CoMMiTMenT – Fact sheet

Acronym
CoMMiTMenT

Full Title
Combined Molecular Microscopy for Therapy and Personalised Medication in Rare Anaemia Treatments

Programme
Development of imaging technologies for therapeutic interventions in rare diseases

Contract Number
602121

Abstract
The aim of CoMMiTMenT is the development of combined imaging technologies based on optofluidic microscopy and scanning ion conductance microscopy. An integrated, completely simultaneous device named µCOSMOS will be used as a proof-of-principle for therapeutic interventions in rare anaemias. Both techniques rely on molecular detection: optofluidic microscopy relies on molecular biomarkers, and scanning ion conductance microscopy on functional imaging of molecular structures. µCOSMOS allows for the exploration, diagnosis and development of therapeutic interventions for several rare anaemias, including hereditary xerocytosis, overhydrated hereditary stomatocytosis, familial pseudohyperkaliemia, cryohydrocytosis, certain types of spherocytosis, hereditary spherocytosis, sickle cell anaemia, thalassemia and phosphofructokinase deficiency. The non-invasive nature of the combined imaging technologies, which probe the function of molecular effectors, facilitates the testing of medications and their dosage in a personalised manner. For some of the rare anaemias, CoMMiTMenT will provide an initial proof-of-principle, whereas for others, such as sickle cell anaemia, personalised medical interventions should become available and will be tested in clinical practice within the project.
CoMMiTMenT will ensure an effective therapy with diminished undesirable adverse effects, largely replacing splenectomy.
CoMMiTMenT includes clinical partners and builds a strong relationship with the European Network for Rare and Congenital Anaemias (ENERCA). Furthermore, CoMMiTMenT acts as a bridge between the technology-driven SMEs and ENERCA and, as such, supports the competitiveness of Europe in this area. The applications will advance (personalised) treatment of rare anaemias and, therefore, contribute to the goal of the International Rare Diseases Research Consortium (IRDiRC) to deliver novel diagnostic modalities and 200 new therapies for rare diseases by 2020.

Duration
60 months (01/10/2013 – 30/09/2018)

Project Funding
€ 5,999,982.25

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