



2014

4TH ANNUAL MEETING

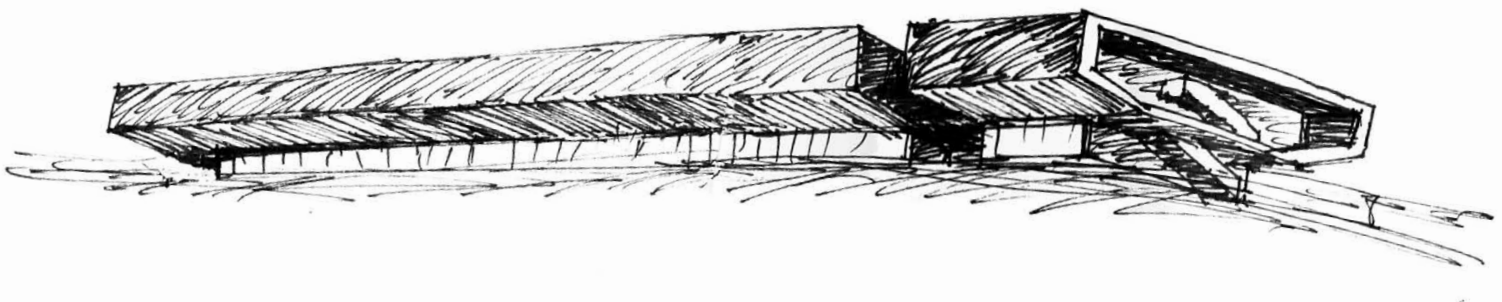
IBMC | INEB | IPATIMUP

30-31 OCTOBER 2014

Axis Vermar

Conference & Beach Hotel

Póvoa de Varzim



ABSTRACT BOOK

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Welcome Address

The 4th I3S Annual Meeting takes place this year on the 30-31 of October at the Hotel Axis Vermar, Póvoa do Varzim.

This meeting which is now a regular event of the new Institute, this year is specially designed to mark the advanced stage in the development of the I3S project both in terms of the construction of the new building and also the implementation of a new scientific structure that will underlay a significant part of our collective future.

The meeting will consist of three main sessions devoted to scientific talks on the topics of the I3S research programs: Host Interaction and Response; Neurobiology and Neurologic Disorders; and Cancer. Each session will include lectures selected from significant work recently published by I3S researchers, as well as additional invited speakers. We will also have a long session dedicated to accommodate the large number of posters already submitted and to foster interaction and discussions. The poster session will be followed by a information session on the I3S project, the recent site visit carried out by the review panel from FCT, the advancement in the building and other relevant information.

The main objective of the meeting is to promote scientific exchange amongst I3S collaborators and also to continue to foster closer integration on our route towards the full implementation of the project, which will occur next year.

So far we have had a very enthusiastic reception to the meeting with more than 500 participants registered and over 200 posters submitted which will certainly make this once more a great event. We are in debt to all those who have made this event possible and hope you will have a very fruitful meeting.

The Organizing Committee

01**Cancer Prevention Education: Building the Future Through School Community**

A. Barros, L. Moreira, H. Santos, N. Ribeiro, L. Carvalho, S. Lamas, F. Santos-Silva

02**Impairment of glucose uptake in human first trimester trophoblasts by xanthohumol, mediated by tyrosine kinases, mammalian target of rapamycin and C-JUN N-terminal kinases intracellular pathways, has consequences upon the process of placentation**

A. Correia-Branco, CF. Azevedo, JR. Araújo, JT. Guimarães, A. Faria, E. Keating and F. Martel

03**Modulation of angiogenic pathways by 8-prenylnaringenin involvement of estrogen receptors**

AC. Guerra, A. Faria, C. Calhau, R. Soares and R. Negrão

04**Anti-Mullerian Hormone and Oocyte Secreted Factors of Human Follicular Fluid in the assessment of infertility disorders**

A.C. Neto, C. Freitas, A. Ribeiro, J.L. Silva-Carvalho, D. Neves, H. Almeida

05**The molecular link between BRAF mutation and Sodium Iodide Symporter (NIS) underexpression**

Catarina Tavares, Catarina Salgado, Rui Batista, Helena Pópulo, Manuel Sobrinho-Simões, Paula Soares

