pharmaceutical Chemistry)
-AMINE OXIDASES (Lecture Hall E, Dept. Biochemical Sciences)
-PLANT AMINO ACIDS (Lecture Hall C, Dept. Pharmaceutical Chemistry)
-METABOLISM AND NUTRITION (Lecture Hall D, Dept. Biochemical Sciences)
-AMINO ACID SYNTHESIS AND MEDICINAL CHEMISTRY (Lecture Hall F, Dept. Biochemical Sciences)
-D-AMINO ACIDS AND RACEMIZATION (Lecture Hall B, Dept. Pharmaceutical Chemistry)

Monday September 8th, 2003

9:00 – 9:45 **Lecture N. Seiler (France)** (Lecture Hall A, Dept. Pharmaceutical Chemistry)
9:00 – 9:45 **Lecture J. Godovac-Zimmermann (UK)** (Lecture Hall E, Dept. Biochemical Sciences)
-POLYAMINES (Lecture Hall A, Dept. Pharmaceutical Chemistry)
-PROTEOMICS (Lecture Hall E, Dept. Biochemical Sciences)
-ANALYSIS (Lecture Hall B, Dept. Pharmaceutical Chemistry) - morning
-AMINO ACID TRANSPORT (Lecture Hall B, Dept. Pharmaceutical Chemistry) - afternoon
-SELENOCYSTEINE (Lecture Hall D, Dept. Biochemical Sciences)
-MODIFICATION OF AMINO ACIDS AND PROTEINS (Lecture Hall F, Dept. Biochemical Sciences)
-GLUTATHIONE AND GLUTATHIONE-S-TRANSFERASES IN TOXICOLOGY (Lecture Hall C, Dept. Pharmaceutical Chemistry)

Tuesday September 9th, 2003

9:00 – 9:45 **Lecture A.J. Michael (UK)** (Lecture Hall A, Dept. Pharmaceutical Chemistry)
9:00 – 9:45 **Lecture J. Williams (European Commission)** (Lecture Hall E, Dept. Biochemical Sciences)
-POLYAMINES (Lecture Hall A, Dept. Pharmaceutical Chemistry)
-SPORT AND EXERCISE (Lecture Hall B, Dept. Pharmaceutical Chemistry)
-AMINO ACID TRANSPORT (Lecture Hall E, Dept. Biochemical Sciences)

18:30-21:00 Excursion
21:00 Gala Dinner - Farewell

FRIDAY SEPTEMBER 5th, 2003

(Aula Magna - Rectorate)

15:00 Registration
17:00 Opening Ceremony: S. Beninati and E. Agostinelli

17:10 Opening Lecture E.R. Stadtman (USA)
An overview of protein oxidation
18:00 Opening Lecture K. Igarashi (Japan)
Identification of polyamine modulons and regulation of gene expression by the modulons

19:00 Welcome buffet

SATURDAY SEPTEMBER 6th, 2003

9:00-9:45 Plenary Lecture S. I. Chung (South Korea) (Lecture Hall A – Dept. Pharmaceutical Chemistry)
(J.E. Folk's Lecture)

9:00-9:45 Introductory Lecture: E.R. Stadtman (USA) (Lecture Hall D – Dept. Biochemical Sciences)

TRANSGLUTAMINASES (Lecture Hall A – Dept. Pharmaceutical Chemistry)

Session 1 - Chairmen: D. Serafini-Fracassini (Italy), S. Beninati (Italy) & M. Piacentini (Italy)

10:00 Griffin M. (UK) Inhibition of transglutaminase activity in kidney proximal tubular cells reduces extracellular matrix accumulation in response to high glucose levels typical of diabetic nephropathy.
10:30 Serafini-Fracassini D. (Italy) Transglutaminase activity in programmed cell death: the spermine role in preventing leaves of nutritional interest from degradation.
11:00 Coffee break
11:30 Hasegawa G. (Japan) A novel function of tissue-type transglutaminase:protein-disulfide isomerase.
11:50 Melino G. (Italy) Role of transglutaminase-2 in glucose tolerance: knockout mice studies and a putative mutation in a MODY patient.
12:20 Candi E. (Italy) Functional studies on transglutaminase 5.
12:40 Gentile V. (Italy) Molecular mechanisms for a possible involvement of the Transglutaminases in the pathogenesis of polyglutamine diseases.

13.00 Lunch buffet

15:00 Hargreaves A. (UK) Membrane associated transglutaminase in porcine brain.
15:30 Piacentini M. (Italy) Role of "tissue" transglutaminase in Huntington's disease pathogenesis.
16:00 Coffee break
16:30 Karpuj M. (USA) Prolonged survival and reversal of abnormal movements in Huntington's disease in a transgenic mouse model, after administration of cystamine, a transglutaminase inhibitor.
16:55 Dijan P. (France) Oligomeric and polymeric aggregates formed by proteins containing expanded polyglutamine.
17:20 Ientile R. (Italy) Transglutaminase and brain ischemia.
17:55 Fesus L. (Hungary) A cytosolic and a nuclear function of tissue transglutaminase.

AMINE OXIDASES (Lecture Hall E – Dept. Biochemical Sciences)

Session 1 - Chairmen: D.M. Dooley (USA) & E. Agostinelli (Italy)

10:00 Tipton K. (Ireland) Amine oxidases and amine oxidase inhibitors.
10:40 Silvestri R. (Italy) *N*-benzyl and *N*-propargyl 1*H*-pyrrole-2-carboxyamides, as simple and effective monoamine oxidase inhibitors.
11:00 Coffee break
11:30 Tanizawa K. (Japan) Stereospecificity of α-proton abstraction by copper amine oxidase is defined by conformation of substrate Schiff-base intermediate formed in the active site.
12:05 Pedersen J. (Italy) Inhibitors of plant copper/TPQ amine oxidases.
12:35 Morpurgo L. (Italy) Inactivation of *lathyrus sativus* amine oxidase.

13:00 Lunch buffet

Session 2 - Chairmen: K. Tipton (Ireland) & K. Tanizawa (Japan)

14:30 Knowles P.F. (UK) Inhibitor binding studies to *E. coli* amine oxidase.
15:05 McPherson M.J. (UK) Structural and mutagenesis studies of *E. coli* copper amine oxidase.
15:40 Punakivi K.M. (Italy) Kinetic studies by amperometric electrode on bovine serum amine oxidase.
16:00 Coffee break
16:30 Frèbort I.(Czech Republic) Gene organization and molecular modeling of copper amine oxidase from *Aspergillus niger*.
17:00 Yu P. (Canada) The involvement of semicarbazide-sensitive amine oxidase in vascular disorders and obesity in spontaneous obese and diabetic KKAy mice.
17:30 Yeguktin G. (Finland) Endothelial semicarbazide-sensitive amine oxidase serves as an adhesion molecule controlling leukocyte trafficking.

