

# Zerion Pharma A/S Enabling better patient care

PRESENTATION | JUNE 2024 | NON-CONFIDENTIAL | NOT FOR DISTRIBUTION

# WE HAVE THE TECHNOLOGY TO MAKE DRUGS MORE SOLUBLE AND FIX A BIG PROBLEM IN ORAL DRUG DEVELOPMENT

DISPERSOME<sup>®</sup> is a technology for oral drugs that increases solubility and dissolution...

... and impacts an industry that invest <u>USD +200bn every year</u> to develop new drugs but many fail due to poor solubility!

DISPERSOME<sup>®</sup> improves the solubility of oral drugs (tablets and capsules) so they are absorbed better in the body

> Better solubility increases the chance of success for new drug development and allows for the improvement of existing drugs

More than 500 poorly soluble compounds enter a human Phase I study every year

90 percent of promising oral drug are poorly soluble, and potential candidates for ZERION's DISPERSOME<sup>®</sup>

Source: 360iResearch – Solubility Enhancement Excipients Market <sup>1</sup>Active Pharmaceutical Ingredient: The medication that produces the intended health effects





**Higher solubility** makes it possible to reduce the amount of API<sup>1</sup> and patient dose

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**Higher drug load (>50%)** allows for smaller tablets and improved compliance for patients

<u>(</u>

**Higher bioavailability** makes it possible to bring new drugs to the market with extended patent life and reduce toxic waste

# ZERION IS ON A MISSION TO CLOSE A GAP BETWEEN DISCOVERY AND DEVELOPMENT OF NOVEL DRUGS

### From thesis to therapeutics – our journey started in 2019...

UNIVERSITY OF COPENHAGEN

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Zerion is a spin-out from University of Copenhagen founded in 2019 based on a decade of research in drug formulation

**Employees today** – 10 work with R&D in our state-of-the-art laboratories in Denmark

**patent families commanded**– we hold a strong and dominant IP position in our field

**EURm invested in Zerion** – extremely efficient capital allocation to build pipeline

... and today we are partners with global pharma companies

**Hovione is our strategic partner**. Hovione is a globally leading CDMO<sup>1</sup> dedicated to helping pharma customers bring new drugs to market

Hovione (#)

**Insud Pharma** is our marketing partner for a drug reformulation project where the first DISPERSOME<sup>®</sup> product is tested in a human clinical study

**dsm-firmenich** is our marketing partner for a DISPERSOME<sup>®</sup> formulation of CBD that holds the promise of changing the cannabinoid field

dsm-firmenich

**INSUDPHARMA** 

### Announced commercial partnerships include:



**U** NOVARTIS

+ undisclosed development partners...



<sup>1</sup>Contract Development and Manufacturing Organization



# PHARMA MANAGEMENT TEAM

and Investment banks



Ole Wiborg, CEO, Co-founder

+25 years experience Pharma executive & entrepreneur



**Korbinian Löbmann**, PhD, CSO, Co-founder +10 years drug formulation expertise



### Jakob Dynnes Hansen, CFO +30 years experience from biotech CFO positions



Wei Tian, PhD, VP, CMC Development +20 years drug development expertise from pharma & CDMOs



### Mónica González, VP, Regulatory Affairs

+15 years regulatory experience from regional and global pharma

ZERION was formed in January 2019 as a spinout from the University of Copenhagen **based on a decade of research in drug formulation.** ZERION has 14 employees of which 10 are in R&D.

# THE DISPERSOME® TECHNOLOGY PLATFORM



CRYSTALLINE DRUG



BLG PROTEIN from Arla Foods Ingredients



Dispersome<sup>®</sup> Creating an amorphous drug-BLG mixture

# Enables development of insoluble drugs ✓ Tested on 60 drugs ✓ >75% success rate at 50 wt% drug loading Dechnological upscaling ✓ Manufactured via spray drying, established industry process ✓ 2<sup>nd</sup> GMP production in progress ✓ PK assessment: ✓ Rodent studies for +10 drugs ✓ Pig/monkey studies for 2 drugs

- ✓ Dog studies for 6 drugs
- ✓ Excellent data from human
   PK study

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# THE DISPERSOME® TECHNOLOGY PLATFORM





# HIGH SOLUBILITY AND DRUG LOADING





# CLINICAL DEVELOPMENT





# CLINICAL DEVELOPMENT





# CLINICAL DEVELOPMENT



# **KEY COMPETITORS IN ORAL FORMULATION**



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# **KEY COMPETITORS IN ORAL FORMULATION**



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# DISPERSOME® ZN002 SHOWS 10X INCREASE IN BIOAVAILABILITY IN DOG STUDIES

