

❖ 9ª Reunião da Sociedade Portuguesa de Neurociências

19-20 de Maio, 2005

Local: Luso

Comissão Organizadora:

- Ana M. Sebastião
- J. Alexandre Ribeiro
- Catarina R. Oliveira
- João O. Malva
- Cecília M. P. Rodrigues

Programa:

19th May

10:00 - Opening of Registration Desk

10:50 - Opening of the Meeting

11:00 - 11:30 - Young Lecture I

Chairperson: Ana M. Sebastião

Neuroprotective and neurotoxic effects mediated by activation of distinct Tumor Necrosis Factor (TNF)- α receptor subtypes in mouse organotypic hippocampal slice cultures

Liliana Bernardino, Sara Xapelli, Ana P. Silva, Frants R. Poulsen, Birthe Jakobsen, Catarina R. Oliveira, Annamaria Vezzani, João O. Malva and Jens Zimmer

11:30 - 13:00 - **Session I**

Chairpersons: A. Pato de Carvalho and Maria João Saraiva

11:30 - *Blockade of P2Y₁ receptors prevents $\alpha\beta_{1-42}$ -induced apoptosis and neuronal degeneration of rat hippocampal neurons*

Lisiane O. Porciúncula, Ricardo J. Rodrigues, Paula M. Canas, Catarina R. Oliveira and Rodrigo A. Cunha

- 11:45 - *Tauroursodeoxycholic Acid Requires Nuclear Steroid Receptors for Inhibiting Amyloid- β Peptide-Induced Apoptosis of Rat Cortical Neurons*
S. Solá, J. D. Amaral, R. M. Ramalho, R. E. Castro, P. M. Borralho, C. M. P. Rodrigues
- 12:00 - *Inhibition of Nitric Oxide Synthase Prevents Leukocyte Adhesion and Blood-Retinal Barrier Breakdown in Diabetic Retinas*
António F. Ambrósio, Ermelindo C. Leal, Ayyakkannu Manivannan, Mary Cotter, Célia Azeiteiro, Andreia Serra, Áurea Castilho, K. Hosoya, John V. Forrester
- 12:15 - *Modulation of NMDA Evoked Nitric Oxide Transients in the Hippocampus by Superoxide Dismutase Mimetic Compounds*
A. Ledo, J. G. Frade, N. R. Ferreira, R. M. Barbosa, J. Laranjinha
- 12:30 - *Ethanol Modulation of Nitric Oxide Production in Hippocampal Slices*
João G. Frade, Ana Ledo, Nuno R. Ferreira, Rui M. Barbosa, João Laranjinha
- 12:45 - *Retinal origin of magnocellular and dorsal stream deficits in Williams Syndrome*
M. Mendes, M. Silva, L. Simões, M. Jorge, J. Saraiva, M. Castelo-Branco
- 13:00 - 14:00 - Lunch
- 14:00 - 14:30 - Young Lecture II
Chairperson: Cecília Rodrigues
Myenteric ATP exerts a dual role on [3 H]-ACh release by transiently activating facilitatory P2X receptors and secondary formation of metabolites acting via inhibitory P2Y₁ and A₁ receptors
M. Duarte-Araújo, M. A. Timóteo, M. T. Magalhães-Cardoso & P. Correia-de-Sá
- 14:30 - 15:30 - **Session II**
Chairpersons: António Coimbra and Caetana Carvalho

- 14:30 - *Decreased vulnerability to kainite-induced neurodegeneration and microglia activation in mice lacking adenosine A_{2A} receptors and in rats treated with A_{2A} receptor antagonist*
Lisiane O. Porniúncula, Paula M. Canas, Catarina R. Oliveira and Rodrigo A. Cunha
- 14:45 - *Interleukin-6 enhances A₁ adenosine receptor-mediated neuroprotection in the mouse hippocampus*
A. Pinto-Duarte, C. C. Fernandes, J. A. Ribeiro and A. M. Sebastião
- 15:00 - *Mechanism of amyloid-beta induced early synaptotoxicity*
E. Ferreira, R. Resende, C. R. Oliveira and Pereira
- 15:15 - *Transthyretin knockouts are a new mouse model for increased Neuropeptide Y*
Ana Filipa Nunes, Maria João Saraiva and Mónica Mendes Sousa

