Ziopharm ONCOLOGY

Corporate Presentation

HC Wainwright 22nd Annual Global Investment Conference

September 16, 2020

Forward Looking Statements

This presentation contains certain forward-looking information about Ziopharm Oncology, Inc. that is intended to be covered by the safe harbor for "forward-looking statements" provided by the Private Securities Litigation Reform Act of 1995, as amended. Forward-looking statements are statements that are not historical facts, and in some cases can be identified by terms such as "may," "will," "could," "expects," "plans," "anticipates," and "believes." These statements include, but are not limited to, statements regarding the Company's business and strategic plans, the availability of cash resources, and the progress and timing of the development of Ziopharm's research and development programs, including the timing for the initiation and completion of its clinical trials. Although Ziopharm's management team believes the expectations reflected in such forward-looking statements are reasonable, investors are cautioned that forward-looking information and statements are subject to various risks and uncertainties, many of which are difficult to predict and generally beyond the control of Ziopharm, that could cause actual results and developments to differ materially from those expressed in, or implied or projected by, the forward-looking information and statements. These risks and uncertainties include among other things, changes in our operating plans that may impact our cash expenditures; the uncertainties inherent in research and development, future clinical data and analysis, including whether any of Ziopharm's product candidates will advance further in the preclinical research or clinical trial process, including receiving clearance from the U.S. Food and Drug Administration or equivalent foreign regulatory agencies to conduct clinical trials and whether and when, if at all, they will receive final approval from the U.S. FDA or equivalent foreign regulatory agencies and for which indication; the strength and enforceability of Ziopharm's intellectual property rights; competition from other pharmaceutical and biotechnology companies as well as risk factors discussed or identified in the public filings with the Securities and Exchange Commission made by Ziopharm, including those risks and uncertainties listed in Ziopharm's quarterly report on Form 10-Q for the three months ended June 30, 2020 filed by Ziopharm with the Securities and Exchange Commission. Readers are cautioned not to place undue reliance on these forward-looking statements that speak only as of the date of the presentation, and we do not undertake any obligation to revise and disseminate forward-looking statements to reflect events or circumstances after the date hereof, or to reflect the occurrence of or non-occurrence of any events.

Ziopharm Today

Ziopharm Oncology is an **independent** immuno-oncology company developing **non-viral and cytokine-driven** cell and gene therapies to effectively access and treat the millions of people diagnosed globally each year with **solid tumors** by **weaponizing the body's immune system**.

Ziopharm Vision for Solid Tumors

To develop **next-generation immunotherapies** to treat every patient with a solid tumor

Highlights	
First Movers	Pioneers in non-viral T-cell therapies and cytokine biology with IL-12
Proven	Multiple peer-reviewed publications and multi-year clinical data
Partners	Embedded at NCI and MD Anderson with T-cell INDs cleared (phase 2 at NCI and phase 1 at MDACC); additional clinical trials planned
Intellectual Property	Exclusive license to leading TCR library; multiple agreements to facilitate continued expansion
Clinical Focus	Advancing in the clinic with trials across all platforms expected in 2020; focused on data generation
Target Markets	Commercial rights to *multiple* billion-dollar markets

Announced 2020 Progress and Milestones

- Commenced DIPG patient dosing in phase 1/2 pediatric brain tumor trial for Controlled IL-12
- Received Rare Pediatric Disorder Designation for Controlled IL-12 for treatment of DIPG
- Completed enrollment in phase 2 combination trial of Controlled IL-12 with Libtayo®
- Presented additional clinical data for Controlled IL-12 program at ASCO 2020

- Initiated phase 1 trial of RPM CAR-T study for relapsed CD19+ leukemias/lymphomas at MD Anderson
- Eden BioCell making strong progress to file IND for *Sleeping Beauty* autologous CD19-specific CAR-T RPM trial in Taiwan this year

