

4th International Conference on Polyamines: Biochemical, Physiological and Clinical perspectives

SAPIENZA University of Rome

and Tivoli (Rome)

Italy

September 4th-9th, 2016

SCIENTIFIC PROGRAM
updated to August 25th, 2016

Sunday, September 4th

GRAND HOTEL DUCA D'ESTE, TIVOLI

09:30 am - 12:30 pm Registration at the Grand Hotel Duca d'Este (Tivoli)

12:30 pm -2:00 pm Lunch

4:30 pm - 5:00 pm Opening Ceremony

E. Gaudio , Rector SAPIENZA
University of Rome, Italy

E. Agostinelli, Rome, Italy

K. Igarashi, Chiba, Japan

U. Bachrach Jerusalem, Israel

5:00 pm- 6:30 pm Opening Lectures

Session leaders: E. Agostinelli (SAPIENZA University of Rome, Italy)

U. Bachrach (Hebrew University, Israel)

- 5:00 pm – 5:45 pm [PL 01] **K. Igarashi (Chiba University, Japan)**
Effects of polyamines and their metabolite, acrolein, on cell functions
- 5:45 pm - 6:30 pm [PL 02] **K.T. Wilson (Vanderbilt University, USA)**
New insights into effects of ODC and DFMO in Helicobacter pylori-induced gastric inflammation and carcinogenesis
- 6:00 pm – 7:30 pm Registration at the Grand Hotel Duca d’Este (Tivoli)**
- 7:30 pm - 10:30 pm Welcome dinner at the Grand Hotel Duca d’Este (Tivoli)**

Monday, September 5th

9:00 am - 10:55 am Session 1: POLYAMINES IN CELL GROWTH AND DIFFERENTIATION

Session leader: T. Oka (Wakunaga Pharmaceutical Co.Ltd, Japan)

- 9:00 am - 9:30 am [PL 03] **C. Kahana (Weizmann Institute of Science, Israel)**
Polyamines, in cellular proliferation and differentiation
- 9:30 am - 9:55 am [L 04] **L.A. Vardy (Instit. of Medical Biology, Singapore)**
Polyamine mediated regulation of wound healing
- 9:55 am - 10:20 am [L 05] **F.W. Bazer (Texas A&M University, USA)**
Effects of agmatine on secretion of interferon tau and catecholamines and expression of genes related to production of polyamines by ovine trophectoderm cells
- 10:20 am – 10:45 am [L 06] **M.T. Hyvönen (University of Eastern Finland)**
Novel 12-kDa isoform of spermidine/spermine-N¹-acetyltransferase facilitates the production of N¹-acetylputrescine and N⁸-acetylspermidine

10:45 am - 11:20 am **Coffee Break**

11:20 am - 12:35 pm **Session 2: eIF5A AND TRANSLATION**

Session leader: A. Kaiser (University Duisburg-Essen, Germany)

11:20 am - 11:45 am [L 07]

M.H. Park (National Institutes of Health, USA)

Roles of polyamines and eIF5A in the regulation of translation in mammalian cells

11:45 am - 12:10 pm [L 08]

T.L. Mastracci (Indiana Biosciences Res Instit, USA)

Polyamine and hypusine biosynthesis is required for proper pancreas development

12:10 pm - 12:35 pm [L 09]

C.F. Zanelli (School of Pharmac Sciences, Brazil)

Mapping surface residues of eIF5A that are important for binding to the ribosome using alanine scanning mutagenesis

12:40 pm **Photograph**

1:00 pm **Lunch**

3:00 pm - 4:00 pm **Oral poster presentation**

Session leaders: A.Toninello (University of Padova, Italy)

F. Sanchez-Jimenez (University of Malaga, Spain)

4:00 pm - 5:00 pm **Poster session and Coffee break**

5:00 pm - 7:05 pm **Session 3 : POLYAMINES METABOLISM, TRANSPORT AND SIGNAL TRANSDUCTION**

Session leader: C. Kahana (Weizmann Institute of Science, Israel)

5:00 pm - 5:25 pm [L 10]

R. Peñafiel (University of Murcia, Spain)

Functional aspects of mouse Gm853, a new paralogue of ornithine decarboxylase antizyme inhibitor 2

