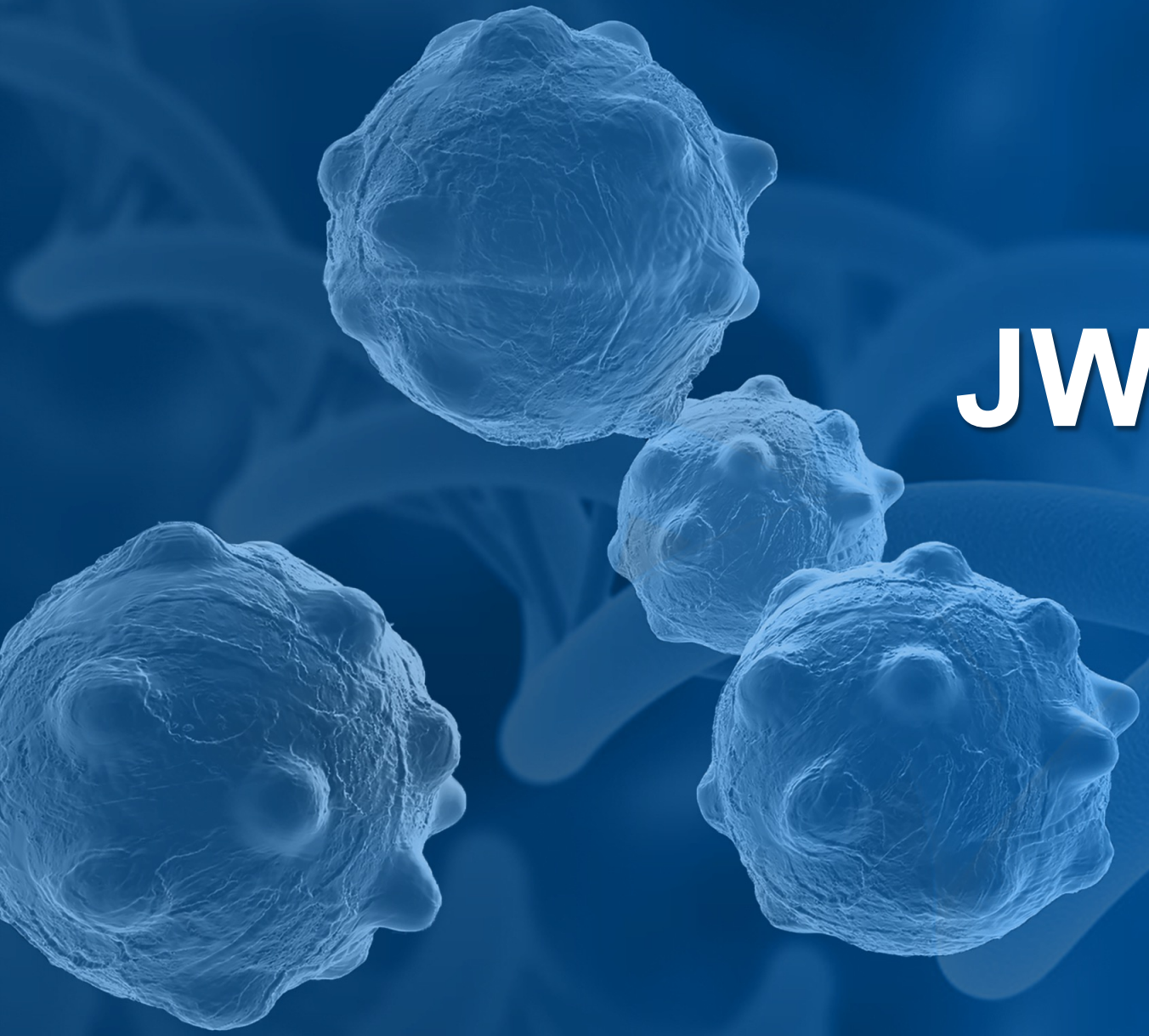
药明巨诺
JW Therapeutics



# JW Therapeutics (2126.HK)

R&D Day Presentation

01

# Welcome and Introduction

James Li, Chairman and CEO

# Today's Agenda

01
Welcome and Introduction of JW
***James Li, M.D.***

02
JW's Research & Development Strategy
***Mark Gilbert, M.D.***

03
JW's Current Opportunities in R&D
***Yun Qin, M.D.***

04
JW's Near-Term Opportunities
***Mark Gilbert, M.D.***

05
JW's Longer-Term Opportunities
***Shaun Cordoba, PhD***

06
CMC & Manufacturing Excellence
***Xiaoping Cao, PhD***

07
Questions and Answers
***Management Team***

# JW Therapeutics—Innovation Leader in Cell Immunotherapy

## Solid performance in Year 2022

- Despite COVID lockdowns, Carteyva® completed 64 infusions in 2022 H1 and continue grow in 2022 H2
- Gross profit margin improved to 35%
- R&D Progress: First FL sNDA approval, solid tumor Phase I clinical study initiated, initiate clinical program in SLE
- Sufficient cash balance for future development

## Drive the future value through

- LCM for Relma-cel to extend potential in heme malignancies in high PoS indications
- Explore Relma-cel indications into autoimmune diseases
- Build innovative solid tumor programs.
- Create new products with global reach
- Innovation to drive down manufacturing cost and improve accessibility

# Key Milestones

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**2016**

- JW Therapeutics founded in Shanghai

**2017**

- Introduced world-class CAR-T technology platform and completed technology development

**2018**

- Completed series A financing totaling over US$100million
- JW Therapeutics R&D center opened

**2019**

- Completed cell therapy commercial- scale manufacturing infrastructure in Suzhou
- GMP quality management lab put into use

**2020**

- Completed series B financing of US$100million
- Acquired Syracuse Biopharma
- Suzhou site obtained drug manufacturing license
- IPO in Hong Kong, stock code 2126.HK

**2021**

- Carteyva BLA approval

**2022**

- JW Therapeutics' cell immunotherapy drugs have successfully benefited 300 Chinese patients
- Kicked off solid tumor trials and expanded to autoimmune disease

# JW Therapeutics – A Leading Cell Therapy Company

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## JW Therapeutics

Fully Integrated Cell Therapy Innovation and Commercialization Platform

- One of the Best Teams & Talents in Cell Therapy
- A Potential Superior CD19 CAR-T – Carteyva®
- Differentiated Pipeline includes Hematological, Solid Tumors and Autoimmune Disease
- Proven R&D Capabilities
- CMC & Manufacturing Excellence
- Established Commercialization

02

# JW's Research & Development Strategy

Mark J. Gilbert, MD – Chief Medical Officer

# JW's Research & Development Strategy

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**01 Current: Expand Relma-cel use in Heme malignancies in high PoS indications**

- With successful approvals in LBCL & FL, Continue with MCL, pALL, early line treatment of LBCL

**02 Current: Advance Products Targeting Hepatocellular Carcinoma [HCC]**

- Advance Multiple Programs to treat HCC with novel CAR T platforms with promising PoS

**03 Current: Expand Relma-cel Indications into Autoimmune Diseases**

- With Relma-cel's safety profile and potency, Move into moderate and severe SLE

**04 Near-Term: Build Innovative Solid Tumor Program with world-class cell therapy partners**

- Advance Multiple Programs to treat lung cancer & GI tumors with novel CAR T platforms with promising PoS

**05 Longer-Term: Through Research, Create Products to Improve Anti-tumor Activity or Access Global Markets**

- Establish proprietary CARs and armored elements to overcome solid tumor barriers for use worldwide
- Build Partnerships for technologies such as gene-editing and allogeneic approaches

# Our Robust and Differentiated Cell Therapy Pipeline

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| | Product | Target | Indication | Commercial Rights | Pre-clinical / IIT / IND / Phase I / Pivotal / Phase II/III / NDA / Marketed | NMPA Classification | Partner |
|---|---|---|---|---|---|---|---|
| Hematologic Malignancies | JWCAR029 / Relmacabtagene Autoleucel (relma-cel) [1] | CD19 | 3L LBCL | Mainland China, Hong Kong, Macau* | NMPA Approved | Category 1 | Juno Bristol Myers Squibb Company |
| | | | 3L FL | Mainland China, Hong Kong, Macau* | NMPA Approved | | |
| | | | 3L MCL | Mainland China, Hong Kong, Macau* | Registrational trial | | |
| | | | 1L/2L LBCL | Mainland China, Hong Kong, Macau* | | | |
| | | | 3L ALL | Mainland China, Hong Kong, Macau* | New Ph1 | | |
| | | | 3L CLL | Mainland China, Hong Kong, Macau* | | | |
| **PLUS: New In-House Discovery Research Hematology Product Candidates** | | | | | | | |
| Solid Tumors | JWATM203 | AFP | HCC | Mainland China, Hong Kong, Macau, Taiwan, and member countries of ASEAN* | 4 | Category 1 | EUREKA |
| | JWATM213[3] | AFP | HCC | Mainland China, Hong Kong, Macau, Taiwan, and member countries of ASEAN* | | Category 1 | Lyell EUREKA |
| | JWATM204 | GPC3 | HCC | Mainland China, Hong Kong, Macau, Taiwan , and member countries of ASEAN* | New Ph1 | Category 1 | EUREKA |
| | JWATM204 | GPC3 | NSCLC/HAS | Mainland China, Hong Kong, Macau, Taiwan , and member countries of ASEAN* | New Ph1 | Category 1 | EUREKA |
| | JWATM214[2] | GPC3 | HCC | Mainland China, Hong Kong, Macau, Taiwan, and member countries of ASEAN* | New Ph1 | Category 1 | Lyell EUREKA |
| | JWTCR001[5] | MAGE-A4 | various solid tumors | Mainland China, Hong Kong, Macau | New Product | Category 1 | 2seventybio |
| **PLUS: New In-House Discovery Research Solid Tumor Targeting Product Candidates** | | | | | | | |
| Other | JWCAR029 / Autoimmune[4] | CD19 | SLE | Mainland China, Hong Kong, Macau* | New Ph1 | Category 1 | Juno Bristol Myers Squibb Company |

Abbreviations: LBCL = large B-cell lymphoma; FL = follicular lymphoma; MCL = mantle cell lymphoma; ALL = acute lymphoblastic leukemia; CLL = chronic lymphocytic leukemia; MM = multiple myeloma; NHL = non-Hodgkin lymphoma; HCC = hepatocellular carcinoma; NSCLC = non-small cell lung cancer; AFP = alpha-fetoprotein; GPC3 = glypican-3; r/r = relapsed or refractory; 3L = third-line; 2L = second-line; HAS= hepatoid adenocarcinoma of the stomach ; MAGE A4= melanoma associated antigen A4;SLE = systemic lupus erythematosus.

