Designed to reverse cellular aging...

# TELOMIR™
## Pharmaceuticals, Inc.

June 2025

**Bio Presentation**

Nasdaq: **TELO**

# CORPORATE OVERVIEW

*Telomir Pharmaceuticals Inc. (Nasdaq: TELO) is a pre-clinical-stage pharmaceutical company leading the development of age-reversal science by focusing on addressing the root causes of age-related conditions, rather than just managing the Symptoms.*

*"Telomir-1 is a novel oral small molecule designed to regulate metal ions, extend telomere caps, and combat oxidative stress—key drivers of aging and disease. By balancing essential metals like iron and copper, it may protect against age-related conditions"*

**Progeria Research**

**Alzheimer's Disease, AMD and other neurodegenerative diseases**

**Age-related Macular Degeneration (AMD)**

**Wilson's Disease**

**Cancer Models**

**Type 2 Diabetes Studies**

**Virus**

# TELOMIR MANAGEMENT

**Erez Aminov** | Chairman & CEO

- A biotechnology leader driving innovation in drug development and strategic growth.
- Current Chairman and CEO of Mira Pharmaceuticals (Nasdaq: MIRA): Led the preclinical development of multiple drug candidates and successfully submitted an IND while securing funding and meeting critical deadlines.
- Collaborated with major universities like University of Miami, Bascom Palmer Eye Institute, and helped form strategic partnerships.

**Alan Weichselbaum, CPA, MBA** | CFO

- Seasoned Financial Executive with 30+ years of experience in corporate finance, capital markets, and strategic advisory; currently CFO of both Telomir and Mira Pharmaceuticals.
- Board and Advisory Leadership as Director of FinWise Bancorp (Nasdaq: FINW) and founder of The Wexus Group, advising growth-stage companies on capital structuring and exit strategies.
- Capital Markets Expertise gained through senior Wall Street roles, hedge fund management, and leadership in institutional transactions across public and private markets.

**Itzchak Angel, PhD** | Chief Scientific Advisor

- Over 40 years of experience in guiding medical, pharmaceutical, drug, and business development in both large and emerging companies.
- Expertise in small molecules, botanical drugs, biotechnology products, delivery systems, medical devices, and drug-device combinations.
- Former Head of Pharmacology at Synthelabo (Sanofi-Aventis) where he participated in research and development of drugs such as Xatral (alfuzosin), Ambien (zolpidem) and Mizollen (mizolastine).

**Alex Weisman, PhD** | Scientific Advisor

- Occupied executive positions of VP R&D and Chief Scientist at numerous Israeli and international pharmaceutical companies. Currently serve as an advisor and management team member for companies developing new products for the chemicals, pharmaceuticals, and food industries.
- More than 30 years of experience in the development, characterization, scale-up, technology transfer, troubleshooting, production and registration of novel and generic drugs, and other pharmaceutical and chemical products.

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# THERAPEUTIC RESEARCH APPROACHES FOR TELOMIR-1

**Key ongoing approaches include:**


Investigating Telomir-1's effects on copper and iron regulation at the cellular level and in preclinical models.

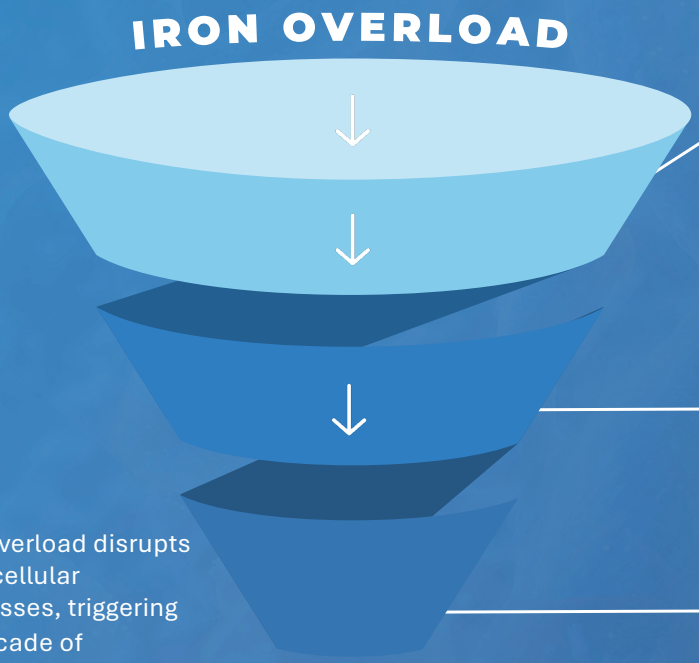
Explore the interactions between iron, copper and zinc on variable cellular functions focusing on cellular aging and its regulation

Identify potential molecular targets for selective modification and control by Telomir-1

Explore available disease and functional models to better understand the therapeutic potential of the drug

Exploring Telomir-1's role in addressing metal toxicity, which occurs when metals like copper, iron, or lead accumulate to harmful levels in the body.

# IMPACT OF IRON OVERLOAD




Iron overload disrupts core cellular processes, triggering a cascade of functional decline and disease development.

## Cellular

- Oxidative stress
- Mitochondrial dysfunction
- DNA dysfunction
- Ferroptosis
- Cellular senescence

