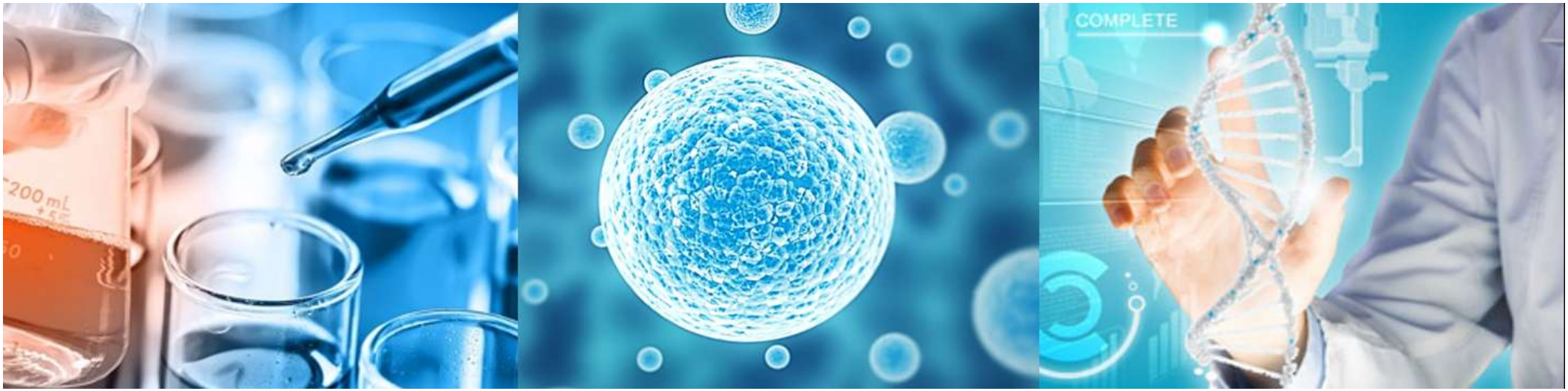


長聖國際生技股份有限公司
Ever Supreme Bio Technology Co.,Ltd

公司展望說明會

股票代號：6712

黃文良 總經理

公司概況

創立時間

- 西元2016年12月

上櫃時間

- 西元2021年1月

資本額

- 新臺幣875,969仟元

公司負責人

- 劉銖淇 董事長

技術核心

1.幹細胞培養及增生技術 2. 特殊免疫細胞培養技術

3.奈米粒子製藥技術　4. 外泌體培養技術

公司人數

- 89人(其中約 7成 相關人員具有醫藥生物博碩士學位)

長聖核心技術平台 Core technology platform

免疫細胞技術平台

- 抗原嵌合受體T細胞 CAR001
  CAR.BiTE- γ δT
- 細胞因子誘導殺手細胞 CIK
  Cytokine Induced Killer Cell
- 樹突細胞結合細胞因子誘導殺手細胞 DC-CIK(WT1)
  Dendritic Cell Cytokine Induced Killer Cell(WT1)
- Gamma-Delta T細胞 GDT
  γ δT Cell
- 樹突細胞 DC
  Dendritic Cell

幹細胞技術平台

- 異體臍帶間質幹細胞 UMSC
  Umbilical Cord Mesenchymal Stem Cell
- 自體骨髓間質幹細胞 BMSC
  Bone Marrow Mesenchymal Stem Cell
- 基因修飾間質幹細胞 CAR-MSC
  Gene-modified MSCs
- 自體脂肪間質幹細胞 ADSC
  Adipose Derived Stem Cell
- 造血幹細胞 cRBC
  Cultured Red Blood Cell

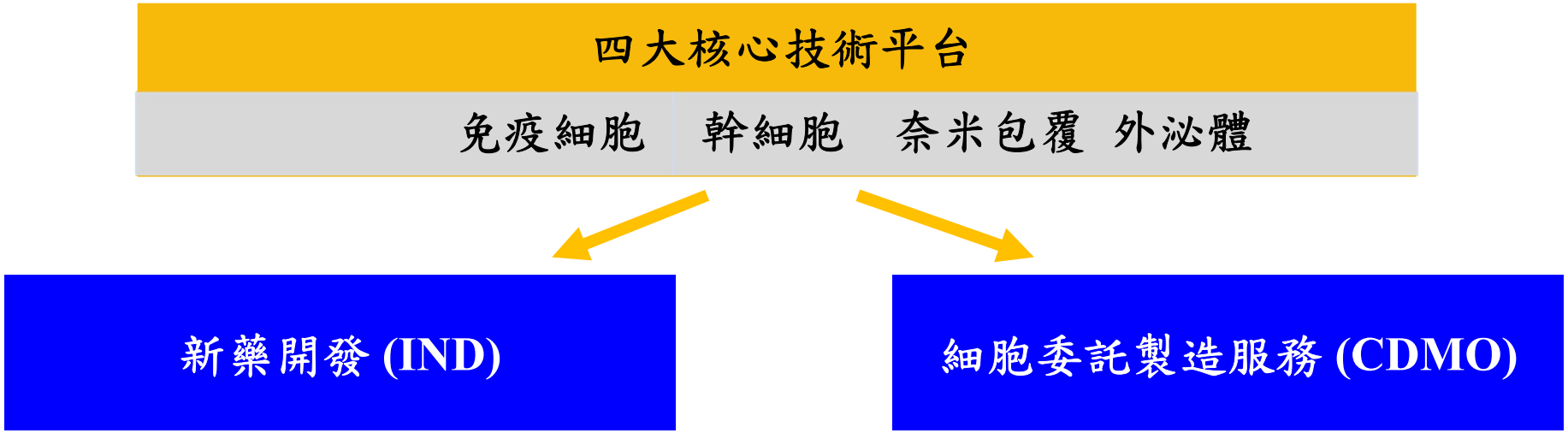
奈米粒子製藥平台

- 多胜肽奈米粒子
  Peptide-encapsulated nanoparticles
- 核酸奈米粒子
  Nucleic acid-encapsulated nanoparticles
- 小分子奈米粒子
  Small molecule-encapsulated nanoparticles
- 抗體奈米粒子複合體
  Antibody-Nanoparticle Conjugate

外泌體技術平台

- 外泌體01
  Exosome01
- 外泌體02
  Exosome02

核心技術平台



新藥開發及CDMO
其兩項具有相輔相成之效，有助本公司業務長久發展

新藥研發

四大核心技術平臺

免疫細胞　幹細胞　奈米包覆 外泌體

新藥開發 (IND)

細胞委託製造服務 (CMO)

