

VITO Precision Health



Precision Health develops innovative diagnostic technologies and identifies new biomarkers for prevention, personalized medicine and sustainable health. Business Development Manager Tina Smets explains what they can do for companies.

“Briefly put, we develop innovative technology solutions for digital precision health, more specifically testing and developing therapies.. These pave the way for preventive screening and patient stratification, leading to more patient-oriented therapeutic treatment and a reduction in the costs of the healthcare system. To achieve this, we work closely with academic partners, health experts, and the pharmaceutical and biotech industries.

Our activities are focused on three themes: Proteomics, Nanobiotechnology and Digital precision health.

At the Center for Proteomics we conduct protein research based on mass spectrometry, which can be valuable for companies developing vaccines or cancer therapies. In addition, VITO is certified as an Olink service provider, a new and promising platform for measuring proteins in a targeted manner with high reliability and high throughput.

In Nanobiotechnology we focus on biomarker research that provides insights into certain diseases as well as therapy development via the production of tiny vesicles secreted by cells, also

called extracellular vesicles. These vesicles can additionally be utilised as transport modules to carry medication in the body to the desired destination. In addition, we perform (in vitro) testing of inhalable components.. In this way we can support companies that are developing a diagnostic instrument or inhalable medication in their preclinical phase. In addition, through co-development processes, we tailor our assays to our partner’s needs.

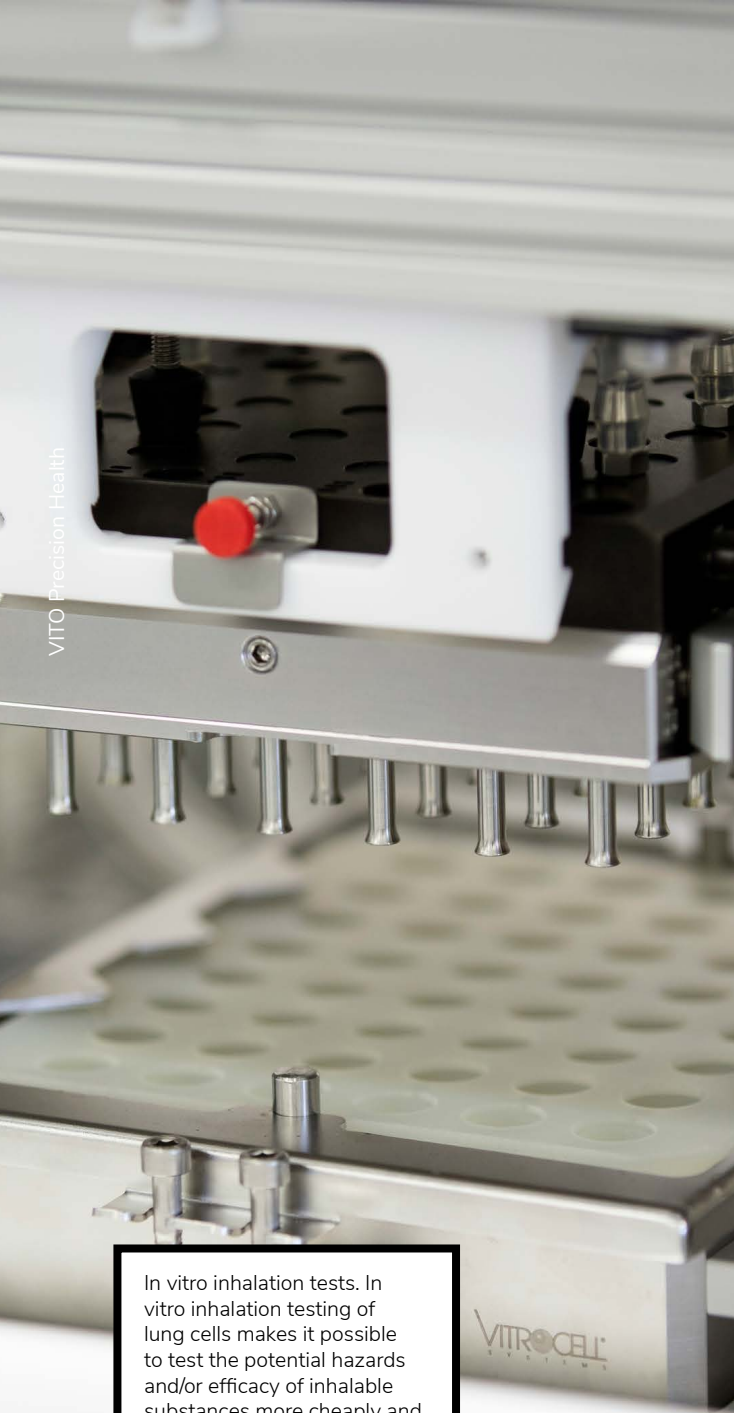
In Digital precision health we use pharmacogenetics and digital twin applications. Pharmacogenetics allows