## Pathology

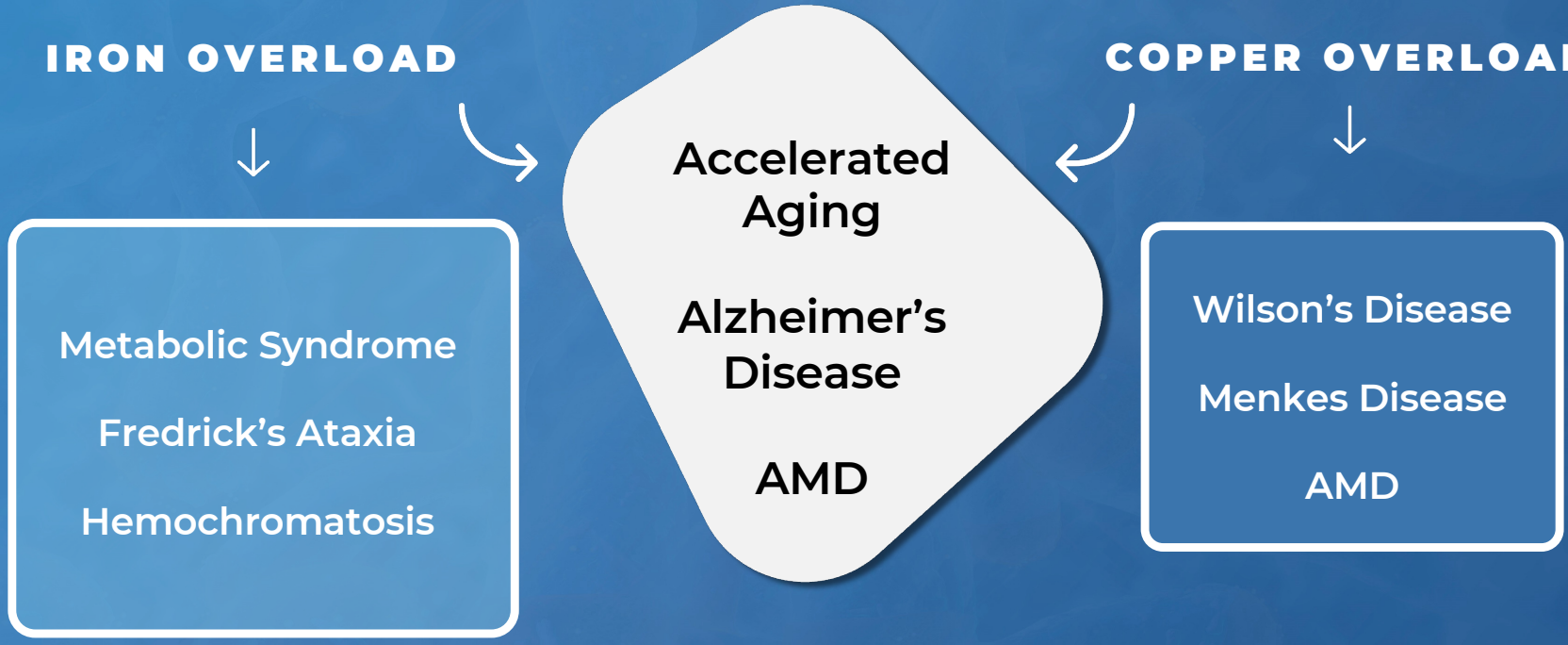
- Progeria and Werner syndromes
- Metabolic Syndrome
- Age-related Macular Degeneration (AMD)
- Fredrick's Ataxia
- Alzheimer's Disease
- Hemochromatosis

## Functional

- Accelerated aging
- Senescence
- Telomer shortening
- Insulin resistance
- Inflammation
- Neurodegeneration

# IMPACT OF IRON AND COPPER OVERLOAD

*Iron and copper overload contribute to AMD and retinal aging, while copper overload is also central to Wilson's disease and broader age-related neurodegenerative processes.*



# THERAPEUTIC AREAS

*Key ongoing initiatives include:*

**Type 2 Diabetes Studies**
Building on zebrafish success, Telomir is testing a rat diabetic model to confirm Telomir-1's efficacy in reversing metabolic parameters, including reduced insulin resistance (HOMA-IR).

**Progeria and Werner syndrome Research**
Following promising C. elegans and zebra fish results, Telomir-1 restored lifespan and normalized aging in wrn-1 mutant nematodes and zebra fish (models for accelerated aging), showing enhanced longevity, DNA functions and physiology.

**Wilson's Disease Study**
Investigating Telomir-1's effects on copper regulation in preclinical models.

**Alzheimer's Disease and other neurodegenerative diseases**
Investigating Telomir-1 for its potential to mitigate cognitive decline and neurodegeneration associated with Alzheimer's and Fredrick's Ataxia.

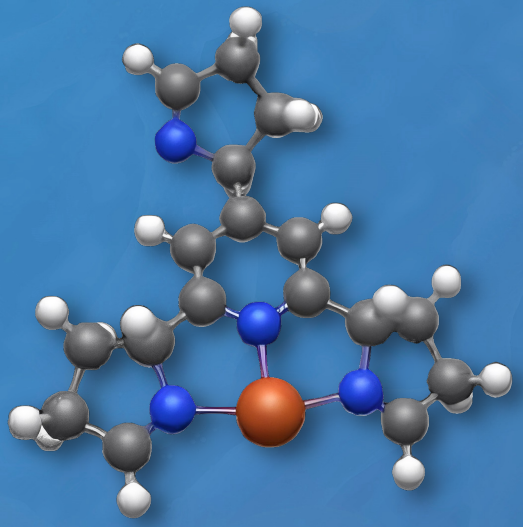
**Macular Degeneration (AMD)**
Exploring Telomir-1's role in addressing retinal cell degeneration and Drusen formation, which occurs when metals like copper or iron accumulate to harmful levels.

**Cancer Models**
Exploring anti-cancer applications using xenograft studies.

**Bacterial and viral infection**
Exploring Telomir-1 or Telomir-Ag2 effects on processes associated with bacterial and viral infections.

