

2010 INTERNATIONAL POLYAMINE CONFERENCE

Progress in Medicine and Life Sciences

June 14 (Mon) -18 (Fri), 2010

Gotemba Kogen Hotel BU at Gotemba Kogen Resort

“Toki-no-sumika”

TIME TABLE

| Monday June 14 | Tuesday June 15 | Wednesday June 16 | Thursday June 17 | Friday June 18 |
|-------------------|---|---|---|---|
| | 6:30–8:45 Breakfast | 6:30–8:45 Breakfast | 6:30–8:30 Breakfast | 6:30–8:30 Breakfast |
| | Session 1 8:45–9:15 S1–1 9:15–9:45 S1–2 9:45–10:15 S1–3 Coffee break 10:30–11:00 S1–4 11:00–11:30 S1–5 11:30–12:00 S1–6 | Session 3 8:45–9:15 S3–1 9:15–9:45 S3–2 9:45–10:15 S3–3 Coffee break 10:30–11:00 S3–4 11:00–11:30 S3–5 11:30–12:00 S3–6 | Session 5 8:30–9:00 S5–1 9:00–9:30 S5–2 9:30–10:00 S5–3 Coffee break 10:15–10:45 S5–4 10:45–11:15 S5–5 11:15–11:45 S5–6 | Session 6 8:30–9:00 S6–1 9:00–9:30 S6–2 9:30–10:00 S6–3 Coffee break 10:15–10:45 S6–4 10:45–11:15 S6–5 |
| | 12:00–13:30 Lunch | 12:00–13:30 Lunch | 11:45–12:15 Poster presentations | Closing session 11:15–12:00 C1 |
| | | | 12:15–13:30 | |

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| | | | Lunch | |
| | Session 2 13:30–14:00 S2–1 14:00–14:30 S2–2 14:30–15:00 S2–3 15:00–15:30 S2–4 | Session 4 13:30–14:00 S4–1 14:00–14:30 S4–2 14:30–15:00 S4–3 15:00–15:30 S4–4 | 13:30– Excursion | |
| 15:00– Registration | | | | |
| | | | | |
| Opening session 17:30–18:15 O1 18:15–19:00 O2 | 15:30– Free time 18:00–19:30 Dinner at “CHAME” | 15:30– Free time 18:00–19:30 Dinner at “Lemon Grass” | 19:00–21:00 Banquet | |
| 19:00–21:00 Welcome reception | | | | |
| | 19:30– Poster session | 19:30– Poster session | | |
| 21:00– Happy hours at “Sky Lounge” | 21:00– Happy hours at “Sky Lounge” | 21:00– Happy hours at “Sky Lounge” | 21:00– Happy hours at “Sky Lounge” | |

PROGRAM

ORAL SESSIONS

June 14th

Opening session (17:30-19:00)

Session leader: Senya Matsufuji (The Jikei University School of Medicine, Japan)

17:30-18:15

O1. Polyamines support mammalian cell growth predominantly through their requirement for the process of translation initiation

Chaim Kahana (Weizmann Institute of Science, Israel)

18:15-19:00

O2. Surveys of possible biological functions of polyamines in *Xenopus* embryos, with special reference to their effects on secondary head formation induced by microinjected beta-catenin mRNA

Koichiro Shiokawa (Teikyo University, Japan)

< Reception >

June 15th

Session 1. Regulation of Cellular Polyamine Contents (8:45-12:00)

*Session leader: Kazuei Igarashi (Amine Pharma Research Institute,
Japan)*

8:45-9:15

**S1-1. Functional aspects and expression of mouse antizyme
inhibitor 2 in brain and testis**

Rafael Peñafiel (University of Murcia, Spain)

9:15-9:45

S1-2. Involvement of the polyamine metabolism in actin dynamics

and vesicle transport

Leif C. Andersson (University of Helsinki, Finland)

9:45-10:15

S1-3. Polyamine regulation of antizyme frameshifting in yeast

Heather M. Wallace (University of Aberdeen, UK)

<Coffee break >

10:30-11:00

S1-4. Differential synthesis of 29 kDa and 24.5 kDa antizymes in vascular smooth muscle cells

Itsuko Ishii (Chiba University, Japan)

11:00-11:30

S1-5. Analyses of antizyme 2- interacting proteins

Senya Matsufuji (The Jikei University School of Medicine, Japan)

