Analyst & Investor Event

AI in Drug Discovery &
Interim Results for 6 months ended
30 June 2022

27 September 2022
Disclaimer

Forward-Looking Statements

This document may contain forward-looking statements. Forward-looking statements are statements that are not historical facts and may be identified by words such as "plans", "targets", "aims", "believes", "expects", "anticipates", "intends", "estimates", "will", "may", "should" and similar expressions. Forward-looking statements include statements regarding objectives, goals, strategies, outlook and growth prospects; future plans, events or performance and potential for future growth; economic outlook and industry trends; developments in BenevolentAI’s markets; the impact of regulatory initiatives; and/or the strength of BenevolentAI’s competitors. These forward-looking statements reflect, at the time made, BenevolentAI’s beliefs, intentions and current targets/aims. Forward-looking statements involve risks and uncertainties because they relate to events and depend on circumstances that may or may not occur in the future. The forward-looking statements in this release are based upon various assumptions based on, without limitation, management’s examination of historical operating trends, data contained in BenevolentAI’s records, and third-party data. Although BenevolentAI believes that these assumptions were reasonable when made, these assumptions are inherently subject to significant known and unknown risks, uncertainties, contingencies and other important factors which are difficult or impossible to predict and are beyond BenevolentAI’s control.

Forward-looking statements are not guarantees of future performance and such risks, uncertainties, contingencies and other important factors could cause the actual outcomes and the results of operations, financial condition and liquidity of BenevolentAI or the industry to differ materially from those results expressed or implied by such forward-looking statements. The forward-looking statements speak only as of the date of this release. No representation or warranty is made that any of these forward-looking statements or forecasts will come to pass or that any forecast result will be achieved.
Opening Remarks & Introduction

Joanna Shields, CEO
Clinical-stage AI-enabled drug discovery company

Uniting artificial intelligence with cutting-edge science to decipher complex disease biology and discover novel treatments
The Benevolent Platform™ is scientifically and commercially validated and has already delivered:

- **13** Named Platform-generated drug programmes
- **1** asset in Phase II
- **3** assets in pre-IND
- **+10** Exploratory stage programmes

- Identified a leading COVID-19 treatment that is now FDA approved
- Successful multi-target collaboration with AstraZeneca further validates our approach with a total of **3 novel targets** selected for AstraZeneca’s portfolio
- Well funded with key value inflection points in the near and medium term
Huge burden on society demands a new approach

96% overall failure rate in drug development

$2.6\text{bn} \text{ in average R&D and to market cost per drug}

10 years to market

30-50% efficacy for leading drugs

Gaining a clear understanding of the underlying molecular mechanisms of disease based on the totality of available biomedical data is a vital step in the development of successful and efficacious treatments.
Unprecedented opportunity to fundamentally rethink drug discovery

8.41 petabytes
of data managed by healthcare institutions in 2018, an increase of almost ninefold from 2016

4.5 petabytes
of data deposited to the US National Cancer Institute’s Genomic Data Commons from 2016 to 2017

25 petabytes
of genomic data estimated to be produced annually worldwide by 2030.

The exponential growth in the production and availability of data, combined with advances in AI and machine learning, create the unprecedented opportunity to rethink the drug discovery and development process.
The Benevolent Platform™: a versatile, scalable and proven AI-enabled R&D engine

- Disease-agnostic
- Modality-agnostic
- Enables novel target ID
- Accelerates discovery
- Scalable and repeatable
- Potential to increase probability of success

85+ diverse data sources
About us

$300m in platform investment

Board with deep expertise across AI, drug discovery & development, pharmaceuticals

Listed on EuroNext Amsterdam
April 2022

Cash runway to Q4 2024
providing sufficient capital for key value inflection points

TEAM
as at June 2022

Full molecular biology, medicinal chemistry and in vivo pharmacology capabilities for in-house experimentation

BOARD

Baroness Joanna Shields
CEO & Executive Director

François Nader
Chairman

Susan Liautaud
Non-Executive Director

Olivier Brandicourt
Non-Executive Director

Jean Raby
Non-Executive Director

Jackie Hunter
Non-Executive Director

Nigel Shadbolt
Non-Executive Director

John Orloff
Non-Executive Director
Market Context - AI-enabled drug discovery
*Dr Ivan Griffin, COO*

The BenevolentAI Business Model
*Dr Ivan Griffin, COO*

Our Approach and Technology
*Dr Daniel Neil, CTO*
- Dr Olly Oechsle, whiteboard animation of the Benevolent Platform™

Drug Discovery and Pipeline Review
*Dr Anne Phelan, CSO*
- Professor Tom MacDonald - Immunology, Barts and the London School of Medicine and Dentistry, Queen Mary University of London

Interim Results 2022 - H1 Review & Financials
*Nick Keher, CFO*

Closing remarks & Outlook
*Joanna Shields CEO*

Q&A
Market Context - AI-enabled drug discovery

Dr Ivan Griffin, COO and Co-Founder
AI is becoming a validated approach in Pharma

This progress has been underpinned by three trends - advances in machine learning techniques, greater availability of biomedical data, increase in computational power

Source: RBC Capital Markets; Emerson Insights. Capital includes funds from private investors, VC and corporate investment funds. Company Websites and press releases. Jayatunga et al. Nat Rev Drug Discov 2022: Number of annual R&D programmes and assets over time, showing the growth of AI-enabled drug discovery. Note: Categories are mutually exclusive. Investment includes equity, Partnerships/collaborations and acquisitions.
**The AI value proposition for pharma R&D**

**Increasing Probability of Success**

**Direct R&D Cost Savings**

**Discovery & Pre-Clinical**

"Faster and cost effective"

<table>
<thead>
<tr>
<th>INDUSTRY STANDARD</th>
<th>AI-ENHANCED</th>
</tr>
</thead>
<tbody>
<tr>
<td>$33m over 5.5 years</td>
<td>$15m over 3-3.5 years</td>
</tr>
</tbody>
</table>

Based on industry benchmarks and internal programmes

Reduce pre-clinical cost by >50% and time to market by 2-2.5 years

Note

Lab research and target identification costs and time not captured in industry data - likely to add significantly to the industry standard time and cost

**Clinical Development**

"Get it right more often"

Highest attrition is at Phase II (current 34% success rate)\(^2\)

~50% Phase II/III trial failures due to lack of efficacy\(^3\)

<table>
<thead>
<tr>
<th>INDUSTRY STANDARD</th>
<th>AI-ENHANCED (ILLUSTRATIVE)</th>
</tr>
</thead>
<tbody>
<tr>
<td>PoS from Phase I to Market</td>
<td>12%</td>
</tr>
<tr>
<td># Phase I Candidates Required for 1 Approved Drug</td>
<td>9</td>
</tr>
<tr>
<td>Illustrative NPV(^6)</td>
<td>c$60m</td>
</tr>
</tbody>
</table>