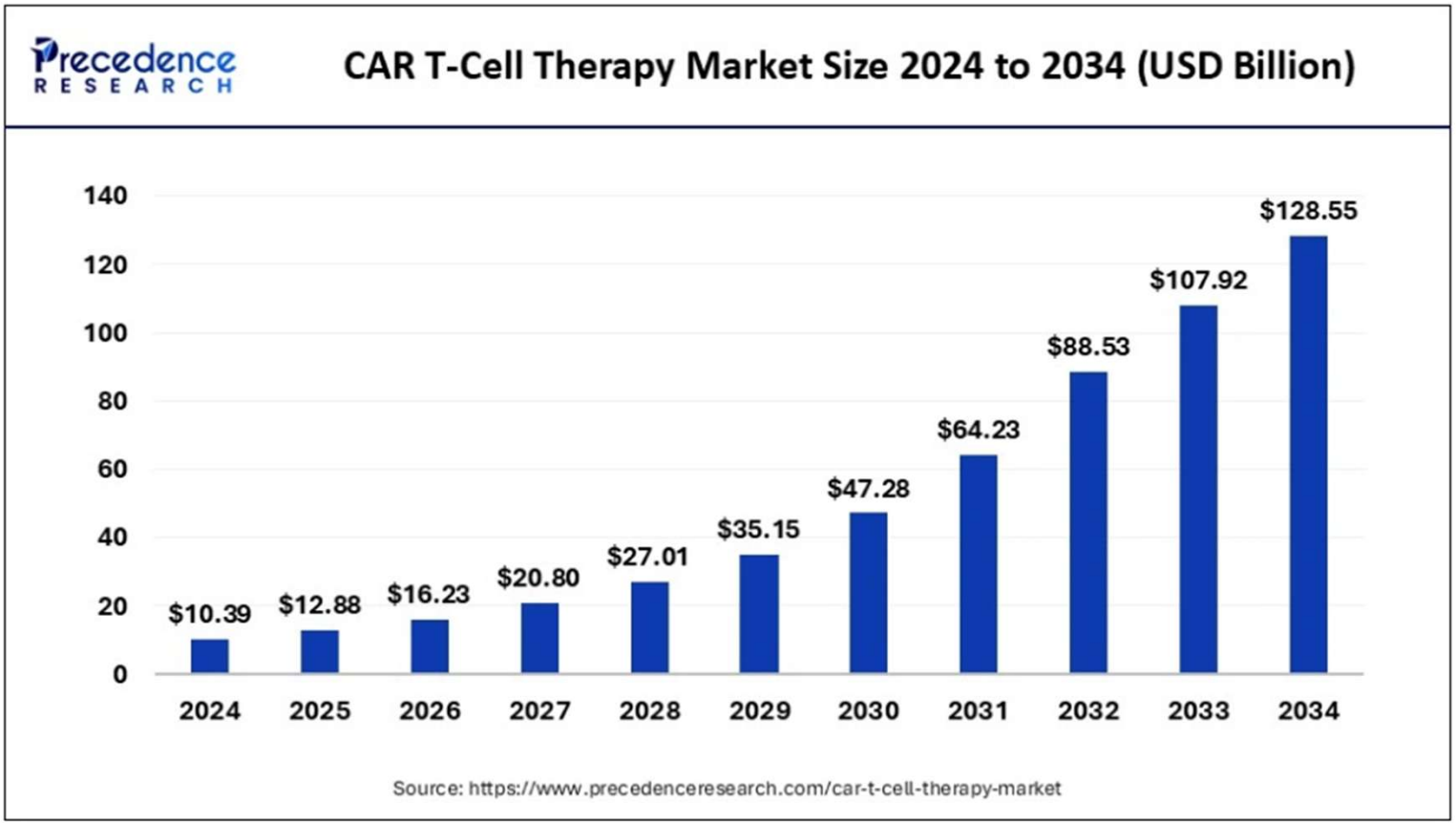
免疫細胞	CAR001(CAR-T)治療實體癌(Phase I/IIa)
幹細胞	UMSC01 治療 AMI (Phase IIa)
	UMSC01 治療 Stroke (Phase I)
	UMSC01治療 MS (Phase I/IIa)
奈米包覆	奈米粒子製藥平臺(準備中)
外泌體	外泌體平台(準備中)

朝異體細胞治療開發

01

免疫細胞技術平臺

全球 CAR T 細胞治療市場規模



以 2025–2034 年複合年均成長率（CAGR）29.1% 的速度快速擴張，至 2034 年約達 1,285.5 億美元

Current CAR-T

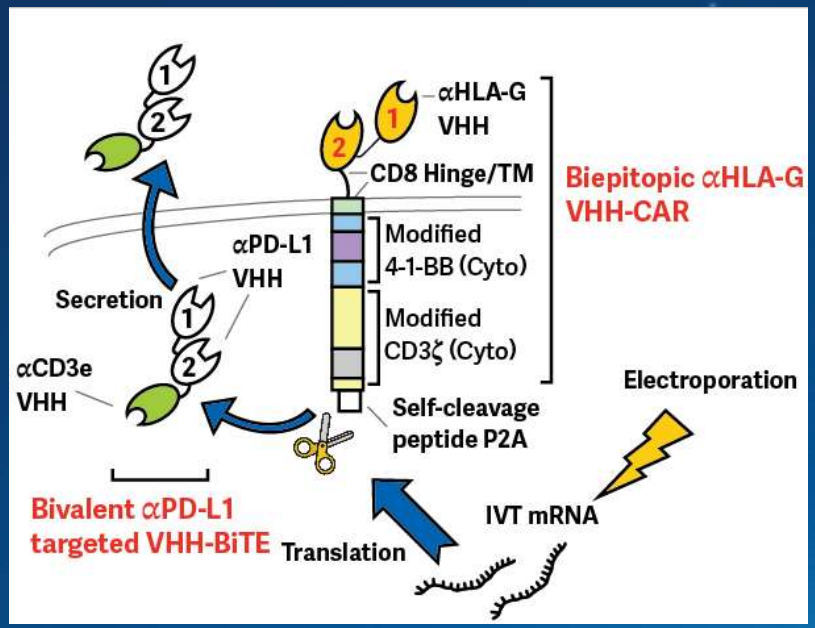
- Limited to Autologous Cell Origin (癌症病患自己細胞來源)
- Only for Liquid Tumor (只能用於血液腫瘤佔10%)
- Expense of personalized 450,000 USD(價格高昂)

How Do We Overcome Solid Tumor?

