



# iX Biopharma Ltd

Update for Shareholders, March 2024



# AGENDA

- 1) Overview of iX Technologies
- 2) Our Growth Drivers
  - ✓ GLP-1 Wafer
  - ✓ Wafermine
  - ✓ Healthspan Products
- 3) Fast Track to Monetisation

# Advanced Drug Delivery Technologies



## 1) WaferiX - optimised for sublingual administration of small molecules

Oral v Sublingual Absolute Bioavailability			
Administration	Ketamine <sup>1</sup>	Buprenorphine <sup>2</sup>	Dexmedetomidine <sup>3</sup>
Oral	10-15%	10-15%	15%
WaferiX Sublingual	29%	45%	~80%

## 2) WaferlogiX - optimised for sublingual administration of biologics

- ✓ Non-invasive delivery
  - Biologics, mostly proteins and peptides are degraded in the gastrointestinal tract and hence normally administered by injection
- ✓ iX freeze-dry manufacturing process preserves biologic structure and function

## Advantages of our Freeze-Dried Wafers

Patented matrix formulation and proprietary manufacturing process creates highly porous, amorphous, non-ionic wafers

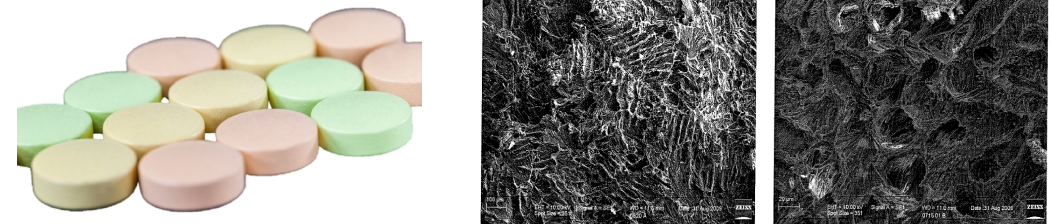
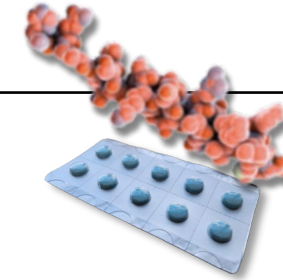


Fig. Patented formulation and proprietary freeze drying process creates long porous voids throughout the structure (above left) and amorphous matrix structure with empty pores to house active drug (above right), enhancing sublingual drug delivery

- ✓ Rapid disintegration, no need to swallow
- ✓ Superior absorption and bioavailability compared to oral administration
- ✓ Fast onset of action
- ✓ Predictable effect, low variability

1. The absolute bioavailability of racemic ketamine from a novel sublingual formulation, British Journal of Clinical Pharmacology, 2013  
2. The Pharmacokinetics & Local Tolerability of a Novel Sublingual Formulation of Buprenorphine, Oxford Journal on Pain Medicine, 2017  
3. DEX-001 Pharmacokinetic Study, Company data on file

# Our Growth Drivers



1) **iXB 401, GLP-1 sublingual wafer** to treat diabetes/obesity



2) Out-license **Wafermine** for  
a) Complex Regional Pain Syndrome (CRPS) &  
b) Depression



