Assessing compounds using an animal free testing strategy

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Introduction

Galapagos is actively engaged to refine, reduce and replace (3Rs) testing involving the use of animals to the greatest possible extent.

- Currently *in vivo* studies remain essential in drug development
- In parallel there is an increasing societal pressure for alternative methods
- Cost of developing and validating alternative methods is high for small pharma companies

To **accelerate an animal free testing strategy** Galapagos has partnered with other stakeholders in the Virtual Human Platform for Safety Assessment

VHP4SAFETY
virtual human platform for safety assessment

The VHP4Safety project is funded by the Netherlands Research Council (NWO) 'Netherlands Research Agenda: Research on Routes by Consortia' (NWA-ORC 1292.19.272).

The Challenge

Reproducibility
Only 25% of published results obtained with animal data can be reproduced

>9 million animals used annually for animal testing in the EU

Human Relevant Scenarios
Current animal testing regimes do not reflect human relevant scenarios such as disease state, life course exposure, and age and gender

Interdisciplinary approach
Integrate data from new in vitro and in silico methods, data sciences making use of innovations in science

Predictive value
Results of animal studies have limited predictive value for human

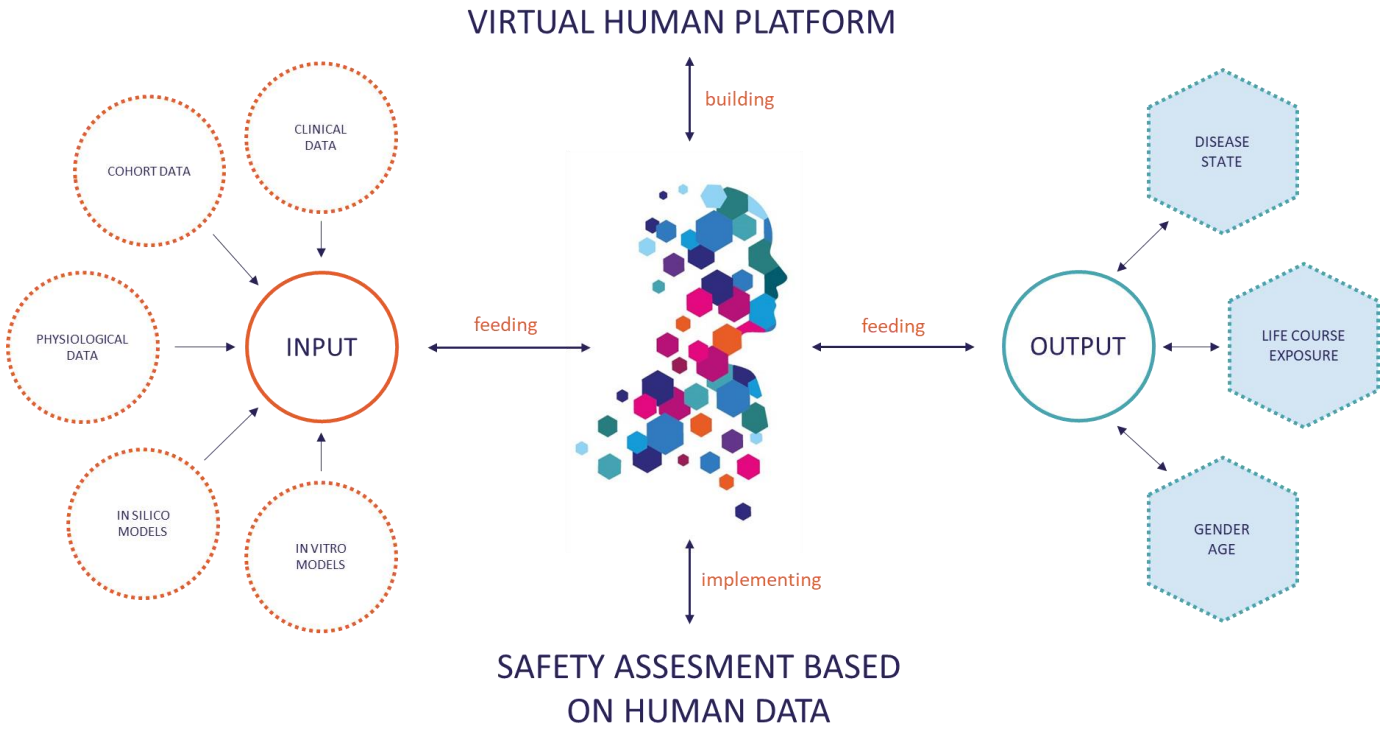
Slow Decrease
In 10-years time, the use of animals decreased only by 22% with current approach of refine, reduce and replace

