

TRANSCAN-3 JTC2021
International
Networking Event



This project is co-financed by the
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Description of the Organization



- BilensoyLab is an active research group located at Hacettepe University Faculty of Pharmacy Department of Pharmaceutical Technology focusing on **pre-clinical research on nanotechnological delivery systems for chemotherapeutic molecules and immunotherapeutics dedicated to cancer treatment and tumor targeting.**
- Currently the reserach team consists of a professor, 3 assistant professors, 8 PhD students within the Department of Pharmaceutical Technology with access to formulation development, in vitro characterization, cell culture and 3-dimensional tumor culture, proteomics and metabolomics based analysis of the effects of nanocarriers on cells, with access to animal facilities, biodistribution and pharmacokintic and antitumoral activity experience.
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Description of your research interest



- Our current projects and expertise include but are not limited to;
 - ① Rituximab-conjugated triple drug loaded nanoparticles targeted to tumor mitochondria to overcome drug resistance in Non-Hodgkin lymphoma
 - ② Cholesterol targeted nanoparticles that induce selective apoptosis in cancer cells (with experience in breast cancer, hepatocellular carcinoma, non-small cell lung cancer)
 - ③ Omics based nanomedicine development (proteomics, metabolomics)
 - ④ Immunotherapeutic nanoplexes based and preclinical evaluation in colon cancer
 - ⑤ Oral nanosponges for toxic molecule removal from biological fluids
 - ⑥ Inkjet printed antiviral-anticancer combination bioadhesive film for cervical cancer treatment
 - ⑦ 3-D printed intrauterine device for the controlled release of cisplatin and paclitaxel in uterine cancers

Project Idea



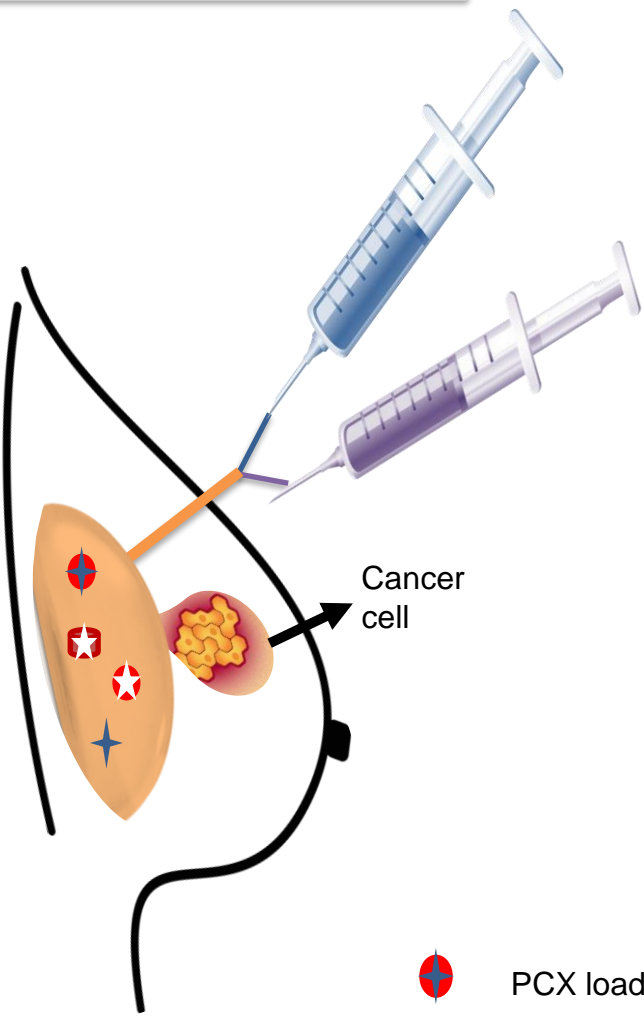
Aim 2: Targeting TME to improve efficacy of immunotherapy in human patients.




2.1 Development of new precision therapeutic strategies that may prevent human tumour recurrence or resistance.

“Dual drug loaded implantable drug delivery device with self-healing properties and biphasic, TME-triggered drug release via targeted nanoparticles in acute and adjuvant treatment of breast cancer”

