

TECHNOLOGY POOL:

NATURALITY R&D

Targeting antibiotic resistance

Drug Delivery systems (DDSs)

Gels

Prebiotic-based oligosaccharides

Biosurfactants

NATURASOL ANTIMICROBIAL platform

NATURALITY R&D

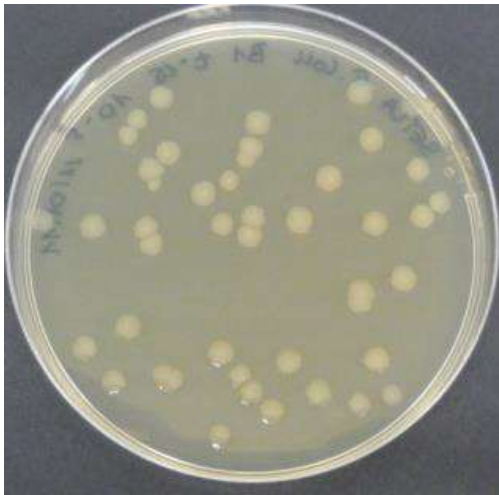
Tackling antibiotic resistance

Nosocomial multi-/pan- resistant pathogens:

Acinetobacter Baumannii

Staphylococcus aureus

Pseudomonas aeruginosa



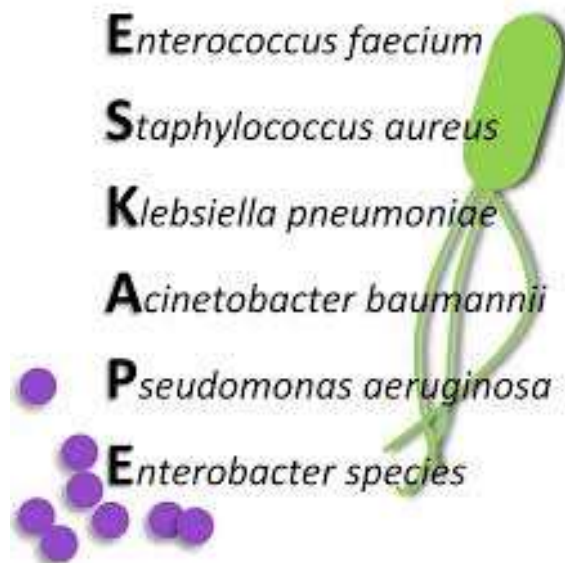
IV and IP routes validated under murine sepsis models during preclinical tests

NATURASOL antimicrobials for killing viruses, fungi & bacteria

Broad antimicrobial activity on > 250 pathogen species

NATURASOL antimicrobial platform

NATURALITY R&D



ESKAPE Pathogens of Highest Concern



- ☞ The most serious, life-threatening infections are caused by a group of drug-resistant bacteria that the
- ☞ Infectious Diseases Society of America (IDSA) has labeled the "ESKAPE" pathogens, because they effectively escape the effects of antibacterial drugs

Dr.T.V.Rao MD

5

Prebiotics: making food for the gut

Human Gut Microbiota: > 400 species of bacteria

Helping us to digest food and protecting us against diseases and infections

Prebiotic: “a substrate that is selectively utilized by host microorganisms conferring a health benefit.”

Health benefits

- GI disorders
- Colon cancer
- Osteoporosis
- Obesity
- Immune system
- Blood ammonia and cholesterol levels

Technological properties

- Improved taste, mouthfeel, texture
- Increase shelf-life
- Enable fibre incorporation in liquid foods