5:25 pm - 5:50 pm	[L 11]	G. Wu (Texas A&M University, USA) <i>Intracellular sources of ornithine for polyamine synthesis in endothelial cells</i>
5:50 pm - 6:15 pm	[L 12]	T. Oshima (Kyowa-Kako Co., Japan) <i>Biosynthesis of thermospermine in an extreme thermophile, Thermus thermophilus</i>
6:15 pm - 6:40 pm	[L 13]	T. Takahashi (Okayama University, Japan) <i>Thermospermine responses are mediated by the SAC51 family in Arabidopsis</i>
6:40 pm - 7:05 pm	[L 14]	I. Pottosin (University of Colima, México) <i>Polyamines regulate the transport of cations across plant membranes in many ways</i>
7:30 pm – 8:30 pm	Dinner	
8:30 pm – 12:00 am	Rome by night	

Tuesday, September 6th

9:00 am - 12:45 pm Session 4 : POLYAMINES IN HUMAN HEALTH: IN CANCER AND OTHER DISEASES. THERAPEUTIC APPLICATIONS

Session leader: K.T. Wilson (Vanderbilt University, USA)

9:00 am - 9:30 am	[PL 15]	S. Gilmour (Lankenau Institute Medical Res, USA) <i>Polyamine-stimulated stem cell recruitment in arsenic-induced skin cancer</i>
9:30 am - 9:55 am	[L 16]	DL.T. Koomoa (University Hawaii at Hilo, HI, USA) <i>Polyamines regulate TRPM7 channel and kinase activities</i>
9:55 am - 10:25 am	[L 17]	K. Kashiwagi (Chiba Institute of Science, Japan) <i>Decrease in acrolein toxicity based on the decline of polyamine oxidases</i>
10:25 am – 10:55 am	[L 18]	E. Agostinelli (SAPIENZA University of Rome, Italy)

Spermine enzymatic oxidation products induce mitochondrial mediated cytotoxicity in human colon adenocarcinoma LoVo and prostate cancer LNCaP cells detected by SILAC-based mass spectroscopy analysis

10:55 am - 11:30 am

Coffee Break

Session leader: D. Zilberstein (Technion-Israel Institute of Technology)

11:30 am - 11:55 am

[L 19]

O. Phanstiel IV (University of Central Florida, USA)

Potential new biomarkers for difluoromethylornithine-based therapies in pancreatic cancers

11:55 am - 12:20 pm

[L 20]

G. Canettieri (SAPIENZA University of Rome, Italy)

Polyamines, developmental pathways and cancer: regulation of ODC translation by the Hedgehog signaling

12:20 pm - 12:45 pm

[L 21]

T. Uemura (Amine Pharma Research Instit, Japan)

Acrolein alters antigen recognition of immunoglobulin and increases matrix metalloproteinase 9 activity in primary Sjögren's syndrome patients

1:00 pm

Lunch

3:00 pm - 4:00 pm

Oral poster presentation

Session leaders: S. Roberts (Pacific University, USA)

P. Mariottini (University "ROMA TRE", Italy)

4:00 pm - 5:00 pm

Poster session and Coffee break

5:00 pm – 7:05 pm

Session 5: POLYAMINES METABOLISM IN PARASITES AND OTHER MICROORGANISMS

Session leader: M.H. Park (National Institutes of Health, USA)

5:00 pm - 5:25 pm

[L 22]

A. Kaiser (University Duisburg-Essen, Germany)

EIF-5A controls apoptotic damage of myocytes under hypoxemia in children with complicated falciparum malaria

5:25 pm - 5:50 pm	[L 23]	D. Zilberstein (Technion-Israel Inst of Technology) <i>Arginine sensing in the human pathogen Leishmania</i>
5:50 pm - 6:15 pm	[L 24]	S.C. Roberts (Pacific University, USA) The role of polyamines for proliferation, survival, and infectivity in the protozoan parasite Leishmania
6:15 pm - 6:40 pm	[L 25]	S. Fujiwara (Kwansei-Gakuin University, Japan) <i>Properties of branched-chain polyamines (BCPA) in thermophiles and enzyme characteristics of BCPA synthase</i>
6:40 pm - 7:05 pm	[L 26]	B.K. Verlinden (University of Pretoria, South Africa) <i>Resisting resistance: pleiotropic antimalarial polyamine analogues</i>
7:30 pm	Dinner	

Wednesday, September 7th

9:00 am - 12:05 pm **Session 6: POLYAMINES IN PLANTS AND TRANSGLUTAMINASES. BIOTECHNOLOGICAL APPLICATIONS**

Session leader: K. Igarashi (Chiba University, Japan)

