

1996 TOKYO INTERNATIONAL SYMPOSIUM ON POLYAMINES

PROGRAM



ORAL SESSIONS

[Opening Address] Oshima, T. (Tokyo University of Pharmacy and Life Science)

[Opening Lecture]

Chairperson: Pegg, A. E. (Pennsylvania State University)

[01] Hayashi, S. (The Jikei University School of Medicine)

ODC antizyme: a unique regulatory protein and a possible tumor suppressor?

[Session 1. Biosynthesis and Its Regulation]

Chairperson : Mitchell, J. L. A. (Northern Illinois University), Otani, S. (Osaka City University)

[02] Coffino, P. (University of California)

Regulation of ornithine decarboxylase by antizyme.

[03] Heby, O. (Ume•University)

The intronless mouse *S*-adenosylmethionine decarboxylase gene has acquired a strong and functional promoter.

Chairperson : Coffino, P. (University of California), Matsui-Yuasa, I. (Osaka City University)

[04] Morris, D. R. (University of Washington)

Regulation of *S*-adenosylmethionine decarboxylase translation in mammals.

[05] Mitchell, J. L. A. (Northern Illinois University)

Antizyme interaction with the stable ornithine decarboxylase of DH23b cells.

[06] Michael, A. (Institute of Food Research)

The plant polyamine pathway.

[Session 2. Polyamine Contents and Their Regulation]

Chairperson : Tabor, H. (NIH), Suzuki, O. (Hamamatsu University School of Medicine)

[07] Pegg, A. E. (Pennsylvania State University)

Structure and regulation of spermidine/spermine-N1-acetyltransferase.

[08] Suzuki, O. (Hamamatsu University School of Medicine)

Organic cofactor(s) of amine oxidases.

[09] Grillo, M. A. (University of Torino)

Polyamines in hepatocytes.

[10] Algranati, I. D. (Instituto de Investigaciones Bioquímicas)

Polyamines, control of proliferation and one-step selection of α -difluoromethylornithine-resistant cell lines in *Leishmania mexicana*.

[11] Davis, R. H. (University of California)

Polyamine-dependent mechanisms regulating the abundance of ornithine decarboxylase mRNA in *Neurospora crassa*.

[Session 3. Functions of Polyamines in Cell Growth]

Chairperson : Chen, K. Y. (The State University of New Jersey), Igarashi, K. (Chiba University)

[12] Park, M. H. (NIH)

The essential role of the polyamine-derived amino acid, hypusine, in eukaryotic cell proliferation.

[13] Shida, H. (Kyoto University)

Cofactors and inhibitor of human immunodeficiency virus Rev and human T-cell leukemia virus type I Rex.

[14] Tabor, C. W. (NIH)

Biosynthesis and function of polyamines in *Saccharomyces cerevisiae*.

Chairperson : Bachrach, U. (Hebrew University), Kawakita, M. (Tokyo Metropolitan Inst. Med. Sci.)

[15] Shirahata, A. (Josai University)

Spermidine accumulation and cell death of HTC cells pretreated with ODC inhibitor.

[16] Holttä, E. J. (University of Helsinki)

Ornithine decarboxylase gene - an oncogene?

[17] Bachrach, U. (Hebrew University)

Effect of polyamines on nuclear oncogene expression.

[18] Janne, J. (University of Kuopio)

Genetic engineering of the metabolism of the polyamines in transgenic mice.

[Session 4. Polyamine Interaction with Macromolecules]

Chairperson : Persson, L. (University of Lund), Samejima, K. (Josai University)

[19] Oshima, T. (Tokyo Univ. of Pharm. Life Sci.)

Effects of a naturally occurring quaternary polyamine on cell-free protein biosynthesis catalyzed by a thermophile extract.

[20] Frydman, B. J. (University of Wisconsin)

Spermine binds in solution to the TyC loop of tRNAPhe: evidence from a 750 MHz ¹H-NMR analysis.

[21] Igarashi, K. (Chiba University)

Structure and function of the PotD protein in the spermidine-preferential uptake system.

