ENLIVEX – COMPANY PRESENTATION

October 2025



FORWARD-LOOKING STATEMENTS

These slides and the accompanying oral presentation contain forward-looking statements and information. Forward-looking statements are subject to known and unknown risks, uncertainties, and other factors that may cause our or our industry's actual results, levels or activity, performance or achievements to be materially different from those anticipated by such statements. The use of words such as "may", "might", "will", "should", "could", "expect", "plan", "anticipate", "believe", "estimate", "project", "intend", "future", "potential" or "continue", and other similar expressions are intended to identify forward looking statements. For example, all statements we make regarding (i) the initiation, timing, cost, progress and results of our preclinical and clinical studies and our research and development programs, (ii) our ability to advance product candidates into, and successfully complete, clinical studies, (iii) the timing or likelihood of regulatory filings and approvals, (iv) our ability to develop, manufacture and commercialize our product candidates and to improve the manufacturing process, (v) the rate and degree of market acceptance of our product candidates, (vi) the size and growth potential of the markets for our product candidates and our ability to serve those markets,

and (vii) our expectations regarding our ability to obtain and maintain intellectual property protection for our product candidates, are forward looking. All forwardlooking statements are based on current estimates, assumptions and expectations by our management that, although we believe to be reasonable, are inherently uncertain. All forward-looking statements are subject to risks and uncertainties that may cause actual results to differ materially from those that we expected. Any forward-looking statement speaks only as of the date on which it was made. We undertake no obligation to publicly update or revise any forward-looking statement, whether as a result of new information, future events or otherwise, except as required by law. This presentation is not, and nothing in it should be construed as, an offer, invitation or recommendation in respect of our securities, or an offer, invitation or recommendation to sell, or a solicitation of an offer to buy, any of our securities in any jurisdiction. Neither this presentation nor anything in it shall form the basis of any contract or commitment. This presentation is not intended to be relied upon as advice to investors or potential investors.



MACROPHAGE MODULATION FOR THE TREATMENT OF INFLAMMATORY DISEASES

Enlivex is a clinical stage pharmaceutical company developing Allocetra[™], a universal, off-the-shelf cell therapy designed to reprogram macrophages into their homeostatic state, for treatment of inflammatory diseases.

About:



Novel therapeutic modality:

macrophage modulation.



Novel approach:

allogeneic cells to trigger macrophage reprogramming.



Substantial market:

unmet need in inflammatory and autoimmune diseases.



Cost-effective cell therapy:

simple manufacturing process yielding a ready-touse off-the-shelf cell therapy.



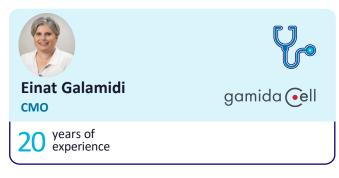
DRIVING INNOVATION WITH BALANCED SCIENTIFIC AND BUSINESS EXPERTISE





















BOARD OF DIRECTORS

Shai Novik

Executive Chairman

Founder and President of PROLOR Biotech, Sold in 2013 (\$590mm transaction). Lead product, Ngenla, partnered to Pfizer, \$295 million down payment, \$275 upon FDA & other regulatory approvals. Ngenla by Pfizer has obtained marketing approvals in 43 countries, including Japan, EU and U.S.

Roger Pomerantz

Vice Chairman

Former Worldwide Head of Licensing and Acquisition and Knowledge Management at Merck & Co., where he led the completion of more than 150 business development transactions. Former Global Head of Infectious Diseases for Johnson & Johnson Pharmaceuticals. Former Venture Partner at Flagship Pioneering, as well as the former President, CEO, and Chairman of the Board of Seres Therapeutics.

Gili Hart, Ph.D

Director

Formerly with PROLOR Biotech, led the pre-clinical, clinical, and pharmacological activities.
CEO of SpliSense, a clinical stage company focused on transformative RNA-based treatments for pulmonary diseases. SpliSense pioneering platform harnesses Antisense Oligonucleotides (ASOs) for the treatment of pulmonary diseases.

Abraham Havron, Ph.D.

Director

Former CEO of PROLOR Biotech.

Founding team and Director of R&D of Interpharm (Merck Serono), where he led the development of REBIF, a multibillion multiple sclerosis drug. Formerly, VP CMC of BioTechnology General Ltd., and VP of Clal Biotechnology Industries Ltd.

Andrew Singer

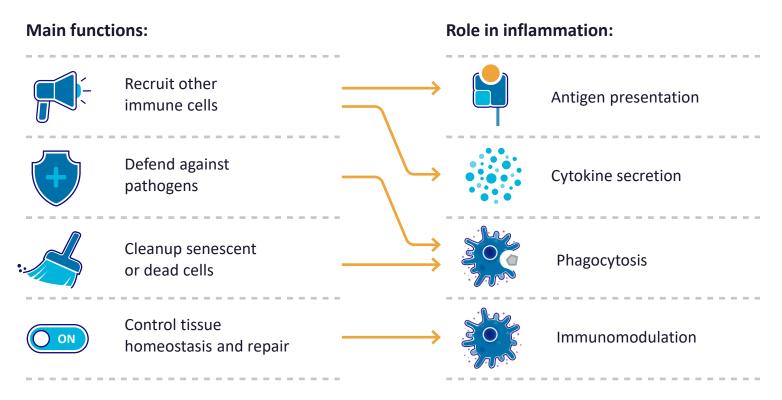
Director

Former EVP and CFO of Epizyme and Senior Biotech Investment Banker at Credit Suisse, Wells Fargo Securities and RBC Capital Markets. Led financing, partnering and M&A biopharmaceutical transactions in excess of \$13B.