► We develop innovative technological solutions for prevention, digital precision health and for testing therapies.

Research Group VITO
Active in Health

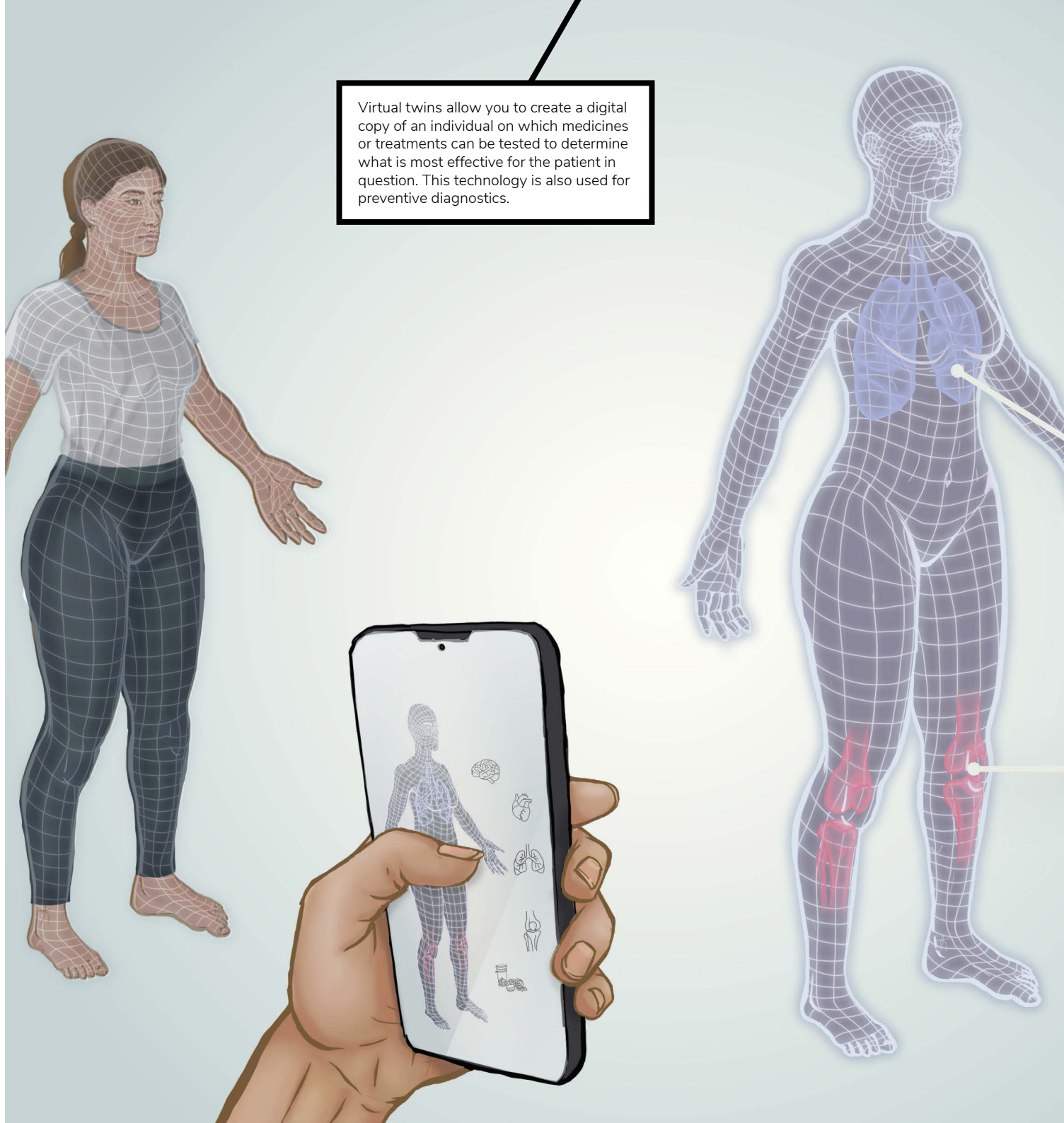
us to tailor medication to the patient, while digital twins allow us to gain more precise medical insights. Finally, we also design tools that support, test or monitor medical AI (‘trustworthy AI’).”

