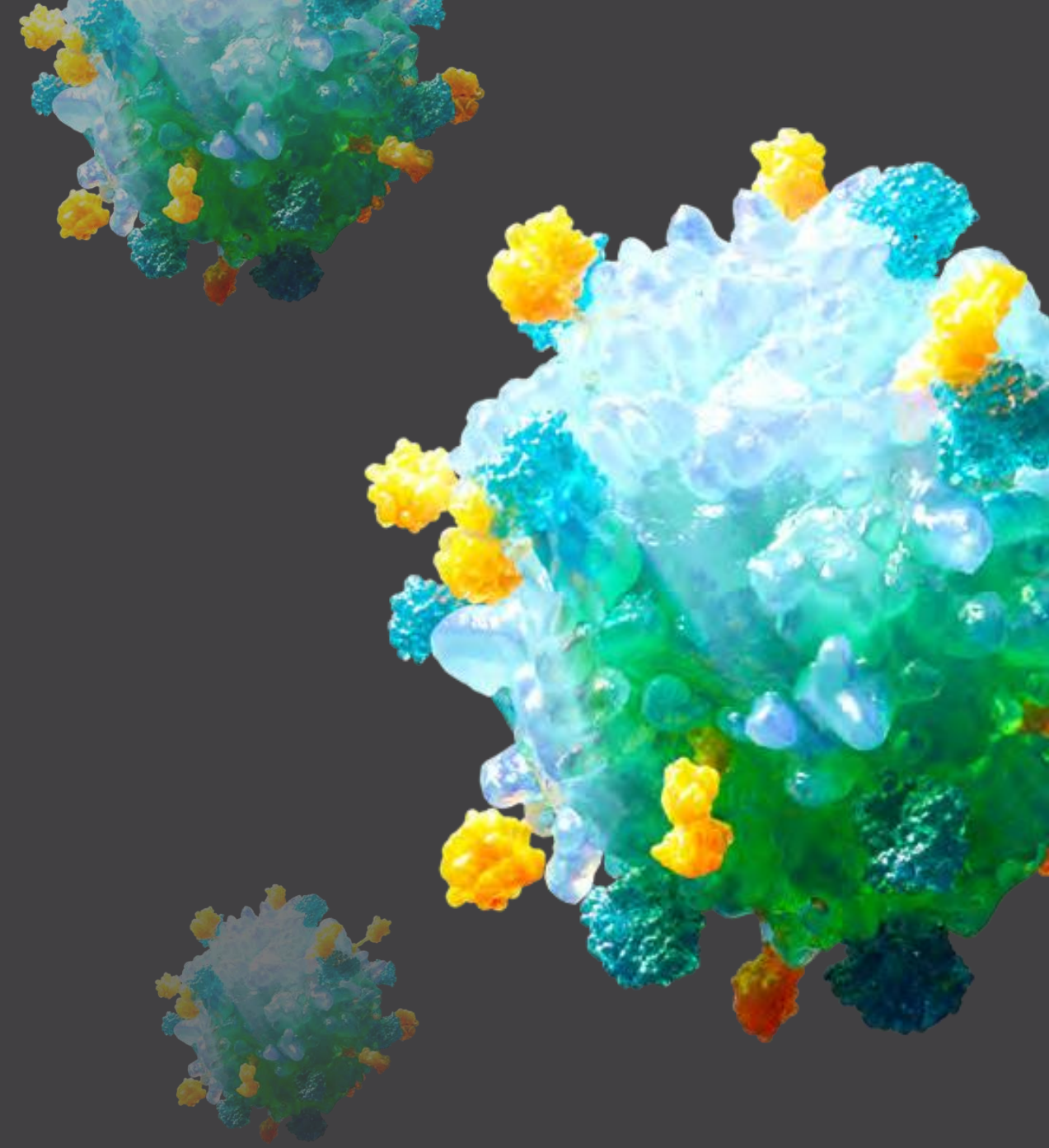
ATARA BIO®

INVESTOR PRESENTATION
41ST ANNUAL J.P. MORGAN HEALTHCARE CONFERENCE

JANUARY 11, 2023

Nasdaq: ATRA



Forward-Looking Statements

This presentation and the accompanying oral presentation contain forward-looking statements made pursuant to the safe harbor provisions of the Private Securities Litigation Reform Act of 1995. All statements other than statements of historical facts contained in this presentation, including statements regarding our future results of operations and financial position, future transactions, business strategy, product candidates, correspondence with regulatory authorities, regulatory submissions, regulatory approvals, the initiation, timing, progress and results of preclinical studies and clinical trials and our research and development programs, the mechanistic link between EBV and multiple sclerosis and the ability of ATA188 to specifically target such link, ability to sell, manufacture or otherwise commercialize our product and product candidates, research and development costs, timing and likelihood of success, plans and objectives of management for future operations, any royalty payments, our ability to obtain and maintain intellectual property protection for our product and product candidates, and the sufficiency of Atara's cash, cash equivalents, short-term investments to fund its planned operations are forward-looking statements of Atara Biotherapeutics, Inc. ("Atara" or the "Company"). These statements involve known and unknown risks, uncertainties and other important factors that may cause our actual results, performance or achievements to be materially different from any future results, performance or achievements expressed or implied by the forward-looking statements. In some cases you can identify these statements by forward-looking words such as "believe," "may," "will," "estimate," "continue," "anticipate," "intend," "could," "would," "project," "predict," "plan," "expect" or the negative or plural of these words or similar expressions. These forward-looking statements are subject to risks and uncertainties, including those discussed in Atara's filings with the Securities and Exchange Commission (SEC), including in the "Risk Factors" and "Management's Discussion and Analysis of Financial Condition and Results of Operations" sections of the Company's most recently filed periodic reports on Form 10-K and Form 10-Q and subsequent filings and in the documents incorporated by reference therein. These risks and uncertainties include, without limitation, risks and uncertainties associated with the costly and time-consuming pharmaceutical product development process and the uncertainty of clinical success; the transition following the closing of our asset sale related to the Atara T-Cell Operations and Manufacturing facility, the COVID-19 pandemic, and the current war in Ukraine, which may significantly impact (i) our business, research, clinical development plans and operations, including our operations in Southern California, Denver and at our clinical trial sites, as well as the business or operations of our third-party manufacturer, contract research organizations or other third parties with whom we conduct business, (ii) our ability to access capital, and (iii) the value of our common stock; the impact of future and pending legislation and regulations; the use of our information technology and communication systems and cybersecurity attacks; the sufficiency of our cash resources and need for additional capital, 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. Because forward-looking statements are inherently subject to risks and uncertainties, some of which cannot be predicted or quantified and some of which are beyond our control, you should not rely on these forward-looking statements as predictions of future events. The events and circumstances reflected in our forward-looking statements may not be achieved or occur and actual results could differ materially from those projected in the forward-looking statements. Except as required by applicable law, we do not plan to publicly update or revise any forward-looking statements contained herein, whether as a result of any new information, future events, changed circumstances or otherwise.