15:30 - 17:00 - Poster Session I

Chairpersons: Paula Agostinho, Miguel Castelo-Branco, Emília Duarte, Cláudia Pereira, Ana Isabel Santos, Paulo Santos and Isaura Tavares

- *Comparative study of isolated and in-situ mitochondria from HDH knock-in (CAG 150) Huntington's disease mice*
Oliveira JMA, Jekabsons M, Chen S, Riley R, Lin A, Ellerby LM, Rego AC and Nicholls DG
- *Ataxin-3 the expanded protein in Machado-Joseph disease, has nucleocytoplasmic shuttling activity*
Cortes L, Maciel P, Macedo-Ribeiro S, Carvalho AL
- *Cells expressing expanded ataxin-3 are more susceptible to mitochondrial inhibition*
Mário N. Laço, Patrícia Maciel, Catarina R. Oliveira, Henry L. Paulson and A. Cristina Rego
- *c-fos expression in the spinal cord of monoarthritic rats induced by brief mobilization of the inflamed paw*
M. Pinto, D. Lima & I. Tavares

- *DOR mRNA expression is decreased in the reticular thalamic nucleus during monoarthritis*
Carvalhosa R, Ferreira-Gomes J, Reguenga C, Neto F. L. and Castro-Lopes J. M.
- *Differential expression of GABA_{B2} receptor subunit mRNA in thalamic nuclei during monoarthritis*
Ferreira-Gomes J, Neto F. L. and Castro-Lopes J. M.
- *A cellular model for the study of TTR fibrillogenesis and for the screening of anti-amyloidogenic drugs*
Cardoso I and Saraiva MJ
- *Controlling Amyloid β -Peptide-Induced Apoptosis of PC12 Cells Through Inhibition of the JNK Pathway*
Ramalho RM, Amaral JD, Borralho PM, Castro RE, Solá S, Rodrigues CMP
- *Altered calcium homeostasis and cell death caused by specific NMDA receptor subtypes in cells exposed to β -amyloid₁₋₄₀*
A. Domingues, E. F. da Cruz e Silva, C. R. Oliveira, A. C. Rego
- *Activation of microglial cells triggered by amyloid-beta and prion peptide*
Garção P, Oliveira CR and Agostinho P
- *Influence of Cdk5 in the neurotoxicity induced by amyloid-beta and prion peptides*
Lopes J, Oliveira CR and Agostinho P
- *Effect of Potential Acetylcholinesterases Inhibitors on β -Amyloid Induced Neurotoxicity*
Melo JB, Garção P, Ferreira R, Seixas D, Carreiras MC, Oliveira CR, Agostinho P
- *Phenolic compounds from Hypericum perforatum protect rat hippocampal neurons from amyloid beta(25-35)-induced neurotoxicity*
Silva B., Oliveira P. J., Rego A. C., Dias A. C. P. and Malva J. O.

- *Insulin protects against amyloid β -peptide toxicity in brain mitochondria of diabetic rats*
Paula I. Moreira, Maria S. Santos, Cristina Sena, Raquel Seica and Catarina R Oliveira
- *Neuronal damage by hyperbilirubinemia involves the generation of reactive oxygen species, oxidation of membrane components and disruption of glutathione metabolism*
MA Brito, AI Rosa, A Fernandes, AS Falcão, RFM Silva, D Brites
- *VGlut 2 is a substrate for caspase-3 and calpain I*
Pedro A. Fernández, Mário Armelão, Júlia Costa, Ana Luísa Carvalho, Carlos B. Duarte
- *Activation of calpains but not of caspases in early excitotoxic neurodegeneration in the hippocampus of epileptic rats*
Inês Araújo, Joana Gil, Bruno P. Carreira, Asa Petersén, Paul Mohapel, Paulo S. Pinheiro, João O. Malva, Ben A Bahr, Patrik Brundin, Caetana M. Carvalho
- *Protein kinase C signaling is involved in the modulation of glutamate release mediated by neuropeptide Y_2 receptors in the hippocampus of epileptic rats*
Ana P. Silva, Joana Lourenço, Sara Xapelli, Catarina R. Oliveira, João O. Malva
- *Role of the NCX in neurotoxicity mediated by AMPA receptor activation in cultured hippocampal neurons*
Bruno P. Carreira, Inês M. Araújo, António F. Ambrósio, Caetana M. Carvalho
- *Involvement of the adenosine A_1 receptor in the recovery of hippocampal metabolism after hypoxia*
J. M. N. Duarte, R. A. Cunha, R. A. Carvalho

