GLUPOR 12

12.ª 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

GLU POR 12

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Aveiro, 11-13 setembro 2017

SOCIEDADE PORTUGUESA DE QUÍMICA

universidade de aveiro

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PROGRAMA CIENTÍFICO

Segunda-feira, 11 de setembro de 2017		
10h00	**10h50**	**Registo** - Átrio da Escola Superior de Saúde, Campus do Crasto
10h50	**11h10**	**Sessão de Abertura** Anfiteatro 30A.1.14
11h10	**12h10**	**Chairperson: Amélia Rauter** Anfiteatro 30A 1 14
11h10	**11h40**	PL01 - Patrick Rollin (U Orléans) *Thioglycosides in our daily vegetables?*
11h40	**12h10**	PL02 - Susana Dias Lucas (Hovione) *Carbohydrates: from bench to market – A process chemistry view*
		Sessões Paralelas
12h10	**13h00**	**Bacterial Cellulose** **Chairperson: José A Lopes da Silva** Anfiteatro 30A 1 14
12h10	12h30	K01 - Fernando Dourado (UM) *Bacterial Nanocellulose: a novel marketable multifunctional biopolymer*
12h30	12h45	O01 - Carla Vilela (UA) *Bacterial Cellulose: a nature's made nanostructured material for drug delivery*
12h45	13h00	O02 - Ana Cristina Rodrigues (UM) *Development of bacterial cellulose wound dressings with controlled delivery of vitamin D_3*
12h10	**13h00**	**Glycobiology** **Chairperson: Angelina Palma** Anfiteatro 30A 2 05
12h10	12h30	K02 - Alexandre Ferreira (IPO) *Circulating tumor cells analysis using glycan-affinity microfluidic devices: Possible Clinical Implications towards precision oncology*
12h30	12h45	O03 - Henrique Duarte (I3SUP) *Deciphering ErbB2 glycosylation profile in gastric cancer cells*
12h45	13h00	O04 - Zélia Silva (UNL) *Sialic acids as immune regulators of antigen presentation in dendritic cells*
12h10	**13h00**	**Carbohydrates in Food** **Chairperson: Dulcineia Wessel** sala 30B 2 16
12h10	12h30	K03 - Susana Soares (FCUP) *Carbohydrates and food organoleptic properties: color and taste modulation*
12h30	12h45	O05 - Pedro Fernandes (UA) *Apple pomace arabinan – phloridzin binding capacity*
12h45	13h00	O06 - Luís Filipe Ribeiro (UTAD) *Reducing negative volatile phenols in red wine by chitosan: impact on wine quality*
13h00	**14h30**	**Almoço**

14h30 15h30	**Chairperson: João Mano** Anfiteatro 30A 1.14
14h30 15h00	PL03 - Ilídio Correia (UBI) *Biomedical applications of carbohydrates*
15h00 15h30	PL04 - Iva Pashkuleva (UM) *Engineering supramolecular functional biomaterials from glycans*
	Sessões Paralelas
15h30 16h20	**Biomedical Applications** **Chairperson: Celso Reis** Anfiteatro 30A.1.14
15h30 15h50	K04 - Isabel Coelhoso (UNL) *Membranes from microbial polysaccharides*
15h50 16h05	O07 - Isabel Pereira (UM) *Dextrin-based hydrogel for the development of an injectable bone substitute*
16h05 16h20	O08 - Alexandra Brito (UM) *Supramolecular hydrogels based on the co-assembly of simple carbohydrates and peptide amphiphiles for biological applications*
15h30 16h20	**Novel Foods and Packaging** **Chairperson: Fernando Dourado** Anfiteatro 30A.2.05
15h30 15h50	K05 - Dmitry Evtugin (UA) *Targeted modification of glucuronoxylan for food packaging applications*
15h50 16h05	O09 - Ana Luísa Fernandes (UP) *Cyclodextrins: impact on anthocyanins thermal and gastrointestinal stability*
16h05 16h20	O10 - Tânia Pires (IPB) *The glycosylic profile of edible flowers while alternative foods*
15h30 16h20	**Chemical and Enzymatic Synthesis** **Chairperson: Isabel Ismael** sala 30B.2.16
15h30 15h50	K06 - Maria Teresa Blázquez-Sánchez (FCUL) *Synthesis of C-glycosyl phenols as a strategy for the treatment of amyloid diseases*
15h50 16h05	O11 - Susete Fernandes (UNL) *Mimicking plusiotis resplendens cuticule with a new photonic properties of cellulose nanocrystals films*
16h05 16h20	O12 - Jing Su (UM) *Designing of a laccase super-catalyst*
16h20 17h30	**Café + Pósteres**
17h30 18h30	**Chairperson: Patrick Rollin** Anfiteatro 30A 1.14
17h30 18h00	PL05 - Maria Helena Godinho (CT-UNL) *Cellulose bio-mimetic materials*
18h00 18h30	PL06 - Raul Fangueiro (UM) *Natural fibers: challenges for advanced materials and products*
19h00	**Receção de Boas-Vindas**

