

5th International Conference on Polyamines: Biochemical, Physiological and Clinical Perspectives

National Taiwan Ocean University
& Taipei, Taiwan
September 2-7, 2018

SCIENTIFIC PROGRAM

Sessions

1. POLYAMINES IN CELL GROWTH AND DIFFERENTIATION
2. eIF5A AND TRANSLATION
3. POLYAMINES IN NUTRITION AND LONGEVITY
4. POLYAMINES METABOLISM, TRANSPORT AND SIGNAL TRANSDUCTION
5. POLYAMINES IN BIOTECHNOLOGICAL APPLICATIONS
6. POLYAMINES IN PLANTS
7. POLYAMINES IN HUMAN HEALTH: IN CANCER AND OTHER DISEASES.
THERAPEUTIC APPLICATIONS (FIRST PART)
8. POLYAMINES AND PHYSIOLOGY
9. POLYAMINES IN HUMAN HEALTH: IN CANCER AND OTHER DISEASES.
THERAPEUTIC APPLICATIONS (SECOND PART)
10. POLYAMINES METABOLISM IN PARASITES AND OTHER MICROORGANISMS

5:45 pm - 6:30 pm [PL 02] **K. Igarashi (Chiba University, Japan)**
Acrolein toxicity at advanced age

5:00 pm – 6:45 pm **Registration at the Howard Civil Service International House Taipei**

6:45 pm - 9:00 pm **Welcome dinner at the Howard Civil Service International House Taipei**

Monday, September 3rd

9:00 am - 10:15 am **Session 1: POLYAMINES IN CELL GROWTH AND DIFFERENTIATION**

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

9:00 am - 9:25 am [L 03] **M.H. Park (National Institutes of Health, USA)**
A potential interplay between polyamine and Mg pathways in the regulation of eukaryotic cell proliferation

9:25 am - 9:50 am [L 04] **L.A. Vardy (Institute of Medical Biology, Singapore)**
Polyamine mediated regulation of the epidermis: Barrier formation and pigmentation

9:50 am - 10:15 am [L 05] **K. Kashiwagi (Chiba Institute of Science, Japan)**
Polyamine stimulation of the synthesis of histone acetyltransferases, Gcn5 and Hat1

10:15 am - 10:45 am **Coffee Break**

10:45 am - 12:00 pm **Session 2: eIF5A AND TRANSLATION**

Session leader: R.G. Mirmira (Indiana University, Indianapolis, USA)

10:45 am - 11:10 am [L 06] **C. Kahana (Weizmann Institute of Science, Israel)**
Investigating the mechanism leading to proliferative arrest of polyamine depleted cells

11:10 am - 11:35 pm [L 07] **T.L. Mastracci (Indiana Biosciences Res Institute, USA)**
Hypusine biosynthesis is required for proper development and growth in mouse and human

11:35 am - 12:00 pm [L 08] **A. Kaiser (University Duisburg-Essen, Germany)**
eIF5A prevents cardiac symptoms in experimental cerebral malaria through apoptosis

12:00 pm - 12:25 pm Session 3 : POLYAMINES IN NUTRITION AND LONGEVITY

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

12:00 pm - 12:25 pm [L 09]

K. Soda (Saitama Medical Center, Japan)

Increased polyamine intake elevates blood spermine levels and suppresses expression of lymphocyte function-associated antigen 1 (LFA-1) on human immune cells. – an interventional study –

12:30 pm Photograph

12:45 pm Lunch

2:30 pm - 3:30 pm Oral poster presentation

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

S. Okubo (Wakunaga Pharmaceutical Co. Ltd, Japan)

3:30 pm - 4:30 pm Poster session and Coffee break

4:30 pm - 6:35 pm Session 4 : POLYAMINES METABOLISM, TRANSPORT AND SIGNAL TRANSDUCTION

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

4:30 pm - 4:55 pm [L 10]

R.G. Mirmira (Indiana University, Indianapolis, USA)

Deoxyhypusine synthase is required for the adaptive proliferative response of the islet β cell

4:55 pm - 5:20 pm [L 11]