FOS as food ingredient

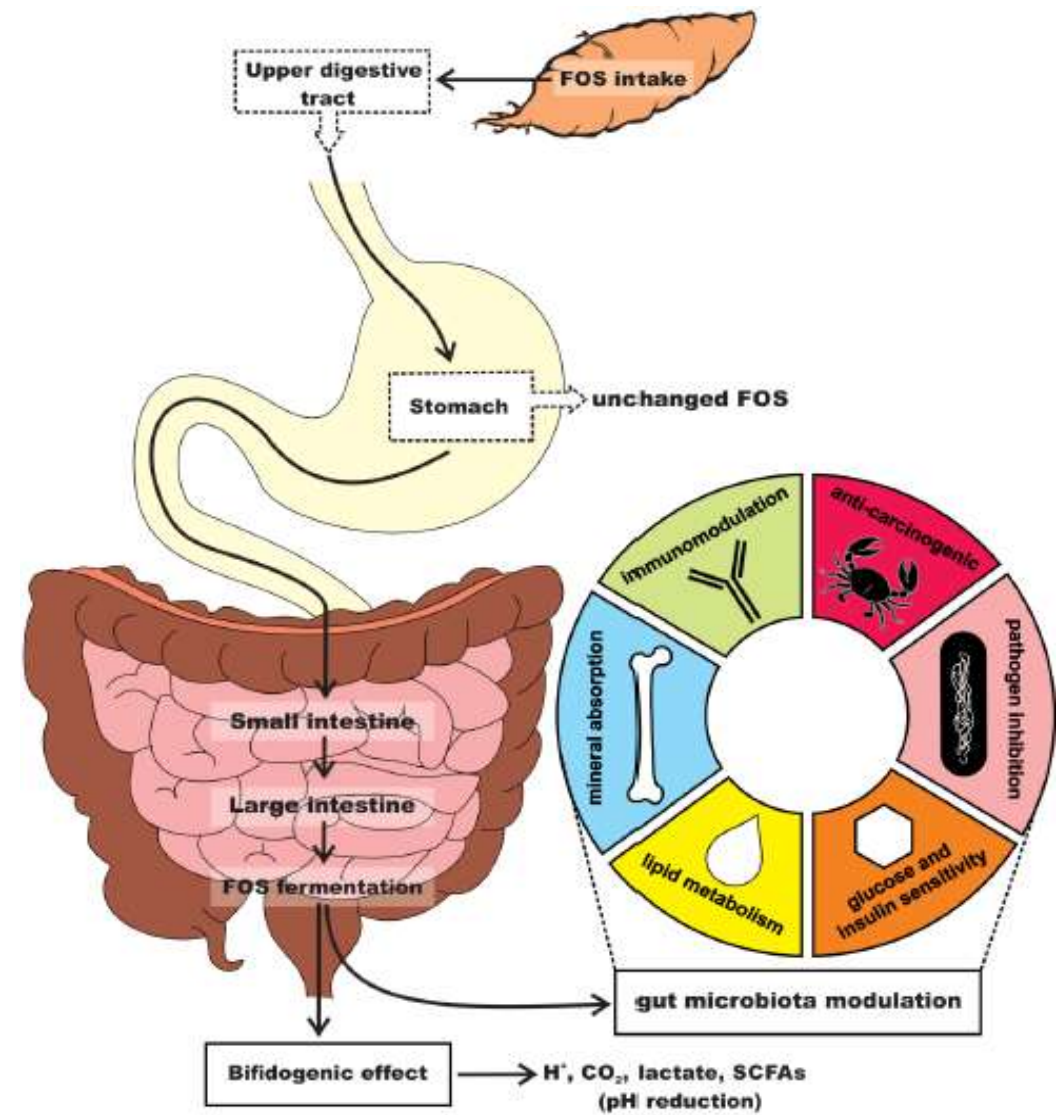
- Diabetic food
- Dietetic food
- Infant food
- Sweeteners substitutes or in combination with other sweeteners

New prebiotics:

