

HYMEDPOLY

DRUG-FREE ANTIBACTERIAL HYBRID BIOPOLYMERS FOR MEDICAL APPLICATIONS

PROJECT OVERVIEW

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➤ Problems

- ✓ Resistance of bacteria to drugs
- ✓ Infection has become one of the toughest problems in the medical world
- ✓ hardly any effective antibiotics left in the fight against many pathogens.

➤ Solutions - *drug free new MOLECULAR therapies – design & development:*

- ORANIC - through synthetic pathway: develop **new hybrid polymers** synthetic and natural “equipped” with antibacterial functionality,
- INORGANIC – through design **new molecular structure of inorganic nature** to make them naturally processing antibacterial functionality
- LEARN FROM NATURE – build new materials with **natural inhibitors** that can ideally permanently deactivate bacteriological proteases
- d. In combination** of (a), and/or (b), and/or (c)

Highlights - the way we have adapted

- Biomedical materials have been widely used in combination with drugs and active principles in medical applications such as wound care, implants and bio film prevention. The challenge is **to develop new medical materials that have an intrinsic antibacterial functionality** to achieve clinical effectiveness.
- To develop the challenge to practical medical solutions, **a new generation of industrial professionals** is needed who will firstly understand **new concept of innovation from concept to commercialisation**, and can implement new strategies to combat bacteria.
- The best way to achieve the goals of HyMedPoly is through:
 - ✓ collaboration, i.e. a multidisciplinary **team action** from academia and industry and clinicians who work as ONE TEAM to take challenges to solutions (**? So far how many sciences, engineering and industrial practice we have practically experienced?**)
 - ✓ Training young PhD researchers to meet **long-term goals**, including:
 - To develop **future professionals** who will play a pivotal role in pushing forward challenging and knowledge-intensive field **for the coming decades** to benefit the world hospitals and personal healthcare
 - To bring state-of-the-art technology **to industry with advanced products** for hospitals and personal healthcare
 - To **be future leaders** in development of new strategies to improve the quality of life, to which all the training designed of HyMedPoly is for that goal, including this event

THANK YOU
&
QUESTIONS