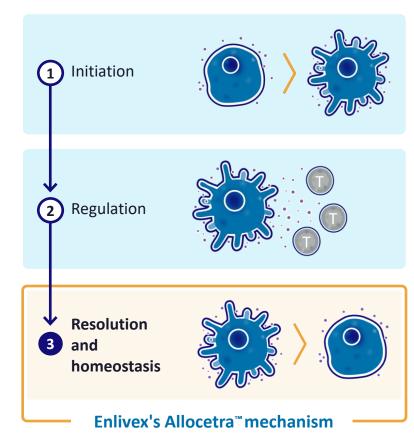
CELLULAR FIRST RESPONDERS: MACROPHAGES AND THEIR CRITICAL ROLE IN INFLAMMATION

Macrophages, which are found in abundance throughout the body, are immune cells that reside in or infiltrate human tissue.



The current understanding among researchers is that disrupted inflammatory processes form the basis of many diseases, beyond "classical" inflammatory diseases.

Macrophages orchestrate inflammation and its resolution.





PROMOTING BALANCE: APOPTOTIC CELLS FACILITATE MACROPHAGE HOMEOSTASIS



Prof. Dror Mevorach

Scientific Founder



Apoptotic Cells Induce NF-kB and Inflammasome Negative Signaling

Amir Grau, Adi Tabib, Inna Grau, Inna Reiner, Dror Mevorach

PLOS One, 2015

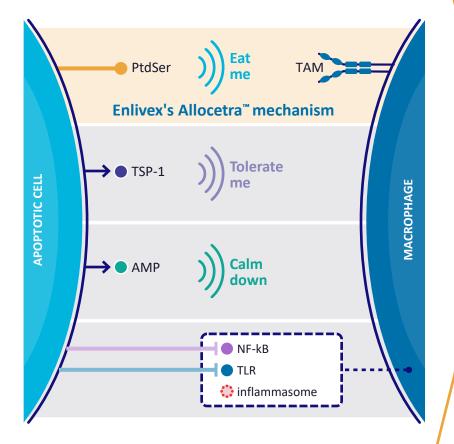


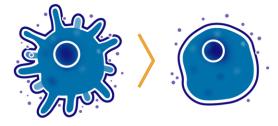
Apoptotic Cells induced Signaling for immune Homeostasis in Macrophages and Dendritic Cells

Uriel Trahtemberg and Dror Mevorach

Frontiers in immunology, 2017

How apoptotic cells influence macrophages

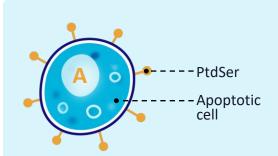




The interaction between apoptotic cells and macrophages contributes to the pro-resolution and immune-modulating effects of Allocetra[™], promoting macrophage and immune homeostasis.



ALLOCETRA™: AN OFF THE SHELF CELL THERAPY DESIGNED TO RESTORE MACROPHAGE HOMEOSTASIS

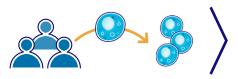


Allocetra™

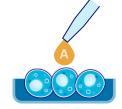
Allogeneic mononuclear cells collected from healthy donors induced to a stable apoptotic state.

- harnesses the same biological activity seen in naturally occurring apoptotic cells;
- presents a highly-differentiated, offthe-shelf, cellular therapy modality.

Process:



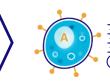
collect cells from healthy donors



proprietary apoptotic cell modification process



cells express "eat me" signal

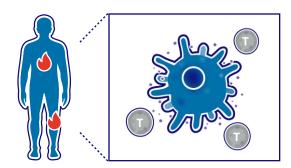


cells are frozen

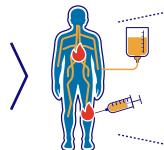


off the shelf, cost effective cell therapy

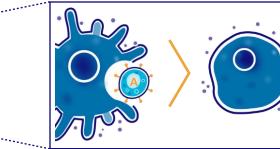
Mechanism:



1. Patient with systemic or joint inflammation



2. Allocetra™ cells are injected into the patient



3. Allocetra[™] cells are engulfed by macrophages

4. Macrophage homeostasis is restored





ALLOCETRATM PIPELINE: BUILDING MOMENTUM

Indication	Study#	Administration	Pre-clinical	Phase I/II	Phase II	Phase III
Moderate knee osteoarthritis	ENX-CL-05-001 NCT06233474	Local knee injection	Randomized/contro 149 patients, enroll			
Moderate knee osteoarthritis	ENX-CL-05-002 NCT:TBD	Local knee injection	Randomized, conti 150 patients,	rolled,		
Basal thumb osteoarthritis	0006-24-KMC NCT06459063	Local thumb injection	Investigator-initiat 56 patients, enrolli			
End-stage knee osteoarthritis	0189-22-KMC NCT06208241	Local knee injection	Investigator-initiat 18 patients enrolle			
Temporomandibular joint osteoarthritis	1400-24-SMC NCT06748651	Local TMJ injection	Open-label 6 patients, enrollin	g		
Organ failure associated with sepsis	ENX-CL-02-002 NCT04612413	Systemic administration		olled, Phase II, 120 patients pleted; safety follow-up comp	pleted	Sepsis Program - seeking for po



