

Time is Life

Morgan Stanley 19th Annual Global Healthcare Conference September 9, 2021

forward-looking statements

These slides and the accompanying oral presentation contain forward-looking statements and information. The use of words such as "may," "might," "will," "should," "expect," "plan," "anticipate," "believe," "estimate," "project," "intend," "future," "potential," or "continue," and other similar expressions are intended to identify forward-looking statements. For example, all statements we make regarding the initiation, timing, progress and results of our preclinical and clinical studies and our research and development programs, our financial guidance, our ability to advance product candidates into, and successfully complete, clinical studies, the timing or likelihood of regulatory filings and approvals, and our financial projections are forward looking. All forward-looking statements are based on estimates and assumptions by our management that, although we believe to be reasonable, are inherently uncertain. All forward-looking statements are subject to risks and uncertainties that may cause actual results to differ materially from those that we expected. These statements are also subject to a number of material risks and uncertainties that are described in our most recent guarterly report on Form 10-Q, as well as our subsequent filings with the Securities and Exchange Commission. Any forward-looking statement speaks only as of the date on which it was made. We undertake no obligation to publicly update or revise any forward-looking statement, whether as a result of new information, future events or otherwise, except as required by law.







2seventy bio – Time to Launch

1	Most experienced team in cell therapy. Done it. Want to do it again and again
2	Tuned to 100% oncology cell therapy focus – do it smarter and faster
3	Most advanced and sophisticated scientific toolkit and engine in cell therapy
4	Capabilities, partners & funding in place to deliver – know what it takes
5	Delivering on next-gen oncology cell therapy products TODAY



12 years in the making...2seventy retooled to go 'back to the future'

- About people & culture mindset
- About learning: be smarter
- About iterating: be faster
- About design: fit for purpose
- Long term: engine behind the products that matters
- Split: A double down to be 1000% focused on future, rewire from top to bottom all in.





Our Seasoned Team is Ready

Leadership



Nick Leschly Chief Kairos Officer*



Duane Baggerly Head of People & Culture



Chip Baird Chief Financial Officer

Kevin Chin, MD

Head of Clinical Development



Susan Abu-Absi, Ph.D. Head of Manufacturing

Nicola Heffron



Philip Gregory, D. Phil. Chief Scientific Officer



Cintia Piccina, PharmD Head of Commercial

+450 Awesome 270ers



Jenn Snyder Head of Corporate Affairs



Teresa Jurgensen, J.D. airs General Counsel



Kathleen Munster SVP, Quality & Operations

Board of Directors



Dan Lynch Board Chair



Denice Torres, J.D. form. Johnson & Johnson



Ramy Ibrahim, M.D. BIT.BIO



Marcela Maus, M.D., Ph.D. Massachusetts General Hospital (MGH) Cancer Center



Bill Sellers, M.D. Broad Institute of MIT and Harvard



Nick Leschly Chief Kairos Officer



*Kairos: is an Ancient Greek word meaning the right, critical, or opportune moment

2seventy bio – privileged starting position and bold trajectory

- Abecma[®] ramping
- **DARIC33 2H21 IND** •
- bbT369 2H21 IND •
- Multiple solid tumor • and next-gen MM programs

AT LAUNCH / [YEAR

END 2021]

- Abecma[®] earlier lines
- bbT369 POC data
- DARIC33 POC data
- Solid tumors IND
- Internal DP •

- Pivotal data/regulatory submissions for latestage heme
- POC for solid tumors
- Next-gen MM POC
- IND engine cranking •

2seventy: THE leading immunooncology cell therapy company

+3-5 YEARS

...AND BEYOND



+1-2 YEARS

2seventy Pipeline – Innovative cell therapy candidates across broad indications

INDICATION[DRLC]	TARGET	TECHNOLOGY	DREAM	DEMSE	DELIVER
Multiple Myeloma [ABECMA]	ВСМА	CAR T cell	BMS Partnership		Abecma Lidentingere vicencel) www.
Multiple Myeloma [bb21217]	ВСМА	CAR T cell PI3K Enhanced Manufacturing	BMS Partnership		Data at ASH21
AML-Pediatric [DARIC33]	CD33	Drug-Regulated CAR T cell (DARIC)	SCRI Collaboration		IND 2H 2021
B-NHL [bbT369]	Dual B cell targets	Dual-Targeted CAR T cell Signal Enhanced Gene Edited	TSVT owned		IND 2H 2021
AML-Adult [DARIC33 Next-Gen]	CD33 + Undisclosed	Drug-Regulated CAR T cell Dual- Targeted Potency Enhanced	SCRI Collaboration		
Solid Tumors	MAGE-A4	TCR T cell Potency Enhanced	REGN / MEDG Partnership		
Solid Tumors	Multiple	CAR / TCR T cell Potency Enhanced	TSVT & UNC		
Multiple Myeloma	Multiple	Multi-Targeted CAR T cell Potency Enhanced	TSVT		
Multiple Indications	Multiple	Multiple	Multiple		



2seventy's R&D philosophy - accelerating innovation



DREAM

Identify fundamental problems Look beyond the horizon Explore new biology What opportunities have the greatest potential impact?