- Zerion compared Zytiga 500mg (Abiraterone acetate) to our Dispersome<sup>®</sup> (125mg) in two dog studies
- The Dispersome<sup>®</sup> formulation (125mg) delivered 10X higher bioavailability than Zytiga (500mg)
- This translates to a potential reduction from 4
   tablets of 250mg to 1 Dispersome® tablet (taking into account the scaling effect from dog data to human)
- The program will move into clinical phase in 2024



Dispersome<sup>®</sup> 125mg vs. Zytiga 500mg

Comparative Pharmacokinetics of the ZN002  $\mathsf{Dispersome}^{\circledast}$  formulation and Zytiga







# ZERION GENERATE REVENUES THROUGHOUT THE DRUG DEVELOPMENT LIFECYCLE – WE GENERATED REVENUES OF EUR 0.5M IN 2023

We have an attractive business model with continuous revenue streams, and we remain involved throughout the drug lifecycle

Drug lifecycle	Discovery & Clinical trials & Launch & pre-clinical tests approval commercialization	Extend patent Generics+		
Our services	Enable formulation	Revise formulation New formulation (Extend patent) (Based on expired patents		
Revenue streams	<ul> <li>Feasibility and development fees - up to USD 1m per project</li> <li>Feasibility and development fees provide Zerion with immediate cash flow and ensure that we are compensated for the critical early-stage work that lays the foundation for drug development</li> <li>Milestone payments &amp; patent licensing fees - up to USD 10m per project</li> <li>Milestone payments are aligned with the progress of the drug's development, reflecting the increased value added by the enabling formulation</li> <li>Royalties</li> <li>When drugs formulated by Zerion are launched, we additionally benefit from royalties (2-4% of sales) - we believe there is a large upside potential in the pipeline</li> </ul>	Feasibility and development fees For Generics+, we offer improvements such as increased efficacy, reduced side effects, or better patient compliance for which we receive fixed short-term cash flows Royalties Based on our technology, patents for revised formulations can be extended for which we can receive royalties of 5-15% of sales as the formulation is revised. In addition, for our post-patent new formulations, we may receive up to 10-20% in royalties		



# ZERION HAS A WIDE PIPELINE OF PRODUCTS DEVELOPED WITH BEST-IN-CLASS LIFE SCIENCE PARTNERS

Product candidate		Partner	Preclinical		Clinical development	Market size / Benchmark	Possible launch	
Туре	Compound		Feasibility	In vivo PoC		Sales per year	Year	PTS <sup>1</sup>
Nutra+	Curcumin	Hovione 🌐			Start of expedited dev in 2024	>\$ 0.3B	2025-26	>90%
Oral GX+	CBD	dsm-firmenich			Bioequivalence 2024	>\$ 3B	2025-26	90%
	ZX052	INSUDPHARMA			Data Q2 2024	>\$ 0.5B	2027-28	>95%
	Abiraterone	(in partner discussions)			Start of expedited dev in 2024	>\$ 2B	2027-28	>80%
	ZX063	(in partner discussions)			Start of expedited dev in 2024-25	>\$ 1B	2027-28	60-80%
	ZX047	(in partner discussions)			Start of expedited dev in 2024-25	>\$ 5B	2027-28	60-80%
Oral NCE	ZX040	Undisclosed partner #3				\$ 1B	2029-33	10-15%
	ZX059	Undisclosed partner #4				\$ 1B	2029-33	10-15%
	ZX054	Undisclosed partner #5				\$ 1B	2029-33	10-15%

<sup>1</sup> Probability of technical success

# NCE & REFORMULATION PROJECTS PORTFOLIO



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### Products Customized Solutions Expert Services News Q



# dsm-firmenich partners with Zerion Pharma A/S to unlock superior patient-centric cannabinoid formulations

Kaiseraugst (Switzerland), Heerlen (Netherlands) 2024

dsm-firmenich, innovators in health, nutrition and beauty, today announces its exclusive partnership with ZERION Pharma A/S ("ZERION") to unlock a new era in cannabinoid innovation that champions patient-centric formulations. The partnership grants dsm-firmenich global access to ZERION A/S's unique, cutting-edge Dispersome® technology, developed with the aim of significantly increasing the bioavailability of oral cannabidiol (CBD) compared to commercially available CBD oils. Not only will the collaboration inspire a new generation of patient-first cannabinoid therapies, but it also enhances dsm-firmenich's unrivalled end-to-end capabilities in the promising cannabinoid space. EN DEL AF WATCH MEDIER



DU ER LOGGET IND SOM OLE WIBORG

MEDICIN & BIOTEK MEDICO & REHAB LABORATORIE & DIAGNOSTIK HØREAPPARATER MERE 🗸

15.02.2024 kl. 10.14 MEDICINAL & BIOTEK

# Biotekfirma fra København går ind på potentielt milliardmarked med nyt licenspartnerskab

Et samarbejde fra 2022 bliver nu til en egentlig licensaftale, der kan give Zerion Pharma royaltyindtægter fra næste år.