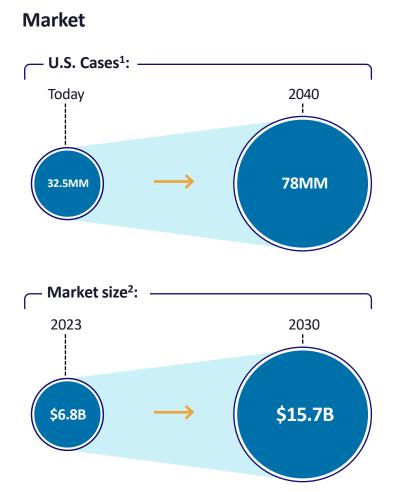
external collaboration or out-licensing, instead of pursuing internal development

ALLOCETRA[™] FOR THE TREATMENT OF OSTEOARTHRITIS



OSTEOARTHRITIS: A GROWING MARKET WITH SIGNIFICANT POTENTIAL

Disease overview ----- Femur Joint Subchondral bone cysts/ sclerosis space narrowing ------ Synovitis Cartilage Fibula -----Disease manifestation: cartilage damage, abnormal bone remodeling, and inflammation of the synovium.



- 1 Arthritis Foundation (https://www.arthritis.org/)
- 2 Verified Market Research reports

Standard of care

Lifestyle changes

Physiotherapy

Pain medication

Surgery

MACROPHAGES ARE AN EMERGING NEW TARGET FOR OSTEOARTHRITIS TREATMENT



The role of innate immunity in osteoarthritis: when our first line of defense goes on the offensive.

Eric W. Orlowsky and Virginia Byers Kraus

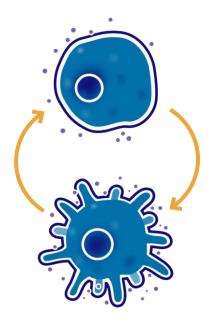
The Journal of Rheumatology 2015



Characterizing heterogeneity in the response of synovial mesenchymal progenitor cells to synovial macrophages in normal individuals and patients with osteoarthritis.

Akash Fichadiya, Karri L Bertram, Guomin Ren, Robin M Yates and Roman J Krawetz

Journal of Inflammation 2016





Imbalance of M1/M2 macrophages is linked to severity level of knee osteoarthritis.

Baolong Liu, Maoquan Zhang, Jingming Zhao, Mei Zheng and Hao Yang

Experimental and therapeutic medicine 2018



An emerging target in the battle against osteoarthritis: macrophage polarization.

Yulong Sun, Zhuo Zuo and Yuanyuan Kuang

International Journal of Molecular Sciences 2020



Synovial macrophages in osteoarthritis:

the key to understanding pathogenesis?

Amanda Thomson and Catharien M. U. Hilkens

Frontiers in Immunology 2021



KNEE OSTEOARTHRITIS (KOA) MARKET

• High prevalence & burden:

- 32M Americans today; projected 78M by 2040
- One of the most disabling diseases globally

• Unmet medical need:

- No approved disease-modifying treatments
- Current options: pain relief, steroids, surgery

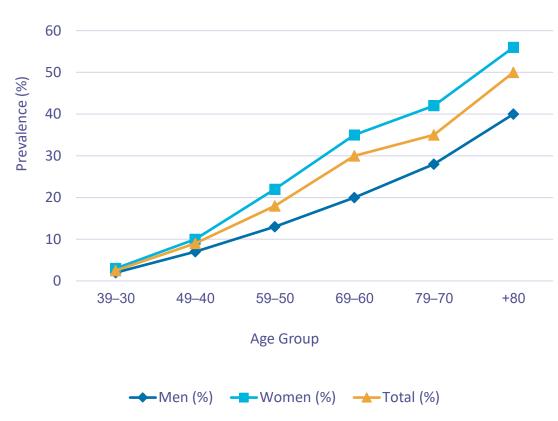
Age-related progression:

- Prevalence rises to 30% at age 60+
- 50% of KOA patients are 60+
- As individuals age, the cumulative effects of wear and tear on joint tissues become increasingly evident and induce low grade inflammation mainly mediated by resident macrophages and fibroblasts, and the regenerative capacity of cartilage diminishes

Future growth driver:

Rising geriatric population → increasing OA prevalence

Prevalence of Osteoarthritis increases with age¹



Global, regional prevalence, incidence and risk factors of knee osteoarthritis in population-based studies, A. Cui et al. / EClinicalMedicine 2930 (2020) 100587