Illustrative 25% PoS improvement at each clinical stage (Phase I-III)

Context

- Phase II trials with pre-selection biomarkers already >50% more likely to succeed\(^4\)
- Industry experts estimate that the use of AI can improve the PoS of each phase by up to 45%\(^5\)

Notes and Sources: For illustrative purposes only; \(^1\) Illustrative NPV for a theoretical $750m peak sales drug during initial 10Y on the market (assumes (i) peak sales reached 5 years post-launch, (ii) 90% gross margin, (iii) 20% S&M expenses, (iv) 20% tax, (v) a 10% discount rate and (vi) excludes any terminal value). \(^2\) Based on Paul et al Nat Rev Drug Discov 2010. \(^3\) Based on Harrison, Nat Rev Drug Discov 2016. \(^4\) Based on Biomedtracker/PharmaIntelligence 2021. \(^5\) Based on Odyssey Due Diligence report.
Categorisation of AI/ML companies in biotech, hit & target-ID

Companies can be characterized across two key dimensions: **Original technology focus** and **drug discovery approach**.

**Target-ID**

**WHAT TARGET DO WE NEED TO HIT TO BE EFFECTIVE AND SAFE IN A SPECIFIC DISEASE (pathways, cellular processes)?**

**HIGH COMPLEXITY THROUGH BIOLOGY**

Many layers of knowledge needed, and many areas where research is not yet complete.

**Hit-ID**

**HOW DO WE NEED TO HIT THE TARGET WE HAVE IDENTIFIED (specific drug characteristics)?**

**HIGH COMPUTATIONAL COMPLEXITY**

Atom-to-atom interaction is relatively well known, but requires many calculations and simulations.

**Hypothesis driven**

Involves a **data-driven hypothesis-led** approach to therapeutic target identification.

**Non hypothesis driven**

Leverages technology to identify solutions **without specific conditions** to target specified at the outset.

**Pharma** companies also active in the space, through **internal development** and/or **collaborations**.

*Figure: Oliver Wyman Analysis (listed companies only)*

*Source: Company Websites, Oliver Wyman Analysis*
BenevolentAI technology approach

Our data foundations integrate the world’s relevant and available biomedical data to surface insights through our tools, improving how scientists discover and develop new therapies.

1. Creating Data Foundations
Integrated knowledge platform built to ingest, represent, and surface insights from large volumes of diverse data types.

2. AI Tools for Scientists
Suite of AI-driven tools and workflows allow scientists to explore data and discover novel, high-quality targets.

85+ Data Sources
46% information proprietary
Principles and benefits of our technology approach

Industry R&D CHALLENGES

- Half of clinical failures due to poor understanding of disease biology/mechanisms
- Siloed disease-specific approach – scientists can’t connect or infer shared mechanisms across diseases
- Single modality data - each with limitations and biases
- Often limited understanding of what drives lab phenotypic effects
- Much of target discovery is serendipitous, not a scalable or repeatable process

BenevolentAI’s APPROACH

1. Biology first
2. Comprehensive data approach
3. Hypothesis driven
4. Software based

Benevolent Platform™

BenevolentAI BENEFITS

- DISEASE-AGNOSTIC
- MODALITY-AGNOSTIC
- ENABLES NOVEL TARGET ID
- ACCELERATES DISCOVERY
- SCALABLE & REPEATABLE
- POTENTIAL TO INCREASE PROBABILITY OF SUCCESS
How BenevolentAI’s approach compares to industry benchmarks

<table>
<thead>
<tr>
<th>Deployment run for chosen disease</th>
<th>Accuracy and Efficiency</th>
<th>Time</th>
<th>Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>Typical proportion of targets identified validated by lab assay</td>
<td>Potential increase in chance of a drug reaching the market vs industry benchmark</td>
<td>Time from target to candidate</td>
<td>Potential time saved relative to industry benchmarks</td>
</tr>
<tr>
<td>23%</td>
<td>&gt;2x (based on 25% increase in PoS at each clinical stage)</td>
<td>2 - 2.5 yrs</td>
<td>At least 2 yrs</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

What that equates to: higher productivity

Number of new INDs filed by year by pharma and biotech companies
Median number of Phase I starts over five years (2015-2020)*

Companies with >20 commercialised products

Companies with 3+ commercialised products

Companies with <3 commercialised products

Note *IND filing rate is based on Phase I trial starts with the company as the lead sponsor. Average adjusted for companies which started clinical development during time period; †Market cap as of 06 September 2022.

Source: clinicaltrials.gov; Company websites: L.E.K. research & analysis

BenevolentAI potential productivity is in line with medium and large companies, but at a fraction of the total cost.

BenevolentAI will aim to increase the number of INDs from its Platform with incremental cost largely from development through to the clinic only.
The BenevolentAI Business Model

Dr Ivan Griffin, COO and Co-Founder
The BenevolentAI business model — leveraging our technology platform to generate new drug IP at scale

**AI-Discovery Tools**

- Target Identification
- Knowledge Graph
- Precision Medicine
- Molecular Design

1. **A** BenevolentAI develop in-house

2. **B** Out-license at IND, end Phase I or end Phase II (upfront, milestones, royalties)

**100% owned in-house pipeline** of novel discovery-stage assets taken to IND

**Pharma Collaborations:**
Selective platform collaborations which can leverage the Platform in areas outside our core competencies

**Non-commercial collaborations (DND\textsc{i}, COVID-19)**

**Decision Criteria:**

- Economic benefits
- Platform validation
- Data generated enriches the Benevolent Platform\textsuperscript{TM}
- ESG
- Platform validation
- Data generated enriches the Benevolent Platform\textsuperscript{TM}
Therapy area and business model rationale

CORE THERAPEUTIC AREAS
- Immunology
- Neurology
- Oncology

Clinical development & commercialisation
Development & out-license at IND, Phase I or Phase II
Out-license prior to Phase I

OTHER CURRENT PIPELINE PROGRAMMES

NON CORE THERAPEUTIC AREAS
- Any indications
- Pharma collaborations
- Non-commercial collaborations
Benevolent Platform™: a validated approach

INTERNAL PIPELINE VALIDATION
Pipeline generated from the Benevolent Platform™
✓ One asset in Phase II, 3 assets in pre-IND and 13 Named Platform-generated drug programmes +10 Exploratory stage programmes