11:30-12:00

S1-6. GSTp regulates caveolin-1 dependent polyamine uptake via actin remodeling

Takeshi Uemura (The University of Arizona, USA)

< Lunch >

Session 2. Molecular Evolution and Structure (13:30-15:30)

Session leader: Akira Shirahata (Josai University, Japan)

13:30-14:00

S2-1. Ubiquitous polyamine-responsive translational regulation in eukaryotes employs different mechanisms

Ivaylo P. Ivanov (University College Cork, Ireland)

14:00-14:30

S2-2. The evolution and diversification of polyamine biosynthesis

Anthony J. Michael (University of Texas Southwestern Medical School, USA)

14:30-15:00

S2-3. Crystal structure of spermidine acetyltransferase from *Escherichia coli*

Hiroyoshi Matsumura (Osaka University, Japan)

15:00-15:30

S2-4. Agmatidine, an agmatine-conjugated cytidine found at the anticodon wobble position of archaeal tRNA^{Ile} essential for AUA decoding

Tsutomu Suzuki (University of Tokyo, Japan)

< Poster Session 1 >

< Dinner >

June 16th

Session 3. Function of Polyamine (8:45-12:00)

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

8:45-9:15

S3-1. The spermidine/spermine N^1 -acetyltransferase

overexpressing mouse ? beauty or beast as an animal model

Anne Uimari (University of Eastern Finland, Finland)

9:15-9:45

S3-2. An inducible transgenic mouse model to examine the role of polyamines in mammary gland development and HER2/*neu*-induced tumorigenesis

David J. Feith (Pennsylvania State University College of Medicine, USA)

9:45-10:15

S3-3. Spermine synthase interacts with Glyceraldehyde-3-phosphate dehydrogenase and regulates its activity

Yoshihiko Ikeguchi (Josai University, Japan)

< *Coffee break* >

10:30-11:00

S3-4. The story of hypusine and eIF5A: an essential posttranslational modification involving a polyamine

Myung Hee Park (National Institute of Health, USA)

11:00-11:30

S3-5. Characterization of the hypusine pathway from *Leishmania donovani*

Rentala Madhubala (Jawaharlal Nehru University, India)

11:30-12:00

S3-6. Promotion of longevity of mice through improvement in the intestinal environment by probiotic-induced upregulation of polyamines

Mitsuharu Matsumoto (Kyodo Milk Industry Co. Ltd., Japan)

< Lunch >

Session 4. Polyamines in Plants and Microorganisms (13:30-15:30)

Session leader: Lo Persson (Lund University, Sweden)

13:30-14:00

S4-1. Thermospermine enhances translation of *SAC51* which is involved in stem elongation in *Arabidopsis thaliana*

Taku Takahashi (Okayama University, Japan)

14:00-14:30

S4-2. High-throughput analysis of plant polyamines including thermospermine during growth and salinity stress

Tomonobu Kusano (Tohoku University, Japan)

14:30-15:00

S4-3. A novel polyamine importer, YeeF, required for swarming induced by extracellular polyamines in *Escherichia coli* K-12

Shin Kurihara (Kyoto Institute of Technology, Japan)

15:00-15:30

S4-4. Enigmas of biosyntheses of unusual polyamines in an extreme thermophile, *Thermus thermophilus*

Tairo Oshima (Kyowa-kako Co., Japan)

< Poster Session 2 >

< Dinner >

June 17th

Session 5. Polyamine in Medicine (8:30-11:45)

Session leader: Nakaaki Ohsawa (Aino Institute for Aging Research, Japan)

8:30-9:00

S5-1. Correlation between images of silent brain infarction, carotid atherosclerosis and white matter hyperintensity, and plasma levels of acrolein, IL-6 and CRP

Keiko Kashiwagi (Chiba Institute of Science, Japan)

9:00-9:30

S5-2. N¹,N¹²-diacetylspermine in colon cancer tissues

Masao Kawakita (Tokyo Metropolitan Institute of Medical Science, Japan)

9:30-10:00

S5-3. Effects of spermine, arginine and glutamine supplementation on lipopolysaccharide-induced bacterial

translocation and Peyer's patch morphology

Phan Nguyen Thanh Binh (HCMC Nutrition Center, Vietnam)

<Coffee break >

10:15-10:45

S5-4. Polyamination of hyphae-specific surface proteins by transglutaminase 4 inhibits adhesion of *Candida albicans* to epithelial cells