ENX-CL-05-001 – PHASE IIa STUDY DESIGNED A PRIORI TO IDENTIFY CORRELATION OF TREATMENT EFFECT AND BASELINE FACTORS

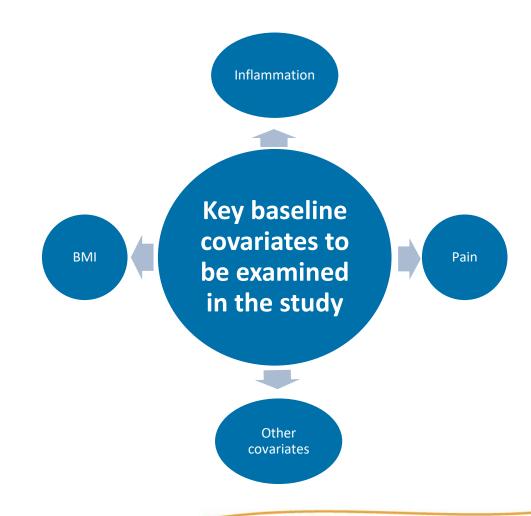
OA leading experts forewarned us prior to study design

"OA is a clinical syndrome and not a singular molecular disease"

Purpose was to assess safety, efficacy, and potentially find a strong signal in a responder sub-population to guide future development

(As stated in our 2024 annual report/PR)

Phase IIa is the proper clinical stage to find the responder sub-population





ENX-CL-05-001: PHASE I/IIa

2-stage trial design - randomized, double-blind, placebo-controlled, multi-country study

Patient criteria:



Patients with symptomatic moderate to severe knee OA who have failed to respond to conventional OA therapy;

Age 45-80 years;

Kellgren-Lawrence (K-L) Grade 2 or 3.





15 patients

Independent safety committee→ no negative safety signal, highest dose selected for Phase IIa

Phase IIa: Randomized, double-blind, placebo-controlled 134 patients



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3 injections (in total) of AllocetraTM or Placebo, each injection 2 weeks from the previous injection

Endpoints:



Primary:

Safety and tolerability.



Secondary:

Change in pain and function assessments (NRS, WOMAC)



Timepoints:

Efficacy: 3-month, 6-month Safety: 12-month follow-up

Efficacy objectives

- Reduction in pain, increase in function and reduction in stiffness
- Numerical grading based on the patients' assessment using a questionnaire
- The validated questionnaire is named **WOMAC**
- Aligned with FDA's accepted Phase III endpoints and timepoints

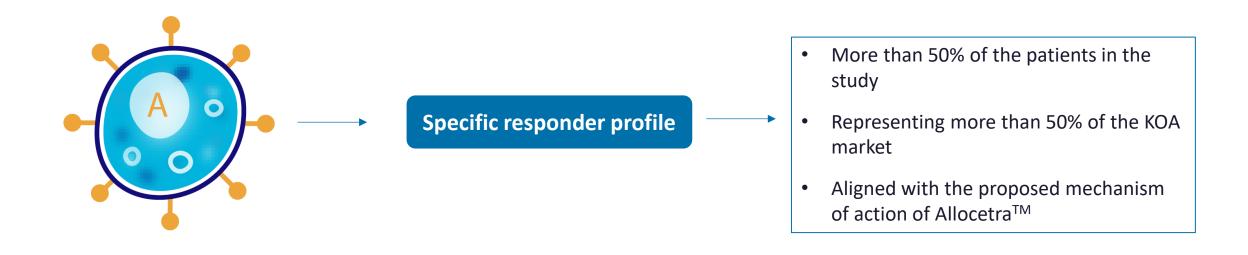
ClinicalTrials.gov Registration: NCT06233474

NRS=numerical rating scale. WOMAC= Standard knee questionnaire evaluating pain, stiffness & physical function



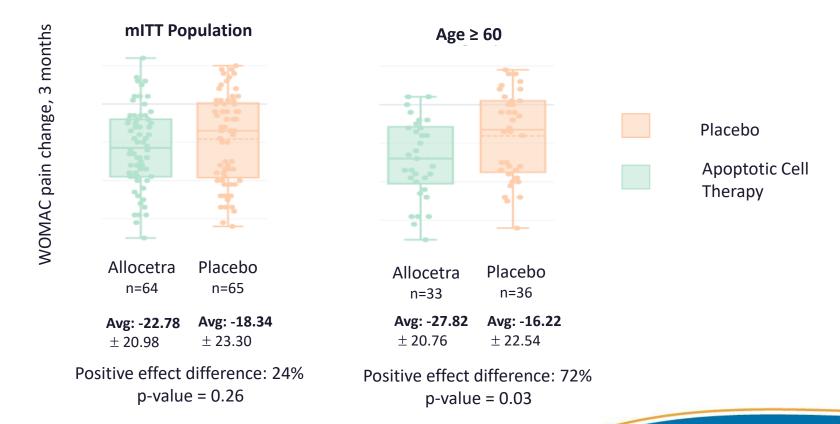
ENX-CL-05-001 – PHASE IIa OBJECTIVES MET:

- (a) FAVORABLE SAFETY PROFILE & POSITIVE EFFECT,
- (b) HIGH RESPONDERS WERE IDENTIFIED (REPRESENTING 50% OF THE KOA MARKET)
 - We had clear success in isolating the key molecular disease for which our drug works well
 - This finding directly illustrates that our hypotheses were correct due to the heterogeneity of the patient population, a distinct responder group needs to be identified