---

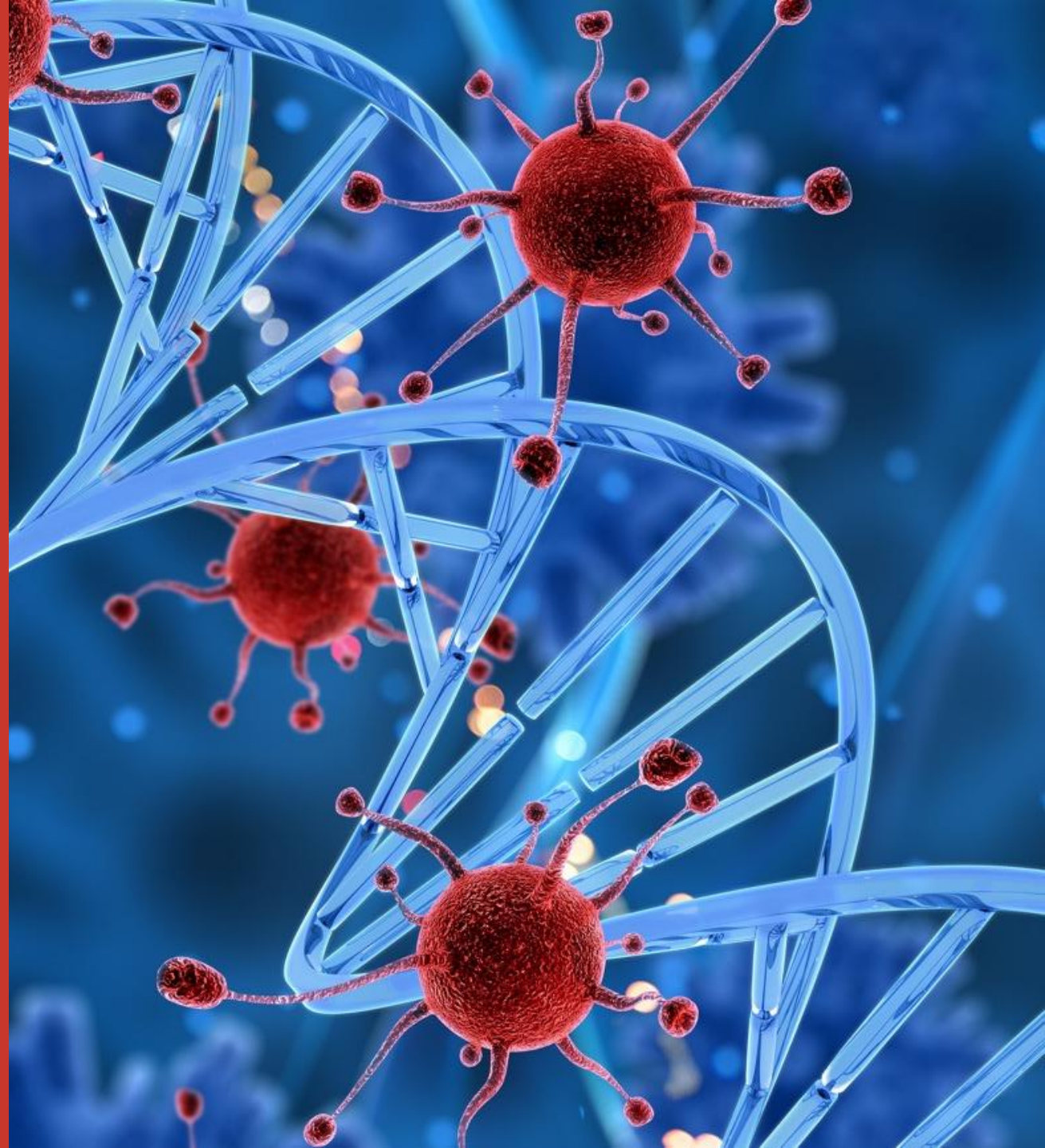
- Expanded TCR library through new license from NCI; Advanced discussions with FDA regarding IND filing for Ziopharm-sponsored TCR clinical trials
- Conducted engineering runs to facilitate dosing of first patient in NCI-led *Sleeping Beauty* TCR-T phase 2 trial targeting solid tumors; leveraged recently completed lab buildout in Houston

---

- Named biotech entrepreneur James Huang to Ziopharm Board of Directors
- Populated Scientific Advisory Board, with Dr. Carl June as Chair

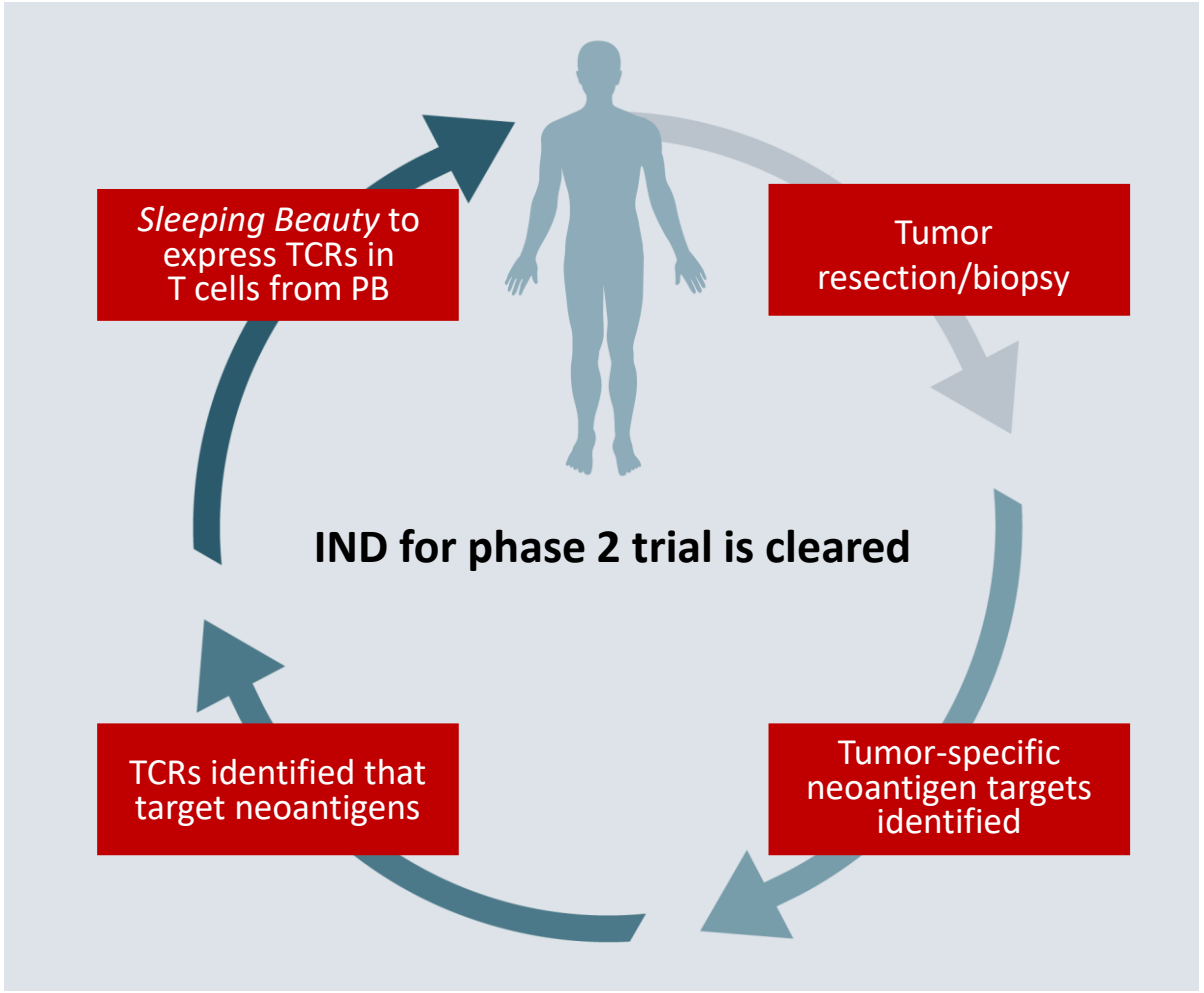
Sleeping Beauty TCR-T Therapies for Solid Tumors

