

Extracellular vesicles from a natural source



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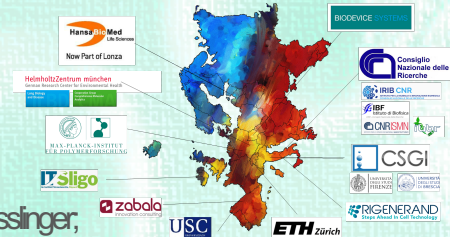
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Extracellular vesicles from a natural source for tailor-made nanomaterials



@BOWProjectEU



Biogenic
Organotropic
Wetsuits



Cellular Dynamic Lab
IRIB – CNR, Palermo



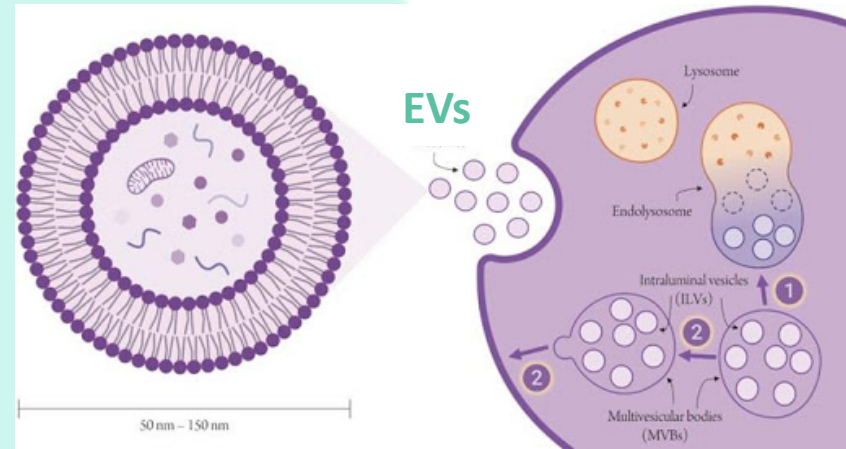


Extracellular Vesicle (EV) impacts

native and drug-loaded EVs have been developed and now constitute a rapidly growing research field known as “cell-free therapy”

SCIENTIFIC

1. well tolerated in the body
2. long circulating half-life
3. internalized by other cells
4. carry small molecules as cargoes
5. able to cross tissue and cellular barriers



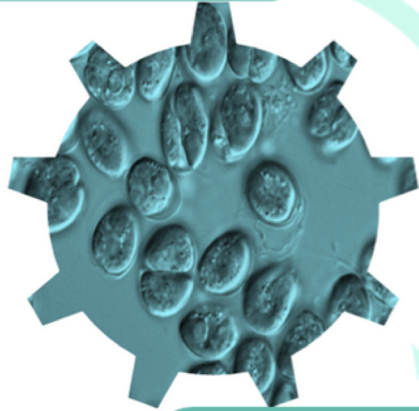
However,

- there are only a few sources from which to extract the EVs from, they are difficult to handle
 - the technology to produce EVs is troublesome and far from the industrial scale
 - it is not easy and costly to obtain good quality EVs.



Innovation

Natural source
cultivation



Renewable
bioprocesses for EV
isolation

Natural
source-derived
Extracellular
Vesicle



Sectors

Biomedicine

Nutraceuticals

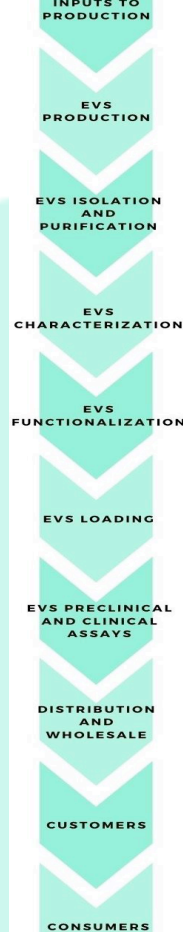
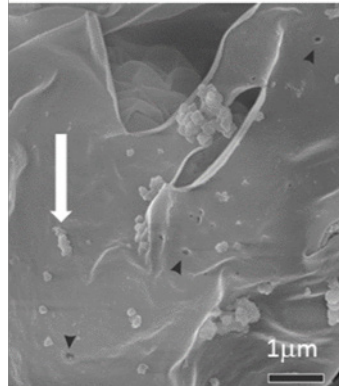
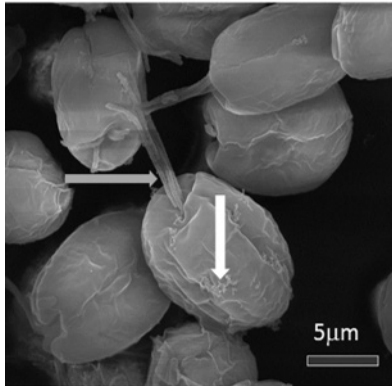
Cosmetics

Bow





nanoALGOSOMES



Make **100x** larger batches of EVs

Reduce the production cost by **10** times

Reduce the production Q&C cost by **5** times

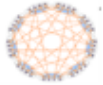
Increase the **quality** purity and size for tailoring EVs for **industry**



Next move



spin-off



exploit, disseminate and communicate:

PromoTT, TechShareDay, EIC Business Accelerator Services, FETLaunchpad;

BubbleMumble



science (!): microfluidic-based technology; omic profiling and functionalization; pre-clinical studies; biomimetic functions



PROS

- ✓ **interdisciplinarity and fundings** (H2020-FET projects)
- ✓ **EV networks** (EVIta and ISEV societies, European and CNR EVcluster)
- ✓ **high impact publications** (2019 and 2020 $IF_{(AVG)}=7.7, 8.2$)
- ✓ **patent 2019** (PCT in progress)

CONS

- lab space
- technical staff
- large equipment
- clinical studies

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More infos:

www.ves4us.eu

<https://cordis.europa.eu/project/id/952183>



THANKS FOR YOUR ATTENTION...



*...Have fun with
BubbleMumble
game!!*

A dissemination deliverable of the VES4US project

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