



XXIV Encontro Luso Galego de

QUÍMICA

21-23 novembro de 2018

Porto - Portugal



LIVRO DE RESUMOS



SOCIEDADE PORTUGUESA DE QUÍMICA



Colegio Oficial de
Químicos de Galicia

TÍTULO

Livro de Resumos do XXIV Encontro Luso-Galego de Química

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EDIÇÃO

Sociedade Portuguesa de Química
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DATA

Novembro de 2018

TIRAGEM

500 Exemplares

DEPÓSITO LEGAL

448804/18

ISBN

978-989-8124-24-1

DESIGN GRÁFICO

Joana Macedo

IMPRESSÃO

Sersilito-Empresa Gráfica, Lda.

CATALOGAÇÃO RECOMENDADA

Livro de Resumos do XXIV Encontro Luso-Galego de Química
Faculdade de Ciências, U. Porto, 2018 – 500 p.
ISBN 978-989-8124-24-1
Química – Congressos

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XXIV ENCONTRO LUSO-GALEGO DE QUÍMICA

Mantendo vivo o evento iniciado em 1985, decorrente da estreita relação existente entre a Delegação do Porto da Sociedade Portuguesa de Química (SPQ) e o Colegio Oficial de Químicos de Galicia (COLQUIGA), O Departamento de Química da Faculdade de Ciências tem o prazer de organizar e receber o XXIV Encontro Luso-Galego de Química, que irá decorrer entre os dias 21 e 23 de novembro de 2018.

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PROGRAMA CIENTÍFICO

21 NOVEMBRO 2018 | QUARTA-FEIRA

9:00 - 11:00	ENTREGA DA DOCUMENTAÇÃO			
11:00 - 11:30	SESSÃO DE ABERTURA			
11:30 - 12:30	PLENÁRIA DE ABERTURA Auditório Ferreira da Silva (AFS) Stéphane Quideau			
12:30 - 14:00	ALMOÇO			
14:00 - 15:00	QAMA 1	QO 1	QA 1	QAMB 1
	QAMA 2	QO 2	QA 2	QAMB 2
	QAMA 3	QO 3	QA 3	QAMB 3
	QAMA 4	QO 4	QSOC 1	QAMB 4
Pausa (5 min)				
15:05 - 16:05	QAMA 5	QO 5	QA 5	QAMB 5
	QAMA 6	QO 6	QA 6	QAMB 6
	QAMA 7	QO 7	QA 7	QAMB 7
	QAMA 8	QO 8	QA 8	QAMB 8
16:05 - 17:00	PAUSA CAFÉ / SESSÃO DE POSTERS			
17:00 - 17:45	PLENÁRIA 1 (AFS) Tomás Cordero Alcántara			
17:45 - 18:30	QAMA 9	QO 9	CAT 1	QAMB 9
	QAMA 10	QO 10	CAT 2	QAMB 10
	QAMA 11	QO 11	CAT 3	QAMB 11
Pausa (5 min)				
19:00 - 19:45	QAMA 12	SQ 1	CAT 4	QAMB 12
	QAMA 13	QP 1	CAT 5	QAMB 13
	QAMA 14	CAT 10	CAT 6	QAMB 14
19:45	PORTO DE HONRA			



PROGRAMA CIENTÍFICO

22 NOVEMBRO 2018 | QUINTA-FEIRA

9:00 - 10:00	QAMA 15	QS 1	QT 1
	QAMA 16	QS 2	QT 2
	QAMA 17	QS 3	QT 3
	QAMA 18	QS 4	QT 4
Pausa (5 min)			
10:05 - 11:15	QAMA 19	CAT 7	QS 5
	QAMA 20	CAT 8	QS 6
	QAMA 21	CAT 9	QS 7
	QAMA 22	CAT 11	QS 8
	QAMA 23	QS 56	QS 9
11:15-11:45	PAUSA CAFÉ/ SESSÃO DE POSTERS		
11:45-12:30	PLENÁRIA 2 (AFS) Carlos Lodeiro Espinô		
12:30-14:00	ALMOÇO		
14:00 - 15:00	QAMA 24	CAT 12	QAMB 15
	QAMA 25	CAT 13	QAMB 16
	QAMA 26	CAT 14	QAMB 17
	QAMA 27	QA4	QAMB 18
Pausa (5 min)			
15:05 - 16:05	QS 10	QSOC 2	QAMB 19
	QS 11	QA 9	QAMB 20
	QS 12	QA 10	QAMB 21
	QS 13	QA 11	QAMB 22
16:05-17:00	PAUSA CAFÉ / SESSÃO DE POSTERS		
17:00-17:45	PLENÁRIA 3 (AFS) Pilar Goya Laza		
17:45-19:00	QS 14	QA 12	QAMB 23
	QS 15	QA 13	QAMB 24
	QS 16	EEQ 1	QAMB 25
	QS 17	EEQ 2	QSUS 7
20:00	JANTAR DO ENCONTRO		



