TREAT U is a spin-off from the University of Coimbra, founded in January 2010, and headquartered in Coimbra, Portugal.
Focusing on the limitations of conventional chemotherapeutic drugs, we are dedicated to the development of targeted nanotechnology-based platforms for specific and triggered drug delivery. The therapeutic agents are released only in the tumour microenvironment, through specific ligand-receptor interactions. Therefore, it is possible to increase therapeutic efficacy by increasing concentration of the drug in the tumour, and decrease the incidence of side effects by decreasing accumulation in healthy organs.

Our mission is to develop more effective strategies and safer products for the oncologic patient by increasing therapeutic efficacy and reducing the incidence of adverse side effects, hence reducing treatment costs for healthcare systems and generating a pipeline of interest for the Pharmaceutical Industry.

We have established strong synergies with national and international partners, facing the global market needs in Oncology. Supported by a highly qualified team, the innovative potential of our R&D was recognized by Maksen. We are part of the MIT-Portugal programme and of the “Residence Entrepreneurship” project from the Carnegie Mellon-Portugal programme.

TREAT U is part of the innovation network at the National Scientific and Technological System. We are partners with:
Our first project was initiated in 2006 with the development of the platform PEGASEMP™, for breast cancer treatment.

PEGASEMP™ is a lipid-based nanoparticle that carries a chemotherapeutic compound (doxorubicin) through the bloodstream and delivers the encapsulated agent to specific cell populations in the tumour microenvironment, namely tumour cells and endothelial cells from tumour blood vessels. Upon internalization, the encapsulated drug becomes rapidly bioavailable, following destabilization in the endocytic pathway.

Results obtained with PEGASEMP™ for the delivery of doxorubicin to breast tumors, both in vitro and in an animal orthotopic model of breast cancer, have demonstrated the benefits of combining specificity and triggered drug delivery to promote selective accumulation of doxorubicin in the tumor microenvironment, thus decreasing vascular density and inhibiting tumor invasiveness to healthy tissues.
PEGASEMPTM’s technology has two patents granted in USA (US8231895B2, US8529944) and a PCT has already been filed in Europe. This platform was developed at CNC.UC and an exclusive license agreement between TREAT U, CNC and the University of Coimbra was established, granting the commercial rights to the first party on therapeutic and diagnostic applications.

PEGASEMPTM IS AN ATTRACTIVE TECHNOLOGY FOR THE PHARMACEUTICAL INDUSTRY, owing to its versatility in the incorporation of drugs or combinations of drugs. This adds new value to already marketed drugs, which patents are expiring or will expire in the near future, allowing new IP protection for these costumers.

The versatility of our platforms will allow new approaches for the treatment of tumors with different histological origins.

PEGASEMPTM WILL ENTER CLINICAL TRIALS IN 2015 FOR ADVANCED BREAST CANCER.

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FUNDING

- **Bluepharma** - Pharmaceutical Industry S.A.
- **Portugal Capital Ventures** - Venture Capital Society, S.A.
- **European Funds for Regional Development** (FEDER) from the National Strategic Reference Framework (QREN)

**MILESTONES & STRATEGIES**

**Target discovery**

- **Breast**
- **Lung**
- **Leukemia**

**Delivery platform development**

- **Target discovery**
- **Pre-clinical**
- **Clinical**

- **Breast**
- **Lung**
- **Leukemia**