* Mainland China, Hong Kong, Macau and Taiwan refer to Mainland China, Hong Kong (China), Macau (China) and Taiwan (China), respectively.

1. Relma-cel is based on the same CAR construct as the product lisocabtagene maraleucel (Breyanzi or lisocabtagene or liso-cel) of Juno Therapeutics, which was approved by the U.S. Food and Drug Administration in February 2021.
2. Developing using Lyell technology.
3. JWATM204 is in a Phase I investigator-initiated trial in China. Eureka's products based on the CAR constructs underlying JWATM203 and JWATM204 are currently in Phase I/II trials in the US conducted by Eureka under an IND application. In November 2021, the U.S. FDA granted Fast Track Designation to Eureka's counterpart to JWATM203 for the treatment of hepatoblastoma ("HB") and HCC in pediatric patients, as well as "rare pediatric disease designation" for the treatment of HB. In February 2022, the FDA granted Orphan Drug Designation to Eureka's counterparts to JWATM203 and JWATM 204.
4. SLE is a chronic autoimmune disease characterized by the production of autoantibodies and abnormal B-lymphocyte function. To further extend Relma-cel's potential in broader disease area, we are planning a study to evaluate the safety, tolerability, and pharmacokinetic profile of Relma-cel in Chinese patients with moderately or severely active SLE.
5. MAGE A4 TCR-T development is in collaboration with 2seventyBio for various solid tumor indications.

03

# JW's Current Opportunities in R&D

Yun Qin, MD – SVP Clinical Sciences & Medical Services

# Hematology

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## Build on Potential Superior CD19 CAR-T: Carteyva®

## Continue advance to more Hematology indications

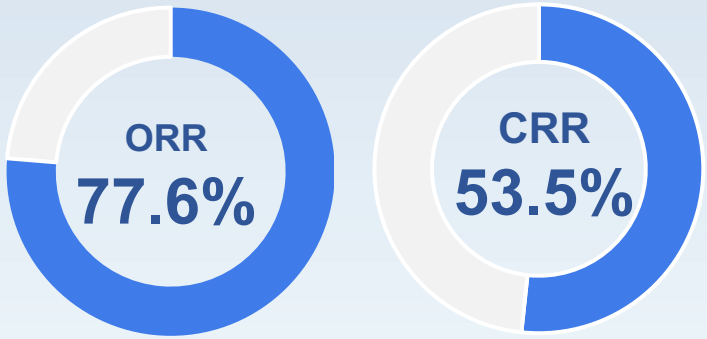

- *Note: Category 1 biologics means new product category.

# Carteyva® – Best-in-Class CD19 CAR-T for r/r LBCL

药明巨诺 JW Therapeutics

## Rapid and deep remission for r/r LBCL

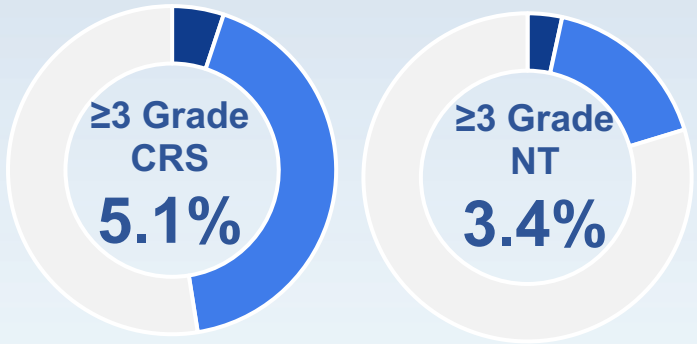
Best Response Rate（N=58）




**Median time to reach the first CR：**


## Very low incidence of serious AEs

≥3 grade CRS and NT: 5.1%/3.4%，and only occurred in the high-dose group。（N=59）

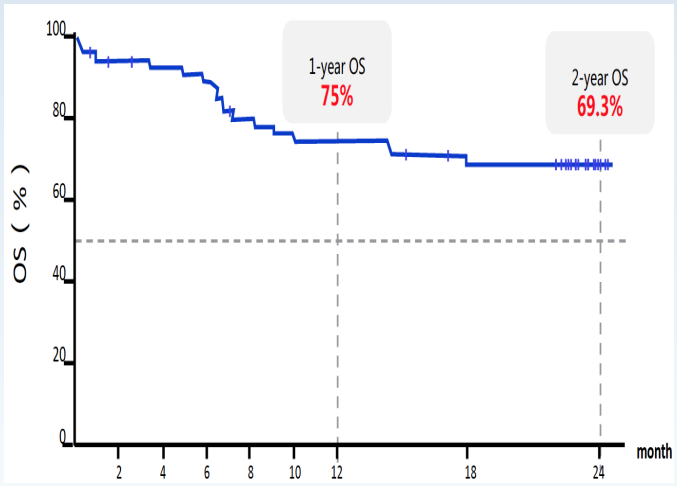



**CRS：** total 47.5%，≥3grade 5.1%

**NT：** total 20.3%，≥3grade 3.4%

## Excellent long-term efficacy：2Y OS 69.3%

- The median follow-up time: 24.1 months, the median OS was not reached, and the 1-year OS rate was 69.3%




- The excellent OS data (stable phase platform) for 2 years, indicating "cure" potential of Relma-cel

- Ying ZT, Song YQ, et al.ASCO 2022 Poster 7529.

# Expand Carteyva® to 2L and Frontline of B-NHL

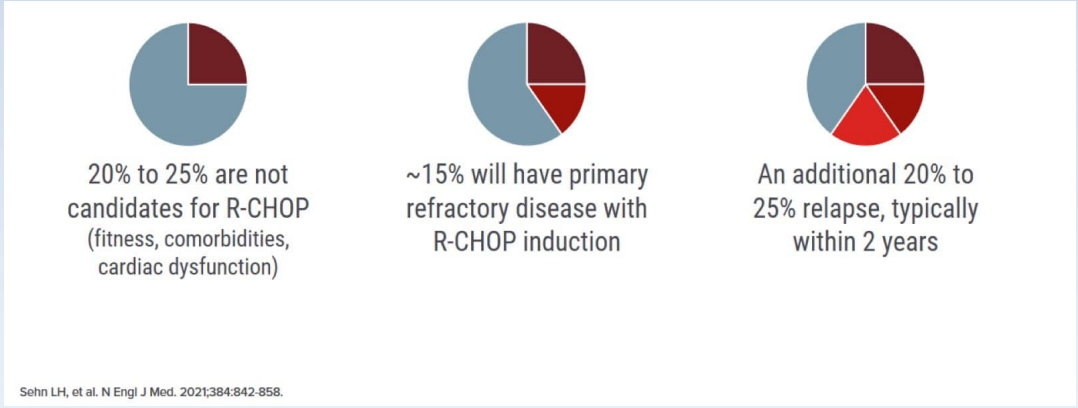
## Front Line LBCL: Patient enroll in Dec 2022

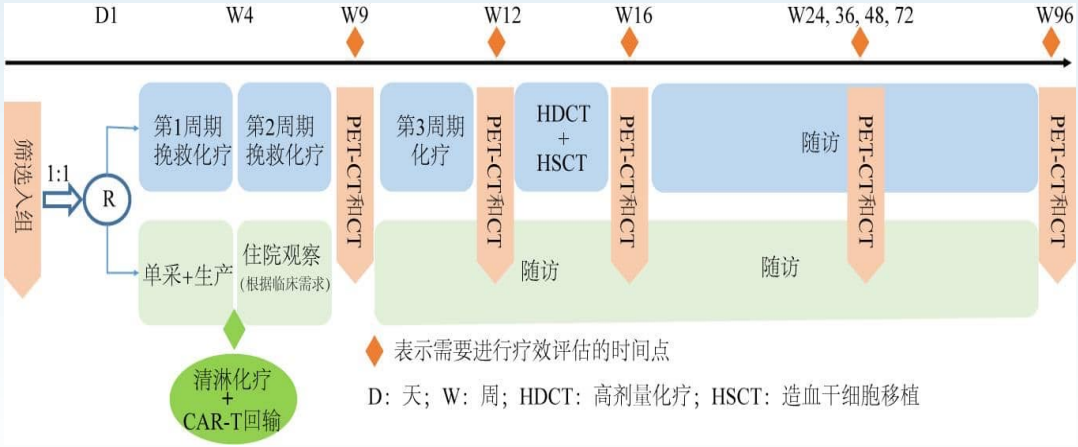
- Huge unmet medical needs for primary refractory LBCL in frontline treatment(15% of all comers)
- Big business potential of qualified patients(~5.5K per yr) with high willingness, affordability and good PS
- Key element of Relma-cel BIC positioning in terms of outcome for refractory paitents
- Quick-win strategy to differentiate following competitors in CD19 class

### High risk LBCL

- HGBL,with MYC and BCL-2 and/or BCL6 translocations (double- or triple-hit), **or**
- LBCL with IPI score ≥3 any time before enrollment
- Positive interim PET (DS 4 or 5) after 2 cycles of an anti-CD20 mAb + anthracycline-containing regimen

## 2ND Line LBCL: IND Approved in Apr 2022



# Carteyva® - First CAR-T Product for 3L FL in China

American Society of Hematology
Helping hematologists conquer blood diseases worldwide

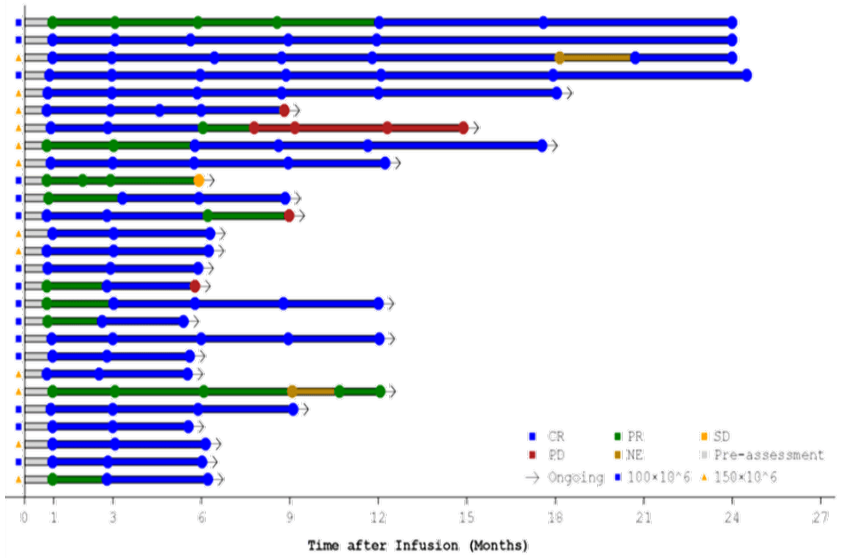
**Abstract # 4640: Efficacy and Safety of Relmacabtagene Autoleucel in Adults with Relapsed/Refractory Follicular Lymphoma in China**

