www.ejci-online.com

April 2013 Vol 43 Supplement 1

European Journal of Clinical Investigation

47th Annual Scientific Meeting of the European Society for Clinical Investigation

Albufeira, Portugal

17–20 April 2013

ABSTRACT BOOK

ESCI

Official journal of the European Society for Clinical Investigation

WILEY Blackwell

European Journal of
Clinical Investigation

Volume 43 Supplement 1 April 2013

Abstracts of the 47th Annual Scientific Meeting of the European Society for Clinical Investigation

Albufeira, Portugal

17 – 20 April 2013

Guest Editor:
Dr. Paulo Oliveira
CNC – Center for Neuroscience and Cell Biology
Largo Marquês de Pombal
University of Coimbra
Coimbra, Portugal

European Journal of Clinical Investigation

THE JOURNAL OF THE EUROPEAN SOCIETY FOR CLINICAL INVESTIGATION

European Journal of Clinical Investigation is published by Blackwell Publishing Ltd, 9600 Garsington Road, Oxford OX4 2DQ, UK. Tel: +44(0) 1865 776868; Fax: +44(0) 1865 714591. Blackwell Publishing was acquired by John Wiley & Sons in February 2007. Blackwell's programme has been merged with Wiley's global Scientific, Technical, and Medical business to form Wiley-Blackwell.

Journal Customer Services: For ordering information, claims and any enquiry concerning your journal subscription please go to www.wiley customerhelp.com/ask or contact your nearest office:
Americas: Email: cs-journals@wiley.com; Tel: +1 781 388 8598 or 1 800 835 6770 (toll-free in the USA & Canada).
Europe, Middle East and Africa: Email: cs-journals@wiley.com; Tel: +44 (0) 1865 778315.
Asia Pacific: Email: cs-journals@wiley.com; Tel: +65 6511 8000.
Japan: For Japanese speaking support, Email: cs-japan@wiley.com; Tel: +65 6511 8010 or Tel (toll-free): 005 316 50 480.
Visit our Online Customer Get-Help available in 6 languages at www.wileycustomerhelp.com

Information for subscribers
European Journal of Clinical Investigation is published in 12 issues per year. Subscription prices for 2013 are: Institutional Print+Online: £1438 (UK), €1826 (Europe), US$2652 (The Americas), $3094 (Rest of World); Prices are exclusive of tax. Australian GST, Canadian GST and European VAT will be applied at the appropriate rates. For more information on current tax rates, please go to wileyonlinelibrary.com/tax-vat. The institutional price includes online access to the current and all online back files to January 1st 2009, where available. For other pricing options, including access information and terms and conditions, please visit wileyonlinelibrary.com/access

Delivery Terms and Legal Title
Prices include delivery of journals to the recipient's address. Delivery terms are Delivered At Place (DAP); the recipient is responsible for paying any import duty or taxes. Title to all issues transfers FOB our shipping point, freight prepaid. We will endeavour to fulfil claims for missing or damaged copies within six months of publication, within our reasonable discretion and subject to availability.

Back issues: Single issues from current and recent volumes are available at the current single issue price from cs-journals@wiley.com. Earlier issues may be obtained from Periodicals Service Company, 11 Main Street, Germantown, NY 12526, USA. Tel: +1 518 537 4700, Fax: +1 518 537 5899, Email: psc@periodicals.com.

ISSN 0014–2972 (Print)
ISSN 1365–2362 (Online)

EUROPEAN JOURNAL OF CLINICAL INVESTIGATION is published monthly. US mailing agent: Mercury Media Processing, LLC, 1634 East Elizabeth Ave., Linden, NJ 07036, USA. Periodical postage paid at Rahway, NJ. POSTMASTER: Send all address changes to EUROPEAN JOURNAL OF CLINICAL INVESTIGATION, Journal Customer Services, John Wiley & Sons Inc., 350 Main St., Malden, MA 02148-5020.

European Journal of Clinical Investigation is covered by Science Citation Index®, SciSearch®, Research Alert®, Medical Documentation Service™, Current Contents®/Life Sciences, Current Contents®/Clinical Medicine, ASCA, ISI/BIOMED, CABS (Current Awareness in Biological Sciences) and EMBASE.