A. Tajima (The Jikei University, Japan)

Antizyme and ATP citrate lyase suppresses the cell death of ornithine decarboxylase-overproducing cell line

5:20 pm - 5:45 pm [L 12]

N.L. Chan (National Taiwan University)

Structural basis of antizyme-mediated regulation of polyamine homeostasis

5:45 pm - 6:10 pm [L 13]

S. Fujiwara (Kwansei-Gakuin University, Japan)

Physiological roles of branched-chain polyamine in hyperthermophile: effect of BCPA on gene expressions in hyperthermophilic archaea

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

6:10 pm - 6:35 pm [L 14] **D. Spandidos (Emeritus University of Crete, Greece)**
Editor Spandidos Publications Ltd
Publishing in Biomedical Sciences

6:45 pm – 8:30 pm Dinner

8:45 pm – 11:00 pm Taipei by night

Tuesday, September 4th

9:00 am - 12:45 pm Session 5 : POLYAMINES IN BIOTECHNOLOGICAL APPLICATIONS

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

9:00 am - 9:25 am [L 15] **F. Vianello (University of Padova, Italy)**
Biotechnological applications of nanostructured hybrids of polyamine based quantum dots and iron oxide nanoparticles

9:25 am - 9:50 am [L 16] **H.J. Lin (National Taiwan Ocean University, Taiwan)**
High efficient and safe bactericides derived from polyamines and their applications in aquaculture

9:50 am - 10:15 am [L 17] **X.H. Makhoba (University of Zululand, South Africa)**
Polyamines-modified nanoparticles and molecular chaperones assembled nanoparticles synthesis in enhancing healing of diabetic wounds

10:15 am – 10:40 [L 18] **P.M. Woster (Medical University of South Carolina, USA)**
How we did it: the discovery of a new chemical scaffold for SMOX inhibition

10:40 am - 11:10 am Coffee Break

11:10 am - 12:25 pm Session 6 : POLYAMINES IN PLANTS

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

11:10 am - 11:35 am [L 19] **A. Mattoo (Beltsville Agricultural Res Center, USA)**
Polyamines: Signaling Molecules in Plant Health and Death

11:35 am - 12:00 pm [L 20] **J. Zepeda-Jazo (University La Ciénega Michoacán, Mexico)**
Technical approach for electrophysiological studies of polyamines effects on ion transport across plant membranes

12:00 pm - 12:25 pm [L 21] **S.H. Su (University of Wisconsin-Madison, USA)**
Polyamines alter primary root growth by modulating biotin synthesis

12:30 pm – 1:30 pm Lunch

1:45 pm - 6:45 pm Sightseeing

7:00 pm - 9:00 pm Dinner

Wednesday, September 5th

9:00 am - 12:50 pm Session 7: POLYAMINES IN HUMAN HEALTH: IN CANCER AND OTHER DISEASES. THERAPEUTIC APPLICATIONS (First part)

Session leader: R. A. Casero (Johns Hopkins University, USA)

9:00 am - 9:25 am [L 22] **K.T. Wilson (Vanderbilt University Medical Center, USA)**
New insights into immunoregulatory effects of polyamines in gastrointestinal inflammation and carcinogenesis

9:25 am - 9:50 am [L 23] **S.K. Gilmour (Lankenau Institute for Medical Res, USA)**
Anti-Tumor and immunomodulatory effects of novel arylpolyamine Drugs

9:50 am - 10:15 am [L 24] **T. Uemura (Amine Pharma Research Institute, Japan)**
N-acetylcysteine derivatives decrease infarction volume by stabilizing glutathione S-transferases

10:15 am – 10:40 [L 25] **E. Agostinelli (SAPIENZA University of Rome, Italy)**
Enzymatic spermine metabolites cause apoptosis in tumor cells detected by flow cytometry, real time RT-PCR and proteomic analyses

10:40 am - 11:10 am Coffee Break

Session leader: P. Mariottini (University “ROMA TRE”, Italy)