- The latest efficacy data show Relma-cel had a stable and significant efficacy in patients with r/r FL with Long-term efficacy endpoints (PFS, OS, and DOR) did not reach median values
- The primary safety profile remains same and there are no changes for the incidence rates of any type of TEAEs, no additional deaths, no additional SAEs, and no new CRS or NT were reported from the 3-month follow-up data cutoff date (18 January 2021/10 September 2021) to the 6-month data cut-off date (18 Jan 2021/17 Dec 2021)

Objective Response Rate and Complete Response Rate at 3 Months and 6 Months as Assessed by Investigator

| | At 3 months N = 27 | At 6 months N = 27 |
|---|---|---|
| CRR, n | 23 | 21 |
| CRR (95% CI) (%) | 85.19 (66.27, 95.81) | 77.78 (57.74, 91.38) |
| ORR, n | 27 | 25 |
| ORR (95% CI) (%) | 100.00 (87.23, 100.00) | 92.59 (75.71, 99.09) |

Note: Objective response rate (ORR) was defined as the proportion of patients with complete response (CR) + partial response (PR), and complete response rate (CRR) was defined as the proportion of patients with CR.
Source data: JWCAR029-002 IIB CSR addendum




- Y. Song, J. Zhu, Z. Ying, et al.

# Carteyva® - First CD19-CAR-T in R/R MCL in China

American Society of Hematology
Helping hematologists conquer blood diseases worldwide

**Abstract # 4640: Efficacy and Safety of Relmacabtagene Autoleucel in Adults with Relapsed/Refractory Follicular Lymphoma in China**

- As of Nov 30, 2021, the preliminary data of relma-cel provided promising clinical efficacy outcome in high risk patients with r/r MCL
- Low incidence of grade ≥ 3 CRS and ICANS, 1 participant respectively
- This study is ongoing and further results will be presented

| Baseline Characteristics | N=11 | Baseline Characteristics | N=11 |
|---|---|---|---|
| Age, Median (range) | 57 (46; 72) | Bridging Treatment, n (%) | 3 (27.3) |
| ≥ 65 years, n (%) | 5 (45.5) | Morphology, n (%) | |
| Male, n (%) | 9 (81.8) | Classic | 2 (18.2) |
| No. of Prior Therapies, Median (range) | 4 (2; 7) | Blastoid | 5 (45.5) |
| < 3, n (%) | 2 (18.2) | Pleomorphic | 1 (9.1) |
| ≥ 3 and < 5, n (%) | 5 (45.5) | Not Know | 3 (27.3) |
| ≥ 5, n (%) | 4 (36.4) | Simplified MIPI*, n (%) | |
| Failure to Use of BTKis* in Prior Therapy, n (%) | | ≤ 3 | 5 (45.5) |
| PD* | 9 (81.8) | > 3 | 6 (54.5) |
| Non-PD | 1 (9.1) | Bone Marrow Involvement, n (%) | 5 (45.5) |
| Unkown | 1 (9.1) | GI Tract Involvement, n (%) | 1 (9.1) |
| Failure to Use of BTKis* in Prior Therapy, n (%) | 11 (100.0) | Spleen Involvement, n (%) | 3 (27.3) |
| The Line of BTKis –based Therapy, median (range) | 3 (2; 7) | Lung Involvement, n (%) | 1 (9.1) |

**Efficacy:**

- best ORR was 81.8% and
- best CRR was 54.5%.

| Safety Events | n (%) |
|---|---|
| Any CRS | 6 (54.5) |
| ≥ Grade 3 CRS | 1 (9.1) |
| Any ICANS | 2 (18.2) |
| ≥ Grade 3 ICANS | 1 (9.1) |
| SAE | 5 (45.5) |
| Relma-cel Related SAE | 2 (18.2) |

- Y. Song, J. Zhu, Z. Ying, et al.

# Carteyva® - Ongoing Clinical Study in ALL

- ALL accounts for 15% of leukemia and 30%-40% of acute leukemia (children 75%-80%)
- 75% of patients < 15 years of age, with peak incidence between the ages of 3 and 7 years, incidence gradual decline with age after 10 years of age. The median age of adult ALL is 30-40 years
- The recurrence rate is about 15%-20%, which is the leading cause of tumor death in children

- IND approved in Apr 2022  for A phase I study to investigate safety, efficacy and PK profile of JWCAR 029 in B-ALL
- Firs patient enrollment achieved in July 2022

- Study designed to enroll pediatric and young adult patient which has highest incident and unmet medical needs.
- Current study is actively enrolling patient, primary data show complete and durable response, with good safety profile

# Solid Tumors

## JW commit to build up a diverse and competitive solid tumor pipeline

01

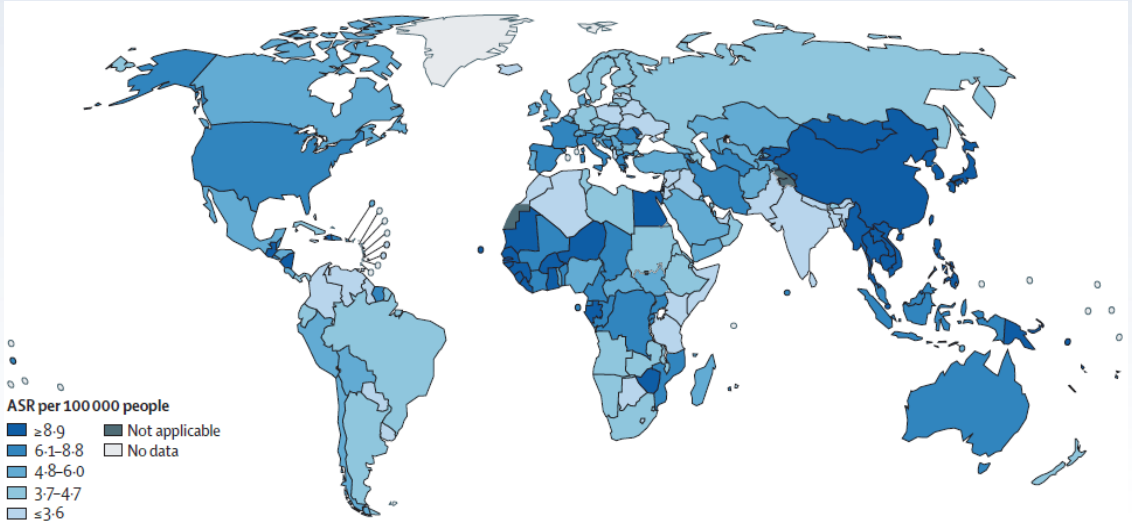
Select candidate based on justified MOA and pre-clinical/clinical data; select indication based on unmet medical needs and drive by clinical values

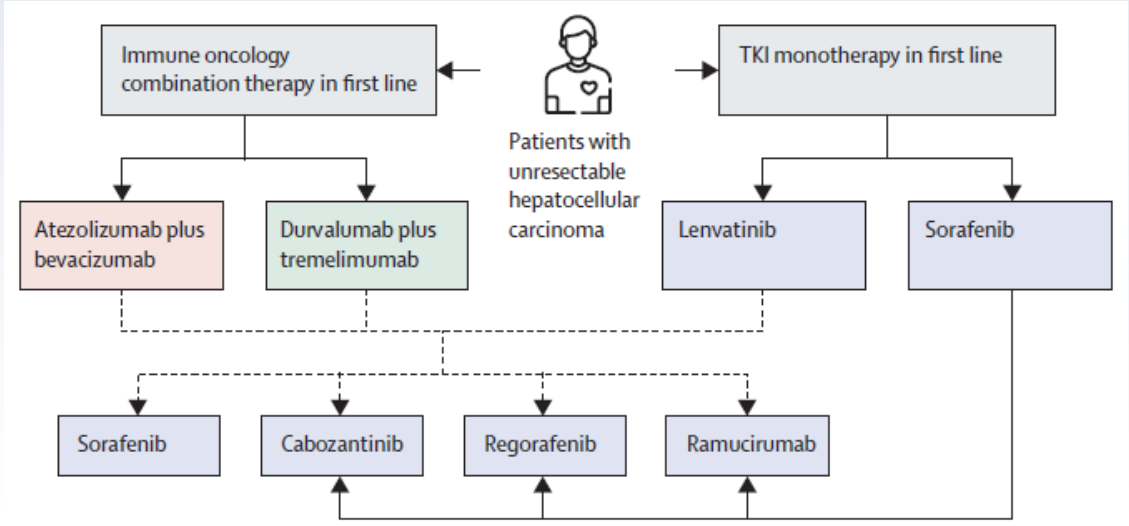
02

Short term goals include primary data generated and POC of JWATM204/214: Ongoing study in HCC patients and other solid tumors

# Huge unmet medical need for HCC patients in China

- HCC is the 3rd leading cause of cancer deaths worldwide, with a relative 5-year OS rate ~18%
- China is one of the regions with highest ASR of liver cancer, of which HCC accounts for ~85% population
- ~379K newly-diagnosed HCC pts in China in 2020, which would rise up to esti. ~428K in 2025
- HCC pts in China have poor prognosis (5-ys OS rate ~12%) due to ~80% pts are initially-diagnosed as advanced/metastatic stage
- In China, PDx+VEGFr or TKI mono have been adopted as 1st SoC for advanced/metastatic HCC with median PFS ~6m
- Currently 2L+ options (mono-agents) shows limited benefit with ORR<15%, median PFS<6m, median OS<12m
- GPC3 is expressed in ~85% HCC pts, currently no GPC3-targeted treatment has been approved for HCC label





- Sources.
- Vogel et al. Lancet. 2022.
- Sung et al. CA Cancer J Clin. 2021.
- Zhou et al. Lancet. 2019.
- Zheng et al. J National Cancer Center. 2022.
- Zheng et al. Chin J Cancer Res. 2018.

