

HORIZON
2020

Leveraging the antioxidant role of volatile isoprenoids for improving grapevine resistance to ozone and temperature stress

Fact Sheet

Project Information

OVOC

Grant agreement ID: 659315

[Project website](#) 

DOI

[10.3030/659315](https://doi.org/10.3030/659315) 

Project closed

EC signature date

1 April 2015

Start date

1 August 2015

End date

31 July 2018

Funded under

EXCELLENT SCIENCE - Marie Skłodowska-Curie Actions

Total cost

€ 244 269,00

EU contribution

€ 244 269,00

Coordinated by

FONDAZIONE EDMUND MACH



Objective

The first aim of the project is to prove a general mechanism for plant protection from abiotic stresses (such as temperature and ozone stress) exerted by volatile isoprenoids (VIPs). Recent studies advanced the hypothesis that VIPs may function as effective antioxidants in plants by directly reacting with reactive oxygen species

(ROS) that accumulate upon abiotic stress, producing oxidized VIPs. However, this mechanism is yet to be confirmed. During the outgoing phase (Harvard University, Cambridge MA, USA) the objective described above will be addressed via a comprehensive experimental approach that will be carried out on the model plant *Arabidopsis* (wild-type and isoprene-emitting transgenic *Arabidopsis*), on a plant species (*Quercus rubra*) that emits very large quantities of VIPs and on grapevine, a crop of outmost importance in the European economy. During the return phase (FEM, Trento, Italy) the multidisciplinary expertise gained in the outgoing period will be fully employed to study the grapevine germplasm owned by the return institution and new grapevine varieties selected or genetically modified for the emission of specific VIPs, which have recently been developed by a partner research group, in collaboration with the applicant. The final objectives of the project are 1) to prove that VIPs act as effective antioxidant on grapevine leading to an improved ozone stress resistance and 2) to integrate screening for VIP emission in the host institution grapevine breeding program in order to improve stress resistance of new grapevine varieties.

Fields of science (EuroSciVoc)

[agricultural sciences](#) > [agriculture, forestry, and fisheries](#) > [agriculture](#) > [agronomy](#) > **[plant protection](#)**

[natural sciences](#) > [chemical sciences](#) > [organic chemistry](#) > **[volatile organic compounds](#)**

[natural sciences](#) > [chemical sciences](#) > [electrochemistry](#) > **[electrolysis](#)**

[agricultural sciences](#) > [agriculture, forestry, and fisheries](#) > [agriculture](#) > [horticulture](#) > **[fruit growing](#)**



Programme(s)

[H2020-EU.1.3. - EXCELLENT SCIENCE - Marie Skłodowska-Curie Actions](#)

MAIN PROGRAMME

[H2020-EU.1.3.2. - Nurturing excellence by means of cross-border and cross-sector mobility](#)

Topic(s)

[MSCA-IF-2014-GF - Marie Skłodowska-Curie Individual Fellowships \(IF-GF\)](#)

Call for proposal

[H2020-MSCA-IF-2014](#) 

[See other projects for this call](#)

Funding Scheme

[MSCA-IF-GF - Global Fellowships](#)

Coordinator



FONDAZIONE EDMUND MACH

Net EU contribution

€ 244 269,00

Total cost

€ 244 269,00

Address

VIA EDMONDO MACH 1
38098 San Michele All'Adige
 Italy 

Region

Nord-Est > Provincia Autonoma di Trento > Trento

Activity type

Higher or Secondary Education Establishments

Links

- [Contact the organisation](#) 
- [Website](#) 
- [Participation in EU R&I programmes](#) 
- [HORIZON collaboration network](#) 

Partners (1)



PARTNER 

PRESIDENT AND FELLOWS OF HARVARD COLLEGE

 United States

Net EU contribution

€ 0,00

Address

MASSACHUSETTS AVENUE 1350
02138 Cambridge 

Activity type

Higher or Secondary Education Establishments

Links

[Contact the organisation](#)  [Website](#) 

[Participation in EU R&I programmes](#) 

[HORIZON collaboration network](#) 

Total cost

€ 160 130,40

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Permalink: <https://cordis.europa.eu/project/id/659315>

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