

Sustainable Exploitation of bio-based Compounds Revealed and Engineered from natural sources

www.secreted-project.eu

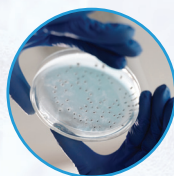
Programme: HORIZON 2020 (H2020-FNR-11-2020)



CONCEPT



The SECRETed project aims to harness the full potential of aquatic biotechnology to create novel molecules with tailor-made properties by the combination of biosynthetic genes of amphiphilic compounds (biosurfactants and siderophores) produced by marine and extremophilic microorganisms for the pharmaceutical, cosmetics, agrochemical, marine and chemistry industries.



AT A GLANCE

48 Months



15 Beneficiaries
9 countries



10 WPs



7.787.818 €



COORDINATOR

 idener.ai

OBJECTIVES

- Screen & detect Biosynthetic gene clusters for the synthesis of biosurfactants & siderophores.
- Develop a genomic & chemical database of siderophore & biosurfactant production pathways and gene clusters.
- Demonstrate optimised production & purification solutions & developed microbial strains in pilot plant scale (TRL-6).
- Assess environmental, economic & social perspectives of the proposed solutions.

IMPACT

- Sustainable exploitation, cultivation & processing of promising organisms.
- Reduce the pressure on harvesting wild populations & increase knowledge about biodiversity potential.
- Development of novel natural, sustainable, eco-friendly, cheaper & readily accessible products with significant bioactive properties.
- Public-private cooperation in European biotechnology by integrating 'green' (plant), 'blue' (marine) & 'white' (industrial).



Funded by
the European Union

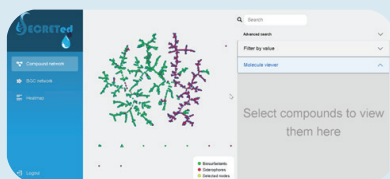
Funded by the European Union under GA number 101058450. Views and opinions expressed are however those of the author(s) only and do not necessarily reflect those of the European Union. Neither the European Union nor the granting authority can be held responsible for them.


exelis
© COPYRIGHT



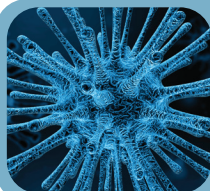
FOUNDING MEMBER OF THE A.I.M.S. CLUSTER

ACHIEVEMENTS



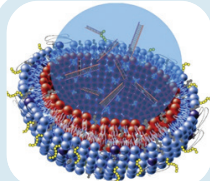
Integrative Management Platform

A powerful database of more than 1700 biosurfactants and siderophores compounds and their associated Biosynthetic Gene Clusters.



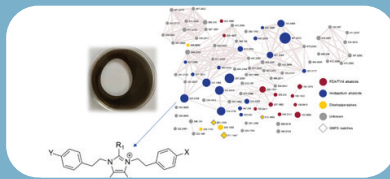
Siderophores against antibiotic - resistant bacteria

One fungal-specific siderophore can reduce or eliminate growth of two key bacteria with high resistance to all existing antibiotics.



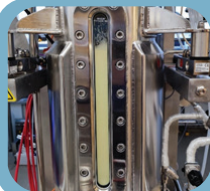
Biosurfactants in drug delivery systems

Development of RNAi-based drug delivery systems that are scalable, and industrially developable and use biodegradable and sustainable compounds.



Screening of bacteria for biosurfactants & siderophore compounds

The halophilic strain collection is expanded and the screening of potential biosurfactant and siderophore producers is completed.



Scaling up biosurfactant production

The process is transferred from glass bioreactors to bigger stainless steel bioreactors at a 30L scale that is pressurised.



Life Cycle Inventory of SECRETed

The inventory of raw materials has been compiled along with LCA assumptions, baselines and benchmarks.

#SECRETed



SECRETed Website



idener.ai

AccuPLEX
Diagnostics

Bio Base Europe
Pilot Plant

BLUE
SYNERGY

exelisis

IMPERIAL

LUND
UNIVERSITY

matix

HELLENIC REPUBLIC
National and Kapodistrian
University of Athens
ESTD. 1837

Pharma
Mar

phero
PHARMACEUTICALS

Stazione
Zoologica
Anton Dohrn
Napoli

sylentis

EBERHARD KARLS
UNIVERSITÄT
TÜBINGEN

UNIVERSIDAD DE SEVILLA



Funded by
the European Union

Funded by the European Union under GA number 101058450. Views and opinions expressed are however those of the author(s) only and do not necessarily reflect those of the European Union. Neither the European Union nor the granting authority can be held responsible for them.

exelisis
© COPYRIGHT