[22] Yamada, M. (Osaka University)

Gating of inwardly rectifying potassium channels by intracellular polyamine.

[23] Williams, K. (University of Pennsylvania)

Modulation and block of ion channels: a new biology of polyamines. Studies with recombinant NMDA receptors.

[Session 5. Biological Action of Polyamines]

Chairperson : Porter, C. W. (Roswell Park Cancer Institute), Matsuzaki, S. (Dokkyo University School of Medicine)

[24] Otani, S. (Osaka City University)

Involvement of polyamines in the production of cytokine-induced neutrophil chemoattractant (CINC) from LPS-stimulated rat alveolar macrophages.

[25] Fujiwara, K. (Saitama Medical School)

The role of putrescine in the regulation of liver regeneration.

[26] Matsuzaki, S. (Dokkyo University School of Medicine)

Acute inhibition of thyroid ornithine decarboxylase by excess iodine in the rat.

Chairperson : Scalabrino, S. (University of Milano), Fujiwara, K. (Saitama Medical School)

[27] Porter, C. W. (Roswell Park Cancer Institute)

Regulatory responses in polyamine homeostasis.

[28] Nakashima, K. (Mie University)

Key roles of polyamines and ODC induction in pancreas and nerve tissue regenerations.

[Session 6. Clinical Aspects of Polyamines]

Chairperson : Moulinoux, J.-Ph. (URA CNRS), Nakashima, K. (Mie University)

[29] Moulinoux, J.-Ph. (URA CNRS)

Wanted: erythrocytes dead or alive?

[30] Kawakita, M. (Tokyo Metropolitan Inst. Med. Sci.)

N1,N8-Diacetylspermidine and *N1,N12*-diacetylspermine: detection in human urine and potential usefulness as novel tumor markers.

[31] Ohsawa, N. (Osaka Medical College)

Clinical significance of the measurement of polyamines in biological fluids.

Chairperson : Marton, L. J. (University of Wisconsin), Kamei, S. (Tokyo Medical and Dental University)

[32] Luk, G. D. (University of Texas)

Ornithine decarboxylase and carcinogenesis - overexpression by a gut-specific promoter.

[33] Nishioka, K. (University of Texas)

Phase I dose de-escalation study of DFMO as a chemopreventive agent in patients with cervical intraepithelial neoplasia grade 3 (CIN3).

[Closing Lecture]

Chairperson : Oka, T. (NIH)

[34] Marton, L. J. (University of Wisconsin)

Transitions between basic and clinical science.

[Closing Address] Ohsawa, N. (Osaka Medical College)



POSTER SESSIONS

[Poster Session 1.]

Leader: Luk, G. D. (University of Texas), Kashiwagi, K. (Chiba University)

[P01] Apirakaramwong, A. (Chiba University)

Decrease in cell viability in the *Escherichia coli* mutant lacking *rmf* and *ompC* genes.

[P02] Kashiwagi, K. (Chiba University)

Molecular mechanism of polyamine stimulation of the synthesis of oligo-peptide binding protein.

[P03] Minchin, R. F. (University of Western Australia)

Studies on the bacterial putrescine transporter encoded by the *speF-potE* operon.

[P04] Ohe, M. (Dokkyo University School of Medicine)

Effects of polyamines on hydrolysis of adenosine 5'-triphosphate catalyzed by *Escherichia coli* GroEL.

[P05] Takatsuka, Y. (Tohoku University)

Purification and characterization of lysine decarboxylase from *Selenomonas ruminantium*; the bifunctional enzyme.

[P06] Yamami, T. (Chiba University)

Spermidine dependent expression of *spo0KA* during sporulation in *Bacillus subtilis*.

[P07] Yamamoto, S. (Okayama University)

Characterization of the genes required for 1,3-diaminopropane biosynthesis from *Acinetobacter baumannii*.

[P08] Takaji, S. (Mie University)

Growth inhibition of *Helicobacter pylori* by methylglyoxal bis(cyclopentyl-amidinohydrazone).

