



12.<sup>a</sup> Reunião do Grupo de Glúcidos

# Carboidratos em Portugal e potencial de diferenciação internacional

Programa e livro de resumos



Universidade de Aveiro, Portugal  
11 - 13 setembro 2017



## **12.<sup>a</sup> Reunião do Grupo de Glúcidos**

### **Carboidratos em Portugal e potencial de diferenciação internacional**

**Aveiro, 11-13 setembro 2017**



**SOCIEDADE PORTUGUESA DE QUÍMICA**



**universidade  
de aveiro**

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Terça-feira, 12 de setembro de 2017		
09h30	10h30	<b>Chairperson: Hans-Peter Wessel</b> Anfiteatro 30A 1.14
09h30	10h00	PL07 - Paula Videira (UNL) <i>Glycoimmunology: cracking sugars to develop novel immunotherapies</i>
10h00	10h30	PL08 - Celso Reis (I3SUP) <i>Glycosylation in cancer: molecular mechanisms and clinical implications</i>
10h30	11h30	<b>Café + Pósteres</b>
		<b>Sessões Paralelas</b>
		<b>Biorefinery</b>
11h30	12h50	<b>Chairperson: Carmen Freire</b> Anfiteatro 30A 1.14
11h30	11h50	K07 - Florbela Carvalheiro (LNEG) <i>Biomass derived oligosaccharides in the Biorefinery context: Production and future prospects</i>
11h50	12h05	O13 - Cláudio Almeida (UP) <i>The role of Choline Chloride-based Deep Eutectic Solvent (DES) and Curcumin on chitosan films properties</i>
12h05	12h20	O14 - Idalina Gonçalves (UA) <i>"POTATOPLASTIC": Development of starch-based bioplastics using potato chips industry byproducts</i>
12h20	12h35	O15 - Eduarda Serra Morais (UA) <i>Hemicellulose extraction using Deep Eutectic Solvents for Biorefinery purposes</i>
12h35	12h50	O16 - Patrícia Moniz (CEBAL) <i>Straw pentoses for the production of added-value products</i>
		<b>Biotechnology and Glycomics</b>
11h30	12h50	<b>Chairperson: Rosário Domingues</b> Anfiteatro 30A 2.05
11h30	11h50	K08 - Mariana Oliveira (UA) <i>Sequentially moldable alginate-chitosan hydrogels compatible with cell encapsulation</i>
11h50	12h05	O17 - Diana Ribeiro (UNL) <i>Identification and structural-functional characterization of a new chitin-binding protein module from <i>Clostridium thermocellum</i></i>
12h05	12h20	O18 - Viviana Correia (UNL) <i>Glycan recognition in the human gut – A combined approach to unravel microbiome strategies</i>
12h20	12h35	O19 - Ana Margarida Carvalho (UM) <i>Potential of thiol-amphiphile glycosaminoglycans as redox-sensitive nanoparticles</i>
12h35	12h50	O20 - Jennifer Noro (UM) <i>Modification of cyclo-oligosaccharides for drug encapsulation</i>
		<b>Glycobiology</b>
11h30	12h50	<b>Chairperson: Paula Videira</b> sala 30B 2.16
11h30	11h50	K09 - Miguel Ribeiro (UTAD) <i>Bioinspired gluten-chitosan supramolecular assemblies: effect on the functionality, digestibility and release of celiac disease active peptides</i>
11h50	12h05	O21 - Catarina Gomes (I3SUP) <i>Carcinoembryonic antigen carries <math>\alpha</math>-2-3 linked sialic acid on type II chains and is implicated in the metastatic potential of gastric cancer cells</i>
12h05	12h20	O22 - Andreia Peixoto (IPO) <i>Hypoxia enhances the malignant nature of bladder cancer cells and concomitantly antagonizes protein O-glycosylation extension</i>

