MAIA BIOTECHNOLOGY

TELOMERE TARGETING IMMUNOTHERAPIES FOR CANCER

NYSE AMERICAN: MAIA

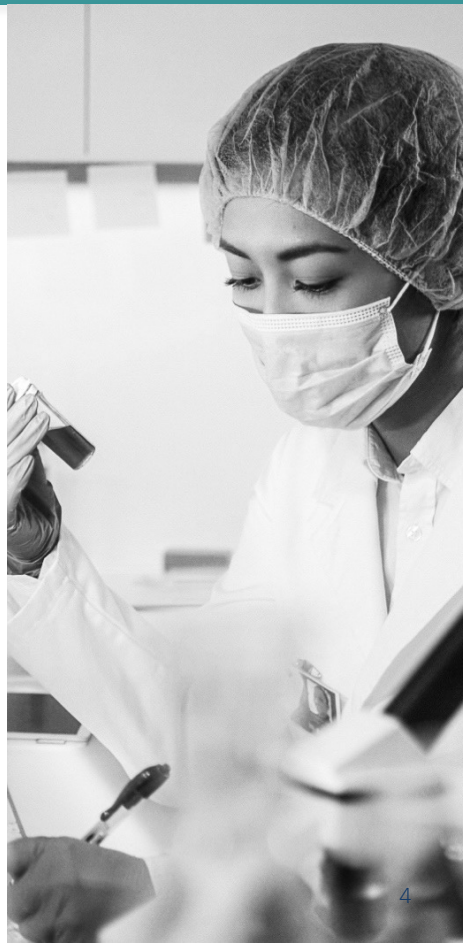
January 2024

FORWARD-LOOKING STATEMENTS

All statements in this presentation, other than those relating to historical facts, are "forward-looking statements." These forward-looking statements may include, but are not limited to, statements relating to our objectives, plans, and strategies; statements that contain projections of results of operations or of financial condition; statements relating to the industry and government policies and regulations relating to our industry; and all statements (other than statements of historical facts) that address activities, events, or developments that we intend, expect, project, believe, or anticipate will or may occur in the future. Forward-looking statements are not guarantees of future performance and are subject to risks and uncertainties. We have based these forward-looking statements on assumptions and assessments made by our management in light of their experience and their perception of historical trends, current conditions, expected future developments, and other factors they believe to be appropriate. Important factors that could cause actual results, developments, and business decisions to differ materially from those anticipated in these forward-looking statements include, among other things: the overall global economic environment; general market, political, and economic conditions in the countries in which we operate: projected capital expenditures and liquidity; changes in our strategy; government regulations and approvals; the application of certain service license; and litigation and regulatory proceedings. The Company has filed a registration statement on Form S-1, as may be amended (Registration No.: 333-269606). Before you invest, you should carefully read the registration statement, including the factors described in the “RISK FACTORS” section of the Registration Statement and other documents that we have filed, and will subsequently file, with the Securities and Exchange Commission to better understand the risks and uncertainties inherent in our business and industry and for more complete information about us and the offering. You may get these documents for free by visiting EDGAR on the Commission's website at www.sec.gov. We caution you that forward-looking statements are not guarantees of future performance and that our actual results of operations, financial condition and liquidity, and the development of the industry in which we operate may differ materially from the forward-looking statements contained in this presentation as a result of, among other factors, the factors referenced in the "Risk Factors” section of the Registration Statement. In addition, even if our results of operations, financial condition and liquidity, and the development of the industry in which we operate are consistent with the forward-looking statements contained in this presentation, they may not be predictive of results or developments in future periods. This presentation shall not constitute an offer to sell or the solicitation of an offer to sell or the solicitation of an offer to buy any of our securities nor shall there be any sale of securities in any jurisdiction in which such offer, solicitation or sale would be unlawful prior to registration or qualification under the securities laws of any such jurisdiction. Any offering of securities can only be made in compliance with applicable securities laws. You should read carefully the factors described in the “Risk Factors" section of the Registration Statement to better understand the risks and uncertainties inherent in our business and underlying any forward-looking statements. These statements are only current predictions and are subject to known and unknown risks, uncertainties, and other factors that may cause our or our industry's actual results, levels of activity, performance, or achievements to be materially different from those anticipated by the forward-looking statements. You should not rely upon forward-looking statements as predictions of future events. Although we believe that the expectations reflected in the forward-looking statements are reasonable, we cannot guarantee future results, levels of activity, performance, or achievements. Except as required by law, we are under no duty to update or revise any of the forward-looking statements, whether as a result of new information, future events or otherwise, after the date of this prospectus. These forward-looking statements speak only as of the date of this presentation, and we assume no obligation to update or revise these forward-looking statements for any reason.

INVESTMENT OVERVIEW

- **Telomere-Targeting Agents for Cancer Therapy:**
  - THIO in clinic
  - Advancing pipeline
- **Efficacy**
- **Safety**
- **U.S. FDA:** 3 Orphan Drug Designations: Liver (HCC), Lung (SCLC), and Brain (GBM)
- **REGN: Clinical Supply Agreement**
- **Phase 2 Go-to-Market Accelerated Approval THIO-101 in NSCLC underway**
  - AUS and EU
  - US IND cleared
  - Disease Control Rates (DCR) – ESMO 2023
  - Dose Selection
  - Upcoming Milestones: ORR, PFS, DoR, OS
- **Phase 2 Go-to-Market Accelerated Approval THIO-102 planned to start**
- **Phase 2/3 Confirmatory/Expansion THIO-103 basket trial planned to start**



ROBUST PIPELINE

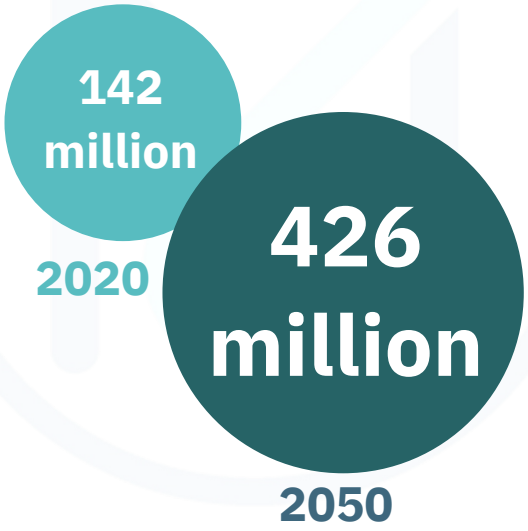
MAIA BIOTECHNOLOGY

	PHASE 1	PHASE 2	PHASE 3	COLLABORATION & RIGHTS
THIO Telomere targeting agent				
THIO-101 NSCLC-2 (THIO → Libtayo®)	Ph 2 Enrolling since July 2022			Worldwide rights owned by MAIA REGENERON
THIO-102 CRC, HCC, SCLC, ST (THIO → CPI)	Ph 2 Planning			Worldwide rights owned by MAIA
THIO-103 NSCLC-1, SCLC-1 (THIO → CPI)	Ph 2/3 Planning			Worldwide rights owned by MAIA
2nd Generation Telomere targeting agents				
MAIA-2021-020 Multiple Ind.	IND Enabling			Developed in-house fully-owned by MAIA
MAIA-2022-012 Multiple Ind.	IND Enabling			
MAIA-2021-029 Multiple Indications				

