Forward-looking statements

This presentation does not constitute an offer to sell or a solicitation of offers to buy Ordinary Shares (the “Securities”). Although reasonable care has been taken to ensure that the facts stated in this presentation are accurate and that the opinions expressed are fair and reasonable, the contents of this presentation have not been formally verified by Oxford Biomedica plc (the “Company”) or any other person. Accordingly, no representation or warranty, expressed or implied, is made as to the fairness, accuracy, completeness or correctness of the information and opinions contained in this presentation, and no reliance should be placed on such information or opinions. Further, the information in this presentation is not complete and may be changed. Neither the Company nor any of its respective members, directors, officers or employees nor any other person accepts any liability whatsoever for any loss howsoever arising from any use of such information or opinions or otherwise arising in connection with this presentation.

This presentation may contain forward-looking statements that reflect the Company's current expectations regarding future events, its liquidity and results of operations and its future working capital requirements. Forward-looking statements involve risks and uncertainties. Actual events could differ materially from those projected herein and depend on a number of factors, including the success of the Company's development strategies, the successful and timely completion of clinical studies, securing satisfactory licensing agreements for products, the ability of the Company to obtain additional financing for its operations and the market conditions affecting the availability and terms of such financing.
Oxford Biomedica – Key Highlights

- In the fast growing Cell and Gene therapy sector we are leading the way in lentiviral vectors
  - The first FDA approved lentiviral vector-based gene delivery system through our collaboration with Novartis on Kymriah®

- Multiple partnerships with leading companies:
  - NOVARTIS
  - Bristol Myers Squibb
  - Sio Gene Therapies
  - AstraZeneca
  - Boehringer Ingelheim

- Our CDMO revenues provide a solid growing financial foundation with significant additional upside from our proprietary pipeline

- We are a FTSE 250 leading global lentiviral vector specialist with 18 partner programmes, 6 proprietary products, over 670 staff located at six facilities covering in excess of 200,000 sqft

A Leading Global Lentiviral Vector Specialist
Former FDA Commissioner – Scott Gottlieb (15 January 2019)

“We anticipate that by 2020 we will be receiving more than 200 INDs [in gene and cell therapy products] per year, building upon our total of more than 800 active cell-based or directly administered gene therapy INDs currently on file with the FDA. And by 2025, we predict that the FDA will be approving 10 to 20 cell and gene therapy products a year.”

Clinical trial initiations by vector type **

* New Company estimates as of March 2020 and based on clinical trial data in Journal of Gene Medicine to December 2018 and Company supply and forecast figures. Old forecasts calculated October 2017

** Source: Clinicaltrials.gov
Strategy: Leveraging our LentiVector® delivery platform

LentiVector™

IP: patents and know-how

Facilities

Expertise

Platform

Quality Systems

Arising IP & Technical /Scientific Knowledge Transfer

CDMO

18 Partners’ Programmes

Multiple Revenue Streams

• Process development fees
• Process development incentives
• Bio-processing revenues
• Royalties

Gene Therapeutics

6 Proprietary Products

Out-licence

• Development funding
• Upfront, milestones & royalties

Internal Development

• Wholly owned products

Partners’ Programmes

• CDMO

Proprietary Products

• Gene Therapeutics

Out-licence

• Development funding
• Upfront, milestones & royalties

Internal Development

• Wholly owned products

Partners’ Programmes

• CDMO

Proprietary Products

• Gene Therapeutics

Out-licence

• Development funding
• Upfront, milestones & royalties

Internal Development

• Wholly owned products
Building industry leading know-how in multiple therapeutic areas

Oxford Biomedica is involved at all stages of development for both proprietary and partners’ lentiviral vector based products with a strong IP position

- Large-scale, high-quality vector production to address indications requiring high vector volumes with large patient populations such as for liver and lung diseases
- Efficient and targeted genetic modification of specific cell types enabled by ability to utilise multiple vector surface proteins
- Incorporate latest platform technologies into our own innovative products

Gene modified cell therapies  |  Ocular diseases  |  CNS disorders  |  Liver diseases  |  Respiratory disease
CDMO

Customer-centric

Leading provider of scale up solutions and commercial supply
Juno Therapeutics / BMS Partnership
• In March 2020, the Group signed a $227 million licence and five-year clinical supply agreement with Juno / BMS for initially four CAR-T and TCR-T programmes

Beam Therapeutics
• In August 2020 the Group signed a development, manufacturing and licence agreement with Beam Therapeutics for next generation CAR-T therapies

Building the Future
• All four suites at Oxbox received MHRA approval and were operational by October, one at 200L scale for the Group’s LentiVector® platform partners and three at 1000L scale for the Oxford AstraZeneca vaccine
• Conversion of office space to GMP laboratories at Windrush Court to meet growing commercial development and analytics demand commenced during 2020, with the first labs completed by year end