STRATEGIC VALIDATION
Successful delivery on multi-target long-term collaboration

AstraZeneca

CLINICAL & REGULATORY VALIDATION
US FDA DRUG APPROVED
The Benevolent Platform™ successfully discovered an FDA approved treatment for COVID-19

- Chronic kidney disease (CKD)
- Idiopathic pulmonary fibrosis (IPF)
- Heart failure
- Systemic lupus erythematosus

Olumiant Image source: olumiant.com/hcp/rheumatoid-arthritis/dosing
Internal validation: pipeline generated from the Benevolent Platform™

<table>
<thead>
<tr>
<th>Target ID</th>
<th>Hit to Lead</th>
<th>Lead Opt</th>
<th>Preclinical</th>
<th>Phase I</th>
<th>Phase II</th>
<th>Phase III</th>
</tr>
</thead>
<tbody>
<tr>
<td>BEN-2293</td>
<td>Atopic Dermatitis</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>BEN-8744</td>
<td>Ulcerative Colitis</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>BEN-9160</td>
<td>Amyotrophic Lateral Sclerosis</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>BEN-28010</td>
<td>Glioblastoma Multiforme</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Inflammatory Bowel Disease</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Amyotrophic Lateral Sclerosis</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Antiviral</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Oncology</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Oncology</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Nonalcoholic Steatohepatitis</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Oncology</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Parkinson's Disease</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Parkinson's Disease</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Chronic Kidney Disease</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Idiopathic Pulmonary Fibrosis</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Idiopathic Pulmonary Fibrosis</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>+10 Exploratory stage programmes</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**BEN-2293**
- Phase Ib complete, **Phase IIa ongoing**

**BEN-8744**
- Novel target - zero prior linkage to UC
- 2 years from target validation to candidate selection

**Broad disease coverage** given platform

**Balance of risk** between “best in class” and “first in class” drug candidates
Strategic validation: successful collaboration with AstraZeneca

Multi-year Target-ID collaboration is delivering multiple, novel targets for complex diseases with high unmet need

- Separate data environment established to integrate AstraZeneca's data into a bespoke Knowledge Graph
- BenevolentAI and AstraZeneca teams working in close collaboration to explore, identify and validate targets
- Deal structure of upfront license fee, milestone payments and downstream royalties
- Collaboration enables BenevolentAI to enrich its platform via the data generated as part of the collaboration but also further validate the use of our AI platform

KEY MILESTONES

To date, three novel targets have been validated & selected for AstraZeneca's portfolio

- **CKD:** Jan 2021
- **IPF:** Dec 2021
- **IPF:** May 2022

THERAPEUTIC AREAS

INITIAL DEAL (APRIL 2019)

- Chronic kidney disease (CKD)
- Idiopathic pulmonary fibrosis (IPF)

EXPANSION (DEC 2021)

- Heart failure
- Systemic lupus erythematosus
Regulatory validation: identified a COVID-19 treatment now fully approved for use by the FDA

- **NOVEL**: Our technology and AI workflows identified a previously unknown antiviral mechanism\(^{(1)}\)

- **RAPID**: The Benevolent Platform\(^{TM}\) empowered scientists to rapidly formulate a hypothesis in just 48 hours

- **EFFECTIVE**: Baricitinib shown to reduce mortality from COVID-19 in randomised controlled trials: COV-BARRIER trial showed baricitinib reduces mortality by 38\% in hospitalised patients\(^{(2)}\), and by 46\% in ventilated or ECMO patients\(^{(3)}\)

- **FDA** U.S. Food & Drug Administration: FDA approved the use of baricitinib to treat COVID-19 in May 2022\(^{(4)}\) after first granting emergency use authorisation for baricitinib in combination with remdesivir in Nov 2020\(^{(5)}\)

---

Animated Benevolent Platform™ Video
Dr Olly Oechsle, Director of Engineering
The BenevolentAI Approach & our Technology

Dr Daniel Neil, CTO
The Benevolent Platform™: Data Foundations and AI Tools

Our data foundations integrate the world’s relevant and available biomedical data to surface insights through our tools, improving how scientists discover and develop new therapies.

1. Data Foundations
   Integrated knowledge platform built to ingest, represent, and surface insights from large volumes of diverse data types.

2. AI Tools for Scientists
   Suite of AI-driven tools and workflows allow scientists to explore data and discover novel, high-quality targets.
Data Foundations integrate diverse data types

**1. Data Foundations**

**Experiments**
- Assay Data (Binding, Omics Comparison, CRISPR Screens)
- Clinical Trial

**OMICS**
- Genes
- Proteins
- Isoforms
- Transcripts & Variants

**Molecules**
- Organic Compounds
  - Preclinical Candidates
  - Approved Drugs
  - Antibodies
  - Other Biologics
  - Pharmacology
  - Pharmacokinetics

**Data Processing Pipelines**

**Literature**
- Scientific Literature
- Patent Literature
- Regulatory Documents

**Aetiology**
- Diseases
- Symptoms

**Biological Systems**
- Cellular Component
- Molecular Function
- Biological Process
- Mechanism
- Pathways

**Clinical Data**

**Transcriptomics**

**Clinical Databases**

**Literature**

**Extracted & Inferred Data**

**The Data Foundation of Our Platform**

- Integrates 85+ disparate data sources
- A data foundation that is proprietary, and scalable

Natural Language Processing: Named Entity Recognition & Relationship extraction
The BenevolentAI Data Foundations, in numbers

- **Data sources**: 85+
- **Biomedical relationships**: 409m
- **Entity types**: 33
- **Proprietary information**: 46%

### Data Modalities
- Ontology and Dictionary
- Genetics and Clinical
- Experimental
- Literature
- Structured Databases
- Omics-derived

### Data Volume
- Total
- Proprietary

- **Relationships (millions)**:
  - Jun 2021
  - Dec 2021
  - Aug 2022
Data modalities paired with processing pipelines

**Literature processing pipeline**

1. **Automated Download and Ingestion**
   - Reliably bring in fresh, up-to-date scientific literature

2. **Document Normaliser**
   - Standardize and remap the text for further processing

3. **Named Entity Recognition**
   - Identify the key concepts in the text

4. **Relation Extraction Methods**
   - Rule-based Methods
   - ML-based Methods
   - Extract relationships between identified biomedical concepts

5. **Identifier Builder**
   - Ensure consistent entities across the platform

**Precision Medicine genetics processing pipeline**

1. **GWAS Pipeline**
   - Spark-enabled, scalable pipeline to link traits to variants

2. **WES / WGS Pipeline**
   - Spark-enabled, scalable pipeline to link traits to variants

3. **Variant-to-Gene Annotation**
   - Match variants to an associated gene

4. **Representation Harmonisation**
   - Ensure consistent genetic linkage

**EXTRACTED & INFERRED DATA**

1. **Data Foundations**

**DBs**
- **APIs**
- **Files**

**Genetic Summary Stats**
- **Genetic Cohorts**

**Annotation Features**
- (eQTL/pQTL, chromatin, locus features, etc.)
The Benevolent Platform™: Data Foundations and AI Tools

Our data foundations integrate the world's relevant and available biomedical data to surface insights through our tools, improving how scientists discover and develop new therapies.

