INVESTOR OVERVIEW

Maximizing GLP-1 Benefits with Oral MS 001

To Drive Deeper Weight Loss, Control Weight Regain, Preserve Muscle, and Improve Overall Health.

INVESTMENT

$10M

divided into $3M + $7M milestone events

CASH PAYBACK

20x–100x

target range after attractive Phase 2 readout

EXIT YEAR

2029

planned proof-of-concept value inflection point

A BIG PROBLEM

Obesity: A Global Health Crisis

1B+ people living with obesity

880M adults

159M children

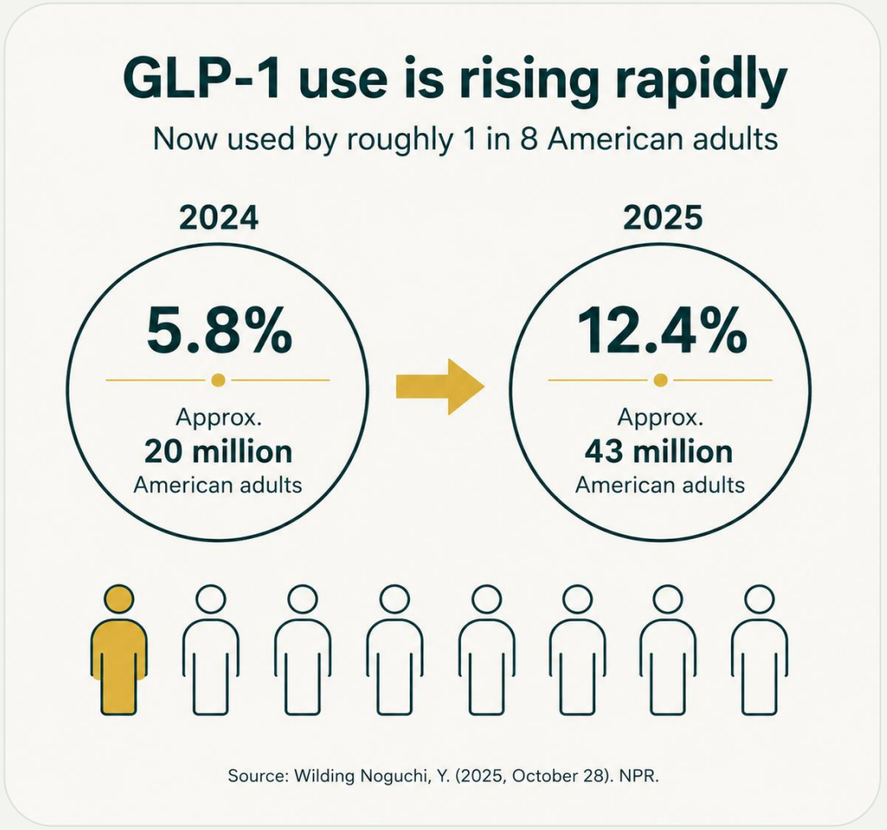
Worldwide adult obesity has more than doubled and adolescent obesity has quadrupled since 1990.

The Lancenet, 2024. WHO, 2025.

FOUNDATION

GLP-1 Drugs: Discovery of the Decade

1. Mimic the glucagon-like peptide-1 (GLP-1) hormone
2. Suppress appetite and slow gastric emptying leading to **significant weight loss**
3. Improve blood sugar control in Type 2 Diabetes



THE OPPORTUNITY

GLP-1s Need a Next-Generation Enhancer

Rising demand

for GLP-1 therapies is creating a multi-billion-dollar market.

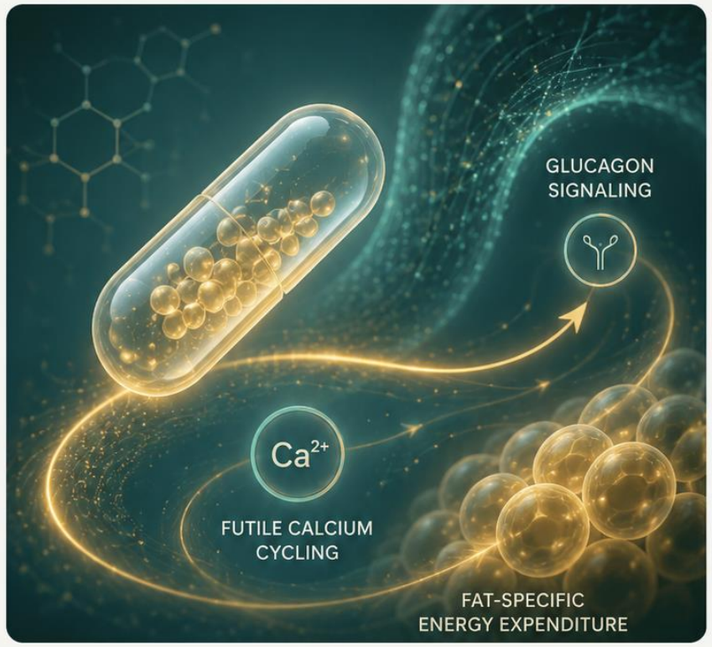
Limitations persist

including plateauing weight loss, muscle loss, and variable responses in high adiposity patients.

Unmet need

for a complementary mechanism that increases fat-specific energy expenditure.