COVID-19 Vaccine Agreement with AstraZeneca
• In April 2020 the Group joined a Consortium led by the Jenner institute, Oxford University, to rapidly develop, scale up and manufacture a potential candidate for COVID-19
• In May 2020 the Group signed a clinical and commercial supply agreement with AZ for COVID-19 vaccine production
• In September, the Group announced an 18-month supply agreement under a three-year Master Supply and Development Agreement with AZ for large-scale manufacture of AZD1222

In 2020 the number of programmes has grown > 50% from 13 to 20¹
• Oxbox is key to delivering bioprocessing capacity to meet future demand

¹ In March 2021, Sanofi gave notice of their intention to terminate the development of their pre-clinical Factor VIII and Factor IX programmes in Haemophilia A and B, bringing the number of partner programmes down from 20 (at 31 December 2020) to 18.
<table>
<thead>
<tr>
<th>Product</th>
<th>Indication</th>
<th>Pre-Clinical</th>
<th>Phase I</th>
<th>Phase I/II</th>
<th>Phase II</th>
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</table>

1 USAN name is tisagenlecleucel  
2 AXO-Lenti-PD formerly known as OXB-102, which OXB out-licensed to Sio Gene Therapies

*Process development and bioprocessing revenues, and royalties*
<table>
<thead>
<tr>
<th>Product</th>
<th>Indication</th>
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</table>

Note 1: Potential scale up and vaccine manufacturing revenues
Novartis CAR-T partnership

Novartis partnership in place since 2014. 1st commercial supply agreement signed in 2017 and 5 year extension signed Dec 2019 with additional 6th programme added Q1 2020

Clinical and commercial supply of vector

Kymriah® (tisagenlecleucel)/CTL019 and five additional lentiviral vectors for CAR-T programmes

IP licence

Minimum of $75 million in vector manufacturing revenues inc. mid single digit reservation fee

Undisclosed process development fees

OXB receives royalties on sales

News release (05 Sept 2018)
Simon Stevens, Chief Executive NHS England said:
“CAR-T therapy is a true game changer, and NHS cancer patients are now going to be amongst the first in the world to benefit. Today’s approval is proof-positive that, in our 70th year, the NHS is leading from the front on innovative new treatments. This constructive fast-track negotiation also shows how responsible and flexible life sciences companies can succeed - in partnership with the NHS - to make revolutionary treatments available to patients.”

Current status and expectations

- Kymriah® approved for r/r ALL & r/r DLBCL indications in US, EU, JP, AU, CA
- Kymriah® the only CAR-T available in Asia
- In April 2020, FDA granted Regenerative Medicine Advanced Therapy (RMAT) designation to Kymriah®, for an investigational new indication to treat patients with relapsed or refractory (r/r) follicular lymphoma (FL). Novartis expects US regulatory filing for Kymriah® in r/r follicular lymphoma in 2021
- Over 300 qualified treatment centres and 28 countries worldwide have coverage for Kymriah® for at least one indication
- Sales estimate >$1.2bn1 by 2025

1 Global Data Pharma eTrack Product Sales/Analyst consensus, extracted Feb 2020
Juno Therapeutics / BMS CAR-T & TCR-T partnership

Juno Therapeutics / Bristol Myers Squibb agreement signed in Mar-20

Licence to the platform for CAR-T and TCR-T programmes in the field of oncology and other indications

Non-exclusive licence

OXB to receive sales royalties

$10m upfront and potential to receive up to $217m in development, regulatory and sales related milestones

Five-year clinical supply agreement where OXB will receive undisclosed process development and batch revenues

Current status and expectations

- Currently working on four active projects – First licence to TCR-T products
- As part of the agreement Juno / BMS will have access to Oxford Biomedica’s new 84,000 sqft commercial manufacturing centre, Oxbox
- Juno / BMS are able to initiate additional projects in the future
- The Group is eligible to receive up to $86m in development & regulatory related milestones and up to $131m in sales related milestones

Press release (03 Jan 2019)

Giovanni Caforio, M.D., Chairman and Chief Executive Officer of Bristol-Myers Squibb said:

“Together with Celgene, we are creating an innovative biopharma leader, with leading franchises and a deep and broad pipeline that will drive sustainable growth and deliver new options for patients across a range of serious diseases,”
COVID-19 Vaccine partnership

AstraZeneca COVID-19 clinical & commercial supply signed in May-20, extended in Sept-20 for up to 3 years

In Sept-20, signed an 18 month supply agreement under a 3 year master services agreement to GMP manufacture the adenoviral vector based COVID-19 vaccine

Follows 1 year supply agreement signed May 20 for multiple batches at 200L scale

Production will be from up to 3 GMP suites at the new Oxbox manufacturing facility

£15m upfront payment as a capacity reservation fee and potentially in excess of £35m plus certain materials costs for large scale vaccine manufacture at 1000L scale

