



10º Encontro Nacional de Cromatografia

Bragança 2017 – 4 a 6 de dezembro

Abstracts book / Livro de resumos



SOCIEDADE PORTUGUESA DE QUÍMICA



INSTITUTO POLITÉCNICO DE BRAGANÇA Centro de Investigação de Montanha

COM O ALTO PATROCÍNIO DE SUA EXCELÊNCIA



O Presidente da República

Title

10th Chromatography Meeting

Título

10º Encontro de Cromatografia

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Edition / Edição

Instituto Politécnico de Bragança · 2017

5300-253 Bragança · Portugal

Tel. (+351) 273 303 200 · Fax (+351) 273 325 405

<http://www.ipb.pt>

Imaging services / Serviços de imagem

Atilano Suarez (Instituto Politécnico de Bragança, Portugal)

URL

<http://hdl.handle.net/10198/8896>

ISBN

978-972-745-234-7



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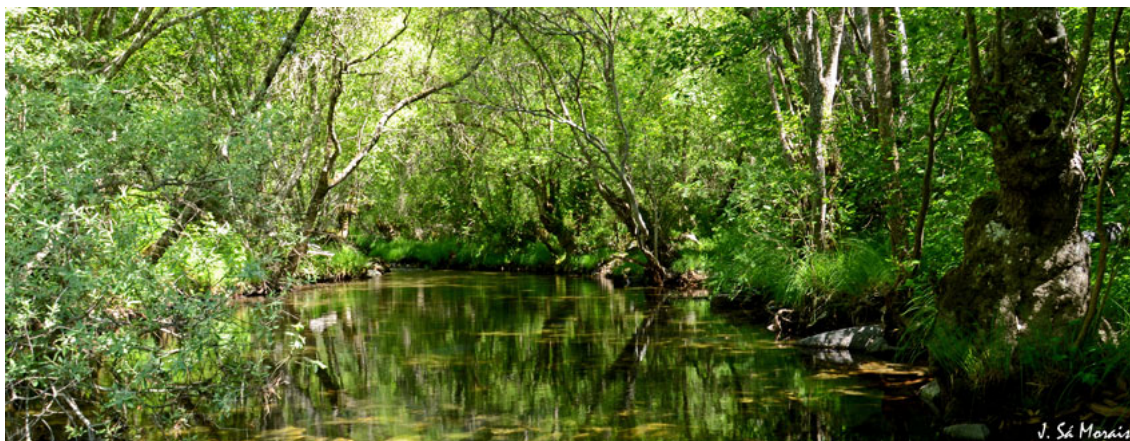
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OC-38		
Oncolytic virus purification using multi-column chromatography		55
<i>João Mendes, Ricardo J.S. Silva, Cristina Peixoto, Paula M. Alves, Manuel J.T. Carrondo</i>		
OC-39		
Effects of e-beam irradiation on bioactive content of cherry tomatoes		56
<i>Joana Madureira, Maria Cojocar, Silvia Garofalide, Pedro M.P. Santos, Fernanda M.A. Margaça, Sandra Cabo Verde</i>		
OC-40		
Otimização da extração de antocianinas de cereja madura através da metodologia de superfície de resposta		57
<i>Carla Pereira, Lillian Barros, Miguel A. Prieto, Isabel C.F.R. Ferreira</i>		
OC-41		
Efeito da radiação gama e feixe de eletrões na concentração de ergosterol em <i>Agaricus bisporus</i> (J.E. Lange) Imbach		58
<i>Ângela Fernandes, Rossana V.C. Cardoso, Amílcar L. Antonio, Sandra Cabo Verde, Lillian Barrosa, Isabel C.F.R. Ferreira</i>		
OC-42		
Optimization of the extraction of triterpenes from <i>Ganoderma lucidum</i>		59
<i>Oludemi Taofiq, Lillian Barros, Miguel A. Prieto, Maria Filomena Barreiro, Isabel C.F.R. Ferreira</i>		
OC-43		
Unveiling the chemical composition of willow added-value lipophilic extractives by gas chromatography-mass spectrometry		60
<i>Patrícia A.B. Ramos, Sónia A.O. Santos, Carmen S.R. Freire, Artur M.S. Silva, Armando J.D. Silvestre</i>		
OC-44		
Application of anti-hail net in apple orchards: effects on fruits chemical characteristics		61
<i>Carlos Martins-Gomes, Luís Pinto, Ermelinda Silva, Sandra Martins, Alexandre Gonçalves, Cátia Brito, José Moutinho-Pereira, M.A. Rodrigues, Carlos M. Correia, Fernando Nunes</i>		
OC-45		
Characterization of the volatile composition of encapsuled coffee		62
<i>Davide Mendes, Pedro Lisboa, Pedro Simões, Eduardo Mateus, Marco Gomes da Silva</i>		
OC-46		
Increased productivity in impurity profile characterization of innovative pharmaceuticals		63
<i>João Pereira, Antonio Serodio, Cátia Sousa</i>		
OC-47		
Characterization of phospholipids, including plasmalogens, in bivalves of the Portuguese coast using solid-phase extraction followed by gas-liquid chromatography		64
<i>Vera Faneca, Susana P. Alves, Rui J.B. Bessa</i>		
OC-48		
Characterization and Identification of Four Essential Oils by GC-MS		65
<i>Mariana Oliveira, Carlos Borges, Ana Patrícia Marques</i>		