Strategic takeaway: A differentiated metabolic amplifier can expand outcomes, extend market reach, and strengthen competitive positioning.



MS 001

Oral, small molecule with novel mechanism of action

Activates futile calcium-cycling and glucagon-linked pathways to increase fat-specific energy expenditure.

MS 001

Amplifying the Value of GLP-1s

Drives deeper weight loss	Without further reducing caloric intake.
Preserves muscle	Addressing a key limitation of current GLP-1s.
Reduces weight rebound	Following GLP-1 discontinuation (preclinical).
Enhances outcomes	Higher adiposity correlates with greater fat loss when paired with GLP-1s (preclinical).
Expands the market	MS 001 is positioned as a force multiplier that broadens GLP-1 utility + strengthens therapeutic differentiation.

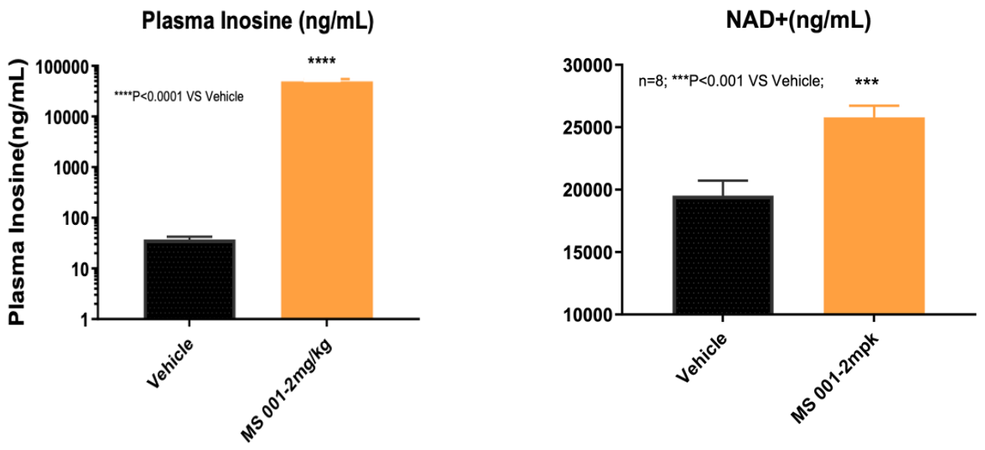
High-impact pipeline
in rapidly growing metabolic health market

Elevates NAD+ ⇢
Potential applications in neuroinflammatory disease

MECHANISM

How Does MS 001 Work?

MS 001 Increases Inosine and NAD+



Yamaguchi et al.,2019., Ruskovska and Bernlohr 2023; Niemann et al., 2022; Dong et al., 2025

Role of Inosine and NAD+ in improving metabolic health and obesity

GLP-1RAs attenuated obesity and reversed leptin resistance partly *via* activating the microbiome-derived inosine/A2A pathway

Chunyan Dong, Bailing Zhou, Binyan Zhao, Ke Lin, Yaomei Tian, Rui Zhang, Daoyuan Xie, Siwen Wu, Li Yang*

Apoptotic brown adipocytes enhance energy expenditure via extracellular inosine

https://doi.org/10.1038/s41586-022-05041-0
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Birte Niemann[1,2], Saskia Haufs-Brusberg[1,2], Laura Puetz[1], Martin Feickert[1], Michelle Y. Jaeckstein[2], Anne Hoffmann[3], Jelena Zurkovic[1], Markus Heine[2], Eva-Maria Trautmann[4], Christa E. Müller[5,6], Anke Tönjes[7], Christian Schlein[8], Azin Jafari[9], Holger K. Eltzschig[10], Thorsten Gnad[1], Matthias Blüher[3,7], Natalie Krahmer[4,11], Peter Kovacs[7], Joerg Heeren[2] & Alexander Pfeifer[1,6]

Adipose tissue NAD^+ biosynthesis is required for regulating adaptive thermogenesis and whole-body energy homeostasis in mice

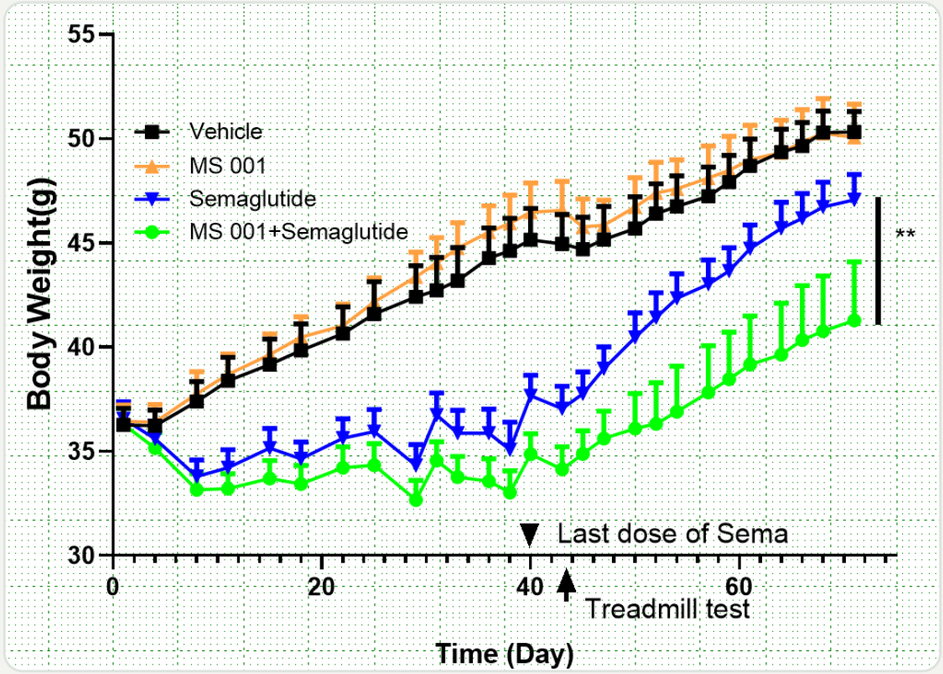
Shintaro Yamaguchi[a,1], Michael P. Franczyk[a,1], Maria Chondronikola[a], Nathan Qi[b], Subhadra C. Gunawardana[c], Kelly L. Stromsdorfer[a], Lane C. Porter[a], David F. Wozniak[d,e], Yo Sasaki[f], Nicholas Rensing[g], Michael Wong[g], David W. Piston[c], Samuel Klein[a,c], and Jun Yoshino[a,h,2]