Timelines and current status

- **April 20**: OXB joined consortium led by the Jenner Institute, Oxford University to rapidly develop, scale and manufacture a potential vaccine for COVID-19, ChAdOx1 nCOV-19. This was licenced in late April to AstraZeneca to enable development, manufacture and distribution of the vaccine globally, vaccine was renamed AZD1222/Vaxzevria
- **May 20**: OXB signs initial 1 year clinical and commercial supply agreement with AstraZeneca at 200L scale
- **June 20**: OXB signs five year agreement with VMIC to enable the rapid manufacture of viral vector based vaccines and provides equipment for two GMP suites in Oxbox to further scale up AZD1222 or other viral vector vaccine candidates
- **September 20**: OXB signs 18 month supply agreement under a 3 year master services agreement with AstraZeneca paying £15million capacity reservation fee and potential additional revenues in excess of £35million, scaling up to 1000L production
- **December 20**: MHRA authorises the Oxford AstraZeneca Vaccine for emergency supply in the UK

Press release (21 May 2020)

**Pascal Soriot, Chief Executive Officer of AstraZeneca said:**

“This pandemic is a global tragedy and it is a challenge for all of humanity. We need to defeat the virus together or it will continue to inflict huge personal suffering and leave long-lasting economic and social scars in every country around the world. We are so proud to be collaborating with Oxford University to turn their ground-breaking work into a medicine that can be produced on a global scale”
Gene Therapeutics

Patient-centric

Leveraging expertise to deliver lentiviral vector based gene therapies
Gene Therapeutics: 2020 Highlights

Sio Gene Therapies (Axovant) Progress

- In January 2020, 12 month data from the first cohort demonstrated a continued favourable safety profile and a 37% improvement in motor function from baseline as assessed by the UPDRS Part III ‘OFF’ score. This followed an improvement of 29% at six months on the same scale.
- In July 2020, Oxford Biomedica signed a three year clinical supply agreement with Sio.
- In October 2020, 6 month data from the second cohort showed a 40% improvement in UPDRS Part III ‘OFF’ score and favourable safety and tolerability profile.

Proprietary in-house product development

- OXB-302 is the Group’s priority candidate and targets haematological tumours with a CAR-T 5T4. Advanced preclinical work is continuing on OXB-302 as the programme moves towards entry into the clinic.
- OXB-203, currently in preclinical studies, is targeting Wet AMD and uses Oxford Biomedica’s technology to deliver a gene to express afibercept. This programme builds on the demonstrated long term gene expression data seen with its predecessor OXB-201.
- The Group is continuing preclinical work on OXB-204 (LCA10) and OXB-103 (ALS) and a new preclinical programme, OXB-401 (liver indication), has been initiated.

Sanofi – Ocular assets

- In June, Sanofi informed the Group that it intended to return the rights for the Stargardt’s and Usher Syndrome programmes. Once returned the Group will undertake its own internal evaluation to decide whether to commit further resources to them.
Gene Therapeutics pipeline

<table>
<thead>
<tr>
<th>Product</th>
<th>Indication</th>
<th>Pre-Clinical</th>
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<td><strong>OXB Partnered Products</strong></td>
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<td>Liver indication</td>
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*SAR4224592 (Stargardt disease) and SAR421869 (Usher syndrome 1B) were out-licensed to Sanofi in 2009. In June 2020, Sanofi informed OXB of its intention to return these programmes

¹ AXO-LENTI-PD formerly known as OXB-102, which OXB out-licensed to Sio Gene Therapies
² Builds on RetinoStat/OXB-201 – Phase I clinical trial in USA (NCT01301443), Campochiaro et al., Lentiviral Vector Gene Transfer of Endostatin/Angiostatin for Macular Degeneration (GEM) Study. Hum Gene Ther. 2017
Pavan Cheruvu, CEO Sio said:

“Axovant, together with our parent company Roivant, remains committed to developing innovative treatments for serious degenerative conditions such as Parkinson’s disease, and we are excited to partner with Oxford Biomedica is a recognised global leader in cell and gene therapy. OXB-102 is potentially a best-in-class gene therapy with the potential to transform Parkinson’s disease treatment. This is an area of significant unmet medical need and a major market opportunity. Advancing this high-quality candidate is a key priority for the team at Axovant and we very much look forward to working with Oxford Biomedica.”

Current status and expectations

- In January 2020, Sio reported twelve month data from first cohort in the ongoing dose-escalation study
- In July 2020, Oxford Biomedica signed a three year clinical supply agreement with Sio
- In October 2020, Sio announced positive six-month follow up data from cohort two of the study, with a 40% improvement in UPDRS Part III “OFF” score from baseline and favorable safety and tolerability profile
- Sio plans to move to the third higher dose cohort in the study after which it expects to initiate the randomised, sham-controlled part of the SUNRISE-PD Phase 2 study in 2022
- Sales of products to treat Parkinson’s disease in the 7 major markets reached $3.1bn in 2016 and is forecast to reach $8.4bn by 2026¹

¹ Parkinson’s Disease: Global Forecast and Market Analysis to 2026, Published Global Data Feb 2020
Platform