Leaders in clinical stage non-viral manufacturing of TCR-T therapies

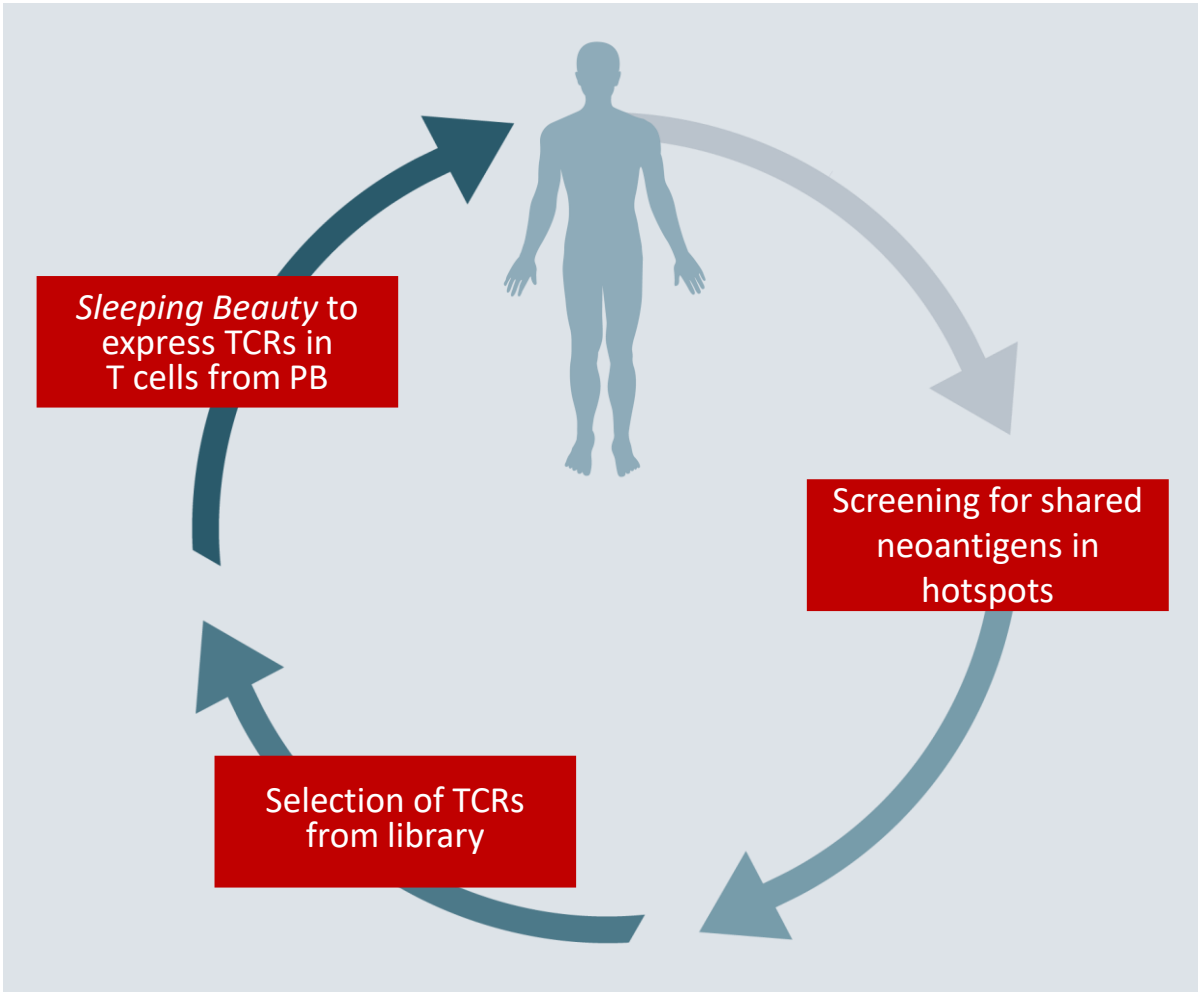


Two Options to Treat All Patients With a Solid Tumor

Personalized TCR-T Process



Library TCR-T Process



First-in-Human Phase 2 *Sleeping Beauty* TCR-T Trial at NCI

NCI Surgery Branch and Dr. Steven Rosenberg are world experts in identifying neoantigens and TCRs, and Ziopharm is a proven leader in *Sleeping Beauty*

A Phase 2 Study Using the Administration of Autologous T-Cells Engineered Using the Sleeping Beauty Transposon/Transposase System to Express T-Cell Receptors Reactive Against Mutated Neoantigens in Patients With Metastatic Cancer

Enrollment:

- Patients with solid tumors including:
  - gastrointestinal
  - genitourinary
  - ovarian
  - breast
  - non-small cell lung cancers
  - glioblastoma

Endpoints:

- Primary: tumor response rate
- Secondary: safety and tolerability

NIH U.S. National Library of Medicine
ClinicalTrials.gov

NCI PROTOCOL ID	INVESTIGATOR
NCI-19-C-0143	Steven A. Rosenberg, M.D., Ph.D.

NCI TCR-T Trial Led by Dr. Rosenberg

First-in-human phase 2 TCR-T *Sleeping Beauty* trial being conducted at NCI by Dr. Steven Rosenberg, Chief of the Surgery Branch

