Enhancing storage stability of vaccines and bacteriophages using Natural Deep Eutectic Solvents

Liane Meneses[1,*], Ana Rita C. Duarte[1,2], Alexandre Paiva[1,2]
*lp.meneses@campus.fct.unl.pt

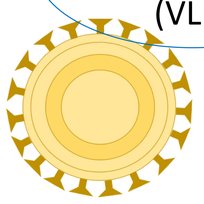
[1]LAQV@REQUIMTE, Departamento de Química, Faculdade de Ciências e Tecnologia, Universidade Nova de Lisboa, 2829-516 Caparica, Portugal
[2]Des Solutio, Avenida Tenente Valadim nº17 2ºF, 2560-275 Torres Vedras, Portugal

STATE OF THE ART

Vaccines

- Most successful approach to prevent diseases
- Responsible for delivery of immunization and prevention of millions of deaths every year

Virus like particles (VLP)

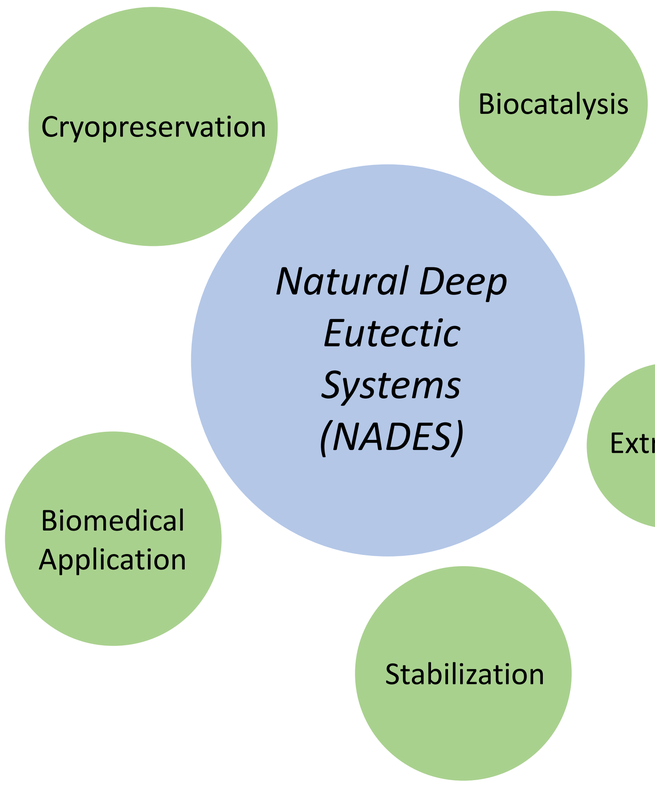


- Proteinic structures that mimic viruses
- Stimulate stronger immune responses
- Used as vaccines for several diseases

- Efficacy depends on:

- The capacity of the antigen to activate the immunological system
- The stability of the structure

Lack of storage conditions hinders the delivery of immunization to developing countries



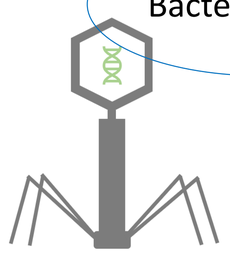
Antibiotics

- First line approach to treat bacterial infections
- Responsible for the increase of life expectancy
- Revolutionized medicine and saved millions of lives worldwide

Overuse and misuse of antibiotics has lead to the development of **bacterial resistance**

Major threat to modern civilization

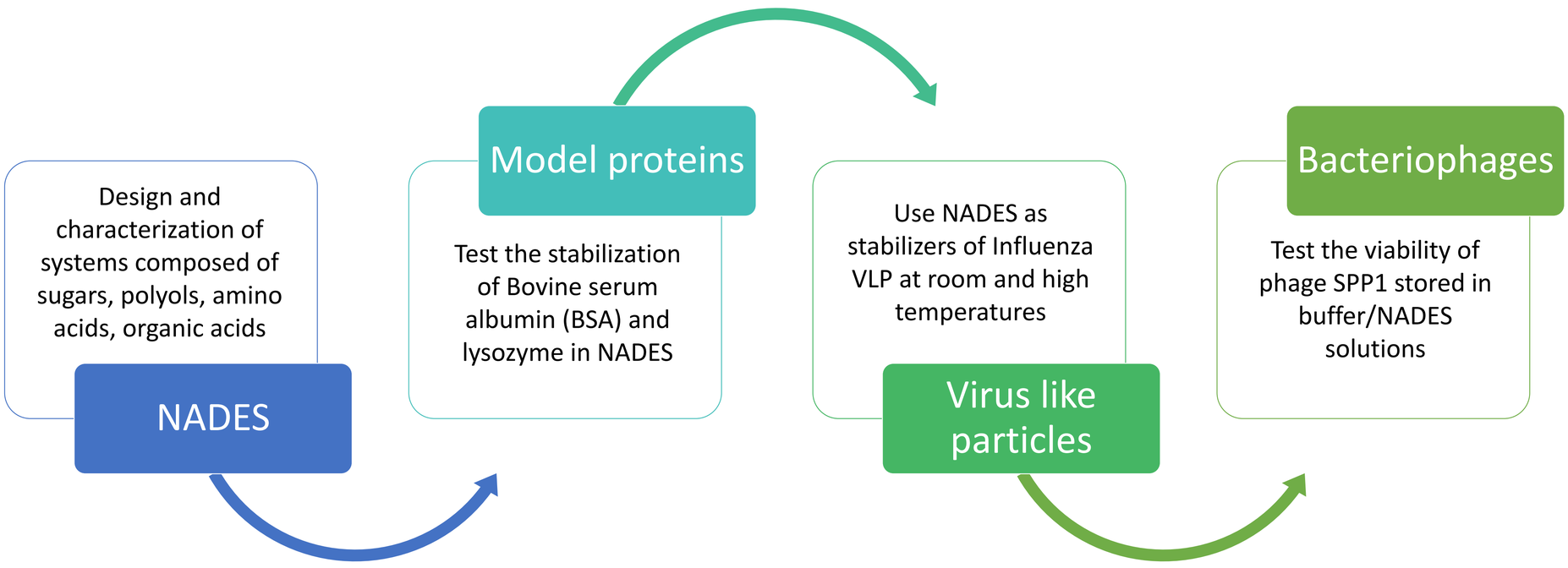
Bacteriophages



- Virus with the ability to infect bacteria
- Have high specificity towards their host
- Proven efficacy to control propagation of bacteria

Tested for the treatment of infections caused by multi-resistant bacterial strains

METHODOLOGY



OBJECTIVES

- Use a biomimetic approach for the development of NADES
- Study the interactions between NADES and proteins using model proteins
- Test NADES ability to **stabilize** influenza vaccines and bacteriophages
- Study the application of NADES as **carriers** for vaccines and bacteriophages

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