KLS-1 Therapy for Oncology Patients

MAKING CHEMOTHERAPIES MORE EFFECTIVE WHILE REDUCING SIDE-EFFECTS

Isotope-Selective Modulation Therapy

July, 2024

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THE FOLLOWING PRESENTATION CONTAINS FORWARD-LOOKING STATEMENTS WITHIN THE MEANING OF THE FEDERAL PRIVATE SECURITIES LITIGATION REFORM ACT OF 1995, CONVEYING THE MANAGEMENT EXPECTATIONS AS TO THE FUTURE BUSINESS PERFORMANCE OF THE COMPANY BASED ON PLANS, ESTIMATES, AND PROJECTIONS AT THE TIME SUCH STATEMENTS ARE MADE. THE FORWARD-LOOKING STATEMENTS CONTAINED IN THIS PRESENTATION MAY BE IDENTIFIED BY THE USE OF WORDS SUCH AS “ANTICIPATE,” “EXPECT,” “BELIEVE,” “WILL,” “MAY,” “SHOULD,” “ESTIMATE,” “PROJECT,” “OUTLOOK,” “FORECAST,” “CANDIDATE” OR OTHER SIMILAR WORDS, AND INCLUDE, WITHOUT LIMITATION, STATEMENTS REGARDING THE ISSUER’S EXPECTATIONS REGARDING TIMELINES AND EXPECTATIONS OF CURRENT OR FUTURE CLINICAL TRIALS. FORWARD-LOOKING STATEMENTS ARE BASED ON THE ISSUER’S CURRENT EXPECTATIONS AND ARE SUBJECT TO INHERENT UNCERTAINTIES, RISKS AND ASSUMPTIONS THAT ARE DIFFICULT TO PREDICT. CERTAIN FORWARD-LOOKING STATEMENTS ARE BASED ON ASSUMPTIONS AS TO FUTURE EVENTS THAT MAY NOT PROVE TO BE ACCURATE, INCLUDING BUT NOT LIMITED TO TIMELINES OF CLINICAL TRIALS AND ANTICIPATED MEETINGS WITH AND/OR PRESENTATION TO THE FDA, WHICH MAY BE DELAYED. THE FORWARD-LOOKING STATEMENTS CONTAINED IN THIS PRESENTATION INVOLVE KNOWN AND UNKNOWN RISKS AND UNCERTAINTIES, INCLUDING, WITHOUT LIMITATION, THE ISSUER’S ABILITY TO PERFORM ITS PLANS, DEGREE OF COMPETITION IN APPLICABLE MARKETS AND INDUSTRIES, LACK OF OPERATING HISTORY, OPERATING LOSSES AND PROFITS, THE NEEDS FOR ADDITIONAL CAPITAL, THE DEPENDENCY UPON QUALIFIED PERSONNEL, THE ENVIRONMENTAL AND OTHER REGULATIONS, ENGAGING STRATEGIC ALLIANCES, AND OTHER RISKS THAT ARE DETAILED IN THE COMPANY’S PRIVATE PLACEMENT MEMORANDUMS. THESE RISKS AND UNCERTAINTIES COULD CAUSE THE COMPANY’S ACTUAL PERFORMANCE TO DIFFER MATERIALLY FROM THE PROJECTED PERFORMANCE EXPRESSED OR IMPLIED IN THIS PRESENTATION. PAST PERFORMANCE DOES NOT GUARANTEE FUTURE SUCCESS. ALL INVESTORS ARE ENCOURAGED TO CONDUCT THEIR OWN INVESTIGATION AFTER THE REVIEW OF THIS PRESENTATION. THE ISSUER UNDERTAKES NO OBLIGATION TO UPDATE OR REVISE ANY FORWARD-LOOKING STATEMENTS, WHETHER RESULTING FROM NEW INFORMATION, FUTURE EVENTS OR OTHERWISE, EXCEPT AS REQUIRED BY THE APPLICABLE LAW. THE FOLLOWING PRESENTATION IS NOT A LEGALLY BINDING DOCUMENT.

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THE VALUE PROPOSITION

Our lead drug compound, KLS-1, enhances the killing of cancer cells by >150% and reduces inflammation and oxidative stress, leading to significantly improved patient outcomes

- Safe at therapeutic doses
- Makes chemotherapy more effective
- Reduces treatment-related side effects
- Reduces tumor metastasis invasion
- Active against multi-tumor types

EXECUTIVE SUMMARY

Metallomix Inc. is a clinical-stage biopharmaceutical company developing a proprietary, new class of inherently safe and clinically derisked medicines to treat unmet medical needs by modulating scientifically validated pathways on an atomic level.

THE OPPORTUNITY

- Multi-billion in pro-forma licensable revenue
- Stong unmet medical need
- Cancers feature a complex zinc biology due to dysregulated zinc uptake and metabolism
- Multiple new molecules in preclinical stage
- Accelerated 505(b)(2) regulatory pathway
- Multiple disease applications and new addressable markets beyond oncology
- Raising $15M for Phase 1 clinical trials

THE BREAKTHROUGH

- Conceptually new mechanism of action
- 150% enhancement of anti-tumor activity
- Reduced post-chemo & radiation side effects
- Versatile drug development platform with 98+ patents and proprietary know-how
- First-in-class isotopically enriched zinc compound and therapy
- Systemic, disease-modifying effect
- Published & peer-reviewed research data

THE PROGRESS

- Unique scientific stance & vision
- Preclinical studies completed
- First-in-human clinical safety confrmed
- Phase 1/2 trials initiated
- CMC file completed to EU standards