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ATARA IS THE FIRST TO DELIVER ON THE TRANSFORMATIVE POTENTIAL OF ALLOGENEIC T-CELL THERAPY

First Company to Obtain Regulatory Approval for an Allogeneic T-cell Immunotherapy

Ebvallo™ (tab-cel®) approved by EMA in December 2022

Potential Transformative MS Treatment Uniquely Targeting Root Cause of Disease

ATA188: Phase 2 EMBOLD study primary endpoint readout in October 2023

Best-in-Class Opportunity with Next-Generation Allogeneic CAR T Programs Leveraging EBV T Cells

ATA3219: Lead allogeneic CAR T program IND in Q2 2023

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Landmark Achievement: Ebvallo™ is Now Approved in Europe for the Treatment of EBV+ PTLD!

First ever allogeneic T-cell therapy approval - addresses **high-unmet** medical need

Groundbreaking achievement **validates** our EBV approach and platform

First of **several anticipated value-creating milestones** for the company

Unique **expertise and know-how** to advance allogeneic cell therapies to approval

Pierre Fabre

Commercialization activities to be led by our EU partner Pierre Fabre

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Note: EBV = Epstein-Barr Virus; EBV+ PTLD = EBV-Associated Post-Transplant Lymphoproliferative Disease

Robust T-Cell Immunotherapy Pipeline

Program	Indication	Target	Preclinical	Phase 1	Phase 2	Phase 3	Registration	Next Milestone
Tab-cel® or Ebvallo™ (tabelecleucel)	RR EBV+ PTLD following HCT and SOT	EBV		ALLELE Study			EU Approved	**Q1 2023:** Clarity on BLA pathway
	Multi-Cohort (Label-Expansion): EBV+ cancers(1)	EBV						**2023**: Ph2 Study data expected
	Nasopharyngeal carcinoma(2) MERCK	EBV						**TBD:** Pending development path
ATA188	Progressive MS	EBV(3)		EMBOLD Study				**Oct 2023**: Phase 2 primary endpoint data
ATA2271 (Autologous)	Autologous CAR T **Solid tumors**(4,5)	Mesothelin						Phase 1 study ongoing
ATA3271 (Allogeneic)	Off-the-shelf, allogeneic CAR T **Solid tumors**(4)	Mesothelin						Development path pending ATA2271 data
ATA3219 (Allogeneic)	Off-the-shelf, allogeneic CAR T **B-cell malignancies**	CD19						**Q2 2023**: IND filing
ATA3431 (Allogeneic)	Off-the-shelf, allogeneic CAR T **B-cell malignancies**	CD19/CD20						Undisclosed

These investigational agents are not approved by any regulatory agencies. Efficacy and safety have not been established.
EBV+ PTLD: EBV-Associated Post-Transplant Lymphoproliferative Disease; RR: rituximab relapsed/refractory; HCT: allogeneic hematopoietic cell transplant; SOT: solid organ transplant
Atara has entered into an agreement with Pierre Fabre to commercialize Tab-cel® for EBV+ cancers in Europe, Middle East, Africa, and other select emerging markets
Other programs: EBV vaccine, other solid tumor, and infectious disease programs

(1) Phase 2 multi-cohort initiated in Q3 2020, with possible indications including EBV+ PTLD with CNS involvement, EBV+ PID/AID LPD, EBV+ LMS and other potential EBV-associated diseases; Initial phase 2 data expected in 2023
(2) Phase 1b/2 study in combination with anti-PD-1 therapy, KEYTRUDA® (pembrolizumab), in patients with platinum-resistant or recurrent EBV-associated NPC.
(3) Targeted antigen recognition technology; Phase 2 Randomized Controlled Trial
(4) Mesothelin is expressed at high levels on the surface of cells in aggressive solid tumors including mesothelioma, triple-negative breast cancer, esophageal cancer, pancreatic cancer and non-small cell lung cancer
(5) Atara's CAR T collaboration with MSK will focus on development of a next-generation, mesothelin-targeted CAR T using novel 1XX CAR signaling and PD-1 dominant negative receptor (DNR) checkpoint inhibition technologies.

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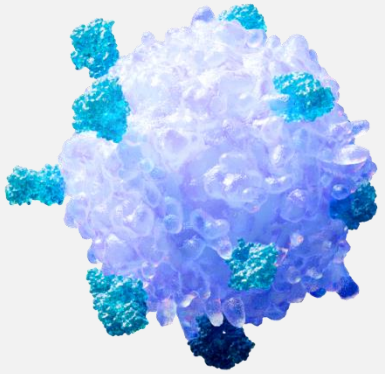
Tab-cel® (Ebvallo™)

Tab-cel® or Ebvallo™ (tabelecleucel)

Investigational T-cell immunotherapy for EBV-associated ultra-rare diseases

FDA Breakthrough Designation (BTD); Pending FDA discussions for BLA pathway

EU Approval Received in December of 2022



ATA188

CAR T

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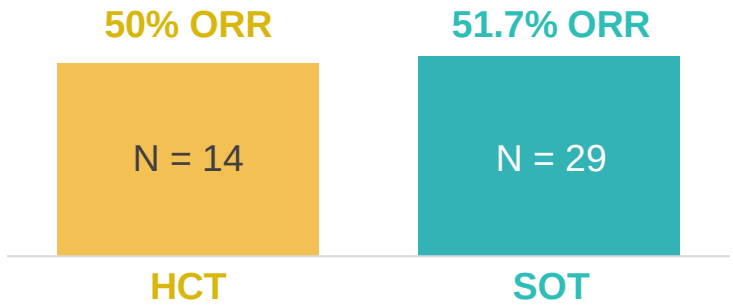
Tab-cel® (Ebvallo™) Addresses Highly Fatal Cancer with Compelling Efficacy and Safety

Interim Analysis for Phase 3 Pivotal Study (ASH 2022)



Estimated 1 year OS rate in Responders:

100% 75.2%

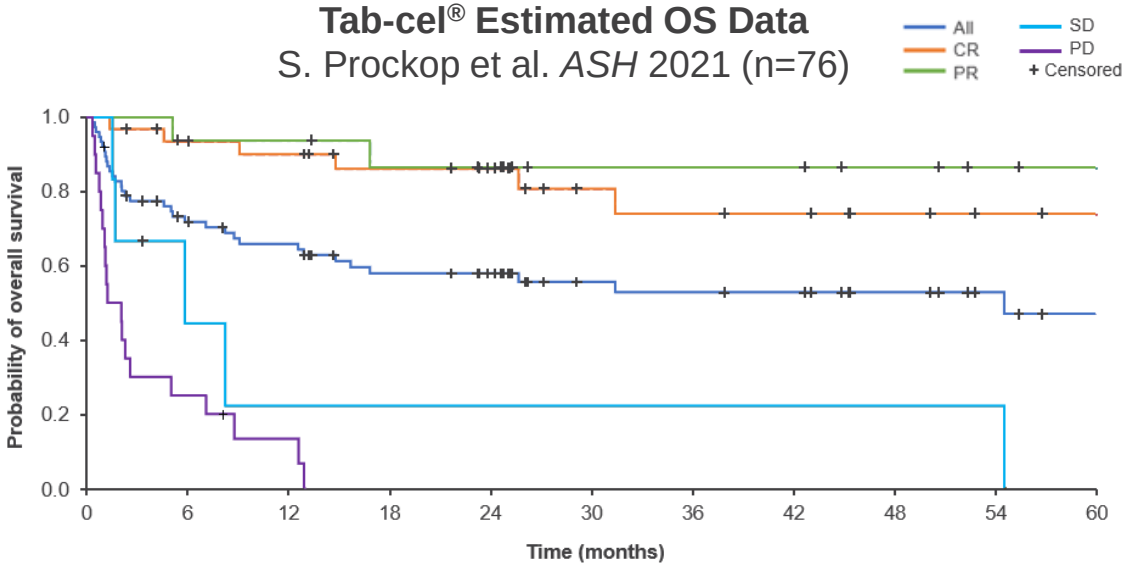
- **43 patients** (14 HCT, 29 SOT) with EBV+ PTLD R/R to rituximab ± chemotherapy were treated with tab-cel®
- The **ORR in all patients was 51%** (22/43), with a best overall response of CR (28%; n=12) or PR (23%; n=10)
- **Rapid Response:** 1-month median time to response (range: 0.7-4.7)
- **Long Duration of Response:** 23-month median DOR in responders (n=22)
- **Favorable Safety Profile:** No CRS, ICANS , GvHD or organ rejection related to treatment

ASH 2021 data confirm tab-cel® long-term survival benefit

86-87%
2-year OS in CRs & PRs

55 months
Median overall survival

Tab-cel® Estimated OS Data
S. Prockop et al. *ASH* 2021 (n=76)



CRS: cytokine release syndrome; DOR: Duration of Response; GvHD = graft vs host disease; ICANS = immune effector cell-associated neurotoxicity syndrome; HCT: allogeneic hematopoietic cell transplant; SOT: solid organ transplant; Objective response rate (ORR) = complete response (CR) + partial response (PR); OS = overall survival; PD = progressive disease
Prockop et al. ASH 2022, datacut from Q4 2021; Sanz J et al. ASH 2021. Abstract #1454. 2. Dharnidharka V *et al*. ASH 2021. Abstract #2528.

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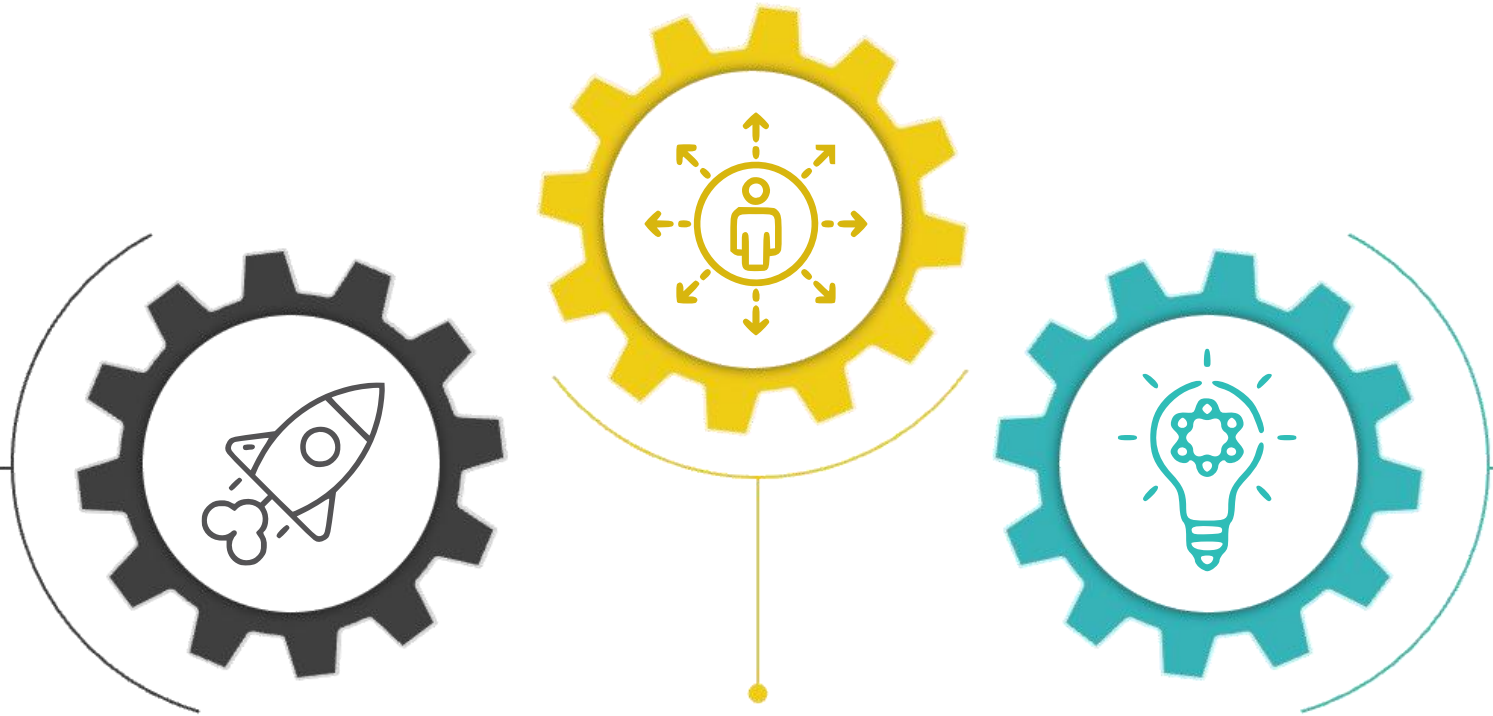
EU Commercial Launch Preparation Underway for Ebvallo™