MISSION AND APPROACH

Cancer is the most dominant age-related disease

Population aged >80 expected to triple by 2050



At age 90:
40% will be diagnosed
20% will die of it

THIO is the only direct telomere targeting agent currently in clinical development

THIO - MECHANISMS OF ACTION

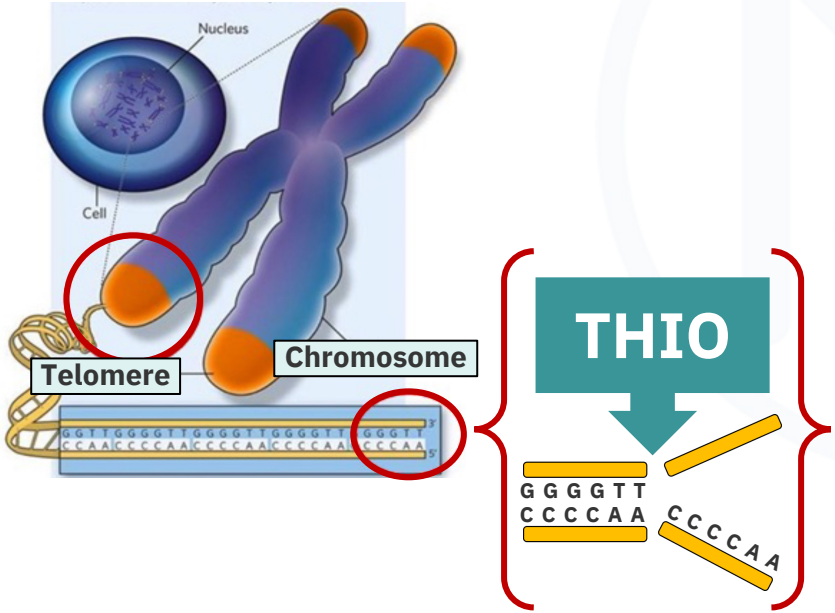
THIO

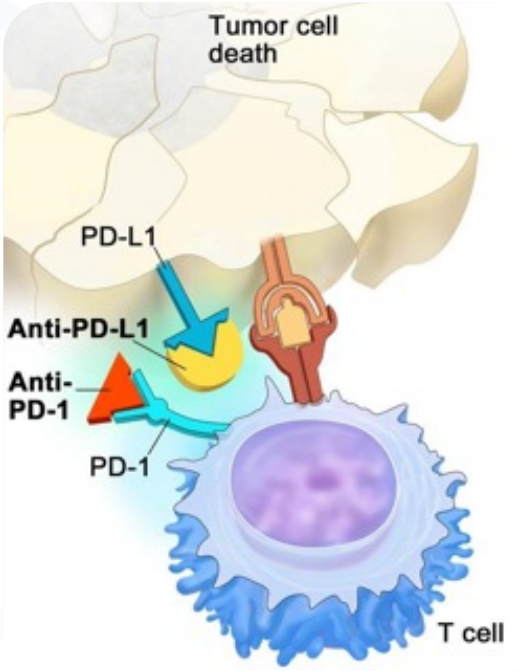
Followed by

Immune Checkpoint Inhibitor (CPI)

THIO has a dual MoA:

1. Telomere targeting
2. Immunogenic effect





- LIBTAYO® (cemiplimab) REGENERON
- KEYTRUDA® (pembrolizumab) MERCK
- TECENTRIQ® (atezolizumab) Genentech, A Member of the Roche Group
- OPDIVO® (nivolumab) Bristol Myers Squibb
- IMFINZI® (durvalumab) AstraZeneca

★ Partnership with REGENERON for NSCLC

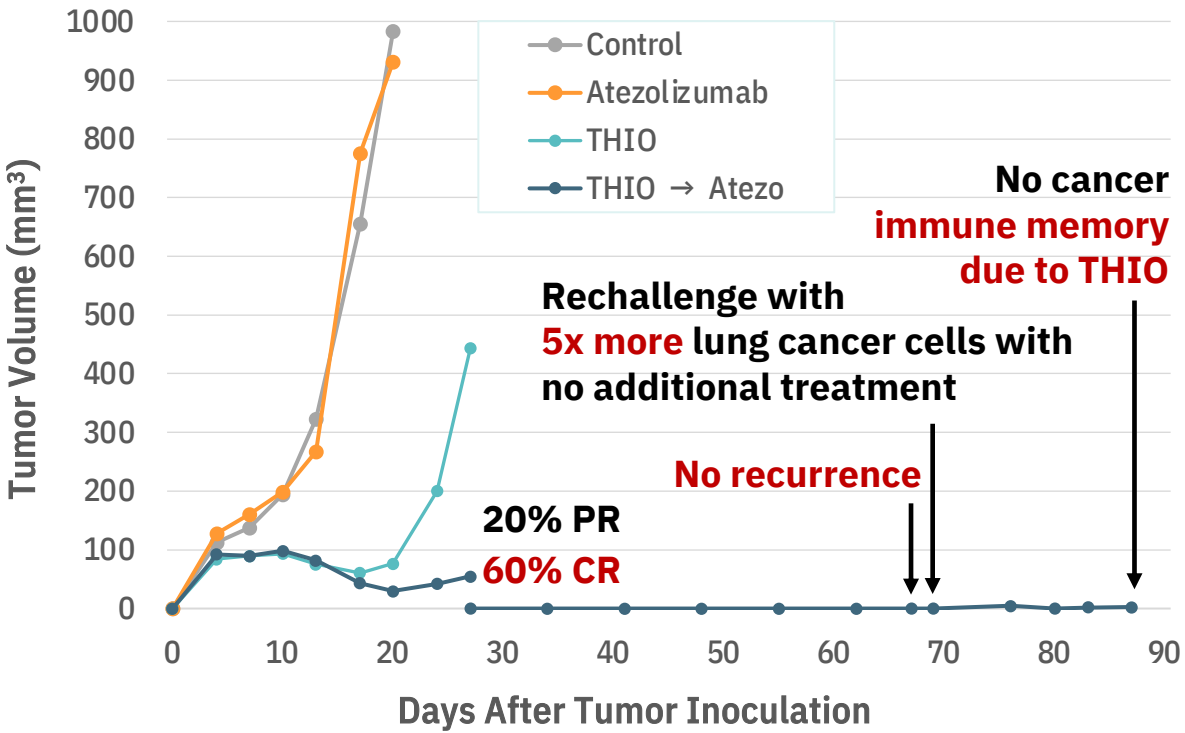
REGENERON AGREEMENT

MAIA BIOTECHNOLOGY & REGENERON

MAIA Biotechnology, Inc. Announces Clinical Supply Agreement with Regeneron for Phase 1/2 Clinical Trial Evaluating THIO in Sequential Administration with Libtayo® (cemiplimab) in Advanced Non-Small Cell Lung Cancer

