

## Non-Confidential Company Overview

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#### **Forward looking statement**

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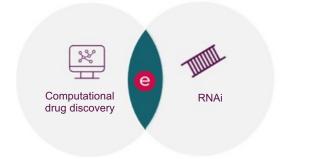
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## **Company Overview**

Driving innovation at the intersection of AI and precision medicine

## **Our mission:**

Integrating computational power and biology to discover life-transforming medicines



Network biology pioneers. Unparalleled ability to model human biology and interrogate its complexity

**Reproducible 100-1000x higher hit rate** 

Computational platform validated experimentally and through partnerships

## **Proprietary RNA interference platform**

**37 FTE** Multi-disciplinary team >300M Data points **SiRNA** Gene silencing platform



## **Experienced Leadership**



Ali Mortazavi Chief Executive Officer



Alan Whitmore Chief Scientific Officer



Alison Gallafent Head of IP



Jonny Wray Chief Technology Officer



Stephanie Maley Chief People Officer



Laura Roca-Alonso Chief Business Officer



Michael Bretherton Acting Interim Chief Financial Officer

#### Board of Directors Ali Mortazavi Chief Executive Officer

#### Professor Trevor Jones CBE

Non-Executive Chairman

#### Michael Bretherton

Non-executive Director CEO Sarossa Plc

#### Scientific Advisory Board Dr Paul Burke Chair, Former CTO, Pfizer

#### **Professor John Mattick**

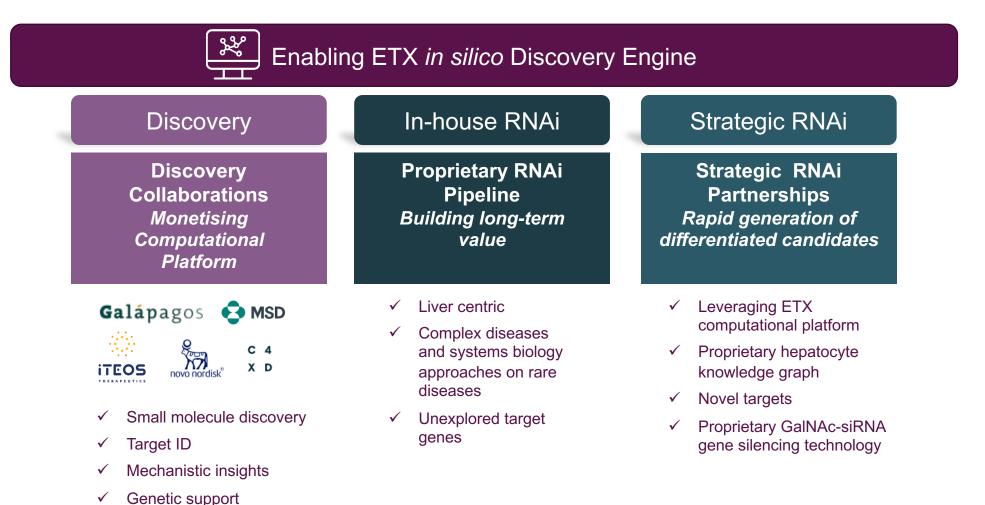
Former CEO, Genomics England Professor RNA Biology, UNSW Sydney

#### **Dr Bill Harte**

Chief Translational Officer Case Western Reserve University

## **Business Model**

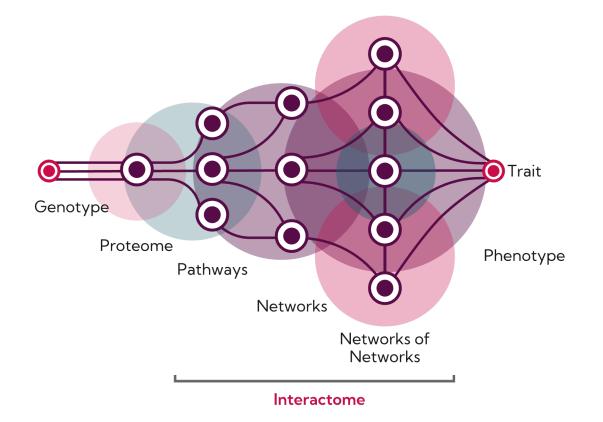
Adaptable, hybrid business model to maximise the impact of our technologies



