Corporate Update and Q1 2021 Highlights

May 6, 2021

Forward Looking Statements

The presentations included in this virtual R&D Day contain 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, the progress and timing of the development of Ziopharm's research and development programs, including the design of its clinical trials and the timing for the initiation and completion, and the data readouts for, its clinical trials, and the anticipated benefits and market size of Ziopharm's products. 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 or maintaining 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 annual report on Form 10-K for the year ended December 31, 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.

Focusing on Suite of Cellular Therapies

Evolved strategy and disciplined capital allocation

Mission

We develop innovative T cell-based therapies for the treatment of hematological and solid tumor cancers

Ziopharm Oncology Today

Long-Term Vision

Distinctive commercial and clinical portfolio of immunotherapies transforming patient lives, supported by a growing body of compelling data

Well positioned with distinctive platforms in clinic

2021 is a Year of Disciplined Strategic Focus

Strategy entails transparent prioritization and directed capital allocation

Strategic Filters

01 Our distinct **capabilities**

02 Balance of de-risked **feasibility and innovation**

03 Direct line of sight to **patient data and unmet need**

04 Assessment of resource and **capital constraints**

Strategic Positioning

TCR-T Programs: Advance clinical program for library as top internal priority (and expand/refine library); plan for personalized / next gen program(s); leverage NCI where possible

CD19 CAR-T Programs: Cost effectively advance program to generate clinical data. Evaluate partnership opportunities for future development and commercialization. Evaluate cross-over potential of CAR-T technology to the TCR program

Controlled IL-12 Program: Seek partner(s) that can optimize the potential of the asset for patients and monetize / return value to Ziopharm shareholders

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Recent Progress and Highlights

Business Updates

01 Completed construction of the GMP facility in Houston with follow on activities for qualification and validation over summer

02 Conducted R&D Day

03 Executing on Strategy via Capital Allocation Prioritization across Programs

- *Wind down of existing Controlled IL12 Clinical Program*
- *Anticipated Closure of CD19 RPM CAR-T Allogeneic Trial (MD Anderson)*
- *Focus on TCR Clinical and Preclinical Opportunities*

Clinical and Preclinical Updates

01 IND Clearance for Phase I/II TCR Library Trial and ongoing preparation for patient enrollment in 2H 2021

- *Pre-screening underway with HLA protocols at MDACC*

02 First patient treated in Taiwan CD19-Specific RPM CAR-T Trial via JV Partner Eden BioCell

- *Updates in 2H 2021*

03 Advancing Next Generation (mbIL15) and other Preclinical TCR Programs

Cash balance of $100.1 million as of March 31*, sufficient to fund operations through late Q2 2022

