

Hyper-accelerate drug and medical device development

In silico is the term scientists use to describe the modeling, simulation & visualization of biological and medical processes in computers.

InSilicoTrials enables an environment where scientists simulate biological & medical processes in order to predict the safety and efficacy of Drugs and Medical Devices.

PROBLEM

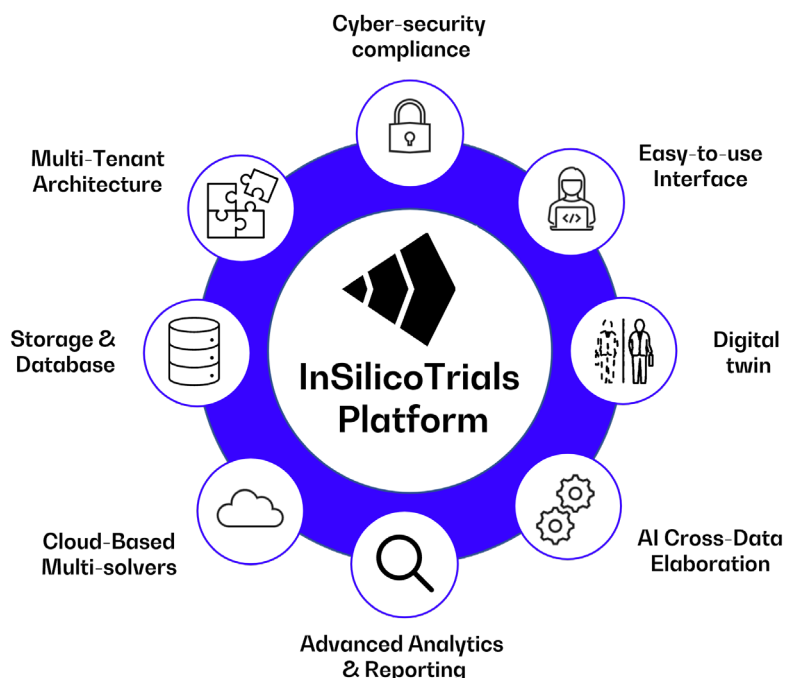
Overall, it takes about \$2.6bn and up to 12 years to bring a new drug to the market and 95% of candidates do not reach the market at all.

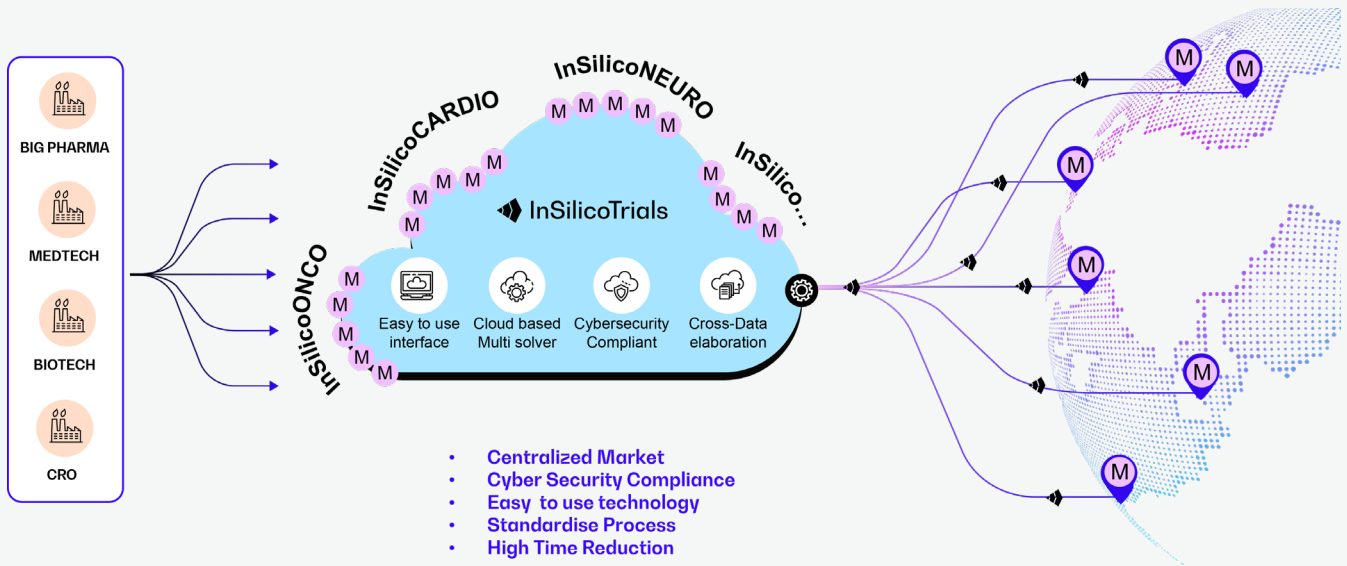
SOLUTION



InSilicoTrials is a cloud-based platform that provides Pharma and MedTech companies with a user-friendly computational modeling and simulation environment where many integrated, easy-to-use in silico tools are readily available.

InSilicoTrials' computational models are developed by internationally recognized universities and research centers and integrated into simplified workflows which the user can access with the highest level of data security in a pay per use mode.