PC - Panel communications / Comunicações em painel

PC1		
Optimization of an HPLC analysis to study the interactions between a <i>Saccharomyces cerevisiae</i> protein-rich extract and wine procyanidins		68
<i>Abigail F. Ferreira, Telmo Francisco, Rosa Pérez-Gregorio, Susana Soares, Nuno Mateus, Victor de Freitas</i>		
PC2		
Phenolic compounds from <i>Annona muricata</i> L.: HPLC-DAD analysis of the aqueous extract and nanoformulations		69
<i>Clara Grosso, Simona Mancini, Luca Nardo, Maria Gregori, João Bernardo, Inês Ribeiro, Francesco Mantegazza, Massimo Masserini, Cristina Delerue-Matos</i>		

PC3		
	Fatty acid profile of seaweeds from the North Portuguese Coast	70
	<i>Sara Sousa, Susana Machado, Cristina Soares, Elsa Vieira, Valentina F. Domingues, Ana P. Carvalho, Manuela Correia, M. João Ramalhosa, Teresa Oliva-Teles, Simone Morais, Cristina Delerue-Matos</i>	
PC4		
	GC-MS identification of oligosaccharides produced by nonenzymatic transglycosylation reactions	71
	<i>Soraia P. Silva, Ana S.P. Moreira, M. Rosário M. Domingues, Dmitry V. Evtugin, Elisabete Coelho, Manuel A. Coimbra</i>	
PC5		
	Chemical characterization of three <i>Thymus</i> species: <i>T. herba-barona</i>, <i>T. pseudolanuginosus</i> and <i>T. caespitius</i>	72
	<i>Andrea F. Afonso, Olívia R. Pereira, Artur M.S. Silva, Susana M. Cardoso</i>	
PC6		
	Phytochemicals of <i>Salvia africana</i> and <i>Salvia elegans</i> and <i>Salvia officinalis</i> 'Icterina'	73
	<i>Andrea F. Afonso, Olívia R. Pereira, Artur M.S. Silva, Susana M. Cardoso</i>	
PC7		
	Applying an API HPLC Related Substances Monograph Method to an Inhalation Drug Product	74
	<i>Andreia Costa, Rúben Chaves, Sofia Silva</i>	
PC8		
	Perfil cromatográfico em ácidos gordos de seis génotipos de <i>Portulaca olerace</i> L.: uma fonte alternativa de ómega-3	75
	<i>Ângela Fernandes, Spyridon A. Petropoulos, Anestis Karkanis, Lillian Barros, Georgia Ntatsi, Konstantinos Petrotos, Christos Lykas, Ebrahim Khah, Isabel C.F.R. Ferreira</i>	
PC9		
	Fatty acids profile contribution for the discrimination of olive oil production year	76
	<i>Nuno Rodrigues, Susana Casal, António M. Peres, José A. Pereira</i>	
PC10		
	Monitoring fructooligosaccharides production using <i>Aspergillus aculeatus</i> by HPLC-ELSD	77
	<i>Aelina Lama, Sara Silvério, Ana C.A. Veloso, Lígia R. Rodrigues, Teresa Dias, António M. Peres</i>	
PC11		
	Selection of SPME fiber for the identification of the pheromone rhynchophorol by GC/MS	78
	<i>Arão C. Viana, Ingrid G. Ramos, Ananda M. Carvalho, Edeilza L. dos Santos, Janice I. Druzian</i>	
PC12		
	Similaridade da farinha da casca do maracujá amarelo (<i>Passiflora edulis flavicarpa</i>) com pectina e ácido galacturônico comerciais por CLAE/IR	79
	<i>Emanuela M. Coelho, Arão C. Viana, Luciana C. de Azevedo, Janice I. Druzian</i>	
PC13		
	Optimization of an analytical method for the determination of underivatized triclosan and related compounds by gas chromatography-triple quadrupole mass spectrometry	80
	<i>Cátia Magro, Davide Mendes, Marco Silva, Alexandra Ribeiro, Eduardo Mateus</i>	
PC14		
	Development and validation of an HPLC method for quantification of the biocide Ecomea®	81
	<i>Cátia Vilas-Boas, Sara Cravo, Emília Sousa, Madalena Pinto, Marta Correia-da-Silva</i>	
PC15		
	Efeito do processamento no perfil lipídico do feijão mangalô (<i>Phaseolus lunatus</i>) germinado	82
	<i>Clícia M.J. Benevides, Sónia Soares, Maria A. Nunes, Rita C. Alves, Maria Beatriz P.P. Oliveira</i>	
PC16		
	Vitamin E profile of green (<i>in natura</i>) seeds from different species of legumes	83
	<i>Cátia Araújo, Rita C. Alves, Sílvia Bessada, Anabela S.G. Costa, Clícia M.J. Benevides, Graça Soveral, M. Beatriz P.P. Oliveira</i>	
PC17		
	RP-HPLC analysis of 21 amino acids in edible seaweeds from the Portuguese coast after OPA/FMOC derivatization	84
	<i>Cristina Soares, Elsa Vieira, Susana Machado, Manuela Correia, M. João Ramalhosa, Valentina F. Domingues, Ana P. Carvalho, Teresa Oliva-Teles, Simone Morais, Cristina Delerue-Matos</i>	
PC18		
	Ion source-MS parameters optimization for pharmaceuticals compounds	85
	<i>Paula Paíga, Luís M.S. Silva, Cristina Delerue-Matos</i>	