NEUROBIOLOGY (Lecture Hall C – Dept. Pharmaceutical Chemistry)

Symposium I: *Metabolic insults during development: involvement of excitatory amino acids*
Chairmen: Beate D. Kretschmer (Germany) & M. Herrera-Marschitz (Chile/Sweden)

9:00 Herrera-Marschitz M.(Chile/Sweden) / Kretschmer B. (Germany) General introduction.
9:10 Kusama-Eguchi K. (Japan) *In vivo* and *in vitro* study on the mechanism of pathogenesis of neurolathyrism.
9:30 Wrobel M. (Poland) L-cysteine desulfuration in various human and mouse brain regions.
9:50 Albasanz J.L. (Spain) Effect of chronic glutamate administration to pregnant rats during gestation on metabotropic glutamate receptors from mothers and full-term fetuses brain.
10:10 Kretschmer B.D. (Germany) Modulation of ventral pallidal dopamine and glutamate release by the intravenous anaesthetic Propofol studied by *in vivo* microdialysis.
10:30 Herrera-Marschitz M. (Chile/Sweden) Effects of metabolic insults and perinatal asphyxia on CNS plasticity.
10:50 Kostrzewa M. (USA) L-Dihydroxyphenylalanine treatment reduces hydroxyl radical levels in tissue and in *in vivo* microdialysates of dopamine-denervated rat striatum.
11:10 Coffee break

Symposium II: *Signalling in neurodegeneration*
Chairmen: A. Novelli (Spain) & A. Tasker (Canada)

11:30 Tasker A.(Canada) Opening remarks.
11:35 Lipsky R.H. (USA) Genomics of ionotropic glutamate receptors.
12:00 Nicoletti F.(Italy) Metabotropic glutamate receptors as targets for neuroprotectve drugs in experimental Parkinsonism.
12:25 Cupello A. (Italy) Imaging by two photon laser scanning microscopy of calcium accumulations in neurites and cell bodies of rat cerebellar granule cells in culture.

13:00 Lunch buffet

14:00 Novelli A. (Spain) New pathways to neurodegeneration in neuronal cultures.
14:15 Fariello R. (Italy) Neuroprotection by voltage sensitive sodium channel blockers.
14:40 Tasker A. (Canada) Age-related changes in kainate receptor-mediated excitotoxicity.
14:55 Novelli A. (Spain) Closing remarks.

Symposium III: ***Molecular mechanisms of CNS injury and neuroprotection: new roles of amino acids, heme oxygenase system, stress proteins and melacortins***
Chairman: H. S. Sharma (Sweden)

15:00 Sharma H.S. (Sweden) Introduction.
15:05 Maines M. (USA) Multiple functions of the hemeoxygenase system in the brain.
15:25 De Boer A.G. (The Netherlands) The blood-brain barrier: dysfunction and recovery.
15:45 Skottner A. (Sweden) Neuroprotective effects of melanocortins in spinal cord injury.
16:05 Coffee break
16:25 Engelhardt M. (Germany) Molecular mechanisms involved in T cell migration across the blood-brain barrier.
16:45 Lafuente J.V. (Spain) Distribution of VEGFR-2 in the surrounding tissue to a minimal brain injury.
16:55 Sharma H.S. (Sweden) Alteration of amino acid neurotransmitters in hyperthermic brain injury.
17:05 Westman J. (Sweden) Neuroprotective effects of antioxidants on heat shock protein (HSP 72 kD) and the blood-brain barrier in hyperthermic brain injury.

Symposium IV: ***Molecular imaging of stress and drug resistance***
Chairmen: Olga Golubnitschaja (Germany) & H. Moenkemann (Germany)

17:25 Moenkemann H. (Germany) DNA breaks and up regulation of G_1 checkpoint gene $p21^{waf1/cip1}$ in circulating leukocytes of glaucoma patients.
17:45 Yeghiazaryan K. (Germany) Increased expression of ABC-transporters in mononuclear blood cells of glaucoma patients and vasospastic individuals indicates the common feature of up-regulated multidrug resistance.
18:05 Trog D. (Germany) Expression of ABC-1 transporter is elevated in human glioma cells under temozolomide treatment and irradiation.
18:25 Kapalla M. (Slovakia) Combined analysis of biochemical parameters in serum and potential molecular markers in circulating leukocytes as an *ex vivo* monitoring system to estimate a risk of developing complications in Diabetes mellitus.
18:45 Golubnitschaja O. (Germany) Analysis of *in vivo* imaging of angio- and retinopathy in correlation with an expression of potential molecular markers for high risk of secondary complications in patients with Diabetes mellitus.
19:05 D'Aniello A. (Italy) D-aspartic acid in the nervous system of *Aplysia*: role in learning and memory.

Posters NEUROBIOLOGY
Crescibene L. (Italy) -Glutathione transferase of patients with Parkinson's disease.
-Myelin basic protein and multiple sclerosis.
Della Corte L. (Italy) Distinction between the neurotransmitter functions of glutamate and aspartate revealed by *in vivo* microdialysis.

TAURINE (Lecture Hall B – Dept. Pharmaceutical Chemistry)
Chairman: J. B. Lombardini (USA)

9:30 Lombardini J.B. (USA) Taurine: evidence of physiological function in the retina.
9:50 Franconi F. (Italy) Taurine and early events in the life.
10:10 Lallemand F. (Belgium) Taurine concentration in the brain and in the plasma following i.p. injection.
10:30 Kontny E. (Poland) Taurine chloramine triggers p53-dependent pathway leading to the cell-cycle arrest of rheumatoid arthritis synoviocytes.
11:00 Coffee break
11:20 Gottardi W. (Austria)Oxidation of bacterial surfaces, a decisive step in microbicidal action.
11:40 Nagl M. (Austria) Attenuation of virulence of bacteria and fungi by N-chlorotaurine.
12:00 Oja S.(Finland) Modulation of taurine release by adenosine in the mouse hippocampus.
12:20 Satsu H. (Japan) Characterization and regulation of the taurine transporter and taurine biosynthetic enzymes in 3T3-L1 adipocytes.

13:00 Lunch buffet

14:40 Ward R. (Belgium) Taurine and cytoprotection.
15:00 Shimizu M. (Japan) Protective effects of taurine on the TNF-α-induced damage of intestinal epithelial cell monolayers.