24% IMPROVEMENT OF WOMAC PAIN OVERALL; 72% IMPROVEMENT PRIMARY OA PATIENTS – STATISTICALLY SIGNIFICANT AND CLINICALLY MEANINGFUL

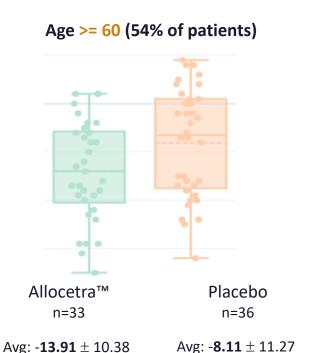
- 54% of the study's population are Primary OA patients (n=69 out of 129)
- The data shows substantial, clinically meaningful, and highly statistically significant difference in treatment effect of Allocetra™ in Primary OA vs placebo



months ന WOMAC pain change,

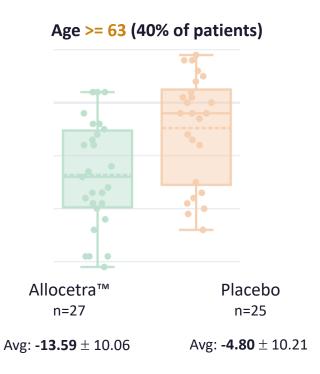
ALLOCETRA™ EFFECT IN PRIMARY OA: CLINICALLY MEANINGFUL, STATISTICALLY SIGNIFICANT, **IRRESPECTIVE OF AGE THRESHOLD (REDUCTION IN PAIN)**

WOMAC pain change 3 months, Primary OA population



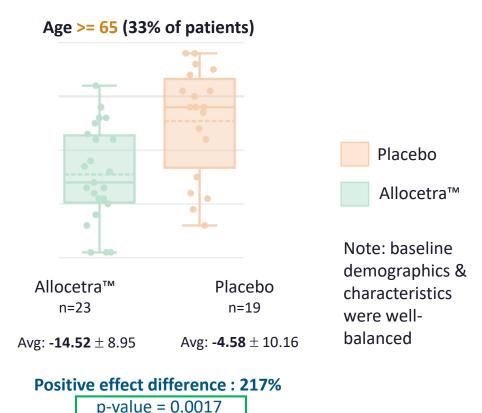
Positive effect difference: 72%

p-value = 0.030



Positive effect difference: 183%

p-value = 0.0029

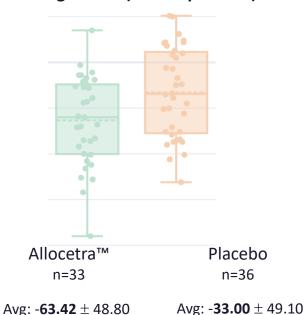




ALLOCETRA™ EFFECT IN PRIMARY OA: CLINICALLY MEANINGFUL, STATISTICALLY SIGNIFICANT, **IRRESPECTIVE OF AGE THRESHOLD (CHANGE IN PAIN, STIFFNESS & FUNCTION)**

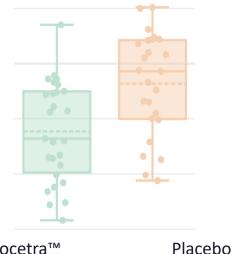
WOMAC total change 3 months, Primary OA population





Positive effect difference: 92% p-value = 0.0121

Age >= 63 (40% of patients)



Allocetra™ n=27

n=25

Avg: **-61.48** \pm 45.27

Avg: -18.24 ± 46.46

Positive effect difference: 237%

p-value = 0.0013

Age \geq = 65 (33% of patients)



n=23

n=19

Avg: **-65.13** \pm 39.50

Avg: -14.47 ± 45.24

Positive effect difference: 350%

p-value = 0.0003



Placebo

Allocetra™

CLINICALLY MEANINGFUL, STATISTICALLY SIGNIFICANT ACROSS EFFICACY ENDPOINTS IN PRIMARY OSTEOARTHRITIS PATIENTS

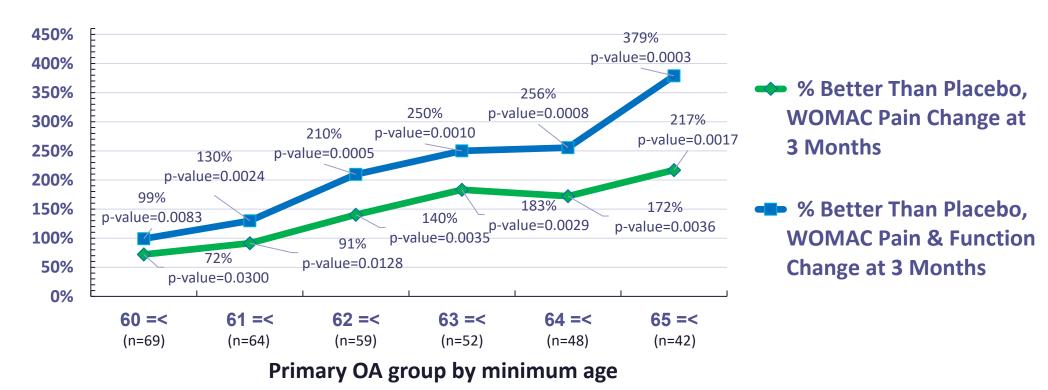
3-month endpoints, Primary OA subjects (age >=60, n=69, 54% of enrolled subjects)