## **Biological Complexity Remains the Biggest Challenge**

Oversimplification of the genotype-phenotype relationship contributes to drug failures

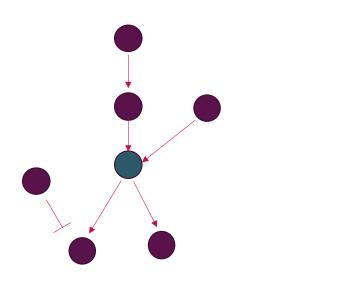
- Phenotype is an emergent
  property of molecular networks
- Molecular networks impart functional robustness to phenotype
- Networks are the mechanistic bridge between genotype and phenotype



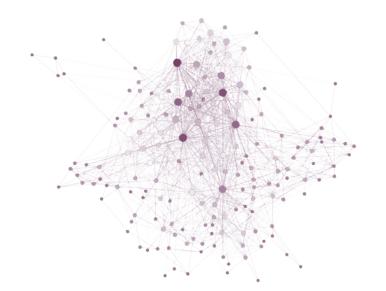
## **Our way of Understanding and Modelling Biology**

Capturing human complexity is key to the discovery of high-confidence drug candidates

Pathway models are too simplistic



**Complexity captured** 



ETX proprietary metrics identify non-obvious as well as known mechanisms and targets. Our models enable superior *in silico* hypothesis generation and testing

Computational biology platform: ETX *in silico* Discovery Engine

## **Network & systems biology – core expertise of ETX**

Network models are constructed and interrogated using ETX proprietary computational methods to provide insights into complex diseases and transform drug discovery

#### Biological complexity remains the big challenge in drug discovery and development. We strive to address it

- Biological functions are controlled by networks of genes and proteins
- Understanding these networks is key to understanding disease
- Millions of network models of disease processes built to ask therapeutic questions
- Ability to test millions of interventions in silico
- Computational outputs feed directly into translatable laboratory assays