The Role of NAD^+ in Metabolic Regulation of Adipose Tissue: Implications for Obesity-Induced Insulin Resistance

Tatjana Ruskovska [1] and David A. Bernlohr [2,*]

PRECLINICAL DATA

Synergy: Weight Loss, Strong Results



50% less weight gain vs GLP-1 alone

Greater weight loss control on high fat diet

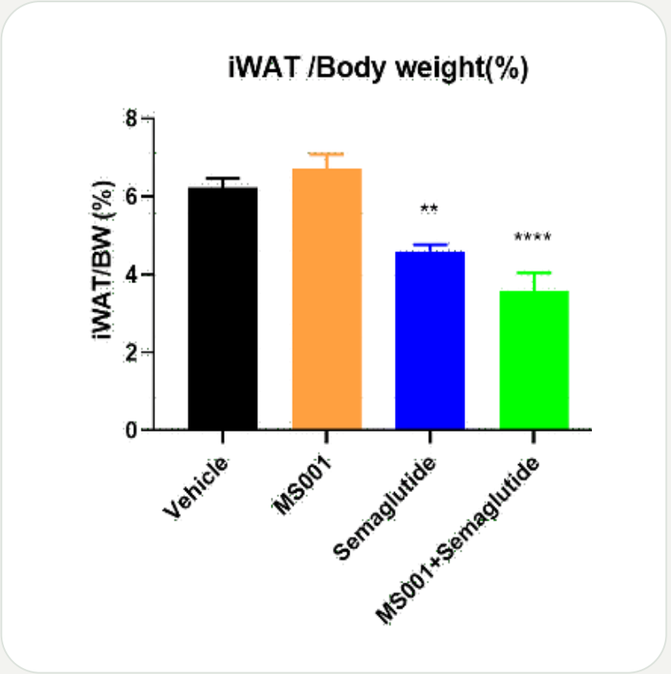
Group	Day 71	
	BW (g)	BW (%) change
Vehicle	50.3	~38%
MS 001	50	~37%
Sema (d/c day 40)	47.1	**~29%**
Sema + MS 001; then stop Sema, continue only MS 001	41.3	**~14%**

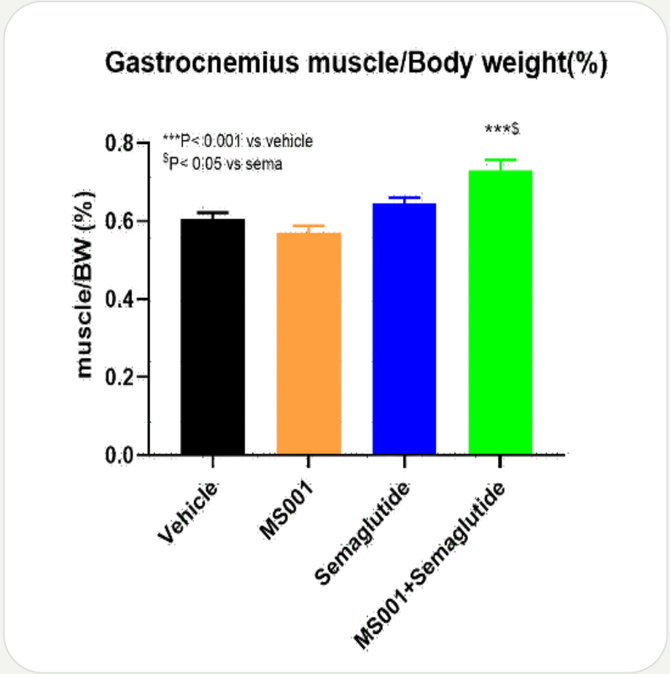
Starting body weight ~ 36.5 g | Semaglutide therapy stopped on day 40

C57BL/6J mice are fed an obesogenic diet from the age of 6 weeks. Approximately 18-week-old mice are either treated with vehicle, or MS 001, or semaglutide, or combination of MS 001+Semaglutide.