Innovation-centric

Driving industrialisation of Lentiviral vectors
Building the future

- Following signing of a lease in 2019 on the new Windrush Innovation Centre signed in 2019 occupation of the facility continues to increase. Post the capital raise in June 2020 plans for the further expansion and refurbishment of the laboratories at this site have commenced

Platform Innovation partnership with Microsoft progressing well

- AI collaboration to improve cell and gene therapy manufacturing – yield and quality of next generation gene therapy vectors
- Machine learning and cloud computing will be applied to the large datasets generated during process development, analysis and manufacture

In House Innovation

- The Group’s continuous improvement programme focuses on developing, refining and enhancing its technology, expanding its IP portfolio
- Examples include the TRiPSystem™, LentiStable™ SecNuc™ and U1/U2 as well as other innovations being developed to enable further scalable cost efficient manufacturing
- Ongoing investment in high-throughput automation and robotics is streamlining production, reducing costs and enabling faster screening and analytical testing

Industrialisation of Lentiviral vectors

- Oxford Biomedica is driving the industrialisation of lentiviral vectors through innovation
Proprietary platform innovation

Maximising data integration and analysis

Analytical dev. to characterise vectors (purity) and achieve rapid batch release

Next generation vectors: Regulated/optimal expression, targeting

Therapeutic vectors with tailored attributes

Cell and vector engineering to increase bioprocessing yield

Packaging and producer cell lines

AI and machine learning

Automation

Proteomics/transcriptomics

U1 & U2 – increase productivity & quality - patents filed

Large scale bioprocessing: Increase yield and improve purity

Microsoft

Synthace

TRIP System

SecNuc

LentiStable™
FY 2020 Financial Highlights

- Total revenues increased by 37% to £87.7 million (2019: Revenue of £64.1 million)
- Continued strong growth was seen in bioprocessing and commercial development, where revenues increased by 45% to £68.5 million (2019: £47.3 million) driven by new customers AstraZeneca, Beam Therapeutics and Juno/BMS
- Revenues from licences, milestones & royalties increased to £19.2 million (2019: £16.8 million) aided by the £7.8 million ($10 million) licence fee from Juno/BMS
- Operating EBITDA\(^1\) profit and operating loss of £7.3 million and £5.7 million respectively (2019 losses of: £5.2 million and £14.5 million respectively)
- Cash at 31 December 2020 was £46.7 million (31 December 2019: £16.2 million). Placing of £38.35 million net in June 2020. Cash at 31 March 2021 was £65.9 million

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\(^1\) Operating EBITDA = Earnings Before Interest, Tax, Depreciation, Amortisation, revaluation of investments and assets at fair value through profit & loss, and Share Based Payments
Potential newsflow 2021

Partner Programmes / CDMO

• The Group aims to further increase the number of partner programmes during the year, both through expansion of existing partnerships and new partnership agreements

• Potential extension of the current 18 month manufacturing agreement with AstraZeneca

• Newsflow potentially arising from progress of partner programmes

Proprietary Pipeline

• Progress internal candidates into our portfolio and towards the clinic

• Update on new potential pipeline targets

• Further updates from Sio Gene Therapies on the progress of AXO-Lenti-PD in the SUNRISE-PD clinical study
Positive outlook for 2021

- The Group expects an increase in underlying LentiVector® platform based revenues in 2021 from both bioprocessing and commercial development activities

- Subject to the continued manufacture of the vaccine, the Group expects total cumulative revenues from this programme to be in excess of the £50 million by the end of 2021, leading to another year of strong revenue growth for the Group as a whole

- The Group also expects EBITDA to increase in 2021, albeit at a more modest rate than revenues due to increased R&D spend as we invest for the future

- Headcount is also likely to increase but by lower levels than seen in 2020

- Capex for 2021 will be above 2020 levels due to the expansion being undertaken at both Windrush Court and Windrush Innovation Centre

- With the Group’s ever increasing number of partner programmes and continued broader market growth, the Group is well positioned to maximise the opportunities ahead
In the fast growing Cell and Gene therapy sector we are leading the way in lentiviral vectors

- The first FDA approved lentiviral vector-based gene delivery system through our collaboration with Novartis on Kymriah®

Multiple partnerships with leading companies:

- Our CDMO revenues provide a solid growing financial foundation with significant additional upside from our proprietary pipeline

- We are a FTSE 250 leading global lentiviral vector specialist with 18 partner programmes, 6 proprietary products, over 670 staff located at six facilities covering in excess of 200,000 sqft
Contact Us

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Stuart Paynter  Chief Financial Officer
Catherine Isted  Head of Corporate Development & IR

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Corporate and market information

Company Facts

- IPO on Main list LSE in April 2001 (OXB.L)
- FTSE250 Constituent from 22 June 2020
- £310 million (approx. $388 million) raised to date
- At 30 April 2021
  - Share price £10.92 ($15.14)
  - Market cap: £900 million / $1,248 million

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<th>Major/significant Shareholders (1)</th>
<th>Share</th>
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<td>Mr Shah</td>
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<td>Novartis</td>
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<tr>
<td>Others</td>
<td>52.0%</td>
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</table>