- *Differential Cytotoxic Responses of PC12 Cells Chronically Exposed to Psychostimulants or to Hydrogen Peroxide*
Teresa Oliveira, Ana Cristina Rego, Maria Teresa Morgadinho, Ana Bela Sarmento, Tice Macedo and Catarina Resende Oliveira
- *The Role of the Caudal Ventrolateral Medulla in the Development of Hypertension by Adenosine Receptor Blockade in Rat*
D. Pinho, J. Marques-Lopes, M. Morato, T. Sousa, I. Tavares, A. Albino-Teixeira
- *Contractile responses and metabolism of purines in detrusor muscle from patients with hyperactive urinary bladder*
M. Faria, M. Silva-Ramos, T. Magalhães-Cardoso, J.-M. la Fuente-de-Carvalho & P. Correia-de-Sá
- *Retinal degeneration upon aging and type 2 diabetes*
A. I. Duarte, T. Proença, M. S. Santos, R. Seíça, C. R. Oliveira and A. C. Rego
- *Differences between mechanical and thermal pain perception in an experimental model of diabetic neuropath*
Morgado C, Tavares I
- *The release of [³H]D-aspartate is altered in diabetic rat retinas*
Tiago Pereira, Armando Cristóvão, António Ambrósio and Paulo Santos
- *Neuropeptide Y Stimulates Cell Proliferation In Rat Retinal Neural Cell Cultures*
Ana Rita Álvaro, Inês M. Araújo, Joana Salgado, António F. Ambrósio, Cláudia Cavadas
- *Transthyretin is involved in Nerve Regeneration*
Carolina Estima Fleming, Maria João Saraiva and Mónica Mendes Sousa
- *Genomic convergence approach applied to the study of stroke genetics*
Sara V. Fidalgo, Tiago Krug, Sofia A. Oliveira

17:00 - 18:00 - **Session III**

Chairpersons: J. Alexandre Ribeiro and José Castro-Lopes

17:00 - *Nogo e Doenças Desmielinizantes: Papéis Crescentes de um Inibidor do Crescimento*

Paulo Fontoura

17:15 - *Sexual plasticity in teleost fish: hormones, brain and behavior*

Rui Oliveira

17:30 - *Applications of transcranial magnetic stimulation in Neurosciences*

Pedro Cavaleiro Miranda

17:45 - *Neural structures involved in perceptual-motor skill learning*

Sara Cavaco, Steven W. Anderson, Alexandre Castro-Caldas, Hanna Damasio

18:00 - 18:45 - Invited Lecture

Chairperson: Luís Pereira de Almeida

Lenti-Vector-Based Gene Therapy for Parkinson's Disease and Motor Neuron Diseases

Mimoun Azzouz

18:45 - 20:00 - General Assembly

20:30 - Dinner

22:00 - Tournament "Jogo do Luso"

20th May

9:00 - 9:30 - Young Lecture III

Chairperson: João Malva

Modulation of cholinergic transmission in the hippocampus

Catarina C. Fernandes, António Pinto-Duarte, J. Alexandre Ribeiro and Ana M. Sebastião

9:30 - 10:30 - **Session IV**

Chairpersons: Deolinda Lima and Paulo Correia-de-Sá

9:30 - *Neuroprotection mediated by neuropeptide Y₂ receptor activation in mouse hippocampal organotypic cultures: cross-talk with BDNF*