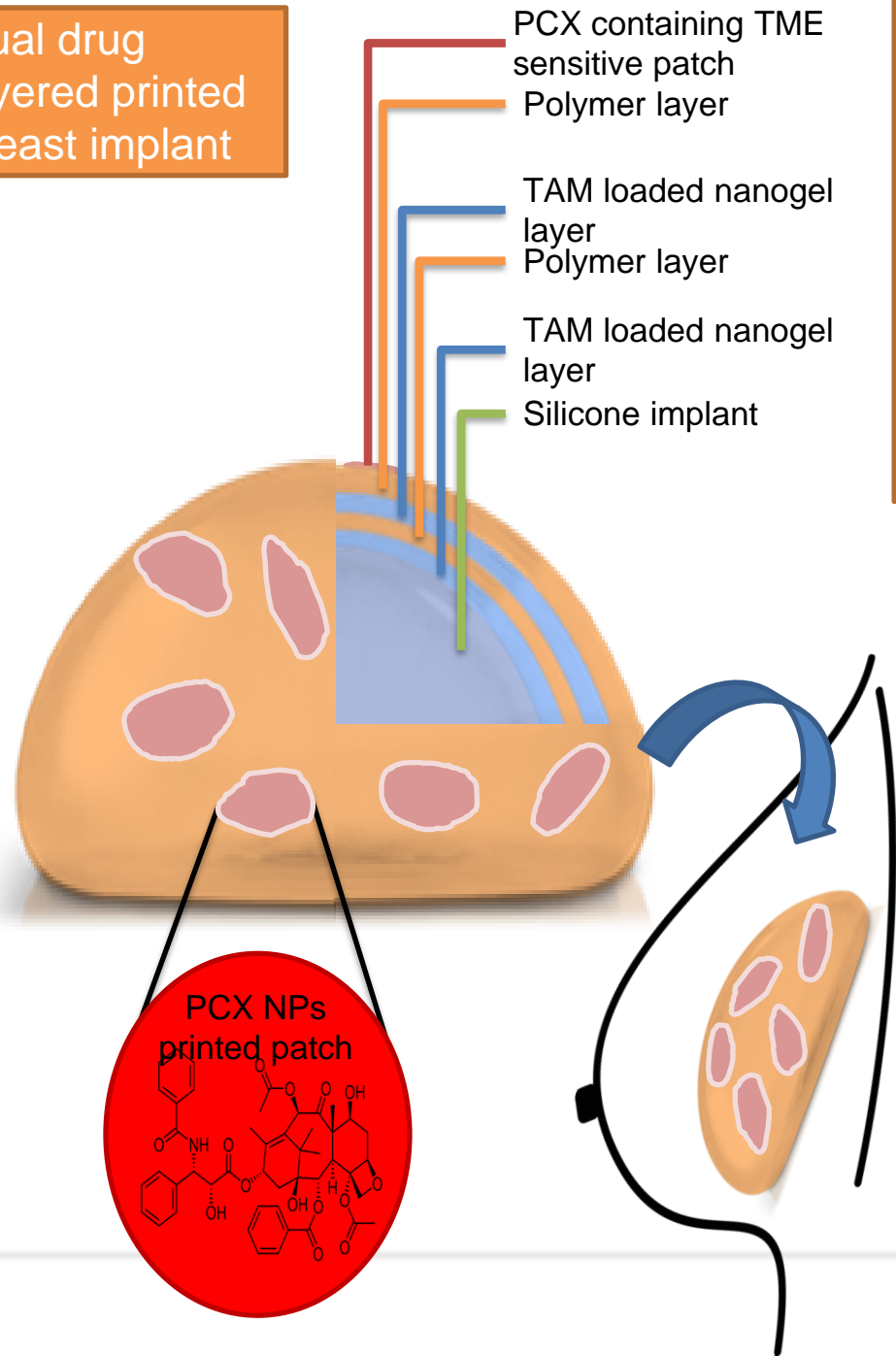
- Objectives:
 - to mimic the clinical 1st choice adjuvant treatment for breast cancer with a local breast implant that is able to release paclitaxel via triggering by TME as well as long term (5 years) Tamoxifen release with layer by layer printing on silicone implant surface
- Expected results
 - Drug eluting implant development, biocompatibility data and personalized drug dosage and combination
 - Avoiding side effects and second cancer progression due to oral tamoxifen administration to breast cancer patients

Dual drug loaded injectable IDDS

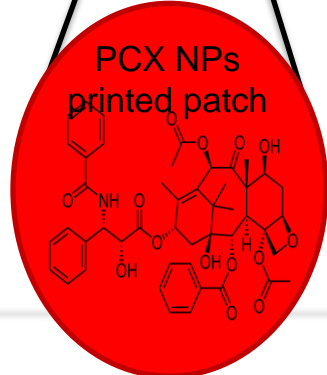


-  PCX loaded NPs
-  TAM loaded CB[n]
-  TAM loaded NPs

Dual drug layered printed breast implant



Layer by layer 3D printing



Consortium - profile of known partners *(if any)*



No	Partner Name	Type	Country	Role in the Project
01	Hacettepe University	Academic	Turkey	Coordinator- targeted nanoparticle development, in vivo evaluation of antitumoral activity
02	Slovak Academy of Sciences	Academic	Slovakia	Partner- Preparation of bioink precursor, polymeric IDDS development, slow release IDDS development for Tamoxifen, characterization of IDDS
03	Aix Marseille University	Academic	France	CB[n] preparation, complexation ability of CDs and CB[n] with Tamoxifen, characterization of Bioink precursor
04				
05				
06				

Consortium - required partners



No	Expertise	Type	Country	Role in the project
01	Biocompatibility tests			Biocompatibility of blank and drug eluting breast implants
02	TME sensitive polymer synthesis			Synthesis of drug conjugated polymers that release drug through triggering by tumor microenvironment factors
03	Clinical – Oncology, immunology			Safety assesment, drug regimen adjustment
04				
05				
06				



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