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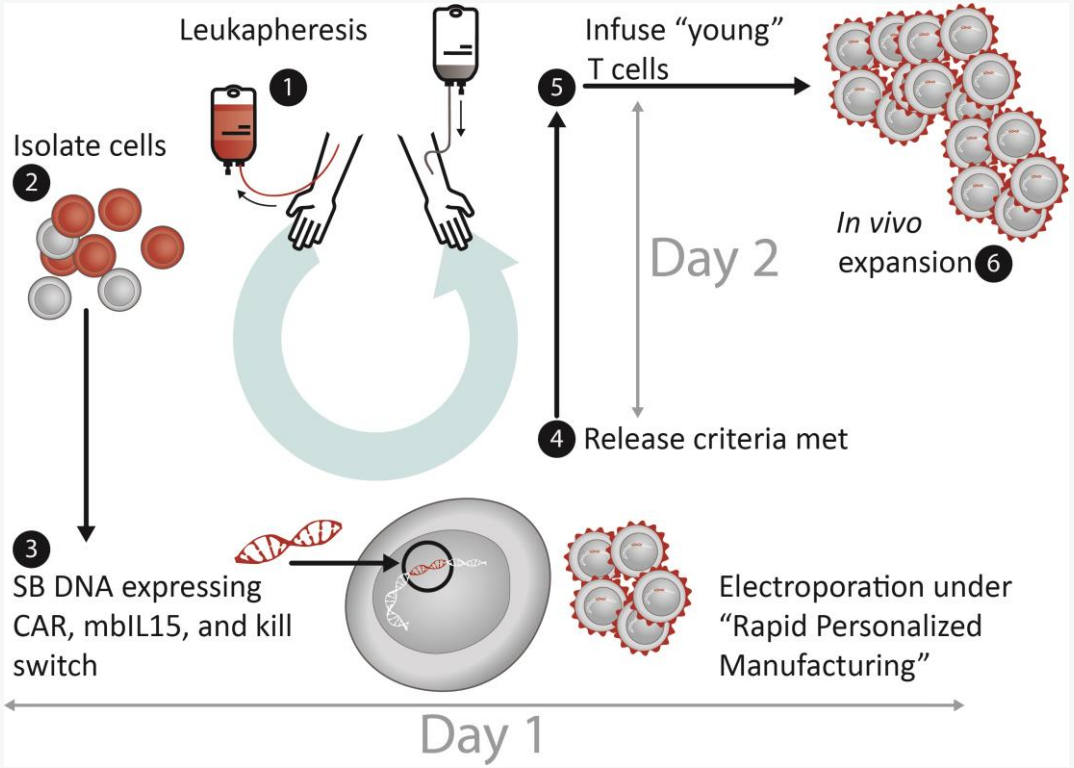
*In addition, the Company has approximately $5 million at MD Anderson from prepayment for programs to be conducted by the Company as of 3/31/2021

CD19 CAR-T Rapid Personalized Manufacturing (RPM) – Phase I Clinical Program in Taiwan

Addressing Cost And Complexity Limiting The Commercialization Of Existing CAR-T



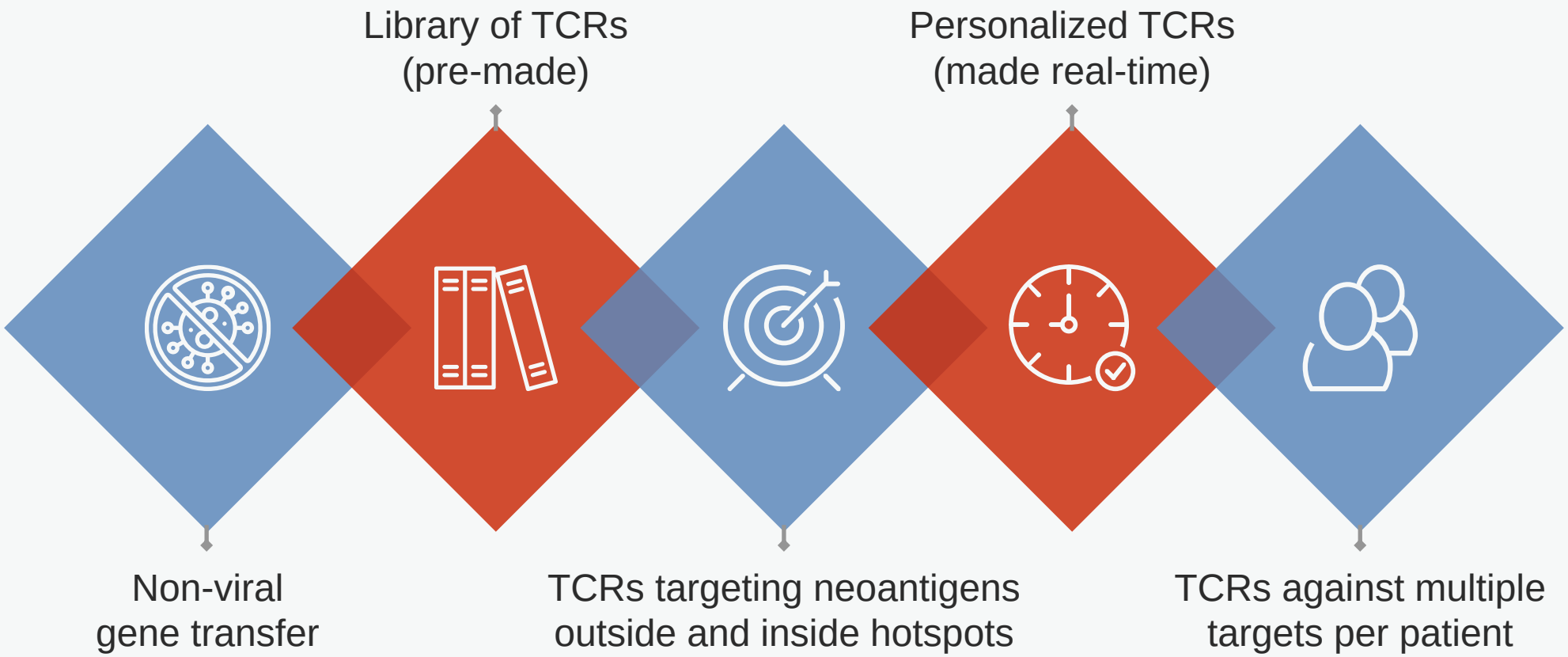
Ziopharm & Eden BioCell Partnership and Progress