Efficacy measure	Allocetra™	Placebo	Difference	% Better than placebo	p-value	Reduction from baseline in Allocetra™ group
WOMAC total change	-26.43 (n=33)	-13.75 (n=36)	-12.68	92%	0.012	-48%
WOMAC pain change	-27.82 (n=33)	-16.22 (n=36)	-11.60	71%	0.030	-50%
WOMAC function change	-26.45 (n=33)	-12.63 (n=36)	-13.82	109%	0.007	-49%
WOMAC pain & function change	-26.76 (n=33)	-13.45 (n=36)	-13.32	99%	0.008	-49%
WOMAC stiffness & function change	-26.06 (n=33)	-13.10 (n=36)	-12.96	99%	0.012	-48%
NRS pain change	-2.89 (n=32)	-1.99 (n=36)	-0.90	45%	0.094	-46%



PHASE III ENDPOINTS: CLINICALLY MEANINGFUL, STATISTICALLY SIGNIFICANT, SUBSTANTIAL EFFECT SIZE, TRENDING WITH AGE

% Excess reduction of pain, pain & function in Allocetra™ group vs reduction in the placebo group





SAFETY PROFILE: ALLOCETRATM DEMONSTRATED A FAVORABLE SAFETY PROFILE, NO RELATED SERIOUS ADVERSE EVENTS WERE REPORTED

- As observed also in earlier clinical data in severe OA subjects, some patients injected with Allocetra™ experienced local responses following injection (84% of patients treated with Allocetra™, vs. 36% for placebo)
- Local responses mostly involved some knee pain or discomfort (73% of patients treated with Allocetra™, vs. 79% for placebo), and might have included knee swelling or limitation in range of motion (79% of patients treated with Allocetra™, vs. 33% for placebo)
- The events usually presented within 1-2 days following injection (average 1 day), and were mostly mild to moderate (93% of events), and transient (average duration 6 days for Allocetra™, vs. 10 days for placebo)
- Patients were advised of the possibility of such reactions to occur, and guided that symptoms may be alleviated with rest, ice packs on the knee, compression bandages, and knee elevation. If needed, they were allowed to take NSAIDs for a few days
- Overall, patients' willingness to continue with treatments was minimally impacted by the side effects, only 7.5% of patients treated with Allocetra™ opted to discontinue subsequent injections due to adverse events



SUMMARY: 3-MONTH TOPLINE DATA – ENX-CL-05-001

- Study objectives met
 - AllocetraTM demonstrated a favorable safety profile, no related serious adverse events were reported
 - 72% avg positive effect in pain reduction, 99% in increased function (Phase III endpoints) for Primary OA patients
 - Clinically meaningful with high statistical significance of intended Phase III endpoints in the planned
 Phase III population, as well as multiple secondary endpoints
 - Positive effect vs placebo exceeds FDA's effectiveness thresholds by more than 65%
 - Robust and consistent effect, aligned with the proposed MOA of Allocetra[™]
- Osteoarthritis: a growing market with significant potential and unmet medical need with Primary OA responders representing more than 50% of the ~\$7BN KOA market
- Simple manufacturing process, highly attractive KOA treatment cycle at estimated total COGS (3 injections) of ~\$450, allowing competitive pricing well within the range of high-end solutions
- We believe Allocetra™ has strong potential to become the therapy of choice for primary knee osteoarthritis
 patients



ENX-CL-05-002: PHASE IIb

Randomized, double-blind, placebo-controlled, multi-country study

Patient criteria:



Primary OA patients with symptomatic moderate to severe knee OA who have failed to respond to conventional OA therapy;

Age 60/65-80 years;

Kellgren-Lawrence (K-L) Grade 2 or 3.

Phase IIb: Randomized, double-blind, placebo-controlled



- Allocetra[™] (1 or 2 doses) Vs. Placebo, 3 injections in total, each injection 2 weeks from the previous injection
- 75 patients per arm

Endpoints:



Primary:

3-month change in WOMAC pain OR

3-month change in WOMAC pain & function

Safety and tolerability



Secondary:

3 & 6-month change in WOMAC total, NRS pain, and response assessments

NRS=numerical rating scale. WOMAC= Standard knee questionnaire evaluating pain, stiffness & physical function