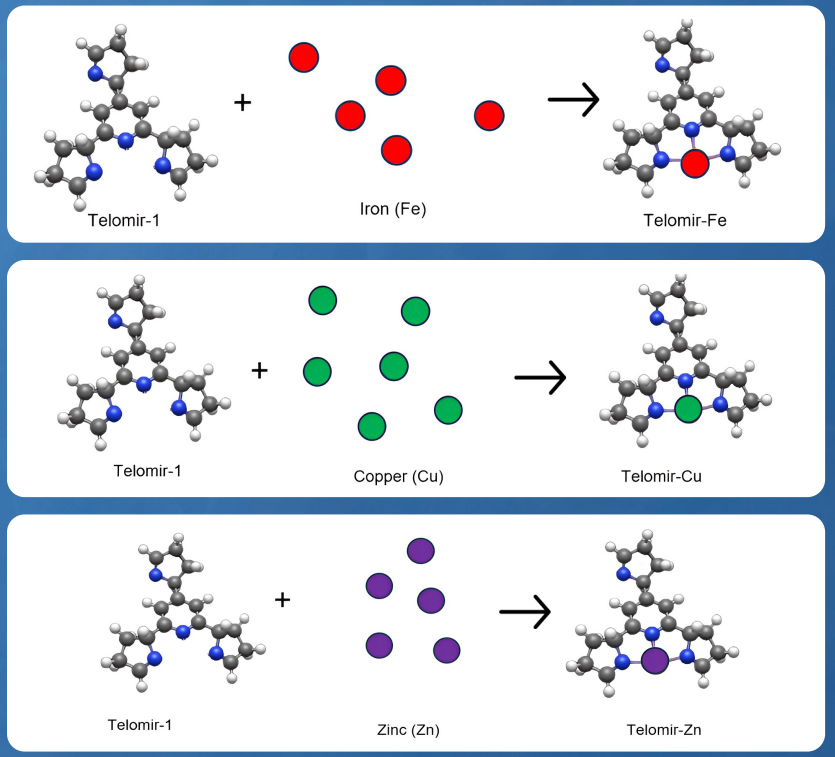
# PRE-CLINICAL RESEARCH

*Age Reversal and Increased Longevity*



**White:** Hydrogen
**Blue:** Nitrogen
**Gray:** Carbon
**Orange:** Metal

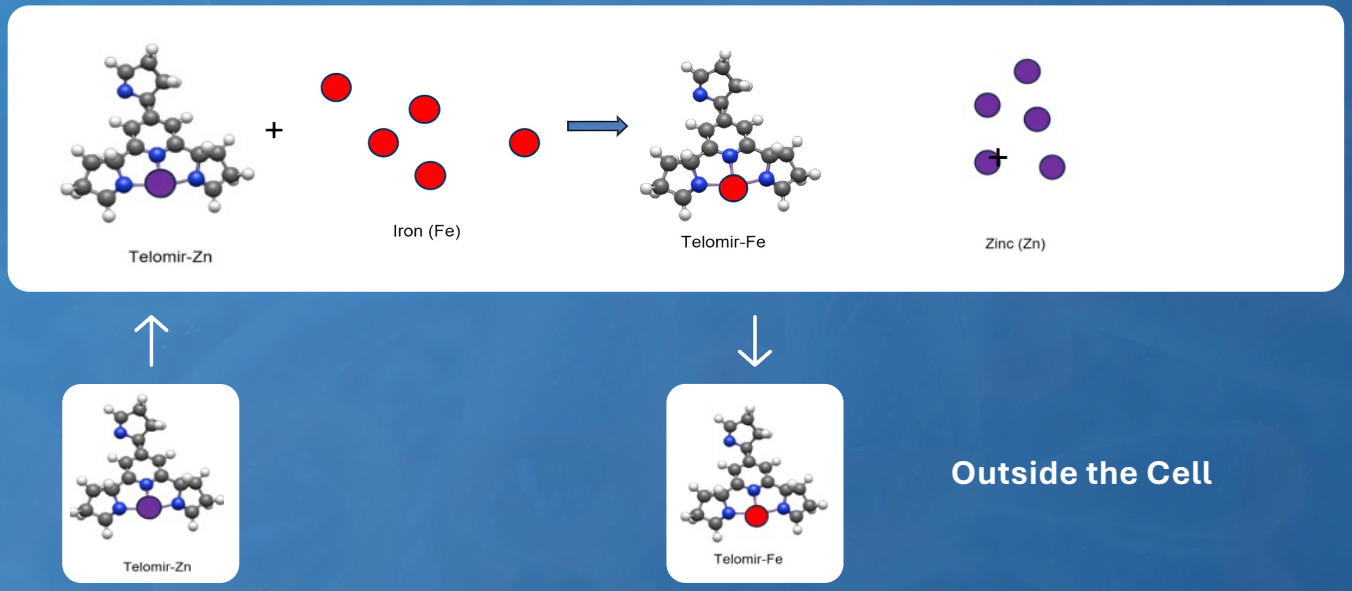
Our molecule, Telomir-1 can effectively bind and chelate several ions. It has high affinity for iron and copper and lower affinity for zinc.



# PRE-CLINICAL RESEARCH

*Age Reversal and Increased Longevity*

*Telomir-Zn, a lipophilic form of Telomir-1, readily enters cells and leverages its higher affinity for iron and copper over zinc to exchange harmful iron or copper ions with beneficial zinc. This exchange mechanism allows Telomir-Zn to chelate and remove excess iron or copper from cells while delivering protective zinc, aiding in cellular detoxification and restoring metal balance.*

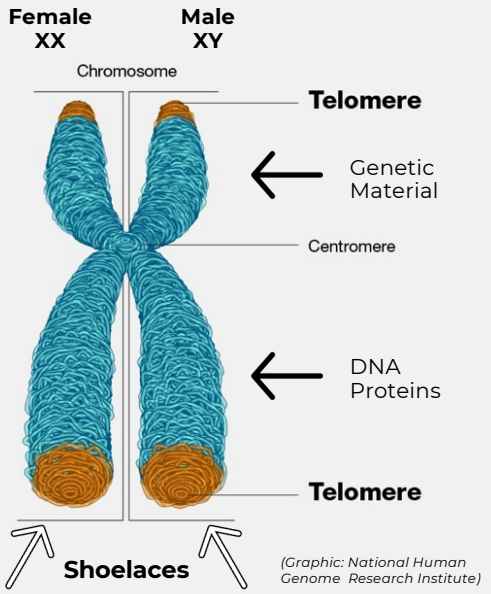


# WHAT ARE TELOMERES?

*Age Reversal and Increased Longevity*

**Telomeres are the protective end caps of a chromosome made up of DNA sequences and proteins (TTAGGG).**

- Telomeres protect chromosome ends during cell division, preventing gene loss, like shoelace caps.
- This could alter genes, causing cell death, cancer, or diseases.
- Telomeres shorten with age, and metal reactivity speeds this, raising the risk of age-related diseases.




*(Graphic: National Human Genome Research Institute)*

## Telomir-1 Restores Telomere Length in Accelerated Aging Models

*Telomir-1 reverses telomere shortening and restores length beyond wild-type levels in models mimicking Progeria and Werner syndromes.*

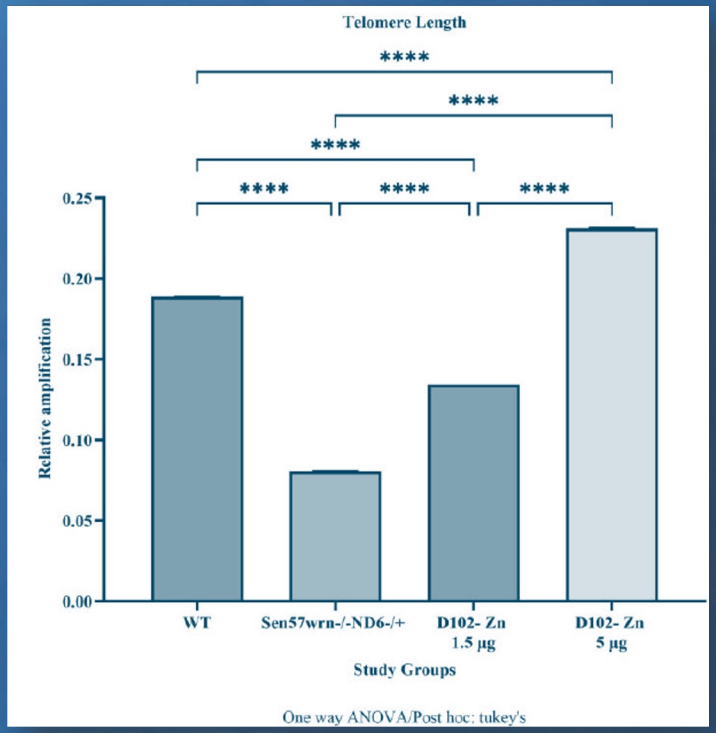
## Reversal by Telomir-1 of shortened telomer length in an accelerated aging model in zebra fish