3) Ramp up commercialisation of **Healthspan products**



# Focusing on the Booming GLP-1 Drug Market

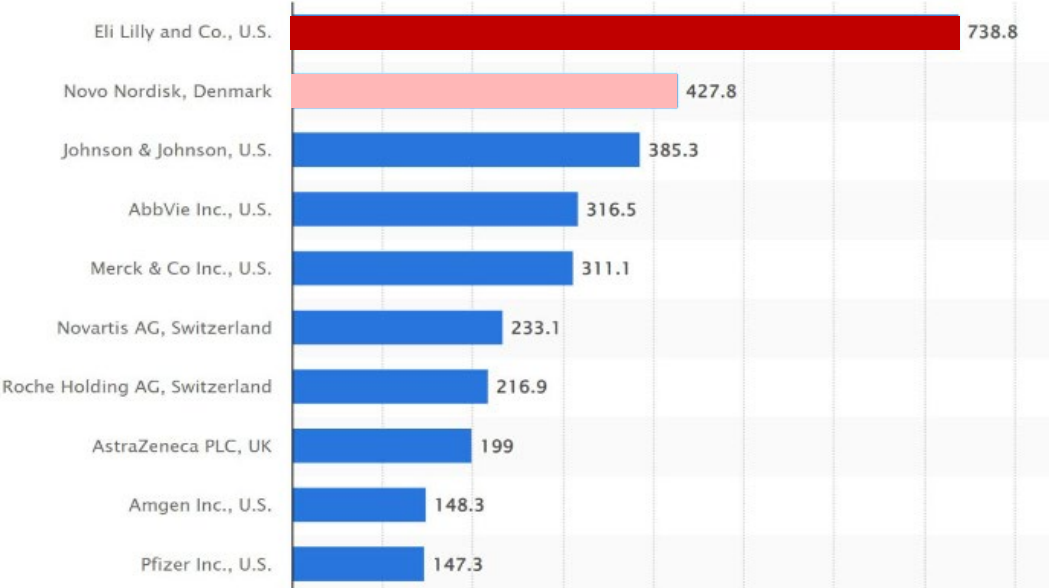
GLP-1 peptides are hormones and neuromodulators. Approved GLP-1 drugs like **Ozempic & Wegovy** (semaglutide), **Mounjaro** (tirzepatide) & **Trulicity** (dulaglutide) have numerous benefits: **Glucose control in type 2 diabetes, significant weight loss in obesity, and cardiovascular risk reduction**

**US\$100 Billion**  
Projected GLP-1 product sales by 2030 treating diabetes and obesity<sup>(1)</sup>

**9% of US population**  
or 30 million people projected to use GLP-1 drugs by 2030<sup>(1)</sup>

**200 million**  
Individuals in China dealing with obesity<sup>(3)</sup>

Due to soaring demand for GLP-1 drugs, in 3 years:



Market Cap as of 2024 in Billion USD<sup>(2)</sup>

(1) <https://www.jpmorgan.com/insights/global-research/current-events/obesity-drugs>  
(2) Statista, leading 10 biotech & pharmaceutical companies worldwide capitalisation as of 2024  
(3) <https://www.wsj.com/health/pharma/ozempic-is-taking-off-with-the-worlds-largest-obese-population-hint-it-isnt-the-u-s-a7c2498c>

# Surging Deal Flow



**There has been a surge of substantial acquisitions and licensing deals by big pharma vying for dominance**

- a) Eli Lilly acquired Versanis Bio for \$1.93 billion for monoclonal antibody, bimagrumab (P2b ongoing), used in combination with semaglutide to reduce weight while preserving muscle mass<sup>(1)</sup> [Jul, 2023]
- b) AstraZeneca licensed ECC5004, an oral once-daily GLP-1 agonist pill (P1 complete) from Eccogene China for up to \$2 billion in upfront and milestone payments plus royalties <sup>(2)</sup> [Nov, 2023]
- c) Roche acquired Carmot Therapeutics for \$2.7 billion upfront & up to \$400m milestone payments, for a once-a-week injection called CT-388 (P1 completed), a dual GLP-1/GIP receptor agonist<sup>(3)</sup> [Dec, 2023]



Fig. Injectable Ozempic (GLP-1 agonist)

*Lilly*

AstraZeneca 

Roche

(1) <https://investor.lilly.com/news-releases/news-release-details/lilly-acquire-versanis-improve-patient-outcomes-cardiometabolic>

(2) <https://www.astrazeneca.com/media-centre/press-releases/2023/agreement-with-eccogene-for-clinical-stage-glp-1ra.html>