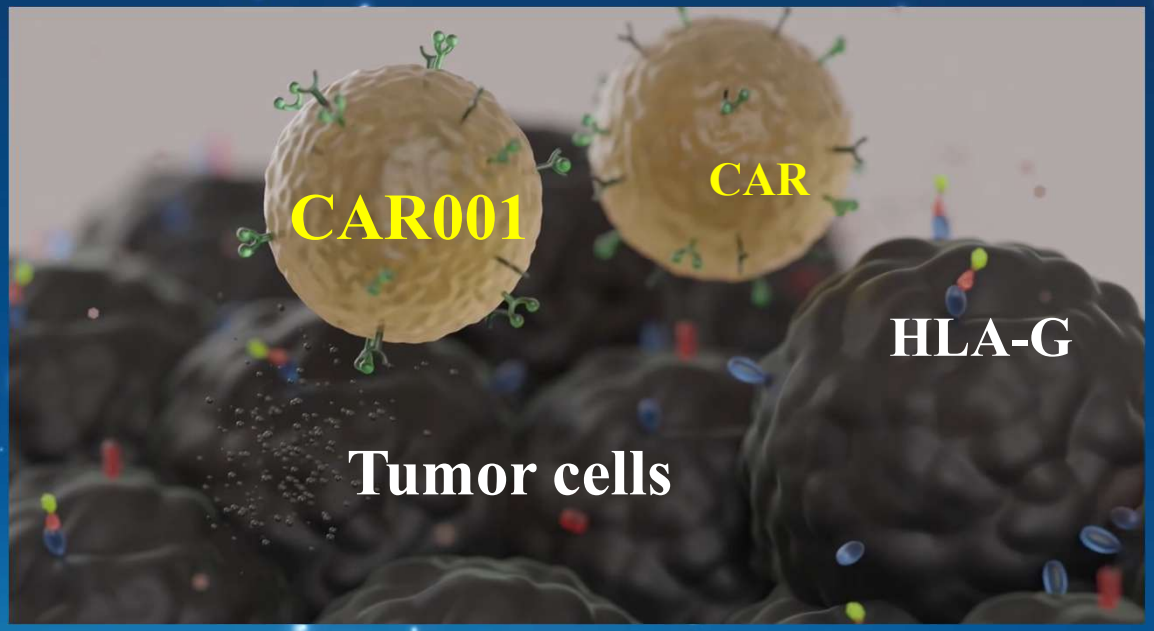
如何克服實體腫瘤

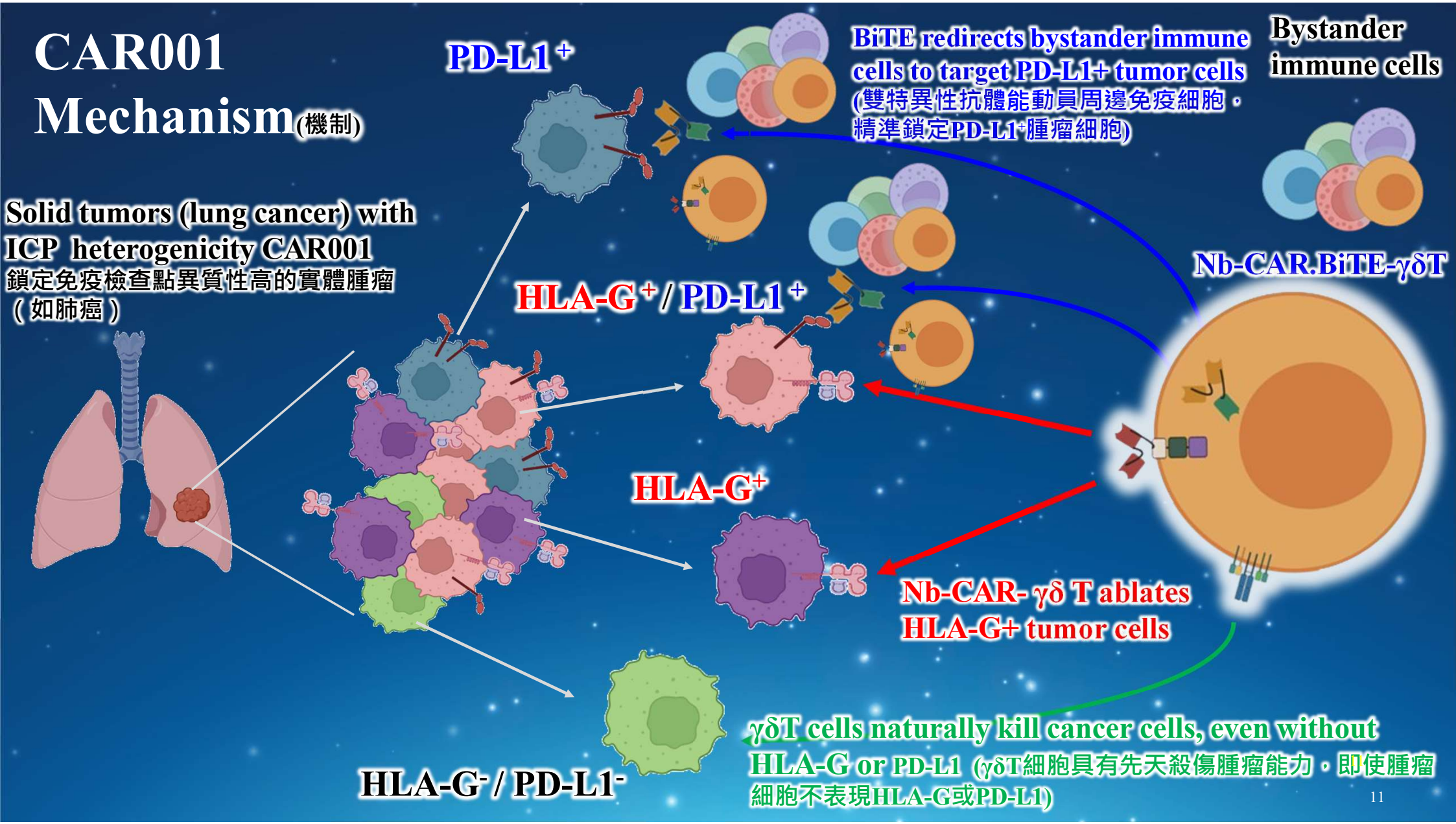
New CAR001 (CAR-T) Structural Design for HLA-G CAR

（長聖CAR001導入創新HLA-G靶向結構，強化腫瘤攻擊力）

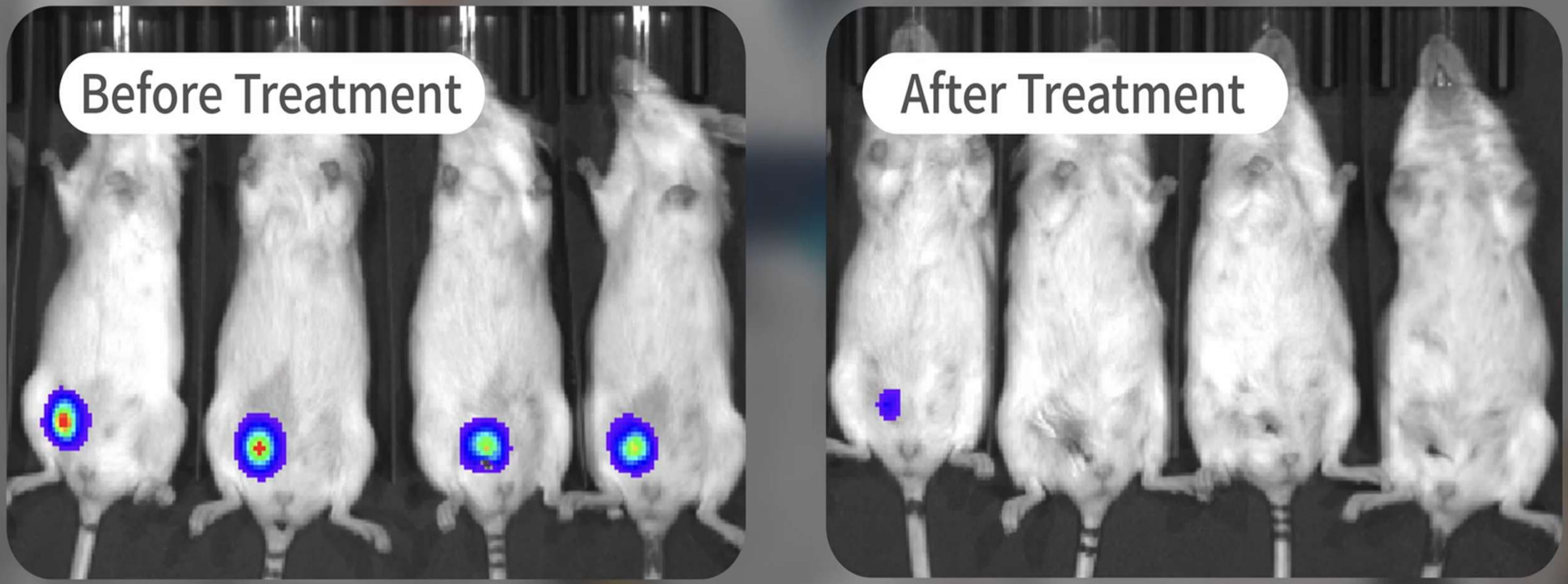


(CAR001)




CAR001 Mechanism(機制)
PD-L1+
BiTE redirects bystander immune cells to target PD-L1+ tumor cells (雙特異性抗體能動員周邊免疫細胞，精準鎖定PD-L1+腫瘤細胞)
Bystander immune cells
Solid tumors (lung cancer) with ICP heterogenicity CAR001
鎖定免疫檢查點異質性高的實體腫瘤（如肺癌）
Nb-CAR.BiTE-γδT
HLA-G+ / PD-L1+
HLA-G+
Nb-CAR- γδ T ablates HLA-G+ tumor cells
HLA-G- / PD-L1-
γδT cells naturally kill cancer cells, even without HLA-G or PD-L1 (γδT細胞具有先天殺傷腫瘤能力，即使腫瘤細胞不表現HLA-G或PD-L1)

In Vivo Breast Cancer Model



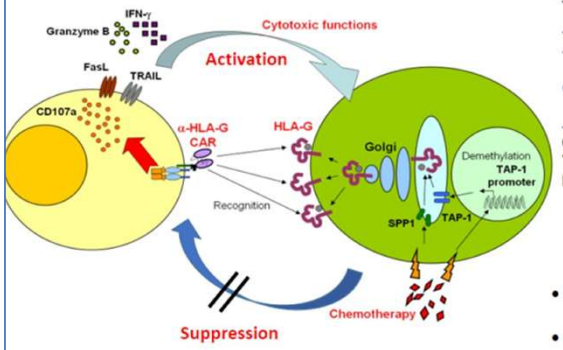
CAR001 cell therapy has the potential to treat solid tumors.

