Drug Target & Biomarker Discovery

Mapping Disease Driver Genes and Pathways

We have assembled disease-specific datasets to understand the genetic and biological drivers of disease.

- Pseudonymized data
- Multi-omics approach
- Harmonized phenotypes
- Longitudinal data, curated by disease specialists
- Homogeneous populations
- Matched controls

Therapeutic Areas

- Liver Disease
- Cardiovascular
- Neurology & Pain
- Diabetes & Complications
- Respiratory
- Immunology & Rheumatology
- Dermatology
- Ophthalmology
- Oncology

Looking for a specific disease dataset? Ask us

Work together with in-house experts

Leverage a suite of genomic technologies

Partner with responsible data stewards

genuity science™

Parkinson's Disease
Drug Target and Biomarker Discovery

Currently there is no treatment for Parkinson's Disease, only drugs that address symptoms. We aim to gain a better understanding of the disease biology to alter the relentless progression of disability. By assembling a clinical omics dataset of several thousand participants, which includes Whole Genome Sequence (WGS), multi-omic and detailed, longitudinal clinical data, our goal is to discover low frequency, high impact genetic variant that may reveal druggable pathways for treatment or prevention of progression.

Disease Dataset

Parkinson's Disease Participants + 3X Population Controls

Longitudinal Disease Characterization

Genomic Analysis

Whole Genome Sequencing
(incl. CNV and indels)

Multi-omic Analysis

(Source: brain tissue*)

- RNASeq
- DNA Methylation
- Metabolomics
- Proteomics

* Available only for a subset

Disease Features

- Motor symptoms
  - Resting tremor
  - Postural instability
  - Rigidity
  - Bradykinesia
- Non-motor symptoms
  - Sleep disturbance
  - Constipation
  - Dysphagia
- Cognitive and psychiatric features
- Levodopa specific symptoms
- Diagnostic history
  - Age of onset
  - Course of disease progression
  - Family history

Target & Biomarker Discovery

Unlock the deepest insights of this clinical omics dataset by leveraging our tools and in-house expertise

Cohort Analytics	Quality Control Harmonized phenotypes & genotypes	Data Freeze Large, stable and analysis-ready dataset	Cohort Stratification Disease severity subtyping	Association Studies & Pathway Identification Novel loci revealed	Functional Annotation Druggable target prioritization (or identification of new ones)
Ensemble A.I. Pipeline	Data Preprocessing Curation and harmonization	Feature Learning Dimensionality reduction without information loss	Combined Machine and Deep Learning Classification & feature ranking	Probabilistic Programming Driver gene identification via causal inference	Natural Language Processing Biological context confirmation