THIO-101 – RATIONALE

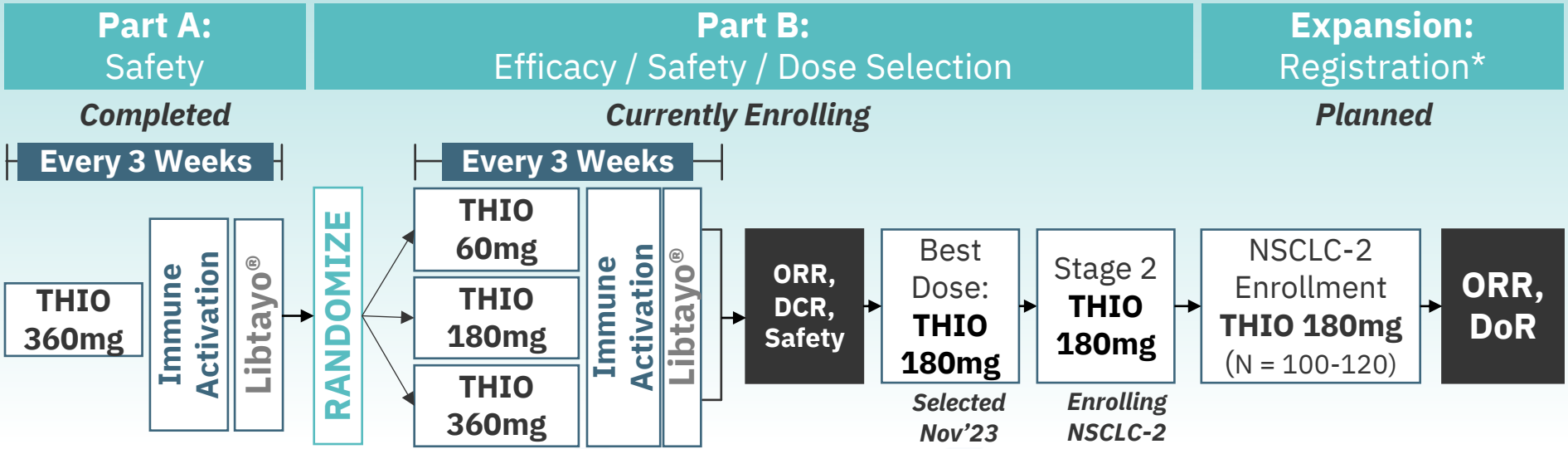
- THIO followed by CPI results in 60% complete response
- No recurrence after long-term follow-up
- Anticancer immune memory has been induced: no cancer after rechallenge with 5x more lung cancer (LLC) cells with no additional therapy



Mender et al, Cancer Cell, 2020; THIO followed by Tecentriq (atezolizumab; Roche/Genentech) tested first; repeated later with THIO followed by Keytruda (pembrolizumab; Merck); and Libtayo (cemiplimab; Regeneron)

THIO-101 TRIAL: 60 PATIENTS DOSED TO-DATE

A Multicenter, Open-Label, Dose-Finding Phase 2 Trial Evaluating the Safety and Efficacy of THIO Administered in Sequence with LIBTAYO® (*cemiplimab*) in patients with Non-Small Cell Lung Cancer (NSCLC)



Primary Endpoints	Safety, ORR, DCR (CR, PR and SD)
Secondary Endpoints	DoR; PFS; OS
Exploratory Endpoints	PK and PD (activity of THIO in circulating tumor cells measured by specific biomarkers)

ClinicalTrials.gov: https://clinicaltrials.gov/ct2/show/NCT05208944?term=05208944&draw=2&rank=1

*Would require FDA agreement

EXPECTED EFFICACY IN NSCLC-2

Indication	CPI-Treated NSCLC Second-Line		
Treatment	**Cyramza® (ramucirumab) + docetaxel** (REVEL ph III pivotal)	**Threshold for Accelerated Approval** (precedents for NSCLC)	**Estimated for THIO-101** (based on DCR from THIO-101)
Efficacy Primary End Points	**ORR:** 23% **DOR:** N/A	**ORR:** 35% **DOR:** 6 months	**ORR:** 35-40% **DOR:** 6-8 months
Disease Control Rate	**64%**		**90%**

FAVORABLE SAFETY PROFILE

- Overall, THIO sequenced with cemiplimab has been generally well-tolerated to date in a heavily pre-treated population, with the majority of Adverse Events (AEs) being Grade 1-2.
- Chemo (SOC): 70-80% incidence of Grade 3-5 side effect
- Best dose: to date, 60% of patients in the 180mg/dose reported no related AEs
- 3 out of 20 patients (15%) reported Grade 3 LFT increases, without clinical presentation; reverted to normal after treatment discontinuation
- No patients reported Grade 4 AEs in the 180mg/dose
- Of the 60 patients who received at least one dose of THIO, 5 subjects were recently enrolled with less than 1 full cycle of treatment and no AEs were entered in the database. They were removed from the safety analysis to not underestimate the AE incidence.

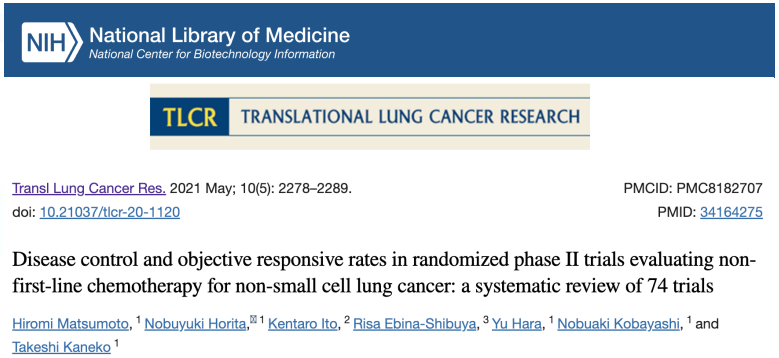
Treatment Related AEs	Cyramza® + docetaxel (n=627) REVEL Study*	THIO 180mg (n=20)
Grade 5	**5.4%**	
Grade 4	**30%**	
Grade 3	**50%** **Neutropenia:** 49% **Febrile Neutropenia:** 16% **Fatigue:** 14% **Leukopenia:** 14%	**15%** **LFT Elevations (no clinical presentation):** 15%
Any Grade	**613 (97.8%)**	**8 (40%)**

* https://www.cyramza.com/hcp/nsclc-treatment/revel-trial-safety

Note: All clinical data presented from 13Nov2023 data cut of ongoing study, THIO-101.