CAR001 (CAR-T) 耀登國際頂尖期刊

2021

Proof of Concept - Publication

Impact Factor:12.020



Journal for ImmunoTherapy of Cancer

Targeting human leukocyte antigen G with chimeric antigen receptors of natural killer cells convert immunosuppression to ablate solid tumors

Chia-Ing Jan,[1,2,3] Shi-Wei Huang,[3,4] Peter Canoll,[5] Jeffrey N Bruce,[6] Yu-Chuan Lin,[3,7] Chih-Ming Pan,[3] Hsin-Man Lu,[8] Shao-Chih Chiu,[3,7,9] Der-Yang Cho[3,7,9,10]

J Immunother Cancer. (2021 Oct) 9(10):e003050.

- HLA-G is a potential target in solid tumors
- Allogeneic potential of NK

2023

Impact Factor:17.521

ADVANCED SCIENCE Open Access

Research Article | Open Access

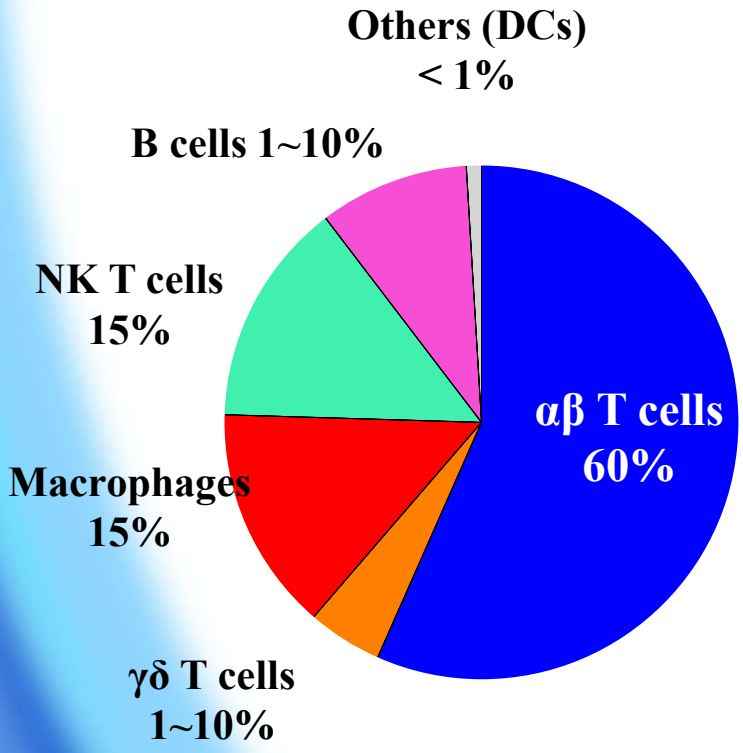
BiTE-Secreting CAR-γδT as a Dual Targeting Strategy for the Treatment of Solid Tumors

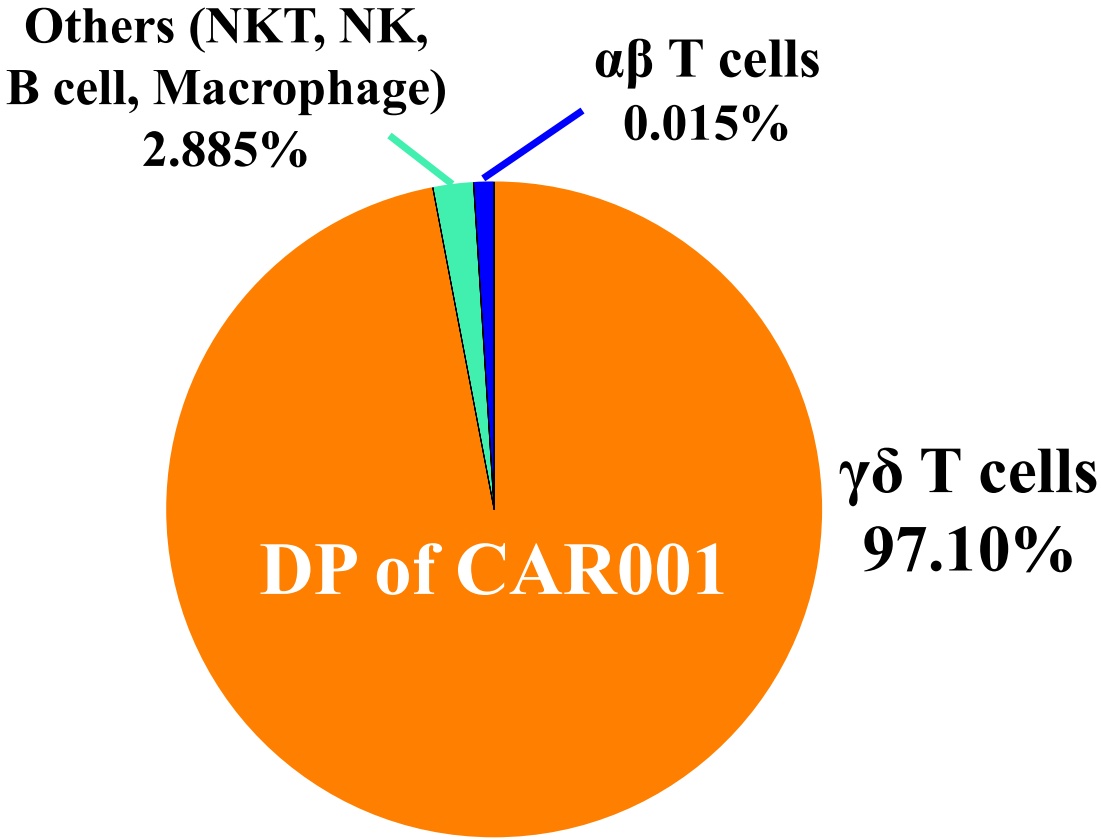
Shi-Wei Huang, Chih-Ming Pan, Yu-Chuan Lin, Mei-Chih Chen, Yeh Chen, Chia-Ing Jan, Chung-Chun Wu, Fang-Yu Lin, Sin-Ting Wang ... See all authors