PC19	Perfil cromatográfico de ácidos gordos e açúcares em <i>cupcakes</i> funcionalizados com um extrato rico em ácido rosmarínico	86
	<i>Cristina Caleja, Lillian Barros, João C.M. Barreira, Ana Ciric, Marina Sokovic, Ricardo C. Calhelha, M. Beatriz P.P. Oliveira, Isabel C.F.R. Ferreira</i>	
PC20	Monitorização cromatográfica de um extrato de <i>Melissa officinalis</i> L. obtido com diferentes técnicas	87
	<i>Cristina Caleja, Lillian Barros, Miguel A. Prieto, Maria Filomena Barreiro, M. Beatriz P.P. Oliveira, Isabel C.F.R. Ferreira</i>	
PC21	Biogenic amine formation during smoking process of traditional Portuguese meat sausages <i>chouriças</i> and <i>alheiras</i>	88
	<i>Daniel O. Carvalho, Cláudia Sousa, Luís F. Guido</i>	
PC22	No dilute” just shoot LC-ESI-MS/MS : feasibility and robustness of a maintenance-free source and interface for applications in low level pesticide residue analysis	89
	<i>Daniel Rocha</i>	
PC23	Development and application of a fast HPLC method for dissolution evaluation of amorphous pharmaceuticals materials	90
	<i>Luísa Pena, Daniela Almeida, Pedro Serodio</i>	
PC24	The effect of storage in HMF of Portuguese honey samples: a 4-year study	91
	<i>Sónia Soares, Diana Pinto, Rita C. Alves, Francisca Rodrigues, M. Beatriz P.P. Oliveira</i>	
PC25	Dairy products fortified with <i>Pleurotus ostreatus</i> beta-glucans	92
	<i>Ekaterina Antontceva, Sergei Sorokin, Mark Shamtsyan</i>	
PC26	Efeitos de radiação ionizante no perfil fenólico de <i>Melissa officinalis</i> L. e de <i>Melittis melissophyllum</i> L.	93
	<i>Eliana Pereira, Amílcar Antonio, João C.M. Barreira, Celestino Santos-Buelga, Lillian Barros, Isabel C.F.R. Ferreira</i>	
PC27	Influência da origem geográfica no perfil fenólico de <i>Lavandula pedunculata</i> (Mill.) Cav	94
	<i>Catarina L. Lopes, Eliana Pereira, Ana Maria Carvalho, Ana Maria Barata, Violeta Lopes, Filomena Rocha, Lillian Barros, Isabel C.F.R. Ferreira</i>	
PC28	Optimization of the method for determining the residual amounts of florasulam in crops by HPLC	95
	<i>Elisey Yu. Alekseev, Taisiya D. Cheremskaya, Larisa M. Karpova</i>	
PC29	Caracterização fenólica da casca do fruto <i>Ficus carica</i> L. por LC-DAD-ESI/MS	96
	<i>Emanueli Backes, Carla Pereira, Maria Gabriela Leichtweis, Lillian Barros, Aziza Kamal Genena, Maria Filomena Barreiro, Isabel C.F.R. Ferreira</i>	
PC30	Determinação de antocianinas no epicarpo de frutos de <i>Prunus spinosa</i> L.	97
	<i>Maria Gabriela Leichtweis, Carla Pereira, Emanueli Backes, Ana Maria Carvalho, Ilton J. Baraldi, Lillian Barros, Isabel C.F.R. Ferreira</i>	
PC31	Biodiesel production through esterification using ionic liquids as catalysts	98
	<i>Arevik Tadevosyan, Fernanda Fontana Roman, Ana Queiroz, António Ribeiro, Paulo Brito</i>	
PC32	Efeito do teor de etanol na composição de compostos fenólicos extraídos da casca de sementes de pinhão	99
	<i>Carlos Henrique Koslinski Santos, Maria Inês Dias, Lillian Barros, Michel Rocha Baqueta, Aline Coqueiro, Maria Filomena Barreiro, Odinei Hess Gonçalves, Evandro Bona, Marcos Vieira da Silva, Isabel C.F.R. Ferreira, Fernanda Vitoria Leimann</i>	

PC33	Perfis cromatográficos de açúcares livres e ácidos gordos em amostras de iogurtes aditivadas com o corante natural curcumina	100
	<i>Heloísa Helena Scorsato de Almeida, Custódio Lobo Roriz, Lillian Barros, João C.M. Barreira, Fernanda Vitória Leimann, Maria Filomena Barreiro, Isabel C.F.R. Ferreira</i>	
PC34	Influence of roasting on the amino acid profile of defatted almond flour	101
	<i>Filipa B. Pimentel, Anabela S.G. Costa, Rita C. Alves, Adrián Rabadán, Manuel Álvarez-Ortí, M. Beatriz P.P. Oliveira</i>	
PC35	<i>Gracilaria vermiculophylla</i> : effect of preservation methods on the fatty acids profile	102
	<i>Filipa B. Pimentel, Maria A. Nunes, Anabela S.G. Costa, Rita C. Alves, M. Beatriz P.P. Oliveira</i>	
PC36	Wild mushrooms as a possible source of nutraceuticals – Use of chromatographic techniques to obtain the species chemical profile	103
	<i>Filipa S. Reis, Anabela Martins, Lillian Barros, M. Helena Vasconcelos, Patricia Morales, Isabel C.F.R. Ferreira</i>	
PC37	Olive oil volatile organic compounds: Single column vs. coupled columns for GC/MS identification purposes	104
	<i>Flávia Freitas, Davide Mendes, Luis Batista, Eduardo Mateus, Marco Gomes da Silva</i>	
PC38	Ultrahigh-Pressure Liquid Chromatography with fluorescent detection (UPLC-FLD) method for the identification of anthocyanins from Purple Sweet Potato	105
	<i>Hélder Oliveira, Iva Fernandes, Victor de Freitas, Nuno Mateus</i>	
PC39	Is thermal treatment a concern for the nutritional quality of flaxseed, chia and sunflower seeds?	106
	<i>Tânia Gonçalves Albuquerque, Mafalda Alexandra Silva, M. Beatriz P.P. Oliveira, Helena S. Costa</i>	
PC40	Phenolic profile obtained by HPLC-DAD-ESI/MS and <i>in vitro</i> bioactivities of <i>Equisetum giganteum</i> L. and <i>Tilia platyphyllos</i> Scop.	107
	<i>Inês Jabeur, Natália Martins, Lillian Barros, Ricardo C. Calhella, Josiana Vaz, Lotfi Achour, Celestino Santos-Buelga, Isabel C.F.R. Ferreira</i>	
PC41	Profiling the volatile fraction of ruminal content from Holstein dry-cows fed different diets	108
	<i>Inês M. Valente, Margarida R.G. Maia, Antonia M. Carro, Rosa A. Lorenzo, António J.M. Fonseca, Ana Rita J.B. Cabrita, José A. Rodrigues</i>	
PC42	The impact of pH on the impurity profile of a model drug	109
	<i>Inês F.S.Silva, Maria C. Paisana</i>	
PC43	In-Tube SPME-MS/MS with hybrid silica monolith as sorbent phase to determine amino acids and neurotransmitters in plasma samples	110
	<i>Luis Felipe Cabral Miranda, Israel Donizeti de Souza, Maria Eugênia Costa Queiroz</i>	
PC44	Design and optimization of a simulated moving bed unit for the separation of betulinic, oleanolic and ursolic acids mixtures: experimental and modeling studies	111
	<i>Ivo S. Azenha, José P.S. Aniceto, Fernando M.J. Domingues, Adélio Mendes, Carlos M. Silva</i>	
PC45	Chromatographic measurement of eucalyptol diffusivities in compressed fluids	112
	<i>Bruno Zêzere, Ivo S. Azenha, Ana Magalhães, Adélio Mendes, Carlos M. Silva</i>	
PC46	A rapid UPLC method development for <i>in vitro</i> dissolution of supersaturation drug delivery systems	113
	<i>António Serôdio, Jessica F. P. Ramos, Inês Almeida, Pedro Serôdio, Silvia Santos</i>	
PC47	Avaliação da composição em ácidos gordos de folhas de urtiga (<i>Urtica dioica</i>)	114
	<i>Jacqueline Silva, Ailey Ap. C Tanamati, Joana S. Amaral</i>	