1 As of 15 April 2021
Building the future – capacity expansion to 226,000 sqft

**Current**

- **WINDRUSH COURT**
  - State of the art laboratories
- **HARROW HOUSE & CHANCERY GATE**
  - FDA and MHRA approved facilities
- **YARNTON**
  - FDA & MHRA approved GMP manufacturing facility

**Future**

- **OXBOX** (2020)
  - 4x cGMP production (MHRA Approved) & 2x filling construction completed
- **WINDRUSH INNOVATION CENTRE** (2019-21)
  - Research laboratories expansion

110,000 sqft + 84,000 sqft* + 32,000 sqft

* Initial phase 45,000 sqft, option to expand into 39,000 sqft fallow area as needed
Differentiation of lentiviral vectors

Lentiviral vectors have key attributes that make them the vector of choice for *ex vivo* targets and selected *in vivo* targets

<table>
<thead>
<tr>
<th>Lentiviral vectors vs. AAV vectors</th>
<th>Lentiviral Vectors</th>
<th>AAV Vectors</th>
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</thead>
<tbody>
<tr>
<td><strong>Lentiviral Vectors</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Efficient <em>in vivo</em> gene delivery</td>
<td>✔✔✔✔️</td>
<td>✔✔✔✔️</td>
</tr>
<tr>
<td>• Safe and well tolerated</td>
<td>✔✔✔✔️</td>
<td>✔✔✔✔️</td>
</tr>
<tr>
<td>• Large therapeutic payload</td>
<td>✔✔✔✔</td>
<td>✔</td>
</tr>
<tr>
<td>• No pre-existing immunity</td>
<td>✔✔✔✔</td>
<td>✔</td>
</tr>
<tr>
<td>• Permanent modification of dividing cells</td>
<td>✔✔✔</td>
<td>✔</td>
</tr>
<tr>
<td>• IP protection</td>
<td>✔✔</td>
<td>✔</td>
</tr>
<tr>
<td>• Ease of manufacture</td>
<td>✔</td>
<td>✔✔</td>
</tr>
</tbody>
</table>

### In vivo & ex vivo development

- Direct administration *in vivo* of lentiviral vectors to target organs such as the eye, brain, liver and lung
- Administration *ex vivo* to target stem cells, T-cells and other cell types to target cancer and other diseases
Lentiviral Vector Market Overview

NUMBER OF LENTI TRIALS INITIATED EACH YEAR, BY THERAPEUTIC AREA

- **Oncology** indications dominate clinical trials using lentiviral vectors.

**Notes:**

- **Immunology** indications include SCID, Sclerdoma, Chronic Granulomatous Disease, SLE, and Wiskott-Aldrich Syndrome; **Haematology** indications include beta Thalassaemia, Haemophilia and Sickle Disease; **Genetic disorders** include Adrenoleukodystrophy, Fabry Disease, Fanconi Anaemia, Gaucher Disease, Mucopolysaccharidosis, Netherton Syndrome Lysosomal Storage Diseases and Recessive Dystrophic Epidermolysis Bullosa; and **Infectious diseases** includes EBV.

- Data includes all phases of trials although not all Phase I trial initiations will be reported to clinicaltrials.gov, although this under reading will be consistent across years and indications.

Source: clinicaltrials.gov
Boehringer Ingelheim Agreement

Apr-21 Signed 3 year Development and Supply Agreement, following earlier partnership agreement signed Aug-18

3 Yr Development and Supply agreement with BI for manufacture and supply of various types of viral vectors

OXB to GMP manufacture and supply viral vector products in the future

No financial terms disclosed

Follows agreement signed Aug 18 with BI / UK CFGCT / Imperial innovations for lentiviral vector technology to manufacture, register & commercialise a lentiviral gene therapy for treatment of CF

Current status and expectations

• The Group intends to manufacture GMP batches for BI to support the development of viral vectors
• Currently the CF gene therapy product is in pre-clinical development
• Sales of products to treat Cystic Fibrosis in the 7 major markets reached $2.2bn in 2015 and is forecast to reach $8.6bn by 2025

Dr Clive Wood, Senior Corporate Vice President Discovery Research said:

“Through this collaboration, we are joining forces with some of the top talents in this disease space to propel treatment advances forward. Bringing together our existing expertise as a leader for nearly a century in the discovery and development of therapies that have advanced patient care in respiratory diseases with the gene therapy knowledge of our partners, we aim to unlock unprecedented opportunities for patients with this devastating disease, who are desperately waiting for better treatment options”

1 OpportunityAnalyzer: Cystic Fibrosis. Opportunity Analysis and Forecast to 2025. Published by Global Data April 2017
Significant clinical experience with lentiviral based products

OXB’s lentiviral vector administered in 6 \textit{in vivo} and \textit{ex vivo} programmes (by OXB / partners)