Influenza virus replication



Endocytosis





Tunneling nanotube regulation



Lipid metabolism

Fibroblast activation



Angiogenic signaling

Axonal degeneration

Tryptophan catabolism



Telomerase signaling

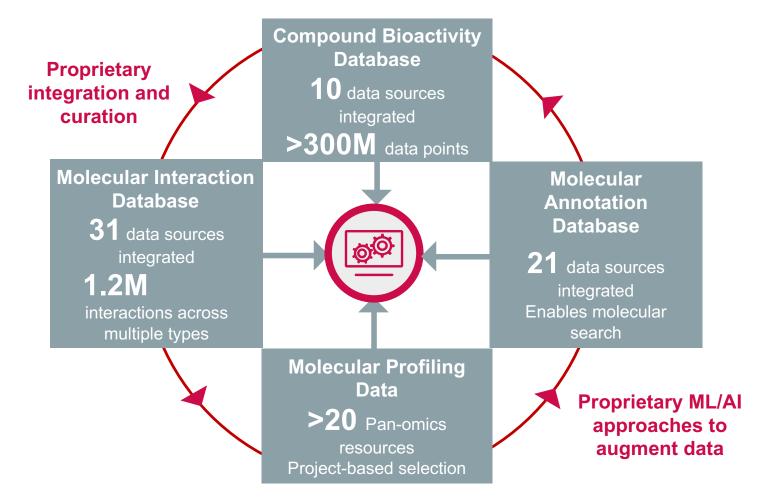
Neuronal autophagy



Immune checkpoint signaling

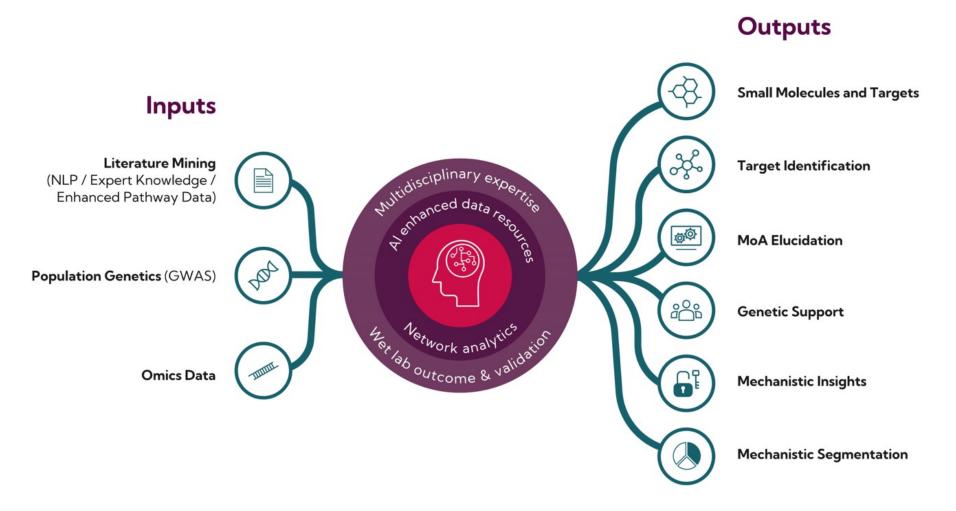


## Solid data foundations to enable unparalleled disease biology modelling and better drug discovery

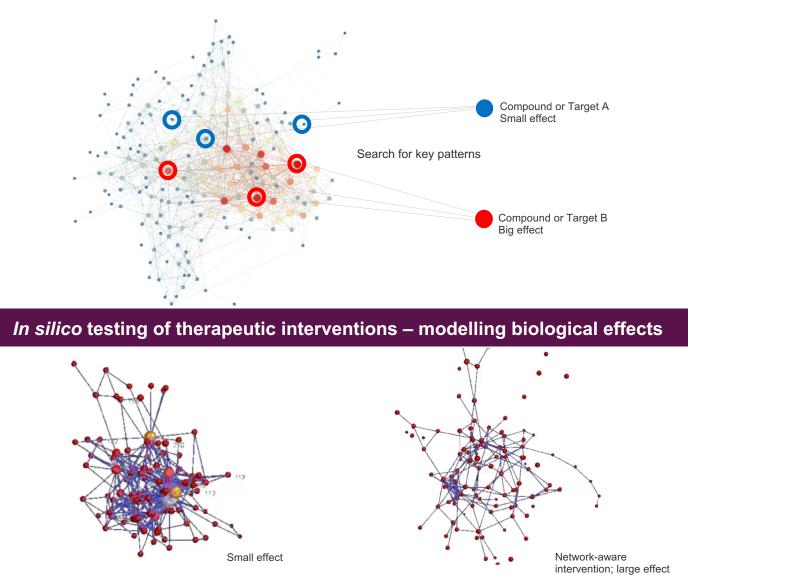


## **ETX** *in silico* **Discovery Engine** – **Inputs & Outputs**

Modular computational platform with multiple applications



## **Network Disruption – Assessing Compound/Target Impact**



# Impact on network integrity

Compound ranking 15M compound Al-enhanced annotated database

Significant impact on network structure and function

> 200-1,000 Compounds selected for screening in relevant, complex assays

Minimal impact on network structure and function

## **Biology First, Higher Hit Rates**

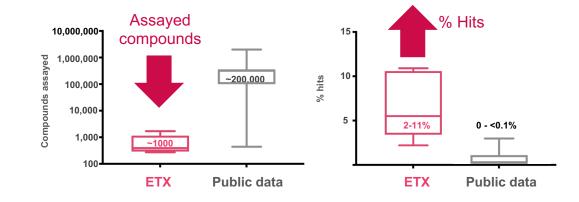
Network models are constructed and interrogated using ETX proprietary computational methods to provide insights into complex diseases and transform drug discovery