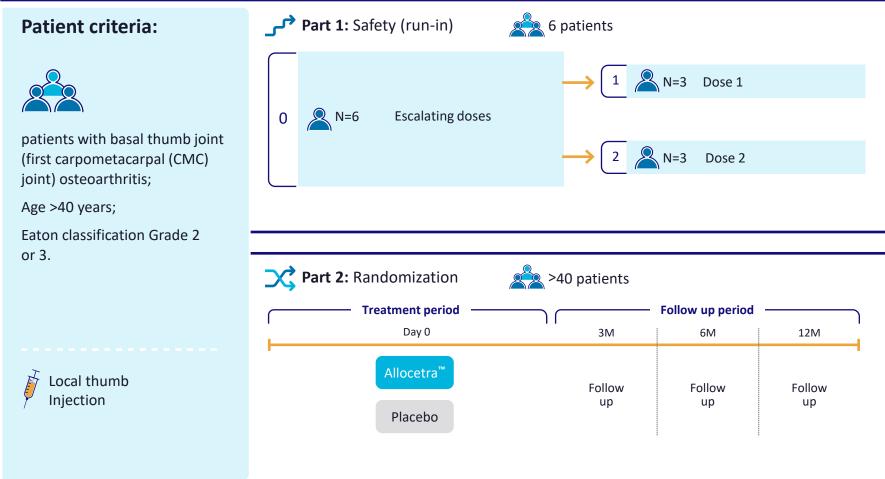


ADDITIONAL CLINICAL STUDIES IN OA



0006-24-KMC BASAL THUMB OA CLINICAL TRIAL DESIGN

Investigator initiated Phase I/II randomized, double-blind, placebo-controlled study



Endpoints:

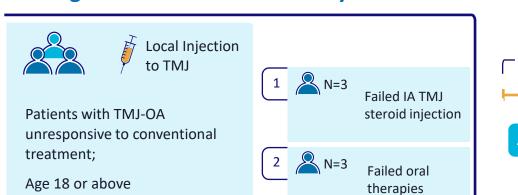
Primary: Safety and tolerability.

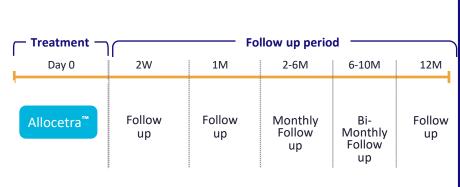
Secondary: Change from baseline in pain and function.

ClinicalTrials.gov Registration: NCT06459063

1400-24-SMC TEMPOROMANDIBULAR OSTEOARTHRITIS (TMJ-OA)

Investigator-initiated Phase I study





Endpoints:

Primary: Safety.

Secondary:
Change in TMJ pain (NRS) and TMJ function.

ClinicalTrials.gov Registration: NCT06748651

ALLOCETRA™ FOR THE TREATMENT OF SEPSIS



SEPSIS: A GLOBAL HEALTH CHALLENGE WITH SUBSTANTIAL MARKET OPPORTUNITY

Affected areas: Brain Lungs Heart Liver Kidneys

A life-threatening overactive immune response to infection that attacks the body and leads to:

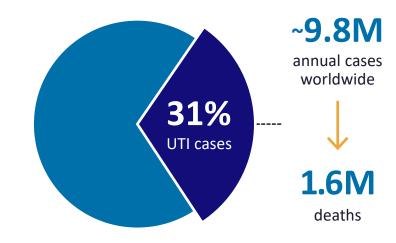
- tissue damage,
- organ failure,
- death.

Market

\$33B GI (se

Global market (severe Sepsis only²)

Up to 31% of sepsis cases start as urinary infections (UTI)¹



Standard of care

Currently there are no FDA/EMA approved drugs to treat sepsis.

SOC only treats complications of sepsis and does not address core dysregulated immune response.

Patients receive:



Antibiotics



IV fluids



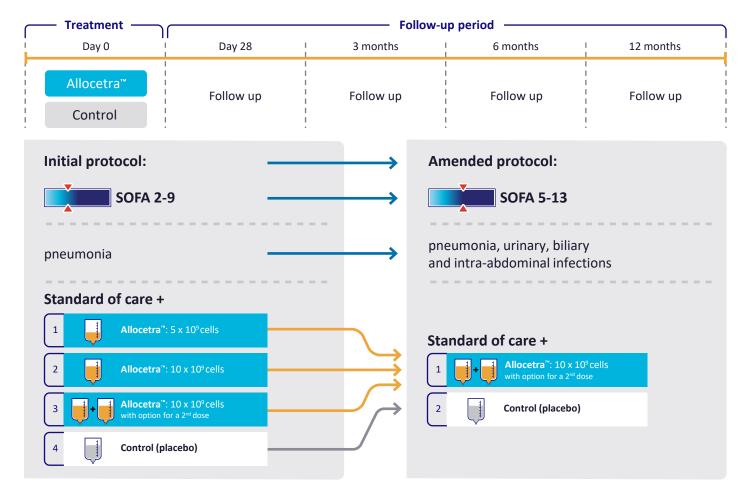
Vasopressors

- 1 Management of Urosepsis in 2018, Bonkat et. Al., European Urology Focus Volume 5, Issue 1, (2019)
- 2 Number of severe cases (<u>www.cdc.gov/sepsis/what-is-sepsis</u>) of 675,000 for US & EU (estimated 25% of the sepsis cases) multiplied by the expected product pricing of \$50k = 33B



ENX-CL-02-002 SEPSIS PHASE II RANDOMIZED CONTROLLED STUDY

Phase II study design:



Patient distribution:

	Treated	mITT		
Control	45	37		
All Allocetra [™] treated	75	50		
Total	120 (safety population)	87 (efficacy population)		



- **Primary:**
 - Safety/change in SOFA score.
- **Secondary:** Mortality.