Posters TAURINE
Fontana M. (Italy) The oxidation of the sulfinates, hypotaurine and cysteine sulfinate, by peroxynitrite.
Lallemand F. (Belgium) Ethanol but not acetaldehyde induced changes in brain taurine: a microdialysis study.

Neher A. (Austria) Efficacy of N-chlorotaurine in acute otitis externa compared to Otosporin ®.
Olszowski S. (Poland) Taurine and peptide chloramine-mediated formation of RFT.

AMINO ACID AND PROTEIN OXIDATION (Lecture Hall D – Dept. Biochemical Sciences)

Chairmen: F. Galli (Italy), E.R. Stadtman (USA) & A. Butterfield (USA)

10:00 Butterfield A. (USA) Proteomic identification of oxidatively- and nitrosatively-modified proteins in Alzheimer's disease brain: insights into potential mechanisms for neurodegeneration.
10:30 Calabrese V. (Italy) Redox regulation of heat shock protein expression in aging and neurodegenerative disorders.
11:00 Galli F. (Italy) Oxidation and glycation protein products as inflammatory mediators in the uremic syndrome.
11:30 Coffee break
12:00 Scapagnini G. (USA-Italy) CAPE and CURCUMIN: a novel class of polyphenolic compounds that modulate cellular stress response in the Central Nervous System
12:30 Parasassi T. (Italy) LDL, misfolding and structural implications of estrogens.

13:00 Lunch buffet

14:30 Pietraforte D. (Italy) Peroxynitrite scavenging by hemoglobin: identification and characterization of modified aminoacid residues.
15:00 Pietzsch J. (Germany) Specific hemin catalyzed low density lipoprotein oxidation reactions: implications for metabolic and inflammatory diseases.
15:30 Pietzsch J. (Germany) Assessment of metabolism of native and oxidized low density lipoprotein *in vivo*: insights from animal positron emission tomography (PET) studies.
16:00 Matsui-Yuasa A. (Japan) Cellular thiol status-dependent inhibition of tumor cell growth by green tea extract.
16:30 Kojima-Yuasa A. (Japan) Involvement of intracellular glutathione in zinc deficiency-induced activation of hepatic stellate cells.
17:00 Nagahara N. (Japan) Regulation of mercaptopyruvate sulfurtransferase activity by oxidative stress.

Posters AMINO ACID AND PROTEIN OXIDATION
Amodeo E. (Italy) Different roles of cystamine.
Petruzzelli R. (Italy) Cu(II)-catalyzed cleavage and oxidation of the N-terminal region of the salivary peptide histatin-5.
Sawada N. (Japan) Activation mechanism of porphobilinogen synthase by reducing agents.

NO/ARGININE (Lecture Hall F – Dept. Biochemical Sciences)

Chairmen: M. Mori (Japan) & K. Racke (Germany)

10:00 Racke K. (Germany) Introduction.
10:15 Meurs H. (The Netherlands) Disturbed L-arginine homeostasis in the pathophysiology of allergic asthma.
10:45 Racke K. (Germany) IL-4 and IL13 up-regulate arginase in rat primary airway fibroblasts.
11:00 Coffee break
11:30 Kolb-Bachofen V. (Germany) The interplay of arginases and iNOS activities in human skin: lessons learned from psoriasis.
12:00 Corraliza I. (Spain) L-arginine metabolism directed to L-ornithine via arginase I induction favors the survival and replication of *Leishmania* inside macrophages.
12:30 Maas R. (Germany) Asymmetrical dimethylarginine (ADMA): endogenous NOS-inhibitor, cardiovascular risk factor and explanation for effects of L-arginine *in vivo*.

13:00 Lunch buffet

14:30 Mori M. (Japan) A novel pathway of NO-mediated apoptosis.
15:00 Ohta Y. (Japan) Protective action of exogenous L-arginine against stress-induced gastric mucosal lesions in rats.
15:30 Suzuki S. (Japan) Characterization and NO-production mechanisms of *Hyphomicrobium* nitrite reductase containing two type 1 and one type 2 coppers.

Posters NO/ARGININE
Pinna G.G. (Italy) Enzymes of arginine/NO and ADMA pathways in endothelial cells treated with homocysteine.

SUNDAY SEPTEMBER 7th, 2003

9:00-9:45 Plenary Lecture: A. Ichinose (Japan) (Lecture Hall A – Dept. Pharmaceutical Chemistry)
Factor XIII A subunit-deficient mice developed severe uterine bleeding events and subsequent spontaneous miscarriages

9:00-9:45 Plenary Lecture: B. Larkins (USA) (Lecture Hall C – Dept. Pharmaceutical Chemistry)
The molecular basis of quality protein maize

9:00-9:45 Plenary Lecture: S. Hanessian (Canada) (Lecture Hall F – Dept. Biochemical Sciences)
From amino acids to functional heterocycles

TRANSGLUTAMINASES (Lecture Hall A – Dept. Pharmaceutical Chemistry)

Session 2 - Chairmen: D. Serafini-Fracassini (Italy), S. Beninati (Italy) & M. Piacentini (Italy)

10:00 Casadio R. (Italy) Predicting protein structure: the test case of Tgases.
10:30 Capell T. (Germany) Production of recombinant transglutaminase in cereals.
11:00 Coffee break
11:30 Del Duca S. (Italy) Characterization of transglutaminase activity in the pollen of *Malus domestica* (cv Golden delicious).
12:00 Di Sandro A. (Italy) Germination of *Malus domestica* pollen and its *in vivo* transglutaminase activity are affected by the same regulators.
12:20 Della Mea M. (Italy) Subcloning and production of an *Arabidopsis thaliana* peptide N-glycanase, with a transglutaminase-like domain.
12:40 Beninati S. (Italy) Role of the FAD-dependent polyamine oxidase in the selective formation of N^1,N^8-*bis*(γ-glutamyl)spermidine cross-links.

13:00 Lunch buffet

15:00 Verderio-Edwards E. (UK) Heparan sulfate proteoglycans are likely cell-surface receptors for matrix tissue transglutaminase.
15:30 Bonner P. (UK) Properties of a transglutaminase isolated from germinating *Vicia faba* cotyledons.
16:00 Coffee break
16:25 Larreta-Garde V. (France) Contribution of helices and transglutaminase-catalyzed covalent bonds to gelatin networks.
16:50 Facchiano F. (Italy) Tissue transglutaminase over-expression inhibits tumor progression *in vivo*.
17:15 Marra M. (Italy) Ubiquitination of tissue transglutaminase is modulated by interferon-α in human lung cancer cells.
17:40 Aeschlimann D. (UK) A novel role for transglutaminase 2 in intracellular signalling in cellular processes involving dynamic cell-matrix interactions.