PC48	Preparation of a new chiral stationary phase for liquid chromatography based on a small molecule	115
	<i>João Ribeiro, Carla Fernandes, Maria Elizabeth Tiritan, Artur M.S. Silva, Madalena M.M. Pinto</i>	
PC49	Liquid chromatography enantioseparation of xanthone derivatives on a human serum albumin stationary phase	116
	<i>João P. do Carmo, Carla Fernandes, Maria Elizabeth Tiritan, Carlos Afonso, Madalena M.M. Pinto</i>	
PC50	Caracterização do perfil carbonílico em cafés por GDME-HPLC-DAD-MS/MS para correlação com diferentes parâmetros de qualidade	117
	<i>Liliana Cordeiro, Inês M. Valente, João Rodrigo Santos, José A. Rodrigues</i>	
PC51	Establishment and differentiation of the volatonic composition of juice and peel from Tahiti lime (<i>Citrus × latifolia</i>) based on HS-SPME/GC-qMS analysis	118
	<i>José A. Figueira, Priscilla Porto-Figueira, Jorge Pereira, José S. Câmara</i>	
PC52	Coupling HPLC and GC-FID for the monitorization of oxidized intermediates from wet peroxide biphasic oxidation	119
	<i>Jose L. Diaz de Tuesta, Joana S. Amaral, Adrián M.T. Silva, Joaquim L. Faria, Helder T. Gomes</i>	
PC53	Fingerprint targeted compounds for use in authenticity of sugarcane honey – an approach based on chromatographic and statistical data	120
	<i>Pedro Silva, Fernando M. Nunes, Jose S. Camara</i>	
PC54	Caracterização química de uma coleção de germoplasma de variedades tradicionais de tomate com recurso a diferentes técnicas cromatográficas	121
	<i>César Montoya, José Pinela, Lillian Barros, Ana Maria Carvalho, Filomena Rocha, Ana Maria Barata, Isabel C.F.R. Ferreira</i>	
PC55	Assessment of biogenic amines profile in biological samples from Holstein dry-cows	122
	<i>Liliana Cordeiro, Inês Maria Valente, Margarida R.G. Maia, António J.M. Fonseca, Ana Rita J.B. Cabrita, José António Rodrigues</i>	
PC56	The effects of starter culture on the biogenic amine accumulation in traditional Portuguese dry-sausages	123
	<i>Dmitriy Panov, Luís G. Dias, Ana Paula Pereira, António M. Peres, Leticia M. Estevinho, Teresa Dias</i>	
PC57	High-throughput method for the analysis of sterols in food samples by gas chromatography without previous fractionation steps	124
	<i>Luís M. Rodríguez-Alcalá, Lígia L. Pimentel, Manuela Pintado, Ana M. Gomes</i>	
PC58	Free fatty acids profiling in olive oil and olives from the Trás-os-Montes Portuguese region	125
	<i>Luís M. Rodríguez-Alcalá, Inês F. Correia, Lígia L. Pimentel, José A. Pereira, Ana M. Gomes, Manuela Pintado</i>	
PC59	Application of an HPLC method for the quality control of vitamin C content in foods for infants	126
	<i>Mafalda A. Silva, Tânia Gonçalves Albuquerque, M. Beatriz P.P. Oliveira, Helena S. Costa</i>	
PC60	Valorization of apple wood wastes from traditional and exotic Portuguese varieties: phenolic profile and antioxidant activity	127
	<i>Manuela M. Moreira, Braam Devos, M. Fátima Barroso, Raul Rodrigues, Annick Boeykens, Hannes Withouck, Simone Morais, Cristina Delerue-Matos</i>	
PC61	Comparison of different extraction solvents for characterization of phenolic compounds <i>Geranium robertianum</i> L. extracts	128
	<i>Marcelo D. Catarino, Micaela I. Jordão, Artur M.S. Silva, Susana M. Cardoso</i>	

