



Chemical composition, antioxidant and anti-AGEs activities of a French propolis

Submitted by Séverine Boisard on Thu, 07/09/2015 - 17:23

Titre	Chemical composition, antioxidant and anti-AGEs activities of a French propolis
Type de publication	Communication
Type	Communication avec actes dans un congrès
Année	2014
Langue	Anglais
Date du colloque	21-24/05/2014
Titre du colloque	10a Reunión Internacional de Investigación en Productos Naturales, Mérida, Mexico
Titre des actes ou de la revue	Revista Latinoamericana de Quimica
Numéro	especial
Volume	42
Pagination	63
Auteur	Boisard, Séverine [1], Le Ray, Anne-Marie [2], Aumond, Marie-Christine [3], Blanchard, Patricia [4], Derbré, Séverine [5], Flurin, Catherine [6], Richomme, Pascal [7]
Pays	Mexique
Ville	Naucalpan de Juarez
ISBN	0370-5943
Mots-clés	anti-AGEs activity [8], Antioxidant activity [9], chemical composition [10], polyphenolic constituents [11], propolis [12]

Résumé en anglais	<p>Accumulation in tissues and serum of advanced glycation end-products (AGEs) plays an important role in pathologies such as Alzheimer's disease or, in the event of complications of diabetes, atherosclerosis or renal failure. Therefore there is a potential therapeutic interest in natural antioxidants with true anti-AGEs capabilities for the prevention of this kind of pathologies. The aim of this study was to evaluate the antioxidant and anti-AGEs potential of a French propolis batch (natural resinous substance collected by honeybees from different plants and trees), then to identify the main compounds responsible for this anti-AGEs effect. For this purpose, the phytochemical composition of a 70% ethanolic extract of propolis (EEP70) was determined, using HPLC/DAD/MS and/or ¹H and ¹³C NMR (1D and 2D) analysis. This study showed the presence of phenolic acids and their esters as well as flavonoids. Then, the evaluation of the antioxidant, using DPPH and ORAC assays, and the anti-AGEs potential, using an automated test recently developed in our laboratory, showed that EEP70 exhibited both high antioxidant (1650 ± 149 μmol TE/g) and anti-AGEs (IC₅₀=0.03 mg/ml) activities. A bio-guided fractionation allowed us to identify the most active anti-AGEs compounds: pinobanksin-3-acetate (IC₅₀=0.06 mM) which is the major compound of EEP70. Thus, EEP70 represents a good candidate as food additive to prevent glycooxidation. Boisard S, Le Ray A-M, Gatto J, Aumond M-C, Blanchard P, Derbré S, Flurin C, Richomme P: Chemical Composition, Antioxidant and Anti-AGEs Activities of a French Poplar Type Propolis. <i>J Agric Food Chem</i> 2014, 62:1344-1351.</p>
Notes	à paraître dans : <i>Revista Latinoamericana de chimica</i> , ISSN 0370-5943. http://www.relaquim.com/archive.html [13]
URL de la notice	http://okina.univ-angers.fr/publications/ua13551 [14]
DOI	10.1021/jf4053397 [15]
Lien vers le document en ligne	http://pubs.acs.org/doi/abs/10.1021/jf4053397 [16]

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