Posters TRANSGLUTAMINASES
Arrizubieta M.J. (Spain) Characterization of the genetic diversity of microbial transglutaminase from *Streptomyces* species.
Forino D. (Italy) Transglutaminase activity in free-living amoebae.
Ientile R. (Italy) Expression of tissue transglutaminase and heme oxygenase in primary astroglial cells during differentiation.
Nemes Z. (Hungary) Isopeptide crosslinks in Alzheimer's neurofibrillary tangles.
Tasco G. (Italy) Building a low resolution model of a transglutaminase domain of an hypothetical N-Glycanase from *Arabidopsis thaliana*.
Trigwell S. (UK) Plant transglutaminase and changes in cytoskeletal proteins as markers of cryopreservation of plant tissue.

AMINE OXIDASES (Lecture Hall E – Dept. Biochemical Sciences)

Session 3 - Chairmen: M.J. McPherson (UK) & E. Agostinelli (Italy)

10:00 Dooley D.M. (USA) Structural and mechanistic studies of copper-containing amine oxidases.
10:35 Bellelli A. (Italy) A kinetic study on cobalt(II)-substituted bovine serum amine oxidase.
11:00 Coffee break

11.30 Zanotti G. (Italy) Towards the crystal structure of amine oxidase from bovine serum.
12:00 Knowles P.F. (UK) Concluding remarks.

13:00 Lunch buffet

Posters AMINE OXIDASES
Agostinelli E. (Italy) -Phenylpyrrolylethanoneamines related to kathinone, endowed with potent and highly selective anti-MAO-A activity.
-Spectroscopic studies of the reaction between copper-containing serum amine oxidase and lipoic acid hydrazide.
Floris G. (Italy) Tyramine as substrate and inhibitor for lentil copper/TPQ amine oxidase.
Mai A. (Italy) 3-(1*H*-pyrrol-2- and -3-yl)-2-oxazolidinones as novel potent and selective monoamine oxidase type A inhibitors.
Syatkin S.P. (Russia) Activators of polyamines oxidative desamination as potential anticancer agents.
Yu P. (Canada) Protein cross-linkage induced by formaldehyde derived from oxidative deamination of methylamine catalyzed by semicarbazide-sensitive amine oxidase (SSAO).

PLANT AMINO ACIDS (Lecture Hall C – Dept. Pharmaceutical Chemistry)
Chairman: B.J. Singh (USA)

10:00 Bush D. (USA) Regulation of amino acid transporter gene expression by nitrogen and carbon metabolites.
10:30 Coruzzi G. (USA) A systems based approach to C:N signaling in plants.
11:00 Coffee break
11:20 Galili G. (Israel) Regulatory networks of amino acid metabolism in *Arabidopsis*.
11:50 Ulmasov T. (USA) Engineering of essential amino acids in soybean for animal feed.
12:20 Bagni N. (Italy) Involvement of amino acids in polyamine synthesis.

13:00 Lunch buffet

14:00 Hoefgen R. (Germany) Multiparallel analysis of amino acid biosynthesis under sulfur depletion in *Arabidopsis thaliana*.
14:30 Leustek T. (USA) The role of competition between cystathionine gamma-synthase and threonine synthase in controlling the synthesis of methionine and threonine in *Arabidopsis thaliana*.
15:00 Saito K. (Japan) Identification of cystine-lyase gene in *Arabidopsis thaliana*.
15:30 Hell R. (Germany) The function of sulfur amino acids and their derivatives in the defense of plants against pathogens.
16:00 Coffee break
16:20 Lea P.J. (UK) Can photorespiratory amino acid metabolism be short-circuited?
16:40 Tomar M. (India) Changes in protein and amino acid content of *Brassica juncea* due to fungal infection.
17:00 Sorochan O. (Ukraine) Amino acids in cereals under heavy metal ions exposure.
17:20 Mascher R. (Germany) Effects of arsenate stress on antioxidative enzymes, glutathione and polyamines in higher plants.

Posters PLANT AMINO ACIDS
Angenon G. (Belgium) Lysine improvement in the seeds of pigeonpea.
Azevedo R.A. (Brazil) -Characterization of storage proteins of maize endosperm mutants.
-Effect of cadmium treatment on soluble amino acids concentration and the activity of antioxidant enzymes in plants.
-Lysine metabolism in sorghum.
Bergmann H. (Germany) Influence of N-shortage on the amino acid pattern in plants under salinity and heavy metal stress.
Caus M. (Moldova) -Effect of chromium on proline content and some red-ox enzymes in *Mentha piperita* plants.
- Changes in amino acid composition in soybean (*Glycine Max L.)* in response to titanium treatment.
Gaziola S.A.(Brazil) Biochemical and molecular aspects of lysine oxoglutarate reductase and saccharopine dehydrogenase in rice (*Oriza Sativa L.*).
Hesse H. (Germany) Current understanding of the regulation of methionine biosynthesis in plants.
Konopinska D. (Poland) Structure/biological function relationship studies on the plant peptide hormone phytosulphokine-α (PSK-α).
Mercier H. (Brazil) Levels of endogenous free amino acids during induction phase of shoot organogenesis in leaves of pineapple cultured *in vitro*.

METABOLISM AND NUTRITION (Lecture Hall D – Dept. Biochemical Sciences)

Chairmen: H. Blom (The Netherlands) & O. Golubnitschaja (Germany)

10:00 Golubnitschaja O. (Germany) Abnormalities in energy metabolism of individuals with vasospastic syndrome.
10:30 Blom H. (The Netherlands) Methylation and neural tube defects.
11:00 Coffee break
11:30 Louw R. (South Africa) Pertubation of critical metabolic processes may be associated with 3-hydroxynorvaline induced teratogenesis.
11:50 Diksic M. (Canada) α-methyl-L-tryptophan as a tracer to evaluate the brain serotonergic system.
12:10 Chiarla C. (Italy) The relationship between plasma cholesterol, amino acids and acute phase proteins in sepsis.
12:30 Brasse-Lagnel C. (France) Molecular mechanism by which glutamine stimulates the argininosuccinate synthetase gene expression.