MISSION

- Improve the identification of the potential harmful effects chemicals and pharmaceuticals on a holistic interdisciplinary definition of human health
- Accelerate the transition from animal-based testing to innovative safety assessment based on human data

Virtual Human Platform

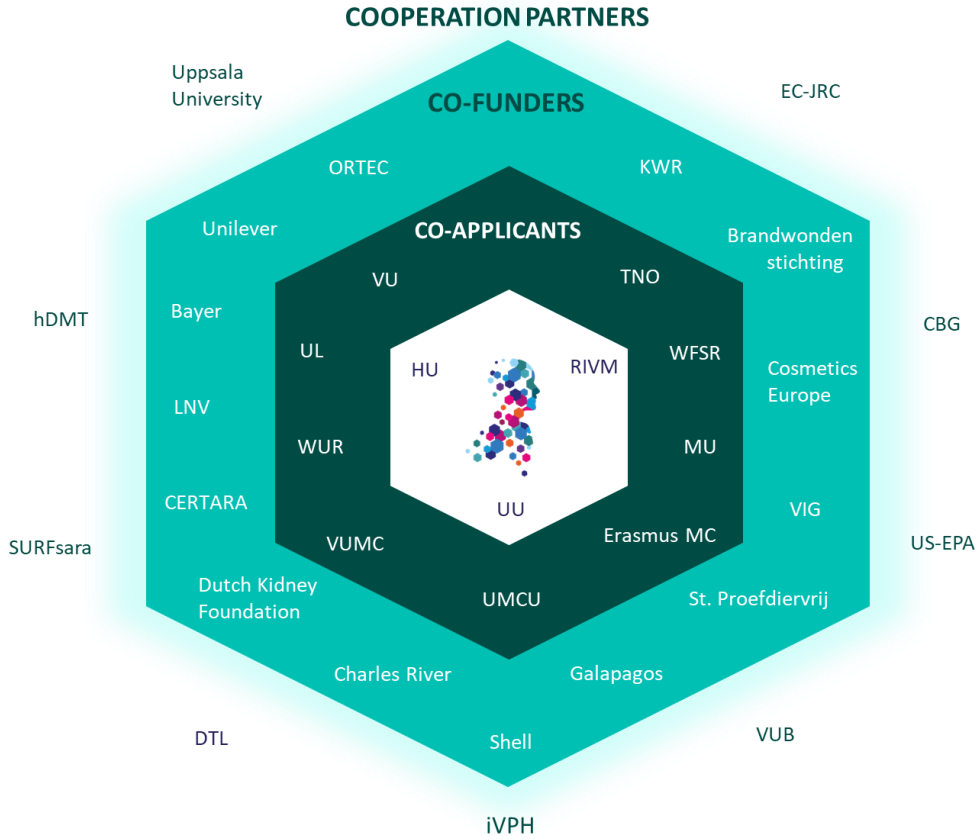
- Three interacting research lines
  - Building
  - Feeding
  - Implementing
- Collaboration between academia, industry, government and societal partners
- Integrating data on human physiology, chemical characteristics and perturbations of biological pathways. Incorporating
  - Human-relevant scenarios,
  - Chemicals from different sectors
  - Different regulatory and stakeholder needs



Virtual Human Platform

- Cloud-based prototype platform

  https://cloud.vhp4safety.nl
- Several in silico models are combined for a better prediction (i.e. PBPK, qAOPs, PCM, QIVIVE, QSAR)
- Data is handled according to FAIR (Findable, Accessible, Interoperable, Reusable) principle
- Collaboration with **ONTOX**, an EU Horizon 2020 funded project on NAMs



Galapagos is proud to be part of this new initiative towards an animal free testing strategy.

Summary

Galapagos is actively engaged to refine, reduce and replace (3Rs) testing involving the use of animals to the greatest possible extent

To **accelerate an animal free testing strategy** Galapagos has partnered with the Virtual Human Platform for Safety Assessment (**VHP4Safety**)

- Improve the prediction on a holistic interdisciplinary definition of human health
- Accelerate the transition based on human data
- Use human relevant scenarios
- Interaction with various stakeholders
- Cloud-based prototype platform: https://cloud.vhp4safety.nl