DISEASE CONTROL RATE AS PRIMARY ENDPOINT IN NSCLC-2+ TRIALS

- Disease control rate (DCR) has been demonstrated to be a better predictor of overall survival (OS) advantage compared to overall response rates (ORR) in NSCLC post first line of therapy
- Meta-analysis[1] aimed to evaluate the association of trial-level ORR and DCR with OS in randomized phase II NSCLC trials that evaluate second- or later-line chemotherapy (e.g. ramucirumab + docetaxel, bevacizumab + docetaxel, paclitaxel/carboplatin vs. vinorelbine/carboplatin)
- 74 trials sourced from PubMed, Cochrane database, Embase, and Web of Science as of May 15, 2020
- The correlation between trial-level odds ratio of objective response rate and hazard ratio of overall survival was weak (r=−0.29, 95% CI: −0.49 to −0.05, P=0.014), while odds ratio of disease control survival had moderate rank correlations with hazard ratio of overall survival (r=−0.53, 95% CI: −0.68 to −0.32, P<0.001)



“Since data on ORR and DCR are available simultaneously, we recommend using DCR instead of ORR as the primary endpoint in a randomized phase II trial evaluating second- or later-line chemotherapy for NSCLC.”

1. Matsumoto H et al. Transl Lung Cancer Res. 2021 May; 10(5): 2278–2289

DISEASE CONTROL RATES (DCR) BY LINE OF THERAPY

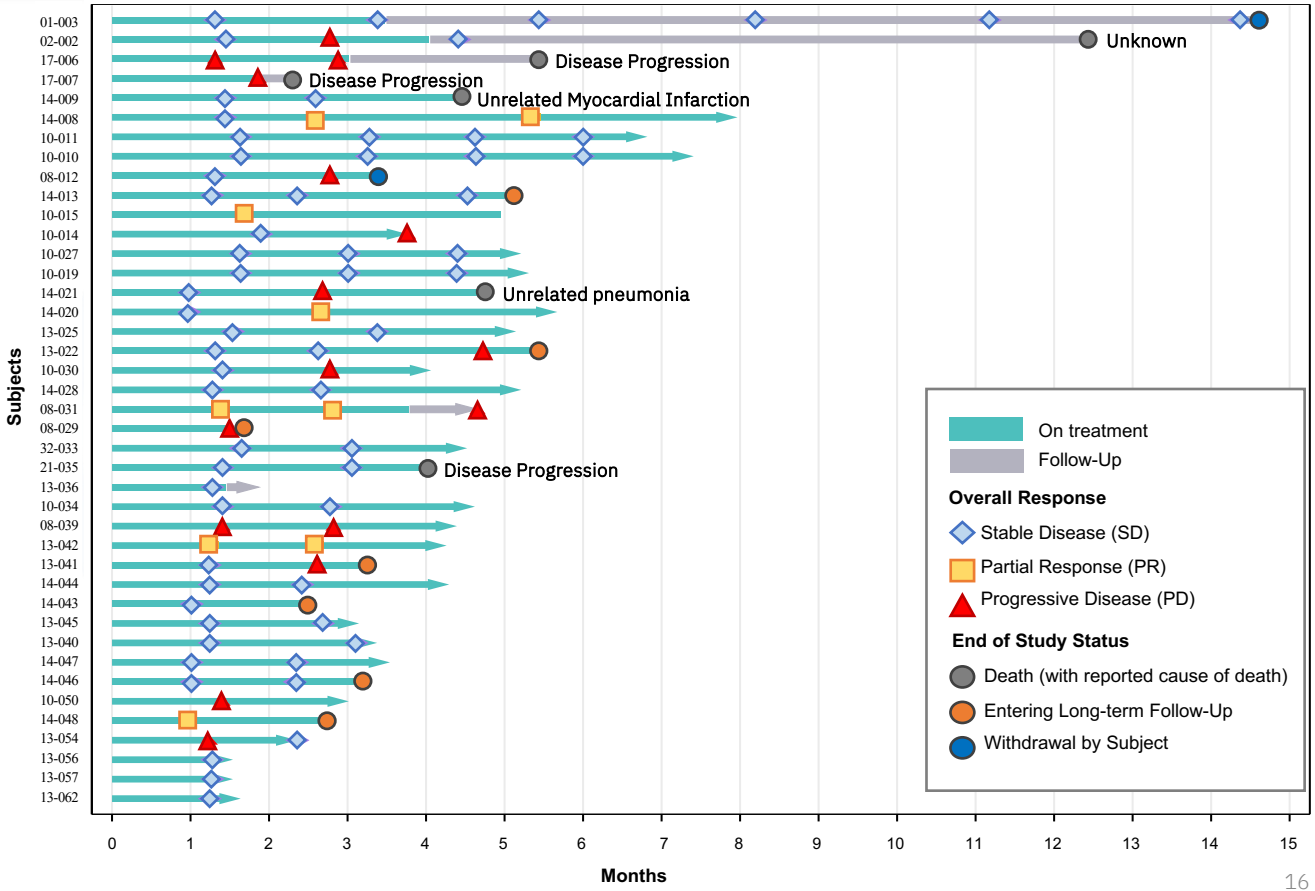
Treatment Line	Standard of Care DCR	THIO + Libtayo® (cemiplimab)*
NSCLC-1	**71%** KEYTRUDA (pembrolizumab; KEYNOTE 024)	**TBD**
NSCLC-2	**64%** CYRAMZA (ramucirumab) + docetaxel (REVEL) **53%** docetaxel monotherapy (REVEL)	**90%**
NSCLC-3	**25-35%** chemotherapy (RWD)	**83%**

*DCR as reported by PI through 13Nov2023 in THIO-101;
Patients who had at least one post-baseline scan.

Note: All clinical data presented from 13Nov2023 data cut of ongoing study, THIO-101.