### Study Model & Design

- Zebrafish model exhibiting rapid telomere loss and aging, mimicking biology of both Progeria and Werner syndromes
- **Dosing:** Oral Telomir-1 for 14 days

### Key Results

- Untreated fish showed severe telomere shortening
- Telomir-1 significantly and dose-dependently reversed this, surpassing wild-type telomere length




***Telomir-1 treatment dose-dependently reversed telomere shortening in aged zebrafish, restoring levels beyond wild-type controls.***

# PRE-CLINICAL RESEARCH

*Age Reversal and Increased Longevity*

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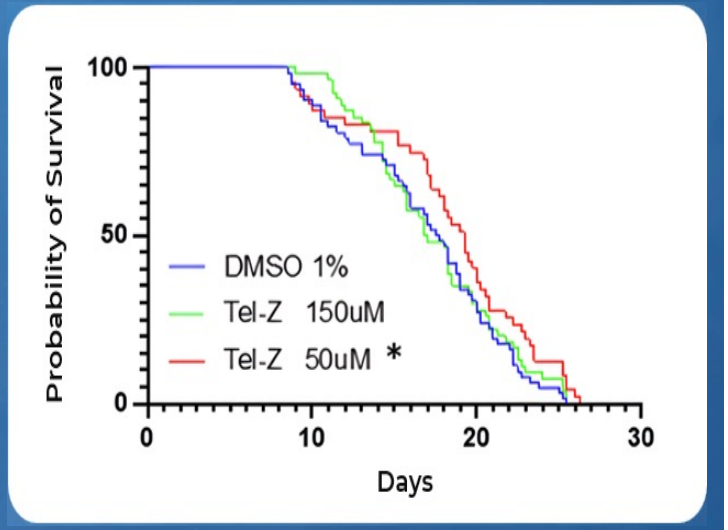
## Study Overview

This preclinical study, in collaboration with Nagi Bioscience, used an in vivo microfluidic-based assay to evaluate Telomir-1 in Caenorhabditis elegans, a well-established aging model. The platform enabled real-time tracking of lifespan, healthspan, and mobility decline, allowing precise measurement of Telomir-1's effects.

Telomir-1 significantly enhanced lifespan and health metrics in aged organisms.

High-dose Telomir-1 significantly extended nematode lifespan by ~2.5 days, demonstrating a strong longevity effect.




## Key Findings Included:

**Increased Lifespan**:

Telomir-1 extended survival by ~2.5 days at high dose

**Enhanced Motility**:

Improved motility in aged organisms indicates a slowdown in biological decline

**Reduced Biological Aging**:

Reversal of key age-related markers supports Telomir-1's potential as a longevity therapy

# PRE-CLINICAL RESEARCH

*Age Reversal and Increased Longevity*

**Study in Adult Progeria - Summary and Methodology**

The preclinical study with Nagi Bioscience SA used C. elegans with a wrn-1 gene mutation, the human equivalent of which is linked to Werner Syndrome (Adult Progeria), showing reduced life expectancy compared to wild-type nematodes.

**Key Findings Included:**

**Increased Lifespan:**
The study demonstrates significant age-reversal effects in wrn-1 mutated nematodes treated with Telomir-1. It was demonstrated that this treatment was capable to effectively bring the longevity level back to levels which are not significantly different from normal animals

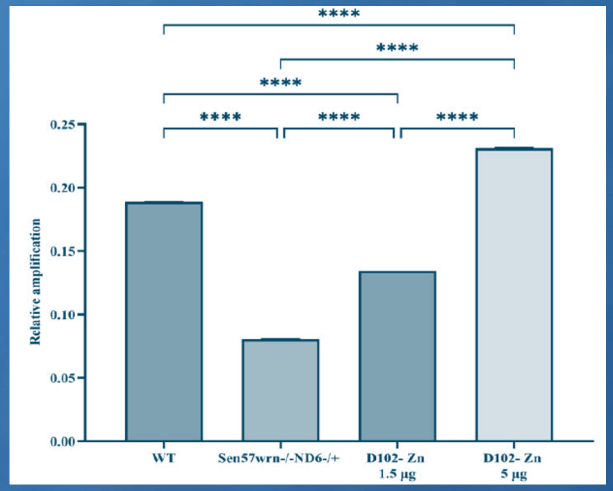
**Enhanced Mobility in Older Organisms:**
These effects include an extended healthy lifespan and normalization of several other physiological parameters such as movement velocity and tail amplitude.

## Telomir-1 Reverses Key Aging Markers in Werner Syndrome Model

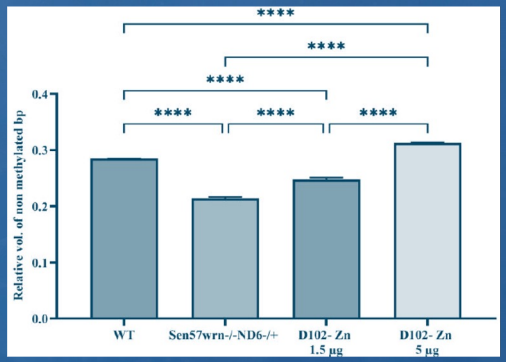
*Telomere length and DNA methylation patterns were normalized in Sen57wrn $^{-/-}$ zebrafish—exceeding wild-type levels at higher doses.*

- Mutant zebrafish showed severe telomere shortening characteristic of Werner pathology
- 14-day oral Telomir-1 treatment significantly reversed telomere loss in a dose-dependent manner—surpassing wild-type levels
- Disrupted DNA methylation was restored by Telomir-1, including in key epigenetic markers like ephb3a
- Findings support Telomir-1's potential to reverse genomic and epigenetic signs of premature aging

