

VISION

The Era-NET Euronanomed III project METASTARG is a translational approach that combines innovative research in the field of nanomedicine and cancer to provide solutions to an urgent unmet clinical need, improving survival of patients with Non-Small Cell Lung Cancer (NSCLC).

METASTARG propose the development of an innovative solution relying on nanotechnology for early detection and treatment of occult micrometastasis (OM) to cause a direct impact in the survival of the disease, quality of life, and health-economics. METASTARG nanoparticles will be developed to identify OM by novel characteristic targets found in metastatic cells and interrupt metastasis progression. This unique patient-driven approach has the potential to become a gold standard in the treatment and monitoring of NSCLC cancer.

OBJECTIVE

We aim to develop Nanoparticles to Interrupt Metastasis Progression (NIMPs) for application in early diagnosis and treatment of OM in NSCLC, to ultimately improve survival and quality of life of cancer patients.

IMPACT

Lung cancer remains the leading cause of cancer-related death (1.6 million deaths/year) and economic burden worldwide. About 85% of lung cancers are NSCLC. The high mortality of NSCLC is attributable to the fact that most tumours are usually detected at advanced stage. In addition, relapse is observed in 22-38% because of the presence of early-disseminated disease, nowadays undetectable and largely untreated.

METASTARG aims for a novel sensitive and specific tool for tumour diagnostic and treatment, to sett an important milestone in the management and prevention of metastatic disease in NSCLC. METASTARG biodegradable NIMPs will be specifically designed for targeting disseminated cancer cells for detection and simultaneous treatment of OM.

The economic benefits of OM detection and therapeutic targeting will come from the ability to reduce the overall budget impact of the late treatment of metastatic and recurrent disease, reducing mortality and triggering long-term improvements in the quality of life for patients. NIMPs could also contribute with costs reduction by eliminating ineffective treatments and reducing the number of hospitalizations that are often related with the evolution of metastatic disease.

CONSORTIUM

The METASTARG consortium consists of 5 partners from 4 European countries comprising 2 research organizations, 1 institution from health sector, and 2 SMEs, all of them with a recognised expertise and high track-record in their specific field of research.