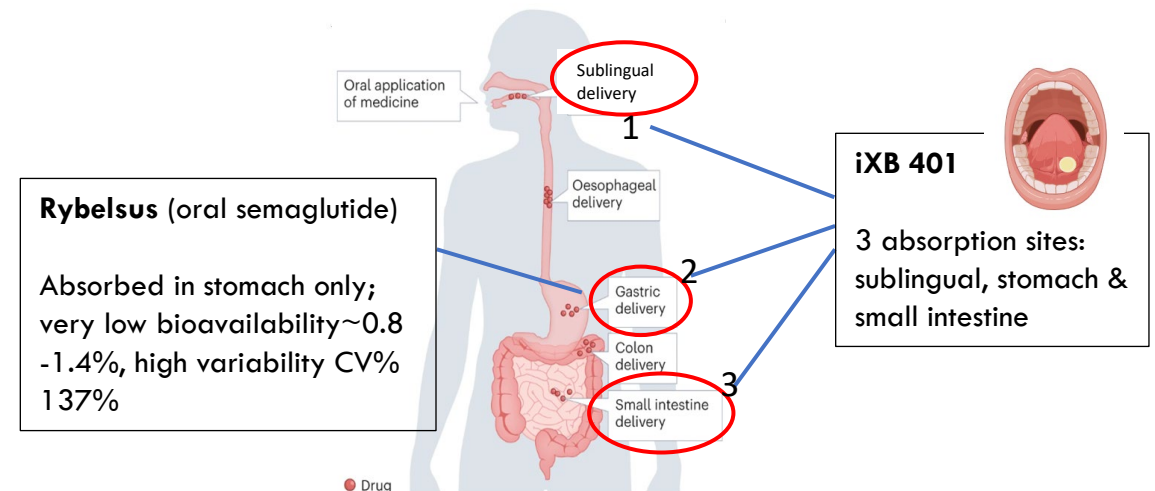
(3) <https://www.reuters.com/markets/deals/roche-acquire-carmot-therapeutics-27-bln-2023-12-04/>

# iXB 401, Sublingual Semaglutide (GLP-1 agonist) wafer



- ✓ Semaglutide (Ozempic, Wegovy) mimics the action of the body's natural GLP-1 peptide hormone, which manages blood sugar levels and helps reduce hunger and food intake after a meal
- ✓ WaferlogiX technology addresses poor oral bioavailability of semaglutide (~1%), by adding sublingual absorption to improve bioavailability and lower variability of absorption
- ✓ Potential for improved efficacy and side effect profile compared to approved oral drug
- ✓ Convenient, non-invasive once-daily dosing with higher patient compliance
- ✓ Semaglutide patent is expiring in China in 2026 presenting a high value, near term opportunity

## iXB 401 targets 3 absorption sites, not just the stomach



- ✓ Improved bioavailability
- ✓ Lower variability

Successful pharmacokinetic (absorption) studies with iXB 401 will validate the concept for other sublingual GLP-1 wafer drugs to be developed by iX Biopharma and **support global licensing**



# Wafermine, Out-licensing for CRPS & Depression

## Complex Regional Pain Syndrome (CRPS)

- ✓ CRPS is a rare condition
- ✓ Affected individuals experience excruciating, prolonged pain & inflammation of limbs or joints
- ✓ **No approved drug treatments available**; huge unmet clinical need with potential market size of US\$2 - 3B<sup>(1)</sup>
- ✓ US FDA granted iX Biopharma an **Orphan Drug designation** for Ketamine for CRPS treatment, providing significant support for drug development
- ✓ **Wafermine has potential to be the First Approved Treatment for CRPS**
- ✓ Ketamine is already recommended as a treatment option for CRPS by US pain specialists & anaesthesiologists, see Consensus Guidelines on the Use of Intravenous Ketamine Infusions for Chronic Pain Management

## Treatment Resistant Depression (TRD)

- ✓ 1/3 of patients with major depressive disorder do not respond to current treatments, meaning they have TRD
- ✓ TRD market is projected to grow from US\$1.69B to \$4.0B in 2033, a CAGR of 9%<sup>(2)</sup>.
- ✓ Ketamine is recognized to
  - have rapid and prolonged antidepressant effects (onset within hours, sustaining >7 days)
  - Effectively treat between 50 - 70% of patients with TRD
  - have the most established safety profile of all NMDA antagonists (approved in 1970)
- ✓ Wafermine sublingual wafers are potentially more tolerable, less variable & easy to use than intranasal (Spravato, see fig. below)

Fig. Spravato, intranasal esketamine was approved in 2019



(1)Independent valuation from Lighthouse BioPartners LCC

(2) <https://www.futuremarketinsights.com/reports/treatment-resistant-depression-treatment-market>



# Our Approach to Healthspan



We know we are living longer (**Lifespan**) but not necessarily healthier (**Healthspan**).