Access to this journal is available free online within institutions in the developing world through the HINARI initiative with the WHO. For information, visit www.healthinternetwork.org.

European Journal of Clinical Investigation accepts articles for Open Access publication. Please visit http://olabout.wiley.com/WileyCDA/Section/id-406241.html or www.ejci-online.com for further information about OnlineOpen.

Disclaimer
The Publisher and Editors cannot be held responsible for errors or any consequences arising from the use of information contained in this journal; the views and opinions expressed do not necessarily reflect those of the Publisher and Editors, neither does the publication of advertisements constitute any endorsement by the Publisher and Editors of the products advertised.

Wiley's Corporate Citizenship initiative statement

Wiley's Corporate Citizenship initiative seeks to address the environmental, social, economic, and ethical challenges faced in our business and which are important to our diverse stakeholder groups. Since launching the initiative, we have focused on sharing our content with those in need, enhancing community philanthropy, reducing our carbon impact, creating global guidelines and best practices for paper use, establishing a vendor code of ethics, and engaging our colleagues and other stakeholders in our efforts. Follow our progress at www.wiley.com/go/citizenship.

For submission instructions, subscription and all other information visit: www.ejci-online.com

Imprint details: Printed in the UK by the Charlesworth Group.

terials and methods: The *Eriocephalus africanus* leafs extract s prepared with an aqueous ethanolic solution (80%, v:v) d its total phenolic content was estimated by the Folin-Ciocal- method. The antioxidant abilities of the ethanolic extract was aluated through the *in vitro* measurement of its DPPH radical venging potential, its reducing power and of its lipid perox- tion inhibition capacity, as evaluated by thiobarbituric acid- ctive substances. Identification of the main compounds in extract was accomplished by ESI-MS and MS^n analysis, upon ctionation by reversed-phase HPLC.

sults: The total amount of phenolic compounds accounted 232.8 ± 20.1 μg g^{-1} of the *Eriocephalus africanus* ethanolic ract. The extract exhibited high antioxidant capacity, with $_{50}$ values of 9.1 ± 1.2 μg mL^{-1}, 0.045 ± 0.004 mg mL^{-1} and 4 ± 0.04 mg mL^{-1} for the DPPH, reducing power and lipid roxidation assays, respectively. Data also allowed to conclude at the *Eriocephalus africanus* ethanolic extract contained a mix- e of compounds which included the polyalcohol quinic acid, clopentyl-derivatives fatty acids and several phenolic com- unds. From the latter, one should highlight the presence of feic acid derivatives, and flavonoids e.g. eriodictyol-*O*-glucor- ide and apigenin-*O*-glucoronide.

nclusions: The present results suggest that *Eriocephalus afric- us* can be used as a potential source of antioxidant mpounds.

knowledgements: FCT (PEst-OE/AGR/UI0681/2011), and FCT/ EN/COMPETE PTDC/AAC-CLI/098308/2008 and PTDC/AAC- I/118092/2010).

20

ntioxidant activities of five lamiaceae plants

R. Pereira*,†, M.J. Perez‡, R.I.R. Macias§, J.J.G. Marin§ & M. Cardoso*

ERNAS, School of Agriculture, Polytechnic Institute of imbra, Coimbra, Portugal; †DTDT, School of Health iences, Polytechnic Institute of Bragança, Bragança, rtugal; ‡University Hospital, IECSCYL-IBSAL, Salamanca, ain; §HEVEFARM, CIBERehd, University of Salamanca, lamanca, Spain

ckground: In the last decades, oxidative stress has been rec- nized as a key process in the physiopathology of several dis- ses. Consequently, the search for new antioxidant compounds, well as new antioxidant sources, has increased exponentially. e Lamiaceae family encloses many plant species which are tential sources of antioxidant compounds. The present study aluates the antioxidant activity of phenolic enriched extracts *Lamium album*, *Leonurus cardiaca*, *Lavandula dentata*, *Mentha uatica* and *Thymus citriodorus*.