PC62		
	Validação do método de aflatoxinas por cromatografia - HPLC	129
	<i>Cristiane L. Paloschi, Margaret S. Nardelli, Mariana Sbizzaro, Divair Christ, Fagner G. da Conceição, Danielle M. Rosa, Silvio C. Sampaio</i>	
PC63		
	Monovarietal olive pomaces: stability prediction based on fatty acid profile and oleic/linoleic ratio	130
	<i>Maria A. Nunes, Rita C. Alves, Francisca Rodrigues, Anabela S.G. Costa, Maria B.P.P. Oliveira</i>	
PC64		
	Influence of <i>Bactrocera oleae</i> infestation on the fatty acids profile of two Algerian olive cultivars: <i>Limli</i> and <i>Rougette de Metidja</i>	131
	<i>Lynda Medjkouh, Abderezak Tamendjari, Maria A. Nunes, Rita C. Alves, Maria B.P.P. Oliveira</i>	
PC65		
	Contribution of a liquid chromatographic method to evaluate if Portuguese vegetables are a good source of vitamin C?	132
	<i>Inês C. Santos, Tânia Gonçalves Albuquerque, Mafalda A. Silva, Helena S. Costa</i>	
PC66		
	Influência da temperatura de secagem nos compostos fenólicos e nas propriedades bioativas de folhas, caules e casca de <i>Croton urucurana</i> Bailly	133
	<i>Jáliston Júlio Lopes Alves, Maria Inês Dias, Lillian Barros, Ricardo C. Calhelha, Osvaldo Resende, Ana Carolina Ribeiro Aguiar, Isabel C.F.R. Ferreira</i>	
PC67		
	Volatile profile of different monovarietal olive oils by HS-SPME-GC/MS	134
	<i>Nuno Martins, Raquel Garcia, Marco Gomes da Silva, Maria João Cabrita</i>	
PC68		
	Assessment of volatile composition in amphora wines by HS-SPME-GC/MS	135
	<i>Raquel Garcia, Nuno Martins, Marco Gomes da Silva, Maria João Cabrita</i>	
PC69		
	Optimization of the extraction of phenolic compounds from walnut leaves using DES	136
	<i>Vanessa Vieira, Miguel A. Prieto, Lillian Barros, João A.P. Coutinho, Olga Ferreira, Isabel C.F.R. Ferreira</i>	
PC70		
	Óleo essencial de <i>Chenopodium ambrosioides</i> : perfil químico em CG/EM e influência na resposta imune em ratos infectados com <i>Trypanosoma cruzi</i>	137
	<i>Marley Garcia Silva, Cássia Mariana Bronzon da Costa, Fabrícia Helena Santelo, Míriam Paula Alonso Toldo, José Clóvis do Prado Júnior</i>	
PC71		
	Influence of storage conditions on polyphenolic, terpenoids and sensory profile from <i>Cymbopogon citratus</i> infusions	138
	<i>Marta Coelho, Célia Rocha, M.J. Pereira, Luís M. Cunha, L. Cardoso, L. Alves, R.C. Lima, Francisco M. Campos, Manuela Pintado</i>	
PC72		
	Preparation, purification and chromatographic fractionation of hydrophobins from biomass of fungus <i>Aspergillus niger</i>	139
	<i>Nikita A. Khrapatov, Ekaterina V. Kochurova, Boris A. Kolesnikov, Mark M. Shamtsyan</i>	
PC73		
	Análise cromatográfica de iogurte funcionalizado com extrato etanólico de <i>Agaricus bisporus</i>	140
	<i>Cristhian R.L. Francisco, Isabel P.M. Fernandes, João C.M. Barreira, Lillian Barros, Odinei Hess Gonçalves, Maria Filomena Barreiro, Isabel C.F.R. Ferreira</i>	
PC74		
	Cromatografia em Camada Fina e Cromatografia em Coluna utilizadas na síntese química de derivados do ergosterol	141
	<i>Cristhian R.L. Francisco, Sandrina A. Heleno, Ricardo C. Calhelha, Odinei Hess Gonçalves, Maria Filomena Barreiro, Pablo García, Isabel C.F.R. Ferreira</i>	
PC75		
	Cosmeceutical properties of phenolic acids and use of microencapsulation to ensure controlled release	142
	<i>Oludemi Taofiq, Sandrina A. Heleno, Ricardo C. Calhelha, Isabel P. Fernandes, Maria José Alves, Ana M. González-Paramás, Lillian Barros, M. Filomena Barreiro, Isabel C.F.R. Ferreira</i>	