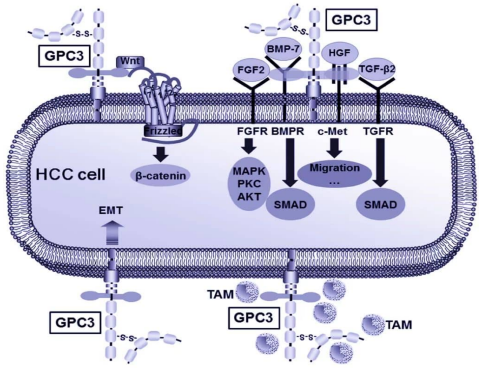
# JWATM204 and JWATM214

## 1. GPC3 highly expressed in HCC

| Antigen | Expresion level |
|---|---|
| Alpha-fetoprotein (AFP) | 50% |
| Glypican-3 (GPC-3) | 70% |
| Melanoma antigen gene family(MAGE) | MAGE-1 and-3(68%),MAGE-8(46%),and MAGE-2,-6,-10,-11,and -12(30%) in RNA. |
| New York esophageal squamous cell carcinoma 1 (NY-ESO-1) | 43.9% in RNA |
| Human telomerase reverse transcriptase (hTERT) | 80%~90% |
| NK group 2 member D ligand (NKG2DL) | NA |
| Epithelial cell adhesion molecule (EpCAM) | NA |
| Mucin1 glycoprotein 1 (MUC1) | NA |
| Viral antigens | NA |

## 2. GPC3 involvement in tumor metastasis/invasion

**Wnt pathway simulation**



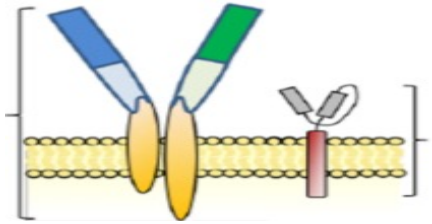

**Growth factors interactions**

**EMT promotion**

**Macrophage recruitment**

## 3. JWATM204 targets GPC3 via two major signals

**GPC3-targeted Antibody T-cell Receptor (AbTCR)**



**Co-stimulatory CD30**

**AbTCR recognizes and binds to GPC3**, triggering the effector domain of the AbTCR to associate with the endogenous CD3 complex, which feeds into a network of phosphorylation pathways that create the T-cell activation signal

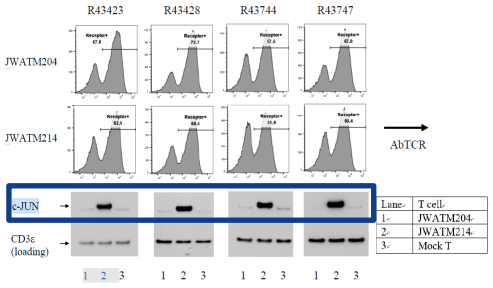
**Co-stimulatory CD30 molecule recognizes and binds to GPC3**, augmenting AbTCR signaling, and resulting in increased cytokine production, proliferation, and persistence of JWATM204

## 4. JWATM214 –cjun overexpression

### c-Jun overexpression by Gen-R

Genetic reprogramming (Gen-R) is an *ex vivo* technology to modify T cells to overexpress the protein c-JUN to delay T-cell exhaustion and to persist durable anti-tumor activities

**High c-Jun Expression in JWATM214**







- Cancers 2021; 13(2): 271.
- Med Res Rev. 2018; 38(2): 741-767.

# JWATM204 and JWATM214 Clinical Programs

| Clinical Program | Key Population | Status | Goal in 2023 |
|---|---|---|---|
| JWATM204-001 | Histologically-confirmed GPC-3 positive HCC<br>No available SoC at enrollment | 4 patients dose, no DLT observed, disease control observed | IND strategy for HCC indication based on primary data from these 2 studies |
| JWATM214-001 | | FPI in Jan 2023 | |
| JWATM204-002 | Histologically-confirmed GPC-3 positive solid tumor<br>No available SoC at enrollment | In site preparation | Active enrollment |

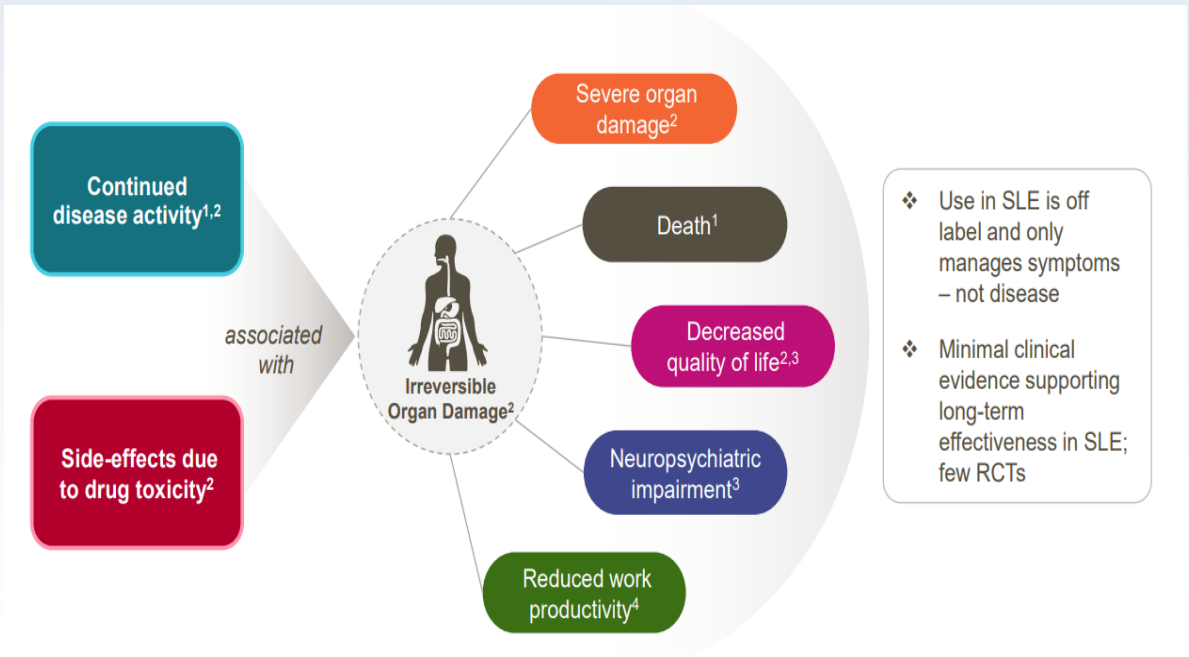
# Autoimmune

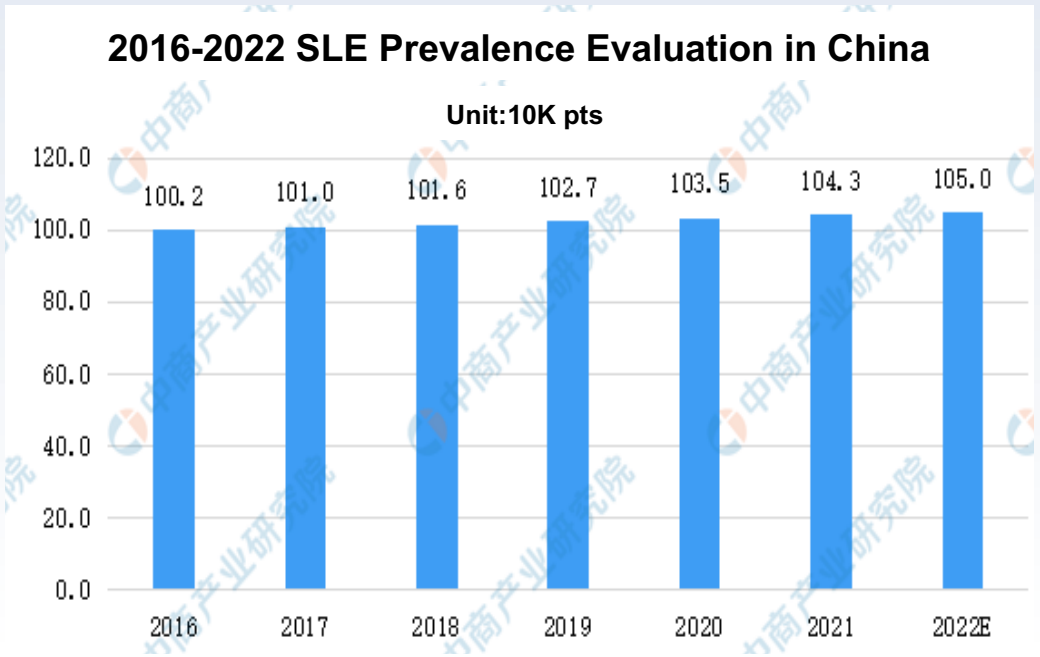
- Focus on SLE for clear prove of concept
- Early Regulatory Path with Conditional Approval in China
- Potential for Development Beyond China

# Unmet Medical Needs of SLE is Profound:

## -Conventional treatments are inadequate & even worsen organ damage over time

- **Treatment goals: Short-term disease control vs. Long-term organ damage reduction**
- **Mindset gap: Less sense of urgency regarding irreversible organ damage**
  - HCPs and pts primarily focus on controlling symptoms driven by inflammation rather than the risk of organ damage
- **SLE market is undeveloped with limited and moderate treatment options**
  - Needs an efficient disease management with long-term effectiveness





1. Lopez R et al. Rheumatology 2012;51:491498 [Page 496, Page 495]
2. Becker-Merok A and Nossent HC J Rheumatology. 2006 Aug;33(8):1570-7 [Page 1570, 1572]
3. Mak A et al. Nat Rev Rheumatol. 2013 May;9(5):301-10 [301]
4. Ali M. Al Dhanhani et al. Arthritis Care & Research. 2015 Nov; 67(11):1536-44 [Page 1536 ]

nature medicine
ARTICLES
https://doi.org/10.1038/s41591-022-02017-5
Check for updates