- NCI commencing with phase 2 overcomes the need to undertake T-cell dose escalation studies; significant time and capital savings in drug development
- Ziopharm team collaborating with NCI to advance manufacturing preparations for dosing first patient; NCI directing timelines
- Newly expanded Ziopharm laboratories in Houston conducted required engineering runs and provided information to the NCI to help expedite enrollment
- As laboratory functions re-open, NCI is once again proactively screening patients for neoantigens and TCRs to render them eligible for the trial
- Given the importance of this first non-viral TCR trial at NCI, they have invested time and talent to ensure the best possible patient outcomes at the outset; a patient-first approach

Building on Foundational Science; Moving to a Commercial Pathway

2019 Focus: Assembling the foundation at Ziopharm

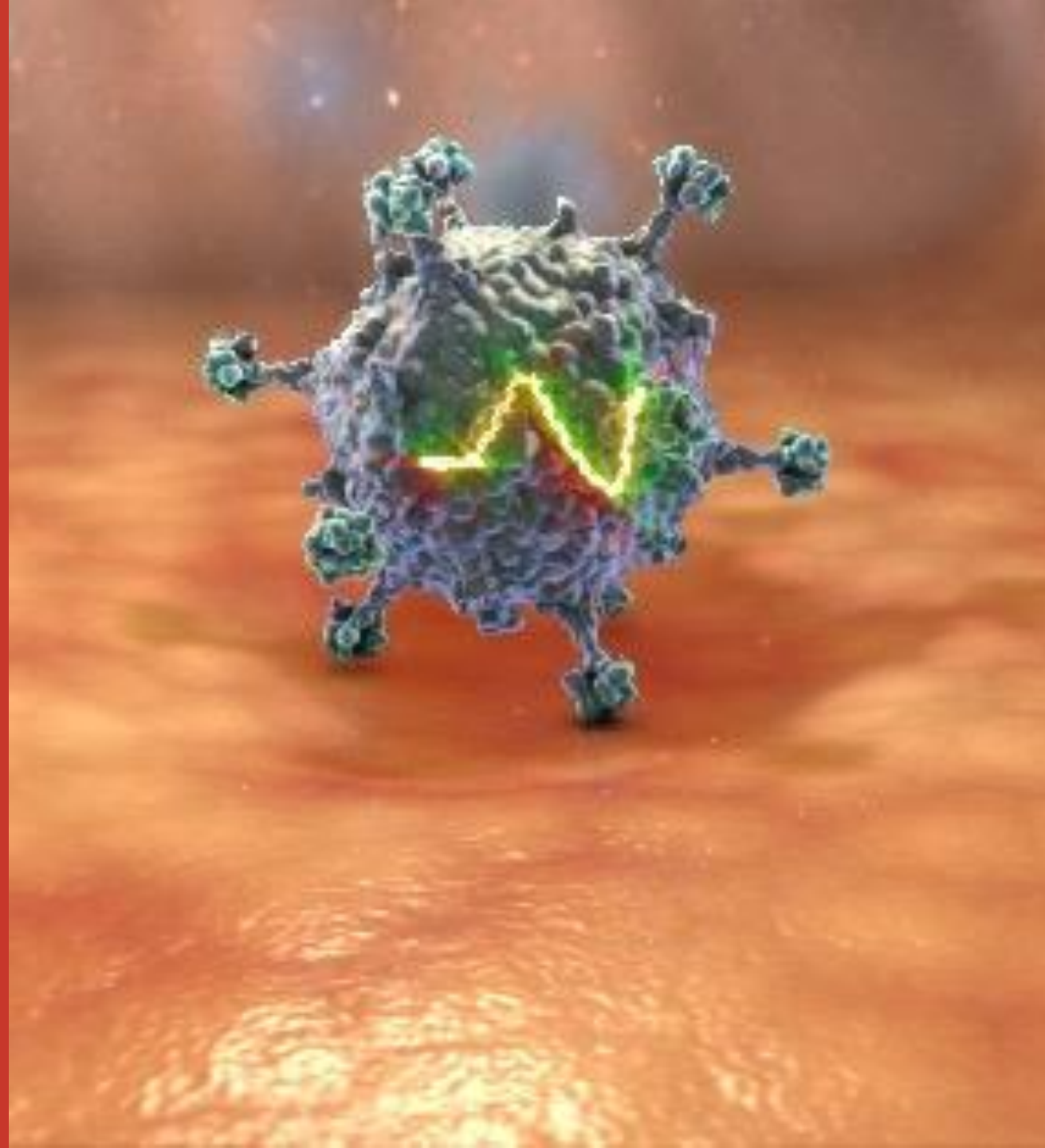
- Technology from NCI
- TCRs for library from NCI
- Personnel from industry leading institutions/organizations/companies
- Research agreement expanded with MD Anderson
- Lab facility buildout on MD Anderson campus to accelerate TCR program advancement

