



Project acronym: *InnCoCells*

Grant agreement no: **101000373**

Project full title:

**Innovative high-value cosmetic products
from plants and plant cells**

Start date of project: 01/05/2021

Duration: 48 months

Deliverable number	7.4
Deliverable title	Leaflet presenting project goals
Work package	7
Lead beneficiary	TRM
Due date of deliverable	31/12/2021
Actual submission date	15/12/2021

Summary

This deliverable report describes the development of the first leaflet/brochure and the purpose of the different elements it contains. It will be a template for the production of a series of leaflets throughout the project charting its progress.



This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 101000373.



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1. Executive summary

One of the components of the *InnCoCells* communication strategy is the distribution of user-friendly leaflets and brochures addressing a broad, non-specialist audience, which will include the online distribution of PDF versions as well as printed copies to be handed out at relevant events, such as conferences and exhibitions. Deliverable 7.4 concerns the first leaflet in this series, which describes the project concept, partners and objectives. Further leaflets will be prepared to showcase the progress of the project, minimally a second leaflet to summarize the project's achievements by month 48 (although this is not attached to a specific deliverable). Optionally, interim leaflets will be prepared to describe significant advances and achievements. The individual leaflets are designed as gatefold A4 products and thus consist of four pages (title page, centre foldout, and back page). At the end of the project, the leaflets will be collected into a multipage brochure for communication purposes, potentially combined with offprints of *InnCoCells* scientific publications for dissemination.

2. Description of the project leaflet series

2.1 Leaflet presenting project goals

One of the components of the *InnCoCells* communication strategy is the distribution of user-friendly leaflets and brochures addressing a broad, non-specialist audience, which will include the online distribution of PDF versions as well as printed copies to be handed out at relevant events, such as conferences and exhibitions. Deliverable 7.4 concerns the first leaflet in this series, which describes the project concept, partners and objectives. The purpose of this leaflet is to introduce the project, provide key facts and figures, outline the overarching concept, list the specific objectives, show how the project is organized, describe some of its wider (non-technological) activities, and summarize the partners involved and their roles.

The leaflet design is a gatefold A4 product so that key facts and figures can be presented on the front page, the description of the project concept, objectives, organization and activities can be placed in the gatefold (pages 2 and 3) and the partners and their roles (and contact details) can be presented on the back page. The product is designed to be informative but also visually appealing and content rich, thus featuring multiple high-quality images and diagrams to break up the text blocks, as well as hyperlinks and a QR code so that both the online PDF version and the physical copies can be used to access related internet resources.

The complete final design of the leaflet is presented in Section 3.

2.2 Future leaflets in series

Although only the first leaflet is associated with a specific deliverable, we plan at least one further leaflet towards the end of the project to summarize its achievements. Optionally, interim leaflets will be prepared to describe significant advances and particularly newsworthy results. Each leaflet in the series will feature the same gatefold A4 design and general aesthetic as the first, and can be used to highlight our progress.

2.3 Project brochure

At the end of the project, the series of leaflets will be collected into a multipage brochure for communication purposes, potentially combined with other articles published in non-specialist periodicals and additional full-page images. A PDF version will be uploaded to the project website, and could potentially be published as a hardback booklet. For dissemination to stakeholders, we envisage a second brochure that combines the leaflets with offprints of *InnCoCells* open-access scientific publications, which would also be uploaded as a PDF and potentially produced as a limited number of printed copies.

3. The InnCoCells leaflet presenting project goals



InnCoCells
Innovative high-value cosmetic products from plants and plant cells

InnCoCells – innovative high-value cosmetic products from plants and plant cells
EU Horizon 2020 Research and Innovation Action, 2021–2025

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Left: Plant cell cultures and hairy roots in Petri dishes.
Right: Apple cell suspension culture.

InnCoCells is a Horizon 2020 project launched in 2021 aiming to develop innovative plant-based production processes for the commercial exploitation of scientifically validated cosmetic ingredients using profitable and sustainable plant cell cultures, aeroponic cultivation, and plants grown in the greenhouse and field.

This is the first of several project brochures – here we describe the project background and goals.

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InnCoCells in a nutshell

The InnCoCells is a consortium of 17 partners representing European academic and industrial leaders in the development, sustainable production and rigorous scientific testing of natural cosmetic ingredients derived from renewable plant-based sources.

