

POLYAMINES 2000
BIOLOGICAL AND CLINICAL PERSPECTIVES
2ND EUROPIAN POLYAMINE CONFERENCE

Program



Plenary Lecture

Chairman: C. M. Caldarera (Italy)

A. E. Pegg (USA):

Polyamines: the past, present and future.

Session 1: Polyamines, Growth, Senescence and Apoptosis

Chairman: H. M. Wallace (UK)

[C 1.1] H. M. Wallace, J. Keen, A. V. Fraser, L. Denby, K. Thompson, G. S. Lindsay (UK):

The role of polyamines in apoptosis.

[C1.2] M. A. Desiderio, E. Matteucci (Italy):

Growth arrest and apoptosis in tumor cells are correlated with antizyme induction.

[C1.3] L. R. Johnson, M. J. Viar, R. Ray, L. M. Pfeffer (USA):

Polyamine depletion prevents apoptosis in intestinal epithelial cells, in part by an NF- κ B dependent mechanism.

[C 1.4] C. Stefanelli, C. Mackintosh, I. Stanic, F. Bonavita, A. Facchini, M. Fattori, C. Pignatti, B. Tantini, F. Flamigni, C. Clo, A. E. Pegg, C. M. Caldarera (Italy/USA):

Polyamines and caspase activation.

[C1.5] C. Hanfrey, C. Illingworth, E. Morlon, M. Mayer, A. Dale, S. Ellwood, A. J. Michael (UK):

Translational regulation of the *Arabidopsis* S-adenosylmethionine decarboxylase.

[C1.6] M. M. Altamura, G. Falasca, M. Possenti, G. Tronelli, D. Zaghi, F. Capitani, N. Bagni (Italy):

Interaction between calcium and putrescine in the control of organogenesis from tobacco thin layers and leaf explants.

Session 2: Polyamines, transport and signal transduction

Chairman: O. Heby (Sweden)

[C 2.1] U. Bachrach (Israel):

Regulation of ornithine decarboxylase expression.

[C 2.2] A. Facchini, B. Zanella, B. Tantini, E. Giordano, C. Steranelli, C. M. Caldarera, F. Flamigni (Italy):

Opposite effects of P44/42 MAPK and P38 MAPK inhibitors on the induction of ornithine decarboxylase.

[C 2.3] O. Erez, C. Kahana (Israel):

Isolation of a new protein kinase that acts as a key regulator of polyamine transport.

[C 2.4] K. Igarashi, K. Sakata, A. Kuraishi, H. Tomitori, K. Kashiwagi (Japan):

Polyamine transport in *Escherichia coli* and animal cells.

[C 2.5] E. Morlon, A. J. Michael (UK):

Isolation of two protein kinases from *Arabidopsis* by functional complementation of a yeast polyamine transport mutant.

[C 2.6] H. Tomitori, K. Kashiwagi, T. Asakawa, Y. Kakinuma, A. J. Michael, K. Igarashi (Japan):

Multiple polyamine transport systems on the vacuolar membrane in yeast.

Session 3: Polyamine Metabolism

Chairman: G. Dandrifosse (Belgium)

[C 3.0] G. Dandrifosse (Belgium):

(Introduction) Importance of polyamine metabolism in cellular life.

[C 3.1] P. Coffino (USA):

Control of polyamine metabolism by means of targeted protein degradation.

[C 3.2] J. L. A. Mitchell, G. G. Judd, S. Moore, C. DeBlecourt (USA):

On the control of antizyme processing, cellular location and activity.

[C 3.3] L. Persson, T. Koichi, E. Lovkvist Wallstrom, S. Nazisadeh, L.

Thiman (Sweden):

Translational control of ornithine decarboxylase.

[C 3.4] E. Masini, R. Federico, O. Befani, M. A. Mateescu, J. F. Ndisang, M.

Moncini, P. F. Mannaioni, B. Mondovi (Italy/Canada):

The effect of pea seedling diamine oxidase on guinea pig anaphylaxis.

[C 3.5] K. Kashiwagi, S. Hayashi, T. Fukuchi-Shimogori, K. Nishimura, K.

Igarashi (Japan):

Translational regulation of mRNA having GC-rich 5'-untranslated region of

ODC mRNA.

[C 3.6] O. Lepri, E. Hitchin, G. El-Hussieni, L. Bassie, P. Christou, T. Capell

(UK):

Putrescine and spermidine accumulation in different rice genotypes

overexpressing the human ornithine decarboxylase cDNA.

[C 3.7] M. T. Olmo, D. Rodriguez-Agudo, C. Rodriguez-Caso, J. L. Urdiales,

M. A. Medina, F. Sanchez-Jimenez (Spain):

Structure/activity and structure/stability relationship studies on recombinant

rat histidine decarboxylase.

[C 3.8] M. Pietila, J. Parkkinen, M. Halmekyto, L. Alhonen, J. Janne

(Finland):

Mice over-expressing SSAT have similar hairless phenotype and similar

response to retinoic acid as the rhino (HRrh) strain.

[C 3.9] M. C. Bastida, A. Cremades, F. Tejada, R. Penafiel (Sweden):

Ornithine decarboxylase and steroidogenesis: influence of aminoglutethimide

and DFMO.

[C 3.10] M. Halmekyto, M. Pietila, T. Pirttila, V.-P. Korhonen, L. Alhonen, J.

Janne (Finland):

Characterisation of spermidine/spermine N1-acetyltransferase deficient cell

line.

[C 3.11] A. Tassoni, M. van Buuren, M. Franceschetti, S. mornale, N.