SWIMMER PLOT: ALL SUBJECTS BY START DATE

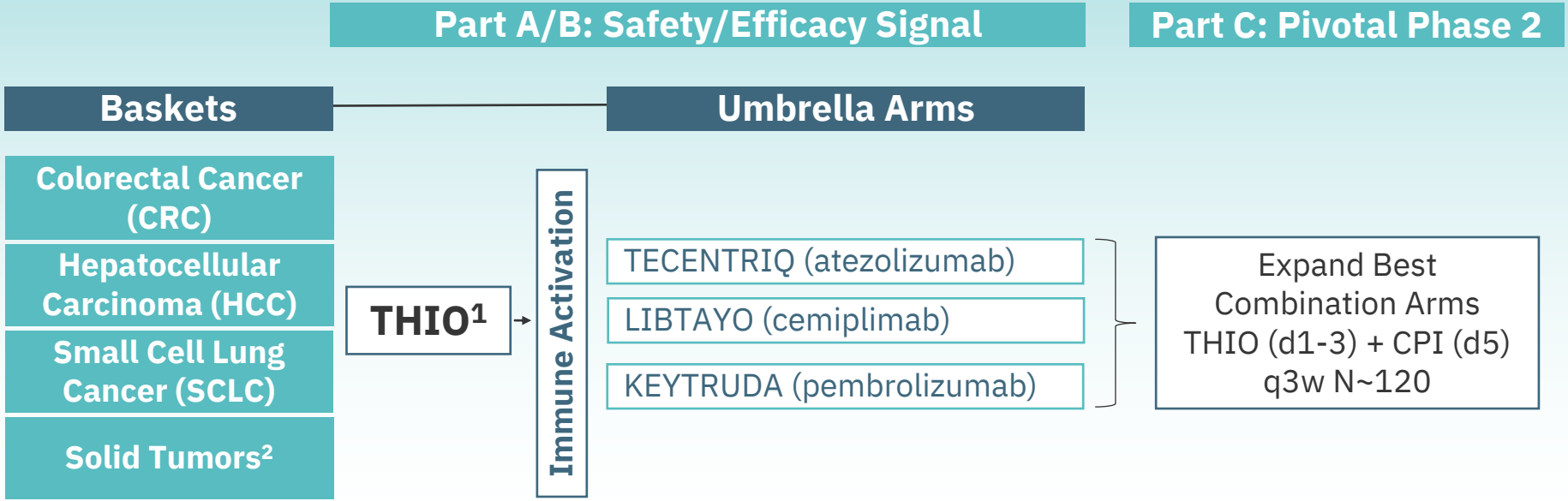
- 42 subjects completed at least 1 post baseline assessment completed at time of cut-off (13Nov2023)
- Partial Responses (PRs) per RECIST 1.1 were reported for 6 subjects, with 3 PRs confirmed by a 2nd scan (per Investigators' assessment). (*Post cut-off update: 1 additional PR was recorded (7 total) and 14-020's PR was confirmed at next scan)
- The first 2 subjects dosed on trial (both receiving 3rd line of treatment) reported long term survival of 14.6 and 12.5 months respectively, with no new anti-cancer treatment initiated.



Note: Includes all subjects with at least 1 post baseline response assessment. One subject (10-060) is represented in overall response assessment but not in swimmer plot due to programming issue.

THIO-102 TRIAL (PLANNED)

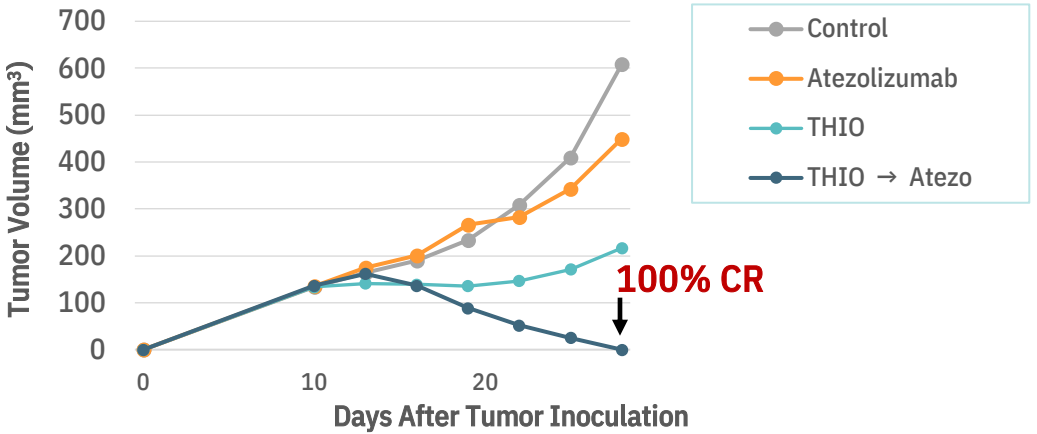
A Multicenter, Open-label, Phase 2 Trial Evaluating the Safety and Efficacy of THIO Administered in Sequence with Anti-PD-1 or Anti-PD-L1

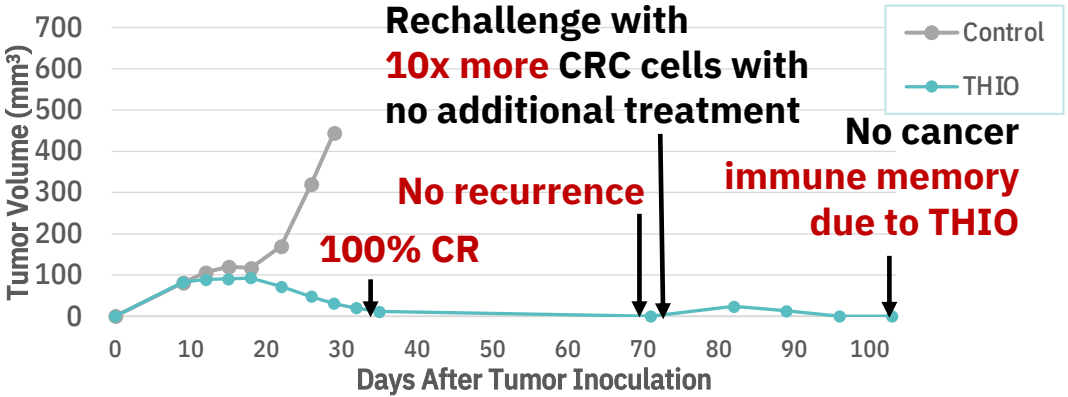


[1] Dose to be selected from THIO-101 study results
[2] E.g. Breast, Prostate, Gastric, Pancreatic, Ovarian, etc

THIO-102 – COLORECTAL RATIONALE

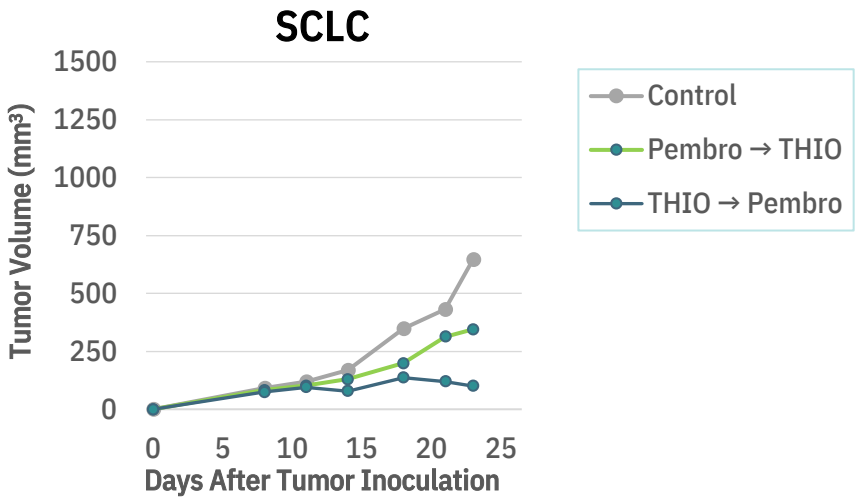
- THIO followed by CPI results in 100% complete response
- No recurrence after long-term follow-up
- Anticancer immune memory has been induced: no cancer after rechallenge with 10x more CRC cells with no additional therapy