13:00 Lunch buffet

14:30 Sanzini E. (Italy) Human milk banking: comparison between different pasteurisation temperatures on levels of protein sulfur aminoacids.
14:50 Eskander E. (Egypt) The protein "royalisin" function on hormonal profile, pathology and histochemistry in alloxan-diabetic male rats.
15:10 Nagata Y. (Japan) D-amino acids as respiratory substrates in microorganisms.
15:30 Abd el Mageed M. (Egypt) Role of protein in coffee substitute aroma.
16:00 Coffee break
16:30 Ventrucci G. (Brazil) Effects of leucine supplemented diet on protein metabolism in young tumor bearing rats.
16:50 Gomes-Marcondes M. (Brazil) Placental cell activity in tumor-bearing rats submitted to leucine supplemented diet.
17:10 Kanazawa Y. (Japan) Protein reduced rice, noodles and breads effectively enable amino acid scores perfect in low protein diets for chronic renal failure.
17:30 Nakao T. (Japan) Release and uptake of amino acids across skeletal muscle in patients with chronic renal failure.

Posters METABOLISM AND NUTRITION

Candito M. (France) -Assessment of folate status: measurement of homocysteine *versus* vitamin B12 and folate.
-Neural tube defects and decreased vitamin B12 values. Study of two cases in Algeria and one case in France.
-Two homocystinurics with deficient CBS activity: additive mutations in vascular disease?
Casini A. (Italy) Pharma-nutritional applications of some amino acids.
Csapó J. (Hungary) -Influence of microwave treatment on the D-amino acid content of meat.
-Changing the free D-amino acid content of different type of cheeses influenced by the ripening period .
-Determination of the protein of bacterial origin from the digestive system of cocks based on D-amino acid (D-Asp, D-Glu, D-Ala) content of excreta.
Della Corte L. (Italy) Extracellular levels of amino acids and choline in human high grade gliomas: an intraoperative microdialysis study.
Gueli M.C. (Italy) Homocysteine: a key player in cellular one-carbon metabolism in Down's syndrome.
Hayase K. (Japan) The quality of dietary protein affects urea synthesis in rats.
Holecek M. (Czech Republic) Changes in protein and amino acid metabolism in rats with acute acidosis.
Holló G. (Hungary) -Effect of diet on amino acid profile of longissimus of young bulls.
-Amino acid composition and biological value of protein of beef as affected by gender.
Misiewicz I. (Poland) -Effect of sulforaphane on human lymphoblastoid cells.
-Determination of the affinity of polycyclic aromatic hydrocarbons toward serum albumin.
Moenkemann H. (Germany) Diabetes mellitus is a risk factor for cardiac tissue degeneration.
Nishizawa N. (Japan) Effects of Japanese millet protein on lipid profile and diabetes in rats.
Rostom de Mello M.A. (Brazil) Spirulina protein, body growth and skeletal muscle protein metabolism in young rats.
Steinfeld R. (Germany) A hypothesis on the biochemical mechanism of tetrahydrobiopterin-responsiveness in phenylalanine hydroxylase deficiency.
Yeghiazaryan K. (Germany) Increased activity of metalloproteinases MMP-2 and MMP- 9in blood of patients with Diabetes mellitus as an indicator for the developing angiopathy.

AMINO ACID SYNTHESIS AND MEDICINAL CHEMISTRY

(Lecture Hall F – Dept. Biochemical Sciences)

Chairmen: P. Meffre (France), S. Bittner (Israel) & K. Burger (Germany)

10:00 Burger K. (Germany) New building blocks for peptide modification.
10:30 Hlavacek J. (Czech Republic) Synthesis of amino acids with methyleneoxy bond: application in peptide analogs.
11:00 Coffee break
11:30 Meffre P. (France) New developments in the synthesis of fluorinated analogues of glutamic acid and glutamine.
12:00 Maison W. (Germany) Efficient synthesis of structurally diverse aza- and diazabicycloalkanes: scaffolds for modular dipeptide mimetics with tunable backbone conformation.
12:30 Martinez A. (Norway) Critical residues in the activation of phenylalanine hydroxylase by L-phenylalanine.

13:00 Lunch buffet

14:30 Matloubi Moghaddam F. (Iran) Microwave assisted synthesis of biologically active compounds.
15:00 Mittendorf J. (Germany) Discovery, synthesis and SAR of β-amino acid BAY 10-8888 / PLD-118, a novel antifungal for treatment of yeast infections.
15:30 Koert U. (Germany) Non-natural amino acids as building blocks for gramicidin-hybrid ion channels.
16:00 Coffee break
16:30 Shtemenko N. (Ukraine) Synthesis and properties of cluster rhenium compounds with amino acids as ligands.

Posters AMINO ACID SYNTHESIS AND MEDICINAL CHEMISTRY

Aguzzi M.S. (Italy) RGDS peptide inhibits endothelial cells chemotaxis and induces caspases activation.
Asano T. (Japan) Design, synthesis and evaluation of *syn*-*O*-(carboran-1-yl)methyl-3-hydroxytyrosine (CMHT) and its derivatives for Boron Neutron Capture Therapy.
Bittner S. (Israel) New quinonyl amino acids.
Blandin V. (France) Straightforward synthesis of *N*-hydroxy-peptides.
Brückner H. (Germany) Synthesis of polypeptide antibiotics emerimicin III and (Aib^{12})-emerimicin.
Burger K. (Germany) New types of glycosylated amino acids, interesting candidates for drug design.
Grohs D. (Germany) Synthesis of modular dipeptide mimetics based on diazabicycloalkane backbones.
Kalmouch A. (Egypt) Synthesis of novel 3-pyridinecarbonitriles with amino acid function and their fluorescence properties.
Mai A. (Italy) Synthesis and histone deacetylase inhibiting activity of 3-[4-(2-benzoylethenyl)-1-methyl-1*H*-2-pyrrolyl]-*N*-hydroxy-2-propenamides, a novel class of synthetic inhibitors highly selective for class II histone deacetylases.
Minakakis P. (Greece) -Design and synthesis of novel (*S*)-pyroglutamic acid based antihypertensive agents.
-Synthesis of non-natural amino acids based on the ruthenium-catalyzed oxidation of a phenyl group to carboxylic acid.
Prenzel A. (Germany) Stereoselective *aza*-Diels-Alder reactions of alkoxy-and aryloxycarbonylimino-acetic acid ester.
Stavropoulos G. (Greece) -Synthesis and antiplatelet effects of RGD peptides incorporating salicylic acid derivatives.
-Synthesis of substance P (SP) analogs incorporating D-Trp and peptoid-peptide hybrids. Study of their antiproliferative properties *in vitro*.
Tanabe K. (Japan) Synthesis and evaluation of 5-fluorodeoxyuridine derivatives possessing tumor-homing peptide unit.
Zabitskaya E. (Ukraine) Amino acids of erythrocytes and plasma under some diseases.