[P09] Audette, M. (Chul Research Center)

Functional characterization of *STK2*, a putative serine/threonine protein kinase involved in the regulation of high affinity polyamine transport in *Saccharomyces cerevisiae*.

[P10] Abid, Md. R. (Nagoya University)

Deoxyhypusine synthase expressed from yeast gene or from human cDNA are essentially interchangeable when overexpressed in yeast.

[P11] Bagni, N. (University of Bologna)

Polyamine binding to proteins solubilized from plasma membrane.

[P12] Bagni, N. (University of Bologna)

Uptake competition between normal and unusual polyamines in carrot protoplasts.

[P13] Bagni, N. (University of Bologna)

Polyamines in phloem exudate of *Ricinus* plants.

[P14] Serafini-Fracassini, D. (University of Bologna)

Conjugated polyamines of chloroplasts are involved in salt stress response of *Dunaliella salina*.

[P15] Serafini-Fracassini, D. (University of Bologna)

Transglutaminases partially purified from sprout apices of *Helianthus tuberosus*.

[P16] Serafini-Fracassini, D. (University of Bologna)

Covalently bound polyamines and photosynthesis.

[P17] Serafini-Fracassini, D. (University of Bologna)

Polyamines are conjugated to cytoskeleton proteins during apical growth of the pollen tube.

[P18] Torrigiani, P. (University of Bologna)

Spermidine biosynthesis gene expression in Tobacco during flower development.

[P19] Tiburcio, A. F. (University of Barcelona)

Inducible over-expression of oat arginine decarboxylase in transgenic tobacco plants.

[P20] Fujihara, S. (Shikoku National Agricultural Experiment Station)

Occurrence of unsaturated polyamines in legume root nodules.

[P21] Minocha, S. (University of New Hampshire)

Genetic manipulation of the polyamine biosynthetic pathway promotes somatic embryogenesis and stress tolerance in carrot (*Daucus carota L.*).

[P22] Maki, H. (Japan Women's University)

Polyamines and the cell cycle in synchronous cultures of higher plants (*Catharanthus roseus* and *Oryza sativa*) cells.

[P23] Otsuka, Y. (Tottori University)

Polyamine contents in foods measured by pre-column derivatization.

[P24] Udaka, S. (Tokyo University of Agriculture)

Polyamine contents in ordinary foodstuffs and various fermented foods.

[P25] Simon-Sarkadi, L. (Technical University of Budapest)

Polyamines in food.

[P26] Pusztai, A. (The Rowett Research Institute)

Contribution of gut bacteria to systemic polyamine pools in the rat.

[P27] Bardocz, S. (The Rowett Research Institute)

Manipulation of polyamine body pools to improve health.

[P28] Fujiwara, K. (Nagasaki University)

Immunocytochemical localization of polyamines in the gastrointestinal tracts of rats and mice.

[P29] Hiramatsu, K. (The Tokyo Metropolitan Institute of Medical Sciences)

Preparation and properties of antibodies specific for *N1,N8*-diacetyl-spermidine and *N1,N12*-diacetylspermine.

[P30] Moulinoux, J.-Ph. (URA CNRS)

Erythrocyte spermine level: a prognostic parameter in childhood common acute lymphoblastic leukemia.

[P31] Moulinoux, J.-Ph. (URA CNRS)

Pretherapeutic erythrocyte polyamine spermine levels discriminate high risk relapsing patients with M1 prostate carcinoma.

[P32] Watanabe, S. (Kawasaki Medical School)

Study of polyamine levels in various tissues of 3-hydroxy-4-methoxy-cinnamic acid- and 3,4-dimethoxycinnamic acid-treated rats for management of cancers.

[P33] Wallace, H. M. (University of Aberdeen)

Changes in polyamine catabolic enzymes explain the increased content of acetylpolyamines in human breast cancer tissue.

[P34] Wallace, H. M. (University of Aberdeen)

Polyamine regulation of etoposide-induced apoptosis in human promyelo-genous leukaemic cells (HL60).