Formed in 2021

Focused on Metallome

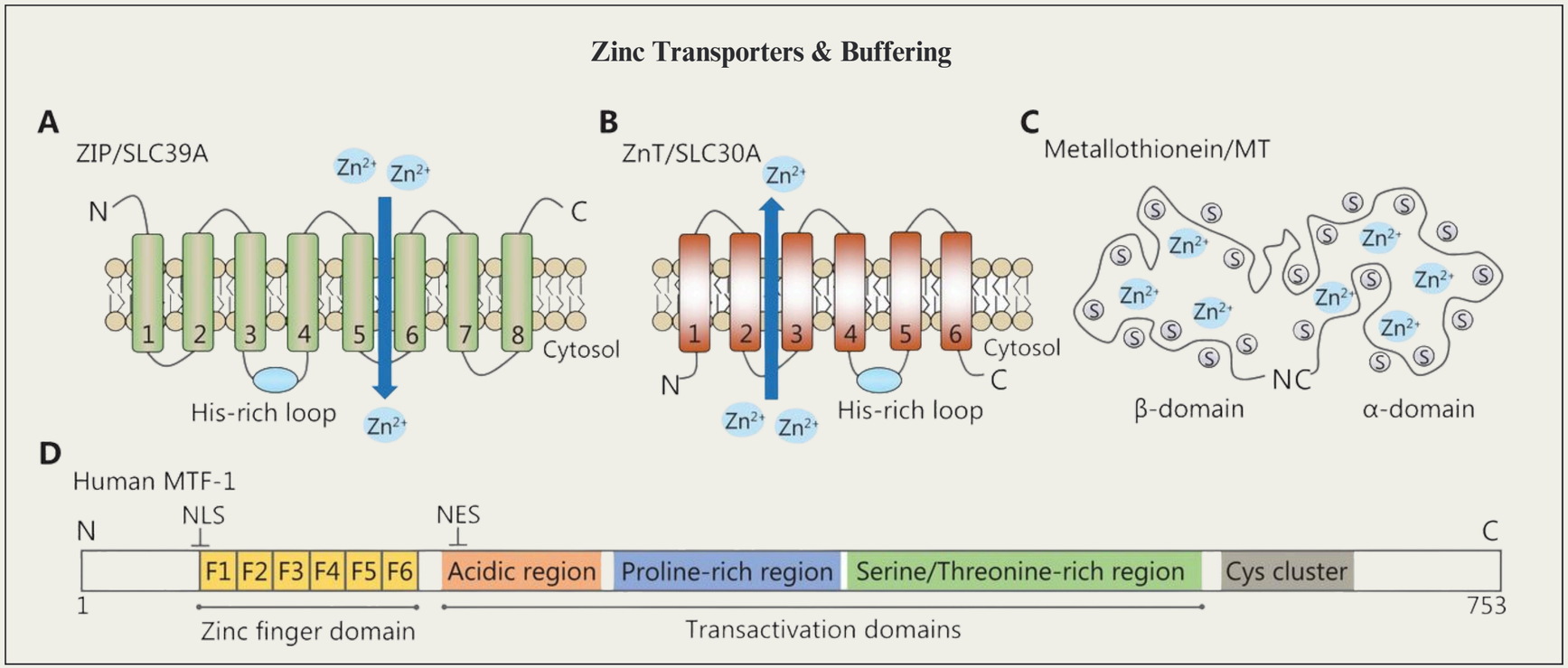
Experienced Team

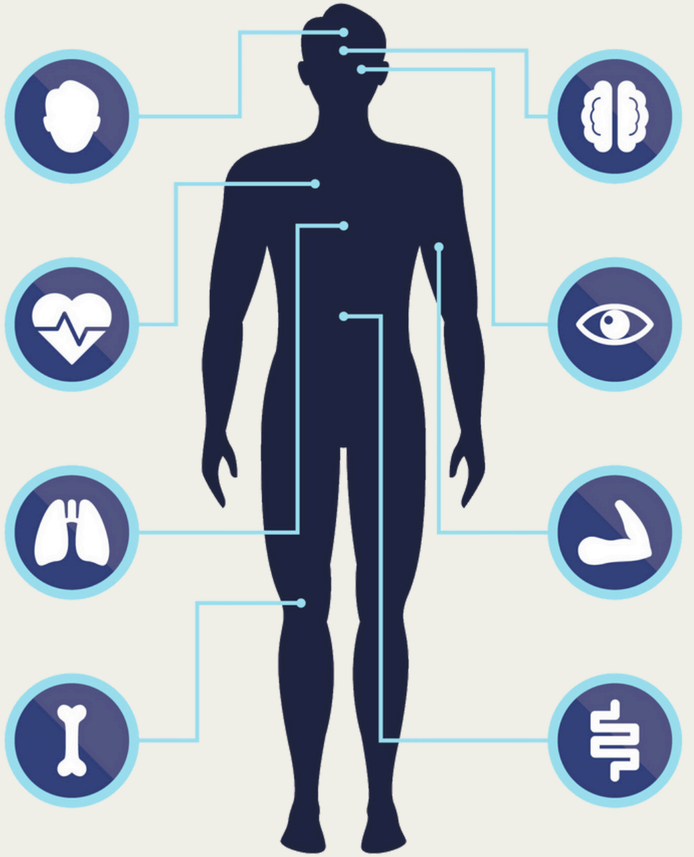
Lead Drug in Clinical Phase

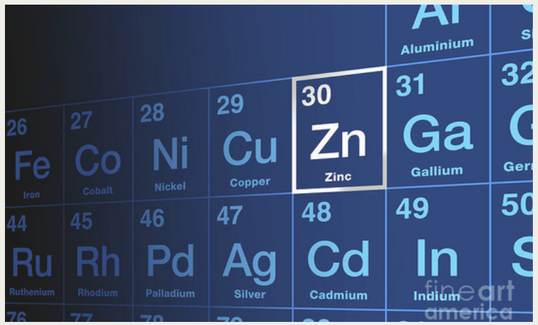
First Mover in New Niche

WHY TARGET INTRACELLULAR ZINC

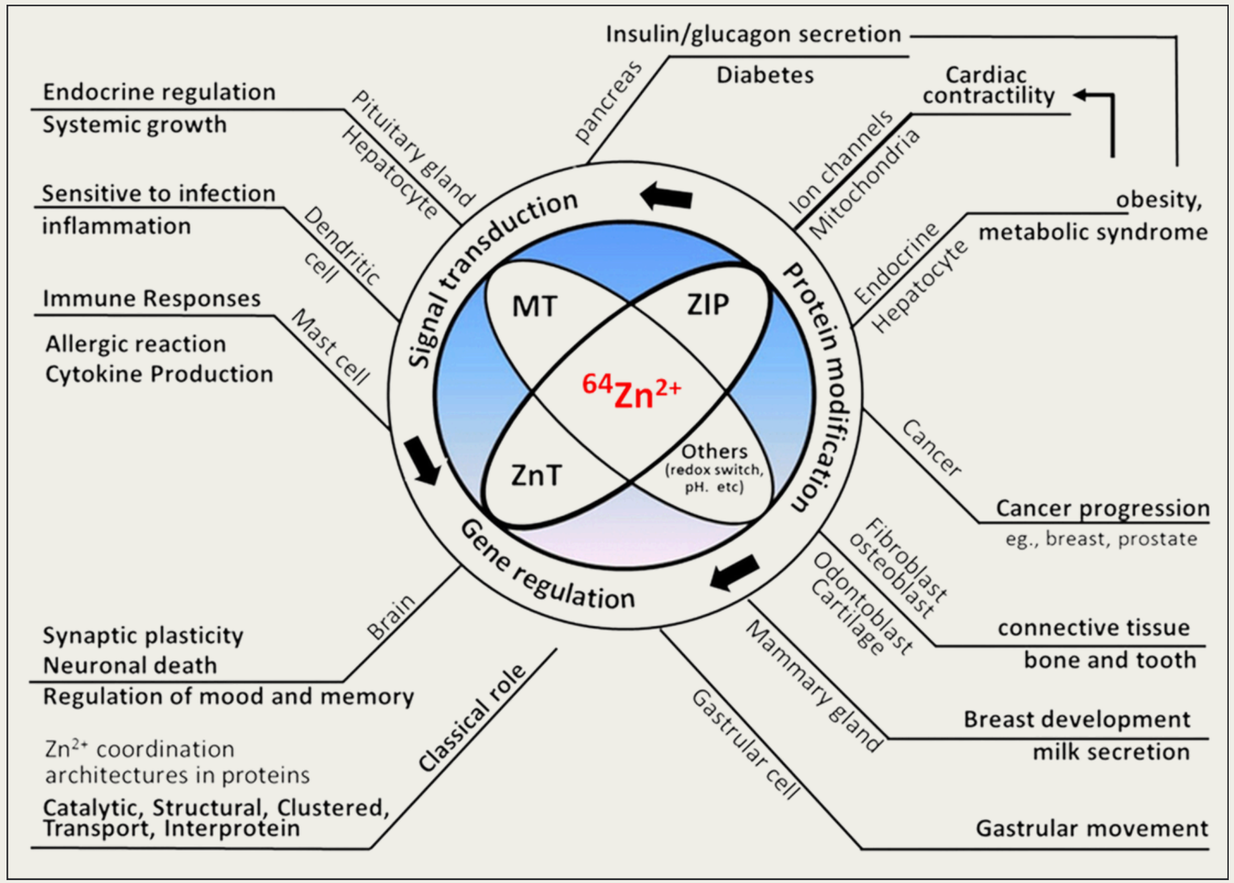
- Intracellular zinc plays structural and catalytic roles in over 3,000 proteins, and is essential for p53-mediated tumor suppression, DNA protection and repair, and many other functions
- Dysregulation of zinc transporters and metallothioneins are associated with over 35% of cancers and many autoimmune, neurological, cardiovascular, and metabolic diseases
- By targeting the cells with downregulated zinc transporters and silenced metallothionein genes, we aim to dramatically improve survival and the efficacy of standard-of-care cancer therapies, and to reduce chemo- and radiation therapy related side effects.