S. Xapelli, L. Bernardino, A. P. Silva, C. Cavadas, E. Grouzmann, F. R. Poulsen, B. Jakobsen, J. Zimmer and J. O. Malva

9:45 - *Age-related changes in the cross-talk between BDNF and adenosine A_{2A} receptors*

Maria José Diógenes, Ana Maria Sebastião and Joaquim Alexandre Ribeiro

10:00 - *Neuron-Glia Crosstalk upon Dopaminergic Injury - Involvement of IL-1 β in GDNF Upregulation*

Ana Saavedra, Graça Baltazar, Caetana M. Carvalho and Emília P. Duarte

10:15 - *BDNF protects axons and dendrites from glutamate excitotoxicity in cultured hippocampal neurons*

Carlos V. Melo, Ramiro D. Almeida, Mário G. Armelão, Dennis Herrmann and Carlos B. Duarte

10:30 - 12:00 - **Poster Session II**

Chairpersons: António Francisco Ambrósio, Inês Araújo, Cláudia Cavadas, Rodrigo Cunha, Graça Lobo and Ana Paula Silva

- *Dynamics of corticothalamic pain processing in freely behaving rats: a multi-electrode study*
Helder Cardoso-Cruz, Clara M. Monteiro, Deolinda Lima, Vasco Galhardo
- *Chronic pain is associated with Low discrimination ability of lamina I neurons projecting to the caudal ventrolateral medulla*
A. R. Castro, J. A. Costa, J. L. Costa, I. Tavares, D. Lima
- *Stereotaxic Administration Of Baclofen, A GABA_B Receptor Agonist, in the Thalamic Ventrobasal Complex Reduces the Formalin Induced Pain Behaviours*

Potes C. S., Neto F. L., Castro-Lopes J. M.

- *Role of the spinal GABAergic system and of the VLM in the inhibition of nociceptive responses of spinal dorsal horn neurons during hypertension*
Manuela Morato, Dora Pinho, Teresa Sousa, Isaura Tavares, António Albino-Teixeira
- *Neuropeptide Y Y₁ Receptor Controls Catecholamine Synthesis By Modulating Tyrosine Hydroxylase Promoter Activity*
Joana Rosmaninho-Salgado, D. Cefai, E. Grouzmann, C. Cavadas
- *Interaction between prejunctional facilitatory receptors and nitric oxide with α_2 -adrenoceptors on the modulation of noradrenaline release in rat mesenteric artery*
Talaia C, Queiroz G, Quintas C, Morato M, Gonçalves J
- *Catecholamine release from the adrenal medulla of α_{2A} , α_{2B} KO mice*
E. Moura, J. Afonso, J. Marques-Lopes, H. Sousa-Lopes, M. A. Vieira-Coelho
- *Effect of carbidopa and tolcapone in epithelial transport of L-DOPA*
J. Guimarães, H. & M. A. Vieira-Coelho
- *Effect of fluoxetine on kidney potassium excretion*
M. A. Vieira-Coelho, E. Moura, J. Marques-Lopes, H. Sousa-Lopes & F. Martel
- *Muscarinic M₃ receptors increase adenosine outflow from myenteric motoneurons of the rat ileum*
S. Adães, M. Duarte-Araújo, M. T. Magalhães-Cardoso & P. Correia-de-Sá
- *Role of muscarinic receptors in the maturation of intestinal contractile function*
Lopes LV, Golliard M, Cherbut C, Correia-de-Sá P, Kucera P, Bergonzelli GE