1. Data Foundations
   Integrated knowledge platform built to ingest, represent, and surface insights from large volumes of diverse data types.

2. AI Tools for Scientists
   Suite of AI-driven tools and workflows allow scientists to explore data and discover novel, high-quality targets.
BenevolentAI’s Target ID workflow and tools

**Prep Phase:** Define disease of interest and scope potential assays.

**Define the Tech Approach, Prediction, and Assessment**
Iteratively formulate a hypothesis for the tools to predict against, alongside the context used to define the disease state, then generate predictions to triage. During triage, scientists review evidence for each target and determine progressibility based on relevance to biology.

**Assay:** Targets sent to a series of mechanistic and disease-relevant assays to assess a target’s potential.

**Target Progressibility Assessment (TPA)**
Assessment on the progressibility potential of the target, chemistry or biologic opportunity, opportunity to differentiate in the field, and safety. Can occur before, during, or after targets are sent to assay.

**Portfolio Entry Preparation:** Evidence from assays, surfaced insights, and analysis combined to form a validation package to evaluate for portfolio entry.
Can we treat ALS by reversing Autophagy impairment in microglia by reducing oxidative stress?

1. Define the Tech Approach
Using our in-house tools and algorithms we explore the data and define the input to our predictive models

Disease Target
Can we treat ALS by reversing Autophagy impairment in microglia by reducing oxidative stress?

Sign
Mechanism

2. Target Prediction
Our AI algorithms, data queries, and endotype-driven workflows identify targets that are likely to address the tech approach.

Graph Models
Transcriptomics Models
Precision Medicine Genetics
Precision Medicine ‘Omics
Data queries
Large Language Model

Aggregation
Prioritization
Targets

3. Triage and Assess Progressibility
Our tools aggregate and present the necessary data for scientific decision-making, progressing only the most promising hypotheses.

4. Validate Experimentally
Targets sent to a series of mechanistic and disease-relevant assays to assess a target’s potential.
Define the tech approach by exploring the data
Triage targets to select only the most promising hypotheses

View from the Triage Tool
Target Progressibility Assessment (TPA): Identify the hypotheses most likely to succeed

View from Target Assessment Tool
Benefits from our technology approach

DISEASE-AGNOSTIC

Enabled by: a focus on breadth of biomedical information and the integration of diverse, wide-ranging data types.

MODALITY-AGNOSTIC

Enabled by: early Target ID tools supporting both small molecule and biologics approaches.

NOVEL TARGET

Enabled by: large volumes of integrated data can surface novel targets never considered before - and spark creativity in scientists.

ACCELERATES DISCOVERY

Enabled by: supporting scientists with aggregated, summarised information and tools to support efficient decisions.

SCALABLE & REPEATABLE

Enabled by: workflows and software foundations designed for scale, run repeatedly for internal deployment and external collaborators.

POTENTIAL TO INCREASE PROBABILITY OF SUCCESS

Enabled by: tools enabling early data-driven decisions to progress only the most promising hypotheses.
Drug Discovery & Pipeline Review

Dr Anne Phelan, CSO
Advanced laboratory capabilities help move programmes faster, and generate data at scale for continuous innovation

**Advanced capabilities and technologies**

- Fully equipped laboratory facilities; Biology, Chemistry, CMC, DMPK.
- Highly experienced scientists across all drug discovery disciplines
- In-house investment in CRISPR, RNA seq and human iPSC capabilities
- Robust and secure data storage capacity
- Access to the Babraham Institute Research facility, with state of the art High Content Imaging and FACs capabilities.
- CROs and academic collaborations complement and extend internal capabilities

**Experimental capabilities enhance entire drug discovery process**

- Mechanism selection, Target identification, target triage and experimental validation
- Refined, model-enabled Design-Make-Test cycle

**Closing the data loop**

- Experimental data from hypothesis validation workflows, portfolio projects and disease relevant expression data are integrated back to further enrich the knowledge graph and our representation of human biology

---

Work progresses rapidly from in-silico to in-vitro experimental test
Dynamic experimental feedback loop between scientists & technologists
## Internal validation: pipeline generated from the Benevolent Platform™

<table>
<thead>
<tr>
<th>Target ID</th>
<th>Hit to Lead</th>
<th>Lead Opt</th>
<th>Preclinical</th>
<th>Phase I</th>
<th>Phase II</th>
<th>Phase III</th>
</tr>
</thead>
<tbody>
<tr>
<td>BEN-2293</td>
<td>Atopic Dermatitis</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>BEN-8744</td>
<td>Ulcerative Colitis</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>BEN-9160</td>
<td>Amyotrophic Lateral Sclerosis</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>BEN-28010</td>
<td>Glioblastoma Multiforme</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Inflammatory Bowel Disease</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Amyotrophic Lateral Sclerosis</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Antiviral</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Oncology</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Oncology</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Nonalcoholic Steatohepatitis</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Oncology</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Parkinson's Disease</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Parkinson's Disease</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Chronic Kidney Disease</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Idiopathic Pulmonary Fibrosis</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Idiopathic Pulmonary Fibrosis</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>+10 Exploratory stage programmes</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Highlights

- All Pipeline programmes generated from the Benevolent Platform™
- Broad therapy area coverage given disease-agnostic approach to date, with future investment to focus on three Therapeutic Indications
- 50/50 mix of Best in class and novel / First in Class indications
- Potential for rapid scaling and expansion into new modalities
BEN-2293 - Atopic Dermatitis (AD)

- Atopic dermatitis is the most common chronic inflammatory skin disease, characterized by intensely itchy, red, and swollen skin\(^1\)
  - Affects **10-20% of children** and up to **3% of adults**\(^2\)
  - Approximately **60-70% of all cases** present with mild-moderate disease severity\(^3\)
  - Prevalence is rising\(^3\), with market value in 7MM forecast to exceed **$14 billion**\(^2,4\)

- Skin inflammation and chronic pruritus associated with atopic dermatitis negatively impact quality of life and psychosocial well-being\(^1\)

- Clear unmet need in **mild to moderate patient** segment for treatment addressing itch and inflammation, without side effects of steroids

**Sources:** (1) Weidinger et al. Nat Rev Dis Primers 2018; (2) GlobalData Report 2018: Atopic Dermatitis: Global Drug Forecast and Market Analysis to 2027; (3) GlobalData Report 2018: Atopic Dermatitis: Epidemiology Forecast to 2027; (4) Evaluate Pharma
BEN-2293 - A potent PanTrk antagonist developed to relieve inflammation and provide rapid itch resolution Atopic Dermatitis

- **BEN-2293** is a PanTrk inhibitor targeting TrkA, B and C receptors. The Trk receptors were identified as part of an effort to find **mediators of both itch and inflammation in AD**. Using our Molecular Design expertise we were able to design a PanTrk inhibitor, equipotent against the 3 receptors.