THE ROLE OF ZINC IN ONCOLOGY & OTHER DISEASE AREAS



THE CELLULAR TRANSPORT PROBLEM:

- ZIP transporters are downregulated in disease states
- Intracellular zinc depletion occurs despite normal serum levels
- Standard therapies fail to address transport dysfunction
- A targeted precision medicine approach is needed

CURRENT TREATMENT LIMITATIONS:

- ❌ Oral zinc supplements: Poor bioavailability; no efficacy
- ❌ IV zinc sulfate: Limited efficacy, side effects, dose-limiting toxicities
- ❌ Dietary approaches: Insufficient for therapeutic needs
- ❌ No precision targeting: Standard-of-care ignores cellular deficiency

Intracellular zinc exerts anti-tumor effect through:

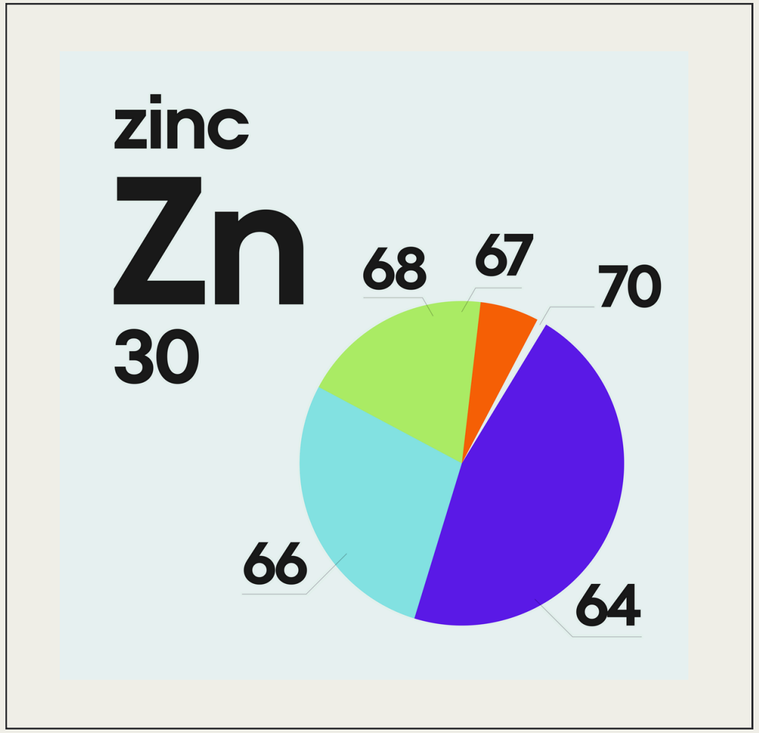
- **DNA Damage Repair**
- **Apoptosis Induction**
- **Metastasis Suppression**
- **Immune System Modulation**
- **p53 Activation**
- **Angiogenesis Inhibition**
- **Cell Cycle Regulation**

THE SOLUTION: TARGETING INTRACELLULAR ZINC HOMEOSTASIS

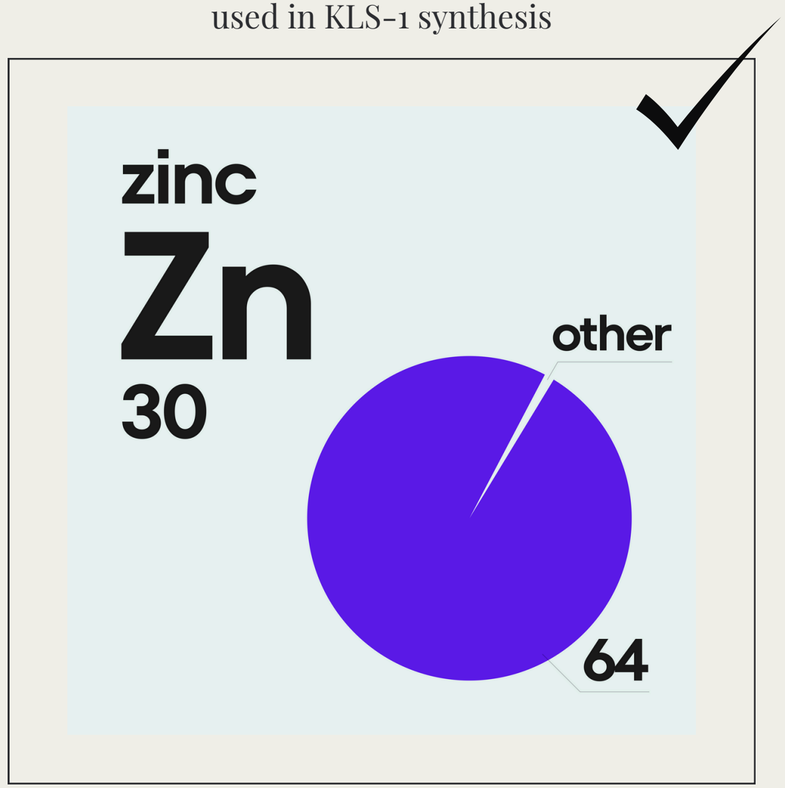
Our proprietary isotope-selective modulation therapies offer solutions in the form of isotopically-modified zinc formulations that combine the therapeutic mechanisms of ionophores and metallochaperones. This allows us to supply isotopically light zinc into the cytoplasm independent of dysregulated zinc transporters and buffering functions, reactivate mutant p53 protein, and to modulate cellular functions with isotope effects.

Zinc coordination provides targeted release in tumor microenvironments

Natural Zinc



Isotopically-Modified Zinc
used in KLS-1 synthesis



THE SOLUTION: LEAD DRUG CANDIDATE

The identification of MT silencing and ZIP/ZnT dysregulation opens new therapeutic avenues, including epigenetic therapies to restore intracellular zinc homeostasis and targeted approaches to reactivate the p53 antitumor/DNA repair and zinc transporter functions.