# Anti-CD19 CAR T cell therapy for refractory systemic lupus erythematosus

- 5 SLE patients reported , Aged between 18 and 24 years, activity Index-2000 (SLEDAI-2K)27 scores of between 8 and 16 All patients had multiorgan involvement with histology-proven glomerulonephritis, and All patients had previously been exposed to several immunosuppressive drugs
- CD19 CAR T cell treatment does not only effectively deplete B cells in patients with SLE but also leads to drug-free remission of this systemic autoimmune disease
- All five patients showed B cell reconstitution after an average time of 110 ± 32 d (median 110 d; range 63–142 d), no relapse of SLE was observed in the long-term follow-up of the patients while still being off any SLE-associated medication

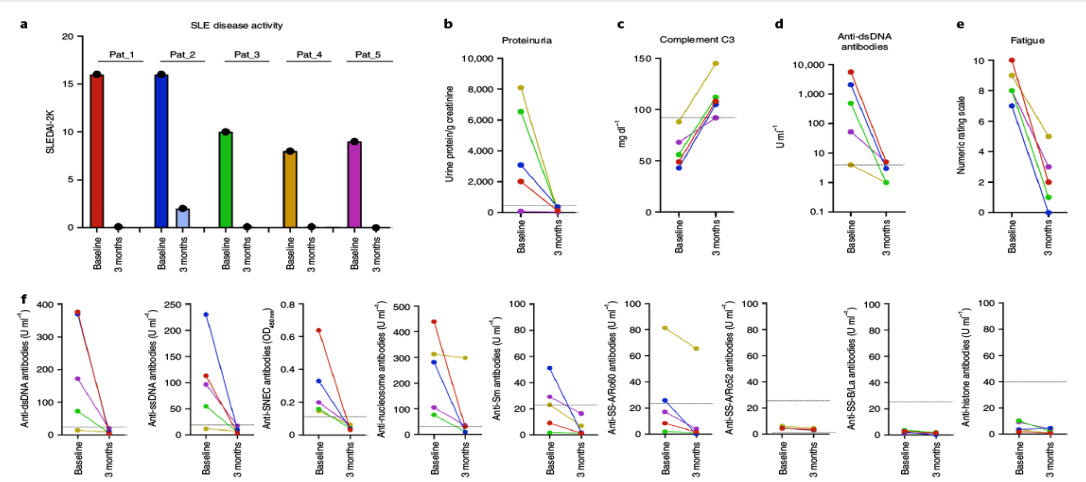
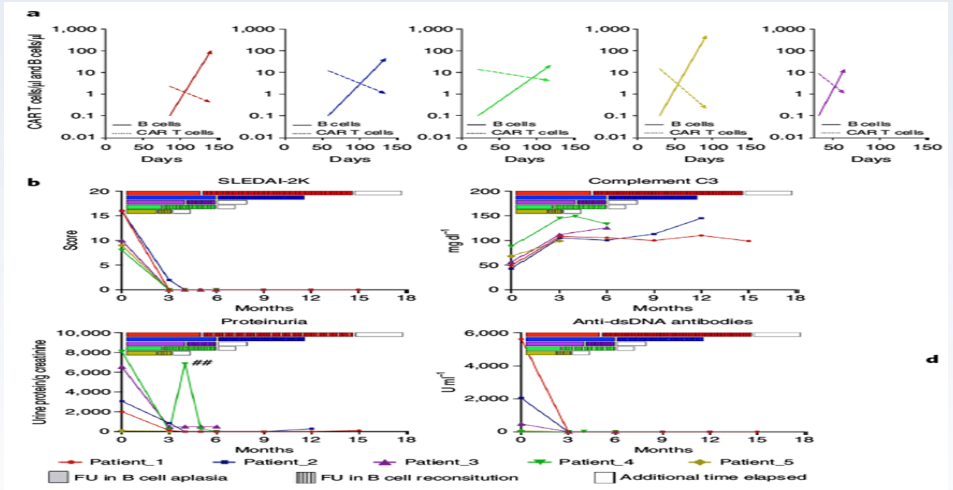


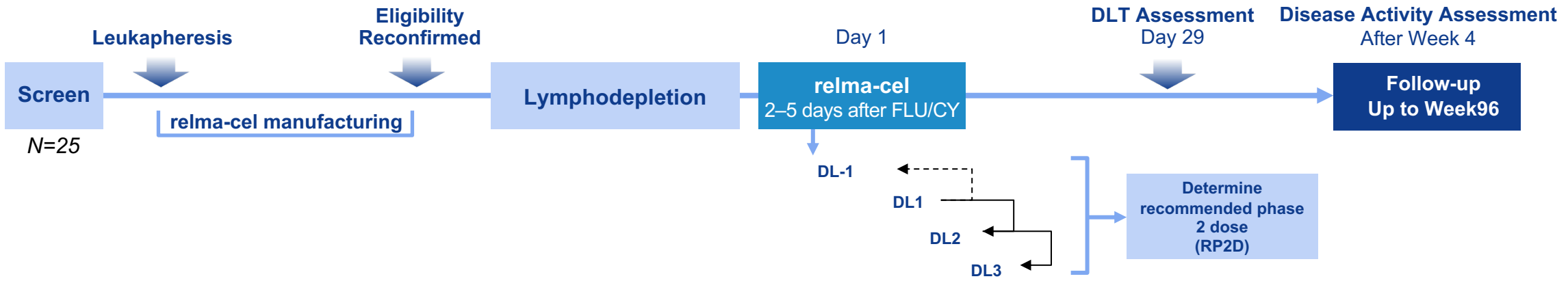

**Fig. 3 | Effects of CAR T cell treatment on the activity of systemic lupus erythematosus. a**, SLEDAI-2K scores at baseline and 3 months after CAR T cell administration ($N=5$). **b**, Proteinuria at baseline and 3 months after CAR T cell administration ($N=5$). **c**, Complement factor C3 levels at baseline and 3 months after CAR T cell administration ($N=5$). **d**, Anti-dsDNA antibodies assessed by radioimmunoassay at baseline and 3 months after CAR T cell administration ($N=5$). **e**, Fatigue measured by numerical rating scale (0–10) at baseline and 3 months after CAR T cell administration ($N=5$). **f**, ELISA-based quantification of antibodies against double stranded (ds) DNA, single stranded (ss) DNA, secondary necrotic cells (SNECs), nucleosomes, Smith (Sm) antigen, Sjogren's syndrome (SS)-A/Ro60, SS-A/Ro52 and SS-B/La antigens and histones at baseline and 3 months after CAR T cell administration ($N=5$).




Long-term follow-up and analysis of recurrent B cells. **a**, Time of recurrence of B cells after CAR T cell therapy (indicated by days in the *x* axis) with changes in CAR T cell numbers and B cell numbers. The last time point with an absence of circulating B cells and the first time points with a new appearance of circulating B cells are indicated ($N = 5$). **b**, Long-term follow-up (FU) of the patients: SLEDAI-2K, serum complement factor C3 levels, proteinuria and anti-dsDNA antibodies in the five patients with SLE treated with CAR T cells. Bars indicate the respective follow-up periods. A hash symbol indicates the phase of proteinuria in patient 4, in which SLE relapse was excluded by kidney biopsy (therefore not calculated in SLEDAI-2K score).

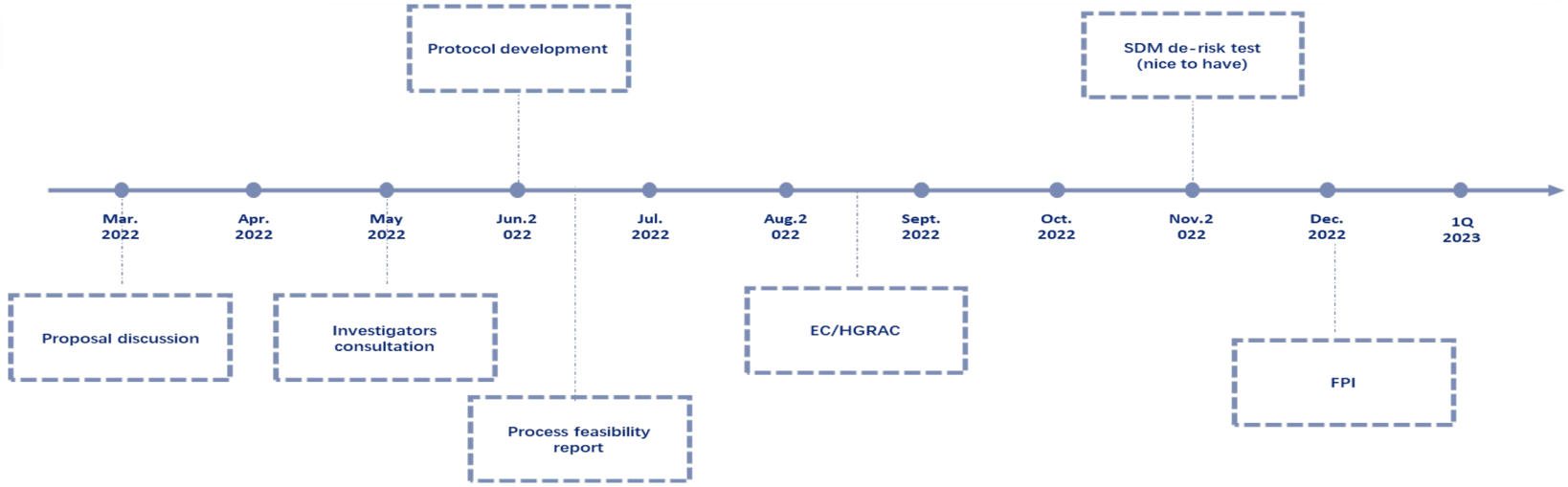
# JWCAR029-012 Study Design and Timeline

**Target Population:** Chinese subjects with moderate-to-severe, refractory/relapse Systemic Lupus Erythematosus (SLE)




## Key Eligibility

- 18-70 years old
- SLE Classification: Have a clinical diagnosis of SLE according to the ACR
- SLE Treatment: Be on either no SLE medication or a stable SLE treatment regimen of any medication (alone or in combination) for a period of at least 2 months prior to Day 0.
- The subjects with positive test for anti-nuclear antibody (ANA) or anti-dsDNA serum antibody or anti-Smith antibody.