<table>
<thead>
<tr>
<th>\textbf{In Vivo}</th>
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</thead>
<tbody>
<tr>
<td>\textbf{Parkinson’s Disease}</td>
</tr>
<tr>
<td>ProSavin® and its successor OXB-102 (Axo-Lenti-PD)</td>
</tr>
<tr>
<td>18 patients treated via stereotactic delivery\textsuperscript{1}</td>
</tr>
<tr>
<td>• \textit{First lentiviral vector-based ATMP\textsuperscript{2} in Man}</td>
</tr>
<tr>
<td>• Safe and well tolerated, cohort 1 out to 10 years</td>
</tr>
<tr>
<td>• OXB-102: 4 patients now treated</td>
</tr>
<tr>
<td>\textbf{Wet AMD}</td>
</tr>
<tr>
<td>OXB-201</td>
</tr>
<tr>
<td>21 patients treated via subretinal delivery</td>
</tr>
<tr>
<td>• Safe and well tolerated, cohort 1 out to 6 years</td>
</tr>
<tr>
<td>• Protein expression from transgenes observed at latest time point (6yr)</td>
</tr>
<tr>
<td>\textbf{Inherited Retinal Diseases}</td>
</tr>
<tr>
<td>SAR422459/SAR421869</td>
</tr>
<tr>
<td>Over 20 patients treated via subretinal delivery</td>
</tr>
<tr>
<td>• Safe and well tolerated with SAR421869/SAR422459, cohort 1 out to 4 or 5 years\textsuperscript{3,4}</td>
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<table>
<thead>
<tr>
<th>\textbf{Ex Vivo}</th>
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</thead>
<tbody>
<tr>
<td>\textbf{Cancer (r/r ALL &amp; r/r DLCBL)}</td>
</tr>
<tr>
<td>Kymriah® (CD19-directed CAR T cell therapy)</td>
</tr>
<tr>
<td>• First approved lentiviral vector-based ATMP, first ATMP approved in US and EU</td>
</tr>
<tr>
<td>• Ongoing safety profile is very well tolerated</td>
</tr>
<tr>
<td>• No transgene related immune responses observed</td>
</tr>
</tbody>
</table>

\textsuperscript{1} Pailli et al. The Lancet 383 (9923):1138-46, 2014 \textsuperscript{2} ATMP – Advanced Therapy Medicinal Product \textsuperscript{3} Binley et al. IOVS 54 (6): 4061-4071, 2013 \textsuperscript{4} Weleber et al. ARVO Meet Abstr. 2286 (B0191), 2015
Parkinson’s disease remains an area of high unmet medical need

- Parkinson’s disease (PD) is a progressive neurodegenerative disorder resulting in the loss of dopamine in the striatum
- Motor symptoms can include tremor, rigidity, and bradykinesia
- PD affects approximately 1% of adults over the age of 60, or 7-10 million patients worldwide\(^1\)
- Current standard of care is primarily oral L-dopa. However, significant unmet need exists in treated patients:
  - Waning efficacy over time
  - Fluctuations between ON and OFF states
  - Dyskinesias

\(^1\) Parkinsonsdisease.net/basics/statistics: September 2019
AXO-Lenti-PD (formerly OXB-102)

**Novel gene therapy for Parkinson’s disease**

AXO-Lenti-PD contains three genes that encode the critical enzymes required for dopamine synthesis

1. **Tyrosine hydroxylase (TH):** converts tyrosine to L-dopa
2. **Cyclohydrolase 1 (CH1):** rate-limiting enzyme for synthesis of critical cofactor in TH activity
3. **Aromatic L-amino acid decarboxylase (AADC):** converts L-dopa to dopamine

Lentiviral vector system with large gene packaging capacity

*Permits delivery of multiple transgenes at once*

One-time MRI-guided stereotactic delivery into the putamen
AXO-Lenti-PD (formerly OXB-102)

*Theoretical benefits based on postulated mechanism of action (not data from investigational studies)*

**GOALS OF THERAPY:**
- Less troublesome dyskinesia
- Less OFF time
- More ON time
- Lower requirement for exogenous L-dopa

**AXO-Lenti-PD’s novel 3-gene therapy approach is designed to (1) increase basal dopamine production and (2) reduce dopamine variability**

**Designed to reduce motor fluctuations in Parkinson’s disease**
Multiple doses evaluated in Phase I/II study with durable response observed years after administration

Mean Improvement in UPDRS-III (OFF) Score at 12 Months

All patients (N=15)
Mean improvement from baseline of 11.8 points at 12 months (p=0.0001)

Cohort 1 (low dose): 1.9 x 10^7 TU
Cohort 2a and 2b (mid dose): 4.0 x 10^7 TU
Cohort 3 (high dose): 1.0 x 10^8 TU

Mean UPDRS-III (OFF) Score

- Durable effects seen through 4 years after one-time administration of ProSavin®
- UPDRS-III (OFF) scores are typically expected to worsen by 3-4 points/year* in this population

AXO-Lenti-PD (formerly OXB-102)
A re-engineered gene therapy product

AXO-Lenti-PD achieves up to 10-fold increases in dopamine + L-dopa production compared to ProSavin (OXB-101), without impacting infusion volume or rate of administration