	Disease agnostic projects	% 'Hits' confirmed in experimental phenotypic screens
e-therapeutics	Telomerase signalling	4.3%
	Hedgehog pathway	5.5%
	TNFα release	7.3%
	Influenza replication	2.2%
	Tryptophan catabolism	11%
	SIRS	11%
	Axonal degeneration	3.4%
	Reversal of T-cell exhaustion	5%
partners	Type 2 Diabetes	-
		-
	Idiopathic pulmonary fibrosis	-
	Applicable across diverse biology and therapeutic areas	High Bar 'Hit' Confirmed activity <10µM in multiple cell-based assays

biology and therapeutic areas

<10µM in multiple cell-based assays

No cytotoxicity | Structural QC | Initial FTO Good chemotypic diversity



#### Our hit rates are 100-1000x higher than industry standards

- Need to test fewer compounds to find high quality hits
- Improves translatability by enabling use of highly relevant phenotypic assays that better represent human disease at the screening stage
- Our hits are not 'blind' we use our Al-enhanced bioactivity data, network models and other AI-approaches alongside structural information in target deconvolution

## Target ID from population genomics and other omics data

GAINs: Genome Associated Interaction Networks

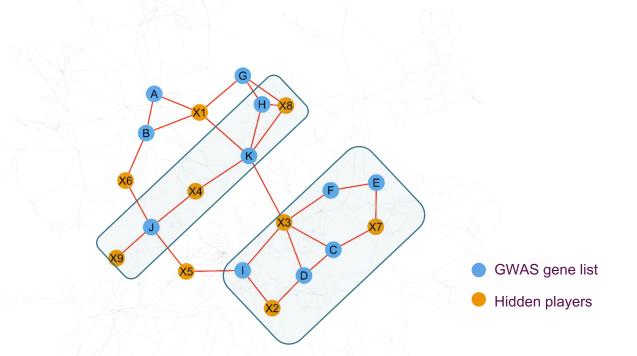
## Scope to identify novel targets beyond genetic variant lists

#### Analytics identify & group pathways that are:

- Important for the structure of the network
- Selective for the network
- Selective for the SNPs-genes
- Are not identifiable from the SNPs alone
- Close in 'network space'
- Likely to contribute to a common process

Proprietary approaches developed to deal with noise, error and bias

Network construction reveals the wider molecular context of the disease-associated proteins



#### Network-aware functional annotation

The Convergence of two Cutting-edge Platforms: Populating our inhouse RNAi Pipeline

## **ETX GalNAc-siRNA Platform Development**

Equivalent performance to leading platforms demonstrated

New proprietary RNAi platform technology for liver gene silencing. Key advantages:

 Enables ETX to selectively silence any gene in hepatocytes



- GalNAc conjugation enables hepatocyte specificity
  and infrequent, subcutaneous administration
- Accelerated generation of new clinical candidates relative to other modalities

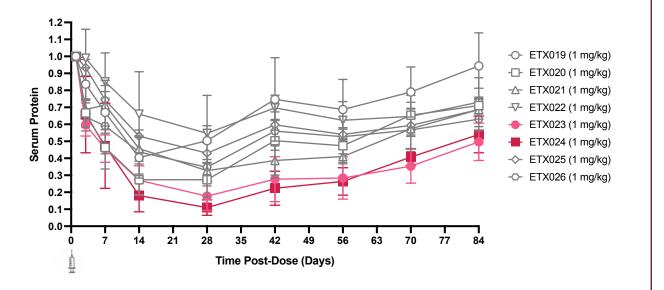
## **Key Aspects:**

- Robust IP position 11 patent applications filed
- Extensive characterisation completed: 8 different construct designs tested across 3 target genes
- High hurdle for performance and safety benchmarking
- Significant in-house molecular design know-how
- Leveraging our **computational target ID capabilities (key differentiator)**. In-house pipeline upcoming

