

ROCKET

Title Systems Medicine based improvement of diagnosis and prediction in kidney transplant patients: Reclassification using OmiCs integration in KidnEy Transplantation

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Project partners



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Start date September 1st, 2018

End date August 31st, 2021

Funding requested 1.294.000 €

Duration 3 years

Abstract

Kidney transplantation is the best therapy for endstage renal failure. The function of kidney transplants is however limited on average to 15 years, due to various injuries like rejection, drug toxicity and infections that damage the transplant over time. Early and reliable diagnosis of these injuries is challenging with the blood tests and transplant biopsies usually carried out. Research over recent years has generated a wealth of molecular data in blood and urine samples from kidney transplant patients to unravel the mechanisms of transplant injury, improve diagnosis and predict outcome. These data obtained with different omics approaches -transcriptomics, proteomics, peptidomics, lipidomics, metabolomics- are very complex and implementation into practical use is still pending. ROCKET will use methods of systems medicine to integrate these biomolecular data sets, together with clinical information and results of transplant biopsies by mathematical modelling. This new approach is expected to refine and improve the accuracy of diagnosing and predicting transplant injuries, a prerequisite for timely therapy.

