COST is supported by the EU Framework Programme Horizon 2020.

N°1, JULY 2016

NEWSLETTER

WELCOME

We are pleased to welcome you to the first issue of the EUROCAROTEN newsletter.

The EUROCAROTEN European Network counts with the participation of researchers and industrial representatives from 31 countries with a common goal: to enhance the competitiveness of the European agrofood industry and promote health by coordinating research on carotenoids.

The aim of this newsletter is to inform scientists and stakeholders about aspects related to the COST Action including participating scientists and industry, general information on carotenoids and applications in everyday life, and the EUROCAROTEN events, initiatives and outcomes. EUROCAROTEN newsletters will be issued every three months through e-mails, our website and social media.

You can find more information about EUROCAROTEN COST Action on its COST website <u>http://www.cost.eu/COST_Actions/ca/CA15136</u> and on our website <u>www.eurocaroten.eu.</u>

> Yours sincerely, Joana Corte-Real Paula Mapelli-Brahm Kristina Kljak



Subscription to the newsletter e-mailing list will be made available soon, via the EUROCAROTEN website.

For further information, please contact us via our e-mail <u>info@eurocaroten.eu</u>. You can also send us your comments and proposals.

EUROCAROTEN

EUROPEAN NETWORK TO ADVANCE CAROTENOID RESEARCH AND APPLICATIONS IN AGRO-FOOD AND HEALTH

NEWS FROM THE ACTION

Past Events Graz, 16th to 18th June 2016

1st Work Group (WC) & 2nd Management Committee (MC) Meetings 1st EUROCAROTEN Symposium

Future Events Skopje, February 2017

EUROCAROTEN Conference and WG & MC Meetings

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EUROCAROTEN INTERVIEW

Talking with: Antonio J. Meléndez-Martínez

"I envisage that we will help carotenoid research through our dissemination strategy, which has the goal of reaching efficiently other stakeholders [...]. In my opinion this is key, as if we are able to make them fully aware of the importance of carotenoids, we will be favouring research on them"

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CAROTENOIDS IN DAILY LIFE

Carotenoid of the Month : Lycopene

The typical colour of tomato fruit is furnished by a pigment called lycopene. Its name is derived from the former Latin name of the tomato species Lycopersicon (meaning "wolf-peach"). Lycopene's chemical structure makes it a potent antioxidant that can protect our body from harmful effects of oxygen radicals...

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Light affects carotenoid production and shelf life

[...] Extensive research is conducted worldwide for the increase of carotenoids with natural ways, without genetic modification of plants. Light is one of these ways. [...]

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THINK TANK INFORMATION

WHAT, WHO, AND HOW!

Helping and promoting the career development of Early Career Investigators.

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European Network to Advance Carotenoid Research and Applications in Agro-food and Health
www.eurocaroten.eu - info@eurocaroten.eu
EUROCAROTEN CA15136





MEETING REPORTS AND **NEWS FROM THE ACTION**



1st Work Group and 2nd Management Committee meeting in Graz

PAST EVENTS

1st Work Group (WC) and 2nd Management Committee (MC) Meetings1st EUROCAROTEN Symposium Graz, Austria.16th-18th June 2016

Organizers:

- EUROCAROTEN Consortium
- Human Nutrition & Metabolism Research and Training Centre of the Institute of Molecular Biosciences, University of Graz
- Clinical Division of Nephrology of Department of Internal Medicine, Medical University of Graz

The 1st EUROCAROTEN Symposium "Carotenoids: from Plant Pigments to Human Health" took place on the 16th of June, prior to the WG presentations. The Symposium covered diverse domains of carotenoid research, presented by established researchers with a long experience in the field.

During the WG 1, 2 and 3 meeting the WG members gave a short presentation about their research activities and available infrastructures. During the MC and individual WG meetings different topics concerning EUROCAROTEN were discussed. See the main outcomes below.