PC76		
	A QuEChERS method followed by liquid chromatography for the quantification of three organic contaminants in soil samples	143
	<i>Paula Guedes, Vanda Lopes, Nazaré Couto, Eduardo P. Mateus, Alexandra B. Ribeiro</i>	
PC77		
	Estudo e identificação de compostos bioativos na casca de pinheiro (<i>Pinus pinaster</i> Aiton subsp. <i>Atlantica</i>)	144
	<i>Preciosa Pires, Catarina Vieito, Élia Fernandes, Begoña Besada, Manuela Vaz Velho</i>	
PC78		
	Optimization of key parameters influencing the chromatographic analysis of phenolic compounds in beverages after isolation by u-SPEed	145
	<i>Priscilla Porto-Figueira, José A. Figueira, Jorge Pereira, José S. Câmara</i>	
PC79		
	Fingerprint of phenolic compounds in <i>Osyris quadripartite</i> Salzm. ex Decne. from Algeria	146
	<i>Wahiba Rached, Ricardo C. Calhelha, Ângela Fernandes, Ana Maria Carvalho, Malika Bennaceur, Abderrazak Marouf, Lillian Barros, Celestino Santos-Buelga, Isabel C.F.R. Ferreira</i>	
PC80		
	Determination of residual amounts of acetamiprid in crops by high-performance liquid chromatography	147
	<i>Roman A. Illarionov, Elisey Yu. Alekseev, Alyona I. Peskova, Maria O. Petrova</i>	
PC81		
	Miniaturized Techniques for the determination of Antidepressants in plasma	148
	<i>Rosa A. Lorenzo, Ana M. Ares, María Regenjo, Purificación Fernández, Antonia M. Carro</i>	
PC82		
	An Improvement of Lab Efficiency in Liquid Chromatography	149
	<i>Rúben Chaves, Andreia Costa, Sofia Silva, Joana Durão</i>	
PC83		
	Aplicação da metodologia SALLE para a determinação de aminas biogénicas em produtos alimentares de origem animal	150
	<i>Karen C. Almeida, Pedro F. Brandão, Rui M. Ramos, Arnaldo A. Cardoso, José A. Rodrigues</i>	
PC84		
	High-performance liquid chromatography in routine environmental analysis: in-house validation of analytical methods	151
	<i>Rui S. Ribeiro, Adrián M.T. Silva, Joaquim L. Faria, Helder T. Gomes</i>	
PC85		
	Identification and quantification of phenolic compounds present in three different cultivars from <i>Sambucus nigra</i> L.	152
	<i>Sandrine S. Ferreira, Pedro Silva, Amélia M. Silva, Fernando M. Nunes</i>	
PC86		
	Anthocyanins profile of <i>Sambucus nigra</i> L. harvested in three different years	153
	<i>Sandrine S. Ferreira, Pedro Silva, Amélia M. Silva, Fernando M. Nunes</i>	
PC87		
	Asthma urinary metabotyping: strategies for data normalization	154
	<i>Jéssica E.P. Marques, Ana Morête, Sónia A.O. Santos, Armando Silvestre, Sílvia M. Rocha</i>	
PC88		
	Combined application of two-dimensional gas chromatography and headspace solid phase microextraction unravels changes in the volatiles of <i>Rhizobium</i> exposed to cadmium	155
	<i>Paulo Cardoso, Magda Santos, Rosa Freitas, Etelvina Figueira, Sílvia M. Rocha</i>	
PC89		
	Fatty acids as potential chemical marker to discriminate robusta coffee silverskin from different geographical origins	156
	<i>Sílvia Bessada, Rita C. Alves, M. Antónia Nunes, M. Beatriz P.P. Oliveira</i>	
PC90		
	Vitamin E profile of melon seed oils	157
	<i>Adrián Rabadán, Manuel Álvarez-Ortí, Sílvia Bessada, Rita C. Alves, José E. Pardo, M. Beatriz P.P. Oliveira</i>	

PC91		
	Comparison of <i>Ulva rigida</i> fatty acid profile in summer and winter seasons	158
	<i>Andreia Silva, Ana Sofia Queiroz, Helena Abreu, Artur M.S. Silva, Susana M. Cardoso</i>	
PC92		
	Lipophilic profile of four European macroalgae species	159
	<i>Andreia F.R. Silva, Rodrigo T. Neto, Ana Sofia Queirós, Artur M.S. Silva, Susana M. Cardoso</i>	
PC93		
	Caracterização de compostos antociânicos em flores comestíveis	160
	<i>Tânia C.S.P. Pires, Maria Inês Dias, Lillian Barros, Celestino Santos-Buelga, Isabel C.F.R. Ferreira</i>	
PC94		
	Gas chromatography: a useful tool for bakery products differentiation	161
	<i>Tânia Gonçalves Albuquerque, Joana Santos, Mafalda Alexandra Silva, M. Beatriz P.P. Oliveira, Helena S. Costa</i>	
PC95		
	Profile of Bound Phenolic Compounds from Olive Pomace	162
	<i>Tânia I.B. Ribeiro, Ana L. Oliveira, João Nunes, António A. Vicente, Manuela Pintado</i>	
PC96		
	Application of GC-MS to characterize the volatile composition of fruit distillates made with honey	164
	<i>Teresa Delgado, Ilda Caldeira, Ofélia Anjos</i>	
PC97		
	HPLC/DAD fingerprint of standardized extracts from <i>Ligustrum lucidum</i> Aiton berries, for bioactive activity screening	165
	<i>Teresa Delgado, Vanessa B. Paula, Maria Graça Campos, Nelson Farinha, André Caeiro, Leticia M. Estevinho, Ofélia Anjos</i>	
PC98		
	Similarity analysis between four Portuguese propolis samples using UHPLC-DAD-ESI-MS ⁿ chromatographic profiles of phenolic compounds	166
	<i>Vanessa B. Paula, Susana M. Cardoso, Luís G. Dias, Leticia M. Estevinho</i>	
PC99		
	Determination of organophosphorus pesticides in strawberries using modified QuEChERS method with magnetic nanoparticles and GC-FPD	167
	<i>Virgínia Cruz Fernandes, José Maria Oliveira, João Grosso Pacheco, Maria Freitas, Valentina F. Domingues, Cristina Delerue-Matos</i>	
PC100		
	Occurrence of Organophosphorus pesticide in sediments from Portuguese rivers	168
	<i>Carolina Rodrigues, Virgínia Cruz Fernandes, Cristina Delerue-Matos, Natividade Vieira</i>	
PC101		
	Total fat content and fatty acid profile of pseudocereals	169
	<i>Roberts R. Slaukstins, Santa Jakobsone, Vitor M. R. Martins, Clementina M.M. Santos</i>	
PC102		
	Enantiomeric separation and chiral recognition mechanisms of different macrocyclic glycopeptide-based chiral stationary phases	170
	<i>Ye Zaw Phyo, Andreia Palmeira, Sara Cravo, Maria Elizabeth Tiritan, Anake Kijjoa, Madalena M.M. Pinto, Carla Fernandes</i>	
PC103		
	Pyrolytic appraisal of the effect of agricultural practices on soil organic matter quality	171
	<i>Zulimar Hernández, Gonzalo Almendros, Tomas de Figueiredo</i>	
PC104		
	Gas chromatographic signature of soil lipids associated to land-use changes	172
	<i>Zulimar Hernández, Gonzalo Almendros, Jesús Sanz, Tomás de Figueiredo</i>	
PC105		
	Influência do método de secagem no perfil fenólico e propriedades bioativas de <i>Galium aparine</i> L.	173
	<i>Sylwia Senio, Carla Pereira, Lillian Barros e Isabel C.F.R. Ferreira</i>	
PC106		
	A novel natural colouring strategy for ice cream: effects on the profiles of individual sugars	174
	<i>Custódio Lobo Roriz, João C.M. Barreira, Patricia Morales, Lillian Barros, Isabel C.F.R. Ferreira</i>	