aterials and methods: The antioxidant activity of the hydroe- anolic plant extracts was estimated by the *in vitro* measure- ent of their 2,2-diphenyl-1-picrylhydrazyl radical (DPPH) avenging potential and reducing power assays. Additionally, e protective effects of the extracts against the potassium di- romate (DK)-induced generation of reactive oxygen species OS) in human hepatoblastoma HepG2 cells were measured flow cytometry, after a 48 h treatment period.

sults: The two chemical assays indicated that the extracts ssess high antioxidant activity with the order of potency *. aquatica* > *L. album* > *L. dentata* > *T. citriodorus* > *L. cardiaca*. $_{50}$ values ranged from 8.1 to 18.3 μg mL^{-1}, and from 51.9 to .7 μg mL^{-1} for DPPH scavenging and reducing power assays, spectively. Moreover, with the exception of *L. cardiaca*, at μg mL^{-1}, all the extracts induced an effective protection ainst the DK-induced generation of ROS in HepG2 cells. This protection was approximately 20% and 30%, for DK exposure at 5 and 25 μM, respectively.

Conclusions: The present data suggest that the herein studied plants can be applied as antioxidant agents.

Acknowledgements: FCT (project PEst-OE/AGR/UI0681/2011) and PROTEC (PhD grant SFRH/PROTEC/49600/2009), Portugal. MCI (Grant SAF2010-15517), ISCIII, FIS (Grant PI11/00337) and JCL (Grants SA023A11-2, SA070A11-2 and Biomedicina-2011), Spain.

3.21

Portuguese propolis enriched phenolic extract: reactive oxygen scavenging and cytoprotective activities

O.R. Pereira*,†, R.I.R. Macias‡, M.J. Perez§, J.J.G. Marin‡ & S.M. Cardoso*

**CERNAS, School of Agriculture, Polytechnic Institute of Coimbra, Coimbra, Portugal; †DTDT, School of Health Sciences, Polytechnic Institute of Bragança, Bragança, Portugal; ‡HEVEFARM, CIBERehd, University of Salamanca, Salamanca, Spain; §University Hospital, IECSCYL-IBSAL, Salamanca, Spain*

Background: Propolis, a resinous natural product produced by honeybees, is claimed to have a wide range of beneficial activities for human health which have been attributed to its phenolics. In general, phenolics account for approximately half of propolis weight, although its content and composition can greatly vary with propolis geographical origin. This study aims determining the antioxidant and cytoprotective properties of Northeast Portuguese propolis.

Materials and methods: The propolis hydroethanolic purified extract (PPE) was obtained by extraction at 70 °C/1 h and recovery onto SPE C_{18} cartridges. Total phenolic content and identification of the main phenolics in the PPE were assessed by the Folin Ciocalteu method and by HPLC-DAD analysis, respectively. The reactive oxygen species (ROS) scavenging and cytoprotective properties of PPE were evaluated in dichromate potassium-stimulated (DK) HepG2 cells model. ROS scavenging ability was measured by flow cytometry, after DK incubation for 48 h and cytoprotective activity was estimated by the MTT assay, after DK exposure for 6 or 72 h.

Results: The total amount of phenolics in the PPE accounted for 375.4 ± 5.8 mg GAE per gram of extract and this was enriched in chrysin, pinocembrin and pinobanksin-3-*O*-acetate. Bioactivity assays showed that the PPE decreased the rate of ROS production about 50% and exerted an effective protection against the reduction of cell viability of 9% and 22%, for HepG2 cells exposed to DK for 6 and 72 h, respectively.

Conclusions: Overall the results emphasize important activities of PPE that can be related to the high content of phenolic compounds.

Acknowledgements: FCT (project PEst-OE/AGR/UI0681/2011) and PROTEC (PhD grant SFRH/PROTEC/49600/2009), Portugal. MCI (Grant SAF2010-15517), ISCIII, FIS (Grant PI11/00337) and JCL (Grants SA023A11-2, SA070A11-2 and Biomedicina-2011), Spain.