- **BEN-2293** is expected to **treat atopic dermatitis** by: inhibiting **itch signaling** and blocking nerve sensitization (TrkA) in addition to inhibiting Th1 and Th2-mediated **dermal inflammation** (TrkB, TrkC).

- **BEN-2293** will target **Mild, Moderate and Severe Atopic Dermatitis patients**, addressing unmet need in the treatment of mild to moderate Atopic Dermatitis as a steroid sparing alternative and in more severe patients undergoing treatment with biologics (e.g. dupilumab) that require add-on treatment.

Neurotrophins bind to high affinity receptors (TrkA, B and C), directly activating both inflammation and itch signalling which propagates a cycle of itching and scratching.

Key: Tropomyosin-related kinase (Trk) receptor tyrosine kinase family, namely TrkA, TrkB, and TrkC; Nerve Growth Factor (NGF); Brain Derived Neurotrophic Factor (BDNF); Neurotrophin-3 (NTF-3)/NT3

Image source: Amatu et al. ESMO Open 2016
Atopic Dermatitis – BEN-2293, PanTrk rationale

**TrkA**
- TrkA levels in skin dramatically increase in response to inflammatory stimuli
- NGF produced by AD keratinocytes is a major mediator of cutaneous hyperinnervation
- Increased NGF in the skin sensitizes primary afferents contributing to peripheral itch sensitization and chronic pruritus
- Involved in the inflammatory activation of mast cells and basophils

**TrkB**
- AD skin-resident eosinophils express elevated levels of TrkB (together with TrkA and C) and functionally respond to BDNF
- BDNF/TrkB inhibit eosinophil apoptosis and increase chemotactic index

**TrkC**
- NT3/TrkC potentiates stimulated Th2 T-cell inflammatory responses and synergistically enhances T-cell receptor induced IL-4 production by Th2 cells
- Mast cells within AD skin lesions express high levels of NT3 compared to normal controls

Source: Weidinger et al. Nat Rev Dis Primers 2018
We expect BEN-2293 to provide both symptomatic relief and to reverse disease progression in atopic dermatitis.

- BEN-2293 is highly selective for Trk receptors, with IC50 potencies in the low nM range for TrkA, B, and C.
- BEN-2293 dose dependently inhibits release of inflammatory Th1 and Th2 cytokines TNFα, IFNγ, IL-13, and IL-4 in human peripheral blood mononuclear cells (PBMCs) stimulated with an inflammatory T-cell stimulus (anti-CD3/CD28).
- BEN-2293 inhibits the release of Calcitonin Gene-Related Peptide (CGRP), a mediator of itch, sensory nerve hypersensitisation and neurogenic inflammation, in dorsal root ganglion (DRG) isolated from adult rats and stimulated with NGF.
- BEN-2293 series significantly (p<0.05) reduced mouse ear inflammation following administration of PMA, significantly reducing expression of cytokines IL-1β, IL-4, IL-6, CXCL1, MCP-1, and Tarc.
- BEN-2293 demonstrates excellent tolerability and safety margins in IND/CTA-enabling toxicology studies.

Key: Tropomyosin-related kinase (Trk) receptor tyrosine kinase family, namely TrkA, TrkB, and TrkC; Nerve Growth Factor (NGF); Brain Derived Neurotrophic Factor (BDNF); Neurotrophin-3 (NTF-3)/NT3.
BEN-2293 - Phase Ib safety and tolerability study successfully completed

Phase Ib/IIa double-blind, placebo-controlled, first-in-patient, two-part clinical study

Phase Ib

First-in-human dose escalation

Phase Ib completed Dec 2021
8 Mild-Moderate AD patients (18-65 years) per cohort, randomised 3:1 BEN-2293:Placebo

Safety, Tolerability, PK
- Adaptive multiple ascending dose cohort design
- Includes efficacy endpoints
- MALDI imaging
  - To evaluate human skin PK

Phase Ib: ✔ Successfully completed
Safety and Tolerability arm

Adaptive design for Phase Ib of the clinical study

Phase Ib/IIa double-blind, placebo-controlled, first-in-patient, two-part clinical study

BSA= Body surface area. QD = once per day dosing  BID= twice per day dosing
BEN-2293 - Phase Ib safety and tolerability study successfully completed

Phase Ib/IIa double-blind, placebo-controlled, first-in-patient, two-part clinical study

Phase Ib completed Dec 2021
8 Mild-Moderate AD patients (18-65 years) per cohort, randomised 3:1 BEN-2293:Placebo

Safety, Tolerability, PK
- Adaptive multiple ascending dose cohort design
- Includes efficacy endpoints
- MALDI imaging
  - To evaluate human skin PK

Phase Ib: ✔ Successfully completed
Safety and Tolerability arm

Adaptive design for Phase Ib of the clinical study

Cohort 1
0.25%
QD 7 Days
10% BSA
Tolerated/ PK Supports SM
Not tolerated/ Inadequate SM
Terminates Study

Cohort 2
1%
QD 7 Days
10% BSA
Tolerated/ PK Supports SM
Not tolerated/ Inadequate SM

Cohort 3a
1%
QD 14 Days
30% BSA
Tolerated/ PK Supports SM
Not tolerated/ Inadequate SM

Cohort 3b
0.25%
QD 14 Days
30% BSA
Tolerated/ PK Supports SM
Not tolerated/ Inadequate SM
Terminates Study

Cohort 4a
1%
BID 14 Days
30% BSA
Tolerated/ PK Supports SM
Not tolerated/ Inadequate SM

Cohort 4b
0.25%
BID 14 Days
30% BSA
Tolerated/ PK Supports SM
Not tolerated/ Inadequate SM
Terminates Study

BSA= Body surface area. QD = once per day dosing  BID= twice per day dosing
BEN-2293 - indicative data from Phase Ib
Eczema Area and Severity Index (EASI)