First published: 20 April 2023 | https://doi.org/10.1002/advs.202206856

SECTIONS PDF TOOLS SHARE

Using allogeneic γδ T cell vectors reduces the risk of GvHD





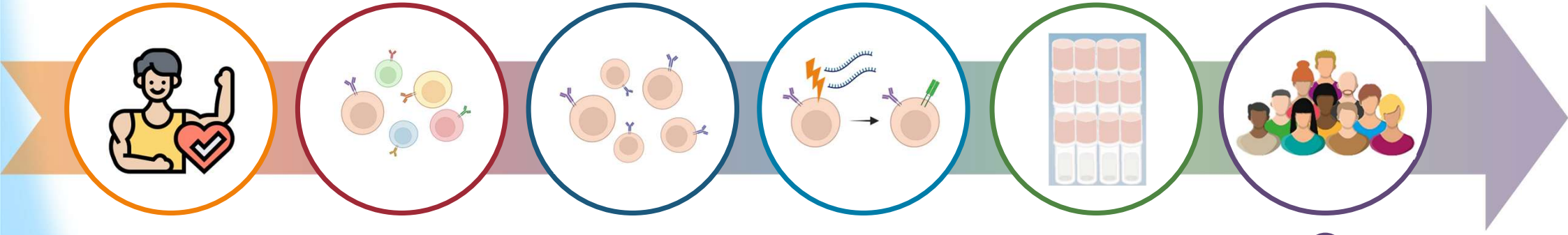
T cell percentage in human PBMC

αβT-depleted cell products prevent GvHD

https://pmc.ncbi.nlm.nih.gov/articles/PMC8131572/

Donor-derived γδ T cell materials for CAR001

Health Donor **Patients**



01 PBMC collection from leukapheresis

02 αβ T Depletion

03 γδ T Expansion

04 mRNA Electroporation

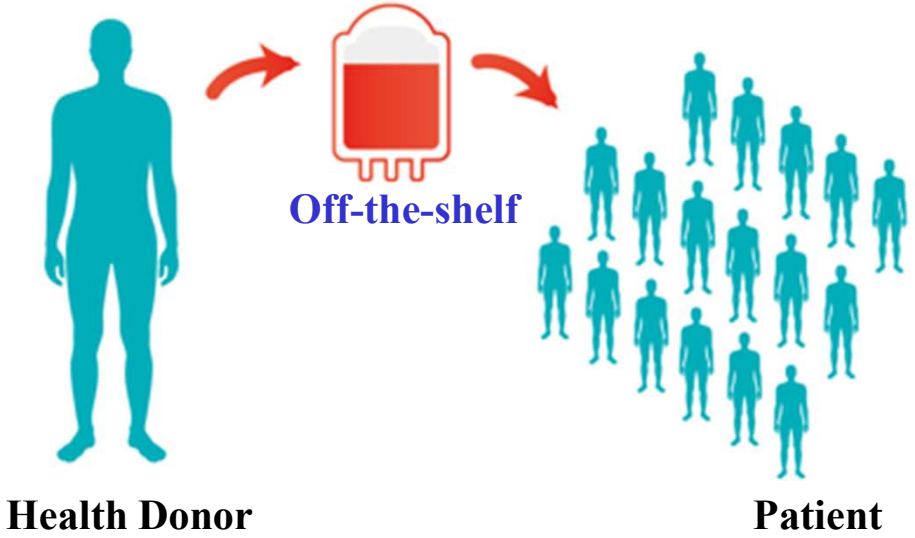
05 Cryopreservation

06 Off-the-shelf Ready to Use

- No HLA matching required
- Only FDA-qualified healthy donors (cytotoxicity tested, 16-virus screened)
- Using MHC-independent γδ T cells to lower alloreactivity risk vs. αβ T cells

Manufacturing for CAR001 (CAR-T)

- **Off-the-Shelf**： Each batch yields over 100 doses of **50 billion cells**.
- **Stable quality:** Large-scale production of the same batch using the same process**.**
- **Price reduction:** Significantly lowering production costs, **up to 5 times reduction**



US FDA and TFDA Approved Phase I/IIa Clinical Trial

Allogeneic Nb-CAR.BiTE-gdT (CAR001)

https://clinicaltrials.gov/study/NCT06150885

Recruiting

A Safety and Efficacy Study of Allogeneic CAR Gamma-Delta T Cells in Subjects with Relapsed/ Refractory Solid Tumors (CAR001)

ClinicalTrials.gov ID NCT06150885

Sponsor Ever Supreme Bio Technology Co., Ltd.

Information provided by Ever Supreme Bio Technology Co., Ltd. (Responsible Party)

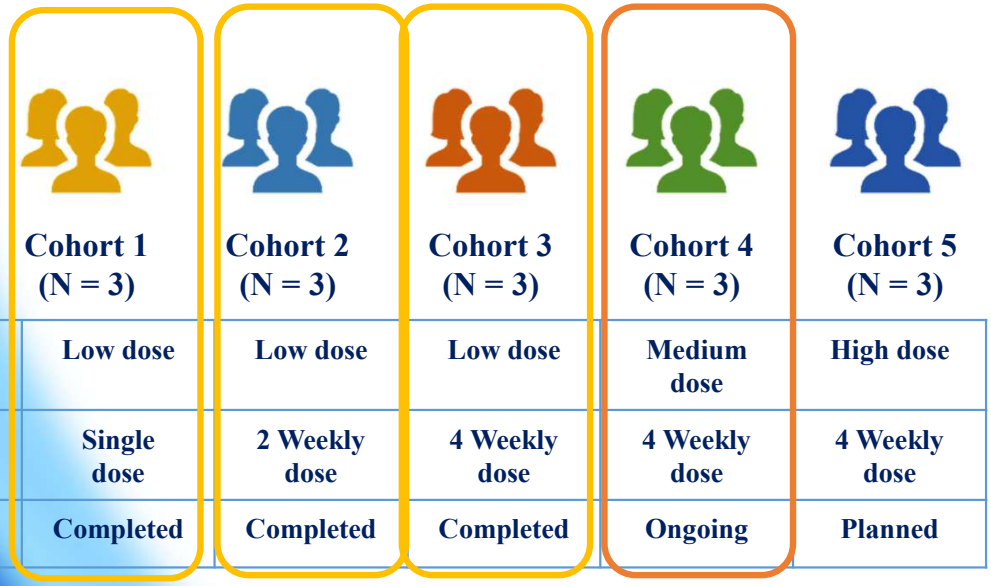
Last Update Posted 2024-12-03

FDA

CAR001 Clinical Trial Design

Phase I: Dose-Escalation

- ✓ Unresectable local advanced or metastatic solid tumor
- ✓ Failed to at least two lines of standard-of-care therapy
- ✓ 5 Cohorts to find the Maximum Tolerated Dose (MTD)



	Cohort 1 (N = 3)	Cohort 2 (N = 3)	Cohort 3 (N = 3)	Cohort 4 (N = 3)	Cohort 5 (N = 3)
CAR001	Low dose	Low dose	Low dose	Medium dose	High dose
Infusion	Single dose	2 Weekly dose	4 Weekly dose	4 Weekly dose	4 Weekly dose
Status	Completed	Completed	Completed	Ongoing	Planned

Phase IIa: Dose-Expansion

- ✓ Planned Q2/2026
- ✓ Objective Response Rate (ORR)
- ✓ 4 Indications:
  - Triple Negative Breast Cancer (TNBC)
  - Non-Small Cell Lung Cancer (NSCLC)
  - Colorectal Cancer (CRC)
  - Glioblastoma (GBM)

Cohort 2(低劑量) – Subject #5 (大腸直腸癌)

Demographics:

- 54-year-old Asian female with transverse colon adenocarcinoma, LN metastasis
- FOLFIRI ± Panitumumab>Xeloda, Avastin + FOLFOX, s/p RFA, RT FOLFOXIRI (兩線以上及惡化)

Biomarker Profile:

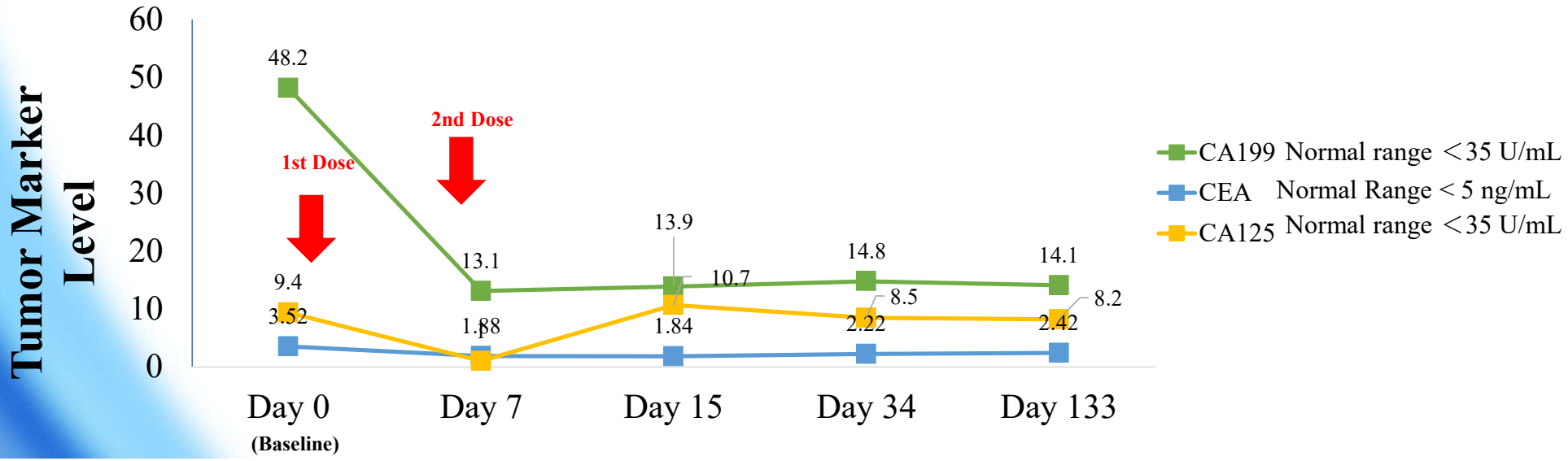
- IHC: PMS2 (+), MSH6 (+) → MSS (no dMMR)
- PD-L1: CPS 20, TPS 1%
- HLA-G: H-score 75