D-AMINO ACIDS AND RACEMIZATION (Lecture Hall B – Dept. Pharmaceutical Chemistry)

Chairmen: G.H. Fisher (USA) & A. D'Aniello (Italy)

10:00 Fisher G.H. (USA) Sensitive one-step HPLC method for determination and quantification of D-Asp and N-methyl-D-Asp.
10:30 D'Aniello A. (Italy) Presence of D-aspartate in retina of *Octopus vulgaris:* possible role in vision.
11:00 Coffee break
11:20 Fujii N. (Japan) Spontaneous D-amino acid formation in elderly human tissues.
11:50 Barra D. (Italy) D-amino acid-containing bioactive peptides in amphibian skin.

12:20 Brückner H. (Germany) Racemization of amino acids in food as result of the Maillard reaction.

13:00 Lunch buffet

14:30 Konno R. (Japan) Mouse serine racemase: gene structure and expression.
15:00 Auvynet C. (France) Storage of peptides in the skin of *Phyllomedusa bicolor*.
15:30 Abe H. (Japan) Alanine racemase and D-amino acid oxidase in acquatic animals.
16:00 Coffee break

Posters D-AMINO ACIDS AND RACEMIZATION
Brückner H. (Germany) Gas chromatographic determination of D-amino acids in fortified wines.
Fisher G.H. (USA) An improved HPLC method for determination of D-aspartic acid.
Fukushima T. (Japan) Serum levels of D-and L-serine in the patients with schizofrenia.
Homma H. (Japan) A new chiral thiol reagent for automated precolumn derivatization and HPLC enantioseparation of amino acids. Application to the aspartate racemase assay.

MONDAY SEPTEMBER 8th, 2003

9:00-9:45 Plenary Lecture: N. Seiler (France) (Lecture Hall A – Dept. Pharmaceutical Chemistry)
Polyamine catabolism

9:00-9:45 Plenary Lecture: J. Godovac-Zimmermann (UK) (Lecture Hall E – Dept. Biochemical Sciences)
Functional proteomics of signal transduction pathways

POLYAMINES (Lecture Hall A – Dept. Pharmaceutical Chemistry)

Session 1 - Chairmen: D. Averill-Bates (Canada) & E. Agostinelli (Italy)

9:55 Kashiwagi K. (Japan) Cellular localization of polyamine transporters TPO1 to TPO4 and regulation of TPO1 activity by phosphorylation.
10:25 Wallace H.M. (Scotland) Cellular effects of polyamine analogues in human leukaemic cells.
11:00 Coffee break
11:30 Averill-Bates D. (Canada) Induction of apoptosis by exogenous spermine and amine oxidase in mouse melanoma cells.
12:00 Arancia G. (Italy) Bovine serum amine oxidase and spermine induce mitochondrial modifications on multidrug resistant human colon adenocarcinoma cells.
12:30 Fortier G. (Canada) Enzymotherapy of murine melanoma B16 by direct intratumoral injection of native or immobilized bovine serum amine oxidase.

13:00 Lunch buffet

Session 2 - Chairmen: H.M. Wallace (Scotland) & S. Beninati (Italy)

14:30 Bachrach U. (Israel) *In vitro* chemosensitivity tests for cancer patients: the use of ornithine decarboxylase.
15:05 Fogel A. (Poland) Interference with histidine decarboxylase activity during pregnancy associated growth of mammary gland.
15:35 Sanchez-Jimenez F. (Spain) Evidence of conformational changes in mammalian histidine decarboxylase during catalysis: a new target for selective inhibition.
16:00 Coffee break
16:30 Mondovì B. (Italy) Biogenic amines and apoptosis.
16:55 Stojanovic I. (Serbia) Polyamine and nitric oxide metabolism interplay changes during experimental epilepsy in different brain regions.
17:20 Ruggeri P. (Italy) Polyamine levels in a group of free-living amoebae, Negleria and Acanthamoeba spp.

PROTEOMICS (Lecture Hall E – Dept. Biochemical Sciences)

Chairmen: D. Barra (Italy) & M. Simmaco (Italy)

10:00 Bini L. (Italy) Proteomics in cancer research.
10:30 Hinz U. (Switzerland) The human proteomics initiative.
11:00 Coffee break
11:20 Rappsilber J. (Italy) Proteomic analysis of the human spliceosome.
11:50 Mattei B. (Italy) Proteomic analysis of plant-pathogen interactions.
12:10 Pucci P. (Italy) Functional proteomics.
12:30 Wallace A. (UK) Novel sample preparation techniques for enhanced protein identification by mass spectrometry.
12:45 Liebler M. (Ray-Test, Gmbh) A novel fluorescence detection system for Proteomics, based on ultra high resolution CCD-technology.

13:00 Lunch buffet

Structural Biology
Chairman: M. Brunori (Italy)

14:00 Yoshikawa S. (Japan) Proton-pumping mechanism of bovine heart cytochrome c oxidase.
14:45 Tegoni M. (France) Chemical communication in insects: structural analysis.
15:30 Federici L. (UK) Plant pathogens and defence responses to infection: crystallographic studies.
16:00 Coffee break
16:20 Mapelli M. (Italy) An unusual cyclin-dependent kinase: activation mechanism and pharmacological inhibition of CDK5.
16:50 Rizzi M. (Italy) Structrural studies on NAD biosynthesis and regulation.
17:20 Liepina I. (Latvia) Molecular modeling of gelsolin interactions with its conformational regulators – calcium ions, phosphoinositol 4,5-bisphosphate and caspase-3.
17:35 Gazarian K. (Mexico) Phage-display mimotope-peptide approach in structural study of helical proteins.

Posters PROTEOMICS
Cancemi P. (Italy) Proteomic profiling of *Pseudoxantoma elasticum* fibroblasts.
Cartoni C. (Italy) PrP^{Sc} allotypes profiling in bank voles *(Clethrionomys glareolus)* experimentally infected with scrapie.
Chertkova R. (Russia) *De novo* proteins on the base of albebetin and functional fragments from α_2-interferon, Differentiation Factor HLDF and insulin: design and properties.
Fontana S. (Italy) Proteomic modulation in breast cancer cells.
Miersch J. (Germany) Heavy metal-induced peptides and proteins in the aquatic fungus *Heliscus lugdunensis* Sacc. et Therry.
Wang J. (China) Molecular cloning and recombinant expression of antimicrobial peptides from house fly, *Musca domestics.*

ANALYSIS (Lecture Hall B – Dept. Pharmaceutical Chemistry)

Chairman: H. Brückner (Germany) & Molnàr-Perl I. (Hungary)

10:00 Molnàr-Perl I. (Hungary) Advances in the *o*-phthalaldehyde derivatization of amino acids and amines applying various SH-group additives.
10:30 Brückner H. (Germany) Design of reagents for amino acid analysis based on cyanuric chloride.
11:00 Coffee break
11:30 Osman F. (Egypt) Amino acids as a basic source of flavours.
12:00 Pitkanen H. (Finland) Comparison of serum and plasma amino acid concentrations in humans.
12:30 Sorimachi K. (Japan) Similarity of the cellular amino acid composition of a gene group coding 3,00-7,000 amino acid residues.