- 11:10 am - 11:35 am [L 26] **S. Merali (Temple School of Pharmacy Philadelphia, USA)**
Scavenging of oxidative stress products by polyamine analogs as basis for diabetes treatment
- 11:35 am – 12:00 pm [L 27] **U. Bachrach (Hebrew University, Israel)**
Green Tea and Polyamines – Past, Present and Future
- 12:00 pm - 12:25 pm [L 28] **A.Toninello (University of Padova, Italy)**
Induction of mitochondrial permeability transition by spermine and bovine serum amine oxidase in hepatoma cell mitochondria. Potential mechanism for intrinsic apoptosis induction
- 12:25 pm - 12:50 pm [L 29] **J.C. Sierra (Vanderbilt University Medical Center, USA)**
Spermine oxidase deletion confers protection from Helicobacter pylori-induced gastric inflammation and DNA damage

1:00 pm – 2:30 pm Lunch

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

Session leaders: R. Jaladanky (University of Maryland, Baltimore, USA)

T. Ueshima (Wakunaga Pharmaceutical Co. Ltd, Japan)

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

5:00 pm – 6:15 pm Session 8: POLYAMINES AND PHYSIOLOGY

Session leader: E. Pirinen (University of Helsinki, Finland)

- 5:00 pm - 5:25 pm [L 30] **J.Y. Wang (University of Maryland, Baltimore, USA)**
Regulation of intestinal epithelium homeostasis by polyamines through RNA-binding protein HuR and noncoding RNAs
- 5:25 pm - 5:50 pm [L 31] **M. Cervelli (University of Roma Tre, Italy)**
The relationship between serotonergic system and polyamines system in aberrant emotional behaviour
- 5:50 pm - 6:15 pm [L 32] **T. Fukui (Saitama Medical Center, Japan)**
Biological background by which polyamine regulates DNA methylation

6:30 pm - 8:15 pm Dinner

8:30 pm – 11:00 pm Taipei by night

Thursday, September 6th

9:00 am - 11:50 am **Session 9: POLYAMINES IN HUMAN HEALTH: IN CANCER AND OTHER DISEASES. THERAPEUTIC APPLICATIONS (Second part)**

Session leader: L.A. Vardy (Institute of Medical Biology, Singapore)

9:00 am - 9:25 am [L 33] **O. Phanstiel IV (University of Central Florida, USA)**
Polyamine Depletion in Pancreatic Cancers via Amino Acid Deprivation

9:25 am - 9:50 am [L 34] **P.K. Epling-Burnette (Moffitt Cancer Center, Florida, USA)**
Regulation and Roles of Polyamines in CD8⁺ T cell Immunity

9:50 am - 10:15 am [L 35] **P. Chi (National Taiwan University, Taipei, Taiwan)**
Polyamines promote homology-directed DNA repair

10:15 am - 10:45 am **Coffee Break**

10:45 am - 11:10 am [L 36] **D.L.T. Koomoa (University of Hawaii at Hilo, Hawaii)**
Polyamines promotes Neuroblastoma drug resistance through a process that involves novel calcium signaling pathways

11:10 am - 11:35 am [L 37] **A.P. Gobert (Vanderbilt University Medical Center, USA)**
Cystathionine gamma-lyase regulates innate immunity through effects on polyamine balance in macrophages during Helicobacter pylori infection

11:35 am - 12:30 pm **Meeting International Polyamines Foundation - ONLUS**

E. Agostinelli, President

All the participants to the Conference are invited to attend

12:45 pm - 2:15 pm Lunch

2:45 pm - 3:45 pm Poster session and Coffee break

3:45 pm – 6:15 pm **Session 10: POLYAMINES METABOLISM IN PARASITES AND OTHER MICROORGANISMS**

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

- 3:45 pm - 4:10 pm [L 38] **T. Oshima (Kyowa-Kako Co., Japan)**
*Why an extreme thermophile, *Thermus thermophilus*, can produce many different polyamines with a limited number of genes involved in polyamine biosynthesis?*
- 4:10 pm - 4:35 pm [L 39] **A. Ilari (National Research Council of Italy, Italy)**
Enzymes of the trypanothione-based redox metabolism and anti-kinetoplastid drug discovery
- 4:35 pm - 5:00 pm [L 40] **S.C. Roberts (Pacific University, USA)**
Polyamines: paramount for parasite proliferation and persistence
- 5:00 pm - 5:25 pm [L 41] **B. Brider Verlinden (University of Pretoria, South Africa)**
Multi-target Antimalarial Polyamine Analogues: Resisting Resistance
- 5:25 pm - 5:50 pm [L 42] **A. Zhgun (Center of Biotechnology RAS Moscow, Russia)**
The relationship between polyamines and overproduction of secondary metabolites in filamentous fungi
- 5:50 pm - 6:15 pm **Concluding Remarks:** *U. Bachrach (Hebrew University, Israel)*
E. Agostinelli (SAPIENZA University of Rome, Italy)

