SATT SUD-EST
ACCELERATING TECHNOLOGY TRANSFER

THE INTERFACE BETWEEN COMPANIES AND PUBLIC RESEARCH IN SOUTH EASTERN FRANCE

MULTI DRUG RESISTANT BACTERIA

INNOVATIVE MOLECULES RESTORING SENSITIVITY TO CLASSICAL ANTIBIOTICS ON MULTI DRUG RESISTANT BACTERIA

BENEFITS

RESTORE MDR BACTERIA SENTIVITY TO ANTIBIOTICS

ACTIVITY HIGHER THAN PAβN ACTIVITY

ANTIBIOTICS DOSE REDUCTION

KEYWORDS

MDR BACTERIA

EFFLUX PUMP

ANTIBIOTIC SENSIBILITY RESTORATION

IP

PATENT

Aix*Marseille université

Università di Corsica Pasquale Paoli

cnrs

PARTNERSHIPS

LICENSE AND/OR PARTNERSHIP TO TEST THE EFFICIENCY OF OUR MOLECULES ON YOUR ANTIBIOTIC-RESISTANT BACTERIA MODELS **(POSSIBLE CO-FUNDING)**

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BACKGROUND

Gap between the burden of infections due to multidrug-resistant bacteria and the development of new antibiotics to tackle the problem.

More and more data on the role of antibiotics efflux in the multidrug resistant (MDR) bacteria emergence, but no efficient solution.

⇨ **New molecules able to restore the sensitivity of MDR Bacteria to antibiotics (inhibitors of efflux pump).** Already tested on 2 bacteria species and with 3 antibiotics at different concentrations. At least 5 active molecules increase/restore *in vitro* antibiotics activity

KEY BENEFITS vs. STATE OF THE ART

Efficient, easy to synthesize; cheap; water soluble

Activity higher than PAβN activity without cytotoxicity effect: restoration of MDR bacteria sensitivity to antibiotics

Potentially active on a wide spectrum of antibiotics /macrolids and bacteria strains

DEVELOPMENT STATUS & RESULTS

In vitro Assays on a large number of MDR strains of each bacterial species
In vitro Assays using different combinations of compounds/antibiotics
In vivo Assays to determine the efficiency of the compounds on infected mice by different MDR bacteria species
Results:

→ Our new molecules target efflux pump and restore the antibiotic activity on MDR bacteria.
→ Antibiotic dose needed to kill the MDR bacteria is at least 8 times lower than without molecule.
→ No cytotoxicity on CHO cell line

APPLICATIONS

Infectiology/Pharmacology

✓ Restoring existing antibiotics activity on MDR bacteria
✓ Development of new applications for existing antibiotics (Macrolids on Gram negatives)

UNION EUROPÉENNE