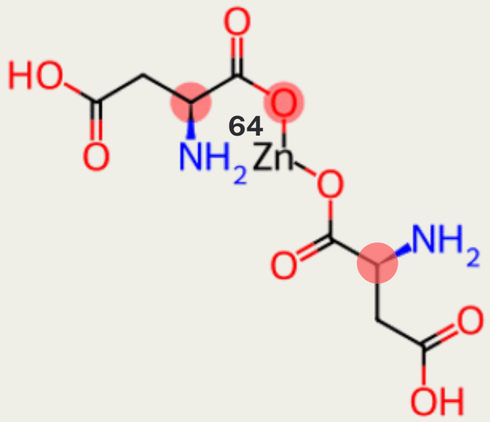
KLS-1 shown promise in treating various forms of cancer, neurodegenerative, and metabolic diseases.

KLS-1 vs. Natural Zinc

- **64Zn Enrichment:** 64Zn>99% vs. 48.6% natural Zn
- **Enhanced cytotoxicity** >1.5x greater vs. natural Zn
- **Superior bioavailability** due to optimized uptake
- **Faster** enzymatic reactions due to isotope effects

Competitive Advantages

- **First Mover:** The only enriched zinc isotope therapy in clinical phase
- **Systemic Effect:** Reduces systemic and local cellular stress and inflammation; Disease-modifying effect
- **Multiple indications** in onco, neuro, and metabolic
- **Strong IP position:** 98 patents protecting technology



64Zn-Enriched Precision Medicine Platform

5 Issued **composition of matter** and **methods of use** patents (Exp. 2035-2049)

68 Pending **indication-specific** patent applications including international counterparts (PCT)

16+ Provisional patent applications

Isotopically-natural zinc aspartate covered by our patents pending

THE SOLUTION: SCIENTIFICALLY VALIDATED PATHWAYS & TARGETS

Isotopically Modified Zn-Aspartate

Metallothionein expression and activities

Induced Bax expression and BCL-2 reduction

Inhibition of NF-kB activation

Induced wtp53 expression/activation and functioning of zinc fingers/zinc proteins

Induced structural integrity of A20 and PPAR-α and cleaved PARP1 expression

Bax pathway | **Interleukins' pathway** | **Mn-SOD pathway** | **ERK / MAPK pathway** | **TGF betta & CRP pathways**

Reduced Local and Systemic Inflammation and Oxidative Stress, Cell Cycle and Apoptosis Regulation

Enhanced Cellular Energy, Mitophagy, Autophagy

Neuroprotective Effects, Memory Improvement, Possible Neurogenesis, Improved Liver / Pancreas Function

Antitumor Action, DNA Repair, Liver Fat Reduction

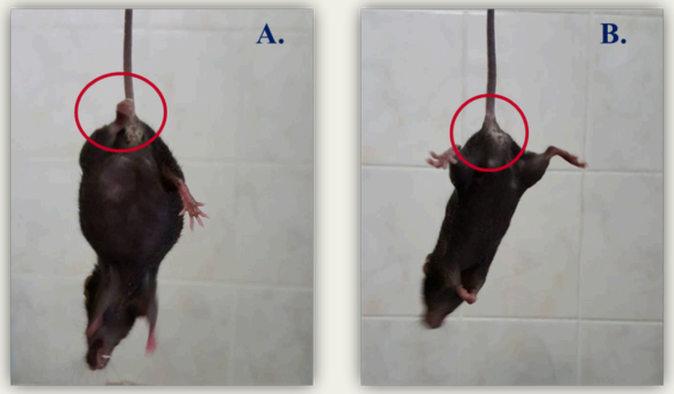
Repair of Cellular Functions => Disease Modifying Effect

SIGNIFICANT PRECLINICAL RESULTS

Type of Investigation	KLS-1 Dose	BCL-2	Bax	wtp53	NF-κB	pro-MMP9	MMP2	MMP9
MM-4 Cell Line, in-vitro	25 µg/ml	No effect	890%↑	950%↑	Not studied	Not studied	76%↓	19%↓
L1210 Mouse Model, in-vivo	28 mg/kg	330%↑	780%↑	900%↑	Not studied	72%↓	40%↓	32%↓
EAC Mouse Model, in-vivo	28 mg/kg	130%↑	780%↑	900%↑	57%↓	36%↓	67%↓	54%↓

L1210 Leukemia Model

Cytotoxic Effect of KLS-1

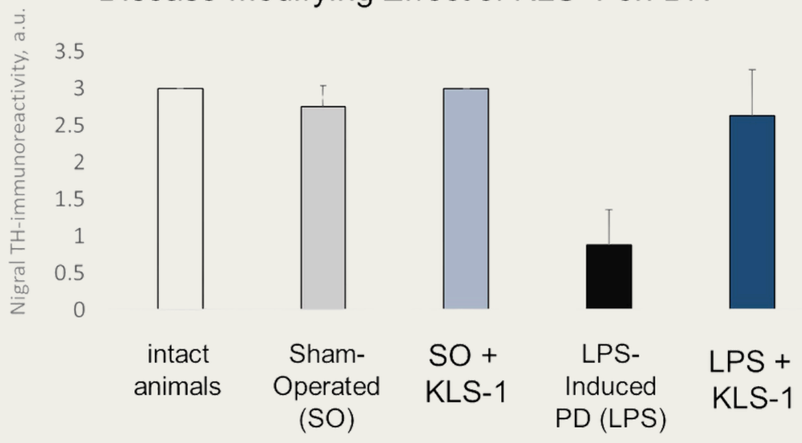


A. L1210 Control B. L1210 + $^{64}Zn_e$(Asp)

Experimental animals on Day 14 after KLS-1 injection into tumor

LPS-Induced PD Mouse Model

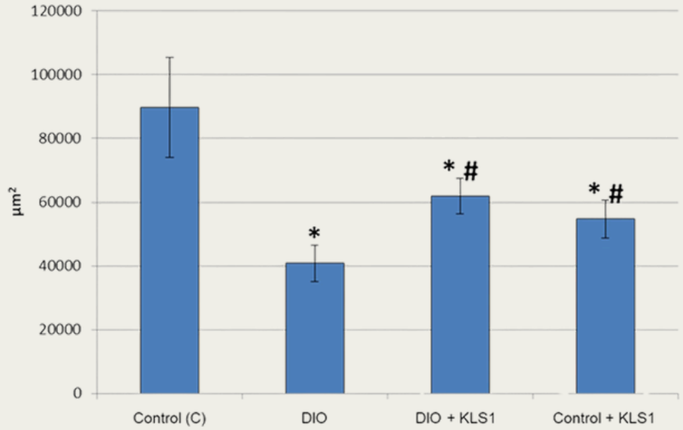
Disease Modifying Effect of KLS-1 on DN



KLS-1 monotherapy resulted in significant revival of TH-positive dopaminergic neurons (DN, #). Combination with Levodopa will be studied next.

DIO-Induced Obesity Mouse Model

Disease Modifying Effect on the Pancreas



A 12-week KLS-1 monotherapy resulted in a 43% increase in cross-sectional surface area of the islets of the pancreas vs. obesity group

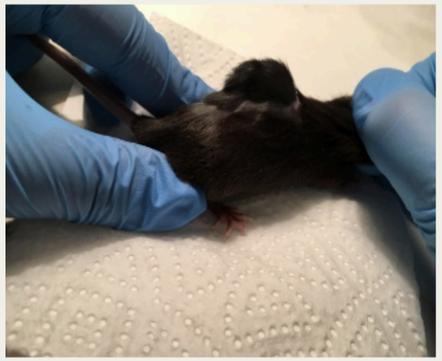
SIGNIFICANT PRECLINICAL RESULTS

Company data

Company data

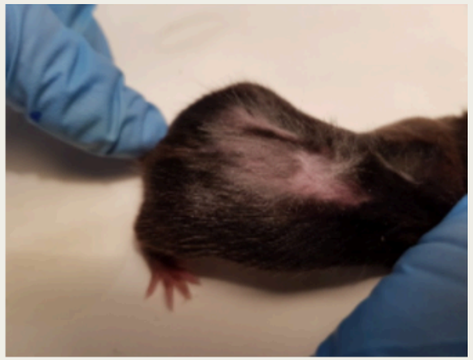
A single injection of KLS-1 led to a significant antitumor effect in experimental model of mice melanoma, B16, accompanied by a revival of skin tissue as evidenced by hair growth.