In-Gyu Kim (Seoul National University College of Medicine, Korea)

10:45-11:15

S5-5. Polyamine transport in *Trypanosoma cruzi*

Marie-Pierre Hasne (Oregon Health & Science University, USA)

11:15-11:45

S5-6. Characterization of putrescine and spermidine uptake by the human malaria parasite, *Plasmodium falciparum*

Jandeli Niemand (University of Pretoria, South Africa)

Selected Poster Presentations (11:45-12:15)

Session leaders: Ann Uimari (University of Eastern Finland, Finland) and Yoshihiko Ikeguchi (Josai University, Japan)

< Lunch >

< Excursion >

< Banquet Party >

June 18th

Session 6. Polyamines as Target of Drug Discovery (8:30-11:15)

Session leader: Olle Heby (Umeå University, Sweden)

8:30-9:00

**S6-1. ODC in pediatric neuroblastoma: Advancement of
DFMO/etoposide into a FDA-approved Phase I clinical trial**

André S. Bachmann (University of Hawaii at Manoa, USA)

9:00-9:30

S6-2. Targeting polyamine metabolism to treat cancer risk factors

Eugene W. Gerner (The University of Arizona, USA)

9:30-10:00

S6-3. Polyamine enzymatic oxidation products in cancer therapy:

Chloroquine and docetaxel potentiate their cytotoxicity

Enzo Agostinelli (SAPIENZA University of Rome, Italy)

<Coffee break >

10:15-10:45

S6-4. Novel absorption improving system using polyamine for oral and pulmonary administration

Masateru Miyake (Otsuka Pharmaceutical Co., Ltd., Japan)

10:45-11:15

S6-5. Small molecule inhibitors of lysine-specific demethylase 1

(LSD1) as epigenetic modulators for the treatment of cancer

Patrick M. Woster (Wayne State University, USA)

Closing session (11:15-12:00)

Session leader: Tairo Oshima (Kyowa-kako Co., Japan)

11:15-12:00

C1. Polyamine analogues targeting epigenetics in cancer therapy

Robert A. Casero, Jr. (Johns Hopkins University School of Medicine, USA)

POSTERS

June 15th 19:30-21:00 June 16th 19:30-21:00

P1. Assay of N¹-acetylpolyamine oxidase activity with N¹,N¹¹-didansyl- norspermine as the substrate by ion-pair reversed phase high performance liquid chromatography

Koichi Takao (Josai University, Japan)

P2. Antizyme 2 accelerates c-Myc degradation in the cells

Noriyuki Murai (The Jikei University School of Medicine, Japan)

P3. Differentiation of multipotent progenitors into common myeloid progenitors is impaired in the liver of antizyme-1 knockout embryo

Makiko Ohkido (The Jikei University School of Medicine, Japan)

P4. Enhancement of translational frameshifting by hnRNP A1-like protein

Satoru Horiya (The Jikei University School of Medicine, Japan)

P5. Crystallization and preliminary X-ray analysis of the *Escherichia coli* spermidine acetyltransferase in complex with spermidine and coenzyme A

Shigeru Sugiyama (Osaka University, Japan)

P6. Putrescine-induced conformational changes in rat S-adenosylmethionine decarboxylase

Makiko Wada (Josai University, Japan)

P7. Docking simulation of polyamines on the HIV-1 dimerization initiation site in the kissing-loop dimer conformation

Gota Kawai (Chiba Institute of Technology, Japan)

P8. The influence of chemical polyamines analogs, decarboxylated ornithine and S-(adenosyl)-methionine on the polyamine synthesis velocity in test-systems from tissues with high

proliferation

Syatkin S.P. (Russian Peoples' Friendship University, Russia)

P9. The influence of chemical analogs of decarboxylated ornithine and S-(adenosyl)-methionine on the growth of L-cell tissue culture

Fedoronchuk T.V. (Russian Peoples' Friendship University, Russia)

P10. Effects of polyamine on early embryogenesis of *Xenopus laevis*

Takeshi Kondo (Teikyo University, Japan)

P11. Polyamine inhibits growth defect in hyperglycemic silkworm

Yasuhiko Matsumoto (University of Tokyo, Japan)

P12. Ribosome modulation factor, an important protein for cell viability encoded by the polyamine modulon