12h20	12h35	O23 - Rita Azevedo (IPO) <i>Targeted O-glycoproteomics explored increased sialylation and identified MUC16 as a poor prognosis biomarker in advanced stage bladder tumours</i>
12h35	12h50	O24 - Benedita Pinheiro (UNL) <i>Structural basis for the highly selective recognition of di-glucosylated N-glycans by human malectin in the endoplasmic reticulum</i>
12h50	14h30	<b>Almoço</b>
14h30	15h30	<b>Chairperson: António Vicente</b> Anfiteatro 30A 1.14
14h30	15h00	PL09 - Helena Marques (FIFUL) <i>Cyclodextrins based materials in drug delivery: state of the art and future perspectives</i>
15h00	15h30	PL10 - Cláudia Nunes (UA) <i>Tailoring chitosan-based materials</i>
		<b>Sessões Paralelas</b>
		<b>Biomaterials</b>
15h30	16h20	<b>Chairperson: Pilar Gonçalves</b> Anfiteatro 30A 1.14
15h30	15h50	K10 - Jorge Coelho (FCTUC) <i>In vitro and in vivo studies of dextran-based materials for peripheral nerve regeneration</i>
15h50	16h05	O25 - Ana Barra (UA) <i>Magnetic and electrical conductive chitosan-based bionanocomposites</i>
16h05	16h20	O26 - Ricardo Pinto (UA) <i>Cellulose nanocrystals coated with gold nanoparticles and folic acid-conjugated chitosan as candidates for nanotheranostic systems</i>
15h30	16h20	<b>Gastric digestion and cell interaction devices</b> <b>Chairperson: Albertino Figueiredo</b> Anfiteatro 30A 2.05
15h30	15h50	K11 - Ana Cristina Pinheiro (UM) <i>Dynamic gastrointestinal system as a tool to evaluate the behaviour of carbohydrates after ingestion: from macro to nano scale</i>
15h50	16h05	O27 - Daniel Madalena (UM) <i>In vitro digestions to predict the glycemic index of rice</i>
16h05	16h20	O28 - Sara Amorim (UM) <i>The effect of immobilized Hyaluronic Acid on CD44-overexpressing MKN45 gastric cancer cell line</i>
15h30	16h20	<b>Sugars origins and occurrence</b> <b>Chairperson: Jorge Justino</b> sala 30B 2.16
15h30	15h50	K12 - João Oliveira (UA) <i>The early times of scientific research on sugar chemistry</i>
15h50	16h05	O29 - Eliana Pereira (IPB) <i>Influence of ionizing radiation on the free sugars content of several aromatic and medicinal plants</i>
16h05	16h20	O30 - Joana Botas (IPB) <i>Composition in sugars of white and black garlic from different origins</i>
16h20	17h30	<b>Café + Pósters</b>
17h30	18h30	<b>Chairperson: Artur Silva</b> Anfiteatro 30A 1.14
17h30	18h00	PL11 - Manuela Pintado (ESB) <i>Opportunities in polysaccharides towards the prebiotic activity</i>

## O29 - Influence of ionizing radiation on the free sugars content of several aromatic and medicinal plants

Eliana Pereira<sup>1</sup>, José Pinela<sup>1,3</sup>, João C.M. Barreira<sup>1</sup>, Lillian Barros<sup>1</sup>, Sandra Cabo Verde<sup>2</sup>, Amílcar L. Antonio<sup>1</sup>, M. Beatriz P.P. Oliveira<sup>3</sup>, Isabel C.F.R. Ferreira<sup>1</sup>

1. Centro de Investigação de Montanha (CIMO), ESA, Instituto Politécnico de Bragança, Campus de Santa Apolónia, 5300-253 Bragança, Portugal;
2. C<sup>2</sup>TN - Centro de Ciências e Tecnologias Nucleares, Instituto Superior Técnico, Universidade de Lisboa, Portugal;
3. REQUIMTE/LAQV, Faculty of Pharmacy, University of Porto, Rua Jorge Viterbo Ferreira n.º 228, 4050-313 Porto, Portugal.

iferreira@ipb.pt

Irradiation is a versatile and effective conservation technique, applied to several food matrices. Based on this evidence, it is very relevant to study the effects of different irradiation conditions on the various molecules present in food [1]. Aromatic and medicinal plants are among the food products that need appropriate conservation technologies to expand their applicability [2,3].

The present study evaluated the effects of gamma radiation and electron beam on the composition of soluble sugars of four widely consumed plant species - *Aloysia citrodora* Paláu, *Melissa officinalis* L., *Melittis melissophyllum* L. and *Mentha piperita* L.. After sample irradiation, using different doses (0 - control, 1 and 10 kGy), the individual sugars profile was evaluated by high performance liquid chromatography coupled to a refractive index detector (HPLC-RI).

All the studied plants showed the presence of fructose, glucose, sucrose and trehalose. In general, after performing an individualized analysis of each species submitted to gamma irradiation, it was verified that the dose of 10 kGy provided a higher sugars content in *M. officinalis* and *M. melissophyllum*, while *A. citrodora* and *M. piperita* tended to have higher values in non-irradiated samples. The processing performed with electron beam resulted in a higher susceptibility of sucrose and trehalose molecules, which changed significantly in most of the cases. Considering total sugars, only small variations were detected. Thus, the results obtained may be a good guide to choose the type of irradiation or dose to be applied, according to the need to maintain or alter the profile of soluble sugars in the studied species.

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### References

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