PROGRAMA CIENTÍFICO

23 NOVEMBRO 2018 | SEXTA-FEIRA

9:00 - 10:00	QAMA 28	QS 18	QF 1	
	QAMA 29	QS 19	QF 2	
	QAMA 30	QS 20	QF 3	
	QAMA 31	QS 21	QF 4	
Pausa (5 min)				
10:05 - 11:05	BB 1	QS 22	QF 5	
	BB 2	QS 23	QF 6	
	BB 3	QS 24	QF 7	
	BB 4	QS 25	QF 8	
11:05-11:45	PAUSA CAFÉ/ SESSÃO DE POSTERS			
11:45-12:30	PLENÁRIA 4 (AFS) Manuel António Coimbra (AFS)			
12:30-14:00	ALMOÇO			
14:00-15:30	QAMA 32	BB 5	NN 1	QSUS 1
	QAMA 33	BB 6	NN 2	QSUS 2
	QAMA 34	BB 7	NN 3	QSUS 3
	QAMA 35	BB 8	NN 4	QSUS 4
	QI 1	QAMA 36	NN 5	BB 9
	QI 2	QAMA 37	NN 6	QSUS 5
15:30-16:00	PAUSA CAFÉ/ SESSÃO DE POSTERS			
16:00-17:30	QI 3	QAMA 38	NN 7	QSUS 6
	QI 4	QAMA 39	NN 8	QIE 1
	QI 5	BB 10	NN 9	QIE 2
	QI 6	BB 11	NN 10	QIE 3
	QI 7	BB 12	NN 11	QIE 4
	QI 8	BB 13	NN 12	QI9
17:30	SESSÃO DE ENCERRAMENTO			

Phenolic composition and cell-based antioxidant activity of roots and aerial parts of *Eryngium viviparum* produced *in vitro*

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Eryngium plants have been used for ornamental, agricultural and folk medicinal purposes [1]. Within this genus, *Eryngium viviparum* J. Gay is an endemic plant from the Northwest of Spain and France and Northeast of Portugal that is included in International Union for Conservation of Nature red list for threatened plants [2]. For this reason, it is important to apply *ex situ* biotechnological conservation tools, such as the *in vitro* culture, to preserve this species, but also take advantage of the high growth rates and yields of bioactive secondary metabolites to provide high added-value to this species [3]. Phenolic compounds, among others, have been reported as important compounds in this genus due to their antioxidant properties [1]. However, as far as we know, the phenolic composition and antioxidant activity of *E. viviparum* have never been described, being this the main purpose of this study.

The *in vitro* culture of *E. viviparum* explants was established in solidified MS medium, supplemented with indole-3-butyric acid (0.1 mg L^{-1}), at $24 \pm 2^\circ\text{C}$ under a 16/8 photoperiod in a growth chamber. After five weeks, the aerial parts and roots of the established explants were collected, freeze-dried and reduced to a fine powder. Hydroethanolic extracts were then prepared from both samples by solid-liquid extraction and the phenolic profile was characterized by HPLC-DAD-ESI/MS [4]. The antioxidant activity was evaluated *in vitro* for the lipid peroxidation inhibition capacity by the thiobarbituric acid reactive substances (TBARS) formation inhibition capacity in brain cell homogenates, and for the antihemolytic capacity by the oxidative hemolysis inhibition assay (OxHLLA) using sheep erythrocytes [4].

Eleven phenolic compounds were identified in both *E. viviparum* hydroethanolic extracts, corresponding to ten phenolic acids and one flavonoid. Rosmarinic acid was the major compound in both samples and the highest concentration was found in roots. Tectorigenin-O-glucuronide was the identified flavonoid. The root extract had an interesting antioxidant activity translated by the lowest IC_{50} values. In fact, the root extract was more effective in preventing the formation of malondialdehyde as a secondary product of lipid peroxidation and preventing lysis of erythrocyte membranes. The high levels of rosmarinic acid found in roots may be responsible for the observed bioactivities, since this compound has been reported as a powerful antioxidant [5]. Therefore, this study provided high added-value to *E. viviparum* roots as an interesting source of rosmarinic acid, which could have different industrial applications as natural antioxidants.

ACKNOWLEDGMENTS: To FCT (Portugal) and FEDER under programme PT2020 for the financial support to CIMO (UID/AGR/00690/2013) and the research contracts of J. Pinela (Project AllNatt, POCI-01-0145-FEDER-030463) and L. Barros. To FEDER-Interreg España-Portugal programme for financial support through the project 0377_Iberphenol_6_E. To the University of Vigo for the M. Ayuso stay grant in research centres. To the Xunta de Galicia for financial support (Programa REDES ED431D-2017/18).

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