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[F.FC.22]	**Chlorogenic acid-arabinose hybrids as part of coffee melanoidin structures: evidences from a model system** A.S.P. Moreira*[1], M.A. Coimbra[1], F.M. Nunes[2], C.P. Passos[1], S.A.O. Santos[3], A.J.D. Silvestre[3], A.M.N. Silva[4], M. Rangel[4], M.R.M. Domingues[1], *[1]QOPNA University of Aveiro, Portugal, [2]CQ-VR, University of Trás-os-Montes e Alto Douro, Portugal, [3]CICECO,University of Aveiro, Portugal, [4]UCIBIO/REQUIMTE,University of Porto, Portugal*
[F.FC.23]	**Milk fat content modifies coffee sensory properties of espresso based recipes** S. Puget*[1], M. Pivrnec[1], M. Gensbittel[2], B. Folmer[1], *[1]Nestlé Nespresso SA, Switzerland, [2]Nestlé PTC Orbe, Switzerland*
[F.FC.24]	**The quantification of total (free and bound) bioactive compounds increases the value of spent coffee extracts** C. Monente, I. Ludwig, A. Irigoyen, M.P. de Peña*, C. Cid, *University of Navarra, Spain*
[P.FC.25]	**Exploring cocoa lipid classes** D. Sirbu*, N. Kuhnert, *Jacobs University Bremen, Germany*
[P.FC.26]	**Purification partial and characterization of carboxypeptidase during germination of Theobroma cacao L. seeds** F. Alvarado-Santiago[1], C. Bautista-Muñoz*[1], M.L. Sánchez-Mundo[2], M.E. Jaramillo-Flores[3], L.M. Vargas-Villamil[1], N. Arguijo-Portillo[1], *[1]Colegio de Postgraduados Campus Tabasco, Mexico, [2]Instituto Tecnológico Superior de Las Choapas, Mexico, [3]Escuela Nacional de Ciencias Biológicas del Instituto Politécnico Nacional, Mexico*
[P.FC.27]	**Purification partial and characterization of aminopeptidase (tcape) of cacao (theobroma cacao l.) seeds** I. Alvarez-Contreras[1], C. Bautista-Muñoz*[1], M.L. Sánchez-Mundo[2], M.E. Jaramillo-Flores[3], L. Vargas-Villamil[1], N. Arguijo-Portillo[1], *[1]Colegio de Postgraduados Campus Tabasco, Mexico, [2]Instituto Tecnológico Superior de Las Choapas, Mexico, [3]Escuela Nacional de Ciencias Biológicas, Mexico*
[P.FC.28]	**Polyphenols content and antioxidant activity of cocoa shell flour and application as bakery product ingredient** S. Hernández-Martínez[1], Y. Chávez-Reyes[2], M.E. Jaramillo-Flores[2], J.G. Torruco-Uco[3], M.L. Sánchez-Mundo*[1], *[1]Instituto Tecnológico Superior de Las Choapas, Mexico, [2]Escuela Nacional de Ciencias Biológicas, Instituto Politécnico Nacional, Mexico, [3]Instituto Tecnológico de Tuxtepec, Mexico*
[P.FC.29]	**Quality of stored coffees subjected to different processing and drying procedures** M.R. Malta*[1], S.D.V.F. Rosa[1], P.M. Lima[1], L.O. Fassio[1], E.N. Alcântara[1], *[1]Empresa de Pesquisa Agropecuária de Minas Gerais, Brazil, [2]Empresa Brasileira de Pesquisa Agropecuária, Brazil, [3]Universidade Federal de Lavras, Brazil*
[P.FC.30]	**Quantification of methylxanthines (theobromine, theophylline and caffeine) in chocolate, tea and coffee-based beverages by hplc** M.N.A. Rahman*[1], A.A. Samat[1], N.H. Muhammad[2], *[1]Universiti Malaysia Sabah, Malaysia, [2]Universiti Teknologi MARA, Malaysia*
[P.FC.31]	**The evaluation of the suitability of different alternative sample preparation procedures prior to the multi-elemental analysis of ground roasted and instant coffees by icp oes and faas** P. Pohl, A. Szymczycha-Madeja, M. Welna, E. Stelmach*, D. Jedryczko, *Wroclaw University of Technology, Poland*
[P.FC.32]	**Potential of drifts for discrimination between roasted coffees of distinct roasting and sensory characteristics** V. Belchior*, N. Reis, A.S. Franca, L.S. Oliveira, *Universidade Federal de Minas Gerais, Brazil*
[P.FC.33]	**Aromatic profile by electronic nose system as affected by grinding grade of roasted coffee** C. Severini*, A. Derossi, T. De Pilli, I. Ricci, M. Marone, *University of Foggia, Italy*
[P.FC.34]	**Study on coffee quality: from green beans to ground roasted coffee during short storage in coffee shop** I. Ricci*, A. Derossi, T. De Pilli, C. Severini, *University of Foggia, Italy*
[P.FC.35]	**Structural features and macrophage immunostimulatory activity of the polysaccharides from fraxinus angustifolia and mentha suaveolens hot water extracts** V.M.R. Martins*[1,2], J. Simões[2], I. Ferreira[3], M.T. Cruz[3], M.R. Domingues[2], M.A. Coimbra[2], *[1]CIMO-IPB, Portugal, [2]QOPNA-University of Aveiro, Portugal, [3]CNC-University of Coimbra, Portugal*
[P.FC.36]	**Discrimination between arabica and robusta coffee brews according to their diterpene esters profile - application of deconvolution approach** M. Moeenfard*, G. Erny, A. Alves, *Universidade do Porto, Portugal*

[P.FC.35]

Structural features and macrophage immunostimulatory activity of the polysaccharides from fraxinus angustifolia and mentha suaveolens hot water extracts

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The dried leaves of *Fraxinus angustifolia* and the dried shoots of *Mentha suaveolens* are used by the population of the Trás-os-Montes, which is a region located in the northeast of Portugal, to prepare hot water extracts due to their therapeutic properties. Recently, the contribution of polysaccharides for the therapeutic properties often attributed to various plants hot water extracts has been highlighted. This work will provide a structural characterization of the polysaccharides present in these hot water extracts and will also evaluate their possible macrophage immunostimulatory activity, which might contribute for the therapeutic properties reported for these hot water extracts.

The decoction during a total of 4 h, followed by dialysis of the extracted material, provided adequate amounts of high molecular weight material (HMWM) for the structural characterization of the polysaccharides from the hot water extracts of *Fraxinus angustifolia* dried leaves and *Mentha suaveolens* dried shoots. For both plants, sugar analysis of the HMWM revealed high proportions of uronic acid, which suggested the presence of pectic polysaccharides. Subsequently, the HMWM polysaccharides were sequentially fractionated by ethanol precipitation and anion exchange chromatography, according to their uronic acid content and methylesterification degree, respectively. Through linkage analysis it was possible to detect the presence of (1→4)-galacturonic acid residues together with (1→2)-rhamose and (1→2,4)-rhamnose, which confirmed the presence of pectic polysaccharides. In addition, it was also possible to various linkages that suggested the presence of minor proportions of other polysaccharides, such as type II arabinogalactans.

Macrophage immunostimulatory activity assays evidenced that pectic polysaccharide rich fractions from *Fraxinus angustifolia* dried leaves and *Mentha suaveolens* dried shoots caused an increase in the macrophage nitric oxide production, without compromising its cellular viability. This suggests a possible contribution of polysaccharides for the therapeutic properties usually reported for these two hot water extracts.

Keywords: Fraxinus angustifolia, Mentha suaveolens, polysaccharides, immunostimulatory activity