Launch Preparation

Phased, country-by-country approach starting in Q1 2023

Meaningful Commercial Opportunity

PTLD first, followed by Multi-Cohort label expansion

Transformative Value

Significant impact for patients and value for healthcare system

Pierre Fabre

Commercialization activities to be led by our EU partner Pierre Fabre

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ATA188 for Multiple Sclerosis

Tab-cel® or Ebvallo™ (tabelecleucel)

Investigational T-cell immunotherapy for EBV-associated ultra-rare diseases

FDA Breakthrough Designation (BTD); Pending FDA discussions for BLA pathway

EU Approval Received in December of 2022

ATA188

- EBV T-cell immunotherapy for progressive multiple sclerosis (MS)
- Fast Track designations in non-active PPMS and non-active SPMS

CAR T

PPMS = Primary Progressive Multiple Sclerosis; SPMS = Secondary Progressive Multiple Sclerosis

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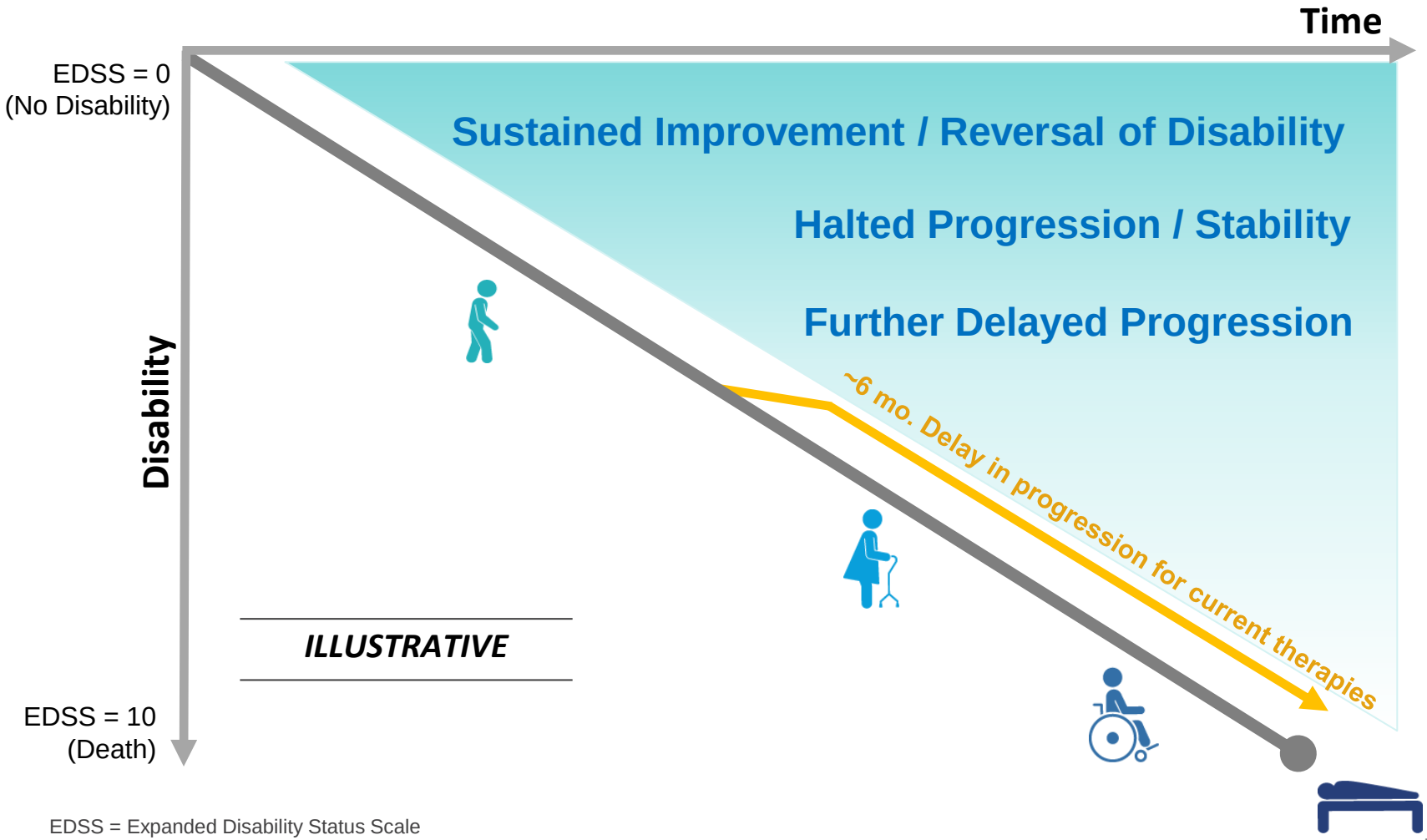
Potential Game Changer in Progressive MS Could Generate a Multi-Billion Dollar Opportunity



ATA188 Phase 1 data showed 20 of 24 patients with stability or improvement

Significant opportunity to improve over current therapies on disability progression

Current therapies offer only modest treatment effect

EDSS = Expanded Disability Status Scale
Note: Chart is not to scale and does not accurately depict time to progression from one to stage to another.
EDSS 0 represents normal neurological exam; EDSS 1-2 represent minimal disability.
EDSS scores 8-10 represent progression to bed rest and death. Time to progression on EDSS varies significantly from patient to patient

Expected course of progression

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EBV as a Trigger for MS Recognized by *Science* as a Top 2022 Scientific Breakthrough

Science

Bjornevik et al. (*Science*, 2022)

Identified that EBV is *what* initiates MS with a **32-fold increased risk after infection**

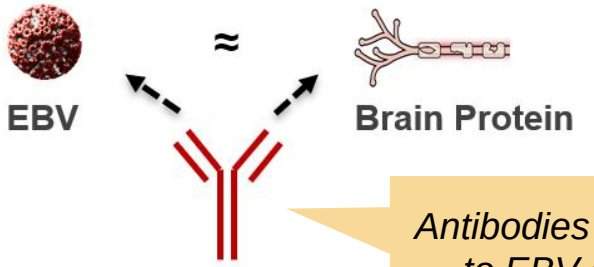
- >**62M** samples
- >**10M** members
- **20-year** period

