Press release

24th of September 2018

**Ves4us: Extracellular vesicles from a natural source for tailor-made nanomaterials**

*The kick-off of Ves4us took place on Palermo this 20th and 21st of September*

**Ves4us** is a new European project funded by the **Fet-Open call of** [**Horizon2020**](https://ec.europa.eu/programmes/horizon2020/) **Programme**, that aims to develop a radically **new platform for the efficient production and functionalisation of extracellular vesicles** (EVs) from a sustainable biosource, enabling their exploitation as tailor-made products in the fields of nanomedicine, cosmetics and nutraceutics. This could allow the development of natural nanocarriers with unprecedented abilities for drug delivery in specific tissues such as brain, lung, skin, dendritic or tumour cells.

This project was launched in Palermo **the 20th and 21stof September 2018** and counted with the assistance of all the members of the consortium and main important personalities in town as well as renown researchers and industrial representatives.

Ves4us has a total budget of **2,946,303.75€** with the EU contribution. The project will run for the next three years with 6 organizations from 6 European countries.

Safe, efficient and specific nano-delivery systems are essential to current therapeutic medicine, cosmetic and nutraceutics sectors. The ability to optimise the bioavailability, stability, and targeted cellular uptake of a bioactive molecule while mitigating toxicity, immunogenicity and off-target/side effects is of the utmost priority. Ves4US aims at creating a fundamentally new bioprocessing approach to generate and functionalise EVs from a renewable biological source using the state-of-the-art technologies.

The discovery of EVs as natural carriers of functional small molecules and proteins has raised great interest in the drug delivery field as it may be possible to harness these vesicles for the therapeutic delivery of miRNA, siRNA, mRNA, lncRNA, peptides and synthetic drugs. However, systemically delivered EVs accumulate in liver, kidney and spleen and some mammalian-derived secreted EVs have shown to date limited pharmaceutical acceptability because of their source. Ves4us aims to overcome these limitations by developing a biocompatible and cost-effective micro extracellular vesicle-based drug delivery system, which would enhance bioavailability and improve the efficacy and safety of loaded bioactive compounds.

To achieve its aims, Ves4us, will start by doing a **selection of EVs-producing natural source** strains that at last, will get to the production of the EVs needed to **develop** the natural **nanocarriers** with the abilities for drug delivery in specific tissues. Before that happens, it exists the need of doing a **good research practice** in a way to discover and define which will be the material needed to develop this research. If this is done correctly, not only they will have a definition but the **physiochemical characterisation** of EVs from a natural source and the **functionalisation and cargo enrichment** of itself.

The Ves4us consortium is professional and consists of 5 research centers and universities and 1 consultancy firm.

The group is led by [CNR](https://www.cnr.it/en), established in Italy. The other partners are: [Institute of Technology Sligo](https://www.itsligo.ie/) (Ireland), [ETH Zürich](https://www.itsligo.ie/) (Switzerland), [Univerza V Ljubljani](https://www.uni-lj.si/) (Ljubljana), [MPG](https://www.mpg.de/en) (Germany) and [ZABALA Innovation Consulting](https://www.zabala.es/) (Spain).

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