Outcomes:

- Discussion on the dissemination strategy;
- Presentation of the EUROCAROTEN Website structure and design;
- Presentation of the WGs tasks and deliverables;
- Discussion on the status and budget of the Action, implementation of COST policies, and scientific planning within the Action.

FUTURE EVENTS

Next EUROCAROTEN Conference, WG and MC meeting will be held in February 2017 in fYR Macedonia, and will be organized by Professor Marina Stefova and Dr. Jasmina Petreska Stanoeva from Faculty of Natural Sciences and Mathematics of Ss Cyril and Methodius University in Skopje. More details will follow soon.

EUROCAROTEN'S INTERVIEW

TALKING WITH:

Antonio J. Meléndez-Martínez

Affiliation	Department of Nutrition and Food S
	Universidad de Sevilla
Position	Associate Professor
Country	Spain
Area of Interest	Food Quality, Nutrition, Health

Link to other interviews and networks:

<u>htin //cardionoides.us.es</u> h<u>tins://www.facebook.com/IBERCAROT/</u> http://comunicacion.us.es/canal-cionciatia-us.fidera-un http://www.color.us.es/

Please tell us a bit about your lab and what you work on?

We are interested in carotenoids as important contributors to food quality in general. Due to their versatility, carotenoids are related to different "dimensions" of quality, like sensory, technological, nutritional and functional quality. [...] In our lab we adopt a "from chemical structure to biological actions" approach. Thus, we are interested in their isolation, analysis, stability, colour, levels in foods and other sources, the study of their

bioaccessibility/bioavailability, carotenoid-accumulating structures and more recently in their possible biological actions in simple models. To do that we use chromatograpphy, colorimetry, UV-Vis spectroscopy, microscopy, simulated *in vitro* digestion protocols, chemical reactions, etc. [...]

Which area of carotenoids research do you find most interesting?

[...] Currently I am very interested in the studies relating the structure of chromoplasts with the deposition ability or their release during digestion, the production of carotenoids by extremophilic microbes or the formation and actions of oxidation products of carotenoids.



As a STSM hosting lab, what type of collaborative projects would you envision?

I envision "symbiotic" collaborations in which we offer our expertise and training capabilities to the visiting scientists and also have the chance to learn from them.

In your eyes, how can the EUROCAROTEN Cost Action contribute to carotenoid research?

[...] It is expected that EUROCAROTEN will catalyze collaborations in the field and boost carotenoid research through a synergistic effect by getting scientist with different backgrounds together around common research topics. This ecosystem will also be very favourable for the quality and multidisciplinary training of young researchers [...]. Last but not least, I envisage that we will help carotenoid research through our dissemination strategy, which has the goal of reaching efficiently other stakeholders [...]. In my opinion this is key, as if we are able to make them fully aware of the importance of carotenoids, we will be favouring research on them.

Read more @ www.facebook.com/eurocaroten

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CAROTENOIDS ON OUR DAILY LIFE



CAROTENOID OF THE MONTH: LYCOPENE

The typical colour of tomato fruit is furnished by a pigment called lycopene. This organic compound belongs to the family of naturally occurring pigments called carotenoids. Its name is derived from the former Latin name of the tomato species *Lycopersicon* (meaning "wolf-peach"). [...]

[...] Lycopene's chemical structure makes it a potent antioxidant that can protect our body from harmful effects of oxygen radicals. Dietary intake of tomatoes and tomato products containing lycopene has been shown to be associated with a decreased risk of chronic diseases, such as cancer and cardiovascular disease. Specifically, studies have implicated lycopene consumption in reduced occurrence of prostate cancer.

Fresh tomatoes as well as tomato products such as tomato juice, soup, sauce, and ketchup or processed are the major source of dietary lycopene. [...]

In 2014, total production of tomatoes in the EU (28 countries) was 16.8 million tonnes, more than apples. Leading countries are Italy (5.6 M), Spain (4.9 M), Portugal (1.4 M) and Greece (1.05 M).