2020 Priorities: Preparing clinical trials

- Implementing and improving upon NCI's technology at MD Anderson
- Planning for Ziopharm TCR-T trials with BOTH "library" and "personalized" designs
- Given progress assembling TCR library, this trial expected to enroll first
- Anticipated cancer indications of gynecologic, colorectal, pancreatic, non-small cell lung cancer and cholangiocarcinoma
- Focus on completing the IND-enabling CMC and nonclinical data package to support IND
- Based on FDA feedback to pre-IND package, anticipates IND filing in Q1 2021

Controlled **IL-12 Platform**

Inducing immune responses;
turning “cold” tumors “hot”



Cytokine Biology is a Hot Space for Drug Development

Ziopharm is a world leader in dosing of IL-12 with deep clinical experience across multiple indications; focus on brain cancers today; ability to expand opportunistically

About IL-12:

- Interleukin 12, or IL-12, is the most powerful pro-inflammatory cytokine and is a master regulator of the immune system
- IL-12 drug development is now possible as the production can be controlled
- IL-12 turns “cold” tumors “hot”, improving T cell access to tumor microenvironment

Ziopharm has:

- Demonstrated that IL-12 recruits and activates T cells within tumors
- Shown that IL-12 can be regulated; safely delivered in 1,300+ doses of Controlled IL-12 switch mechanism
- Expanded efforts to prove IL-12 can improve immune checkpoint inhibitors

Controlled IL-12 Clinical Experience in recurrent glioblastoma (rGBM)

Approaches

- Monotherapy
- Combination with PD-1 inhibitors

Data

- Publication of supportive results of phase 1 monotherapy trial in recurrent GBM in *Science Translational Medicine*
- Interim encouraging data presented at 2019 Society for Neuro-Oncology and American Society of Clinical Oncology in May 2020

Trials

- Phase 1 monotherapy trial in recurrent GBM
  - Enrollment completed in Q1 2019
- Phase 1 combination study with OPDIVO® in recurrent GBM
  - Enrollment completed in Q4 2019
- Phase 2 combination trial with Regeneron's Libtayo® in recurrent GBM
  - Enrollment completed in June 2020

IL-12 Delivered into rGBM can be Controlled and Improves Survival

Controlled IL-12 in the clinic

- Ad*
- RTS®**
- hIL-12
- Veledimex***
- Low-dose steroids****

* Replication-incompetent adenovirus (delivered Day 0)
** RheoSwitch Therapeutic System®
*** Daily doses of 20 mg (Days 0 to 14)
**** ≤ 20 mg cumulative dexamethasone (Days 0 to 14)