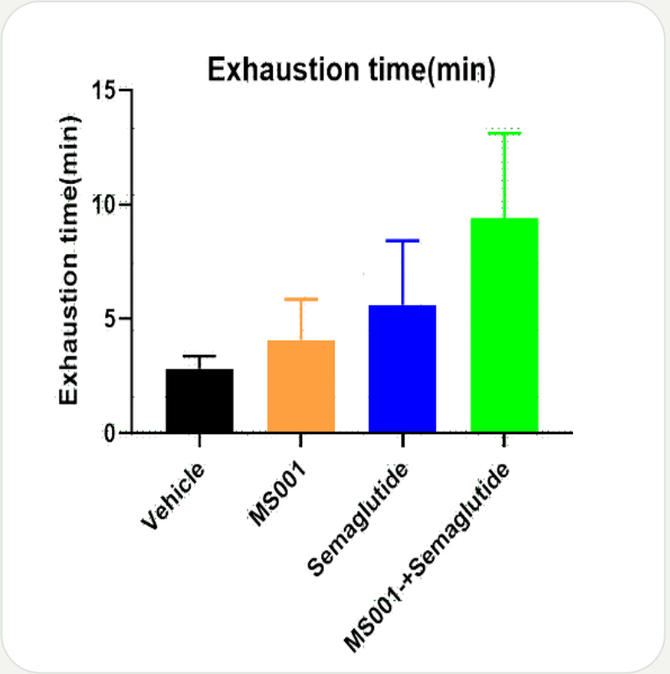
PRECLINICAL DATA

Synergy: Fat Decrease, Muscle Increase, and Improved Endurance





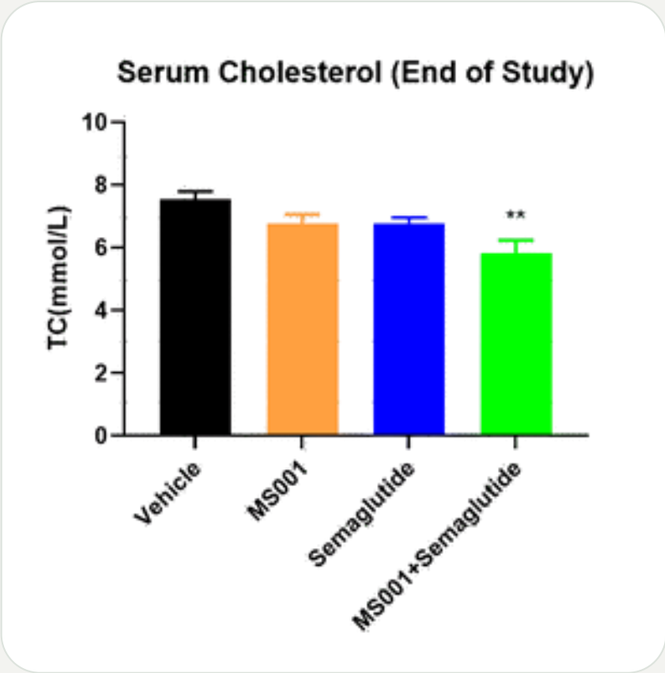
Treadmill Test

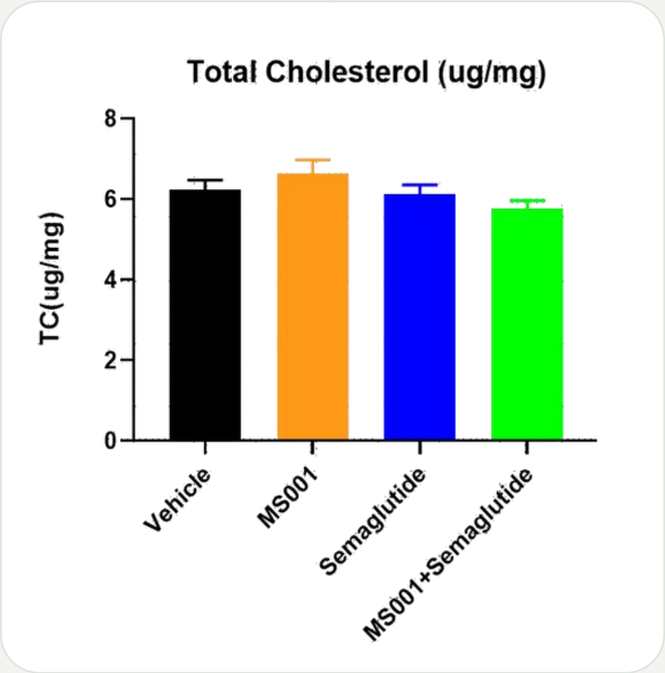


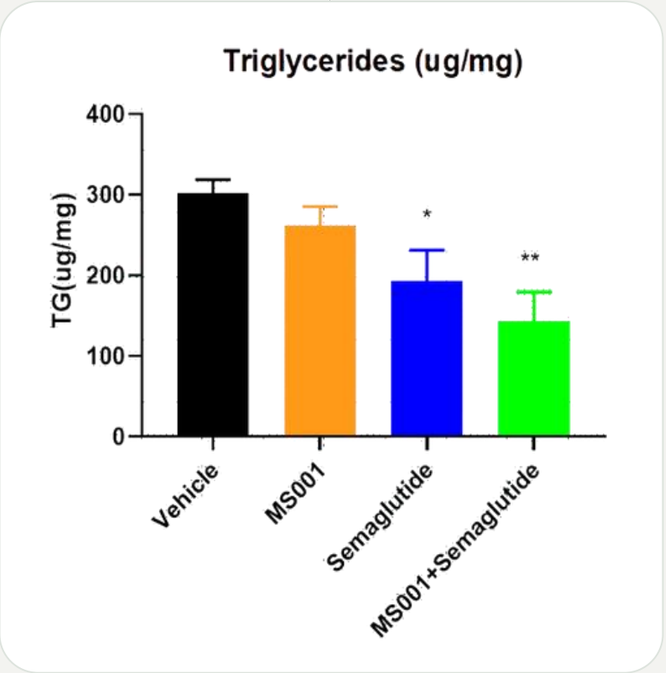
PRECLINICAL DATA

Synergy: Improved Lipid and Liver Profile

Liver Profile



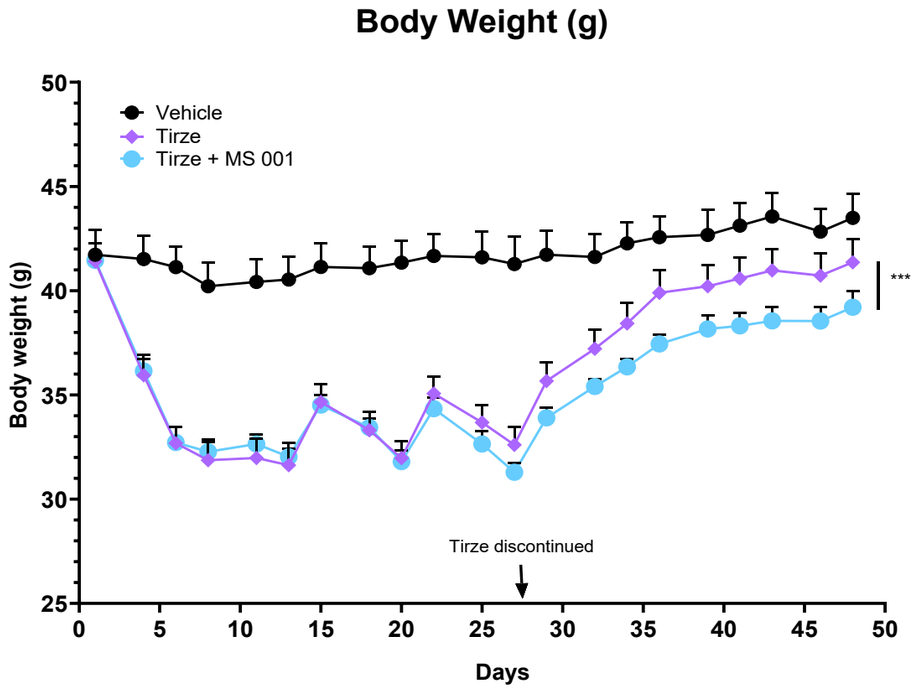


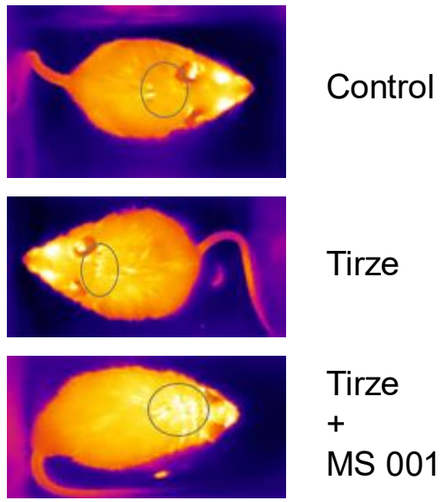