Company data



Control mouse
3 weeks post treatment

KLS1 single injection
3 weeks post treatment



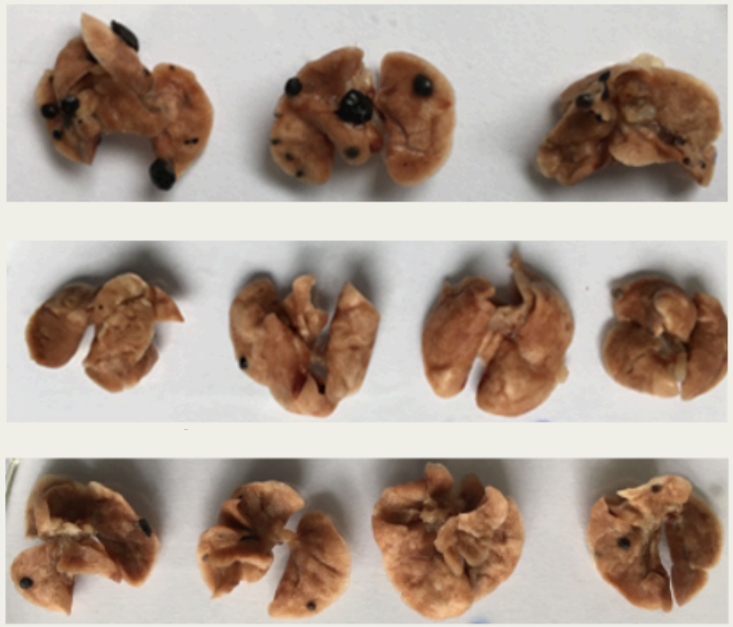
KLS1 single injection
5 weeks post treatment

KLS-1 administered sequentially to dacarbazine, doxorubicin, paclitaxel, and vinorelbine resulted in a significant synergistic effect.

Effective Dose (IC50) [KLS1 administered sequential to chemo agent]	% Surviving Malignant Cells (monotherapy)	% Surviving Malignant Cells (combotherapy)	% Improved Efficacy
KLS-1, 5 mcg/ml	27.2%		
Dacarbazine, 7.5 mcg/ml	41.0%	2.1%	1464% (~14x)
Doxorubicin, 150 ng/ml	91.0%	6.0%	1516% (~15x)
Paclitaxel, 1 ng/ml	98.0%	7.8%	1256% (~12x)
Vinorelbine, 1 ng/ml	85.2%	7.8%	1092% (~11x)
Cisplatin, 1 mcg/ml	31.0%	21.0%	147% (~1.5x)

KLS-1's Anti-Metastic Effect

Administration of KLS-1 suppressed metastases into lungs in mouse melanoma model B16. This experiment shows that KLS-1 therapy may be used for prevention of metastases in human melanoma



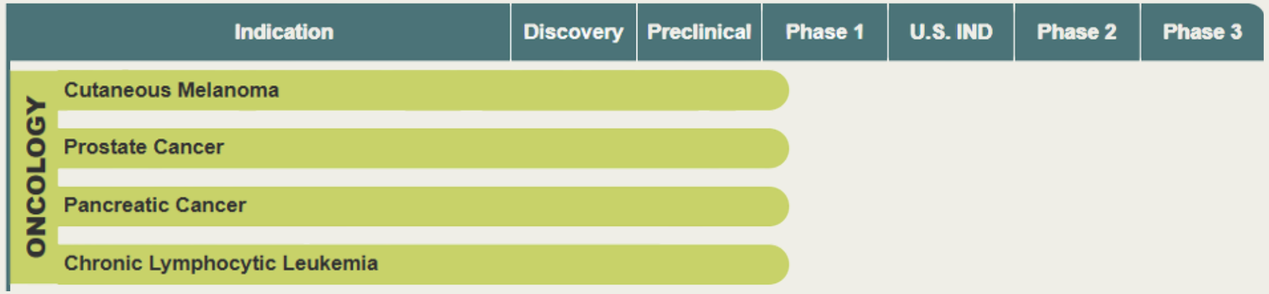
Control

KLS1.1
Tx started 45 min after injecting tumor cells

KLS1.1
Tx started 24 hrs after injecting tumor cells

Company data

CLINICAL DEVELOPMENT PROGRAMS



Recruiting

Safety and Efficacy of KLS-1 Monotherapy in Malignant Neoplasms

ClinicalTrials.gov ID NCT06506643

Sponsor Vector Vitale LLC

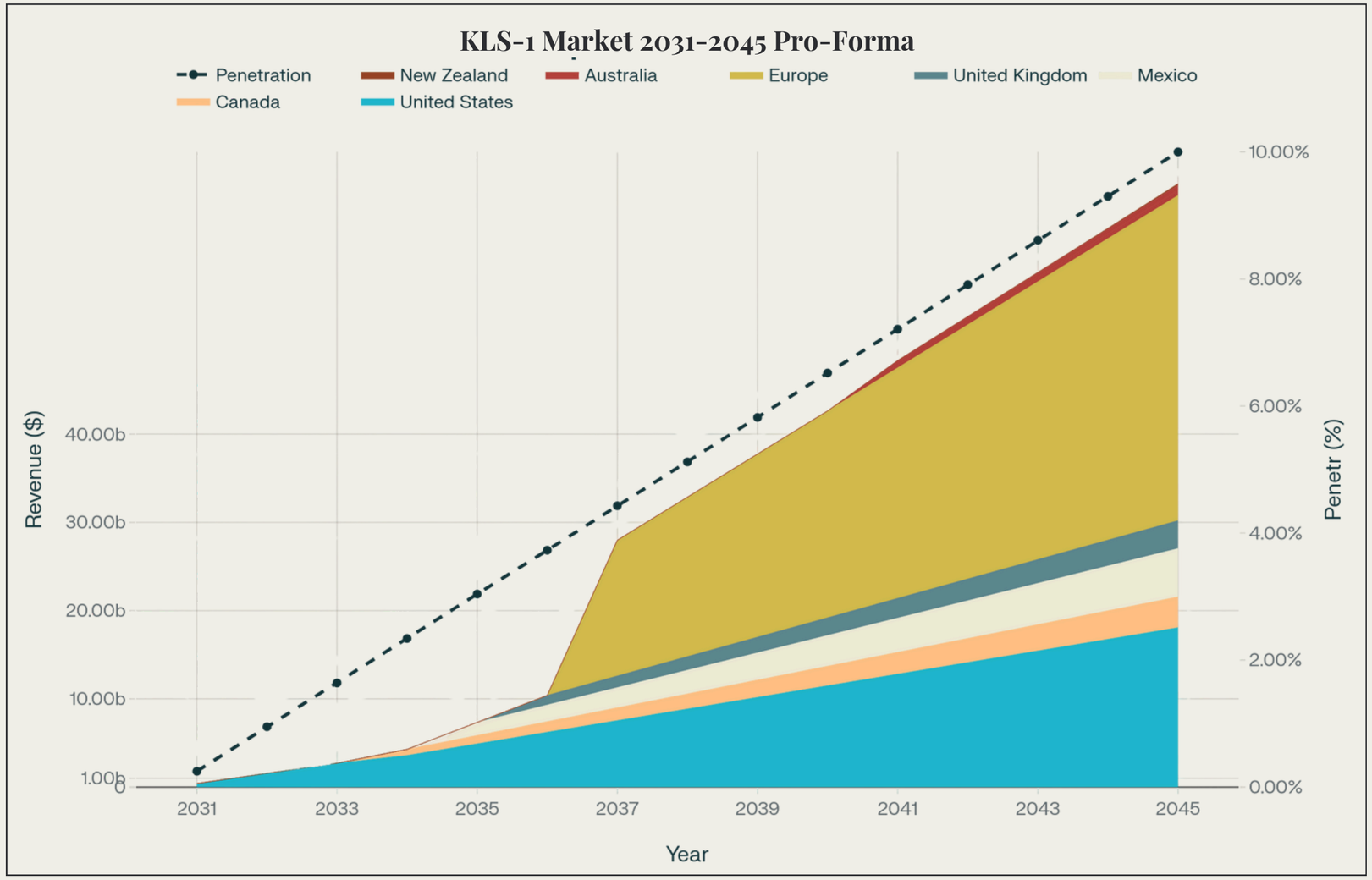
Information provided by Vector Vitale LLC (Responsible Party)