04

# JW's Near-Term Opportunities

Mark J Gilbert, MD – Chief Medical Officer

药明巨诺
JW Therapeutics

# TCR-T with MAGE-A4

# Autologous TCR-T: De-risked for Solid Tumors

药明巨诺 JW Therapeutics

## JW's TCR-T Product Candidate Employing Novel Technology & Successful Manufacturing Processes

### TCR-T has Solid Proof of Concept Through Clinical Trials

**Phase 2: NY-ESO-1/HLA-A2(GSK) & MAGE-A4/HLA-A2(ADAP) [1,2]**

gsk Adaptimmune

**40-60% CR&PR**

targeting metastatic melanoma and synovial cell sarcoma

**Phase 1: HPV E7/HLA-A2(Kite/NcI) [3]investigator-initiated trial**

Kite Pharma

**50% PR(6/12)**

targeting cervical, vulvar and other HPV-associated cancers

**Phase 1: PRAME/HLA-A2 (IMTX) [4]**

immatics

**50% PR(8/16)**

targeting melanoma, synovial cellsarcoma, head & neck and more [4]

### Changing TCR-T Paradigm w New Targets & New Modalities

01 MAGE-A4 binder restricted by HLA-A2 with PoC in several cancers

02 FLIP receptor from 2seventy to overcome TME

03 Manufacturing process from prior development experience

04 Plan IIT & IND trials for rapid test of PoC & tumor indications


(1) P.F.Robbins et al 2011J cin Oncol.29(7):917.
(2) Ramachandran et al. 2019J. immunol can 7:276.
(3) Nagarsheth, N.B., et.al.2021 Nat Med.
(4) Immatics topline data release.

# MAGE-A4 TCR-T: Target Indications with High Unmet Medical Need

药明巨诺 JW Therapeutics

## Clinical study to be initiated in Q4-2023

**MAGE-A4 Candidate indications**

### Recurrent & Metastatic Squamous-Esophageal Carcinoma

- ESCC accounts for >90% ESCC in China and comprises ~277K new cases and ~206K deaths in China
- ~50% ESCC pts have distant metastasis at initial diagnosis, 5-yrs OS rate ~15%
- ~60% MAGE-A4 overexpression amongst ESCC patients

### Advanced & Metastatic Squamous-NSCLC

- Sq-NSCLC accounts for ~45% of all lung cancer pts, ~245K newly-diagnosed sq-NSCLC pts in China in 2020
- ~60% sq-NSCLC are diagnosed as advanced/metastatic stage with 5-yrs OS rate ~15%
- ~35%-57% sqNSCLC pts in China showed MAGE-A4 overexpression

### Recurrent & Metastatic Ovarian Cancer

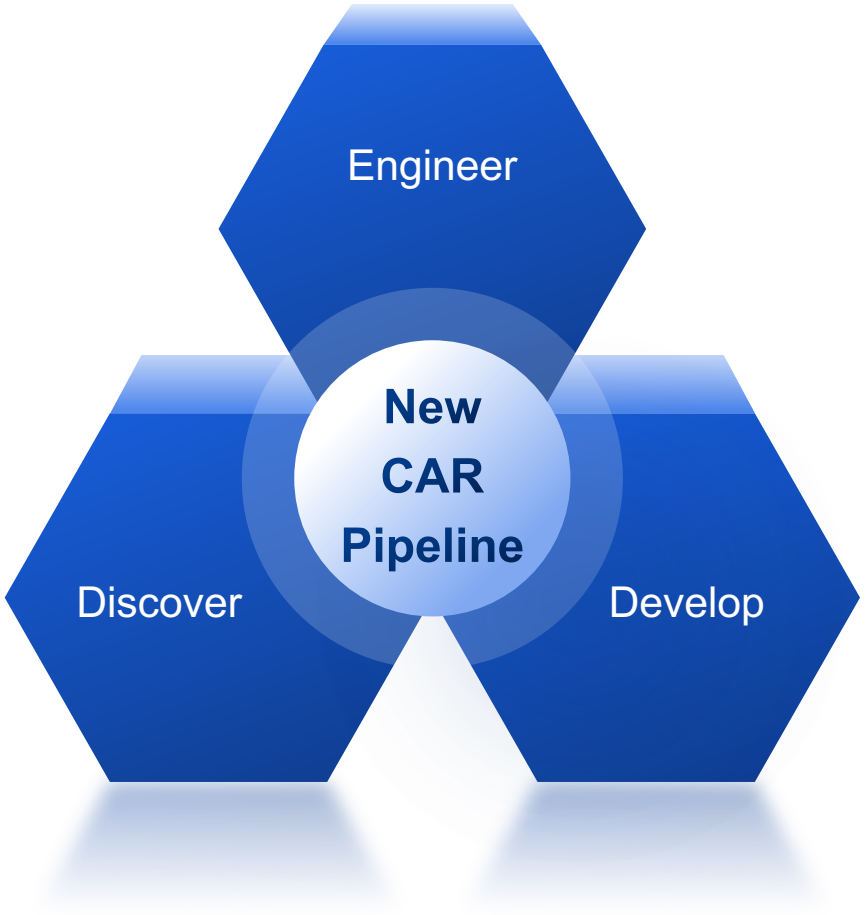
- Among ~55K new OC cases in China (2020), ~50% with distant metastasis with 5-yrs OS rate ~18%
- ~20%-35% OC pts in China showed MAGE-A4 overexpression
- CTx are available 2L+ options for r/m OC patients with ORR ~20%, mPFS 3.4m-24m

05

# JW's Longer-Term Opportunities

Shaun Cordoba, PhD – Chief Scientific Officer

# Early Research and Discovery Core Focus




## Autologous Therapies

- Building on JW strengthens

## Armored CAR T cells

- Enhancing CAR T cell performance in difficult TME

## Target China Market with Global Commercial Rights

- Asian unmet need indication
- Ability to expand product globally

## Focus on Liquid and Solid Tumors

- Strengthen stance in BCM with dual targeting armored CAR T cells
- Make rapid progress in solid indications with next generation armored CAR T cells

# Early Research Approach

## Future of CAR T cell therapies at JW

### ENGINEER

**New pipeline targeting China market with global FTO**

- Targeting liquid and solid indications

### STRENGTHEN

**Existing target indications**

- Enhanced efficacy and maintain safety in established indications

### DEVELOP

**Build in-house CAR discovery infrastructure**

- Technology platforms
- IP portfolio

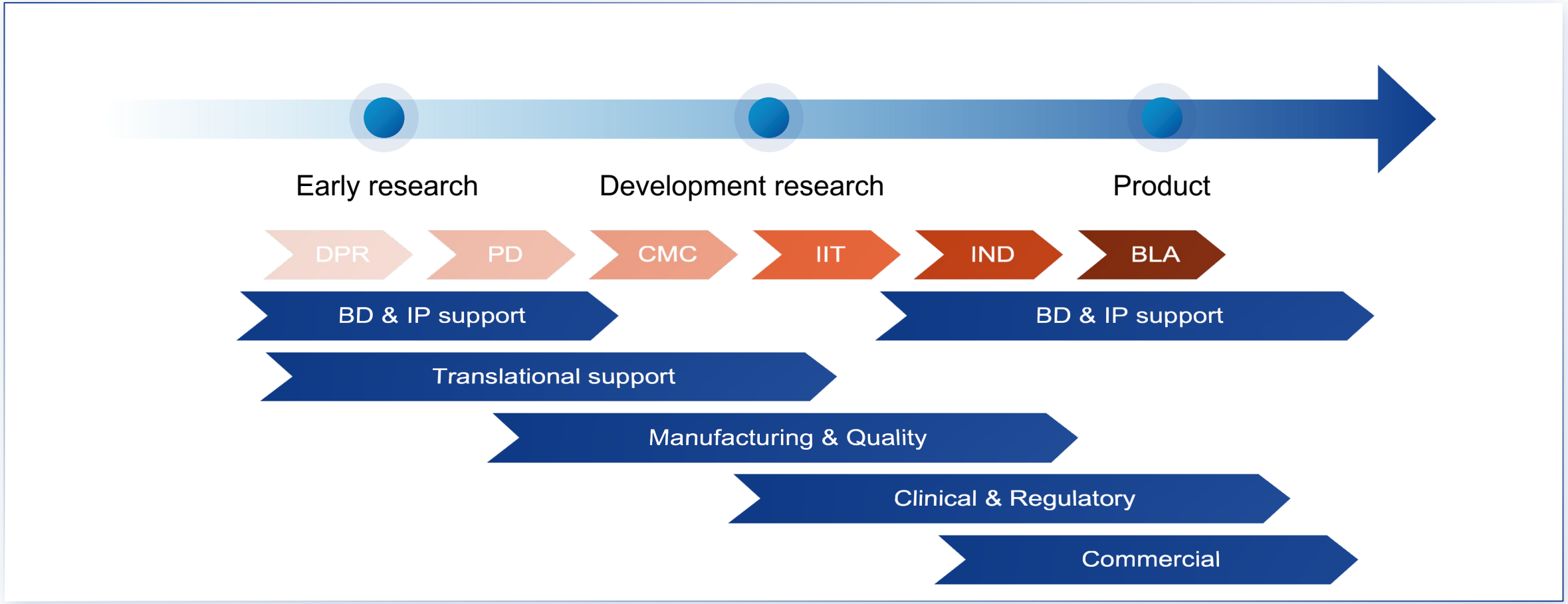
### EXPAND

**Explore new process platforms**

- Off-the-shelf and non-viral approaches

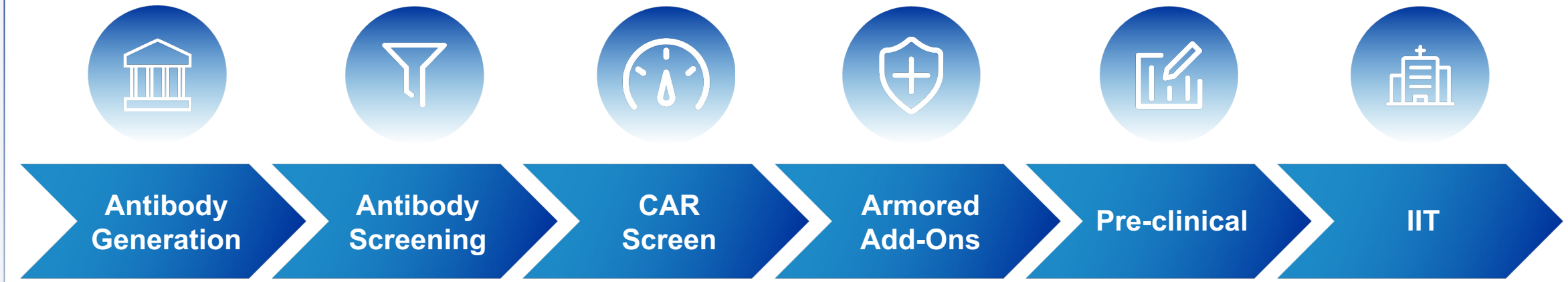
# Developing In-house Early CAR Discovery/Research