Yusuke Terui (Chiba Institute of Science, Japan)

P13. Generation of eukaryotic translation initiation factor 5A and its post-translational modification enzyme disrupted mice

Kazuhiro Nishimura (Chiba University, Japan)

P14. Effect of intestinal absorption of macromolecules by polyamine derivatives in rats

Yoshiaki Sugita (Josai University, Japan)

P15. Spermidine plays an important role in the regulation of insulin synthesis and cytoplasmic Ca^{2+} in mouse Beta-TC6 insulin-secreting cells

Ikuko Hisanaga (Mizuno) (Wakunaga Pharmaceutical Co., Ltd, Japan)

P16. Establishment of a novel assay system for transglutaminase using highly reactive substrate peptide and polyamine

Kiyotaka Hitomi (Nagoya University, Japan)

P17. Cadaverine covalently linked to the peptidoglycan of *Selenomonas ruminantium* interacts with the major outer membrane protein Mep45 through the N-terminal SLH domain in

the periplasmic space

Seiji Kojima (Tohoku University, Japan)

P18. Molecular biological and biochemical characterization of five polyamine oxidase isoforms in *Arabidopsis thaliana*

Yoshihiro Takahashi (Tohoku University, Japan)

P19. The dwarf phenotype of thermospermine-deficient mutant, *ac/5-1* is suppressed by mutations in ribosomal proteins

Jun-ichi Kakehi (Okayama University, Japan)

P20. Thermospermine and norspermine suppress xylem differentiation in vascular plants

Hiroyasu Motose (Okayama University, Japan)

P21. Oxidation and degradation of gamma-glutamylputrescine synthetase (PuuA) in *Escherichia coli* K-12

Ayaka Kambe (Kyoto Institute of Technology, Japan)

P22. Synthesis of glutathionylspermidine using glutathionylspermidine synthetase/amidase (Gsp)

from *Escherichia coli* K-12

Kanoko Hayashida (Kyoto Institute of Technology, Japan)

P23. Analysis of polyamine composition of a novel extreme thermophile *Calditerricola satsumensis* YM081

Toshiyuki Moriya (Kyowa Kako Co., Ltd, Japan)

P24. Deoxyhypusine synthase-like (DSL) protein is involved in *sym*-homospermidine biosynthesis in *Thermus thermophilus*

Yumiko Takeda (Tokyo University of Pharmacy and Life Sciences, Japan)

P25. Dual biosynthesis pathway for longer chain polyamines in hyperthermophilic archaeon *Thermococcus kodakarensis*

Shinsuke Fujiwara (Kwansei-Gakuin University, Japan)

P26. Identification of potential biomarkers for antimony susceptibility / resistance in *Leishmania donovani*

Swati Mandal (Jawaharlal Nehru University, India)

P27. More intensive correlation between brain infarction and acrolein threactive oxygen species

Ryotaro Saiki (Chiba University, Japan)

P28. Increased polyamine intake prolongs murine longevity

Yoh Dobashi (Jichi Medical University, Japan)

P29. Polyamine intake and Mediterranean diet

Kuniyasu Soda (Jichi Medical University, Japan)

P30. Change in the methylation status of the *ITGAL* promoter by spermine possibly regulates LFA-1 expression

Yoshihiko Kano (Jichi Medical University, Japan)

P31. Effect of polyamine on factors involved in the initiation of cancer metastasis and invasion

Shingo Tsujinaka (Jichi Medical University, Japan)

P32. No increased incidence of inflammation-associated neoplasms after and during increased polyamine intake

Fumihiro Chiba (Jichi Medical University, Japan)

P33. Selection and characterization of RNA aptamers against spermine to develop the new sensing probe of polyamine

Akihiro Oguro (The Jikei University School of Medicine, Japan)

P34. Occurrence of polyamine bodies in parallel with anticancer drug-induced apoptosis

Masashi Shin (Sojo University, Japan)

P35. Anthracene polyamine conjugates induce cell death in human leukaemic cells

Radiah A. Ghani (University of Aberdeen, UK)

P36. PG11047 induces mesenchymal to epithelial transition in the trastuzumab resistant JIMT-1 cell line

Helena Cirenajwis (Lund University, Sweden)

P37. Vibrational and cytotoxic studies on a modified spermidine and its Pd(II) complex

Tânia Silva (University of Coimbra, Portugal)