ENX-CL-02-002 SEPSIS PHASE II RANDOMIZED CONTROLLED STUDY **ALLOCETRA™ GROUP PRESENTED A HIGHER MORTALITY RISK**

Demographics and baseline characteristics:

mITT population ¹	Control N=37	Allocetra™ N=40
Age	64.2 (30-89)	65.1 (30-89)
BMI	27.2 (17-38)	26.3 (17-39)
Screening SOFA	8.1 (5-12)	8 (5-13)
APACHE II ²	21.1 (6-44)	20.5 (6-47)
Septic shock Invasive ventilation	24 (65%) 16 (43%)	31 (78%)
Pneumonia	14 (38%)	16 (40%)
Urinary (UTI)	9 (24%)	9 (22.5%)
Intra-abdominal	5 (14%)	10 (25%)
Skin and soft tissue infections Acute	4 (11%)	3 (7.5%)
cholangitis	5 (13%)	2 (5%)

Allocetra[™]-treated cohorts presented **20%** higher frequency of septic shock and 35% higher frequency of invasive ventilation compared with the control cohort.

These attributes are associated with higher mortality rates.



^{1 -} Analysis of modified intent-to-treat (mITT) population for all patients who were randomized, received the high dose of AllocetraTM or placebo, had a screening total SOFA score >= 5 points above pre-admission total SOFA score and had at least one post-baseline total SOFA score.

^{2 -} Acute Physiology and Chronic Health Evaluation (APACHE) II is an ICU score system, used to determine the severity of disease at baseline.

ENX-CL-02-002 PHASE II: UTI HIGH-RISK PATIENTS, POTENTIAL INDICATION OF EFFECT, SUBSTANTIAL MARKET

Potential indication of effect in high-risk UTI patients

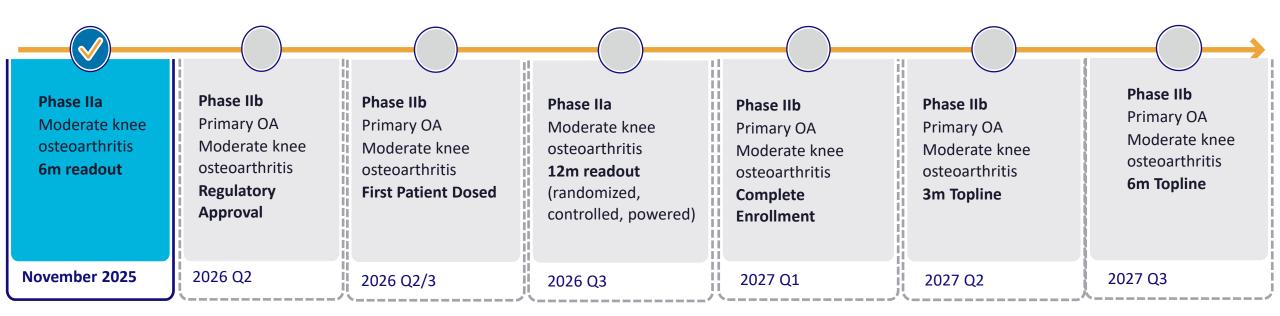
UTI	Population: screer	ning SOFA ≥7	D1-14	D1-28
N=9	Control	Average reduction in SOFA score:	-7.22	-6.75
		Stdev:	2.28	2.12
N=6	Allocetra™	Average reduction in SOFA score: Stdev:	-9.00 	-8.40 2.61
		% over control:	25%	24%
		p-value:	0.0814	0.1181

Despite higher risk of the Allocetra™-treated group

	Septic shock	Respiratory SOFA	Coagulation SOFA	Cardiovascular SOFA	Renal SOFA
		≥3	≥3	=4	≥3
Control N=9	78%	22%	33%	33%	11%
Allocetra™ N=6	100%	33%	17%	83%	50%

^{1 -} Management of Urosepsis in 2018, Bonkat et. Al., European Urology Focus Volume 5, Issue 1, (2019).

SHORT AND LONG TERM TARGET MILESTONES

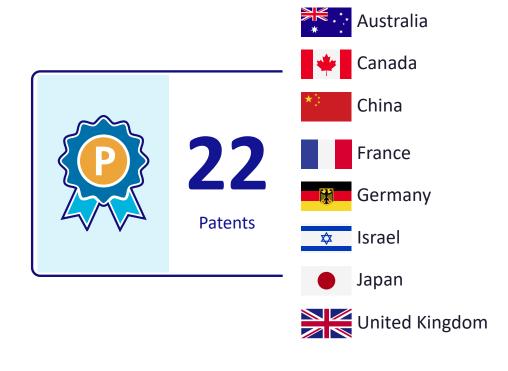


Initiation and potential finalization of partnership discussions



EXTENSIVE IP PROTECTION





Expected protection up to

2043



FINANCIAL SUMMARY

NASDAQ GS

ENLV

Cash & equivalents

\$19.5 MM (June. 30, 2025)

Debt

none

Shares outstanding

23.8 MM (June 2025)

Estimated cash runway through

Dec. 31, 2026



INVESTMENT SUMMARY





Clinical data supportive of proposed MOA

THANK YOU