16 month mOS in patients with recurrent disease

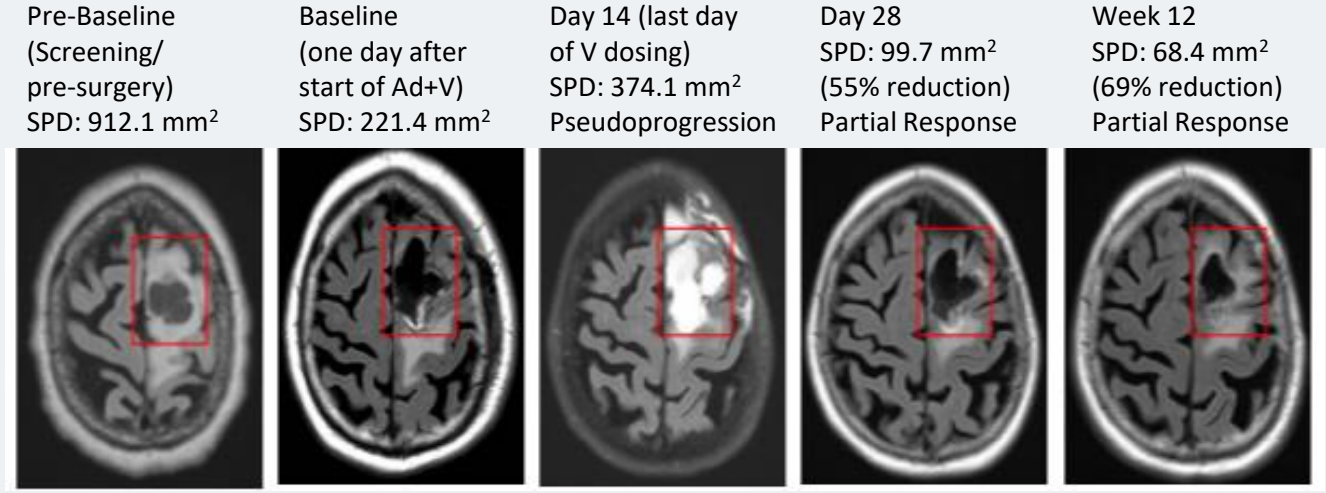
Cohort	Cumulative Steroids (Days 0-14)	No. of Subjects	No. of Subjects Alive	Median Survival (95% CI) (mons)	Mean Follow-up (mons)
Unifocal	≤20 mg	20	6	**16.2 (8.9, 20.1)**	14.1
	>20 mg	16	3	9.8 (4.6, 13.5)	10.9

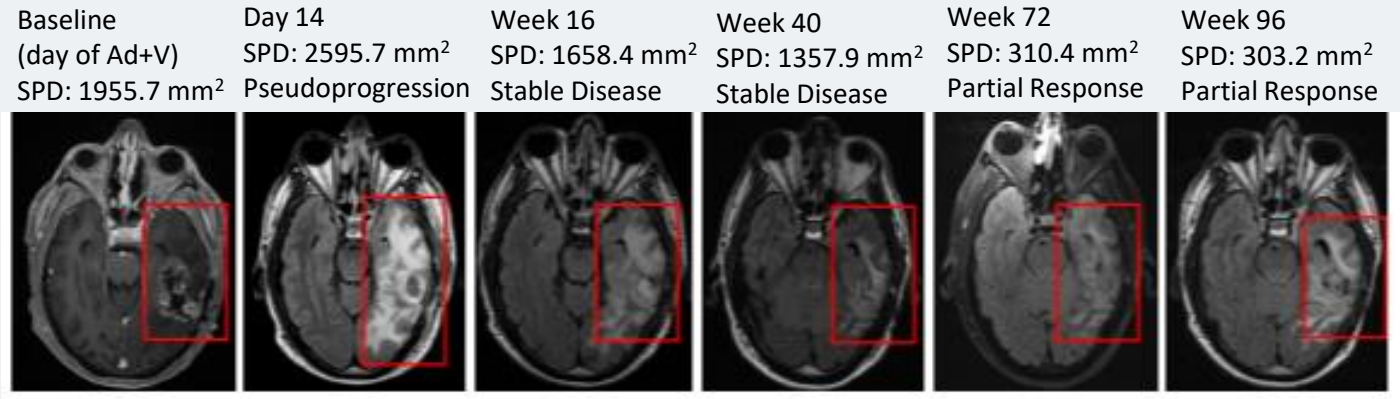
mOS measured from time of re-resection

ASCO®
AMERICAN SOCIETY OF CLINICAL ONCOLOGY

American Society of Clinical Oncology, May 2020

Ziopharm at American Society of Clinical Oncology 2020





SPD: sum of products of bi-perpendicular diameters

Ziopharm presented encouraging clinical data for Controlled IL-12 for the treatment of recurrent glioblastoma at the 2020 American Society of Clinical Oncology meeting

Combination with PD-1 inhibitor

20mg veledimex & 3mg/kg nivolumab

- Updated clinical data were presented as a poster discussion led by Dr. Antonio Chiocca, M.D., Ph.D., lead trial investigator

Monotherapy (Main)

20mg veledimex monotherapy

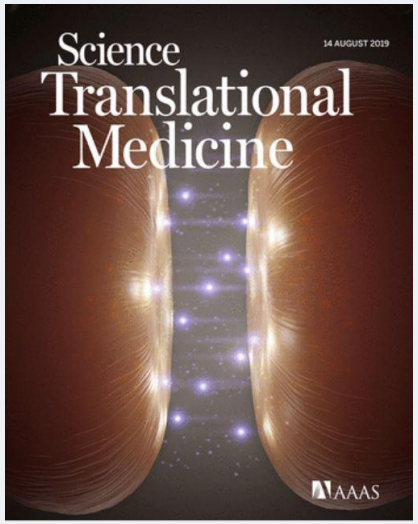
- Final data from the phase 1 monotherapy "Main" study and updated data from the phase 1 monotherapy expansion study "Expansion" were presented in posters