Cosmetics from plants

Higher plants synthesize a diverse range of bioactive, low-molecular-weight natural products, offering huge potential as cosmetic ingredients. The growing use of cosmetics has increased the demand for scientifically validated bioactive ingredients that are produced in a sustainable manner, reflecting the greater consumer awareness of scientific and environmental issues. This has encouraged companies to seek innovations in sustainable production processes and to demonstrate the evidence-based functionality of their products. Growth in the cosmetics industry has also embraced products containing environmentally beneficial and naturally sourced ingredients to meet the demands of a society increasingly geared towards greener industry and a circular economy based on renewable materials.

Major objectives of the InnCoCells project

The InnCoCells project will achieve its sustainability goals by focusing on seven key objectives spanning the areas of biosourcing, upstream production, downstream processing, scientific testing and commercial development (including dissemination, exploitation and communication):

- Mine biological, genetic and chemical resources (following the Nagoya Protocol and local regulations) for biodecovery, resulting in the sustainable exploitation of at least 10 relevant metabolic pathways in various plant species.
- Develop a multi-step evaluation pipeline for the testing of plant-derived bioactive molecules and extracts, yielding at least 50 scientifically verified active ingredients for cosmetic products.
- Develop, test and optimize production processes and technologies for at least 20 ingredients, using three major production platforms (plant cells, aeroponics, and greenhouse/field cultivation).
- Explore the potential of at least 10 agri-food byproducts or waste fractions by implementing a cascade biorefinery to generate value-added extracts, compounds or ingredients with confirmed activities, using the exhausted biomass as feed, fertilizer or fuel (zero waste).
- Establish environmentally sustainable pilot-scale production and purification technologies for at least 10 active, fully-characterized, cosmetic ingredients by the end of the project, to prepare them for commercialization.
- Ensure product safety, regulatory approval and the sustainability and profitability of the proposed value chains and processes by life cycle assessment and techno-economic analysis, including the development of business models and a mandate for biodiversity preservation.
- Promote knowledge exchange among InnCoCells academic and industrial partners, thus supporting product development and ensuring intellectual property (IP) protection. To achieve this, we have established a Stakeholder Group to facilitate the dissemination and exploitation of project results and have developed targeted communication and engagement strategies for the duration of the project and beyond.

The InnCoCells approach

InnCoCells is focusing on underutilized plants that are sourced unsustainably, as well as underutilized byproducts and waste fractions from the agri-food industry. The project is developing sustainable and cost-effective production systems with a small environmental footprint for high-value plant-derived cosmetic ingredients and compounds by integrating biotechnology-based approaches into sustainable production chains featuring cutting-edge innovative technologies. These products are then tested in a broad panel of cell-based assays and ultimately in human clinical trials to prove their efficacy.

Organization of the InnCoCells project



Snapshot of the InnCoCells project in action

The InnCoCells project has nine work packages focusing on the following aspects of the value chain: **Plants, ingredients and production. We will identify candidate plants producing useful target molecules and will develop the upstream production process (cell/cultures, aeroponics and whole plants) to maximize the yields of these molecules in a sustainable manner, including the use of metabolic engineering to boost the production of subtle cosmetic ingredients.**

Extraction and purification. We will develop efficient extraction processes for the key molecules based on starting material from the plant cells or whole plants described above, and also from agro-industrial waste streams.

Testing and validation. We will test the ingredients in cell-based assays and ultimately in human clinical trials to confirm their efficacy.

Communication, dissemination and exploitation. We will share our results with industry and consumer stakeholders to ensure that consumer requirements are addressed throughout the project and on the path to commercialization.

Dissemination activities

InnCoCells has developed a suite of dissemination activities to ensure that our results are shared widely with stakeholders, creating an efficient path towards commercialization. As well as the Stakeholder Group, scientific publications, presentations at conferences and industry events, and the project website, we have also established an InnCoCells Academy to develop a program of seminars and training workshops that showcase our activities and train a new generation of research scientists.

Communication with the public

We are also increasing public awareness of the project's commitment to sustainability and efficacy by developing a suite of communication tools. For example, you can visit the InnCoCells website for more information, and follow us for updates on Facebook, LinkedIn, Twitter and Instagram.

The InnCoCells Academy on YouTube: <https://www.youtube.com/channel/UC...>

The InnCoCells public website – <http://www.innocells.org>

The InnCoCells consortium



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The first leaflet can be accessed directly from the project website here:
<http://www.innocells.org/wp-content/uploads/2021/12/First-InnCoCells-Project-Leaflet.pdf>