O10 - The glycosylic profile of edible flowers while alternative foods

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Edible flowers have been used in the human diet with secular records in Asia, ancient Greece and Rome, medieval France, England and the Middle East region [1]. Due to consumer's interest in healthier living habits, edible flowers have performed an increasingly important function. These flowers are abundant natural sources of phytochemical compounds around the world with health benefits [2].The aim of this study was to determine the individual profile of soluble sugars and glycosylated flavonoids in petals and respective infusions of four edible flower species (*Dahlia mignon, Rose damascena* 'Alexandria' and *R. Gallica* 'Francesa' grafted on *R. canina*, *Calendula officinalis* L. and *Centaurea cyanus* L). The soluble sugars were determined by high performance liquid chromatography coupled to a refractive index detector (HPLC-RI) and quantification was performed using the internal standard (melezitose) method. The phenolic profile analysis was performed by LC-DAD-ESI/MSn. Fructose, glucose and sucrose were found in the petals and in the infusions of the different species. Fructose was the main sugar present in three of the studied edible flowers, except for the *Calendula officinalis* L. where sucrose was the predominant sugar. Dahlia and rose petals (10.24 ± 0.62 and 10.75 ± 1.05 g/100 g dry weight), and their infusions (0.19 ± 0.02 and 0.19 ± 0.01 mg/100 mL respectively) presented higher values of total sugars, while the centaurea petals (1.5 ± 0.1 g/100 g) and its infusion (0.14 ± 0.01 mg/100 mL) presented lower values. The phenolic profile, of dahlia sample presented a total of 21 compounds, the main being naringenin-3-*O*-glucoside. The rose petals presented 12 flavonoids (kaempferol- and quercetin-3-*O*-glucosides as major compounds). Calendula presented a profile with 13 phenolic compounds (isorhamnetin-3-*O*-rutinoside as the most abundant molecule) and centaurea flowers presented 14 polyphenols (apigenin-*O*-glucuronide as the most abundant).

These results confirm the potential of edible flowers as a source of bioactive compounds and their applicability, not only as ingredients in gourmet cooking but also as sources of bioactive phytochemicals with interest for the pharmaceutical and food industries.

Acknowledgments: The authors are grateful to the Foundation for Science and Technology (FCT, Portugal) and FEDER under Programme PT2020 for financial support to CIMO (UID/AGR/00690/2013), REQUIMTE (UID/QUI/50006/2013 - POCI/01/0145/FERDER/007) and L. Barros' contract. GIP-USAL is financially supported by the Spanish government through project AGL2015-64522-C2-2-R.

References

1. T. C. S. P.Pires; M. I. Dias; L. Barros; I. C. F. R. Ferreira, *Food Chem.* **2017**, *220*, 337–343.
2. B. Lu; M. Li;R. Yin, *Crit Rev Food Sci Nutr* **2015**, *56*, 130-148.