Text by Orly Dery, PhD Candidate at the Hebrew University of Jerusalem, Israel. E-mail: <u>orlydery@gmail.com</u>

LIGHT AFFECTS CAROTENOID PRODUCTION AND SHELF LIFE

[...] Extensive research is conducted worldwide for the increase of carotenoids with natural ways, without genetic modification of plants. Light is one of these ways. Light is crucial for plant growth and development. [...] Therefore, the light spectra provided to the plant or fruit is energy and at the same time information [...].

[...] Furthermore, it is possible to control the amount of carotenoids in fruits and vegetables after harvest, on the supermarket shelf. For example [...] in Satsuma mandarin carotenoid synthesis can be increased if the fruits are exposed to red light after harvest. Using light to enhance carotenoid content in plants is not harmful to humans. [...] NASA started such experiments in the 90s' and nowadays similar experiments are performed on the International Space Station. However, more research is still needed in order to fully understand the impact of light on carotenoids of fruits and vegetables.

Text by Filippos Bantis, PhD Candidate at Aristotle University of Thessaloniki, Greece. E-mail: fbanths@gmail.com

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THINK TANK INFORMATION

The Think Tank (TT) group integrates the EUROCAROTEN Steering Committee (SC), with the goal of helping and promoting the career development of Early Career Investigators (ECI). Some of the objectives of the TT group include:

- To serve as an intermediary between the ECIs and the EUROCAROTEN Committees.
- Creating a space for dialogue and debate amongst ECIs.
- Dissemination of information relevant to ECIs via social networks, EUROCAROTEN webpage and Newsletter.
- To promote the organization of workshops and summer schools, according to the major needs appointed by the ECIs.
- Encourage and support ECIs to participate as candidates for prestigious fellowships such as Marie Skłodowska-Curie Actions.
- Promoting leadership and decision making within ECIs.

The TT group has two elected representatives (TTR), whom ECIs can contact at any moment with questions and/or suggestions.

Representatives are renewed annually, and will be chosen from amongst the ECIs. Everyone is welcome to apply.

The TT is a work in progress, meaning that as we go along, our objective list may grow, and with your feedback we'll be able to provide a better support platform for the ECIs.



OF EARLY CAREER INVESTIGATORS AND OTHER YOUNG RESEARCHERS

Representatives for 1st year:

Joana Corte-Real (<u>ioana.corte-real@lih.lu</u>) Paula Mapelli-Brahm (<u>omapelli@us.es</u>)

ECI spokesperson:

Kristina Kljak (kkljak@agr.hr)





WORK GROUP NEWS

WORKING GROUPS & LEADERS & VICE-LEADERS

WG1. Production: developing resources and biosynthetic pathways

Leader: Paul Fraser (<u>P.Fraser@rhul.ac.uk</u>) Vice Leader: Pauline Snoeijs-Leijonmalm (<u>Pauline.snoeijs-leijonmalm@su.se</u>)

WG2. Quality along the food chain

Leader: Nora O'Brien (<u>nob@ucc.ie</u>) Vice Leader: Anamarija Mandic (<u>anamarija.mandic@fins.uns.ac.rs</u>)

WG3. Nutrition and health

Leader: Torsten Bohn (<u>torsten.bohn@lih.lu</u>) Vice Leader: Joanna Dulinska-Litewka (<u>joanna.dulinska-litewka@uj.edu.pl</u>)

WG4. Transfer, dissemination and exploitation

Leader: Anneli Ritala (<u>anneli.ritala@vtt.fi</u>) Vice Leader: George Manganaris (<u>george.manganaris@cut.ac.cy</u>)

ACKNOWLEDGEMENTS

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Filippos Bantis for his article on the "Light Affects Carotenoid Production and Shelf Life" rubric;

Joseph Hirschberg and Orly Dery for writing about our "Carotenoid of the Month";

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