ASCO® American Society of Clinical Oncology, May 2020

We Believe Controlled IL-12 Can be a Drug for rGBM

Data supports immune mediated anti-tumor effects; will guide later stage development

- Controllable
- Pathology showing influx of immune cells and decrease in tumor cells
- Regression of tumor by serial MRI
- Median overall survival compelling



14 August 2019

Opportunities to expand into other tumor indications

Controlled IL-12 for DIPG; Rare Pediatric Disorder Designation

DIPG Dosing Commenced in Pediatric Brain Tumors Trial

- 12 patients to be enrolled in Phase 1 DIPG cohort
- Leading pediatric centers including Lurie Children's in Chicago; Dana-Farber in Boston; University of California in San Francisco
- Diffuse intrinsic pontine glioma (DIPG) represents 10-15% of pediatric brain cancers. Median survival ranges from 8-11 months. There are no curative options.

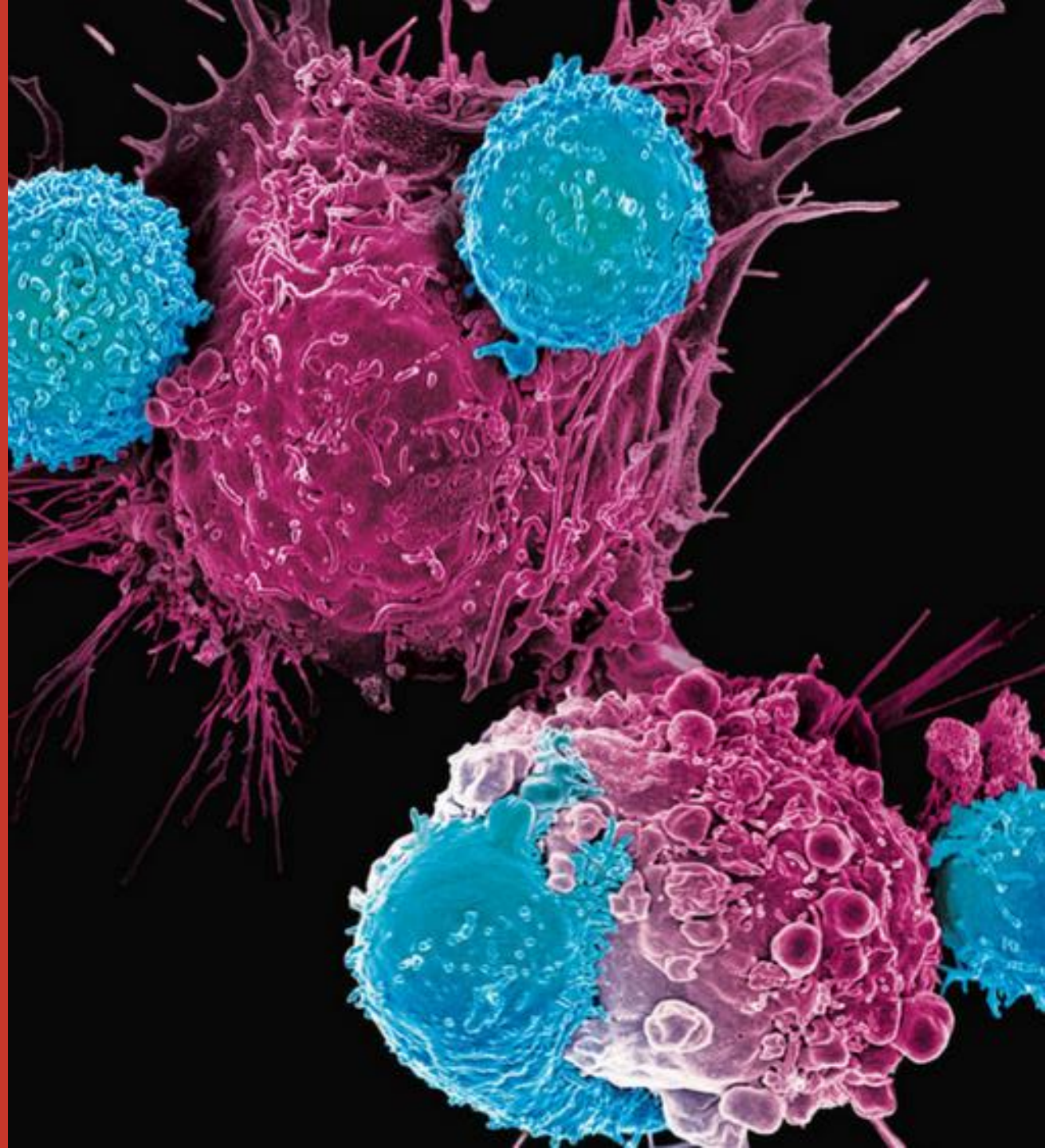
Opportunity to demonstrate utility in various types of brain tumors

FDA Grants Rare Pediatric Disorder Designation

- Announced designation on September 14, 2020
- If BLA for Controlled IL-12 in DIPG is approved, the Company may receive a priority review voucher from the FDA, which can be redeemed to obtain priority review for any subsequent marketing application or may be sold or transferred to another company for their program

