

Speakers

- A human based technology platform for in vitro pyrogen testing, Koen Marijt **MAT Research**
- AI meets biology: understand patient and preclinical model variability, Roeland Hanemaaijer **TNO Mechpath**
- In vitro safety and efficacy testing of cell therapy, Sabrina de Munnik **Charles River**
- 3D-Organotypic skin cultures for research and screening purposes, Abdoel el Ghalbzouri **LUMC**
- NAMs for safety assessment of novel pharmaceuticals, chemicals and cosmetics, Giel Hendriks **Toxys**



Leiden has all five succes factors for innovation:
 1 Technology 2 society 3 end users 4 infrastructure 5 policy

Why starting at LBSP a knowledge network animal-free innovation?

- New drugtypes and scientific questions
- New technologies and models
- Ethical considerations on animal-use

Is here growing a **TPI**. Leiden?

KNOWLEDGE

MAT

- making devices free of pyrogens
- 'fever in a dish' instead of animals
- diversification
- method and dbase relevant or other tests
- in the end personalized

Mecpath

- failing projects on drug development
- translate in vitro studies
- patient variability (identification biomarkers)
- new targets
- combine pathways with patient groups

Toxys

- black box because of sensitivity and specificity
- use of stem cells as a basis of assays
- cause of damage by genotoxic substances
- study embryo development in cell structures
- Is your assay fit for purpose?

LUMC

- mimic specific situation of skins
- tissue stays 20 weeks
- follow behavior of cancers and drugs

Charles River

- therapy: take T-cells from patient, work on it, bring back into the patient to clear the tumor
- What are requirements from regulators/end users?

ACTIONS

MAT

- increase efficacy of tests on pyrogen
- manage risks on pyrogen with tests
- co-develop product validation
- improve the predictive value

Mecpath

- searching with AI: text mining, in vitro path ways and patient data (2 - 5 groups)
- building infrastructure

Toxys

- making mechanistic in vitro assays for tox tests for human and for environment
- contract research all over the world
- several assays for example cancer and tox test

LUMC

- retrospective studies on what worked and what didn't
- developed 3d skin model
- improve healthy skin like test antibiotics
- replacing eye test
- following healing wounds

Charles River

- turn 3Rs into in vitro assays
- proving T-cell production
- testing with CAR T-cells: what is ideal, what not?
 - co-culture experiments
 - safety testing with CAR T-cells from patients

RELATIONS

Bio Science Park

- diverse networks for ATMPs, TPI, etc.

MAT

- need for animal free tests by ... laboratories
- donors in biorepository (of cells, tissue)

Mecpath

- donors
- patients with life styles

Toxys

- connections with for instance OECD
- industry: looking what failed in the past

LUMC

- several industrial partners/clients, like Beiersdorf
- donors for primary cells

Charles River

- acceptance CAR T-cells by FDA
- patients

Where are cross-linkings? There you find impact!

What are barriers?

- Search for requirements.
- Benchmark new tech towards animal models not ideal.
- Sending living tissue to USA is difficult.

Who are doing the same?

- Several speakers work with donors and patients.
- Broad search for better representing patients.
- Search for better translations, predictions.

What is missing?

- Infrastructure (tissue, data, (regulatory) knowledge).
- Donors in biorepository for instance for primary cells.
- Database with molecules that failed (certain doses).