

## RESCUER

**Title** Resistance under treatment in breast cancer

**Coordinator** Arnaldo Frigessi (University of Oslo, Norway)



### Project partners



Arnaldo Frigessi (University of Oslo, Institute of Basic Medical Sciences, Oslo Centre for Biostatistics and Epidemiology, Norway)



Jorg Tost (Centre National de Recherche en Génomique Humaine, Laboratory for Epigenetics & Environment, France)



Peter Fasching (University Hospital Erlangen, Dept. of Gynecology and Obstetrics, Germany)



Svetlana Miklikova (Skolekova) (Cancer Research Institute BMC SAS, Dept. of Molecular Oncology, Bratislava, Slovakia)



Vessela Kristensen (Oslo University Hospital, Dept. of Cancer Genetics, Norway)

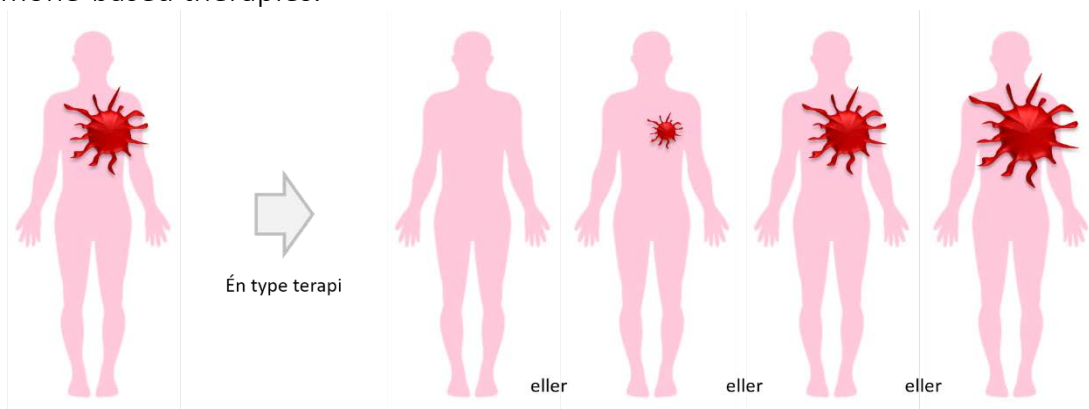


Martin Bohác (OZ MAMMA FEMININA, Bratislava, Slovakia)

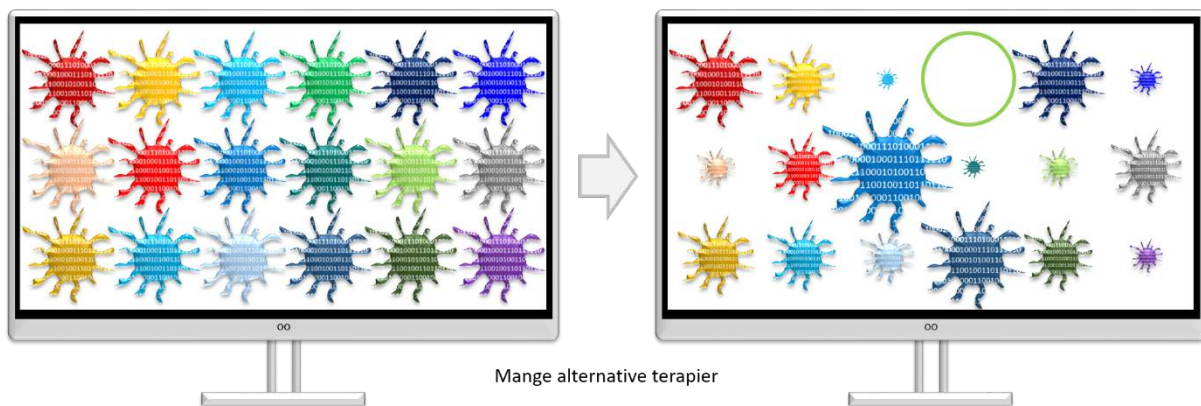
<b>Start date</b>	July 1 <sup>st</sup> , 2020
<b>End date</b>	June 30 <sup>th</sup> , 2023
<b>Funding requested</b>	1.520.000 €
<b>Duration</b>	3 years

## Abstract

Breast cancer is the first cause of cancer-related death in women worldwide. There are many drugs available, but despite this, only some patients benefit from their administration. The reason is that patients are very heterogeneous. Personal therapy aims to determine the best therapy for each patient. This is not easy, as there are millions of possible therapies, each determined by combinations of drugs, doses and regimes of administration. This project develops new computationally intensive approaches to identify mechanisms of treatment of resistance at systems level. The project benefits from a collection of several European clinical trials, which generate longitudinal multidimensional data, which can be integrated to predict therapeutic success. The overall goal is to develop computer-based copies of each patient, so that multiple treatments can be tested by simulation. We will in particular focus on hormone-based therapies.



Tradisjonell pasientbehandling



Mange alternative terapier

### Datadrevet behandling

For breast cancer patients, a specific treatment strategy is usually chosen today based on the type of tumor the doctor has found through preliminary examinations. The result may be good, but since the patients are different, there is a risk that the tumor does not disappear completely, is unaffected, or even grows as shown in the top row. In data simulation, one can first test millions of different treatments and then choose the alternative that appears to be most effective as highlighted with a green empty circle in the bottom row.

Email [frigessi@medisin.uo.no](mailto:frigessi@medisin.uo.no)