9:00 am - 9:30 am	[PL 27]	A. Mattoo (Beltsville Agricultural Res Center, USA) <i>Polyamines rule the roost – from nucleolus to cellular proteins to ecosystem services in sustainable agricultural systems</i>
9:30 am - 9:55 am	[L 28]	S.C. Minocha (University of New Hampshire, USA) <i>Polyamines in host-pathogen and pest interactions in plants: designing plants to tolerate and resist the enemy</i>
9:55 am - 10:20 am	[L 29]	A.K. Handa (Purdue University, USA) <i>Polyamines transcriptionally regulate gene expression during fruit development and ripening</i>
10:20 am - 10:50 am		Coffee Break

Session leader: S. Gilmour (Lankenau Institute for Medical Research, USA)

- 10:50 am - 11:15 am [L 30] **E. Verderio (School of Science and Technology, UK)**
The role of alternative Transglutaminase-2 transcripts in prostate cancer
- 11:15 am – 11:40 am [L 31] **S. Del Duca (University of Bologna, Italy)**
Gluten free flour doughs improvement of texture by protein cross-links occurring via microbial transglutaminase from Streptovercillium mobaraense
- 11:40 am - 12:05 pm [L 32] **F. Vianello (University of Padova, Italy)**
Probing the interactions between proteins and naked iron oxide nanoparticle
- 12:05 pm – 1:30 pm Lunch**
- 1:45 pm - 7:30 pm Sightseeing**
- 8:00 pm - 10:30 pm Dinner**

Thursday, September 8th

9:00 am - 11:50 am Session 7 : POLYAMINES AND THEIR ANALOGS: CHEMISTRY AND MOLECULAR PHARMACOLOGY

Session leader: A. R. Khomutov (Russian Academy of Sciences, Russia)

- 9:00 am - 9:30 am [PL 33] **P.M. Woster (Medical University of South Carolina, USA)**
Oligamine analogues targeted against drug-resistant pathogens
- 9:30 am - 9:55 am [L 34] **Z. Urban (Institute of Cancer Research, UK)**
2d, a dual polyamine analogue and LSD1 inhibitor, enhances differentiation-inducing potential of retinoic acid in neuroblastoma

9:55 am - 10:20 am	[L 35]	H.M. Wallace (University of Aberdeen, UK) <i>Insights into polyamine transport</i>
10:20 am - 11:00 am		Coffee Break
11:00 am - 11:25 am	[L 36]	H.J. Lin (National Taiwan Ocean University, Taiwan) <i>Polyamine-capped fluorescent carbon quantum dots and their applications</i>
11:25 am - 11:50 am	[L 37]	T. Keinanen (University of Eastern Finland, Finland) <i>Controlling polyamine analogue metabolism and their biomolecular interactions by means of targeted deuteration or C-methylation</i>
11:50 am - 12:40 pm		Session 8 : POLYAMINES IN NUTRITION AND LONGEVITY <i>Session leader: H.M. Wallace (University of Aberdeen, UK)</i>
11:50 am - 12:15 pm	[L 38]	M. Minamisawa (Chiba Inst of Technology, Japan) <i>The functional evaluation of polyamine-containing Yuzu (citrus Junos) extracts</i>
12:15 pm – 12:40 pm	[L 39]	Z. Zwihaft (Weizmann Institute of Science, Israel) <i>Circadian clock control by polyamine levels through a mechanism that declines with age</i>
12: 40 pm – 2:30 pm		Lunch
2:30 pm - 4:00 pm		Poster session and Coffee break
4:00 pm – 5:40 pm		Session 9: POLYAMINES AND PHYSIOLOGY <i>Session leader: O. Phanstiel IV (University of Central Florida, USA)</i>
4:00 pm - 4:25 pm	[L 40]	J.Y. Wang (University of Maryland, USA) <i>Polyamines regulate the gut epithelial barrier function by altering expression level of long noncoding RNA H19</i>

- 4:25 pm - 4:50 pm [L 41] **F. Sanchez - Jimenez (University of Malaga, Spain)**
Structural and functional interaction between polyamine-related molecules and biological membranes
- 4:50 pm - 5:15 pm [L 42] **W.A. Fogel (Medical University of Lodz, Poland)**
H₄ histamine receptor antagonist improves heart function and survival for rats with experimental autoimmune myocarditis (EAM)
- 5:15 pm - 5:40 pm [L 43] **E. Pirinen (University of Helsinki, Finland)**
Long-term folate deficiency induces hepatic polyamine catabolism in mice
- 5:40 pm - 6:15 pm **Concluding Remarks:** *U. Bachrach (Hebrew University, Israel)*
E. Agostinelli (SAPIENZA University of Rome, Italy)

8:00 pm **Gala Dinner**

Friday, September 9th

9:00 am **Departure to Fiumicino Airport and Termini Station**