

Mammary Carcinoma Molecular Imaging for Diagnosis and Therapeutics (MAMMOTH)

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Research Areas



Tool Development



Biomarker Research

Imaging

At a Glance

- Status: **Completed Consortium**
- Year Launched: **2010**
- Initiating Organization: **Center for Translational Molecular Medicine (CTMM)**
- Initiator Type: **Government**
- Location: **Europe**

Abstract

The Mammary Carcinoma Molecular Imaging for Diagnosis and Therapeutics (MAMMOTH) project will result in improved breast tumor detection and accurate staging and selection of metastatic patients for targeted drugs. This will improve secondary prevention and avoid the administration of drugs that are not effective or no longer effective, not only increasing the quality of life for patients but also reducing healthcare costs and unwanted side effects. In addition, MAMMOTH has the clear potential to speed up drug development and generate patents.

Mission

The MAMMOTH project aims to meet the twin objectives of earlier detection of breast cancer and new patient-tailored therapies to treat it. It will do so by developing innovative imaging techniques capable of detecting alterations in cell biology that indicate the presence of breast cancer – for example, hypoxic tissue, angiogenesis, and changes in the expression of hormone and growth factor receptors.



The project team will identify ligands for these cell biology markers, labelling them either with fluorescent tracers to allow the use of molecular optical imaging for breast cancer screening, or with radioactive tracers to use PET/SPECT imaging for improving breast cancer staging and characterization. Optical (fluorescent) molecular imaging is a promising modality for screening because it is patient-friendly, fast, and does not involve ionizing radiation. Being non-invasive, SPECT/PET molecular imaging is preferable to obtaining tumor biopsies in order to determine detailed receptor activity in individual lesions.

Fluorescent and radioactive tracers will be validated in-vitro and in-vivo in rodent models, and will include pharmacokinetic and safety studies. Thereafter, relevant tracers will be produced under GMP conditions for use in clinical proof-of-concept trials for screening and optimization of patient-tailored therapy, by comparing the data obtained from fluorescence and SPECT/PET molecular imaging with immunohistochemical results obtained from biopsy samples.

Consortium History

Start date: April 1, 2010

End date: Dec. 31, 2014

Financing

Project budget: 15 M€

Intellectual Property

The generated intellectual property and technology will be valorized.

Homepage

<http://www.ctmm.nl/en/projecten/kanker/mammoth>

Points of Contact



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