Neo-FOS

Lactose- based

Other oligosaccharides



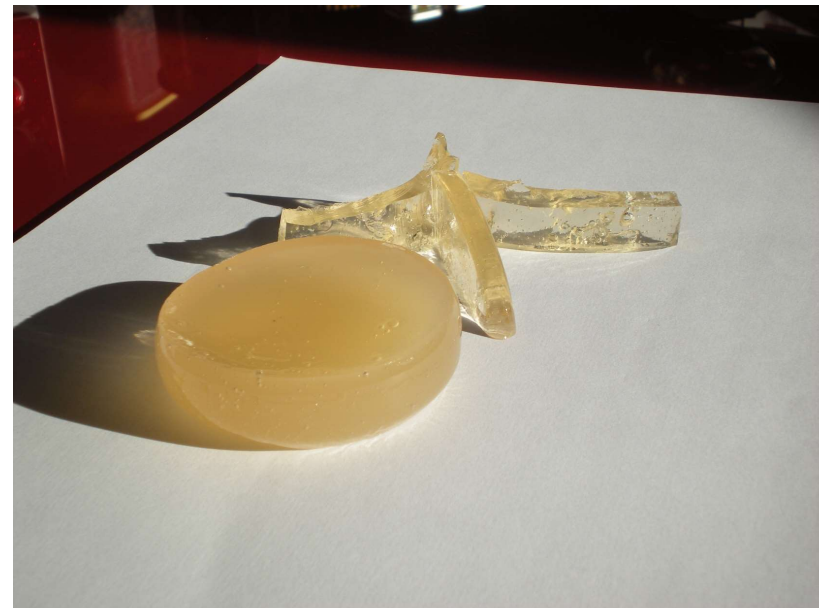
TEXTUROSE technology

- made with selected polysaccharides or proteins
- loaded (option) with antimicrobial NATURASOLs

Up to 100% prebiotic food ingredients

CAN CONTAIN ANY TYPE OF ACTIVE
or other food ingredient:

Antimicrobials, Antioxidants, vitamins,
minerals, hormones, ...



NAT experience in EU projects:

NATURALITY R&D

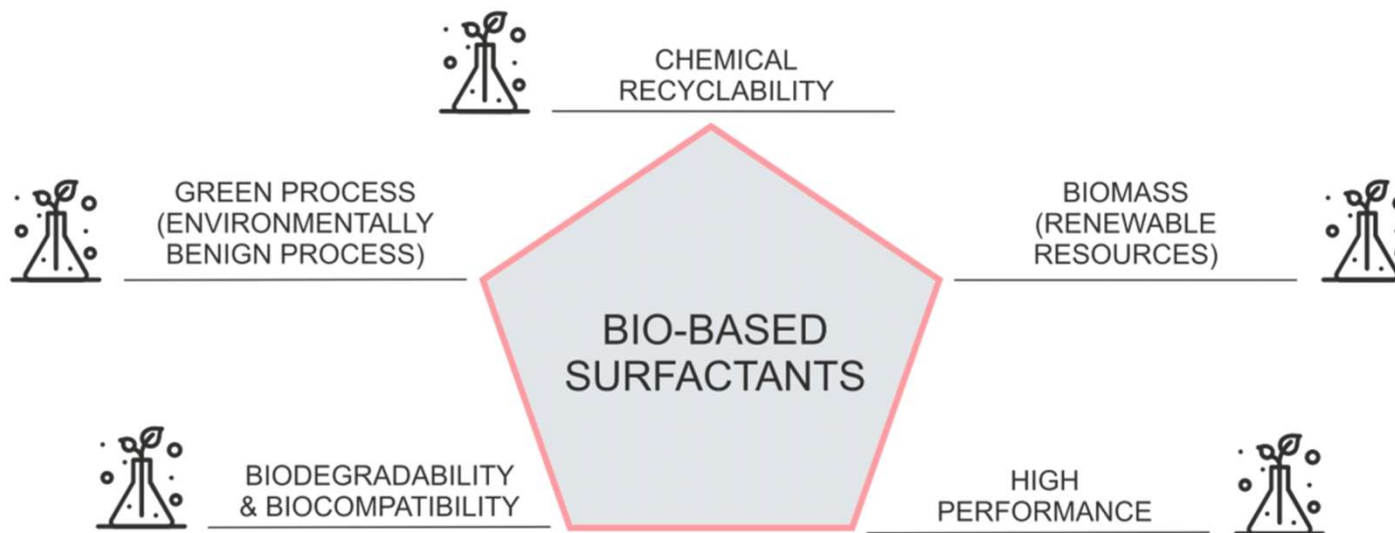
Flexpol: www.flexpol.eu antimicrobial flexible polymers for its use in hospital environment (project closed)

Aerograft: <https://graphene-flagship.eu/project/spearhead> graphene flagship – spearhead projects – next generation aerospace filtration systems (started 01/04/2020)