Caveats:
● Phase Ib was **NOT** powered to meaningfully assess efficacy - only 6 patients dosed with active per group
● Maximum duration of dosing 14 days (EASI score changes typically measured at 28 days)
BEN-2293 - Phase IIa progressing
Phase Ib/IIa double-blind, placebo-controlled, first-in-patient, two-part clinical study

**Phase IIa clinical study design**

- **Screening**
- **Wash out**
- **Run in**
- **28d BID dosing over affected skin area**
- **Follow up**

**Baseline assessments**
- Itch and AD score

**Re-baseline or exclude**

**Continuous safety monitoring**

**Study endpoints - itch and AD rating scales**

- **7 day**
  - Wash out from any existing medication
- **3 day**
  - Placebo run in
- **28 day**
  - BID dosing on affected skin up to a maximum of 30% BSA
  - Placebo:Active (1:1), Moderate: Mild patient ratio 70:30, Total of 90 patients (45 active:45 placebo)
- **14 day**
  - Final safety assessment

- **11 active recruiting sites**, 7 in the UK, 4 in Europe. A further 17 sites under final approval
- **Recruitment completion** anticipated 4Q22

Our intention is to partner this asset with a pharmaceutical company that has a focus in dermatology for continued clinical development and, if approved, commercialisation.
BEN-2293 is being developed to address key unmet needs in the treatment of Atopic Dermatitis

**BEN-2293 development is targeting:**

- **Efficacy** against both itch and inflammation, with potential disease modifying effects
- **Improved safety** profile, suitable for chronic use with no irritancy on application

**Positioning:**

- Potential to **displace ineffective and poorly tolerated second line** treatment for chronic use in adults and paediatrics
- Potential use in a subset of **first line patients where rapid itch resolution is key** and
- In the **severe patient population as an adjunct treatment option**
Thomas T MacDonald PhD FMedSci
Professor of Immunology

Barts and the London School of Medicine and Dentistry, QMUL

INTERESTS
Mucosal immunology and inflammation in man
Ulcerative Colitis (UC)

Affects 0.4% US population\(^1\), 1.7 million patients in 7MM\(^1\), forecast $7.8bn market by 2026\(^2\)

- A chronic, lifelong disease that causes inflammation and ulceration of the inner lining of the colon and rectum
- Efficacy - 20-40% of Moderate-severe patients do not respond to anti-TNF (main treatment paradigm)\(^3\)
- Safety - Treatments have many side effects — from steroids to anti-TNF and JAK inhibitors (black box warnings)\(^4\)
- High unmet need for an alternative oral small molecule treatment option with improved safety profile and efficacy in treatment of refractory patients


Experimental Model System: Inflamed colonic mucosa biopsies from UC patients

- Disease phenotype retained with high basal cytokine release
- Readouts: IL6 and IL8 - key mediators of UC pathology
- Efficacy demonstrated with standard of care therapies

Ulcerative Colitis

<table>
<thead>
<tr>
<th>Mild-moderate</th>
<th>Moderate-severe</th>
<th>Severe-fulminant</th>
</tr>
</thead>
<tbody>
<tr>
<td>64%</td>
<td>31%</td>
<td>5%</td>
</tr>
</tbody>
</table>

Culture 24 hrs
- Cytokines in sups
- Store biopsies
- Single cell work
- Western blots
- PCR

Biopsies

Resections

Lamina propria mononuclear cells for in vitro activation

- Short term organ culture of human intestinal mucosa
- Gut is a tissue that is sampled a lot
- Inflamed biopsies do not know that they are not in the gut
Experimental Model System: Inflamed colonic mucosa biopsies from UC patients

- Therapeutic anti-TNF monoclonal antibodies inhibit the spontaneous release of inflammatory cytokines and chemokines in ex vivo cultures of inflamed CD and UC tissue.

Source: Crowe et al 2018
Colon biopsy signatures

Phosphorylation pattern in...

Healthy colon biopsies

Inflamed Crohn’s biopsies
UC and CD biopsies responsive to pharmacological intervention
Can we treat UC by reversing chronic inflammation of the colonic mucosa by targeting pathways in colon epithelial cells and tissue resident immune cells?

1 Biological Question

2 Predictive algorithms ran over the curated knowledge graph to identify potential targets, aggregate findings and present the most relevant ones to DD scientists

3 Target assessment and validation tools presented scientific evidence allowing scientists to evaluate the rational and opportunity for progressibility

- PDE10 has zero linkage to UC in all available biomedical literature

4 Experimental validation

- Endoscopic Biopsy from UC patients
- Colonic mucosa tissue culture and compound treatment
- PDE10 inhibition promoted an anti-inflammatory effect
- Inflammatory cytokine measurement
Transcriptomics data support the rationale for PDE10 as a novel target for UC

- PDE10 regulates signal transduction by hydrolysing cGMP
- PDE10 is significantly upregulated in UC-derived colon and colonic mucosa samples, whilst guanylyl cyclase, which makes cGMP, is down-regulated

Reduced levels of guanylyl cyclase correlate with increased TNF-α in UC colonic mucosa

- cGMP is downregulated in UC and its expression inversely correlates to disease severity
- PDE10 is well-studied in CNS disorders but not in inflammation with zero linkage to UC

PDE10 demonstrates restricted expression in peripheral tissue

- Reduces the safety liability of targeted inhibition

PDE10 degrades cGMP

Differential RNA expression of PDE10A and GUCY2C: normal vs UC

Low basal PDE10 expression, highest levels in brain. Low basal soluble guanylate cyclase (GUCY2C) levels except in colon and sm intestine

Source: (1) Brenna et al. Scand J Gastroenterol 2015
Image (left): Rashed, Second Messenger System 2018
Target validation in colon tissue from ulcerative colitis patients

Inflamed colonic mucosa biopsies from UC patients
- Disease phenotype retained with high basal cytokine release
- Readouts: IL6 and IL8 - key mediators of UC pathology

Tissue samples treated with:
- Target-selective tool compound (BEN-3218)
- Positive controls – prednisolone and tofacitinib

Selective target inhibition showed comparable reduction of IL-6 and IL-8 to the positive controls

Validated as a target with a novel mechanism of action for ulcerative colitis
PDE10 inhibition: potential to normalise dysregulated mechanisms in IBD

- Reduced inflammatory cytokine release from intestinal epithelia via ↓NFκB
- Reduced tissue-resident macrophage activation
- Improved TJ assembly via PKG/PKA-mediated ↓pMLC
- Improved fluid/mucus homeostasis via PKG phosphorylation of intestinal CFTR