Source slide visual

PRECLINICAL DATA

MS 001 Boosts Tirzepatide Efficacy via Enhanced Fat Burning



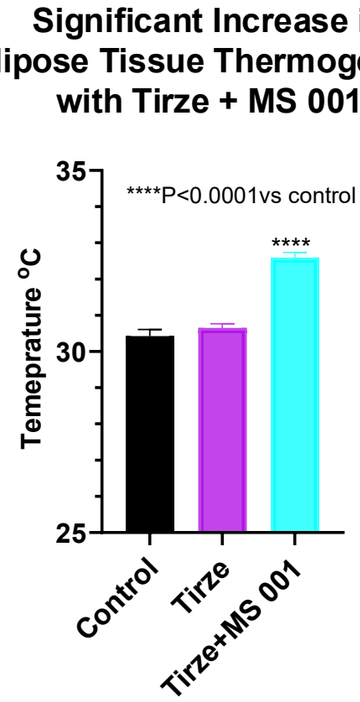


Control

Tirze

Tirze + MS 001

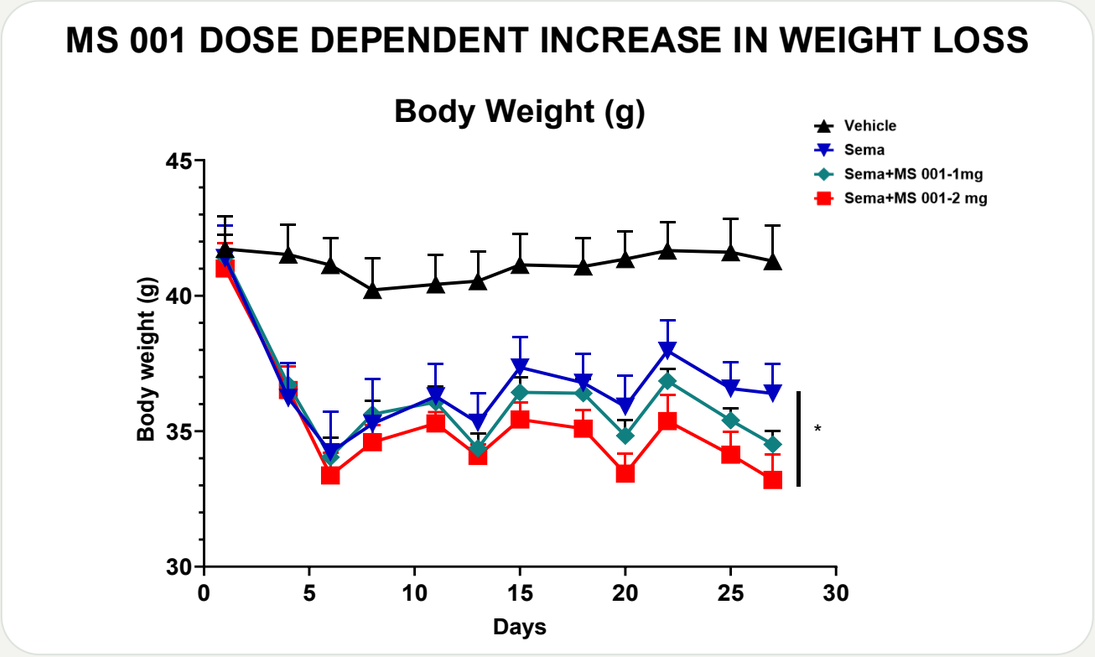
Circles indicate location of heat mapping and temperature measurement.

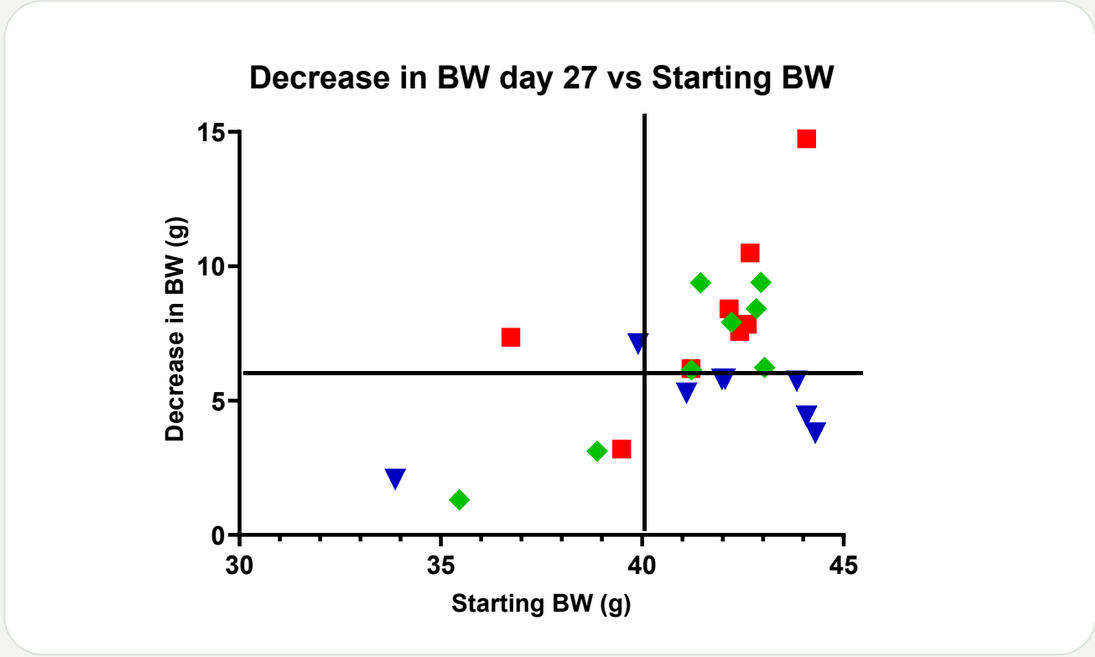


Study design: C57BL/6N; 30-week-old; 8 mice/gp. Tirze was given twice a week 0.05 mg/kg except for the first 2 doses (0.3 mg/kg; first week) and MS 001 was given orally 3 days/week at 1mg/kg dose. Thermal imaging performed Day 45.

PRECLINICAL DATA

Higher Body Fat Drives Increased Weight Loss with MS 001 + Semaglutide





Study design: C57BL/6N; 30-week-old; 8 mice/gp. Sema was given twice a week 0.05 mg/kg except for the first 2 doses (0.3 mg/kg; first week) and MS 001 was given orally 3 days/week at 1mg/kg or 2mg/kg dose.