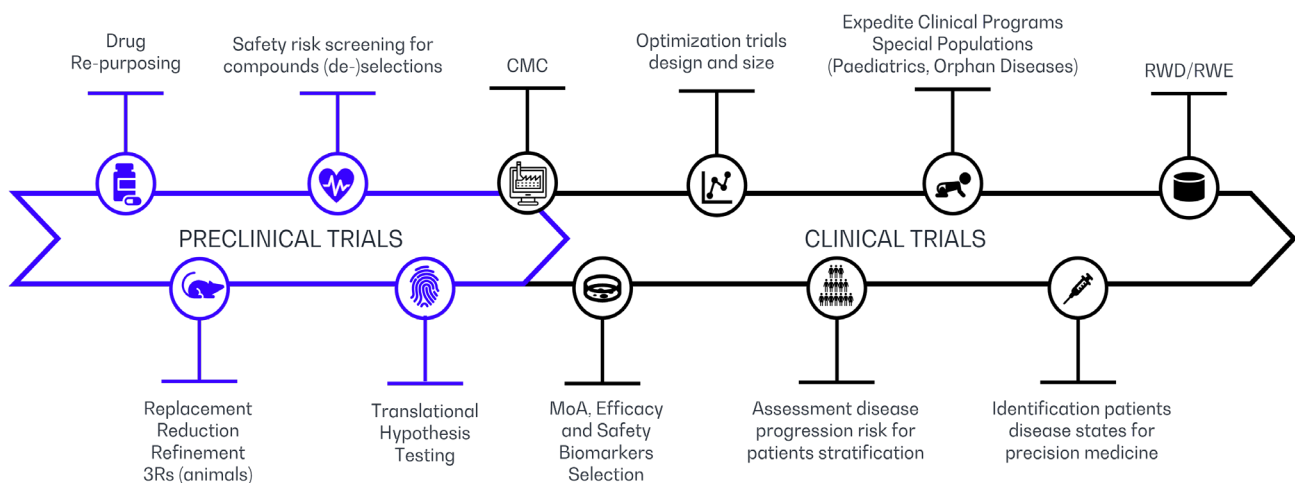


Schematic representation of insilicotrials.com collaborative model

ADVANTAGES

- Access to an ecosystem which integrates research and industry of in silico world
- Generation of in silico evidence for de-risking the development process of drugs and medical devices
- Integration of customers' value proposition with the in silico approach
- Design and optimization of clinical trials

MODEL INFORMED DRUG DEVELOPMENT



Covering the whole drug lifecycle

USE CASES

DRUG DEVICE COMBINATION

Using InSilicoTrials' digital tools, Cipla has been able to virtually test a complex scenario that could not be simulated physically, due to bench testing constraints, before proceeding to human clinical trials. The case involved a drug administered through an intranasal device that InSilicoTrials simulated combined with the drug particles behaviour when sprayed into a human nasal cavity.

ADVANTAGES

- Risk mitigation
- Provide insights on device geometry and drug formulation to improve efficacy of combinational products
- High reduction of R&D costs

DRUG REPURPOSING

A pharma company has approached InSilicoTrials in order to solve a specific drug discovery and repurposing need for four compounds close to patent expire. InSilicoTrials has been able to provide a digital tool which has allowed the company to maximize its value proposition finding the best repurpose for a selection of proprietary small molecules.

ADVANTAGES

- High reduction of R&D costs
- Reduction of drug development time
- Quicker go-to-market

CARDIAC SAFETY

Thanks to InSilicoTrials' QT/TdP Risk Screen digital tool, one of the top 10 pharma companies has been able to screen new molecules.

The tool allows to calculate safety markers and estimate clinical risks for multiple concentrations of a compound against the four most relevant cardiac ion currents. Clinical risks estimations follow CredibleMeds classification.

ADVANTAGES

- Reduction of drug development timeframe
- Up to 99.9% of time saved (1 minute instead of 1 day)
- Cost saving compared to a traditional approach

INTERNATIONAL R&D PROJECTS



BRAINTEASER

Brainteaser is a data science project that seeks to exploit the value of big data, including those related to health, lifestyle habits, and environment, to support patients with amyotrophic lateral sclerosis and multiple sclerosis and their clinicians. By taking advantage of cost-efficient sensors and apps, Brainteaser will integrate large, clinical datasets that host both patient-generated and environmental data. Our role in this project also includes exploitation, or taking scientific research to the industry.



INSILICO WORLD

In Silico World is a project funded by the European Union that involves 14 partner institutions, including us. The aim is to accelerate the uptake of modelling and simulation technologies for the development and regulatory assessment of medicines and medical devices. The project will develop 11 solutions leveraging state-of-the-art computational technologies to treat osteoporosis, tuberculosis, multiple sclerosis, coronary stenosis, cerebral aneurysms, mammary carcinoma, and covid-19 infection.



SIMCARDIOTEST

SimCardioTest is an international project funded by the European Commission (EU H2020) that brings together 10 organizations – we are one of them – from 6 European countries and the United States. Its aim is to provide new insights into designing predictive tools for cardiac pathologies and to accelerate the uptake of computer simulations for testing medicines and medical devices.

ESTABLISHED PARTNERSHIP