H.J. Lin (National Taiwan Ocean University, Taiwan)

E. Agostinelli (SAPIENZA University of Rome, Italy)

K. Igarashi (Chiba University, Japan)

7:00 pm **Gala Dinner**

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Oral Poster Presentations

Monday, September 3rd

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

S. Okubo (Wakunaga Pharmaceutical Co. Ltd, Japan)

2:30 pm - 2:40 pm	[P 01]	Y. Terui (Chiba Institute of Science, Chiba, Japan) <i>Role of polyamines on cell growth under high temperature environment</i>
2:40 pm - 2:50 pm	[P 02]	A. Oguro (The Jikei University School Medicine Japan) <i>Polyamines promiscuously induce +1 ribosomal frameshifting in a human cell-free translation system</i>
2:50 pm - 3:00 pm	[P 03]	C.T. Lee (National Taiwan Ocean University, Taiwan) <i>Production of longer uncommon polyamines in Escherichia coli with polyamine synthase gene from diatom</i>
3:00 pm - 3:10 pm	[P 04]	K. Saya (Kwansei-Gakuin University, Japan) <i>The method of making Agmatine rich rice syrup</i>
3:10 pm - 3:20 pm	[P 05]	E. Neborak (Peoples' Friendship University of Russia) <i>The lymphocytes of brain glioma patients excrete polyamine oxidation enzymes after phytohemagglutinin stimulation</i>
3:20 pm - 3:30 pm	[P 06]	Y.H. Cheng (National Taiwan Ocean University, Taiwan) <i>Identification of functional motifs of silica affinity protein, which interacting with the long-chain polyamine for biomineralization in marine diatom Phaeodactylum tricornutum</i>
3:30 pm - 4:30 pm	Poster session and Coffee break	

Wednesday, September 5th

Session leaders: **R. Jaladanky (University of Maryland, Baltimore, USA)**

T. Ueshima (Wakunaga Pharmaceutical Co. Ltd, Japan)

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| 3:00 pm - 3:10 pm | [P 07] | M.L. Di Paolo (University of Padova, Padova, Italy)
<i>Novel targets for "old" polyamine analogues: monoamine oxidases and benextramine derivatives</i> |
| 3:10 pm - 3:20 pm | [P 08] | A. Sakamoto (Chiba Institute of Science, Chiba, Japan)
<i>Development of an ELISA for a urinary metabolite of acrolein-glutathione conjugate</i> |
| 3:20 pm - 3:30 pm | [P 09] | S. Krysenko (University of Tübingen, Germany)
<i>Characterization of the gamma-glutamylpolyamine synthetase GlnA3 in Mycobacterium tuberculosis as a potential drug target</i> |
| 3:30 pm - 3:40 pm | [P 10] | W. Fukuda (Kwansei-Gakuin University, Japan)
<i>Effect of branched-chain polyamine on gene expression in the hyperthermophilic archaeon Thermococcus kodakarensis</i> |
| 3:40 pm - 3:50 pm | [P 11] | Y. Yamori (Kwansei-Gakuin University, Japan)
<i>Effect of branched-chain polyamine on RNA polymerase stabilization in the hyperthermophilic archaeon Thermococcus kodakarensis</i> |
| 3:50 pm - 4:00 pm | [P 12] | H.Y. Lin (National Taiwan Ocean University, Taiwan)
<i>Development of molecular toolbox for studying diatom polyamine synthases in Phaeodactylum tricornutum</i> |
| 4:00 pm - 5:00 pm | | Poster session and Coffee break |