Research at IVTD aims to improve human health and safety through: the modelling of liver disease; identification of new drug targets and liver disease biomarkers; and the development of in vitro models to facilitate greater accuracy in liver toxicity prediction.

**HIGHLIGHTS**

- Developing industry-ready innovative human stem cell-derived hepatic cell models
- Exploring novel targets in liver disease therapeutics
- Evolving novel gene therapies for the treatment of inborn errors of liver metabolism
- Advancing new analytical methods to identify toxic ingredients
- Providing industry-recognised training in safety assessment, with emphasis on cosmetics within European legislation.

**CONTACT**

Vrije Universiteit Brussel  
Laarbeeklaan 103 – Building G  
1090 Brussels  

Group leader:  
Prof. Dr. Tamara Vanhaecke  
tamaravh@vub.be

Business Developer:  
Dr. Ruani Fernando  
rufernan@vub.be

Visit our website  
IVTD.RESEARCH.VUB.BE
EXPERTISE

IVTD has accumulated over 30 years of internationally recognized expertise in the field of **3R alternative methods** (Refinement, Reduction, Replacement). Within Belgium, IVTD holds a pioneering role in the context of Replacement methodologies.

We have an extensive knowledge portfolio on the creation of *in vitro* liver models. These technologies spearhead the animal-free methods of the future, that find their application in *in vitro* toxicity studies of drugs, chemicals and represent human-relevant liver disease models.

Technical expertise within the IVTD-team includes:

- Human liver-based *in vitro* models
- Adult human skin-derived progenitor cells and their hepatic derivatives
- DILI screening, including steatosis, phospholipidosis and acute liver failure
- Flow cytometry-based high throughput screening of various hepatic cell models, for live/dead cell analysis, lipid and phospholipid accumulation
- Microscopy-based high content analysis for lipid and mitochondrial deregulation analysis
- Genotoxicant-specific qPCR array
- Transcriptomics and metabolomics readouts and analysis.

Research at IVTD seeks to identify and uncover mechanisms of chronic and acute liver injury caused either by drugs, chemicals, or by disease. Our technology supports the development of human-relevant therapeutic strategies.