

INSPIRATION

Title Qualified open systems pharmacology modeling network of drug-drug-gene-interactions

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Project partners



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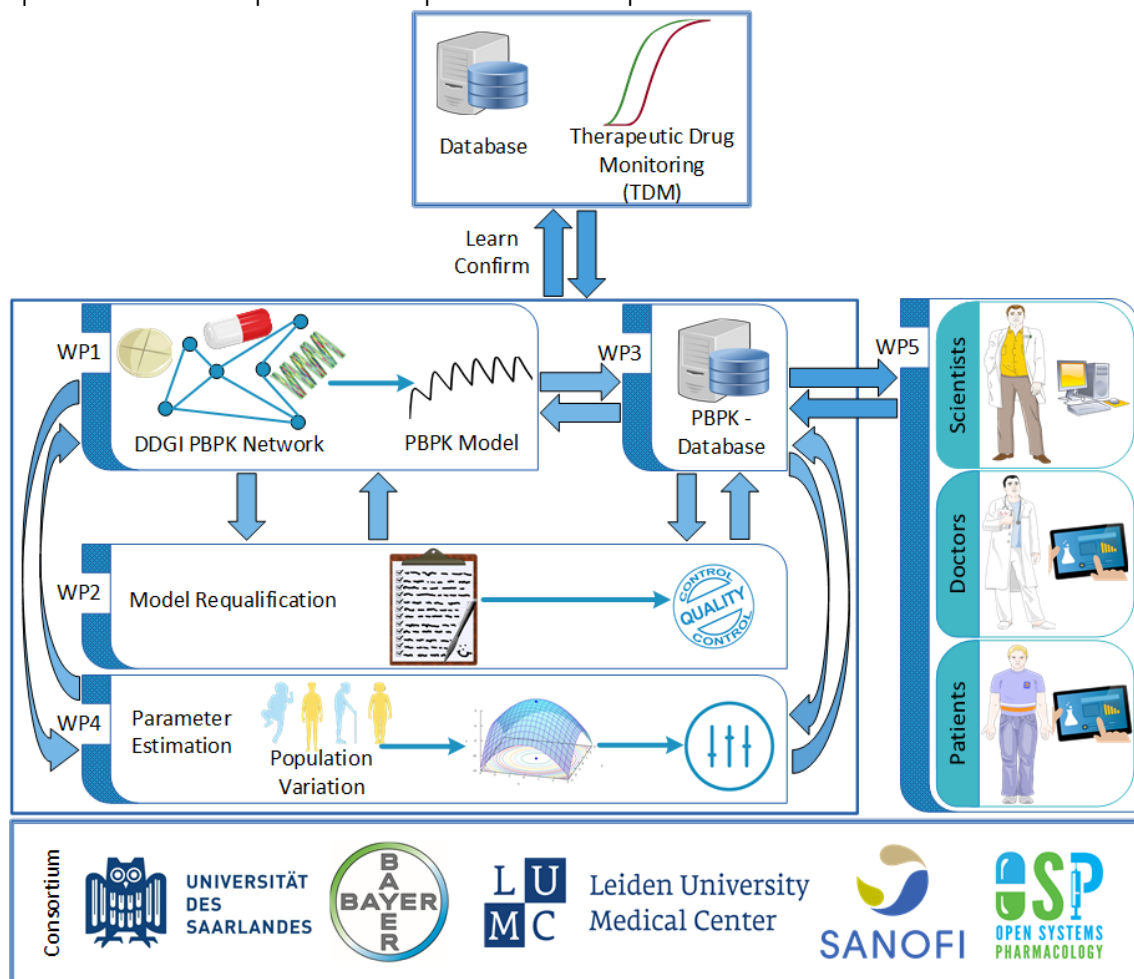
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Funding requested	674.000 €
Duration	3 years

Abstract

Drug-drug (DDI) and drug-gene interactions (DGI) result in decreased efficacy, increased risk for adverse drug reactions and increased healthcare costs. In current clinical practice, DDI and DGI are considered separate entities. However, they are highly interconnected and ignoring drug-drug-gene interactions (DDGI) can be hazardous to the patient.

The ultimate aim of INSPIRATION is to improve the outcomes of drug therapy by establishing clinically applicable DDGI models that can be used to guide drug treatment. The backbone of the project will be whole-body physiologically-based pharmacokinetic (PBPK) modeling. PBPK models of relevant perpetrator and victim drugs will be qualified using literature and existing pharmacokinetic and outcome data collected at Leiden University. All models will be made publicly available, together with a newly established DDGI database. To provide easy access to complex DDGI models to clinicians, a web-based clinical decision support system will be developed, which will allow the upfront assessment of the DDGI potential for an individual patient and the generation of alternative dosing recommendations. The clinical decision support system will be evaluated by clinicians and tested in clinical practice. Afterwards, an adapted tool will be provided to patients to empower them about DDGI.



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