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Searching for the molecular mechanism by which P-cadherin expression confers resistance to DNA damage in normal and breast cancer cell lines

F.Lopes, A.F.Vieira, J. Monteiro, M. Gomes, A.R. Nobre, B. Sousa, A.S. Ribeiro, J. Paredes

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Studying *Ganoderma lucidum* as a source of molecular inducers of autophagy

F. S. Reis, R. T. Lima, P. Morales, I. C. F. R. Ferreira, M. H. Vasconcelos

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TERT promoter mutations: a possible worse prognosis marker in cutaneous melanoma

H. Pópulo, J. Vinagre, R. Batista, R. Caldas, J. Pardal, F. Azevedo, J. M. Lopes, M. Sobrinho-Simões, P. Soares

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Intronic *CDH1* variation landscape in HDGC syndrome – a place for causal alterations?

H. Pinheiro, P. Oliveira, S. Sousa, K. Shumansky, S. Shah, J. Senz, G. Almeida, D. Ferreira, J. Carvalho, D. Huntsman and C. Oliveira

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miR-128 increases DNA damage in acute myeloid leukemia cells

H. Seca, R. T. Lima, G. M. Almeida, M. Sobrinho-Simões, R. Bergantim, J. E. Guimarães, M. H. Vasconcelos

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A lentivirus-based shRNA screen identifies integrator complex subunit 9 (INTS9) as a regulator of *MCL1* alternative polyadenylation in human T cells

I. Pereira-Castro, A. Curinha, A. Neves-Costa, L. F. Moita, J. R. Neilson, A. Moreira

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Adipocyte secretome influence on glioma cells

Almeida J, Costa J, Silva L, Coelho P, Vieira M, Noronha JP, Galesio M, Dinis MS, Prudêncio C, Fernandes R

Studying *Ganoderma lucidum* as a source of molecular inducers of autophagy

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Autophagy is one of the three main mechanisms of programmed cell death^[1]. One of the basis of cancer therapy is to induce death of tumour cells. There are several clinically approved molecules that induce cell death^[2,3], but unfortunately not all tumours highly resistant to cell death respond to the existing therapies. Therefore, the search for new molecules capable of inducing tumour cell death is an area of growing interest. In this context, modulators of autophagy have become very attractive in recent years. Previous work performed by some of us has shown that methanolic extracts of the medicinal mushroom *Ganoderma lucidum* were modulators of cellular autophagy^[4]. The aim of the present work was to further understand the cellular mechanisms involved in the autophagy modulation and to identify bioactive compounds responsible for this modulation.

A methanolic extract obtained by cold extraction (-20°C) from *G. lucidum* was studied with respect to its ability to induce autophagy in a gastric adenocarcinoma cell line (AGS). The presence of autophagic vacuoles was observed following transfection of cells with a mCherry-LC3 expression vector and the levels of some autophagic proteins were analysed by Western Blot. Cells were also treated with the lysosomal

protease inhibitors E-64d/pepstatin together with the extract, in order to confirm if the extract induced autophagy or a decrease in the autophagic flux. The levels of the autophagic proteins after this treatment were also evaluated by Western Blot.

An increase in the autophagic vacuoles was observed in cells treated with the extract (concentrations corresponding to the GI_{50} and $2 \times GI_{50}$) 24h before transfection with the mCherry-LC3 vector. In addition, treatment of cells with the same concentrations of the extract for 48h induced an increase in the expression of LC3-II together with a slight reduction in the levels of p62, particularly with the highest concentration. Additionally, cells treated with the extract together with E-64d/pepstatin expressed higher levels of LC3-II and p62, when compared with cells treated only with the extract, indicating that *G. lucidum* caused an induction of autophagy rather than a decrease in the autophagic flux.

With these results we can conclude that the methanolic extract from the mushroom *G. lucidum* may be a source of compounds capable of inducing autophagy. Further studies to identify the bioactive compounds present in the tested extract and responsible for such activity are still ongoing.

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- [3] M. Vogler *et al.* (2009) Cell Death Differ. 16:360-367.
- [4] M. Oliveira *et al.* (2014) Food Func. 5:1389-1394.

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