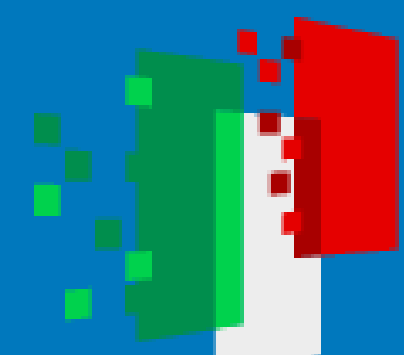




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PIANO NAZIONALE  
DI RIPRESA E RESILIENZA



Università  
degli Studi di  
Messina

# FINI - Future challenges in management of recurrent/resistant Infection: development of antimicrobial Nanoparticulate systems and physical-chemical investigation of their Interactions with biofilm-associated infection

(PNRR - Missione 4, Componente 2, Investimento 1.1 - Bando Prin 2022 – Decreto Direttoriale n. 104 del 02-02-2022)

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<https://portale2.unime.it/prin2022fini/>

## GOALS

**Main goal:** design the correct therapeutic systems based on innovative antimicrobial nanoparticles (NPs) able to eradicate the biofilm-associated infections, so permitting a specific antimicrobial therapy without cytotoxicity and side effects.

**Result 1:** develop nanotechnological platforms, with specific surface properties and sizes, addressed to reduce the formation of BPB in various models of human eukaryotic cells and explanted organs, to inhibit biofilm production and development and/or breaking/dissolving the mature biofilm.

**Result 2:** clarify the mechanism of biofilm eradication, by an exhaustive physicochemical and morphological characterization of the biofilm produced by selected pathogen microorganisms before and after the treatment with these nanosystems, in order to evaluate their specific interaction with biofilm components.

### PROJECT DETAILS

Duration: 24 months

Principal Investigator: **Prof. Valentina VENUTI** (University of Messina)

MUR Contribution: € 77.290,00 - Total: € 101.997,00

## RESEARCH GROUP

2 Research units involved in the project



Università degli Studi di Messina  
(RU1-UniME)

- VENUTI Valentina (P.I.)
- CARIDI Francesco
- PALADINI Giuseppe
- TOMMASINI Silvana
- VENTURA Cinzia Anna

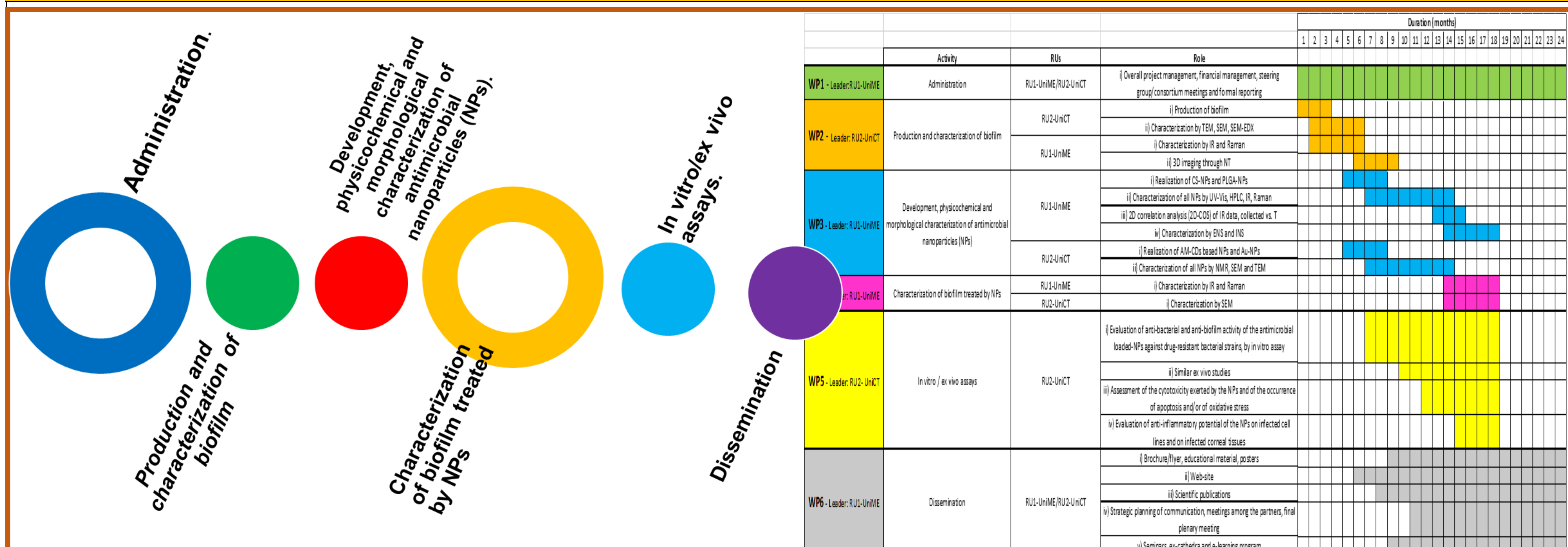


Università degli Studi di Catania  
(RU2-UniCT)

- PISTARA' Venerando
- SALMERI Mario

The two research units (RUs), involved in the FINI project, constitute a "scientific" network with complementary experiences, including the entire production process of the proposed NPs, ranging from the design, to the organic synthesis, from the characterization, up to the in vitro test and the ex-vivo models.

## WORKING PACKAGES (WPS)



## EXPECTED BENEFITS