Images: Nettleford and Prabhu, Antioxidants 2018 (left); He et al. Int J Mol Sci 2020 (right)
BEN-8744 results and progress to date

**Target Identification**
- Novel target for UC
  - Discovered using Benevolent TargetID tools
  - PDE10 has zero linkage to UC in all available biomedical literature
  - Experimentally validated in ex-vivo UC colon samples from patients refractory to SoC treatment

**Chemistry**
- Rapid and efficient lead optimisation
  - Molecular Design tools enabled rapid and efficient lead optimisation
  - Candidate nominated in Sep ’21
  - Novel, potent, selective, peripherally restricted PDE10. Inhibitor, with low dose prediction
  - Only 2 years from programme initiation

**Clinical Development**
- Developing responder and progression endotypes
  - We will develop responder and progression endotypes, adding molecular descriptors
  - These will inform our trial design, patient selection and further target identification in UC
  - Augmenting a further loop of iteration on an enriched graph

Timeline:
- 2019: Target validation
- 2020: Novel, potent advanced lead molecule developed within 2 years
- 2021: Preclinical
- 2022: Candidate nomination
- 2023: Phase I clinical study
Phosphodiesterase 10 (PDE10) was identified by our TargetID platform as an entirely novel target for the treatment of UC/IBD.

Using our Molecular Design expertise we optimally designed a best in class peripherally restricted PDE10 inhibitor: BEN-8744.

BEN-8744 is expected to provide an efficacious disease modifying oral treatment for UC/IBD.

BEN-8744 will target Moderate and Severe UC/IBD patients, meeting the unmet need left by existing therapies including:

- Patients refractory to anti-TNFs or other biologics
- Improved safety and tolerability profile compared to competitors
- A Precision Medicine approach to target key responder patient cohorts, avoiding the safety risks associated with ineffective therapies.

An opportunity to differentiate on safety, efficacy and a precision medicine approaches

<table>
<thead>
<tr>
<th>Drug</th>
<th>Company</th>
<th>MoA</th>
</tr>
</thead>
<tbody>
<tr>
<td>Zeposia (Ozanimod)</td>
<td>BMS</td>
<td>S1P1 receptor agonist</td>
</tr>
<tr>
<td>Etrasimod</td>
<td>Arena</td>
<td>S1P1 receptor agonist</td>
</tr>
<tr>
<td>Jyseleca (Filgotinib)</td>
<td>Galapagos &amp; Gilead</td>
<td>JAK1 inhibitor</td>
</tr>
<tr>
<td>Rinvoq (Upadacitinib)</td>
<td>Abbvie</td>
<td>JAK1 inhibitor</td>
</tr>
<tr>
<td>TD-1473</td>
<td>Theravance &amp; Janssen</td>
<td>Pan-JAK inhibitor (gut-selective)</td>
</tr>
</tbody>
</table>

Safety

- S1P1 agonists are associated with immunosuppression and anaemia
- JAK inhibitors carry a black box health warning
**Internal Pipeline - continued progress**

<table>
<thead>
<tr>
<th>Target ID</th>
<th>Hit to Lead</th>
<th>Lead Opt</th>
<th>Preclinical</th>
<th>Phase I</th>
<th>Phase II</th>
<th>Phase III</th>
</tr>
</thead>
<tbody>
<tr>
<td>BEN-2293</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>BEN-28010</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>BEN-9160</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>BEN-8744</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Progress in 1H22 - several programmes have progressed through key DD stage gates**

- **GBM - Candidate nominated**, IND-enabling studies to begin
- **2nd ALS asset** - transitioned through to Candidate Seeking
- **2 oncology programmes** - transitioned into Lead Optimisation
- **New portfolio entrant** for Parkinson's Disease
Our Precision Medicine approaches are applied to multiple stages of our pipeline and can support repurposing activities.

Repurposing a target or drug (approved or in development) through the identification of additional disease indications

- Address additional unmet need
- Maximise the value of a target or drug programme

Identifying key patient cohorts and responders for drugs

- Optimise clinical development
- Increase probability of success
- Improve outcomes for patients
**Portfolio key inflection points**

<table>
<thead>
<tr>
<th></th>
<th>H2 2022</th>
<th>2023</th>
<th>2024</th>
</tr>
</thead>
<tbody>
<tr>
<td>BEN-2293 Atopic Dermatitis</td>
<td>Complete Phase IIa clinical study</td>
<td>Full data package available Q1 2023</td>
<td>Phase I data package early 2024, with Phase II to follow shortly after</td>
</tr>
<tr>
<td>BEN-8744 Ulcerative Colitis</td>
<td>File Clinical Trial Application (CTA) late 2022</td>
<td>Begin Phase I study early 2023</td>
<td>Initiate Phase I study</td>
</tr>
<tr>
<td>BEN-28010 Glioblastoma multiforme</td>
<td>Commence iND enabling studies</td>
<td>Submit Clinical Trial Application (CTA)</td>
<td>Aim to progress 1-2 CTA/IND stage drug candidates every year</td>
</tr>
<tr>
<td>Pipeline depth and progression</td>
<td>Move at least 1 project into lead opt &amp; Initiate 2 - 4 new drug discovery programmes</td>
<td>Expect to add 4-6 names drug programmes</td>
<td></td>
</tr>
</tbody>
</table>

**Key Points**
- BEN-2293 Atopic Dermatitis: Full data package available Q1 2023
- BEN-8744 Ulcerative Colitis: File Clinical Trial Application (CTA) late 2022
- BEN-28010 Glioblastoma multiforme: Commence iND enabling studies
- Pipeline depth and progression: Move at least 1 project into lead opt & Initiate 2 - 4 new drug discovery programmes
H1 2022 Highlights

1. Continued progress across in-house pipeline
2. Consistent delivery in collaboration with AstraZeneca - non-commercial collaborations progressing
3. Full FDA approval of COVID-19 treatment first identified by BenevolentAI
4. Continuous enhancement of the Benevolent Platform™
5. Completed Business Combination/listed Amsterdam EuroNext - raised gross proceeds of €225m
6. Strengthened Board of Directors and Leadership
7. Building Business Operations capability for long term success
1H 2022 Financial highlights

Revenue increase across AstraZeneca collaboration, with a milestone reached related to the second novel target for idiopathic pulmonary fibrosis.

DD spend increase driven by portfolio advancing into later stages of development, in particular BEN-2293 entering adaptive Phase I/II clinical study.

P&T spend increase reflecting increased headcount, which is set to plateau.

Bus Ops spend +15%, driven predominantly by listing status but expected to maintain at this level.