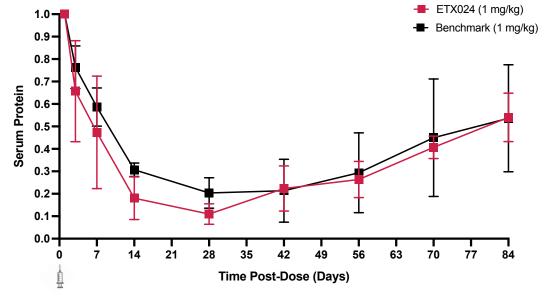
# ETX GalNAc-siRNA Platform Performance: Headline Non-Human Primate (NHP) Results

Summary NHP target Y knock-down data (serum protein)

Different ETX constructs tested – Target Y



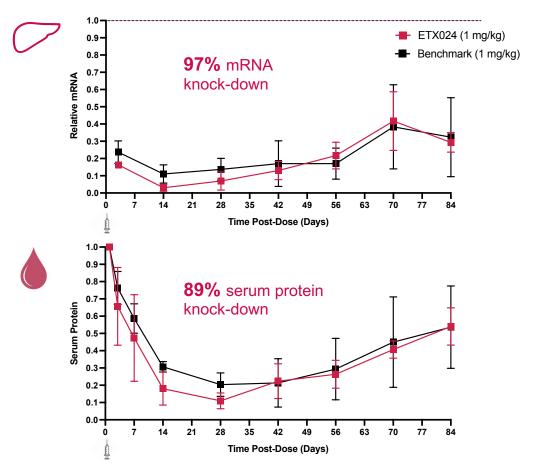
Competitive depth and duration of target knock-down



#### Cynomolgus monkeys, n=3

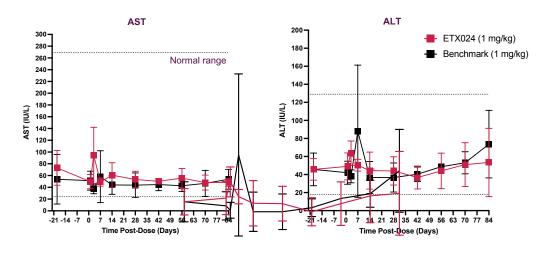
## ETX lead Construct Design Performance and Safety (NHP)

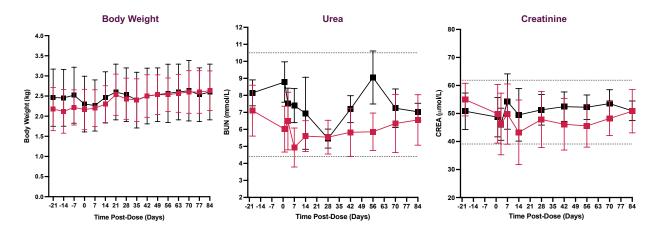
Target Y liver mRNA and serum protein levels show deep and sustainable knock-down for 3 months