13:00 Lunch buffet

Posters ANALYSIS
Brückner H. (Germany) -Determination of biogenic amines in tea.
-Amino acid analysis of Asian fermented foods using HPLC and precolumn derivatization with OPA/MPA/FMOC-Cl.
Micheli L. (Italy) Amperometric amino acid and protein bioprobe analysis in food and pharmaceutical products.

Palecz B. (Poland) Enthalpic heterogeneous pair interaction coefficients between the zwitterions of the L-α-amino acids and a molecule of urea in water as a hydrophobicity parameter of amino acid side chains.

AMINO ACID TRANSPORT (Lecture Hall B – Dept. Pharmaceutical Chemistry)

Session 1 - Chairmen: E.I. Closs (Germany) & C. MacLeod (USA)

14:30 Sobrevia L. (Chile) Modulation of L-arginine transport by elevated D-glucose and adenosine in human fetal endothelium.
15:00 MacLeod C. (USA) Inhibition of CAT2 transporter protects from immune-mediated diabetes, neurodegeneration and asthma.
15:30 Kolb-Bachofen V. (Germany) The role of CAT-transporter expression in human skin.
16:00 Coffee break

16:00 Posters AMINO ACID TRANSPORT
Bungard C. (UK) Molecular and functional characterisation of the hepatoma glutamine ASCT transporter.
Bussolati O. (Italy) Membrane transport of asparagine-synthase substrates in asparaginase-sensitive and resistant sarcoma cells.
Dall'Asta V. (Italy) Transduction pathways involved in the regulation of arginine transport in human endothelial cells.
Sasaki E. (Japan) Fate of elevated blood L-tryptophan after oral L-tryptophan administration in nephrotic rats.
Spagnuolo S. (Italy) Short term regulation of aminoisobutyric acid transport by thyroid hormones during prenatal life in hepatocytes.
Yamamoto T. (Japan) Rat model of fatigue reduction and enhancement by controlling tryptophan level in the brain.

17:15 Schweitzer F. (Germany) Correlations between serum concentrations of asymmetric (ADMA) and symmetric (SDMA) dimethylarginine (DMA) in patients with renal insufficiency and their concomitant diseases.
17:30 Simon A. (Germany) Substrates of the neutral amino acid transport system N interfere with the arginine supply of nitric oxide synthase in human endothelial cells.
17:45 Rotmann A. (Germany) PKC activation promotes the intemalization of the human cationic amino acid transporter hCAT-1.

SELENOCYSTEINE (Lecture Hall D – Dept. Biochemical Sciences)

Chairman: J. Roberts (USA)

10:00 Stadtman T. (USA) Selenium delivery proteins and selenophosphate biosynthesis.
10:20 Hondal R. (USA) The mechanism of mammalian thioredoxin reductase studied by semi-synthesis.
10:40 Sies H. (Germany) Selenoproteins and glutathione peroxidase mimics: defense against hydroperoxides and peroxynitrite.
11:00 Coffee break
11:20 Ursini F. (Italy) Unraveling new functions of selenium catalysis in peroxidases.
11:40 Cassidy P. (USA) Inhibition of the selenoprotein thioredoxin reductase by electrophilic prostaglandins.
12:00 Commandeur J. (The Netherlands) Bioactivation and biological activity of selenocysteine Se-conjugates.
12:20 Roberts J. (USA) Selenazolidine prodrugs of selenocysteine as cancer chemopreventive agents.

13:00 Lunch buffet

MODIFICATION OF AMINO ACIDS AND PROTEINS

(Lecture Hall F – Dept. Biochemical Sciences)

Chairman: A. Abbruzzese (Italy)

10:00 Budillon A. (Italy) Acetylation of proteins as potential novel target for antitumor therapy.
10:30 Esposito C. (Italy) Tissue transglutaminase modulators regulate actin rearrangements and cell cycle in several cell types.
11:00 Coffee break

11:30 Caraglia M. (Italy) Protein prenylation as a potential target in the therapy of human neoplasms.
11:55 Longo O. (Italy) Role of elongation factor 1A (EF-1A) and ubiquitin in INFα and VP16–mediated apoptosis.
12:20 Ingrosso D. (Italy) Unbalanced methylation of macromolecules: a new mechanism for homocysteine toxicity on cardiovascular system?
12:40 Cerella C. (Italy) Mono(ADP-ribosylation) inhibition mobilises calcium from the endoplasmic reticulum by triggering a phospholipase C-like pathway: implications for apoptosis.

13:00 Lunch buffet

Posters MODIFICATION OF AMINO ACIDS AND PROTEINS
Borromeo V. (Italy) Peptide mass mapping and N-acetyl- and N-glycolyl- neuraminic acid analysis of pituitary purified bovine follicle stimulating hormone.
Cimmino A. (Italy) Expression of a protein repair methyltransferase prevents apoptosis induced by oxidative stress in endothelial cells.
Farriol-Mathis N. (France) Post-translational modifications in the Swiss-prot protein knowledgebase.
Giordano C. (Italy) Insertion of sulfonyl analogues of β^3-aminoacids in peptides. Synthesis and activity of Gonadotropin-Releasing Hormone analogues
Paternoster L**.** (Italy) Melatonin reduces stress-induced apoptosis in U937 cells by stimulating MT1 plasma membrane receptors.

GLUTATHIONE AND GLUTATHIONE-S-TRANSFERASES IN TOXICOLOGY

(Lecture Hall C – Dept. Pharmaceutical Chemistry)
Chairmen: G. Federici (Italy), E. Testai (Italy) & L. Ghibelli (Italy)

10:00 Mannervik B. (Sweden) Glutathione transferases and the evolutionary redesign of their substrate selectivities.
10:30 Strange R.C. (UK) Genetic polymorphism in the glutathione S-transferase supergene family: implications for susceptability and outcome in complex diseases.
11:00 Coffee break
11:30 Diederich M. (Luxembourg) Induction of apoptosis by curcumin: mediation by glutathione S-transferase P1-1 inhibition.
12:00 Lo Bello M. (Italy) Nitrosylation of human glutathione transferase P1-1 with dinitrosyl-diglutathionyl iron complex *in vivo*.
13.00 Lunch buffet

14:30 Meyn R. (USA) The regulation of tumor cell apoptosis by glutathione.
15:00 Ghibelli L. (Italy) Glutathione in apoptotic and survival pathways
15:30 Merendino N. (Italy) Glutathione as "sensor" of the apoptosis induced by DHA.
16:00 Coffee break
16:30 Pompella A. (Italy) Membrane γ-glutamyltransferase: from sulfur aminoacid metabolism to cell redox regulation.
17:00 De Nicola M. (Italy) Different fates of intracellular glutathione determine different apoptotic morphologies.
17:20 D'Alessio M. (Italy) GSH depletion upregulate Bcl-2 in BSO-resistant cells: possible involvement of NF-kappaB-mediated survival pathways.