**Would you like to call on the expertise of Precision Health?
Please contact Tina Smets.**



In vitro inhalation tests. In vitro inhalation testing of lung cells makes it possible to test the potential hazards and/or efficacy of inhalable substances more cheaply and efficiently at an early stage.

Virtual twins allow you to create a digital copy of an individual on which medicines or treatments can be tested to determine what is most effective for the patient in question. This technology is also used for preventive diagnostics.



Precision Health is ...

Precision medicine · Preventive health · Pharmacogenomics · Trustworthy medical AI · In vitro inhalation testing · Proteomics · Exosome research · Nanobiotechnology test development · Spatial omics

► For our proteomics request we are extremely happy to collaborate with VITO ensuring good quality experiments and advice.

Quote from OHMX.bio

Research groups and expertise

VITO works in three impact areas: Sustainable resource economy, Climate adaptation and mitigation and Sustainable living. Precision Health is part of the impact area of Sustainable Living and has in-depth expertise in:

Proteomics

UAntwerp and VITO jointly invested in the Center for Proteomics (CfP) with state-of-the-art equipment for protein research (immunopeptidomics and biomarker research) based on mass spectrometry. We recently established the spin-off ImmuneSpec from Proteomics. ImmuneSpec is known for its rapid and reliable identification of immunogenic peptides for developing next-generation vaccines, cancer therapies and protein medicines.

Nanobiotechnologie

This research focuses on sample preparation, biomarker detection and therapy development via extracellular vesicles and nanocarriers on the one hand and in vitro inhalation testing on the other.

Digital precision health

Bioinformatics expertise with applications such as pharmacogenomics and digital twin applications.

Datascience en biostatistiek

Biomedically applied data science, such as, for example, trustworthy AI. This has led, among other things, to the spin-off MONA, for which an innovative, simple and cheap technique was developed for the screening of eye diseases such as diabetic retinopathy and glaucoma.

In addition, our research group has extensive expertise in legislation and regulations regarding medical instruments and in vitro diagnostics, which we also translate into AI applications.

We also have an extensive network made up of academic partners, health experts, the pharmaceutical and biotech industries.

And last but not least, our research group is part of the bigger picture of VITO. The close collaboration between the various VITO research groups also provides added value for external research partners.

Collaboration is possible through ...

Contract research · Co-development · PhDs and Postdocs ·
Master's theses · Providing equipment ·



Contact Precision Health

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Unique features of our equipment

We have a range of highly specialized equipment in each of our research domains. For example, we use state-of-the-art mass spectrometry to identify and detect (panels of) protein biomarkers and have an extensive infrastructure for measurements in lung cells.

For in vitro inhalation testing, we are developing a platform for testing new medical developments and instruments. We focus on innovative systems for exposing lung cells to gases, vapors or airborne particles (such as dry powders), the so-called 'air-liquid interface' exposure method (ALI). In addition, we have ICT with exceptionally strong computing power for processing images among other tasks.

We also make all of our equipment available to companies during their partnership with our research unit.