

LMT-MouseKing Platform

A game-changer in preclinical neuroscience: automated, scalable and ready to transform therapeutic screening.

The LMT-MouseKing Platform comprises advances in development and validation of the high-tech Live Mouse Tracker that analyses treatment effects in exceptional detail and at unprecedented speed with the MouseKing software. Our goal is to partner with organisations committed to transforming drug discovery for rare neurological disorders through innovative, data-driven approaches to discover effective patient therapies.

Situation before

Developing treatments for rare neurodevelopmental diseases remains a major challenge in molecular medicine because, despite advances in genetic discovery, effective personalised therapies have not kept pace. Although these disorders affect over 300 million people collectively, many promising drug candidates fail to deliver effective patient therapies.

AI is now accelerating drug discovery by rapidly identifying potential therapies from large datasets, but this has shifted the main challenge to testing. Current testing methods are slow, expensive, and labor-intensive, creating an urgent need for more scalable, standardised, and efficient testing approaches.



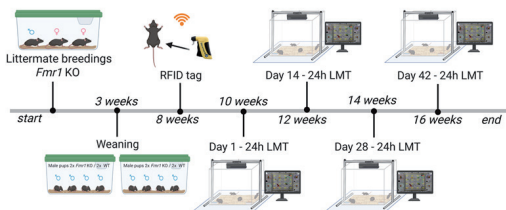
**University
of Antwerp**

Technology

The LMT-MouseKing Platform comprises advances in development and validation of the Live Mouse Tracker (LMT) platform and our in-house MouseKing software.

The LMT system automates behavioral mouse phenotyping by extracting up to 40 traits from individual and group interactions. It has been adapted into a robust preclinical screening pipeline capable of continuously monitoring and analysing complex behaviours, including social interaction, anxiety-like responses, and activity patterns in groups of mice over 24-hour recording periods. By replacing subjective scoring with automated, continuous data collection, the platform can detect even subtle phenotypic changes. This enables rapid and standardised in vivo assessment of drug efficacy.

Complementing the LMT system, the MouseKing software processes and integrates the complex datasets produced by LMT. Together, LMT and MouseKing create the first universal platform capable of testing multiple drug candidates under identical and highly standardised conditions. This innovation reduces variability across experiments and laboratories, enabling direct comparisons of treatment efficacy. Our initial focus is on fragile X syndrome (FXS), a well-characterised neurodevelopmental disorder that still lacks an approved treatment. The platform has since been extended to other neurodevelopmental disorders, such as Helsmoortel-Van der Aa syndrome, broadening its impact and applicability.



For more information

contact valorisatie@uantwerpen.be
or visit our website



About the team



The **Kooy Lab** (Cognitive Genetics Group, Center for Medical Genetics, University of Antwerp) has an established track record in identifying and characterising genes involved in rare neurodevelopmental disorders. The **Bittremieux Lab**, part of the ADReM Data Lab, focuses on the theoretical foundations and applied research of AI and data mining, with a specialisation in biomedical AI.



Partners we search for

- Pharmaceutical and biotech companies can use the platform to quickly screen lead compounds, reducing the cost and time needed to advance candidates toward clinical trials using either built-in or custom mouse models.
- AI-driven drug discovery companies can integrate our comprehensive, high-quality in vivo data to train and refine predictive models, accelerating the path from discovery to treatment.
- Commercial and academic research collaborations in related fields.