### SENESTE NYT $\rightarrow$

- Bristol Myers Squibb får FDA-forlomme til udvidet brug af kræftmiddel – 11.53
- Eli Lilly lancerer fedmemiddel i Storbritannien – 10.44
- Biotekfirma fra København går ind på potentielt milliardmarked med nyt licenspartnerskab – 10.14
- Genmab i største stigning i seks år efter regnskab – 09.59
- Erhvervsminister: Verdens udvikling er årsag til dansk sats på kvanteteknologi - 09.22

# **Cannabinoids & Zerion Pharma**

Several companies active in the cannabinoid (CBD) field have approached ZERION to apply our technology. ZERION entered collaboration concerning cannabinoids with dsm-firmenich in 2022.

### THE PROBLEM

Cannabinoids have poor biological absorption – oral CBD compounds in oil are estimated to have 6-8% bioavailability ZERION has developed high performing Dispersome® formulations of key cannabinoid components. Purpose to enable solid (capsules or tablets) rather than poor oil liquid formulations. Dispersome<sup>®</sup> technology likely to be applicable for modified cannabinoid compounds.

The prescription market for CBD is expected to reach >\$ 3 billion by 2027

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# DISPERSOME® APPLICATION IN THE CANNABINOID FIELD





# Benefits of ZX055 Dispersome<sup>®</sup>

- ✓ Enables tablet formulations
- ✓ Lower variation in plasma PK
- Improved therapeutic window
- More robust clinical studies
- ✓ Fewer side effects



# THE CANNABINOID BUSINESS CASE IS VERY ATTRACTIVE







A billion-dollar market with double digit growth



### **Epidiolex**

is the leading CBD product on the market. Sales 2023 approx. \$ 800 mio. Only approved for epilepsy. Zerion's formulation will be tested against Epidiolex in human clinical study in 2024.

Zerion's partner dsm-firmenich is committed to develop and supply best-in-class cannabinoids to the pharma industry

### **Benefits for Zerion**

- ✓ dsm-firmenich covers all
  - development costs
- ✓ Zerion obtains royalties on all sales of cannabinoids
- Zerion has option to improve and develop new cannabinoids

# IMPROVED CANCER TREATMENT IS A MAJOR OPORTUNITY FOR ZERION



50% of new drugs are for cancer treatment. Cancer is becoming a chronic disease where better formulations are key to improved patient care



Zerion has demonstrated feasibility and benefits of Dispersome for existing cancer drugs, e.g. Abiraterone. Additional 5 projects identified.



Significant value of each of the 3 projects. Market entry possible now/2027/2028

## **Benefits for Zerion**

- Many potential drug candidates where
   Dispersome technology can benefit
- ✓ Low/modest
   development costs
   (€ 4-10 mio./project)
- Possibility to partner after animal/early human data
- Zerion obtains royalties on all sales of drug products



# The dose reduction and bioavailability improvements using Dispersome technology enable key benefits\*:

- ✓ Improved safety profile
- ✓ Removal of food interactions
- ✓ Reduced drug-drug interactions
- ✓ Fewer and smaller tablets
- Combination products

\*improvements and benefits are compound specific

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# REVENUES 2019-2024



# WE ARE RAISING EUR 4M TO REACH MAJOR MILESTONES WITH OUR PIPELINE

We are ready to scale up our pipeline with projects for new and existing partners and reach key value inflection points

30%

# **Capital allocation:**

Sales and marketing to secure additional projects for our pipeline

EUR

investment

**25**% Investment into our internal pipeline of proprietary development projects

**25**% Research and development, IP maintenance and expansion

20%

Continued validation of DISPERSOME<sup>®</sup> (QA and regulatory)

# **Targets & Outcomes**

2024

- Receive data from first human clinical study
- Launch 3-4 new partner projects
- Progress two internal projects to the partner stage

2025

- Completion of BE study on lvacaftor
- Market launch of DISPERSOME<sup>®</sup> cannabinoid in cooperation with dsm-firmenich

2026

- Regulatory approval of first DISPERSOME<sup>®</sup> product
- The first DISPERSOME<sup>®</sup> product on the market will drive the pharma industry to jump on the technology



# Potential (exit) routes for Zerion Pharma

### Trade sale (M&A)

Potential acquirors with different strategic rationale:

**CDMOs** Hovione (PO) Lonza (CH)

**Excipient suppliers:** Evonik (DE) Colorcon (US)

**Big Pharma Partners:** Novartis/Bayer etc.

Arla (DK)

### **Public listing (IPO)**

Moderate risk, broad portfolio and long-term possibilities to expand technology offerings make Zerion a good IPO candidate.

Market conditions and attractive valuation key success parameters-

Listing options: First North Copenhagen/Stockholm NASDAQ US



# Key milestones in 2024



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