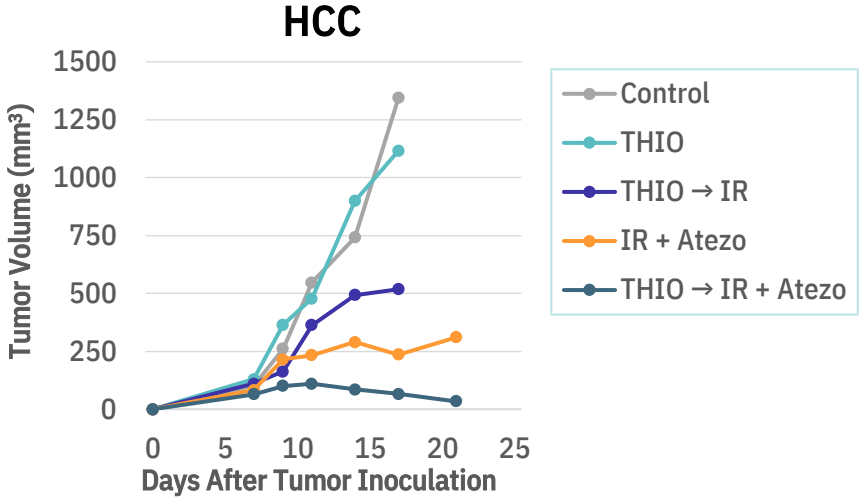




Mender et al, Cancer Cell, 2020

SCLC & HCC – ORPHAN DRUG DESIGNATION



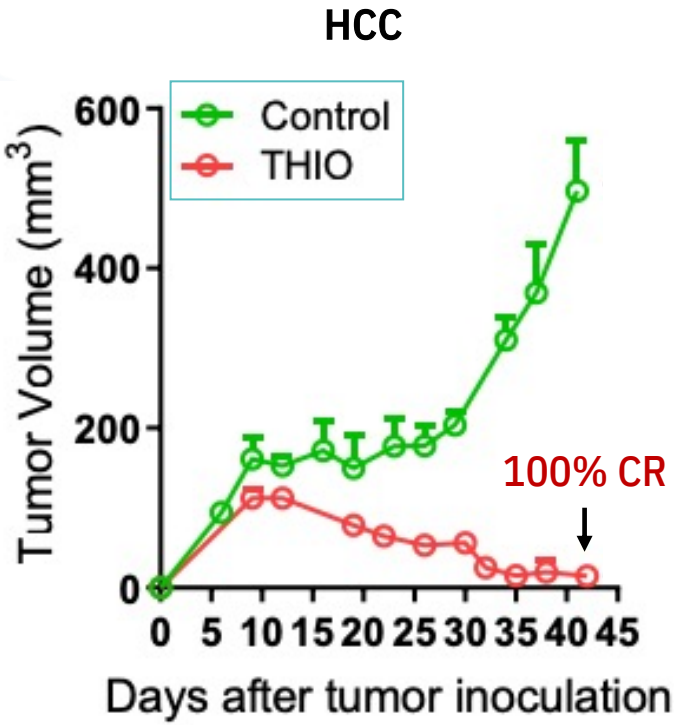


- THIO is synergistic with anti-PD-1 agent Pembrolizumab in Small Cell Lung Carcinoma (H2081) *in vivo* in humanized murine cancer model.
- Treatment with THIO followed by Pembrolizumab results in highly potent anticancer effect, as compared to Pembrolizumab alone.
- THIO converts immunologically “cold non-responsive” SCLC tumor into “hot and responsive” to Pembrolizumab.

- THIO is highly synergistic and effective in combination with anti-PD-L1 agent Atezolizumab and Ionizing Radiation (IR 10Gy) in HCC53N Hepatocellular Carcinoma.
- Treatment with THIO in combination with IR and Atezolizumab results in a complete regression of aggressive HCC tumors. The combination of IR and Atezolizumab is just partially efficacious.

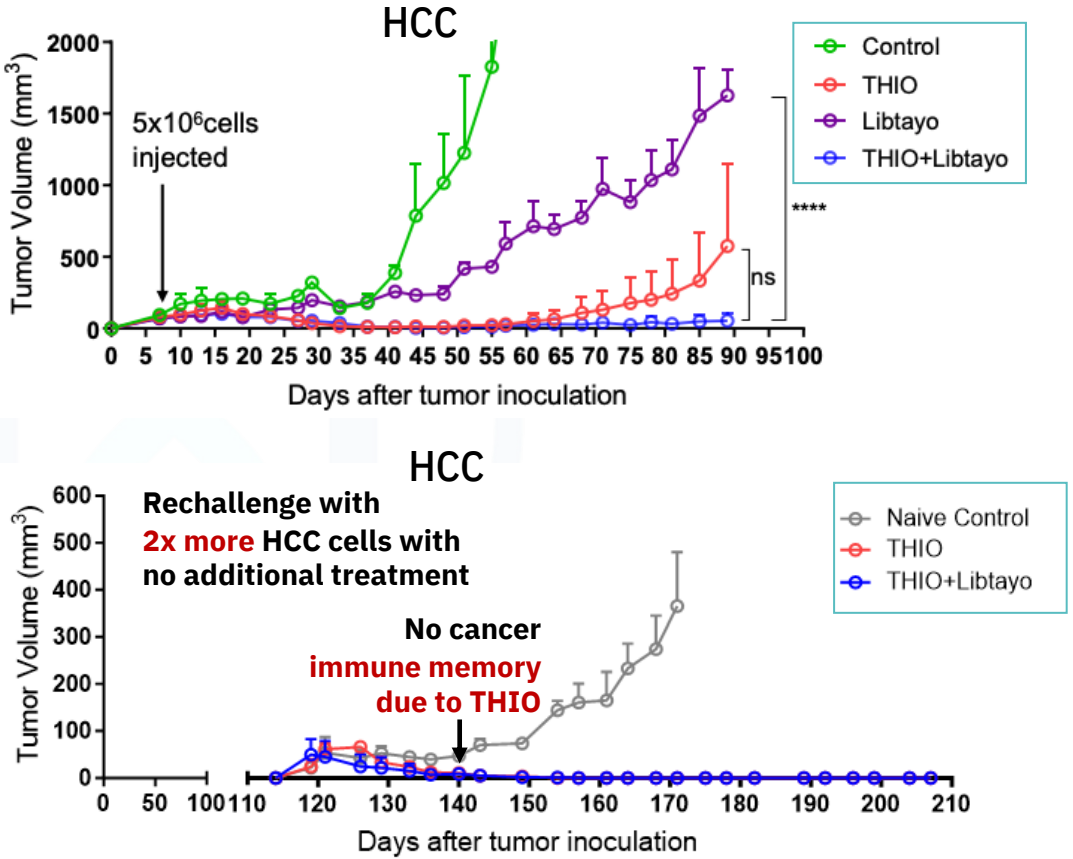
EXCELLENT EFFICACY IN HCC MODELS

- THIO achieved complete and durable responses in Hepatocellular Carcinoma (HCC), the dominant histology in primary liver cancer (90%), in *in vivo* models