Bagni (Italy):

Polyamine content and metabolism in *Arabidopsis thaliana* and effect of

spermidine on plant development.

[C 3.12] S. Soyka, A. G. Heyer (Germany):

Differential regulation of *Arabidopsis thaliana* ADC genes under abiotic stress.

Session 4: Polyamines and Transglutaminases

Chairman: S. Beninati (Italy)

[C 4.1] L. Fesus (Hungary):

Induction of transglutaminase in dying cells.

[C 4.2] C. M. Bergamini (Italy):

Structure and stability of tissular transglutaminase in relation to regulation by ligands.

[C 4.3] A. Lentini, S. Beninati (Italy):

Theophylline reduces B16-F10 melanoma cells invasion by the enhancement of protein-polyamine cross-links catalyzed by transglutaminase.

[C 4.4] F. Facchiano, D. D'arcangelo, S. Beninati, M. C. Capogrossi (Italy):

Polyamine-induced apoptosis in vascular cells is a transglutaminase-mediated phenomenon.

[C 4.5] D. Serafini-Fracassini, M. Della Mea, F. Poli, G. Sacchetti, S. Del Duca, F. Monti, A. M. Bregoli (Italy):

Morpho-functional aspects of the *Nicotiana tabacum* corolla during development, senescence and programmed cell death.

[C 4.6] R. Ientile, S. Pedale, V. Macaione, V. Torre, S. Macaione (Italy):

Tissue transglutaminase mediates NMDA effects in primary cultures of cerebellar granule cells.

Session 5: Polyamines and Clinical Aspects

Chairman: A. Corti (Italy)

[C 5.1] I. D. Algranati, S. Cejas, M. Cortes, C. Carrillo, N. S. Gonzales (Argentina):

Sensitivity of trypanosomatid parasites to α -difluoromethylornithine correlates with the metabolic stability of their ornithine decarboxylase.

[C 5.2] R. A. Casero, P. M. Woster (USA):

Terminally alkylated polyamine analogues as chemotherapeutic agents.

[C 5.3] R. G. Schipper, J. C. Romijn, C. M. de Ridder, A. Valasinas, V. K. Reddy, H. S. Basu, L. J. Marton, B. Frydman, A. A. J. Verhofstad (USA):

Conformationally restricted analogues tetra- and pentamines: growth inhibitory effects on human prostatic carcinoma cell lines.

[C 5.4] E. Agostinelli, A. Calcabrini, S. Lord-Fontaine, G. Arancia, D. A. Averill (Italy/Canada):

Cytotoxicity and morphological changes induced by enzymatic oxidation products of spermine in multidrug resistant cultured cell lines, at 37 and 42 °C.

[C 5.5] B. Martin, F. Posseme, F. Carreaux, B. Carboni, J.-P. Moulinoux, J.-G. Delcros (France):

In vitro biological evaluation of new boron-containing polyamines for boron neutron capture therapy.

Session 6: Polyamines and Cancer

Chairman: E. Holttä (Finland)

[C 6.1] F. Scorcioni, P. Davalli, S. Astancolle, A. Corti, S. Bettuzzi (Italy): Simultaneous manipulation of the expression of genes coding for regulatory proteins of polyamine metabolism resulted in specific alterations of cell cycle progression in immortalized human prostate epithelial cells.

[C 6.2] V. Milovic, A. R. Khomutov, L. Turchanowa, R. M. Khomutov, W. F. Caspary, J. Stein (UK/Germany):

Impaired growth of colon cancer cells by hydroxylamine-containing inhibitors of polyamine biosynthesis and uptake.

[C 6.3] G. Marverti, S. Bettuzzi, M. G. Monti, M. S. Moruzzi (Italy): Differential transcriptional and post-transcriptional regulation of spermidine/spermine N1-acetyltransferase activity induced by N1,N12-bis(ethyl)spermine in cisplatin-sensitive and -resistant cancer cells.

[C 6.4] G. Schillinger, G. Rohn, A. Kleckner, R. Schroder, N. Klug, R. I. Ernestus (Germany):

ODC-elevation in astrocytomas is regulated posttranscriptionally.

[C 6.5] R. I. Ernestus, G. Rohn, T. Els, G. Schillinger, R. Schroder, N. Klug (Germany):

Polyamine metabolism in brain tumors: diagnostic significance of quantitative

biochemistry.

[C 6.6] G. Rohn, A. Klekner, G. Schillinger, R. Schroder, N. Klug, R. I. Ernestus (Germany):

Regulation of ornithine decarboxylase gene expression in recurrent meningiomas.

Session 7: Polyamines and Food

Chairman: M. A. Grillo (Italy)

[C 7.0] M. A. Grillo (Italy):

(Introduction) Biologically active amines and food.

[C 7.1] P. Christou, L. Bassie, E. Hinchin, O. Lepri, G. El-Husseiny, P. Hang, P. Nghia, T. Capell (UK):

Genetic engineering of the polyamine biosynthetic pathway in cereal grains.

[C 7.2] G. Hajos, A. Sass-Kiss, E. Szerdahelyi (Hungary):

Changes of polyamine content of Tokaj grapes and wines.

[C 7.3] L. Colin, L. Geny, M. Brodequis (France):

Evaluation of hydroxycinnamic acid amides during flowering and berries development of *Vitis vinifera*.

[C 7.4] S. Biondi, S. Scaramagli, V. Ziosi, P. Torrigiani (Italy):

Modulation of the polyamine-ethylene metabolic interactions in ripening peach fruits.