## Establish JW's End to End Process



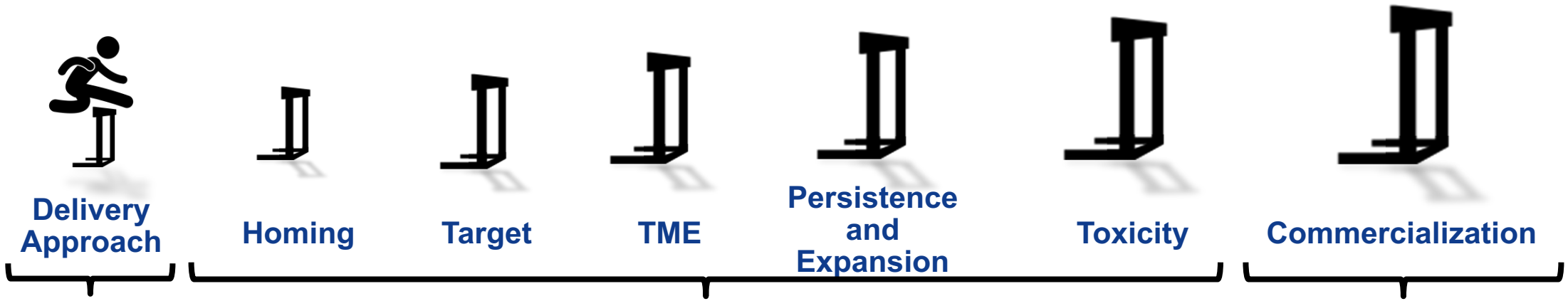
# Internal Discovery

## In-House Generation of Unique Antibody and CAR Products



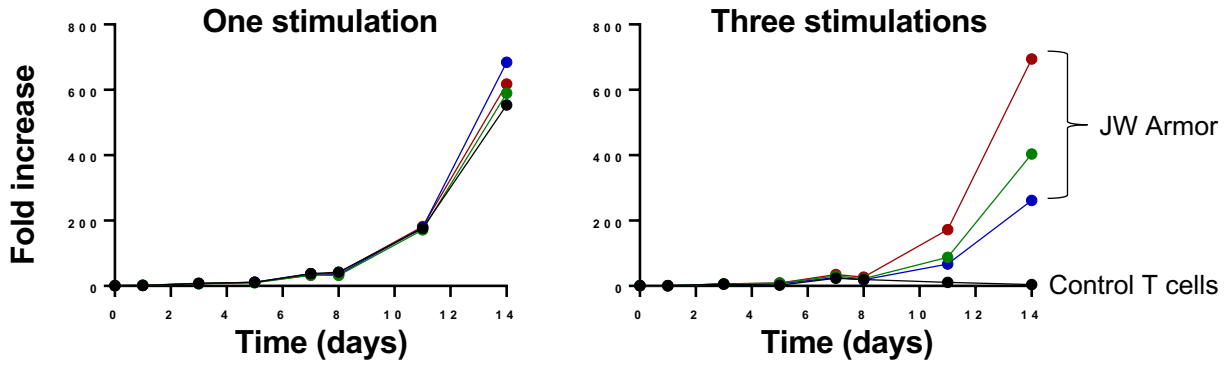
# Armored Add-On Elements

## Challenges in the Field




### JW Armored Elements Enhance CAR Function

- Overcomes functional huddles in CAR products
- Building JW IP portfolio
- Maximize FTO



# STRENGTHENING JW stance on BCM indications

## The JW advantage in BCM

- **Proven**: Deliver a CAR product from IND to BLA
- **Speed**: 4 years from establishment to registered product
- **Integrated**: From manufacturing and clinical operations to commercial
- **Robust**: Fast and efficient logistical infrastructure in place for autologous products
- **Access**: China market

## Currently Relma-cel

- Relma-cel is currently one of the best approved CAR products targeting CD19
- Treated over **300 patients** with BCM. Approved in 2021
- CR rate in 3rd Line LBCL of **54%** and 2 year OS of **69%**, with low rates of CRS and NTX**
  - Room for improvement
  - JW is positioned to deliver the next generation CAR product for BCM

***Zhitao Ying, Yuqin Song, et.al.; 2022 ASCO abstract #7529, 2022 ASCO annual meeting, Chicago, IL.*

# STRENGTHENING JW stance on BCM indications

## JW's next generation in BCM

### Dual Targeting CAR Product

- Designed to reduce the incidences of antigen low or negative escape

### Addition of Armored Elements

- Engineered to enhance CAR product performance

### Utilize Next Generation Product Processing

- Development to increase speed and reduce CoG

### Expeditiously Developed for the China Market with Potential Global Commercial Rights

- Maximizing and leveraging JW unique advantage in this field

# ENGINEERING JW Pipeline

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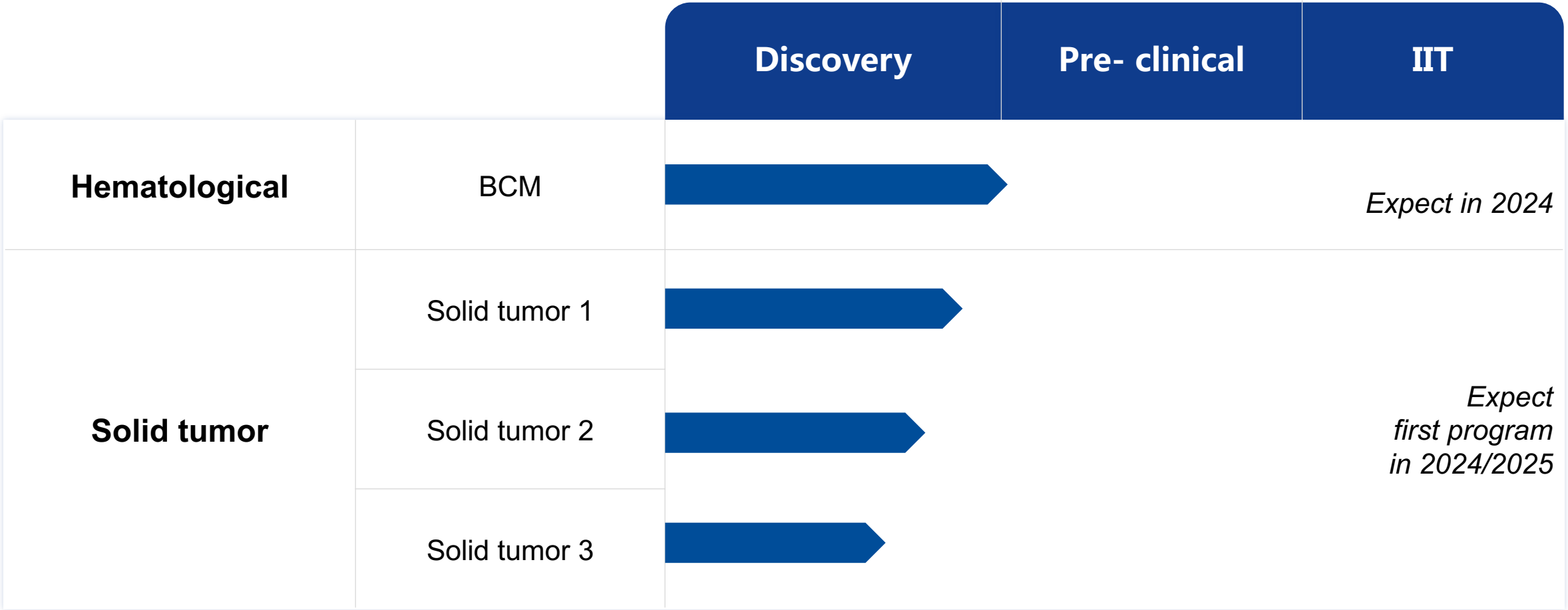
## Expected Clinical Delivery



# EXPANDING JW Process Platforms

## Personalized Autologous Approach

- Proven approach
- High efficiency
- Well characterized
- Limitations
  - CoGs
  - Speed
  - Size

## Exploratory Early Research Projects

- Non-Viral
  - Early research is exploring projects using non-viral approaches in combination with next generation genomic editing
- Allogenic platform
  - Early research has projects to explore the use of armored off-the-shelf allogenic CAR cells for various indications

06

# CMC & Manufacturing Excellence

Xiaoping Cao, PhD MBA – SVP & Head of Tech Ops

# CMC & Manufacturing Excellence

## Integrated Cell Therapy Innovation and Commercialization Platform with Cross-disciplinary Expertise

**01**

Robust platform process & technology to enable product development at various stages

**02**

Leading clinical & commercial manufacturing infrastructure

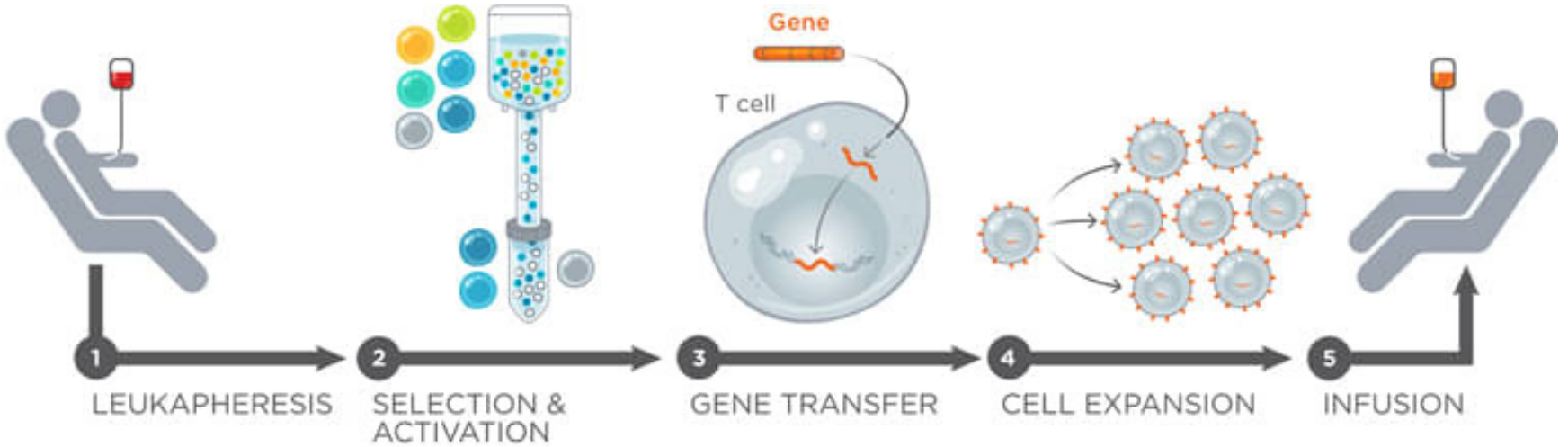
**03**

LCM & innovation to drive down COGS & improve product accessibility for more patients