Last Update Posted 2024-10-01

- Lead candidate KLS-1 in human clinical trials in oncology. Phase 1 (safety) SAD and MAD planned 3Q2025
- Completed Phase 1-2 monotherapy trials are expandable into Phase 1-2 combination therapies
- CMC file completed. KLS-1 production scheduled for 2Q2025 to be completed in 2Q2025
- Animal toxicology completed & first-in-human MTD/toxicity tested. Phase 2 clinical protocols, combination therapies in oncology, and IND filings are in the works
- Mechanistic studies are in development
- Four new molecules are in development

THE MASSIVE MARKET OPPORTUNITY

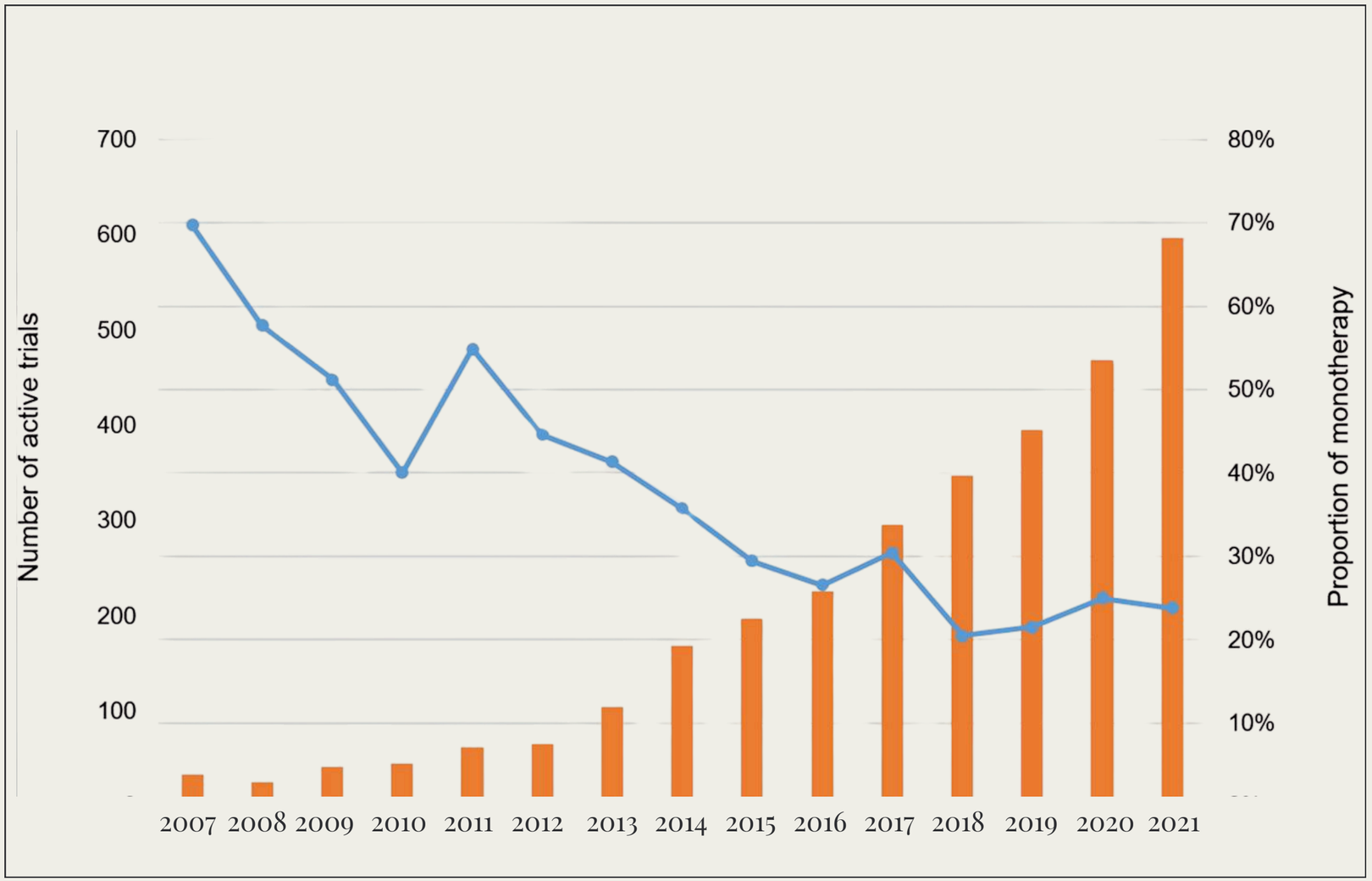
Intracellular zinc treatment represents a massive, largely unrecognized catalytic factor exacerbating diseases affecting nearly 94 million patients with definitive disease and 124 million individuals with functional impairment across the US, Canada, and Europe.



- ✓ Massive, underserved medical need with clear commercial viability across multiple therapeutic areas. The sequential geographic expansion mitigates execution risk while the 15-year post-NDA exclusivity period provides substantial IP protection for return on investment
- ✓ The multi-billion dollar product revenue over 15 15-year of forward-looking post-NDA exclusivity period represents a substantial commercial opportunity supporting a high likelihood of attracting a strong, established pharmaceutical company partnership
- ✓ Licensing fee potential of $12.5-28.3 billion NPV represents a transformative value creation opportunity, with multiple scenarios providing attractive returns

Isotopically-natural zinc aspartate covered by our patents pending

FAVORABLE MARKET TRENDS



Combination therapies are on the rise.