CLINICAL FOUNDATION

MS 001: Backed by Human Clinical Safety Data

Clean safety profile with daily administration demonstrated in Phase I & II studies **in 500+ subjects.**

Infectious Adverse Events (AEs)	**Placebo (n=56)**	5mg (n=56)	10mg (n=56)	20mg (n=56)	**40mg (n=54)**
		Allopurinol 300mg +			
Any infections AEs N(%)	**11 (20%)**	10 (18%)	10 (18%)	9 (16%)	**11 (20%)**
Typical cold symptoms	6 (11%)	7 (13%)	2 (4%)	4 (8%)	4 (7%)
Lower respiratory tract	2 (4%)	0	1 (2%)	0	1 (2%)
Bacterial/Potentially bacterial	5 (9%)	2 (4%)	9 (16%)	5 (9%)	7 (13%)
Viral/Potentially viral	10 (18%)	9 (16%)	3 (5%)	4 (8%)	6 (11%)
Fungal/Potentially fungal	1 (2%)	1 (2%)	1 (2%)	1 (2%)	1 (2%)

Phase 2 BCX-4208 (ulodesine) study in patients with gout has demonstrated long-term safety and tolerability, at high doses of **40 mg daily for 6 months**

5-10mg Day of MS 001 as a GLP-1 co-therapy for obesity.

Long-Term Safety: A Phase 2 BCX4208 24-Week Blinded Safety Extension and Vaccine Challenge Study. Presented at EULAR, Berlin, June 6 – 9 2012.

SUMMARY

MS 001 Significantly Enhances the Metabolic Effects of GLP-1 Receptor Agonists

Drives deeper, increased fat loss in mice with higher baseline body mass

Activates thermogenesis, primarily in adipose (fat) tissue

Preserves muscle mass and muscle health

Improves lipid and liver profiles

Reduces weight rebound following GLP-1 discontinuation

Favorable safety profile of predecessor compound in humans

IP POSITION

Long Patent Runway

Method-of-Use Application

Exp. 2042

Covering **all PNP inhibitors** for the treatment of obesity, cardiometabolic disorders & neurological diseases.

Composition-of-Matter Application

Exp. 2041

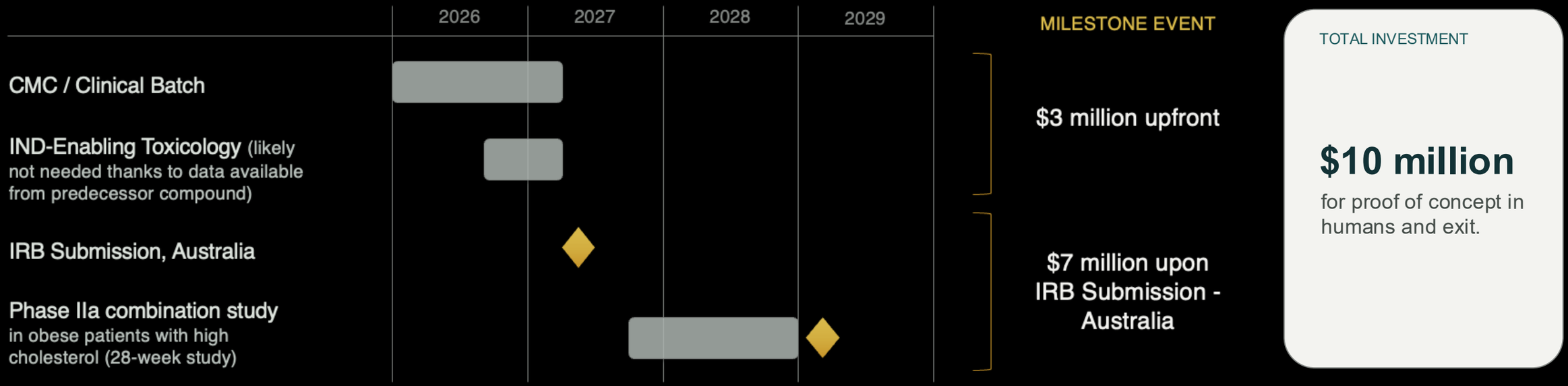
Covering novel, stable salt form of ulodesine under an exclusive license for non-oncological indications.

Applications under examination for exclusivity and long patent runway. Historical clinical data suggests MS 001 is an excellent candidate for combination with GLP-1 drugs.

DEVELOPMENT PLAN (Values in USD)

Investment to High Value Exit

MetaShape plans to conduct a Phase IIa proof-of-concept study in Australia under standards aligned with FDA regulatory expectations. This approach is designed to generate human proof-of-concept data more efficiently and cost-effectively, supporting a potential licensing or M&A transaction with large pharma.