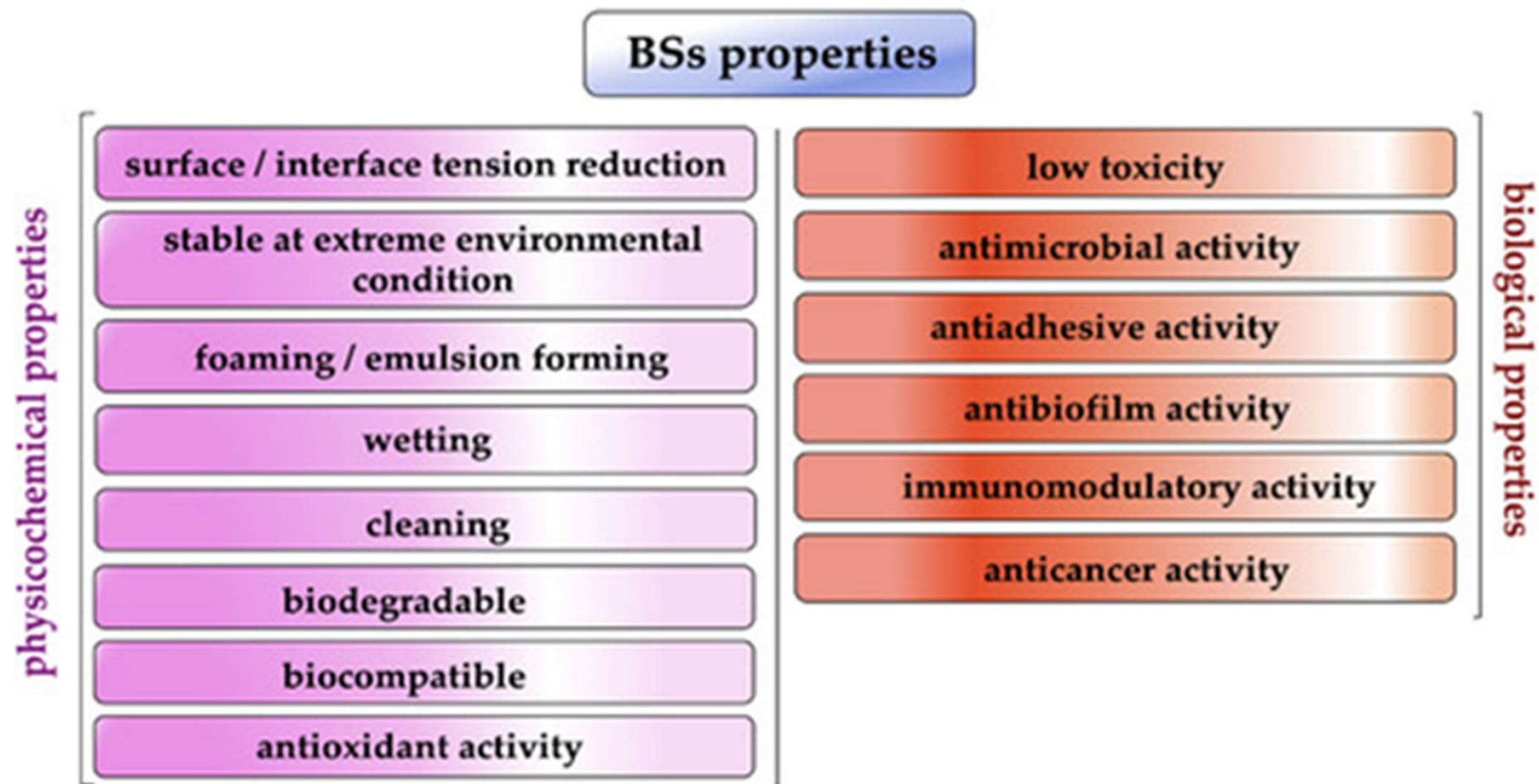
SALSETH: www.salsethproject.com MSCA-RISE Innovative bio-inspired sensors and microfluidic devices for saliva-based theranostics of oral and systemic diseases (started 01/10/2019)



