

Accepted Manuscript

Antioxidant activity of hydroxytyrosyl esters studied in liposome models

Valentina Balducci, Sandra Incerpi, Pasquale Stano, Daniela Tofani



PII: S0005-2736(17)30379-6
DOI: doi:[10.1016/j.bbamem.2017.11.012](https://doi.org/10.1016/j.bbamem.2017.11.012)
Reference: BBAMEM 82645

To appear in:

Received date: 9 August 2017
Revised date: 27 October 2017
Accepted date: 17 November 2017

Please cite this article as: Valentina Balducci, Sandra Incerpi, Pasquale Stano, Daniela Tofani , Antioxidant activity of hydroxytyrosyl esters studied in liposome models. The address for the corresponding author was captured as affiliation for all authors. Please check if appropriate. *Bbamem*(2017), doi:[10.1016/j.bbamem.2017.11.012](https://doi.org/10.1016/j.bbamem.2017.11.012)

This is a PDF file of an unedited manuscript that has been accepted for publication. As a service to our customers we are providing this early version of the manuscript. The manuscript will undergo copyediting, typesetting, and review of the resulting proof before it is published in its final form. Please note that during the production process errors may be discovered which could affect the content, and all legal disclaimers that apply to the journal pertain.

Antioxidant activity of hydroxytyrosyl esters studied in liposome models

Valentina Balducci, Sandra Incerpi, Pasquale Stano*† and Daniela Tofani*

Department of Sciences, Roma Tre University, Viale G. Marconi 446, 00146 Roma, Italy

* Corresponding Authors. E-mail: pasquale.stano@unisalento.it; daniela.tofani@uniroma3.it

† Current address: Department of Biological and Environmental Sciences and Technologies (DiSTeBA), Ecotekne, University of Salento, 73100 Lecce, Italy

Abstract

The properties and the antioxidant activity of a series of hydroxytyrosyl esters having different carbon chain lengths (C4, C8, C12 and C18) have been measured in phosphatidylcholine model membrane (liposomes) using specific probes for the bilayer and liposome lumen microenvironment, *i.e.*, 1,6-diphenyl-1,3,5-hexatriene (DPH) and 2',7'-dichlorodihydrofluorescein (H₂DCF), respectively.

Antioxidants self-assembly and their interaction with liposomes has been evaluated by light scattering, fluorescence, turbidimetry, gel filtration chromatography and microfiltration measurements, allowing the determination of critical aggregation concentration, bound fraction, capacity of crossing the lipid bilayer.

The distribution of hydroxytyrosyl long chain esters has been proved to depend quite specifically on their lipophilic chain length, and this turns to have deep effects on their antioxidant behaviour.

Shedding new light on the cut off effect and antioxidant behaviour of phenolipids, this study also put forward the relevance of cell-free liposome-based cellular models, like giant liposomes, for further characterization of analogous systems.

Keywords: phenolipids, liposomes, antioxidant, hydroxytyrosol

Download English Version:

<https://daneshyari.com/en/article/8299743>

Download Persian Version:

<https://daneshyari.com/article/8299743>

[Daneshyari.com](https://daneshyari.com)