Telomer length normalization




Epigenetic Clock restauration- ephb3a- CPG Island

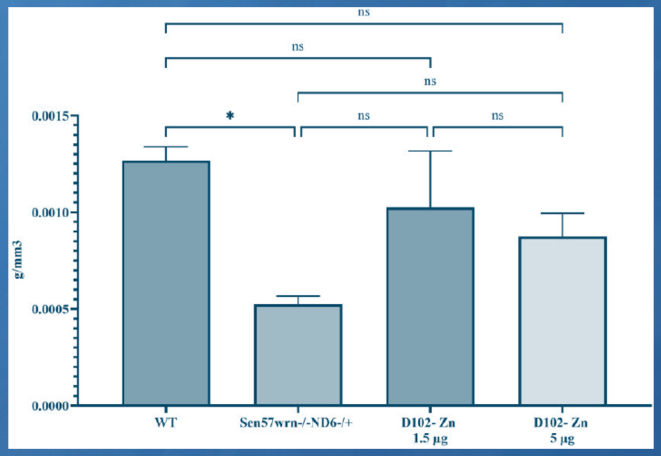


## Telomir-1 Restores Physical and Cellular Health in Werner Syndrome Model

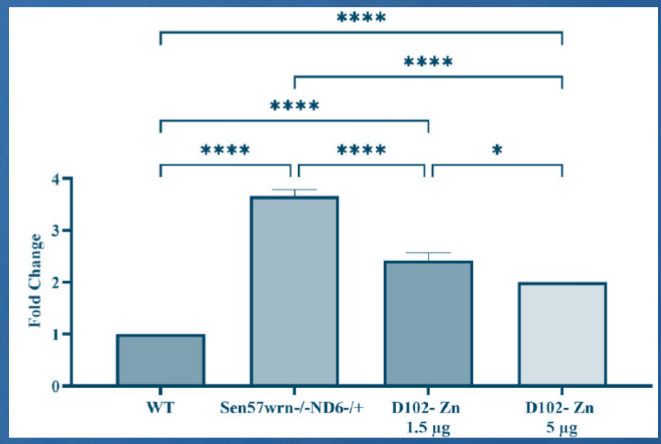
*14-day oral treatment reverses muscle loss and oxidative stress in Sen57wrn $^{-/-}$ zebrafish*

- Mutant fish displayed significant loss of body and muscle mass
- Telomir-1 fully restored muscle weight—no significant difference from wild-type controls
- Reactive oxygen species (ROS) were highly elevated in mutants
- Telomir-1 reduced ROS levels significantly and dose-dependently—up to 50% reduction

Restauration of lost muscle weight




Reduction of ROS



## Telomir-1 Achieves Full Survival and Broad Rejuvenation in Werner Syndrome Model

*14-day treatment in Sen57wrn $^{-/-}$ zebrafish reverses aging hallmarks and eliminates mortality*

**Study Model & Design**

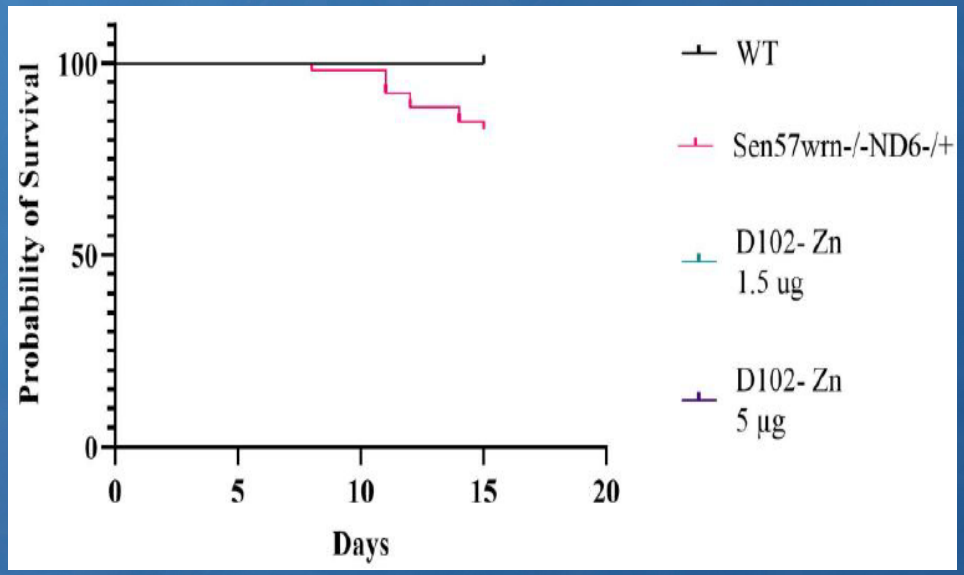
- **Model:** Sen57wrn$^{-/-}$ND6$^{-/+}$ zebrafish recapitulating Werner Syndrome accelerated aging
- **Dosing:** Oral Telomir-1 for 14 days

**Results**

**Rejuvenation Beyond Aging Biomarkers**

- **100% survival** in treated fish vs ~15% mortality in controls
- Suggests Telomir-1 not only halts but partially reverses hallmarks of aging (epigenomic instability, telomere attrition, tissue decline)
- Positions Telomir-1 as a foundational therapy for age-related diseases and ultra-rare progeroid syndromes

Survival analysis – no animals died when treated with telomir-1



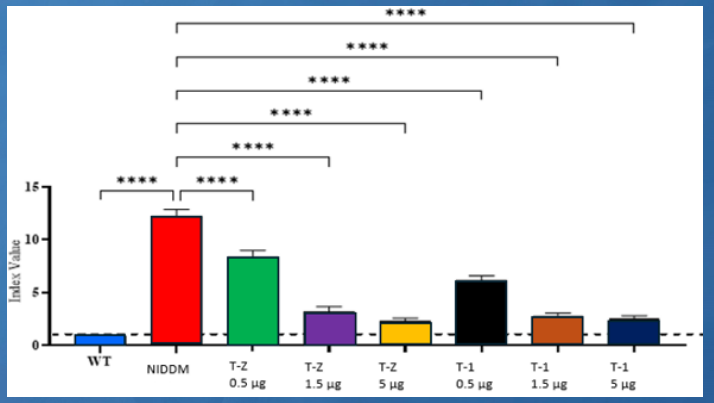
# PRE-CLINICAL RESEARCH

*Reversal of Key Type 2 Diabetes Parameters*

**Study Overview and Results**

In collaboration with Pentagrit, Telomir evaluated two forms of Telomir-1, administered orally at three different doses, in zebrafish models of Type 2 diabetes mellitus induced by a high-calorie diet. The study assessed key metabolic indicators, including fasting glucose levels, Oral Glucose Tolerance Test (OGTT), insulin concentrations and HOMA-IR.

## Reversal of insulin resistance (HOMA-IR)




## Key Findings Included:

In a high-fat diet zebrafish model, Telomir-1 (two forms, three doses) normalized fasting blood glucose levels, **restoring glucose balance** in a dose-dependent manner.

Both forms of Telomir-1 **significantly reduced insulin resistance**, restoring HOMA-IR values to near-normal levels—highlighting its therapeutic potential for Type 2 diabetes.

OGTT results confirmed **improved glucose handling**, reinforcing Telomir-1's role in correcting multiple metabolic impairments.

Treated fish also showed **higher survival rates** versus controls, supporting Telomir-1's broad benefits across metabolic health.