DEVISE

Define clear hypotheses Invent compelling solutions Bridge gaps through partnership What solutions can we conceive to unlock that potential?

DELIVER

Prospective data inflections Defined development path Invest in manufacturing v2.0 What development strategy robustly tests the hypothesis?



Abecma®: Our first dream, devise, deliver iteration is realized in multiple myeloma



The FIRST CAR T cell therapy for Multiple Myeloma



Building on the Abecma Foundation

Launch Strong out of the Gate

Strong and fast uptake, illustrating high unmet need and confidence in the unprecedented efficacy of ABECMA

Over 65 sites activated in the US, first patient apheresed the week after launch through BMS collaboration

Demand stronger than anticipated. Partnership efforts at all stages of supply chain to expand capacity

Strong access and reimbursement position, very few patients face payer delays

Future



Expanding eligible patient population



Expand capacity to match demand



Independently progress our novel MM next-gens

> US ABECMA Revenue of \$24M* in 2Q

*US ABECMA profit and loss shared 50/50 between bluebird and BMS as part of the collaboration agreement 2Seventy bio/

Recoding R&D engine built to rapidly build, test, learn, & improve





bbT369 is purpose-built to enhance depth and durability of response in B-NHL





Strive to create a product that:

- Meets the significant need in bNHL
- Addresses shortcomings of existing therapies by increasing response rate and durability of response to a larger fraction of patients.

How to get there:

DEVISE

- Devise a sophisticated and disruptive cell therapy: a dualtargeting, potency-enhanced candidate that solves failure modes of CD19 CAR-Ts
 - Novel combination of antigens to <u>address antigen escape</u>.
 - Synergistic antigen receptor signaling domains to <u>augment</u> <u>T cell activation.</u>
 - Gene edit to <u>enhance potency</u> and reduce T cell exhaustion.



DELIVER



Progress on execution:

- Encouraging <u>pre-clinical</u> data: bbT369 clears single and low antigen tumors, and achieves deep, durable responses
- Clinical development plan poised to quickly determine if bbT369 can provide better outcomes for patients
- IND anticipated in 2H21



bbT369: Pre-clinical data outperforms model CD19 CAR supporting planned Phase I



- bbT369 outperforms model CD19 CAR in challenging low antigen expressing tumors in vivo
- Data supports potential to overcome resistance and elongate durability of response
- Phase I trial will include both CD19 CAR relapsed and naïve patients
- Trial will be enriched for patients with high risk factors as a proving ground to quickly demonstrate improved patient outcomes

Anticipated IND Filing 2H21



DARIC33: Engineered to kick start CAR T cell therapy in AML

DEVISE







- Addresses the average life expectancy of 3 months post relapse
- Addresses underlying barriers preventing transformative outcomes

How to get there:

- Drug regulated CAR Ts overcome the underlying aplasia risk of targeting myeloid cells
- Enhance CAR T cell persistence by reducing exhaustive effect of continuous antigen stimulation

Progress on execution:

- Maximize speed to clinical study via collaboration with worldclass translational center
- Test hypothesis in pediatric setting to reduce confounding variables
- IND 2H 2021

DELIVER



DARIC33 in AML: Sensitive, drug-regulated tumor control achieved





Aggressively targeting AML requires pharmacologically-controlled CAR architecture that works under clinically feasible drug dosing



2seventy's attack on solid tumors addresses the key barriers to success





MAGEA4-CTBR12: Solid Tumors





Dreaming, Devising, and Delivering on the future of cell therapy





2seventy's manufacturing network: poised to deliver

INNOVATION VELOCITY CAPABILITY Enable pipeline speed & decisions making to POC Manufacturing partnerships defined by identical goals Multiply our reach, capacity & ability to innovate Seattle Children's Deliver an In-house clinical DP manufacturing facility Under construction in our labs, Cambridge, Ma Ensures ownership of the process, analytics, execution, value creation Enables 'deep' integration of CMC with research and correlative sciences plus, flexibility to iterate **Deliver on game**changing industry RESILIENCE partnerships Deliver "best-in-class" Academic Resilience- new model for access to CDMO++ partnerships for 'exploratory' programs capabilities, aligning

- Outlets for high-risk programs for clinical validation while preserving flexibility & bbb resources
- Access to external innovation and programs, network



Risk-reward partnership with incentives & promoting agility

2seventy bio: a clear and differentiated strategy, well-funded to deliver

 Strategy + Vision Deliver ABECMA constrained and product op Relentless innovation Relentless innovation Relentless innovation 	ommercially and portunity ion focus on product ver/learn & iterate
 ABECMA launch ex Innovative cell the across broad indic 2 INDs 2021 	Acceeding plan rapy candidates ations Anticipate ~\$975M Wholeco cash balance at time of
 <i>Leadership +</i> New leadership tea BOD retooling for a 	am in place concology focus split; 2seventy poised to launch with approximately 24 months of rupurat
 Funding + Financial \$75M private stock Resilience collabor upfront and \$25M+ Anticipating approx of runway at launce 	a offering (WholeCo) ration brings \$110M savings/year ximately 24 months h





2seventybio

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