[P35] Matsui-Yuasa, I. (Osaka City University)

Mechanism of antitumor effect of tea polyphenols in Ehrlich ascites tumor cells.

[P36] Kramer, D. L. (Roswell Park Cancer Institute)

Differential polyamine regulatory and growth responses to novel spermine analogs in MALME-3M human melanoma cells.

[P37] Beninati, S. (II University of Rome)

Transglutaminase-catalyzed polyamine incorporation into fibronectin reduces the invasiveness of B16-F10 melanoma cells estimated by an *in vitro* metastatic assay.

[P38] Messina, A. (University of Catania)

The inhibition of interferon regulatory factor 1 in U937 cells causes a decrease in the expression of the ornithine decarboxylase gene upon interferon gamma activation.

[P39] Schipper, R. G. (University Hospital Nijmegen)

Role of polyamines in TNF and aFas-induced apoptosis in different human and murine tumor cell lines.

[Poster Session 2.]

Leader: Park, M. H. (NIH), Matsufuji, S. (Jikei Univ. Sch. Med.)

[P40] Bachmann, A. S. (University of Hawaii)

Phaseolotoxin: a possible new inhibitor of ornithine decarboxylase.

[P41] Miyoshi, K. (The University of Tokushima)

Intracellular Ca^{2+} decreases ornithine decarboxylase activity in cultured rat parotid explants.

[P42] Scalabrino, G. (University of Milano)

Different patterns of expression of ornithine decarboxylase mRNAs in rat liver after acute administration of hepatocarcinogens or TGF-beta.

[P43] Sasaki, H. (Mie University)

Role of ornithine decarboxylase activation in regeneration of Schwann cell tube within a silicon chamber.

[P44] Nakatani, T. (Osaka City University)

The requirement of Zn^{2+} for the increase in ornithine decarboxylase in primary cultured rat hepatocytes.

[P45] Morita, A. (Mie University)

Involvement of ornithine decarboxylase and DNA synthesis in proliferation of myosatellite cells during rat muscle regeneration after denervation.

[P46] Komine, T. (The Jikei University School of Medicine)

Effect of dietary protein on myocardial ornithine decarboxylase activity in the rats.

[P47] Kontusaari, S. I. (University of Oulu)

Expression of ornithine decarboxylase in tissues of transgenic mice carrying an MMTV/ODC cDNA fusion gene.

[P48] Persson, L. (University of Lund)

Cloning of a trypanosomatid gene coding for an ornithine decarboxylase that is metabolically unstable even though it lacks the C-terminal degradation domain.

[P49] Holm, I. (Umeå University)

Molecular cloning and sequencing of a gene and a corresponding cDNA encoding mouse ornithine decarboxylase antizyme. Expression in mouse cells.

[P50] Hietala, O. A. (University of Oulu)

Distributions of ornithine decarboxylase and antizyme in rat brain.

[P51] Mizutani, S. (The National Children's Medical Research Center)

Anti-tumor activity of ornithine decarboxylase (ODC)-antizyme targeted against ODC which is required for cell growth and transformation.

[P52] Matsufuji, S. (The Jikei University School of Medicine)

Mammalian antizyme frameshifting in yeasts, *Saccharomyces cerevisiae* and *Schizosaccharomyces pombe*.

[P53] Murakami, Y. (The Jikei University School of Medicine)

Antizyme is not trapped in the 26S proteasome during ODC degradation.

[P54] Sakata, K. (Chiba University)

Identification of regulatory regions of antizyme for polyamine transport.

[P55] Shinga, J. (University of Tokyo)

Specific developmental arrest at the gastrula stage in *Xenopus* embryos overexpressed with *S*-adenosylmethionine decarboxylase.

[P56] Madhubala, R. (Jawaharlal Nehru University)

Inhibition of *Leishmania donovani* but not host macrophages by a potent *S*-adenosylmethionine decarboxylase inhibitor.

[P57] Pietila, M. T. (University of Kuopio)

Transgenic mice over-expressing the mouse spermidine/spermine *N*1-acetyltransferase-gene.