# PRE-CLINICAL RESEARCH

*Significant Anti-Cancer Activity in Prostate Cancer Model*

## Telomir-1 Demonstrates Promising Efficacy in Aggressive Human Prostate Cancer Model

**Key Study Highlights:**

**Model Used:** Preclinical in vivo study using human prostate cancer PC3 cells in murine xenograft model

**Results:**

- Telomir-1 significantly inhibited tumor growth in highly aggressive prostate cancer (PC3 cells)
- Efficacy observed with both tested forms of Telomir-1
- One form showed tumor volume suppression comparable to standard chemotherapeutics (docetaxel)

**Significance:**

- Suggests Telomir-1 may hold potential as a novel therapeutic candidate for hormone-independent, advanced prostate cancer
- Supports further investigation into Telomir-1 as a multi-indication oncology asset

# Telomir-1™ Restores Vision in AMD Model

*First Oral Therapy Showing Regenerative Effects in FDA-Surrogate AMD Model*

**Study Overview**

- **Model:** 18-month-old Sen57wrn$^{-}$/$^{-}$ND6$^{-}$/$^{+}$ zebrafish — recapitulates dry AMD with central vision loss, retinal thinning, oxidative stress and ~15% mortality
- **Dosing:** Oral administration for 14 days

**Functional Recovery**

- Vision restored: coordinated swimming returned, improved responsiveness to light/movement
- Improved central vision

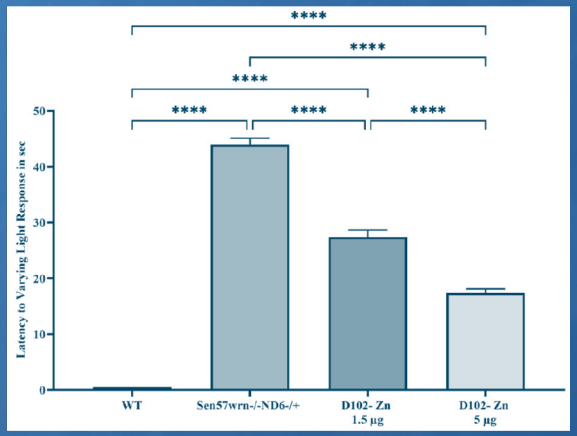
**Mechanism Signals**

- ~50% reduction in reactive oxygen species — supporting antioxidative/regenerative effect

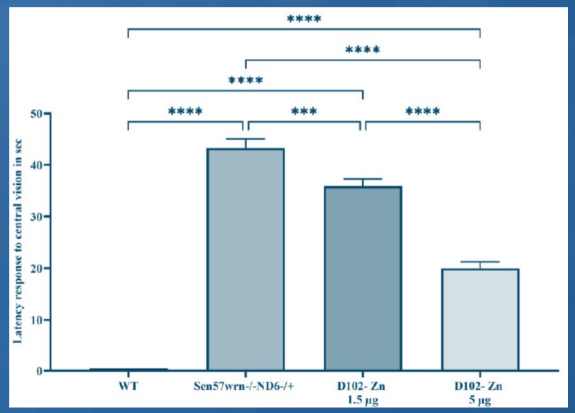
**Significance & Difference**

- **Oral first-in-class**: contrasts with injectable ophthalmic agents
- Targets **true regenerative endpoints** beyond neuroprotection
- Employs multiple FDA-recognized surrogate markers (function + structure)

Varying light response




Moving objects response

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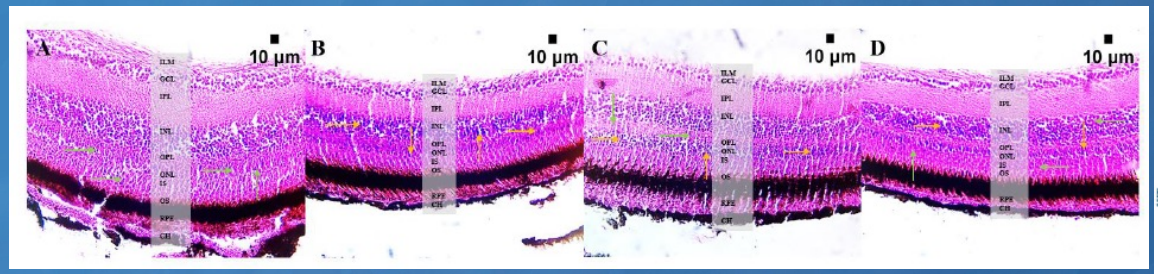
# Telomir-1™ Rebuilds Retinal Layers in AMD Model

*Telomir-1™ Restores Vision & Retinal Structure in AMD Model*

**First Oral Therapeutic Showing Regenerative Effects in FDA-Surrogate-Driven Proof-of-Concept**

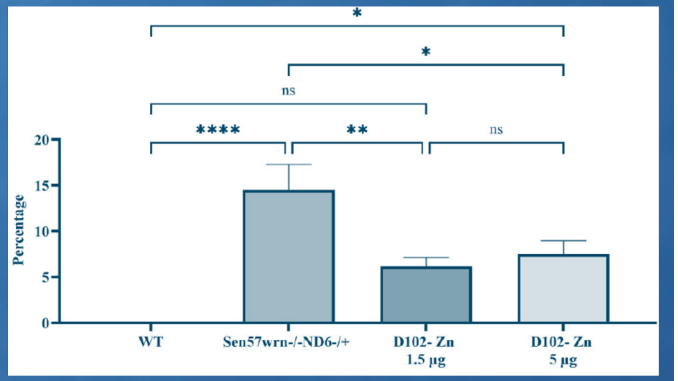
**Structural Regeneration**

- Marked improvement in the percentage of retinal degeneration
- Full restoration of inner nuclear layer (INL) thickness
- Reconstitution of ganglion cell layer (GCL), inner plexiform layer (IPL), and outer plexiform layer (OPL)

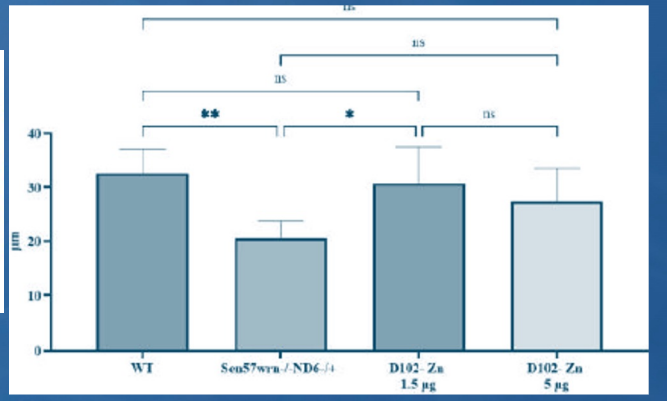



Control Wilde Type | Control Sen57wrn-/-ND6-/+ | Telomir-1, 1.5 µg Sen57wrn-/-ND6-/+ | Telomir-1, 5 µg Sen57wrn-/-ND6-/+