- *Muscarinic M₃ autofacilitation of [³H]-ACh release depends on endogenous adenosine generation channeling to the activation of A_{2A} receptors in the myenteric plexus*
C. Vieira, M. Duarte-Araújo & P. Correia-de-Sá
- *L-Citrulline, a co-product of NO biosynthesis by neuronal NO synthase (NOS) enhances the adenosine A₁-inhibitory tonus on evoked [³H]-ACh release from motor nerve terminals*
A. Barroso, L. Oliveira, M. A. Timóteo & P. Correia-de-Sá
- *The Activation of adenosine A_{2A} receptor influences BDNF effects on synaptic transmission at the rat diaphragm neuromuscular junction*
Paula A. Pousinha, Maria José Diógenes, Ana M. Sebastião and J. Alexandre Ribeiro
- *Brain-Derived Neurotrophic Factor (BDNF) Enhances Electrically-Evoked Striatal Dopamine Release*
António F. Francisco, Ana M. Sebastião and J. Alexandre Ribeiro
- *Glial Cell Line-Derived Neurotrophic Factor (GDNF) Enhances Striatal Dopamine Release, an Effect Modulated by Adenosine A_{2A} Receptor*
Catarina A. Gomes, Ana M. Sebastião and J. Alexandre Ribeiro
- *BDNF regulates the expression of AMPA acid receptor subunits in cultured hippocampal neurons*
Margarida V. Caldeira, Carlos V. Melo, Daniela B. Pereira, Donald Bakos, Ana Luísa Carvalho, José Esteban and Carlos B. Duarte
- *BDNF does not influence the number or the affinity of the A_{2A} adenosine receptor in rat striatal slices*
Natália Assaige-Lopes, J. Alexandre Ribeiro and Ana M. Sebastião
- *BDNF upregulates the vesicular glutamate transporters in cultured hippocampal neurons*
Carlos V. Melo, Carla G. Silva and Carlos B. Duarte

- *Brain derived neurotrophic factor (BDNF) decreases [³H] gamma-aminobutyric acid ([³H] GABA) uptake in the rat hippocampal nerve terminals*
Sandra H. Vaz, J. Alexandre Ribeiro and Ana M. Sebastião
- *BDNF promotes survival of cortical neurons exposed to 3-nitropropionic acid*
S. Almeida, C. R. Oliveira, A. C. Rego
- *Differential role of MAPK signalling pathways in neuroprotection by BDNF against glutamate-induced apoptotic cell death in cultured hippocampal neurons*
João R. Gomes, Ramiro D. Almeida, Bruno J. Manadas, Arsélio P. Carvalho and Carlos B. Duarte
- *Differentiation of mice adult neural stem cells*
Ana da Silva, Jorge Pereira, Catarina R. Oliveira, João B. Relvas and A. Cristina Rego
- *A slow after-hyperpolarization-like current in differentiating N1E-115 neuroblastoma cells*
Lima P. A. & Costa P. F.
- *Expression of an inactivating K^{*} current in differentiating N1E-115 cells*
Santos A. I., Nascimento M. M., Costa P. F.
- *Hippocampal mossy fiber long-term potentiation and presynaptic calcium in a zinc chelation study*
N. C. Matos, C. M. Matias, M. Arif, J. C. Dionísio and M. E. Quinta-Ferreira
- *Neuronal excitability due to high concentrations of nifedipine may be operated by Ca²⁺ penetration through activated TTX-sensitive Na⁺ channels*
J. Costa, M. G. B. Lobo & P. Correia-de-Sá
- *Neuropeptide Y Receptors Modulate [Ca²⁺]_i Changes In Retinal Neural Cells*
Ana Rita Álvaro, A. R. Santiago, A. P. Silva, J. O. Malva, E. Grouzmann, A. L. Carvalho, A. F. Ambrósio, C. Cavadas

- *Heme Oxygenase-1: A Defense Against Oxidative Stress in Rat Retinal Endothelial Cells*

Áurea Castilho, Célia Aveleira, Ermelindo Leal, Andreia Serra, Carolina Fernandes, Rita Meirinhos, António F. Ambrósio

- *Interleukin-1 Receptor Type I is Regulated by High Glucose and Interleukin-1 beta in Retinal Cells*

Célia Aveleira, Áurea Castilho, Ermelindo Leal, Andreia Serra, Ana R. Álvaro, Carolina Fernandes, Rita Meirinhos, António F. Ambrósio