For context, 10 to 15-fold lung cancer risk for individuals who smoke a pack of cigarettes per day

nature

Lanz et al. (*Nature*, 2022)

Explains *how* EBV infection causes MS at a molecular level



Antibodies may cross-react to EBV and self-brain proteins

ATA188 precisely targets **EBV** as the **root cause** of MS

Encouraging Phase 1 data in progressive MS

Phase 2 randomized, double-blind, placebo-controlled study (EMBOLD) primary data readout in **October 2023**

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Growing Clinical Evidence Supporting Transformative Potential of ATA188

Transformative potential in Phase 1 and OLE data:
20 of 24 patients had EDSS improvement (7) or Stable EDSS (13)

Improvement on patient reported outcomes:
e.g. less fatigue severity, lower MS impact, improved walking scale

Long-term Sustained EDSS Stability:
~ 41.2 months median duration, with up to 48.5 months follow up (Sept 2022)**

Long-term Sustained EDSS Improvement:
~27.5 months mean duration, with up to 46.5 months follow up (Sept 2022)*

MTR data suggests potential remyelination with disability improvement:
Significant increase (p=0.02) from baseline in nMTR for unenhancing T2 lesions at 12 months

MRI data shows less brain atrophy with improvers:
Longitudinal analysis through 42 mos. shows significantly less % brain volume change (p=0.037) for those patients with confirmed disability improvement

Targeting EBV infected B cells and plasma cells could lead to sustained clinical benefit

OLE = Open Label Extension; EDSS = Expanded Disability Status Scale; MTR = Magnetization Transfer Ratio; MRI = Magnetic Resonance Imaging
*Median for 5/5 pts in OLE at datacut who achieved disability improvement
**Median for 8 pts in OLE at datacut maintaining stable EDSS

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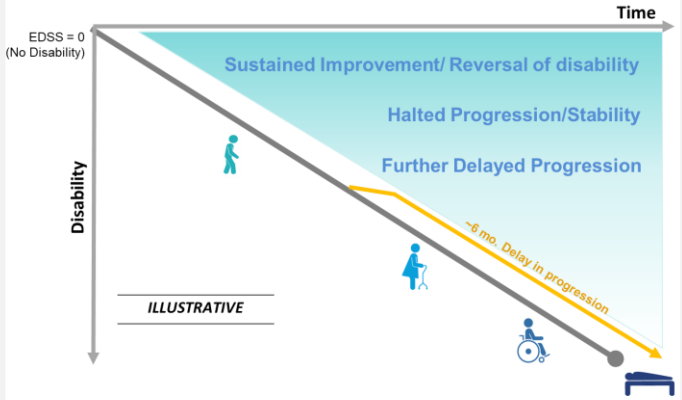
Multiple Potential Value Creating Outcomes for ATA188 Phase 2 EMBOLD Readout in October 2023

Growing Body of Evidence Supports Potential of ATA188

- **Transformative Potential in** Phase 1 and OLE data
- **Improvement** on patient reported outcomes
- Long-term Sustained EDSS **Stability**
- Long-term Sustained EDSS **Improvement**
- MTR data suggests **remyelination** in improvers
- MRI data shows **less brain atrophy** with improvers

Targeting EBV infected B cells and plasma cells

Spectrum of Ph2 EMBOLD Outcomes Could Transform MS Care



Possible Late-Stage Clinical Development

- **Ph 3 Global study:** Non-active SPMS
- **Ph 3 Global study:** Non-active PPMS
- Additional Phase 2 studies in other MS populations

Fast Track designations in non-active PPMS and non-active SPMS

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CAR T Portfolio

Tab-cel® or Ebvallo™ (tabelecleucel)

Investigational T-cell immunotherapy for EBV-associated ultra-rare diseases

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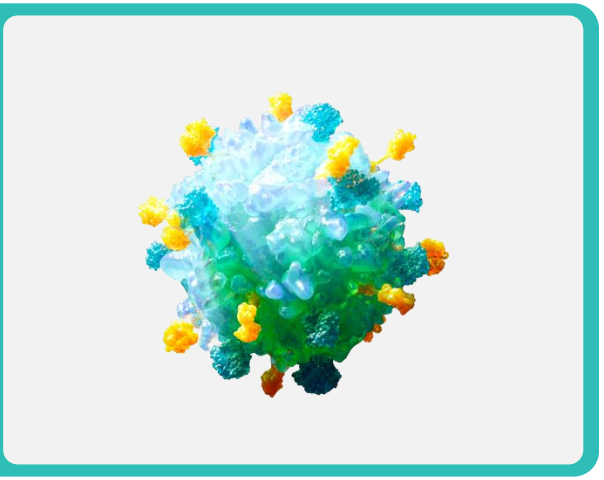
ATA188

- EBV T-cell immunotherapy for progressive multiple sclerosis (MS)
- Fast Track designations in non-active PPMS and non-active SPMS