**04**

Novel vector development & manufacturing capability to support commercial product & clinical programs

# Robust Manufacturing Process for Carteyva® (Relma-cel)





- Unit Operations to enable manufacturing flexibility and easy scale-out
- Robust process to minimize variabilities from process operations and patient variabilities
- Comprehensive process control from extensive process characterization and understanding

# Platform Processes to Expedite Program Development

药明巨诺 JW Therapeutics

## Platform processes for multiple indications and patient populations

- Relma-cel Process: Support Relma-cel different indications and pediatric patients
- Solid tumor process: HCC program and new projects

## Enable programs at various stages

- Enable programs at discovery and early clinical stages with speed and quality
- Accumulated process knowledge to support late development, commercialization & LCM

## Significantly expedite program development timeline and reduce development cost from plasmid design to clinical

# Leading Manufacturing Infrastructure

## GMP Clinical MFG Facility in Shanghai

- Clinical manufacturing capability to support manufacturing of multiple clinical products concurrently
- Phase appropriate approach to ensure GMP compliance while maintain operation flexibility and speed

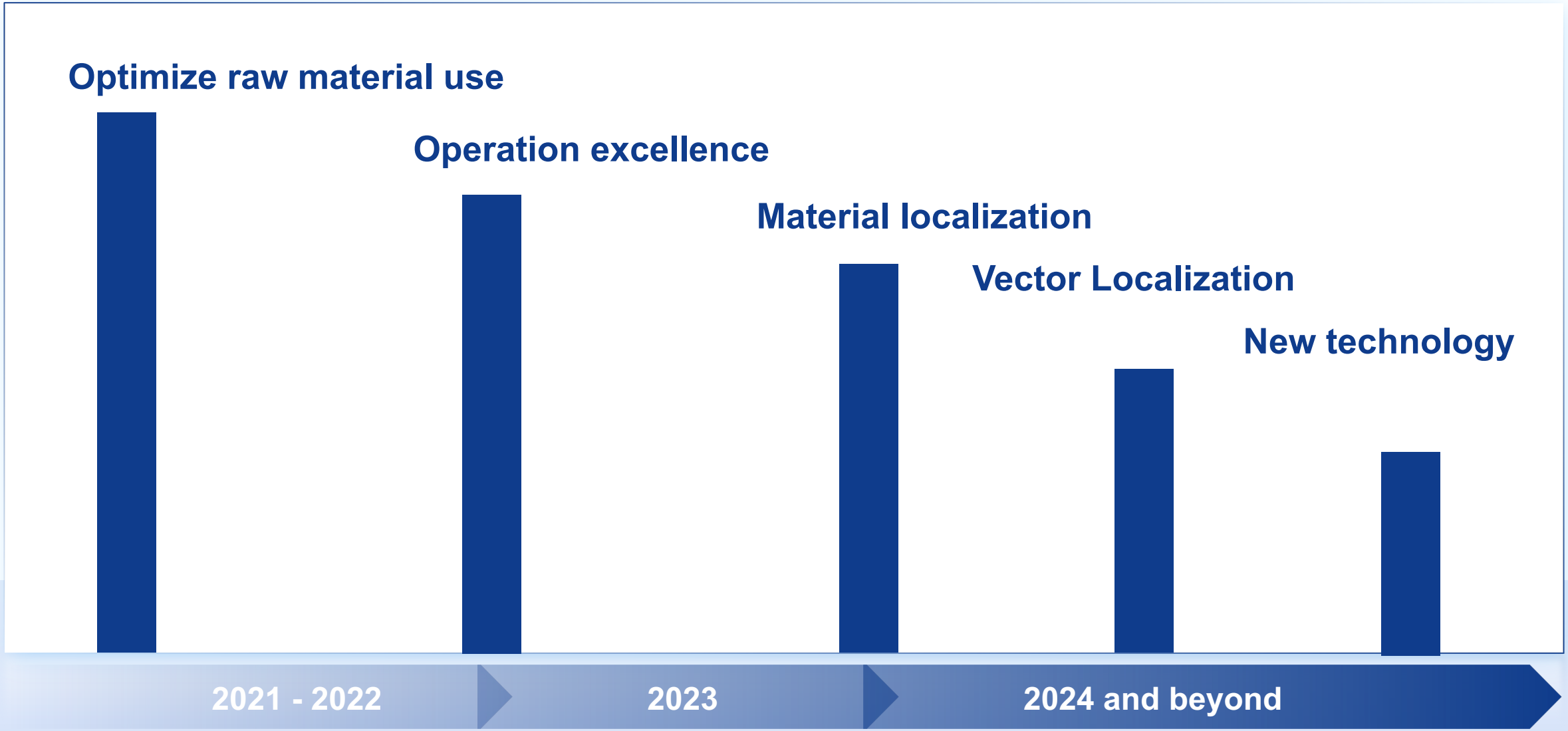


## GMP Commercial/Clinical MFG Facility in Suzhou

- Received the Production License approval in June 2020
- Scalable manufacturing capacity to meet increased demand
- Multiple modules to support late stage development and commercialization
- In-house viral vectors manufacturing capability


**Experienced team** | **Lean operation** | **Sustainable supply** | **Digitalized platform**

# LCM & Innovation to Drive Down Cost & Improve Accessibility



# Build State-Of-Art Vector Development Facility

## Vector Development Lab in Shanghai

- Plasmid and vector process development lab
- Analytics lab for in-process, release and characterization

## Vector cGMP MFG in Suzhou

- cGMP Vector facility
- Up to 200L scale
- Automated filling in isolator
- In-house AD & QC

# Vector Development Capability

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01 Successfully established a suspension-based process for both development & commercial

02 Consistent performance across multiple programs

03 Successfully manufactured GMP vector lot for clinical program

04 High yield for sustainable vector supply with reduced cost

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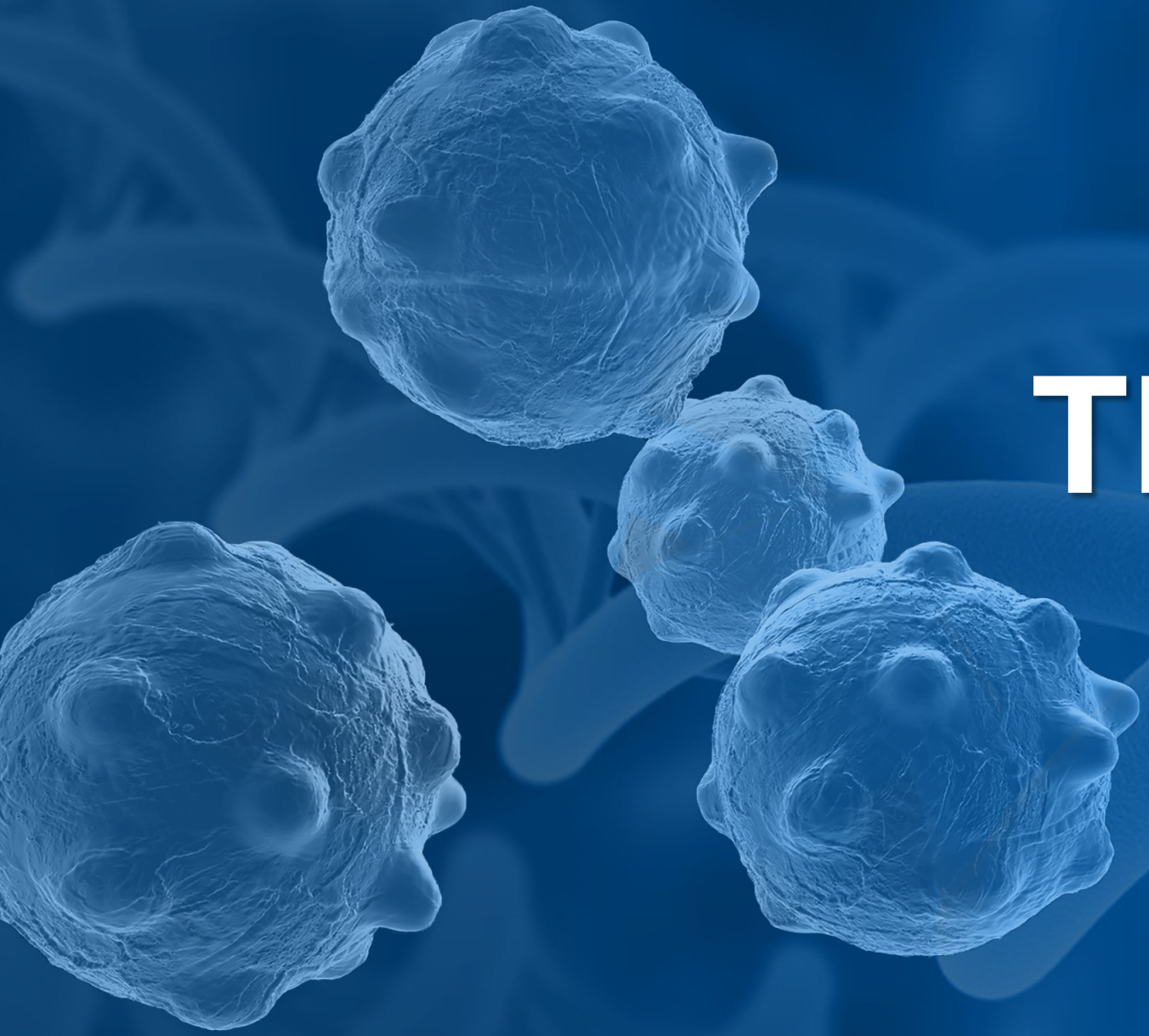
JW Therapeutics



# THANK YOU

Become an Innovation Leader in Cell Immunotherapy