[P58] Yano, Y. (Osaka City University)

Effects of expression spermidine/spermine *N*1-acetyltransferase in HLF cells, human hepatocellular carcinoma cell line.

[P59] Otani, K. (Osaka City University)

Hypertonic NaCl solution induced spermidine/spermine *N*1-acetyltransferase in rat gastric mucosa.

[P60] Verhofstad, A. (University Hospital Nijmegen)

Localization of polyamine oxidase activity in rat tissues.

[P61] Ferioli, M. E. (CNR)

Effect of acute hormonal treatment on polyamine oxidase activity in rat tissues.

[P62] Poulin, R. (Chul Research Center)

2,2-Dithiobis(*N*-ethyl-spermine-5-carboxamide): synthesis and properties of a high affinity, membrane impermeant antagonist of the mammalian polyamine transport system.

[P63] Miki, T. (The Tokyo Metropolitan Institute of Medical Sciences)

Uptake of polyamines by polarized porcine renal cells (LLC-PK1).

[P64] Chen, K. Y. (Rutgers - The State University of New Jersey)

Biochemistry and possible function of deoxyhypusine and hypusine formation of eukaryotic initiation factor 5A.

[P65] Morgan, D. M. L. (King's college London)

Structural requirements for substrate binding to the polyamine carrier(s) of human vascular endothelial cells.

[P66] Shimogori, T (Chiba University)

Spermidine regulation of protein synthesis at the level of initiation complex formation of Met-tRNAⁱ, mRNA and ribosomes.

[P67] Thomas, T. J. (UMDNJ-Robert Wood Johnson Medical School)

Selective utilization of polyamine analogues as a novel strategy for triplex DNA-based anti-gene therapeutics.

[P68] Weiger, T. (University of Salzburg)

Polyamines modulate calcium activated potassium channels.

[P69] Shirahata, A. (Josai University)

Synthetic diacetylpolyamine substrates for rat polyamine oxidase.

[P70] Penafiel, R. (University of Murcia)

Influence of citrulline and arginine on polyamine metabolism in the mouse kidney.

[P71] Oredsson, S. M. (Lund University)

Normal G1/S transition and prolonged S phase within one cell cycle in Chinese hamster ovary cells seeded in the presence of polyamine biosynthesis inhibitors.

[P72] Cho, S.-C. (Fujita Health University)

Changes of polyamine contents on cultured mammalian cells in the early incubation stage after X-irradiation.

[P73] Deloyer, P. (University of Liege)

Effect of prolonged spermine treatment on intestinal maturation in the suckling rat.

[P74] Ichimura, S. (National Institute of Radiological Science)

The decrease in the putrescine level of HeLa cells prior to the depression of growth by X-ray, C-ion beam and H₂O₂ treatments.

[P75] Mizokami, T. (The Jikei University School of Medicine)

Effects of anti-hypertensive agents on cardiac polyamine contents of spontaneously hypertensive rats.

[P76] Myojo, S. (Shiga University of Medical Science)

The effect of glicentin on polyamine metabolism in the small intestinal mucosa of rats, *in vitro* and *in vivo*.

[P77] Sasaki, H. (The Jikei University School of Medicine)

Effects of angiotensin I converting enzyme inhibitor and b-adrenergic blocking agents on isoproterenol-induced cardiac hypertrophy and cardiac polyamine contents.

[P78] Wu, C. (Osaka City University)

Polyamine in the protection of taurine against the cytotoxicity of hydrazine or carbon tetrachloride in isolated rat hepatocytes.

[P79] Tsujikawa, T. (Shiga University of Medical Science)

Characteristic of mucosal polyamine content at rectum in patients with ulcerative colitis.

[P80] Delcros, J.-G. (URA CNRS)

Polyamine content and uptake in red blood cells from rats grafted with the MAT-LyLu prostatic adenocarcinoma.

[P81] Delcros, J.-G. (URA CNRS)

Polyamine deprivation provokes an antalgic effect.