CAR T

- ATA3219 (B-cell malignancies)
- ATA2271/ATA3271 (Solid Tumors)
- Other CAR T



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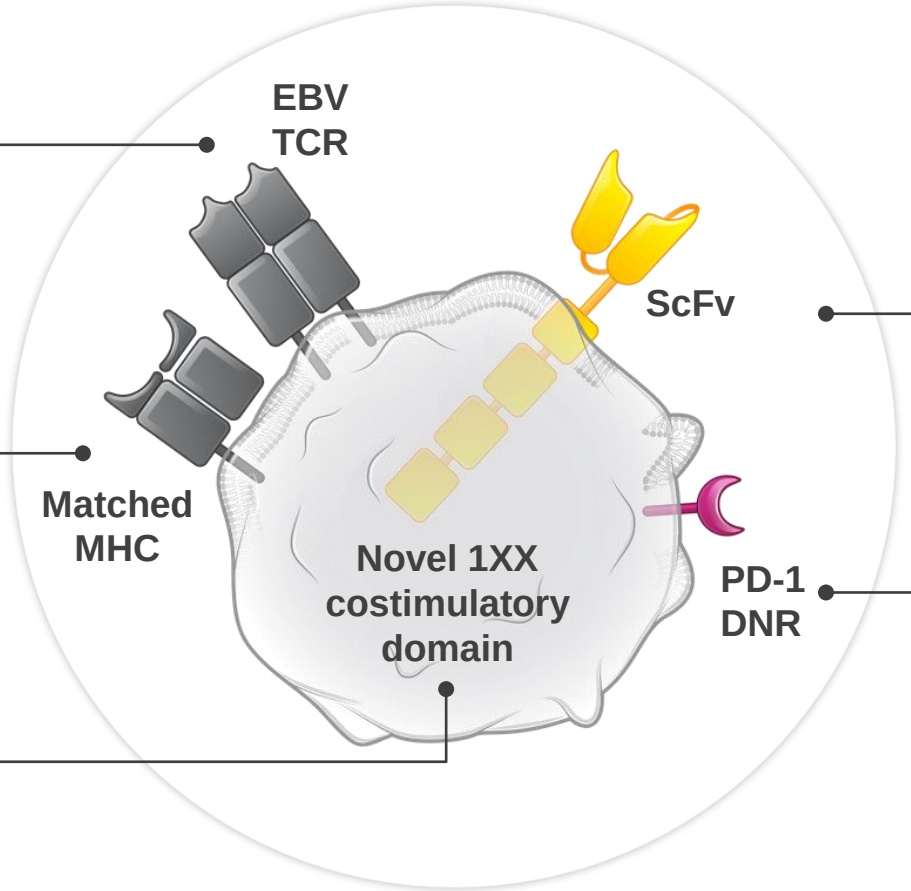
Atara Next-Gen CAR T Platform: Potentially Improving Efficacy, Safety, and Persistence

- **TCR is a key survival signal** for T cells[1,2,7]
- **Loss of TCR** complex results in **reduced persistence** in vivo[3,4]

- Partial HLA Matching allows TCR/MHC matching and **minimizes GVHD risk**[8]
- Obviates need for genomic editing or stealth approaches

- Optimized CAR signaling to **attenuate T-cell exhaustion**



- **Optimized affinity** for therapeutic index[5]
- Humanized (ATA3271) to **minimize HAMA**

- Maintains **endogenous PD1** expression
- Co-expression of DNR molecule
- **Avoid ablation of PD1** which results in premature T-cell exhaustion[6]

[1]Tanchot et al, Science 1997. [2]Myers et al, Trends Immunology 2017. [3]Stenger et al, Blood 2020. [4]Wang et al, Nature CMI 2021.
[5]Adusumilli et al Can Disc 2021. [6]Kalinin et al, Frontiers Molec Bio 2021. [7]Polic et al, PNAS 2001. [8]Prokop et al, JCI 2020.
HAMA = human anti-mouse antibodies; MHC = major histocompatibility complex

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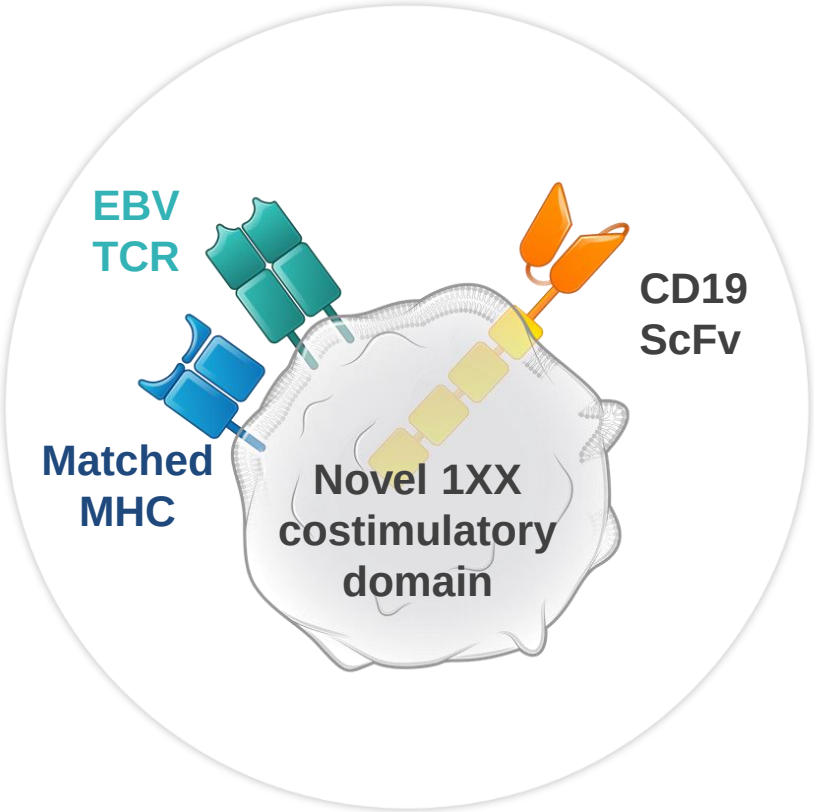
ATA3219: Potential Best in Class Off-the-Shelf Allogeneic CD19 Program for B-Cell Malignancies, with IND Expected in Q2 2023



Investigator Sponsored Trial (MSKCC):
Advanced B-cell malignancy patients received partially HLA matched EBV CD19 CAR T cells manufactured from third-party donors

83%

83% (5/6) of R/R B-ALL, NHL and CLL patients had **durable Complete Response** (CR) with median follow up of 26.9 months

100% CR in CLL (1/1) and NHL (4/4)

Average HLA match 3-4: similar to Atara EBV T-cell clinical experience

No dose-limiting toxicities observed with multiple doses administered

No CRS or neurotoxicity above Grade 2, no confirmed GvHD

ATA3219: Next-generation off-the-shelf, allogeneic CD19-1XX CAR+ EBV T-cell product containing a modified CD3ζ signaling domain, 1XX.

ATA3219 demonstrates persistence, polyfunctional phenotype, efficient targeting of CD19 expressing tumor cells both *in vitro* and *in vivo* (ASH 2020)

IND = Investigational New Drug

Curran KJ, Sauter CS, Kernan NA, et al. Durable remission following "Off-the-Shelf" Chimeric Antigen Receptor (CAR) T-cells in patients with relapse/refractory (R/R) B-cell malignancies. Biol Blood Marrow Transplant. 2020;26(3):S89.