Percent retinal degeneration




Restauration of INL layer thickness

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## Telomir-1™ Restores Neuromotor Function in Wilson's Disease Model

*Telomir-1™ Reverses Multi-Organ Dysfunction in **Wilson's Disease Model***

### Dose-Dependent Reversal of Neurological, Hepatic & Renal Damage in ATP7B$^{-/-}$ Zebrafish

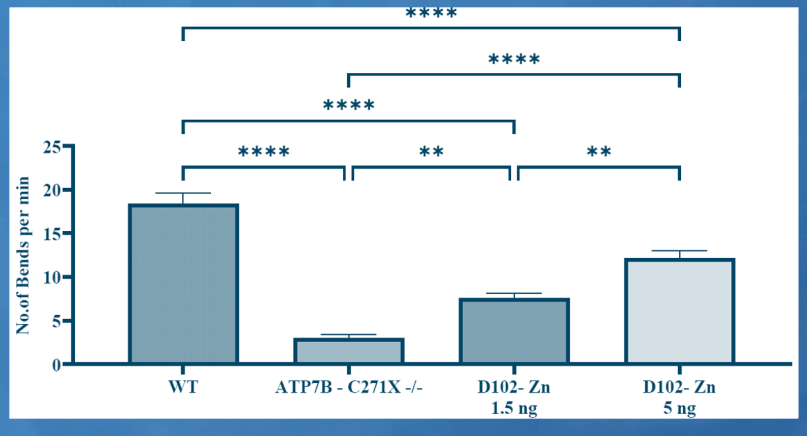
**Study Overview**

- **Model:** ATP7B C271X$^{-/-}$ zebrafish, replicating human Wilson's disease pathology
- **Dosing:** Multiple Telomir-1 oral doses, demonstrating clear dose–response effects

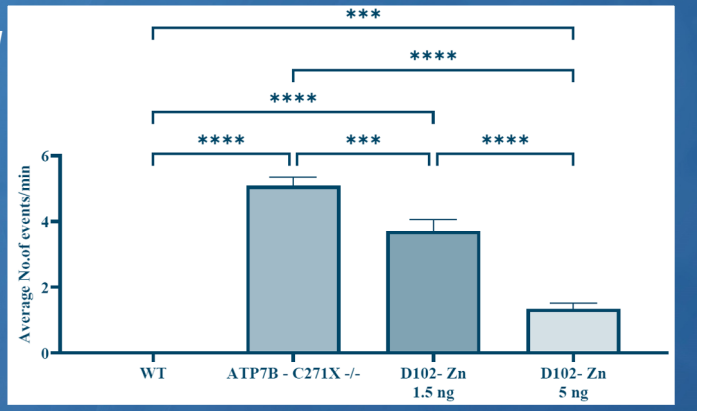
**Neurological Recovery**

- **4–5× reduction** in tremor frequency
- Restoration of normal swim distance, velocity, and exploratory behavior
- Reversal of ataxia-like behaviors (body bends, turn angles)

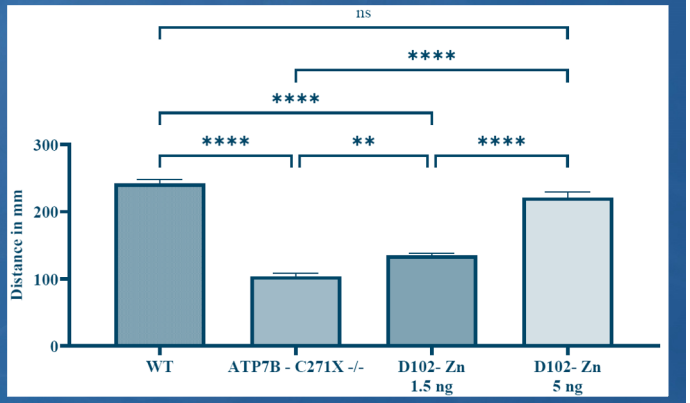
Ataxia stereotype- No. of bends




Episodic tremor events




Swim distance



*Telomir-1™ Reverses Multi-Organ Dysfunction in **Wilson's Disease Model***

## Dose-Dependent Reversal of Neurological, Hepatic & Renal Damage in ATP7B$^{-/-}$ Zebrafish

**Hepatic & Renal Benefit**

- ~50% reduction in liver copper accumulation
- Histopathology scores near-normal for liver and kidneys
- ALT, AST, and bilirubin restored to wild-type levels, signaling organ protection

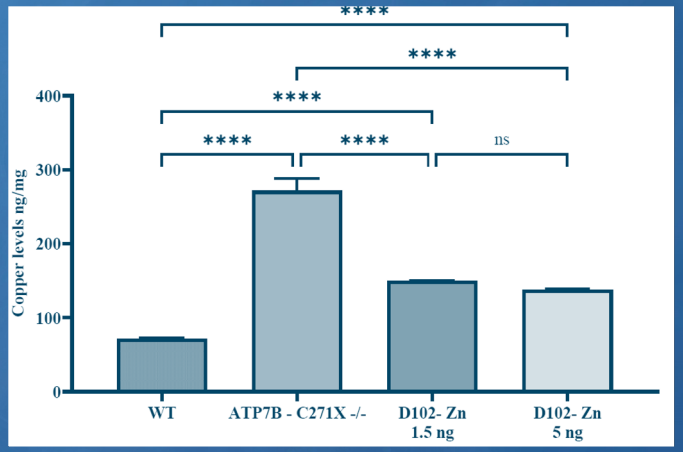
**Survival Advantage**

- Improved survival under high copper exposure conditions

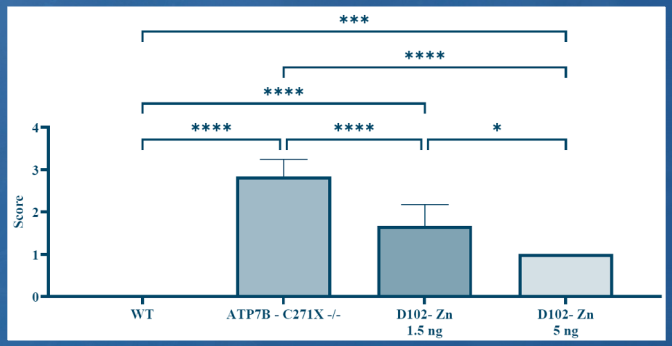
**Strategic Importance**

- Demonstrates **disease-modifying potential**—beyond chelation, actively reversing established damage
- Reinforces Telomir-1 as a multi-indication platform (complements prior AMD, Werner, and cancer data)
- Supports upcoming IND filing by end-2025 and human studies in first half of 2026