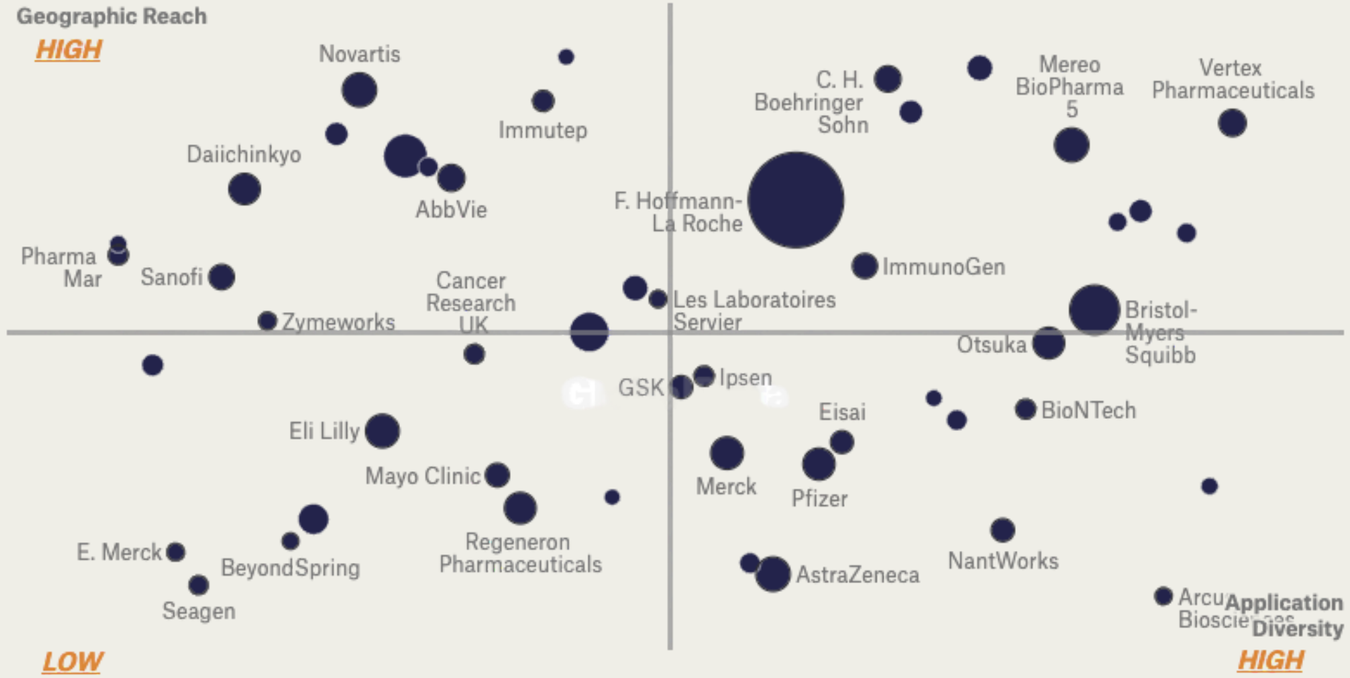
The total number of yearly initiated human clinical trials has increased over time, while the proportion of monotherapy trials have fallen sharply from 70 to 20–30%.

However, it is estimated that the available patients could not support the explosion of mono-therapy oncology clinical trials. Taking melanoma as an example, there are no more than 1,500 melanoma patients who can be recruited globally, which will be far from enough to meet the nearly 600 melanoma trials in progress.

FAVORABLE MARKET TRENDS

Developing newly patented treatments delivering better outcomes than those of the known drugs alone

Cancer combination therapy is a key innovation area in the pharmaceutical industry from 2025 forward



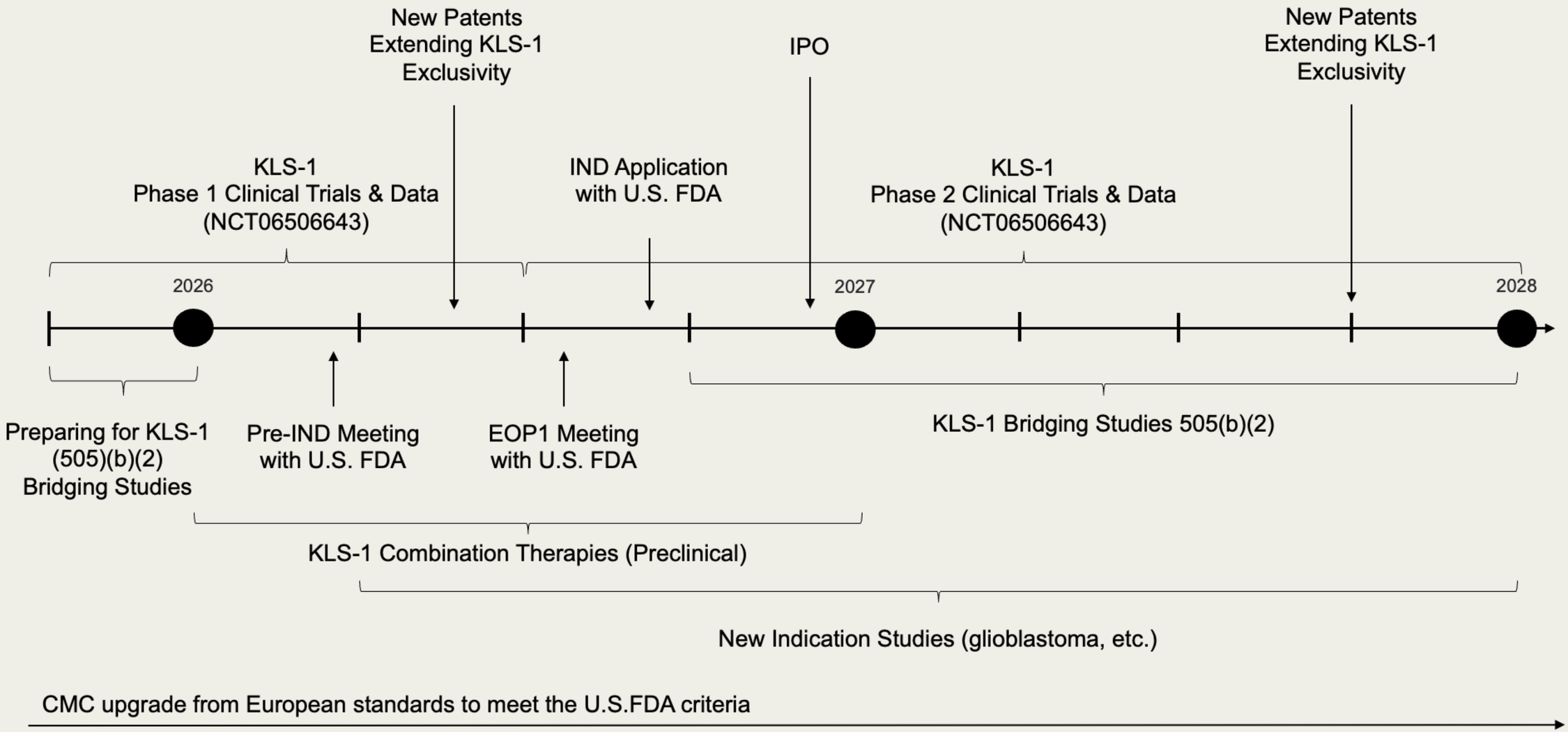
- Bubble size = patent volumes between 2021 and 2023
- Application diversity and geographic reach scores are normalised and ranked on a scale between 0 and 1