CAR001 Dosing:

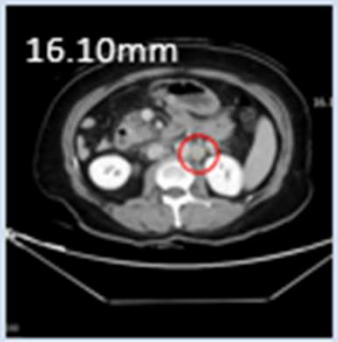
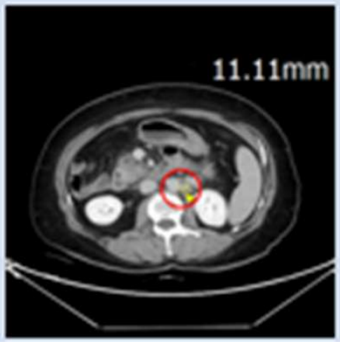
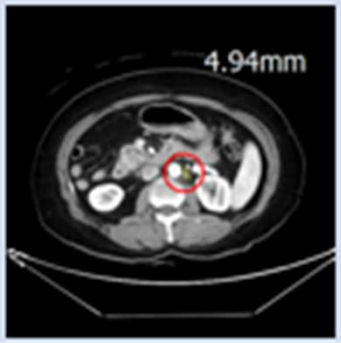
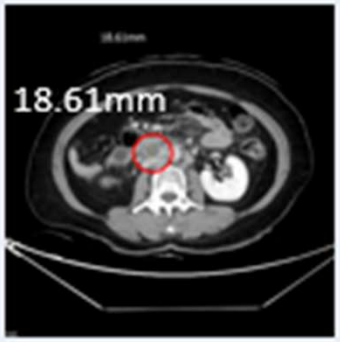
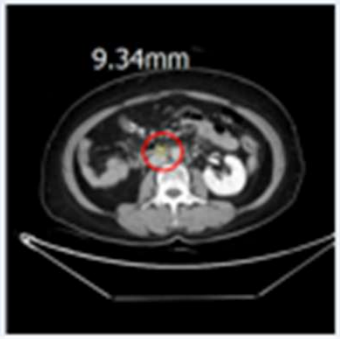
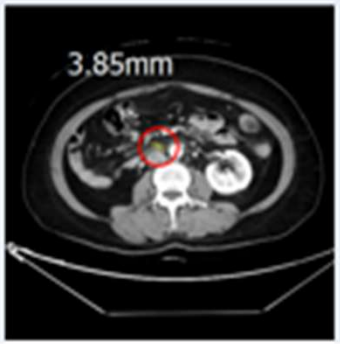
- 1st Dose: 09 Jan 2025 (低劑量)
- 2nd Dose: 16 Jan 2025 (低劑量)

Tumor Marker Response:

- CA199 dropped from 48.2 → 13.1 after 1st infusion



01-005-005 Cohort 2 (Low Dose x 2) CT Imaging (大腸直腸癌)

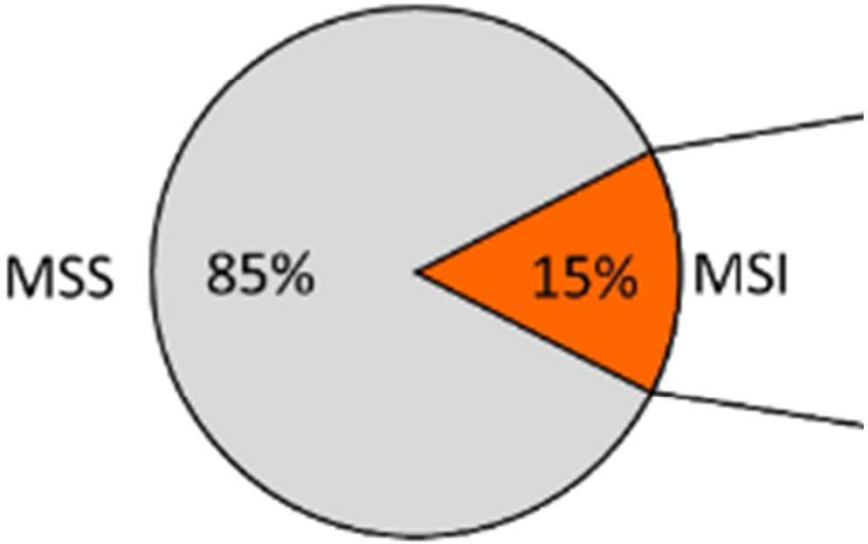
Lesion No.	(Baseline)	(Day 40)	(Day 96)
LN at paraaortic Space			
LN at antecaval space			
Total SUM	35mm	20mm	9mm

iRECIST Result：

Partial Response(PR)
Reduced 72.89% compared to Baseline

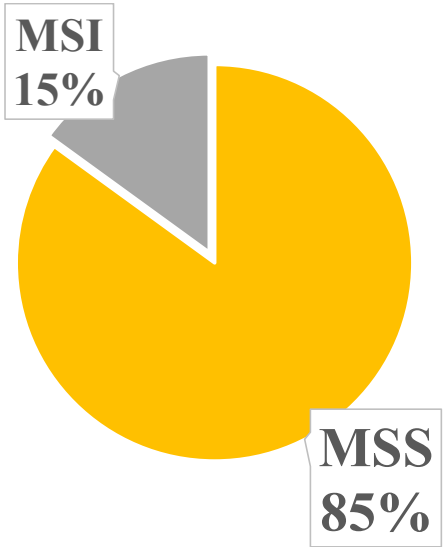
每年新增逾萬名患者 大腸癌免疫治療納入健保給付

2025-08-14 11:13:13 聯合報健康版 ／ 彰化秀傳紀念醫院大腸直腸外科醫師陳重均



根據國際研究，這些患者接受PD-1抑制劑（如pembrolizumab）治療後，常出現顯著腫瘤縮小，甚至長期穩定控制；相較傳統化療，免疫治療不僅療效持久，副作用也較低。以往礙於藥價高昂，許多病患需自費使用免疫藥物，自今年6月起，健保正式給付MSI-H/dMMR轉移性大腸癌病患使用免疫治療藥物做為第一線治療，讓更多患者能負擔得起，及早接受有效療法，這也是台灣精準醫療的新篇章。