PC107	Development of a MHS-SPME-GC/MS method for analysis of volatile composition of Tawny Port wine	175
	<i>Juliana Milheiro, João Siopa, Sandrine S. Ferreira, Alice Vilela, Irene Fraga, António Inês, Carlos Matos, João Coutinho, Fernanda Cosme, Fernando M. Nunes</i>	
PC108	Translocation study of pesticides applied by endotherapy in coconut palm (<i>Cocos nucifera</i> Linn.) and determination of residues by UHPLC-MS/MS	176
	<i>Jordana A. Ferreira, Joana M.S. Ferreira, Viviane Talamini, Paulo M.P. Lins, Carla B.G. Bottoli</i>	
PC109	The impact of extrusion on the organics acids composition of gluten-free snacks based on rice, bean and carob flour blends.	177
	<i>C. Arribas, E. Pereira, L. Barros, E. Guillamón, I.C.F.R. Ferreira, M.M. Pedrosa</i>	
PC110	Tocopherols content in gluten-free extruded composite flours of rice and different legumes	178
	<i>C. Arribas, E. Pereira, L. Barros, E. Guillamón, I.C.F.R. Ferreira, M.M. Pedrosa</i>	
PC111	Phytochemical characterization of <i>Opuntia macrorhiza</i> (Engelm.) and <i>Opuntia microdasys</i> (Lehm.) cladodes	179
	<i>Hassiba Chahdoura, João C.M. Barreira, Lillian Barros, Celestino Santos-Buelga, Isabel C.F.R. Ferreira, Lotfi Achour</i>	
PC112	Chemical characterization of <i>Opuntia</i> sp. by-products	180
	<i>Hassiba Chahdoura, João C.M. Barreira, Lillian Barros, Celestino Santos-Buelga, Isabel C.F.R. Ferreira, Lotfi Achour</i>	
PC113	Extractability of rosmarinic acid by using three different aqueous based extraction procedures	181
	<i>Márcio Caroch, Lillian Barros, Isabel C.F.R. Ferreira</i>	
PC114	Rosmarinic acid contents in putative natural food preservatives	182
	<i>Márcio Caroch, Lillian Barros, Isabel C.F.R. Ferreira</i>	
PC115	Medicinal properties of biologically active substances derived from basidiomycetes	183
	<i>Sergei Sorokin, Ekaterina Antontceva, Alexander Ponyaev, Mark Shamtshyan</i>	
PC116	Holistic strategy using HPLC-QqQ-MS and GC-qMS towards the screening of bioactive compounds from <i>Salicornia ramosissima</i>	184
	<i>Carla Martins, Ângelo C. Salvador, Cátia Martins, Sónia A.O. Santos, Carla Vilela, Neda Mimica-Dukic, Armando J.D. Silvestre, Sílvia M. Rocha</i>	
PC117	Análise cromatográfica de compostos hidrofílicos em acessos de tomate (<i>Solanum lycopersicum</i> L.) conservados ex-situ	185
	<i>Valter Martins, José Pinela, Lillian Barros, Ana Maria Carvalho, Filomena Rocha, Ana Maria Barata, Isabel C.F.R. Ferreira</i>	
PC118	Caracterização do perfil em tocoferóis e ácidos gordos de uma coleção de germoplasma de tomate (<i>Solanum lycopersicum</i> L.)	186
	<i>Valter Martins, José Pinela, Lillian Barros, Ana Maria Carvalho, Filomena Rocha, Ana Maria Barata, Isabel C.F.R. Ferreira</i>	
PC119	Epicarpo de <i>Diospyros kaki</i> L. como uma fonte de vitaminas: análise cromatográfica de ácido ascórbico e de tocoferóis	187
	<i>Nilton P. de Souza, Ângela Fernandes, Natália Conceição, Lillian Barros, Isabel C.F.R. Ferreira</i>	
PC120	Propriedades nutricionais de croissants aditivados com sumo de sabugueiro	188
	<i>Ricardo F.R. da Silva, João C.M. Barreira, Lillian Barros, Sandrina A. Heleno, Isabel C.F.R. Ferreira</i>	
PC121	Utilização de subprodutos de bagas de sabugueiro como fonte de corantes naturais	189
	<i>Andreia C.R. Sousa, Sandrina A. Heleno, Lillian Barros, João C.M. Barreira, Isabel C.F.R. Ferreira</i>	