Sleeping Beauty
CAR-T CD19

Clinical validation of Rapid Personalized Manufacturing



CAR-T Opportunity: CD-19 CAR Rapid Personalized Manufacturing (RPM)

Providing a solution to cost and complexity of commercial CAR-T today

Phase 1 trial initiated to evaluate allogeneic CD19-specific CAR-T

- Investigational treatment for patients with $CD19^+$ leukemias and lymphomas who have relapsed after allogeneic bone marrow transplantation
- Validate Ziopharm's RPM technology, potential commercial opportunity
- Infuse as soon as day after gene transfer
- Trial to be conducted at MD Anderson; Initiation announced in July 2020

Ziopharm & Eden BioCell pursuing autologous CD19-specific CAR-T

- Greater China: Eden BioCell on track to file IND for phase 1 trial in Taiwan this year
  - 50-50 joint venture; up to $35 million funding committed from TriArm Therapeutics

Eden BioCell

TriArm™ THERAPEUTICS

Corporate Summary

Summary of the Foundation to Target Solid Tumors

1.5 million people are diagnosed with a new solid tumor every year in the US

Ziopharm is pursuing **3 approaches** to treat these patients

1 Personalized TCR-T

- Deliver T cells genetically engineered using *Sleeping Beauty* to target neoantigens unique to each patient
- TCRs made real-time
- T-cell products with multiple TCRs per patient

2 Library TCR-T

- Quickly infuse T cells genetically engineered using *Sleeping Beauty* to target neoantigens shared between patients
- TCRs from pre-existing library
- New line of attack as tumor has not "seen" the 3rd party TCRs

3 Controlled IL-12

- Enable T cells to gain access to tumor
- Controlled expression to dial in therapy and reduce toxicity
- Active as monotherapy and when combined with PD-1 inhibitor

Scientific Advisory Board

Carl June, M.D.
University of Pennsylvania
Perelman School of Medicine
SAB Chairman

Adi Barzel, Ph.D.
Tel Aviv University

Gavin Dunn, M.D., Ph.D.
Washington University
School of Medicine

Matthew Porteus, M.D., Ph.D.
Stanford University

Kole T. Roybal, Ph.D.
University of California,
San Francisco

Anticipated 2020 Milestones

- Enrollment and dosing of DIPG patients in recently commenced pediatric trial for Controlled IL-12
- Present additional clinical data for Controlled IL-12 program; initial data from phase 2 combination with Libtayo
- Commence patient dosing in RPM CAR-T study, recently initiated at MD Anderson Cancer Center
- File IND for *Sleeping Beauty* autologous CD19-specific CAR-T RPM trial in Taiwan with Eden BioCell
- Dose first patient in NCI-led *Sleeping Beauty* TCR-T phase 2 trial targeting solid tumors
- Generate CMC and nonclinical IND-enabling data to support IND in early 2021 for Ziopharm TCR-T trial to be conducted at MD Anderson
- R&D Day planned
- Engage newly created Scientific Advisory Board under Dr. Carl June as Chair
- Continue review of potential additions to Board of Directors; Recruitment of key executive leadership

Broad Pipeline of Oncology Innovation

Asset	Indication	Phase 1	Phase 2
Sleeping Beauty **TCR-T targeting neoantigens**	Multiple solid tumors	Personalized TCR-T (NCI sponsor)	NIH NATIONAL CANCER INSTITUTE
	Multiple solid tumors	Library TCR-T ("hotspots") (Ziopharm sponsor* at MD Anderson)	Ziopharm ONCOLOGY
	Multiple solid tumors	Personalized TCR-T (Ziopharm sponsor* at MD Anderson)	
Ad-RTS-hIL-12 + veledimex (Controlled IL-12)	rGBM	Combination with Libtayo® (Ziopharm sponsor)	REGENERON
	rGBM	Combination with OPDIVO® (Ziopharm sponsor)	
	rGBM	Monotherapy expansion (Ziopharm sponsor)	Ziopharm ONCOLOGY
	Pediatric brain tumor/DIPG	Monotherapy (Ziopharm sponsor)	
Sleeping Beauty **CAR-T**	Leukemia/lymphoma	3rd Gen CD19 with mbIL15 (MD Anderson sponsor)	MD Anderson Cancer Center
	Leukemia/lymphoma	3rd Gen CD19 with mbIL15 (TriArm sponsor)	Eden BioCell

* Subject to FDA discussions and feedback regarding the trial phase and design.

Initiated Planned

Summary

- **Clinical stage immuno-oncology company developing next generation cell and gene therapies**
  - Additional clinical and corporate catalysts expected in H2 2020
- **Significant market opportunity for multiple blockbuster therapies**
  - Novel next generation approach to solid tumor market
  - Strong initial pipeline with potential to rapidly expand into new indications
- **Cutting-edge science and partnerships provide company with competitive edge**
- **Clinical trial advancement across all three platforms expected in 2020**
- **Strengthened advisory/leadership team, intellectual property and balance sheet**

Thank you…

September 16, 2020