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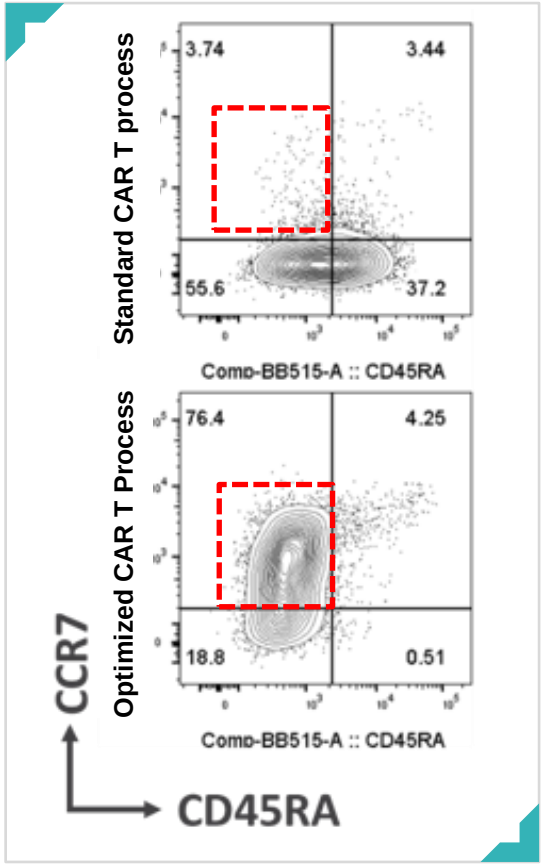
ATA3219 CAR T Cells are Optimized for T-Cell Memory and Show Superior Tumor Control *in vivo*

CAR T field highlights **importance of memory T cell** phenotype for CAR T **durability of response**

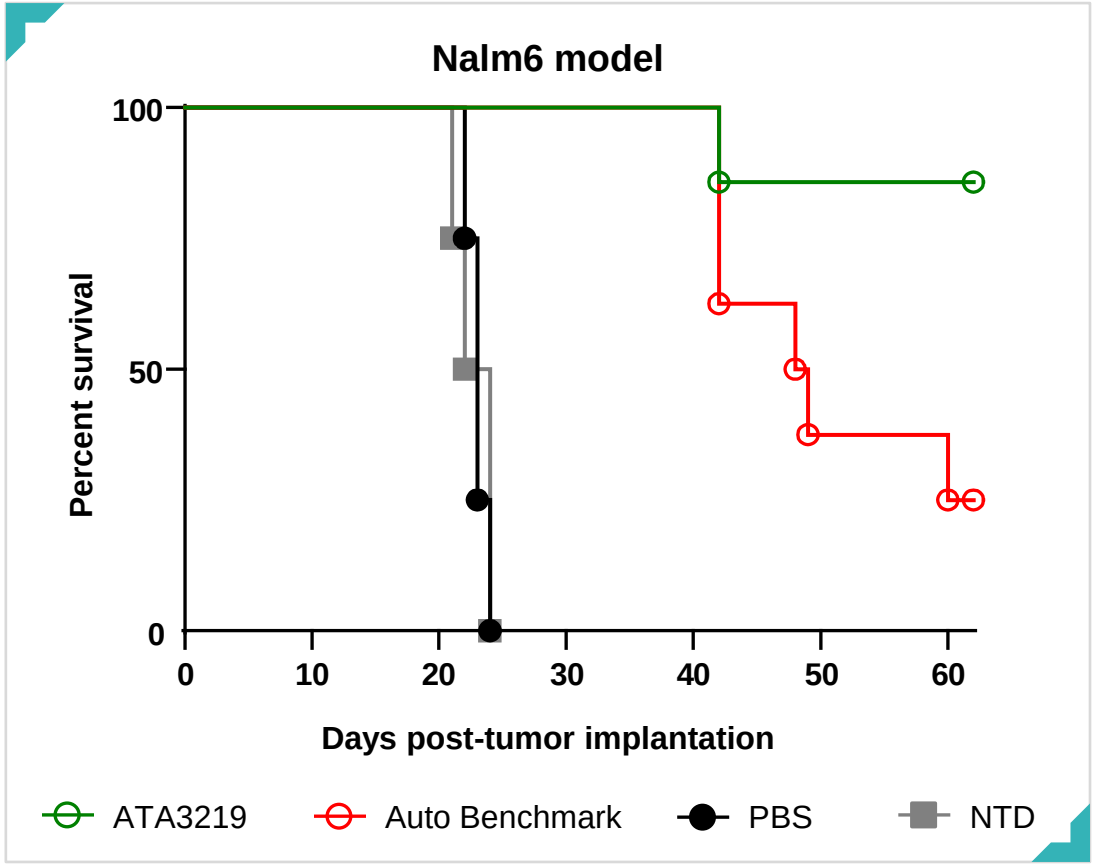
ATA3219 is being optimized for **best-in-class opportunity**

Modifying the ATA3219 bio-production process for stem-like T cells shows **more robust *in vivo* activity** in Nalm6 preclinical model

ATA3219 is **enriched** for CCR7+ memory T cells



ATA3219 T cells show **consistently superior tumor control** when compared to benchmark auto CAR19 T cells



Source: Atara – Data on File

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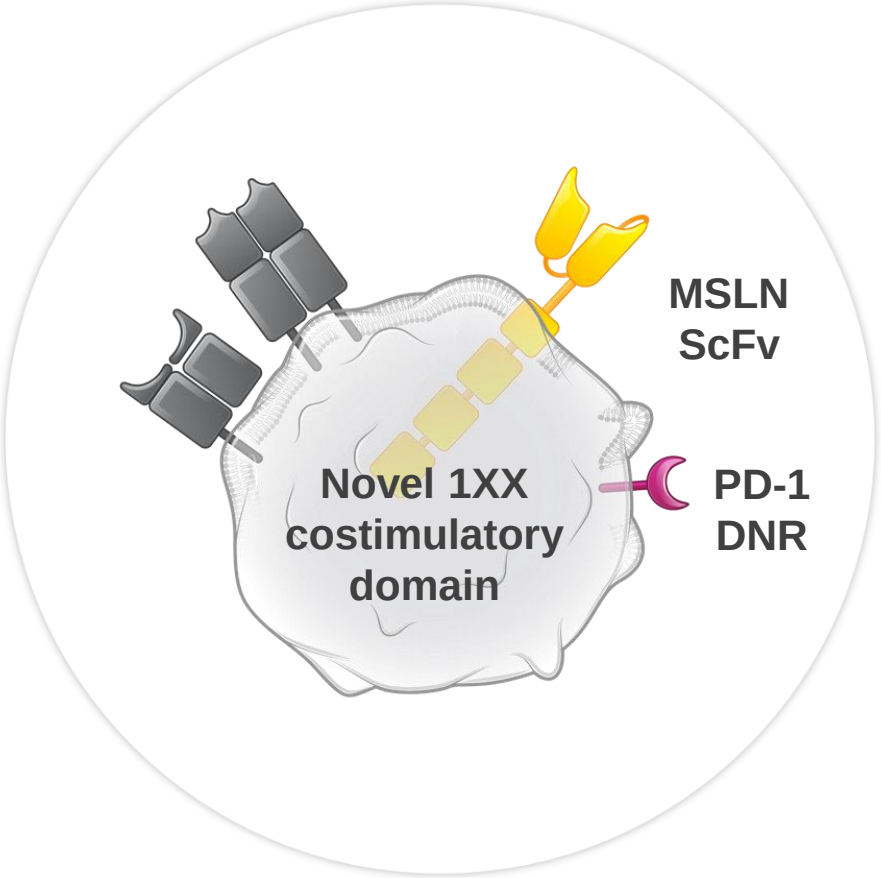
ATA3271: Off-the-Shelf Allogeneic Mesothelin CAR T Program in Solid Tumors