HCC ANTI-CANCER IMMUNE MEMORY

- When combined with immunotherapy checkpoint inhibitor Libtayo®, duration of response was further potentiated
- Upon rechallenge with two times more cancer cells and no additional treatment, tumor growth was completely prevented
- Administration of THIO alone and in combination with Libtayo® generated anti-cancer immune memory



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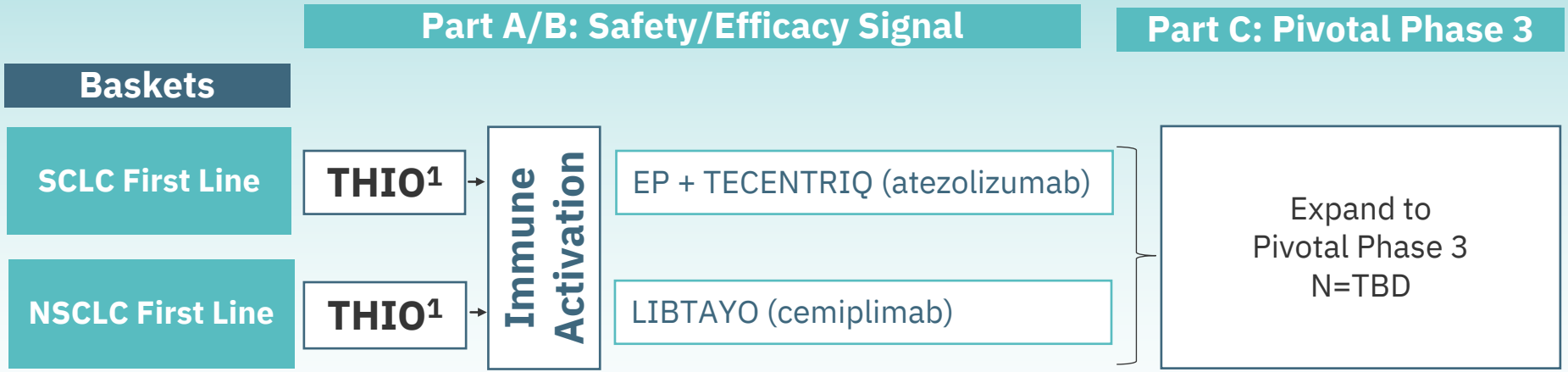


[1] Dose to be selected from THIO-101 study results

INVESTMENT OPPORTUNITY

EXCLUSIVITY AND INTELLECTUAL PROPERTY

Goal: New Chemical Entity (NCE) Marketing Exclusivity

- THIO has never been previously approved by the FDA for commercialization
- Robust exclusivity
- US: 7 years; EU, Japan, other markets: 10 years

Robust and Growing Patent Portfolio for THIO

- 1 issued US patent
- 4 issued foreign patents
- 5 pending US patent applications
- 7 pending foreign patent applications

Current patents/provisional applications broadly cover the following key areas:

- Telomere targeting compounds (2034+)
- THIO's immunogenic treatment strategy: sequential combination with CPIs (2041)

EXPERIENCED MANAGEMENT TEAM

Vlad Vitoc, MD, MBA

Founder, Chairman, and Chief Executive Officer

- 22+ years in Oncology Pharma/ Biotech: Commercial, Medical
- 12 compounds launched across 20+ tumor types
- Leadership roles at Bayer (Nexavar), Astellas (Tarceva, Xtandi), Cephalon (Treanda), Novartis (Zometa), Incyte (Jakafi)

Sergei Gryaznov, PhD

Chief Scientific Officer

- 25+ years as Scientist
- Expert Drug Discovery and Development, Oncology with 120+ publications
- Head of the J&J Oligonucleotide Center of Excellence Worldwide
- Expert of telomeres and telomerase in cancer, co-inventor of THIO

Jeffrey Himmelreich, MBA

Head of Finance

- 20+ years of financial expertise
- CFO for privately held and publicly traded companies in the healthcare and manufacturing industries
- Active CPA licensed in the state of Pennsylvania and is a Chartered Global Management Accountant

SIGNIFICANT MARKET OPPORTUNITY

Developing agents for the top tumor types markets globally

NSCLC (#1 WW)	CRC (#2 WW)
Mortality: 1.7M	Mortality: 1.0M
Sales: $ 34B	Sales: $ 20B

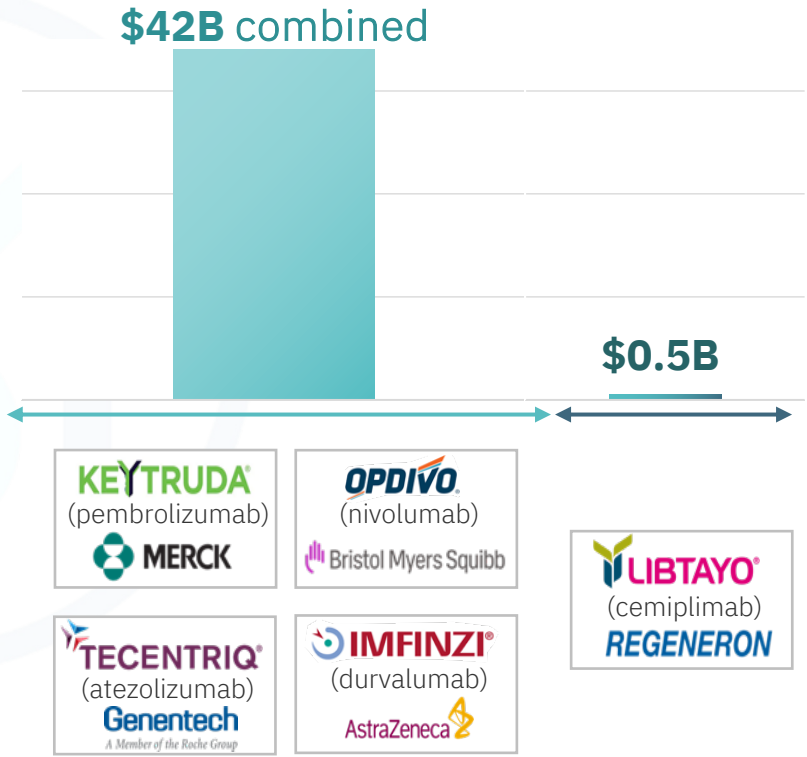
$42B CPIs Group

- 5 CPIs approved for NSCLC sold $12B
- >30% of NSCLC drug sales
- >40% of total CPI sales
- Keytruda®: $7.5B in NSCLC of $21B total