Patent volumes related to cancer combination therapy

Company	Total patents (2021 - 2023)
F. Hoffmann-La Roche	
Bristol-Myers Squibb	
Amgen	
Johnson & Johnson	
Mereo BioPharma 5	
AstraZeneca	
Eli Lilly	
Novartis	
Merck	
Pfizer	

Source: GlobalData Patent Analytics

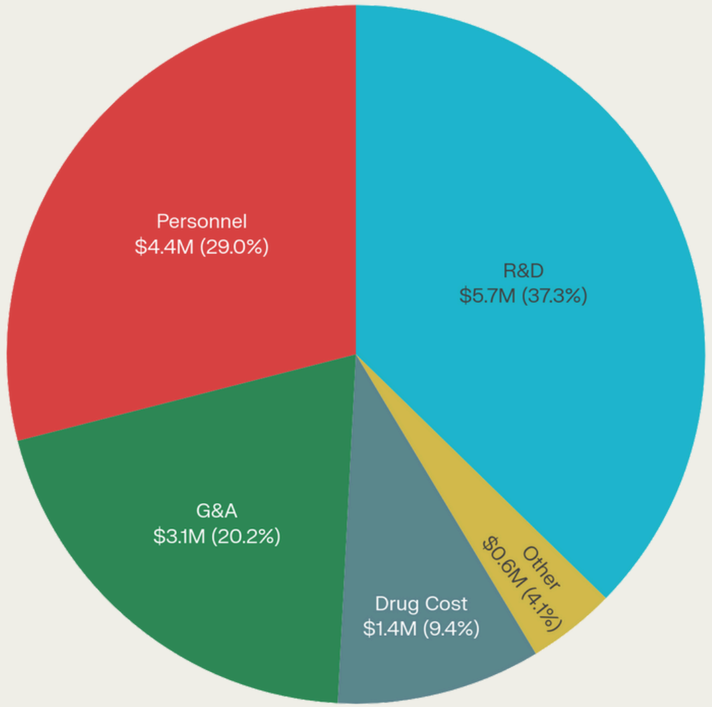
NEAR-TERM MILESTONES & INFLECTION POINTS



USE OF PROCEEDS & CAPITAL REQUIREMENTS

KLS-1 Phase 1 & US Bridging Cost

$15.1 Million



CAPITAL REQUIREMENTS TO REVENUE

- Phase 1 & US Bridging: 21 month, $15.2 million
- Phase 2 Development: 36 months, $45.9 million
- Phase 3 & Registration: 46 months, $104.5 million
- Label Expansion: 51 monhts, $46.2 million

COST EFFICIENCY HIGHLIGHTS

- 75% below industry average ($203.4M vs. $800M+ traditional)
- 3+ years faster than traditional drug development timeline
- 21.1% drug costs reflecting premium isotopically enriched compound
- 505(b)(2) pathway enabling accelerated, cost-efficient development

Phase I clinical trials and bridging studies will establish safety and dosing across all indications.

Phase II efficacy studies will provide proof-of-concept data and inform Phase III trial design.

Pivotal Phase III trials will demonstrate clinical benefit and support regulatory approval across multiple indications.

COMPANY HIGHLIGHTS

THE COMPANY

- Privately-held, founder-financed, C-corp (FL)
- Contemplating an IPO in 2026-2027
- Differentiated business model and R&D strategy with 505(b)(2) in focus.
- Proprietary I.P. for using isotopically modified non-radioactive zinc formulations
- Multiple new molecules in conceptual stage
- Multiple new molecules in conceptual stage
- Based in Miami, FL with R&D oversight from U.S. performed by top researchers in Ukraine

THE PLATFORM

- A new paradigm across multiple diseases
- Focus on new frontier: the metallome biology
- Leading new niche: Isotopic metallome
- Core innovations in isotopic dysfractionation
- Multi-omic approach
- Targets root-cause in diseases vs. symptoms
- Helps the immune system vs. suppression
- Versatile drug development platform with 97+ patents and proprietary know-how

THE LEAD PRODUCT

- Essential preclinical studies completed
- Clinical safety in humans confrmed (Mexico)
- Phase 1/2 trials authorized (Ukraine)
- IND preparation in progress (U.S.)
- CMC compliant with European regulations
- 5-year supply secured through 2030
- 6-year time-to-market plan under 505(b)(2)
- Priority for oncology. Plans for expanding into metabolic and neurological indications

Proven track record of execution and near-term data readout

- Generated robust preclinical data and substantial I.P. portfolio
- Developed and initiated Phase 1 trials in oncology patients
- Filed additional composition of matter and methods of use IP
- Bridging studies to RLD under 505(b)(2) NDA pathway
- CMC package completed. KLS-1 drug supply produced till 2030
- Preparing for 505(b)(2) bridging study in healthy volunteers
- Several peer-reviewed publications in professional media
- Phase 1/2 oncology trial top line data readout 3Q 2025

PEOPLE

Founder, President, COO & Director

Max Temnik, PhD

Investor in several biotech startups, experienced entrepreneur with multiple business ventures, expert in chemistry.

Co-Founder & CEO

Sergei Petukhov, DVM, MSc

Distinguished venture capitalist in the biotech sector, noted for securing "unicorn" IPO exits and M&As, serving as a board member for various biotech companies.

Co-Founder, EVP & Interim CFO

Sergey Gurin, MBA

Accomplished serial entrepreneur, investor and inventor with proficiency in management, business growth, intellectual properties, and securities offerings.

VP, Product Development, Oncology, Neurology

Santosh Kesari, MD, PhD

Leading neuro-oncologist in the U.S., distinguished by extensive research and development expertise coupled with practical experience.

VP, Product Development, Internal Diseases

Leonid Magilenko, MD

Boaard-certified physician in internal medicine with 25+ years of clinical experience.

Board Member

Walter Olesiak, BS, MBA

Over 28 years experience in business development, healthcare consulting and venture investment with Remiges Ventures, Mitsui, Cambridge Pharma Consultancy (an IMS Health company), Genzyme Japan and SRL, Inc.

Chair of Advisory Board

Al Beardsley, PhD

30+ years of creating and leading complex, highly successful public and private sector biopharma companies including Galera, MSDC, Kereos, President & CEO Cirius Therapeutics

Isotope Effects in Biological Organisms

Roman Zubarev, PhD

Professor of medicinal proteomics in the Department of Medical Biochemistry and Biophysics at the Karolinska Institutet.

Regulatory Affairs and Compliance

Andreia Collier, MSc

Over 80 successful INDs and 60 NDAs with the FDA, in oncology, dermatology and cardiology divisions; regulatory approvals in Europe, Australia, Latin America, Japan and Asia; worked at Gilead, BTG, Johnson & Johnson and Merck.

Analytical/Bioanalytical Chemistry

James Blackledge, PhD

Expert in biological mass spectroscopy, 20+ years in pharmaceutical drug development, founder of Capella Imaging, R&D at BMS, Parke-Davis, Kereos, Inc, Mallinckrodt Pharmaceuticals and Galera Therapeutics.

Thank you!

Dr. Sergei Petukhov, CEO
spetukhov@metallomix.com

www.metallomix.com