<table>
<thead>
<tr>
<th></th>
<th>2022</th>
<th>2021</th>
</tr>
</thead>
<tbody>
<tr>
<td>Revenue</td>
<td>4,843</td>
<td>1,664</td>
</tr>
<tr>
<td>R&amp;D - Drug discovery [&quot;DD&quot;]¹</td>
<td>(19,292)</td>
<td>(12,957)</td>
</tr>
<tr>
<td>R&amp;D - Product &amp; technology [&quot;P&amp;T&quot;]¹</td>
<td>(10,684)</td>
<td>(9,940)</td>
</tr>
<tr>
<td>G&amp;A - Business operations [&quot;Bus Ops&quot;]¹</td>
<td>(8,074)</td>
<td>(7,000)</td>
</tr>
<tr>
<td>Underlying expenses related to share-based payments</td>
<td>(22,145)</td>
<td>(18,343)</td>
</tr>
<tr>
<td>Other income</td>
<td>72</td>
<td>74</td>
</tr>
<tr>
<td>Normalised operating loss</td>
<td>(55,280)</td>
<td>(46,502)</td>
</tr>
<tr>
<td>Normalised EPS (in pence)²</td>
<td>(44.7)</td>
<td>(45.8)</td>
</tr>
<tr>
<td>Weighted average ordinary shares outstanding (in millions)</td>
<td>100.5</td>
<td>89.8</td>
</tr>
</tbody>
</table>

¹) Excludes exceptional costs related to the Business Combination
²) Normalised EPS also excludes taxation impact from exceptional items and finance income related to the Business Combination
Reported loss significantly driven by non-recurring costs of Business Combination.

Non-cash exceptional costs related to acceleration of share based payments also incurred from Business Combination, and set to reduce beyond 2022.

Non-cash listing service expenses reflects cost of share issuance to Odyssey SPAC as part of Business Combination net of assets acquired (before PIPE and backstop)

<table>
<thead>
<tr>
<th></th>
<th>Six months ended 30 June</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>2022</td>
</tr>
<tr>
<td>Reported operating loss</td>
<td>(134,547)</td>
</tr>
<tr>
<td>Adjustments for:</td>
<td></td>
</tr>
<tr>
<td>G&amp;A - Exceptional share-based payment (&quot;SBP&quot;) expenses</td>
<td>2,611</td>
</tr>
<tr>
<td>G&amp;A - Direct Transaction costs</td>
<td>11,255</td>
</tr>
<tr>
<td>G&amp;A - Non-cash listing service expense</td>
<td>65,401</td>
</tr>
<tr>
<td>Normalised¹ group operating loss</td>
<td>(55,280)</td>
</tr>
</tbody>
</table>

¹) Excludes exceptional costs related to the Business Combination
Cashflows focused upon drug and platform development

<table>
<thead>
<tr>
<th></th>
<th>2022</th>
<th>£'000</th>
</tr>
</thead>
<tbody>
<tr>
<td>Normalised¹ operating loss</td>
<td>(55,280)</td>
<td></td>
</tr>
<tr>
<td>Depreciation &amp; amortisation</td>
<td>1,506</td>
<td></td>
</tr>
<tr>
<td>Foreign exchange</td>
<td>(1,589)</td>
<td></td>
</tr>
<tr>
<td>Equity share-based payment</td>
<td>21,913</td>
<td></td>
</tr>
<tr>
<td>Cash flows from changes in working capital</td>
<td>(12,312)</td>
<td></td>
</tr>
<tr>
<td>Cash expended from underlying operating activities</td>
<td>(45,762)</td>
<td></td>
</tr>
<tr>
<td>Opening cash balance</td>
<td>40,553</td>
<td></td>
</tr>
<tr>
<td>Closing cash balance</td>
<td>165,338</td>
<td></td>
</tr>
</tbody>
</table>

£0.3m lab equipment; £0.1m computer; £1.1m property-related leases

£3m charge from Euro holdings, £1.8m gain from operational

Non-Transaction-related equity awards removed from the P&L (no cash impact)

Largely driven by outstanding R&D tax credit receivable (£12m) expected in 2H and other payable decreases

End-June cash position of £165.3m provides ample liquidity to meet multiple key value inflection points

¹) Excludes exceptional costs related to the Business Combination
Cash runway to Q4-2024 providing sufficient capital for key value inflection points

**Cash Runway**

- Cash at 30th June 2022: £165m
- H2 2022 cash spend: £36m-£40m
- BEN-2293 trial costs (c.£15m) fall away in 2023
- Cash runway guidance assumes no future capital from licensing or collaboration agreements
- Multiple assets at or close to key value inflection points and ready for out-licensing

**Capital allocation**

1. Fund Phase I/II trial for BEN-2293 in Atopic Dermatitis (before subsequent out-license)
2. Fund Phase I trial for BEN-8744 in Ulcerative Colitis and commencement of Phase II trial in 2024
3. Prioritisation of clinical spend on target Therapeutic Indications, with 2 Phase I trial starts by 2025
4. Continuous enhancement of the Benevolent Platform™
5. Investment to support listing status and further collaborations
Closing Remarks and Outlook

Joanna Shields, CEO
### BenevolentAI • Investment Highlights

| ✔️ Market leader in AI drug discovery with scientifically and technologically differentiated approach |
| ✔️ Significant platform scale and internal capability |
| ✔️ Rich portfolio of drug programmes all generated from the Benevolent Platform™ |
| ✔️ High-value and successful commercial partnership proving strategic validation |

| ✔️ Robust IP with patents on drug pipeline and copyright and trade secrets on our technology platform |
| ✔️ Flexible business model with revenue opportunities to extend cash runway |
| ✔️ Near and medium-term key value inflection points |
| ✔️ World-renowned Board and experienced leadership team |

*Significant platform scale and internal capability*

*Rich portfolio of drug programmes all generated from the Benevolent Platform™*

*High-value and successful commercial partnership proving strategic validation*

*World-renowned Board and experienced leadership team*
Poised for growth and success

Strengthened financial position enhances our leadership position in AI-enabled drug discovery and enable us to:

✔ **Independently pursue the clinical development** of certain in-house pipeline assets in core therapeutic areas

✔ **Out-license multiple assets** over the next 1-3 years to strengthen our balance sheet and drive long term value creation

✔ **Increase the size of our pipeline** with a healthy balance of new first-in-class and best-in-class assets with 1-2 CTA / IND-stage drug candidates every year

✔ **Sign new collaboration agreements** with pharma companies to leverage our disease agnostic capabilities into therapeutic indications outside our focus areas, to generate incremental revenue

✔ **Maintain our leading position in Target ID** through increased investment in our technology capabilities

✔ **Build out our technology metrics** to exemplify the differentiation of our approach