AXO-Lenti-PD was the product of multifactorial experimentation to modify the genetic payload to improve dopamine production

- Different ordering of transgenes
- Balanced stoichiometry of gene expression to ensure consistent 1:1 production of TH and CH1
- Fusion of TH and CH1 with flexible linker

Vector Configuration

AXO-Lenti-PD (formerly OXB-102)

Increases in catecholamine production compared to ProSavin® (OXB-101)

Change in AADC activity (measured by 18F-FMT or Ki) at six months in non-human primate model

AXO-Lenti-PD achieved up to 10-fold increases in dopamine + L-Dopa production and increased AADC activity compared to ProSavin® (OXB-101)

1 AADC = Aromatic L-amino acid decarboxylase
Parametric images from 18F-FMT (Ki) PET scans showing commissural coronal. Images are presented with scale bars for tracer binding intensity (red=highest; violet=lowest).
5T4 is an Attractive Target for Therapeutic Interventions

Expressed by Cancer Stem Cells
(CD20, CD24, CD34, CD44, CD49f, CD87, CD90, CD123, CD133, CD166, ABCG2, ABCB5, ALDH, EpCAM, Integrin α2β1, 5T4)

Not Commonly Expressed on Normal Tissues
(CD20, CD24, CD34, CD49f, CD90, CD133, EpCAM, 5T4)

Expressed on “Bulk” Tumour Cells
(CD20, CD24, CD90, CD133, EpCAM, 5T4)

Expressed on Solid & Liquid Tumours
(5T4)

Efficacy
(i.e. Curative potential)

Safety
(e.g. On-Target, Off-Tumour)

Market Potential

1 Blount et al ECGCT 2019
The tumour antigen 5T4 has been shown to be expressed on Chronic lymphocytic leukaemia (CLL), Acute Myeloid Leukaemia (AML) and Multiple Myeloma (MM) as well as being expressed on putative cancer stem cells.

OXB-302 is a CAR-T therapy in which T cells are genetically modified ex vivo using a lentiviral vector to express a 5T4-specific chimeric antigen receptor (CAR).

OXB-302 targets 5T4, an oncofoetal antigen which is expressed on the surface of most solid tumours and some haematological malignancies.

The restricted expression profile of 5T4 on normal tissues combined with its broad expression on tumour cells (including cancer stem cells) make 5T4 an attractive target for therapeutic intervention.

Pre-clinical Data

- The tumour antigen 5T4 has been shown to be expressed on Chronic lymphocytic leukaemia (CLL), Acute Myeloid Leukaemia (AML) and Multiple Myeloma (MM) as well as being expressed on putative cancer stem cells.
- OXB-302 lentiviral vectors have been manufactured and shown to transduce human T-cells.
- OXB-302 transduced human T-cells show good growth kinetics and secrete cytokines in response to “in vitro” challenge with a range of human haematological tumour cell lines.

Results

Figure 1: Expression of 5T4 in primary patient CLL samples
- 5T4 is highly expressed in CLL
- 5T4 is more highly expressed on CD34+ CLL cells which contain the putative cancer stem cells

Figure 2: 5T4 CAR-T cells are active against liquid tumours in vitro
- IFNγ and Granzyme-B are secreted by activated T-cells upon engagement with their specific target antigen.
- Significant levels of both IFNγ (Fig 2A) and Granzyme-B (Fig 2B) are secreted by 5T4 CAR-T cells upon co-culture with AML (THP-1), CLL (MEC-1), MM (NCI-H929) or Ovarian (SKOV-3) cells but not 5T4 negative Jurkat cells.

Programme Status

- Pre-clinical studies nearing completion
- GLP toxicology studies planned

1 Blount et al ECGCT 2019
OXB-203 in Wet AMD

Overview

OXB-203 aims to reduce vision loss caused by Wet AMD

Current standard of care requires repeated intravitreal injections of anti-VEGF proteins

Uses lentiviral vector technology to deliver gene for aflibercept (VEGF-trap)

Builds on long term gene expression demonstrated in the OXB-201 Phase I clinical trial in USA (NCT01301443)\(^1\)

Potentially single administration - market advantage over Lucentis®/Eylea (2014 sales of ~$7bn)\(^2\)

Pre-clinical Data

- OXB-203 derived aflibercept protein is comparable to commercial aflibercept protein in \textit{in vitro} biochemical and potency assays
- OXB-203 demonstrated proof of concept data in a rat model of neovascularisation

Programme Status

- Long term PK studies ongoing
- GLP toxicology studies planned

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\(^1\) Campochiaro et al., Lentiviral Vector Gene Transfer of Endostatin/Angiostatin for Macular Degeneration (GEM) Study. Hum Gene Ther, 2017

\(^2\) 2014 sales for Lucentis and Eylea for retinal treatments (source: Novartis/Roche/Regeneron/Bayer financial results reported sales)
**OXB-201 Phase I study design – GEM study**