The world is now wishing to live not only longer but also healthier, free from age-associated chronic conditions including cancer, dementia, and heart disease; in short for a better quality of life.

Rapid advancements in longevity and healthspan research are recent and potentially **disruptive**, may replace conventional medicines in healthcare as ageing is considered the root cause of numerous chronic diseases<sup>(1)</sup>.

But exploratory approaches to aging, like drug therapy (e.g., rapamycin), genetic manipulation (e.g., gene editing), and regenerative medicine (e.g., stem cells), remain years away, are invasive and cost-prohibitive.

iX's NAD+ and GSH wafers are nutritional supplements designed to replenish critical molecules to optimal levels found in youth, benefits include: anti-aging, immune support, skin and liver and muscle health, amongst others

**US\$25.1 → 44.2Bn**  
Market size for longevity therapies by 2030<sup>(1)</sup>

## Non optimized healthspan



Human lifespan



**Enhanced healthspan:  
live longer, healthier**

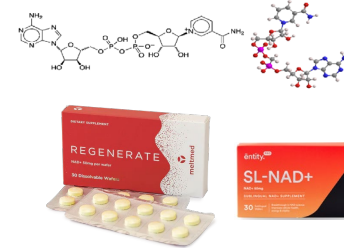
(1) Allied Market Research; <https://www.strategyand.pwc.com/de/en/industries/pharma-life-science/longevity-therapeutics.html>

# NAD+ Wafers Enhance Healthspan



## iX's sublingual NAD+ wafers

- ✓ Leverage NADiX proprietary technology to stabilise and deliver pure NAD+ directly as nanoparticles into the body
- ✓ Shown to significantly increase intracellular NAD+ levels
- ✓ Avoid the need for IV infusion or high doses of precursors like NMN and NR, which must absorb and convert to NAD+



NAD+ is an unstable molecule, degraded in GI tract

Therefore, some opt for IV infusions which are invasive and expensive while others consume precursor molecules like NMN or NR which have unpredictable absorption and conversion to NAD+

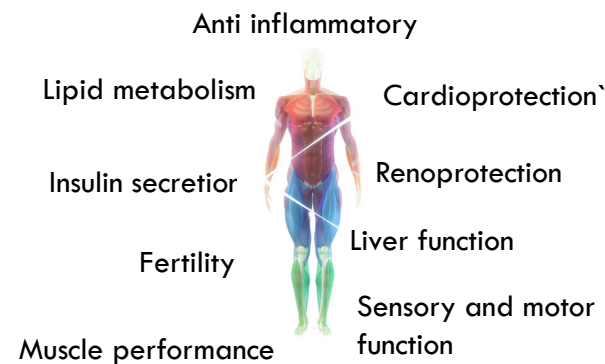
## What is NAD+?

A critical molecule produced by the body required for the functioning of all living cells. It powers energy production, DNA repair, activates sirtuins which are key to extending lifespan, regulates circadian rhythm and rejuvenates stem cells

NAD+ levels decline by half by age 50, leading to cellular dysfunction and chronic diseases

Scientific research shows that replenishing NAD+ may combat age-related decline and reduce the risk of chronic diseases like diabetes and heart disease

## NAD+ is key to optimal functioning of the body:



# Fast Track to Monetisation



## Out-Licensing Opportunities

### IMMEDIATE

**1) Wafermine,**  
sublingual ketamine wafer

- ✓ Out-license for CRPS and/or Depression

### NEAR-TERM

**2) iXB 401,**  
sublingual GLP-1 wafer for  
obesity and diabetes

- ✓ Conduct pharmacokinetic (pK) study to confirm superior drug absorption, ~12 months
- ✓ Out-licensing after pK study

### Benefits of out-licensing:

- ✓ Generate revenue (upfront fees, milestone development payments, sales royalties)
- ✓ Partner will fund additional studies up to registration
- ✓ Access local regulatory expertise
- ✓ Leverage partner's distribution channels and marketing resources

## NAD+ Commercial Strategy

**3) NAD+ wafer,**  
for Healthspan Enhancement

- ✓ Ramp up commercialisation of NAD+ products
- ✓ Develop new product lines
- ✓ Partner major distributors in key markets

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Thank You