- 50-50 joint venture with TriArm Therapeutics
- Eden BioCell IND cleared in Q4 2020
- First patient infused in Q1 2021
- Initial data expected in H2 2021
- Mainland China: Infusion of several patients under Investigator Initiated Trials and Compassionate Use

TriArm™ THERAPEUTICS

Eden BioCell

Competitive Advantage:
Differentiated Positioning in Solid Tumors



Ziopharm's complementary and unique suite of technologies

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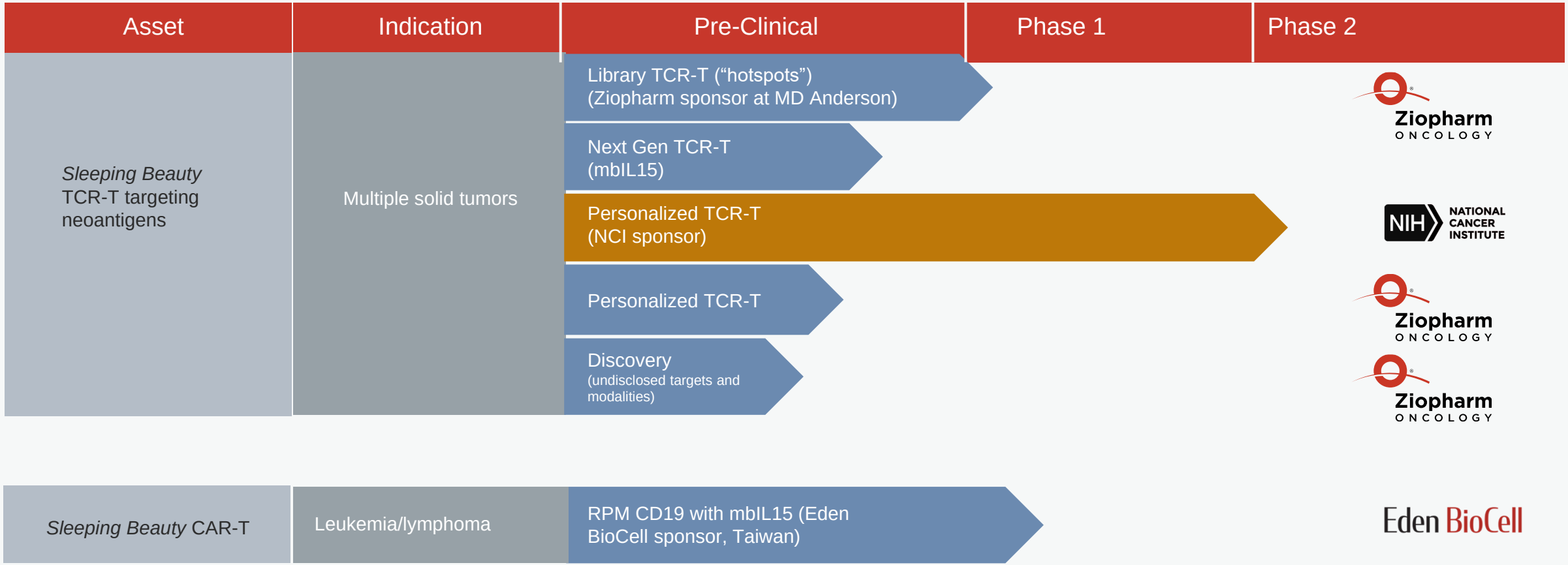
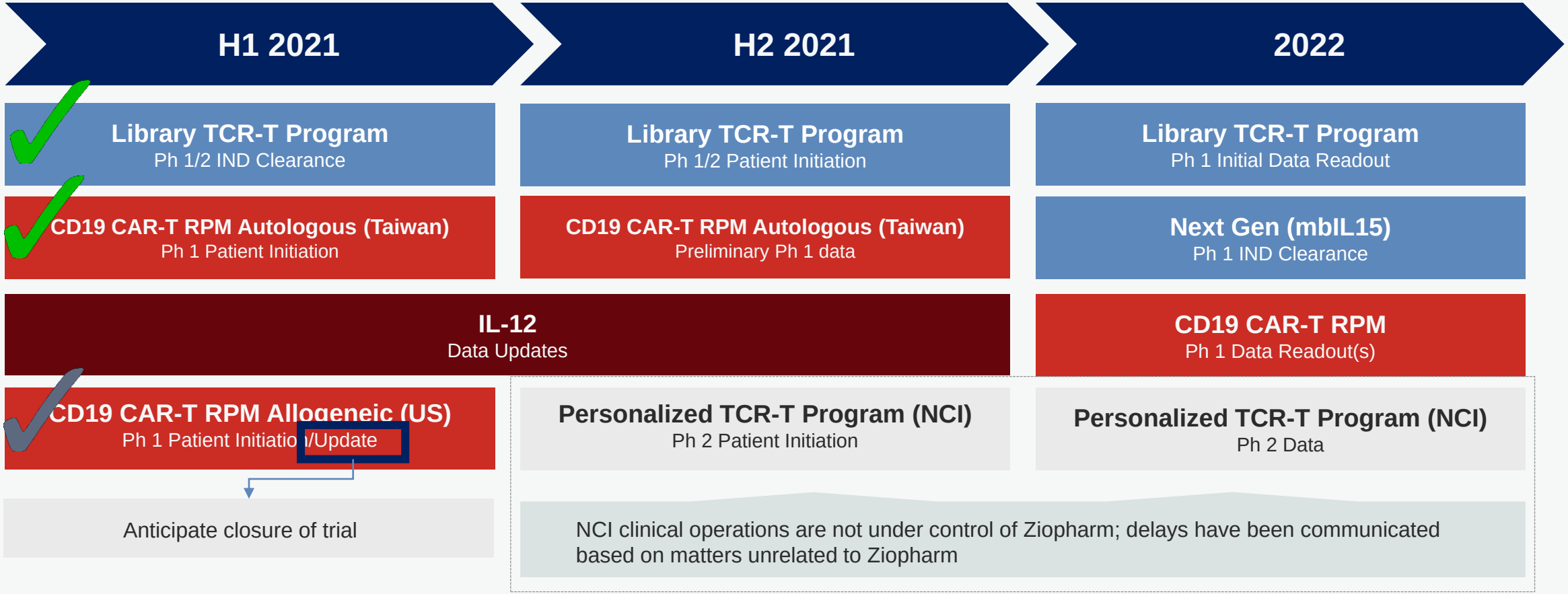
Focused Pipeline of Oncology Innovation in Cell Therapy



2021/2022 Clinical Milestones



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R&D Summary

- The Library TCR-T program is underway, and we expect clinical data to be available early next year.
- We plan to augment the current TCR library in the FDA cleared IND, allowing for broader patient inclusion.
- In house manufacturing capabilities coming online 4th quarter 2021, allowing for increased patient recruitment in 2022.
- Next generation (mbIL15) TCR-T IND expected in 2022.
- Autologous RPM CD19 CAR-T program underway in Asia.