- **Cohort 1**: Dose 1X
- **Cohort 2**: Dose 10X
- **Cohort 3**: Dose 33.3X
- **Cohort 4**: Confirmatory ‘top’ dose, Dose: 33.3X

---

LentiVector® platform evidence of long-term duration

- Significant levels of transgene expression that are persistent
- Clear dose response between cohorts
- Relatively consistent within the cohort

LentiVector® platform evidence of long-term duration\(^1\)

- Clear dose response between cohorts
- Relatively consistent within the cohort
- Significant levels of transgene expression
- Expression is stable - data out to 6yrs so far (ongoing)

OXB-201: biological activity (suppression of vascular leakage)\(^1\)

- **Baseline**: Leakage is present in all patients at baseline
- **Week 24**: Leakage is present in only 6/21 patients (<30%) all but one with low expression of Endostatin and Angiostatin, and absent in 15/21 patients (>70%) all but 2 with high expression of these proteins
- **There is a clear correlation between presence/absence of leakage and expression of cargo genes**

---

Improving yields of vectors that contain toxic transgenes
High Throughput Automation

NyONE®
High-throughput cell imager

Carousel stack

Robot Arm

9 deck liquid handler platform

High-throughput liquid dispenser

Barcode scanner

Automated Incubator

From packaging to producer cell line

<table>
<thead>
<tr>
<th>Genome</th>
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<tr>
<td>Gag-Pol</td>
<td>Gag-Pol</td>
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<tr>
<td>Env</td>
<td>Env</td>
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<tr>
<td>+/- Rev</td>
<td>+/- Rev</td>
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</table>

LV Drug Product

HEK293T DNA Integration Assay (TU/ml)

Therapeutic LV produced by PCL clone

Therapeutic LV produced by standard transient process

-----

3-fold improvement

Titre

1.0E+09

1.0E+08

1.0E+07

1.0E+06

1.0E+05

1.0E+04

1.0E+03
Improving the purity of our vectors

- SecNuc reduces residual DNA improving product quality
- Titre is unaffected
<table>
<thead>
<tr>
<th>Patent Family (publication no.)</th>
<th>What is covered</th>
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<tbody>
<tr>
<td>US 7,419,829</td>
<td>WPRE variant – key safety feature</td>
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<tr>
<td>WO 03/064665</td>
<td>Rev-less vectors – key safety feature for clinical use</td>
</tr>
<tr>
<td>WO 2009/153563</td>
<td>Downstream processing of manufactured vector to maximise yield</td>
</tr>
<tr>
<td>WO 2015/092440</td>
<td>TRiP system – improved manufacturing, particularly vector titre</td>
</tr>
<tr>
<td>WO 2019/175600</td>
<td>Vector production methods – secreted nuclease</td>
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<tr>
<td>WO 2021/014157</td>
<td>Vector production methods (U1)</td>
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<tr>
<td>WO2018/167486</td>
<td>Anti-5T4 methods for treating/preventing haematological malignancies</td>
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<td>Anti-5T4 CARs with specific sequences</td>
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# Senior Executive Team (1/3)

<table>
<thead>
<tr>
<th>Name</th>
<th>Title</th>
<th>Years at OXB</th>
</tr>
</thead>
<tbody>
<tr>
<td>John Dawson</td>
<td>Chief Executive Officer</td>
<td>Joined OXB as Non-executive Director, then appointed CEO in 2008</td>
</tr>
<tr>
<td>Stuart Paynter</td>
<td>Chief Financial Officer</td>
<td>Joined OXB in 2017</td>
</tr>
<tr>
<td>Jason Slingsby, PhD</td>
<td>Chief Business Officer</td>
<td>Joined OXB in 2015</td>
</tr>
<tr>
<td>Senior Executive Team (2/3)</td>
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<td>----------------------------</td>
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<tr>
<td><strong>Kyriacos Mitrophanous, PhD</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Chief Scientific Officer</td>
<td></td>
<td></td>
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<tr>
<td>Joined OXB in 1996</td>
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<tr>
<td>PhD in Molecular Biology from UCL; postdoctoral research at Oxford University</td>
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<tr>
<td>Recognised expert in lentiviral vectors with key publications (<em>Lancet, Human Gene Therapy</em>) and inventor on numerous patents</td>
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<tr>
<td><strong>James Miskin, PhD</strong></td>
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<tr>
<td>Chief Technical Officer</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Joined OXB in 2000</td>
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<tr>
<td><strong>Helen Stephenson-Ellis</strong></td>
<td></td>
<td></td>
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<tr>
<td>Chief People Officer</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Joined OXB in 2018</td>
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<table>
<thead>
<tr>
<th>Name</th>
<th>Title</th>
<th>Joined OXB in</th>
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</thead>
<tbody>
<tr>
<td>Nick Page</td>
<td>Chief Operations Officer</td>
<td>2018</td>
</tr>
<tr>
<td>Natalie Walter</td>
<td>General Counsel</td>
<td>2019</td>
</tr>
</tbody>
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