12:00 - 13:15 - **Session V**

Chairpersons: Cristina Rego and Vasco Galhardo

- 12:00 - *Gene therapy for pain control by manipulation of supraspinal areas: what did we learn from studies with replication defective forms of HSV-1?*

I. Martins, M. Pinto, S. P. Wilson, D. Lima, I. Tavares

- 12:15 - *GluR2 Upregulation: Protection Against High Glucose-Induced Toxicity in Retinal Neural Cells?*

Ana Raquel Santiago, Susana Rosa, Armando Cristóvão, Paulo Santos, Alistair Barbe rand Francisco Ambrósio

- 12:30 - *The visual world is not perceptually symmetric: consequences of photoreceptor and ganglion cell anisotropic distributions in the retina*

Castelo-Branco M, Silva MF, Maia-Lopes S, Guerreiro M, Faria P

- 12:45 - *Physical interaction between P2X and nicotinic receptors*

Almeida T, Ciruela F, Solsona C & Cunha R. A.

- 13:00 - *Muscarinic M₁-induced PKC activation suppresses pre-synaptic A_{2A} adenosine excitation by inhibiting adenylate cyclase and by competing to Ca²⁺ influx via Ca_v1 (L-type) channels at the rat neuromuscular junction*

Laura Oliveira & Paulo Correia-de-Sá

13:30 - 14:30 - Lunch

15:00 - 19:00 - Joint Meeting with the Sociedade Portuguesa de Neurologia

15:00 - 16:00 - Invited Lecture

Chairperson: Ana M. Sebastião

Neurotrophins and the antidepressant drug action

16:00 - *Chronic Pain Induces Cognitive Modulation in a Behavioural Task for Decision-Making in the Rat*

M. Pais-Vieira, D. Lima, V. Galhardo

16:15 - *Ressonância Magnética Funcional da Actividade Epiléptica Interictal*

Alberto Leal, José M. Fernandes, João P. Cunha, Mário Secca, Constança Jordão

16:30 - *Dissociating the neural correlates of verbal and visual episodic memory in normal subjects and in patients with hippocampal damage*

Patrícia Figueiredo, Egídeo Machado, Isabel Santana, Miguel Castelo-Branco

16:45 - *A Proteína tau no liquor não é bom marcador de degenerescência neuronal na Esclerose Múltipla*

Joana Guimarães, Maria João Cardoso, Maria José Sá

17:00 - 17:30 - Coffee break

Chairpersons: Alexandre Castro Caldas and Ana M. Sebastião

17:30 - *HDAC Inhibitors Chemotherapy Improves The Homeostatic Response To Excitotoxicity In Huntington's Disease Models*

Oliveira JMA, Chen S, Almeida S, Riley R, Gonçalves J, Oliveira CR, Hayden MR, Nicholls DG, Ellerby LM and Rego AC

17:45 - *Forma Recessiva de Esclerose Lateral Amiotrófica Familiar. Mutação D90A no Gene da SOD1*

Teresinha Evangelista, Mamede de Carvalho, Peter Anderson

- 18:00 - *Identification of risk and age-at-onset genes on chromosome 1p in Parkinson Disease*
Sofia A. Oliveira, Yi-Ju Li, Maher A. Noureddine, Stephan Züchner, Xuejun Qin, Tara J. Skelly, Scott Auerbach, Seth M. Ebersviller, William K. Scott, Margaret A. Pericak-Vance and Jeffery M. Vance
- 18:15 - *Doença de Parkinson - estudo genético de uma família portuguesa*
Ana Morgadinho, José Miguel Brás, Catarina Oliveira, Cristina Januário
- 18:30 - *Nova Mutação no Gene da Lamina A/C numa Família Portuguesa com Distrofia Muscular das Cinturas e Disritmia Cardíaca*
João Costa, Teresinha Evangelista, Vieira T, Oliveira J, Rosário Santos, Isabel Conceição
- 18:45 - *Cognitive Impairment in the Elderly: Neuropsychological Results*
Filipa Ribeiro, Manuela Guerreiro e Alexandre de Mendonça