



11^o International Symposium on the Maillard Reaction

Centenary of the Maillard reaction discovery (1912 - 2012)

Nancy, du 16 au 20 septembre 2012



ABSTRACTS

- *ORAL*
- *POSTER*

PRESENTATIONS

11th MAILLARD REACTION SYMPOSIUM

NANCY 2012



International Maillard Reaction Society



UNIVERSITÉ
DE LORRAINE

www.maillard-nancy.fr

Antiaging effect of coffee silver-skin extract

del Castillo, M.D.¹; Morales, F.J.²; Blanch, G.P.²; Mesa, M.D.³; Genovés, S.⁴;
Martorell, P.⁴, Ramón, D.⁴

¹ CIAL (UAM, CSIC);

² ICTAN (CSIC);

³ Granada University;

⁴ Biópolis, S.L.

Silver-skin (SK) is removed from the coffee beans during roasting. They can be easily found as coffee processing by-product in coffee roasting plants and are presently used as fuel (1-2). However, because its composition its potential as source of functional food ingredients has been also proposed (3-6). Strong antioxidant properties and prebiotic character have been some of the beneficial effects associated to SK. It is believed that the antioxidant properties of SK are a consequence of its high contents in melanoidins generated by Maillard reaction during roasting and free phenol surviving the thermal processes. Because it's powerful antioxidant capacity extracts of this by-product may be used for other applications such as cosmetic. Antiaging cosmetics and preparations for antiaging nutricosmetic treatments are nowadays very popular. Therefore, the application of a coffee by-product to achieve this goal may allow its green recycled in an economical rentable manner for the producer.

Preclinical data regarding to the antiaging properties of SK extracts employing as animal model *Caenorhabditis elegans* were collected during the present study. *C. elegans* life expectancy is very short, between two and three weeks, being a useful model of accelerated ageing. SK extracts were produced according to procedure patented by the Spanish research team (5). Worms of 3 days of age were feed with standard diet and diet supplemented with the SK extracts. Accelerated aging was induced by treating the worms every day for 45s with UV. Nematodes feed with a doses of 1mg/ml of SK extract showed a very significant longer longevity than those feed with a standard diet. The effect was similar to those observed for vitamin C and chlorogenic acid in doses of 0.1 µg/ml. Our results support the antiaging properties of the patented extract and its great potential for nutricosmetic.

1. Saenger, M et al. (2001). *Renewable Energy*, 23, 103–121.

2. Menéndez, J. A et al. (2007). *Energy & Fuels*, 21, 373–378.

3. Borrelli, R. C. et al. (2004). *Journal of Agricultural and Food Chemistry*, 52, 1338–1343.

4. Napolitano, A. et al. (2007). *Journal of Agricultural and Food Chemistry*, 55, 10499–10504

5. del Castillo, M.D. et al (2011). P201131128.

6- Esquivel, P.; Jiménez V.M (2012). *Food Research International*, 46, 488–495.