Posters GLUTATHIONE AND GLUTATHIONE-S-TRANSFERASES IN TOXICOLOGY
Caccuri A.M. (Italy) Specific interaction of a natural NO carrier with the glutathione transferase superfamily.
Stevanato R. (Italy) Nitrosopropofol and dipropofol: two nitrosoglutathione derivatives active on the mitochondrial energy metabolism.

TUESDAY SEPTEMBER 9th, 2003

9:00-9:45 Plenary Lecture: A. J. Michael (UK) (Lecture Hall A – Dept. Pharmaceutical Chemistry)
Polyamine-responsive regulation of the polyamine biosynthetic pathway by mRNA translational mechanisms

9:00-9:45 Plenary Lecture: J. Williams (European Commission) (Lecture Hall E – Dept. Biochemical Sciences)
The COST system

POLYAMINES (Lecture Hall A – Dept. Pharmaceutical Chemistry)

Session 3 - Chairmen: N. Seiler (France) & K. Igarashi (Japan)

9:55 Grillo M.A. (Italy) Isolation and characterization of a rat hepatoma cell line resistant to the antiproliferative effects of agmatine.
10:25 Satriano J. (USA) Getting Ras transformed cells to grow old.
11:00 Coffee break
11:30 Oshima T. (Japan) Reverse genetic studies on roles of unusual polyamines in *Thermus thermophilus*.
12:00 Bagni N. (Italy) Putative ODC activity in *Arabidopsis thaliana*: inhibition and intracellular localization.
12:30 Bjelakovic G. (Serbia) Effect of glucocorticoids on polyamine metabolism in some guinea pig tissues during sensitization.

13:00 Lunch buffet

Session 4 - Chairmen: E. Agostinelli (Italy) & S. Beninati (Italy)

14:30 Bettuzzi S.(Italy) Rat cardiac polyamine metabolism response to HBO (hyperbaric oxygen) depends on intensity of treatment.
15:00 Bachrach U. (Israel) Concluding remarks.
15:20 "Polyamine: Future perspectives".

Posters POLYAMINES
Agostinelli E. (Italy) Spermine enzymatic oxidation products cause cytotoxicity in multidrug resistant human melanoma cells overexpressing P-glycoprotein.
Fabiano C. (Italy) Free-polyamine in tomato fruits after saline and nematocide treatments.
Fiumana E. (Italy) Involvement of polyamines in etoposide-induced apoptosis of mouse fibroblasts.
Ohnuma M. (Japan) Polyamine biosynthetic pathway of an extreme thermophile, *Thermus thermophilus*
Pavlovic D. (Serbia) Protective effect of spermine on hepatic injury in the iron-overloaed rats.
Peñafiel R. (Spain) Arginine and polyamine metabolism in mouse kidney: influence of gender and dietary arginine.
Sobieszczuk E. (Poland) The role of spermidine in the greening process stimulated by cytokinin.
Solinas S. (Italy) Cystamine induces apoptotic cell death in rat hepatoma cells.
Syatkin S.P. (Russia) Regulation of cell proliferation and tumor growth processes by chemical compounds mediated by polyamines metabolism.
Toninello A. (Italy) Agmatine is transported in liver mitochondria by an energy-dependent mechanism.

SPORT AND EXERCISE (Lecture Hall B – Dept. Pharmaceutical Chemistry)

Chairman: F. Botrè (Italy)

10:00 Botrè F.(Italy) Opening remarks.
10:10 Gmeiner G. (Austria) Detection of erythropoietin doping in urine samples - strategies of data interpretation.
10:30 Casetta B. (Italy) Application of LC-MS-MS to the study of the differences between endogenous and recombinant peptides: the glicosylation profile of native and recombinant human erythropoietin.
11:00 Coffee break
11:30 Mero A.A. (Finland) Amino acid concentrations in blood and muscle following bovine colostrum supplementation.
11:50 Castell L. (UK) Acute sleep deprivation, fatigue, immunodepression and glutamine.
12:10 Ward R. (Belgium) Comparative studies of changes in amino acid profiles after aerobic and anaerobic exercise.

13:00 Lunch buffet

Posters SPORT AND EXERCIS E
Castell L. (UK) Glutamine and tryptophan in relation to immunedepression during intensive training at altitude.
Gmeiner G. (Austria) Anabolic steroids in sports nutrition: the Austrian experience.
Rossi F. (Italy) Effects of amino acid supplementation on the urinary steroid profile concentrations.

AMINO ACID TRANSPORT (Lecture Hall E – Dept. Biochemical Sciences)

Session 2 - Chairmen: D. Thwaites (UK) & C. Fleck (Germany)

10:00 Collinson I. (Germany) Structural and functional studies of the bacterial protein-translocation complex.
10:30 Leibach F. (USA) New aspects of substrate specificity for peptide transporters.
11:00 Coffee break
11:30 Peres A. (Italy) Molecular physiology of the GABA cotransporter rGAT1.
12:00 Thwaites D. (UK) hPAT1: a high capacity mechanism for taurine, betaine, imino acid and drug absorption across the human small intestine.
12:30 Kennedy D. (UK) Amino acid transport by the novel transporter rat PAT2.

13:00 Lunch buffet

14:30 Sacchi V.F. (Italy) Structure/function relationship in the insect amino acid transporter KAAT1.
14:45 Mühling J. (Germany) Nutritional and pharmacological manipulation of neutrophils (PMN): influence on markers of PMN immune function including intracellular taurine and taurine-dependent amino acids
15:00 Gebauer S. (Germany) 3D-QSAR of peptide substrates of the mammalian peptide transporter PepT1.
15:15 Frey I. (Germany) *Pept2*-knockout mice show altered renal handling of peptides.

18:30-21:00 Excursion – Meeting point h.18:00 at Piazzale Aldo Moro (see map -in front of the main entrance of the University "La Sapienza")

21:00 Gala Dinner - Farewell

Participation at the bus excursion and at the gala dinner has to be confirmed at the registration desk not later than Saturday 6th September.