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PATH Patients' Tumor Bank of Hope

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Research for a Life without Cancer

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HITS

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Learn more

To find out more about our project, please visit:

www.mesi-strat.eu

or contact us directly

info@mesi-strat.eu

Participate

Answering our survey
about interest in cancer research
takes only 5 min of your time
and would help us a lot.

MESI-STRAT

Systems Medicine of Metabolic-Signaling networks -
A New Concept for Breast Cancer Patient Stratification

ER+ Breast Cancer

Improving therapy decision and relapse detection

Breast cancer is a complex disease with high prevalence in Europe and worldwide. About one in eight women is diagnosed with breast cancer in the course of her life and men are also affected.

75 – 80 % of patients have estrogen receptor (ER)-positive tumors, which means that the growth of their tumors is estrogen dependent. These patients are routinely treated with endocrine therapies, which block ER-driven tumor growth and usually show high efficacy. However, about 30 % of patients will eventually relapse with metastatic breast cancer, and the recurrence rates remain almost constant for up to 20 years. In addition, the relapse is often detected very late, as there are no routine screening methods.

It is still unknown why especially this tumor type can survive unnoticed in the human body for years before it starts to grow again. The scientists in the MESI-STRAT consortium are looking for answers to this question.

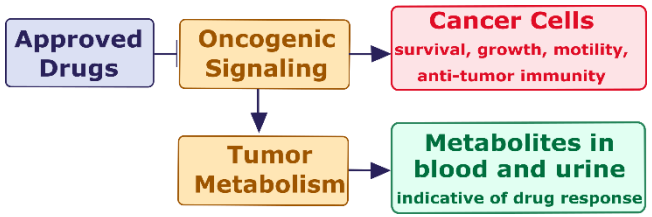
What is MESI-STRAT ?

MESI-STRAT is a five year project, financed by the EU, that is aiming to improve breast cancer therapy and the detection of relapse.

MESI-STRAT stands for MEtabolic Signaling and STRATification. The project wants to study the connections between metabolic and signaling pathways and use it to classify patients (stratification) into groups with different resistance mechanisms. Signaling pathways influence the development of the tumor, but are difficult to surveil in a patient. However, they influence the tumor metabolism and metabolites can often easily be measured in blood and urine.

Studying the effects of signaling on metabolism will allow to define a set of parameters measurable in blood and urine. This will help to guide clinical decision making throughout endocrine therapy and to monitor the development of resistance with routine check-ups.

This is a new concept as although it is known that endocrine therapy influences breast cancer metabolism, it is poorly explored for diagnostics and therapy.

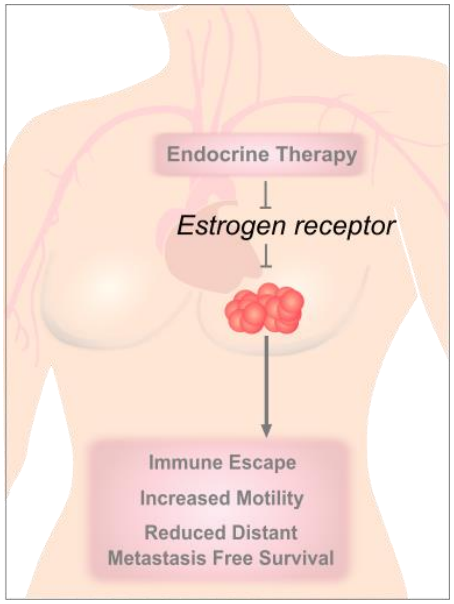


Who is MESI-STRAT ?

The MESI-STRAT consortium is coordinated by Prof. Kathrin Thedieck at the University of Innsbruck. It is highly interdisciplinary and combines clinicians, experimentalists and theoretical scientists, working at 14 different universities, institutes, and companies in seven European countries. This special collaboration makes completely new approaches possible.

The research effort combines laboratory work (e. g. cell cultures), two clinical studies and the computational analysis of both existing and newly created data. Another important part is the Patients' Tumor Bank of Hope (PATH) tissue collection. This unique collection comprises tumor tissues and serum samples from follow up examinations over ten years after diagnosis and is essential for the analysis of long-term endocrine therapy resistance and relapse.

Upon successful validation in preclinical models, the predictive marker panels and related treatments will be jointly investigated by MESI-STRAT's clinical and industrial partners.



Aims of MESI-STRAT

Improve decision-making:

At the beginning of the therapy:

- Recognizing patients with individual resistance mechanisms
- Predict, which patients will need chemotherapy

During the therapy:

- Recognizing resistance development and mechanisms
- Improve therapy decisions

At the end of therapy:

- Predict probability of relapse
- Improve decisions about the prolongation of anti-hormonal therapy

Combination Therapies will target Signaling and Metabolic Networks in the tumor