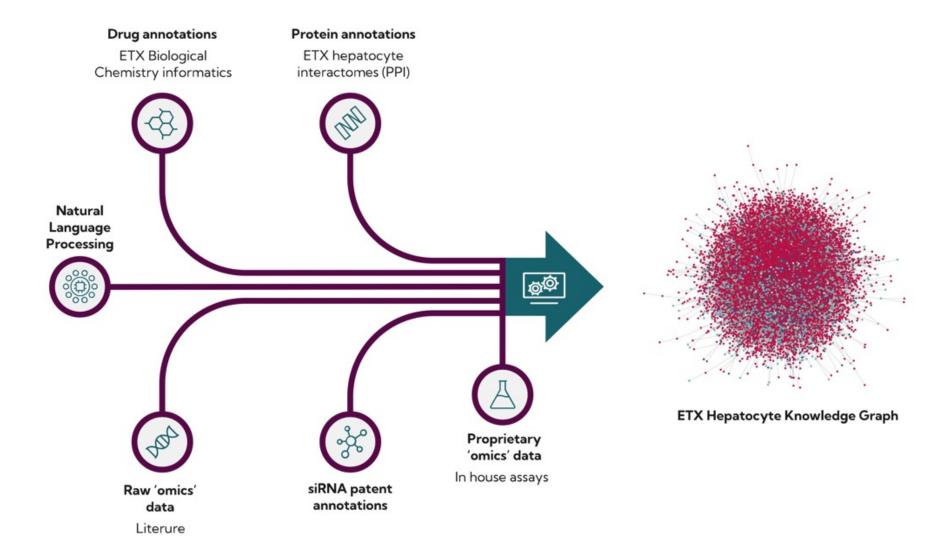
Cynomolgus monkeys, n=3, ALT (alanine aminotransferase), AST (aspartate aminotransferase)

#### Well tolerated in non-human primates



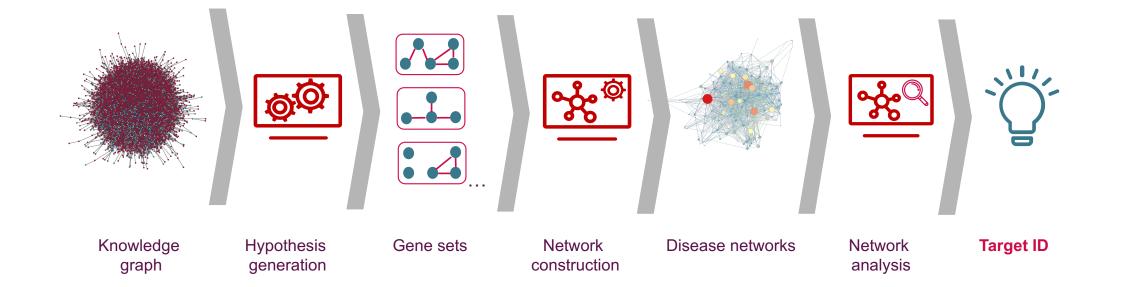


## Hepatocyte-specific\* Data Strategy and Knowledge Graph



Reproducible in other cell types

## **Hepatocyte Target Identification**



Target identification is a key limitation in the field and the competitive landscape is highly overlapping. We leverage our computational platform to identify targets and are uniquely positioned to drive novelty, based on a better understanding of disease biology

## **Recent progress and Next Steps**

#### **Computational Platform:**

- Expansion of target ID capabilities, including mode of action elucidation and target deconvolution capabilities
- Most complete hepatocyte-specific knowledge graph created
- Adaption and application of computational approaches to RNAi discovery
- Continued streamlining via increased automation and cloud computing
- **Galapagos collaboration:** Successfully identified hits (replicated 100-1000x higher hit rate) and 3 further milestone payments received. Scope for further upside throughout development and commercial
- New immuno-oncology collaboration started with iTeos Therapeutics
- **RNAi:** Proprietary GalNAc-siRNA platform technology developed and extensively characterised
  - Equivalent level of target gene knock-down and duration of action demonstrated against leading platforms
  - 11 patent applications filed to protect inventions
  - Ability to inhibit any gene in hepatocytes and rapidly generate drug candidates to prosecute target ideas

#### Next Steps:

- Generate **proprietary omics** hepatocyte data to feed into knowledge graph
- Continued development of **computational platform** for internal use and further collaborations
- Populate in-house **RNAi pipeline** and initiate partnering discussions



## www.etherapeutics.co.uk