Partnership with Regeneron (Libtayo®)

- Profile similar to Keytruda®
- Libtayo® is entrant #5 in CPIs
- Needs superior efficacy to Keytruda®
- Sequential combination with THIO is key

Checkpoint Inhibitors Market



COMPARABLE COMPANIES

MAIA BIOTECHNOLOGY	MIRATI THERAPEUTICS	zentalis	IOVANCE BIOTHERAPEUTICS	KURA ONCOLOGY	Turning Point Therapeutics
$26M	$4.0B	$0.8B	$1.1B	$0.7B	$4.1B
Market Cap	Market Cap	Market Cap	Market Cap	Market Cap	Market Cap

- On June 3, 2022, Bristol Myers Squibb (BMS) announced the acquisition of Turning Point Therapeutics in an all-cash transaction for $4.1B in equity value.
- On October 9, 2023, BMS acquired Mirati for $4.8B in cash, plus up to $1B in contingent value right.

Note: Market Caps as of November 14, 2023 (source: S&P CapitalIQ)

MULTIPLE VALUE-DRIVING MILESTONES

★ **Major inflection points**

	2024			2025				2026
THIO-101 Ph2 NSCLC-2	**Early Efficacy Update** (Biotech Showcase)	**Part B Efficacy** (ASCO) ★	**Part B Long-term Efficacy** (ESMO) ★	**Part C Enrollment Complete**	**Part C Efficacy Update** (Biotech Showcase)	**Part B Full Efficacy** (ASCO) ★	**Filing for US approval**	**Potential Accelerated Approval in US** ★	
THIO-102 Ph2/3 CRC, SCLC, HCC, ST				**Enrollment** First Patient In ★			**Early Safety Report** ★		**Early Efficacy Report** (ASCO)
THIO-103 Ph2/3 SCLC-1, NSCLC-1					**Enrollment** First Patient In ★				**Early Safety Report** ★

APPENDIX

CAPITALIZATION TABLE & CASH BALANCE

Capitalization Table *(as of 9/30/2023)*

Common stock	13,761,123
Options (WAEP: $2.62)[1]	7,860,736
Warrants (WAEP: $5.59)	924,760
Fully Diluted Shares Outstanding	22,546,619

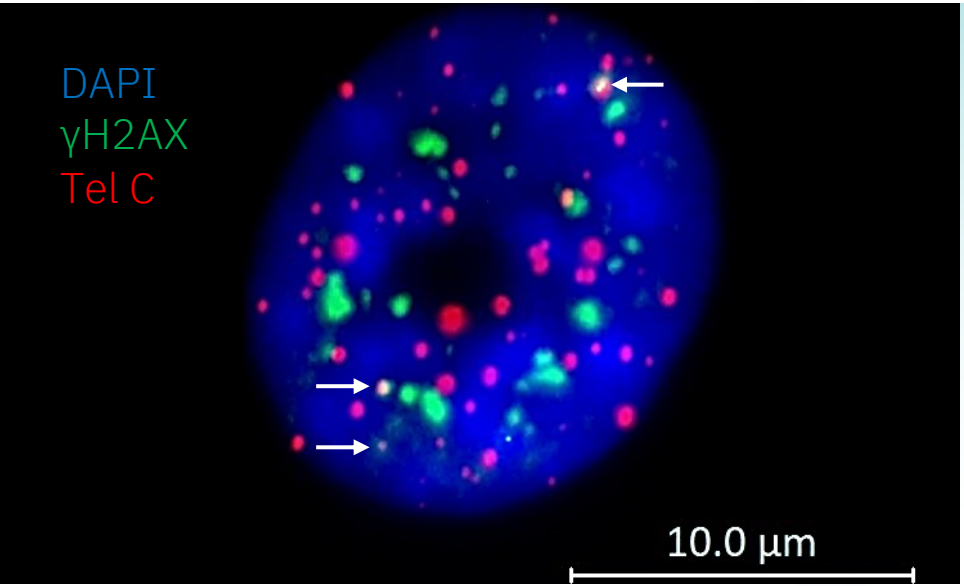
Cash Balance of $6.10[2] million
(as of 9/30/2023)

[1] 5,252,847 options held by directors and officers
[2] Includes the net proceeds from a public offering of common stock in April 2023

Note: Directors and officers, and their affiliates, own 39.2% of the 22,546,619 fully diluted shares outstanding

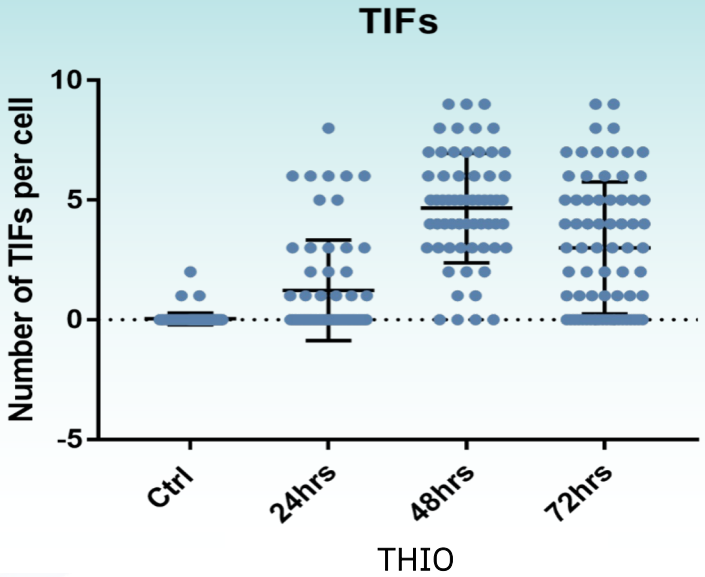
BIOMARKER – TIFS (TELOMERE DYSFUNCTION INDUCED FOCI)

Confocal microscopy image of LLC cell nucleus after treatment with THIO



- **Yellow** dots indicated TIFs by THIO
- **Green** dots - γH2AX
- **Red** dots - telomeres

Quantification of TIFs induced in LLC cell by 3 µM of THIO



- TIFs induction reached max after ~ 48h
- Formation of TIFs indicated on-target MOA of THIO