biosurfactants platform

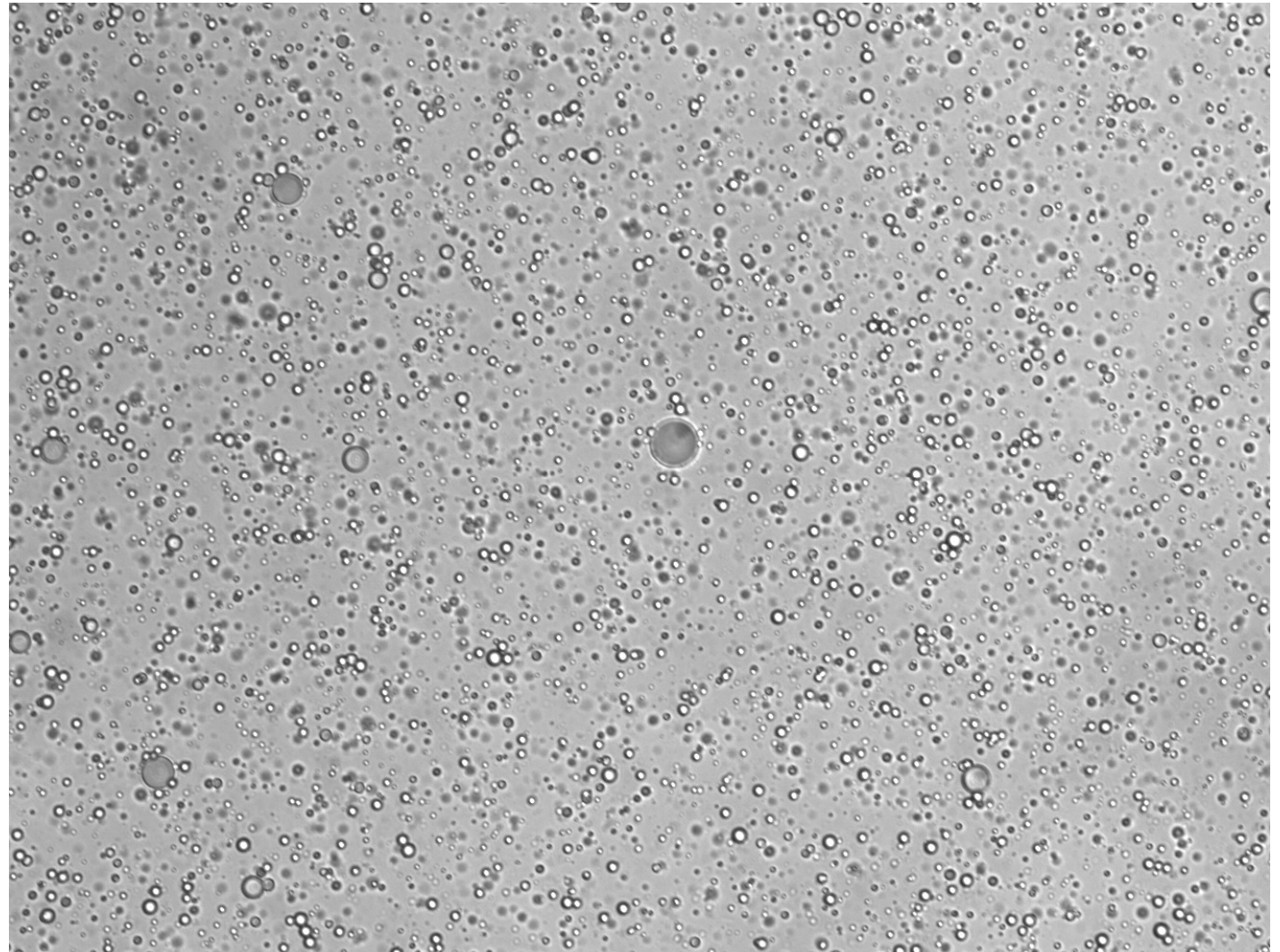


biosurfactants platform



biosurfactants platform

Essential oils in water
nano-sized emulsion
(50nm)
4 years shelf stability



Thank you for your attention

NATURALITY R&D



www.naturality.tech