PC122	Perfil cromatográfico de ácidos orgânicos e tocoferóis de <i>Umbilicus rupestris</i> (Salisb.) e <i>Raphanus raphanistrum</i> L.	190
	<i>Júlia Harumi Iyda, Ângela Fernandes, Samara Cristina da Silva, Flávio Dias Ferreira, Lillian Barros, Joana S. Amaral, Isabel C.F.R. Ferreira</i>	
PC123	Perfil cromatográfico em tocoferóis e ácidos orgânicos da microalga <i>Spirulina platensis</i>	191
	<i>Samara Cristina da Silva, Ângela Fernandes, Júlia Harumi Iyda, Lillian Barros, Eliane Colla, Maria Filomena Barreiro, Isabel C.F.R. Ferreira</i>	
PC124	Lipophilic and phenolic compounds from <i>Eucalyptus grandis</i> wood cultivated in Portugal, Brazil and South Africa	192
	<i>Sônia A.O. Santos, Carla Vilela, Rui M.A. Domingues, Catia S.D. Oliveira, Juan J. Villaverde, Carmen S.R. Freire, Carlos P. Neto, Armando J.D. Silvestre</i>	
PC125	Detailed composition and biological properties of lipophilic fraction of <i>Bifurcaria bifurcata</i> macroalga	193
	<i>Sônia A.O. Santos, Stephanie S. Trindade, Catia S.D. Oliveira, Paula Parreira, Daniela Rosa, Maria F. Duarte, Isabel Ferreira, Maria T. Cruz, Andreia M. Rego, Maria H. Abreu, Silvia M. Rocha, Armando J.D. Silvestre</i>	
PC126	Tocopherols content of different wheat varieties: differences between refined and whole-wheat flour	194
	<i>Maria Ciudad-Mulero, Ângela Fernandes, Lillian Barros, Isabel C.F.R. Ferreira, M. Cruz Matallana, Patricia Morales, Virginia Fernández-Ruiz, José M. Carrillo</i>	
PC127	Analysis of tocopherols and phenolic compounds in extruded lentil flour formulations for development of snack-type functional foods	195
	<i>Maria Ciudad-Mulero, Ângela Fernandes, Lillian Barros, Isabel C.F.R. Ferreira, José De J. Berrios, Montaña Cámara, Patricia Morales, Virginia Fernández-Ruiz</i>	
PC128	Design of an one-step platform purification of STEAP1 using octyl-sepharose	196
	<i>Diogo P. Monteiro, Diana R. Duarte, Fátima M. Santos, Cláudio J. Maia, Luís A. Passarinha</i>	
PC129	Valorising leaves of <i>Garcinia brasiliensi</i> Mart as sources of bioactive compounds	197
	<i>Stephanie Jedoz, Ângela Fernandes, Renato André Zan, Ricardo C. Calhelha, Roberto Carlos Campos Martins, Lillian Barros, Isabel C.F.R. Ferreira</i>	
PC130	Evaluation of fatty acids of salmon from different origins: comparison of extraction and derivatization methodologies	198
	<i>Liliana Grazina, Maria A. Nunes, Isabel Mafra, M. Beatriz P.P. Oliveira, Joana S. Amaral</i>	
PC131	A new multiple reaction monitoring method for the assessment of catechol-O-methyltransferase Val/Met108	199
	<i>Ana M.G. Gonçalves, Fátima Santos, Joana Diogo, Eugénia Gallardo, Cláudio J. Maia, Luís A. Passarinha</i>	

PC-126

Tocopherols content of different wheat varieties: differences between refined and whole-wheat flour

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Wheat is an important cereal worldwide that plays an outstanding role in human nutrition [1]. Whole grain consumption has been associated with reduced risk of developing chronic diseases and this health benefit may be due to different phytochemical compounds, including tocopherols [2]. The aim of this study was to identify and quantify the tocopherols present in four different varieties of wheat flours (Cajeme and Marius as soft wheat and Endural and Aldura as durum wheat), comparing whole grain flour and refined flour. Tocopherols were determined by using HPLC coupled to a fluorescence detector (FP-2020; Jasco, Easton, MD, USA). The quantification was based on the fluorescence signal response of each standard, using the internal standard (tocol) and by using calibration curves obtained from commercial standards of each compound [3]. In the present study α -, β - and γ -tocopherols were identified and quantified, while δ -tocopherol was not found in the analysed samples. The refined Cajeme flour was the only exception in which none of the vitamins were detected. In all samples, α -tocopherol was the major compound (0,53 mg/100g and 0,17 mg/100g, in Marius whole grain flour and Aldura refined flour, respectively). Total tocopherols content ranged from 0.81 mg/100g to 0.23 mg/100g in Marius whole grain flour and Aldura refined flour, respectively. Tocopherols content was significantly higher ($p < 0.05$) in all whole-wheat flour in comparison with refined wheat flours. Comparing durum wheat flour with soft wheat flour, the present study showed that the content of α -tocopherol is higher in soft wheat varieties. The Relative vitamin E activity (REA) of the analyzed samples ranged from 0,2 mg to 0,7 mg (Aldura refined flour and Marius whole grain flour, respectively), covering up to 5,5% of Nutrient Reference Value (NRV) according to the EU Regulation 1169/2011 [4]

Acknowledgements:

This work was supported by project reference AGL2012-38345 from the Spanish Ministry of Science and Technology, and by FCT, Portugal and FEDER under Programme PT2020 (financial support to CIMO (UID/AGR/00690/2013, A. Fernandes grant (SFRH/BPD/114753/2016) and L. Barros contract).

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