- Mesothelin is a well-established target associated with **aggressive solid tumors**
- **Unique ScFv** that binds to mesothelin above cancer threshold
- Innovative next-gen CAR T technologies combining **novel 1XX costimulatory domain** and **PD-1 Dominant Negative Receptor** (DNR)
- ATA2271 (autologous) was associated with **less cell exhaustion**, improvements in functional **persistence**, serial cell killing, and enhanced *in vivo* **efficacy** when compared with first-generation mesothelin CAR T therapy (AACR 2020)
- ATA3271: off-the-shelf, allogeneic EBV mesothelin CAR T
  - First preclinical data presented showing **potent anti-tumor activity** without allo-reactivity *in vivo* (SITC 2020)

Phase 1 Study of ATA2271 Ongoing at MSK

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A Bold Vision to Transcend the Current Limitations of Cell Therapy

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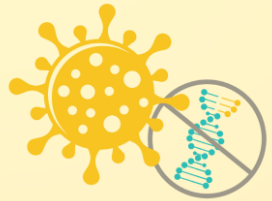
Differentiated Features of EBV T-cell Platform Provide Potential Benefits

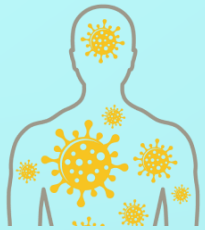


No TCR Gene Editing

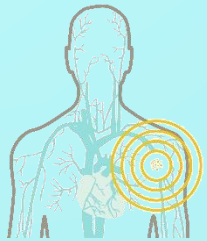
Off-the-Shelf

Scalable Manufacture

Versatile Platform



Trafficking



Expansion

Persistence

Tolerability

Atara Has Treated Over 500 Patients;
More Than Any Other Allogeneic T-cell Company to Date

ATARA BIO®

We Are a Leading Allogeneic T-Cell Immunotherapy Company

Tab-cel® (Ebvallo™): First-In-Kind Oncology Program	**Historic EMA approval obtained** in December of 2022; **FDA meeting scheduled in Q1 2023** to potentially align on clinical data package requirements for BLA
ATA188: Potentially Transformative MS Treatment in Randomized Controlled Trial	Fast-track designations granted; Primary endpoint data read out in **October 2023**, with potential to unlock **multi-billion-dollar** opportunity
Next-Gen Allogeneic CAR T Portfolio	Potential **best-in-class programs** designed to address current limitations of autologous and allogeneic CAR T
Proven Technical Capabilities	**Advanced process science capabilities** and long-term strategic manufacturing partnership
Differentiated Allogeneic T-Cell Therapy Platform	**Clinically validated** and **scalable EBV T-cell platform** and technologies to develop multiple allogeneic cell therapies

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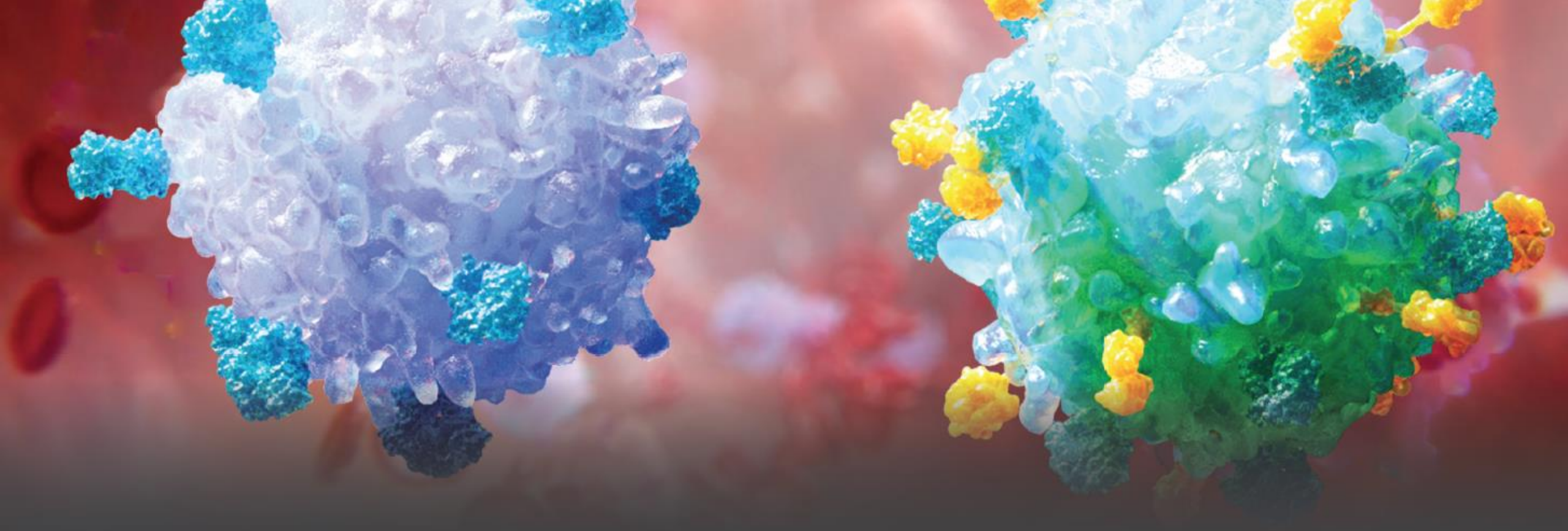

THANK YOU

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