Liver copper levels




Liver Histology



# PRE-CLINICAL RESEARCH

*Telomir-1 Reverses Cellular Decline—Expanding Therapeutic Potential*

## In Vitro Proof-of-Mechanism Supports Targets in Autism & Spasmodic Dysphonia

**Key Findings (Human Cell Lines)**

- **Cell viability under stress**, supporting resilience in dividing cell populations
- **Enhanced mitochondrial function**, boosting cellular energy production
- **Reduced oxidative stress** (ROS levels attenuated)
- **Normalized calcium signaling**, restoring healthy cellular communication
- **Protection against metal toxicity** (iron & copper) impairing cell function

**Mechanistic Rationale for Neurological & Rare Disease Focus**

- Shared cellular disruptions—oxidative stress, mitochondrial dysfunction, calcium imbalance, metal toxicity—implicated in ASD and spasmodic dysphonia (SD)
- ASD affects ~1 in 36 U.S. children; SD impacts ~50,000 Americans; neither have therapies targeting underlying cellular pathology
- Supports a strategy to initiate exploratory models in ASD and SD

**Regulatory Strategy: Rare Disease FMU Via FDA RDEA Pilot**

- Telomir intends to engage with the FDA's Rare Disease Endpoint Advancement (RDEA) program to streamline IND-enabling trials for orphan conditions like progeria and Wilson's disease

# PRE-CLINICAL RESEARCH

*Telomir-$Ag_2$ – First-in-Class Silver(II) Antimicrobial*

## Breakthrough Preclinical Efficacy Against MRSA & Multidrug-Resistant Pathogens

**Strategic Rationale**

- Antimicrobial resistance is a top global health threat (e.g., MRSA causes 323K hospitalizations and >10K U.S. deaths/year)
- Targets $30 billion+ in wound dressings and antimicrobial coatings markets

**Novel Mechanism & Efficacy Highlights**

- First-ever **stabilized Silver(II) complex** enabling real-world application using Telomir-1 chelation technology
- **Robust MIC activity** shown in vitro against E. coli, P. aeruginosa, E. faecalis, S. aureus, and MRSA—outperforming its Silver(I) precursor Telomir-Ag1

**Product Advantages**

- Multi-mechanistic antimicrobial action—membrane disruption, DNA/protein binding, ROS generation—limits likelihood of resistance
- Designed for **controlled silver release** in topical applications (e.g., burns, surgical sites)
- **No sulfa compounds**, minimizing allergic risk and cytotoxicity issues common with current formulations

**Next Steps Toward Clinic**

- Advancing into formulation development and IND-enabling studies
- Targeted therapeutic areas include burn wound care, surgical-site prophylaxis, and antimicrobial coatings

# ANTICIPATED TIMELINE FOR TELOMIR-1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## 2025 Q1

- **CMC (Chemistry, Manufacturing, and Controls):** Synthesis, Upscaling & Formulation
- **Pharmacology:** Screening and characterization
- **ADME (Absorption, Distribution, Metabolism, and Excretion):** In Vitro Metabolism
- **Toxicology:** Initial toxicology & General Pharmacology

## 2025 Q2

- **CMC (Chemistry, Manufacturing, and Controls):** Stability, Pharmacology: Characterization & Consolidation
- **ADME (Absorption, Distribution, Metabolism, and Excretion):** PK/PD (Pharmacokinetics/Pharmaco dynamics) and Formal DMPK (Drug Metabolism and Pharmacokinetics)
- **Toxicology:** MTD (Maximum Tolerated Dose) Rat/Dog

## 2025 Q3

- **GMP CMC (Chemistry, Manufacturing, and Controls):** GMP (Good Manufacturing Practice), Stability, Drug product development and Clinical DP (Drug Product) Development, Pharmacology Consolidation
- **ADME (Absorption, Distribution, Metabolism, and Excretion):** Formal DMPK (Drug Metabolism and Pharmacokinetics)
- **Toxicology:** Formal Toxicology
- **Regulatory:** Prepare IB (Investigator's Brochure) and IND (Investigational New Drug Application)

## 2025 Q4

**IND Submission**

**(Investigational New Drug Application)**

# MARKET OPPORTUNITY

## Summary of US Epidemiology

The eligible patient pool analysis for Telomir-1 highlights a potential large patient pool looking for potential treatments to their conditions.

| | Total Eligible Population | Diagnosed Prevalence | Treatment Rate | Total Addressable Market |
|---|---|---|---|---|
| **Type 2 Diabetes** | 34-45M | 25-27M | 88% | $57.47B |
| **Cancer** | 18M | 1.9M | Nearly 100% | $16.7B |
| **Alzheimer's Disease** | 6.5M | 6.5M | 50% | $3.1B |
| **AMD** | 19.8M | 20M | Variable. Around 20% | $18B |

**Source:** https://oaaction.unc.edu/oa-module/oa-prevalence-and-burden/?utm_source=chatgpt.com

# MARKET OPPORTUNITY FOR RARE DISEASES

## Summary of US Epidemiology

The eligible patient pool analysis for Telomir-1 highlights a potential large patient pool looking for potential treatments to their conditions.

| | Total Eligible Population | Diagnosed Prevalence | Treatment Rate | Total Addressable Market |
|---|---|---|---|---|
| **Progeria (Hutchinson-Gilford Progeria Syndrome)** | 20 children in the U.S. | Most cases | Limited, Lonafarnib is the only approved drug | Minimal |
| **Wilson's Disease** | 6-10K | Many cases remain undiagnosed. | Includes chelating agents like penicillamine and zinc salts. | $200-900M |
| **Friedreich's Ataxia** | 6K | Most cases | SKYCLARYS™ (omaveloxolone) is the first FDA-approved treatment. | $600.5M, projected to reach 1.71B by 2034 |
| **Menkes** | 16-40 new cases annually | Improved detection through genetic testing | Includes parenteral copper histidinate administration. | Limited |

# GROWTH STRATEGY

TELOMIRPHARMA.COM


01 Continue pre-clinical development of Telomir-1 across a range of diseases and progress into clinical development

02 Advance Telomir-1 through clinical development and FDA approval

03 Identify additional product candidates and expand current candidates into additional diseases

04 Explore strategic collaborations and partnerships to maximize the value of our product candidates

# INVESTMENT HIGHLIGHTS

## Telomir-1

TELOMIR-1 is novel small molecule metal ion regulator, with a broad potential to affect several pathologies and age-related diseases such as Progeria, Type 2 Diabetes, AMD, Wilson's disease and cancer.

Based on our pre-clinical studies to date we assemble experimental evidences showing that Telomir-1 may potentially serve as a metal ion regulator of essential metals such as iron, copper and zinc.

The Company's goal is to explore the potential of Telomir-1 starting with ongoing research in animals and then in humans.

# Thank you.

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