

Evaluation of the anti-angiogenic potential of hydroxytyrosol derivatives

Ana Dácil Marrero¹, Beatriz Martínez-Poveda¹, Paloma Carrillo¹, Laura Castillo¹, Ana R. Quesada^{1,2}, Elena Gallardo³, José L. Espartero³, Miguel Ángel Medina^{1,2}

¹*Universidad de Málaga, Andalucía Tech, Departamento de Biología Molecular y Bioquímica, Facultad de Ciencias e IBIMA (Instituto de Biomedicina de Málaga), Málaga, ES*

²*Unidad 741, CIBER de Enfermedades Raras (CIBERER).*

³*Universidad de Sevilla, Andalucía Tech, Departamento de Química Orgánica y Farmacéutica, Facultad de Farmacia, Sevilla, ES*

Angiogenesis, a process which allows the formation of new vessels from pre-existing ones, is an essential phenomenon for tumor survival since it allows cancer cells to obtain nutrients and oxygen. This explains the increasing interest showed by many groups of research and pharmaceutical companies to find compounds with potential to disrupt at least one of the steps within the angiogenic process.

Hydroxytyrosol (3,4-dihydroxyphenyl ethanol) has been identified as the most important health-related phenolic compound of virgin olive oil because of its pleiotropic effects on multiple targets. In 2012, our group identified hydroxytyrosol as an anti-angiogenic compound able to inhibit several key steps in the angiogenic process. In the present study, the potential effects of six hydroxytyrosol derivatives are tested and compared with those exhibited by hydroxytyrosol by making use of several *in vitro* and *in vivo* assays. Results indicate that these are candidate new anti-angiogenic compounds with potential utility in anti-tumor and anti-angiogenic therapies.

[Our experimental work is supported by grants BIO2014-56092-R (MINECO and FEDER) and P12-CTS-1507 (Andalusian Government and FEDER) and funds from group BIO-267 (Andalusian Government). The "CIBER de Enfermedades Raras" is an initiative from the ISCIII (Spain)]. This communication has the support of a travel grant "Universidad de Málaga. Campus de Excelencia Internacional Andalucía Tech".