TOTAL INVESTMENT

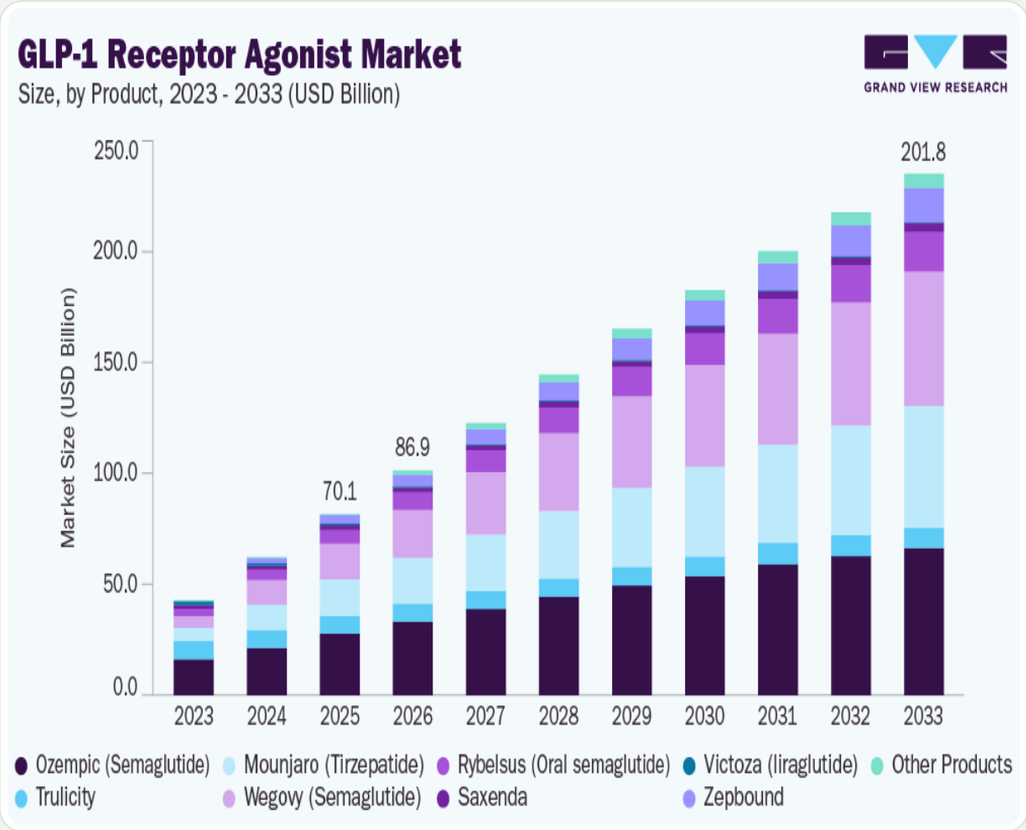
$10 million

for proof of concept in humans and exit.

Value inflection point

MARKET

Total Addressable Market for MS 001



More than 2% of Americans are taking GLP-1 drugs for overweight or obesity, up nearly 600% over six years, according to FAIR Health.

Assumptions and Peak Annual Sales

- 260 million American Adults
- 30% (78 million) Americans consider taking GLP-1s
- 10% (7.8 million) Americans take GLP-1s
- MS 001 TAM of 7.8 million Americans
- Only 7% (546K) Americans take MS 001/year with GLP-1s
- Cost of therapy for 1 year = $100/month ($1,200/year)
- $1,200/pt./year * 546K patients per year, equals (=)

$655,200,000 in first 12 consecutive months on market

$2 Billion+ in peak annual sales 5 years out

MS 001 Differentiators:

- Oral drug that synergizes weight loss with GLP-1s
- Backed by clinical safety and tolerability
- Reduces weight rebound
- Increases lean muscle mass
- Increases NAD+ in body and brain, linked to overall improvement in health, including Alzheimer's and Parkinson's

INVESTMENT RETURN SCENARIO

Potential Return at POC / Phase II

Company	Deal Year	M&A	License	Upfront	Milestone	Drug Candidate
Novo / United Laboratories	2025		✓	$ 200M	$ 1.8Bn	Triple agonist GLP/GIP + glucacon – in Ph Ib
Pfizer / Metsera	2025	✓		$ 10Bn		GLP-1 + Amylin – Ph II
Abbvie / Gubra	2025		✓	$350M	$ 1.875Bn	Amylin hormone – Ph I
Roche / Zealand Pharma	2025		✓	$ 1.4Bn	$ 3.6 Bn	Amylin hormone – Ph II
AstraZeneca / SixPeaks Bio	2025	✓		$ 200M	$ 100M	Activins / TGF-beta – Preclin.

- M&A or License transactions with Phase I or Phase II candidates in the cardiometabolic space command high dollar values
- Upon end of Phase II with attractive data, investment returns could range from $200M upfront to over $1Bn over time
- Cash payback on $10M investment with attractive Phase II readout: **20x–~100x, not including new discovery by Case Western University of MS 001's potential upside to treat and reverse Alzheimer's (mkt projection 2036: $106 Bn)**
- Time to exit: ~1H 2029

OUR TEAM

Thoughtfully Assembled Based on Our Past Experience Working Together

Randall Riggs, MBA

Chief Executive Officer

Thomas Mehrling, MD, PhD

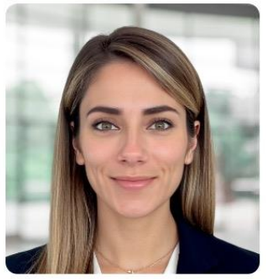
Chief Medical Officer, Founder

Shanta Bantia, PhD

Chief Scientific Officer, Founder

Pooran Chand, PhD

Chief Development Officer



Jessica Kourniaktis, DPhil

Chief Operating Officer

Shingo Kajimura, MD, PhD

Scientific Advisor

Irfan Lodhi, PhD

Scientific Advisor

KEY STRATEGIC COLLABORATORS:

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Steve Mittleman, MD, PhD

Professor Solomon A. and Marie M. Kaplan Chair of Pediatric Endocrinology; physiology of obesity research, UCLA Health

Vincenzo Sorrentino, PhD

Associate Professor, Department of Biochemistry, National University of Singapore

THANK YOU

Maximizing GLP-1 Benefits with Oral MS 001

To Drive Deeper Weight Loss, Control Weight Regain, Preserve Muscle, and Improve Overall Health.

FOR INVESTOR-RELATED ENQUIRIES:

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