CAR001對於85% 大腸直腸癌病患有潛在希望

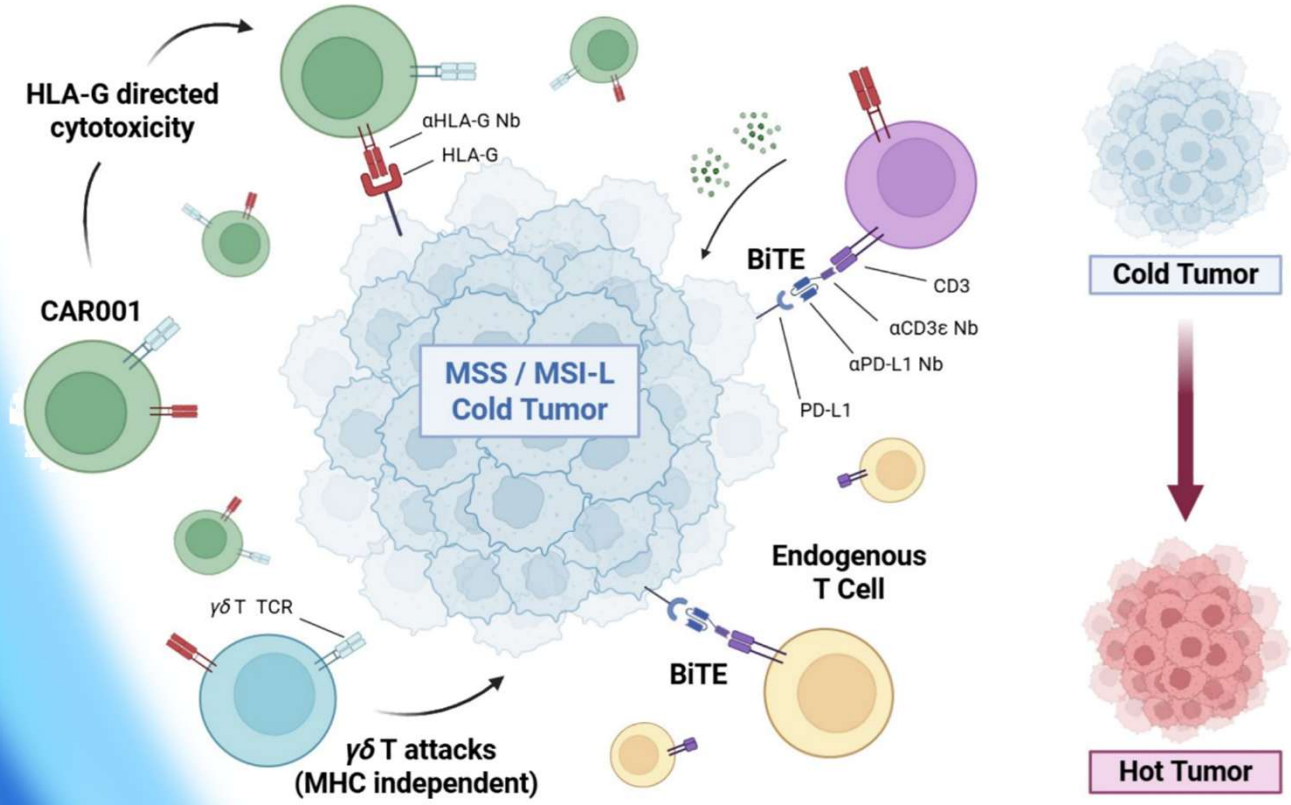


Type	% of CRC	免疫治療反應	健保給付
MSI-H	~15%	好 (免疫抑制劑)	有(台灣健保給付)
MSI-L/ MSS	**~85%**	**差 (Cold Tumor)**	無(這組群市場最多)

- MSS（微衛星穩定型）患者約佔所有大腸直腸癌（CRC）病例的 85%。
- 此族群對目前的 PD-1/PD-L1 免疫檢查點抑制劑反應極低或幾乎無效，因此被視為 免疫治療耐受族群，亦稱為「冷腫瘤」（cold tumors）。

Mechanism of action of Nb-CAR.BiTE γδT (CAR001)

Nb-CAR.BiTE-γδT (CAR001) Therapy



1. Nb-CAR- γδT induces antigen-specific cytotoxicity to HLA-G-positive tumor cells.
2. BiTE (CD3 x PD-L1) recruits and activates endogenous CD3+ effector cells against PD-L1-positive tumor cells.
3. γδT cell innate MHC-independent anti-tumor activities against HLA-G-negative/PD-L1-negative tumor cells

Cohort 4 (中劑量) – Subject #10: 惡性腦癌

Demographics:

- 39-year-old Asian female with GBM since June 2023
- Temozolomide (TMZ)：Jul, 2023 – Aug, 2023
- Avastin (Bevacizumab) ：Jan, 2024 – Mar, 2025
  - Last Dose：14 Jun, 2025 (Stable Disease)

CAR001 Dosing:

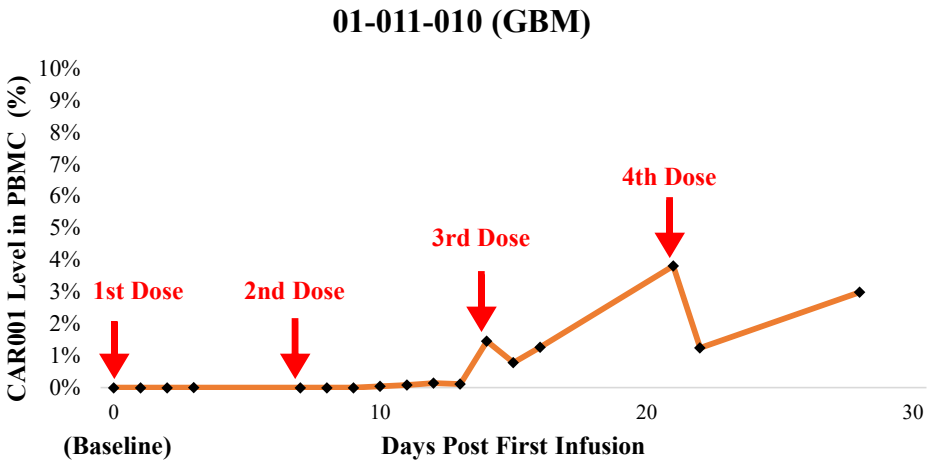
- 1st Dose: 15 Jul, 2025
- 2nd Dose: 22 Jul, 2025
- 3rd Dose: 29 Jul, 2025
- 4th Dose: 05 Aug, 2025

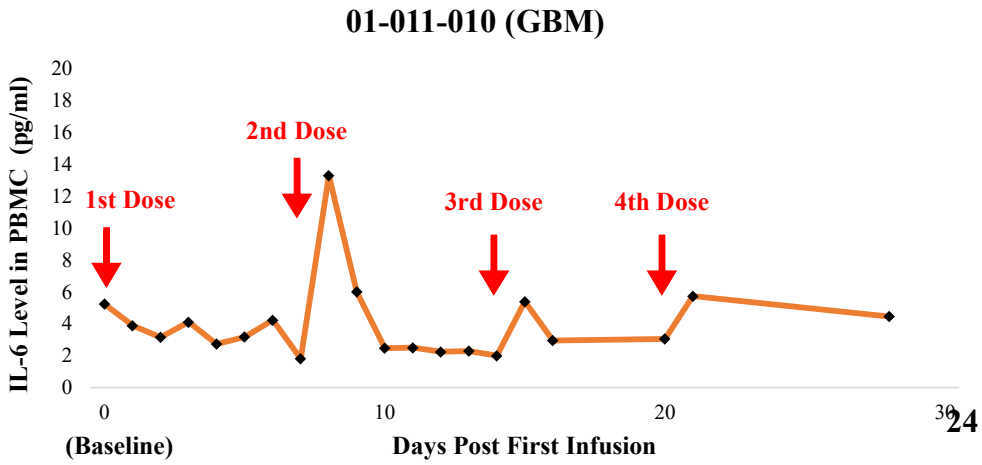
Biomarker Profile:

- PD-L1: CPS 20, TPS 10%
- HLA-G: H-score 70

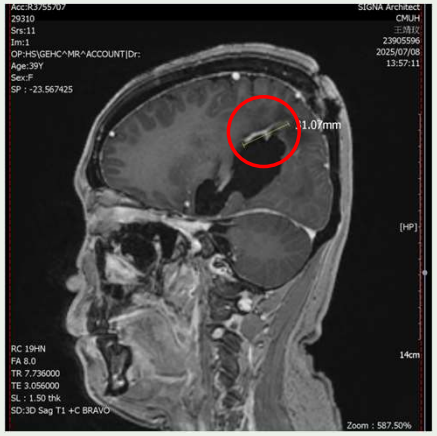
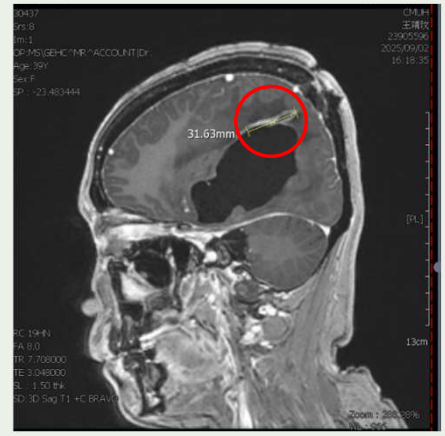
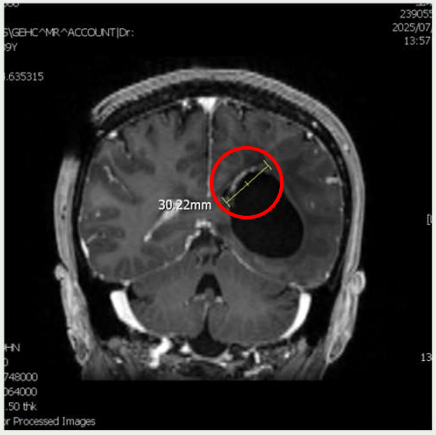
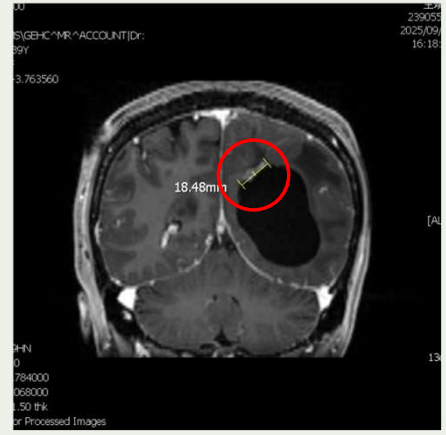
CAR001 Response:

- CAR001 expansion peaking post 4th dose.
- IL-6 level increases, most prominent after the 2nd infusion, then declined.





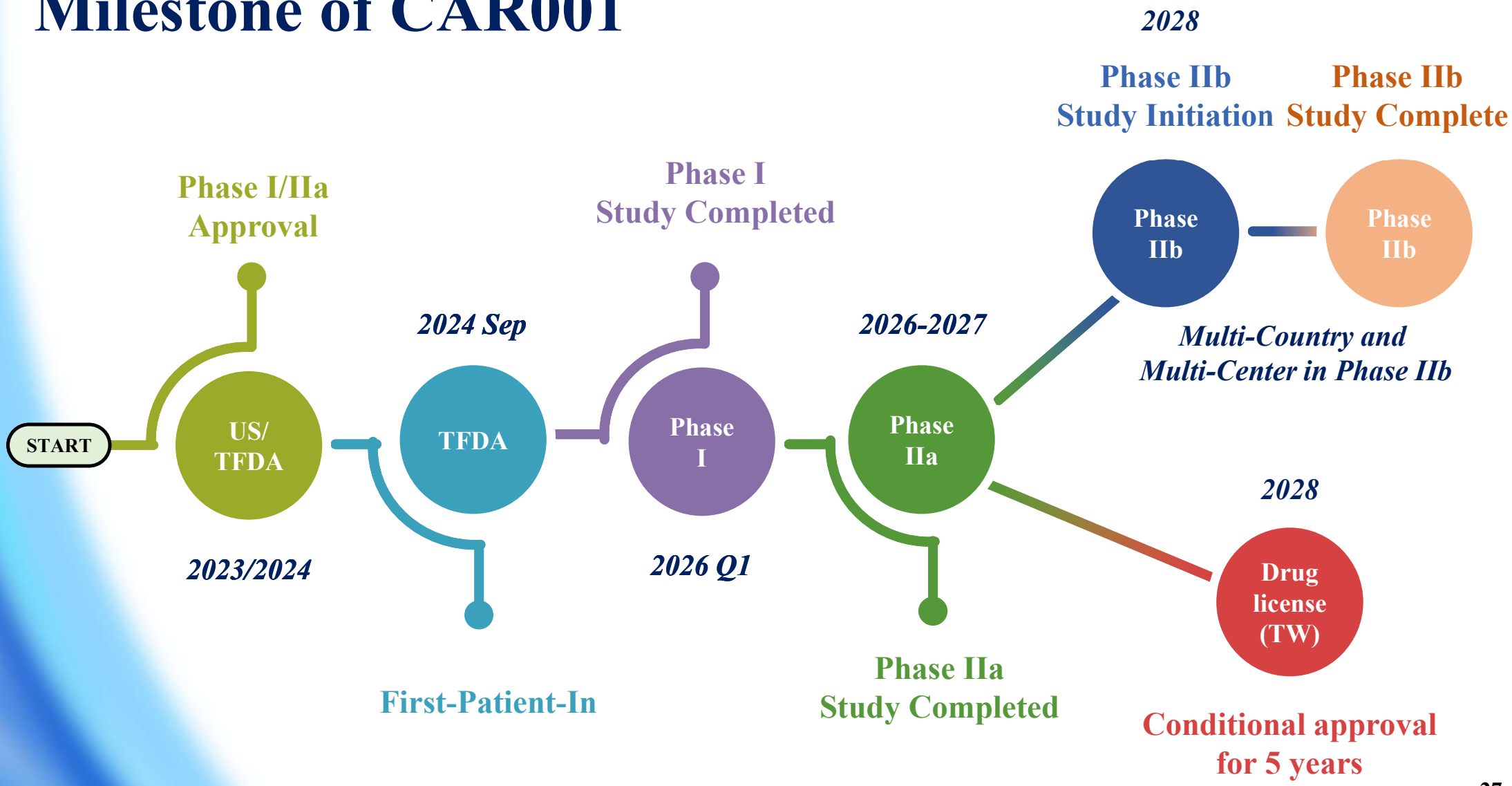
Subject #10: 01-011-010 - MRI Imaging (惡性腦癌)

Lesion No.	2025/07/08 (Baseline)	2025/09/02 (Day 49 – 1st Follow Up)
Left Parietal Lobe **RANO Result：** **Stable Disease (SD)** **Reduced 37.70%** **compared to Baseline**	31.07 mm 	31.63 mm 
	30.22 mm 	18.48 mm 
Product of Perpendicular Diameters	31.07mm x 30.22mm = **938.94 mm^2**	31.63mm x 18.48mm = **584.52 mm^2**

CAR001全球競爭者分析

Company	Ever Supreme	CytoMed Therapeutics	Adicet Bio	Astellas & Poseida (Xyphos)	Poseida (Roche collaboration)	Merck & Celyad Oncology
Product Name	**CAR001 (Nb-CAR-BiTE γδ T cell therapy)**	CTM-N2D (CAR γδ T cell therapy)	ADI-270	P-MUC1C-ALLO1	P-BCMA-ALLO1 and P-CD19 CD20-ALLO1	CYAD-101 (NKG2D CAR T)
Cell type	**γδ T cells**	γδ T cells	γδ1 T cells	TSCM-enriched αβ T cells	Allogeneic T cells	Allogeneic αβ T cells with TCR inhibitor molecule
Allogeneic	**Yes**	Yes	Yes	Yes	Yes	Yes
Target Antigen	**HLA-G, PD-L1**	NKG2DL	CD70	MUC1-C	BCMA / CD19 & CD20	NKG2D
Gene Transfer Type	**mRNA electroporation**	mRNA electroporation	mRNA transfer system	piggyBac DNA + Cas-CLOVER gene edit	piggyBac with Cas-CLOVER editing	Non-gene edited shRNA-based CAR (no viral edit)
Indications	**Relapsed or refractory CRC, TNBC, NSCLC,GBM**	Advanced solid and hematologic tumors	Relapsed or refractory ccRCC	Epithelial-derived solid tumors	Multiple myeloma; B-cell lymphoma	mCRC in combination with pembrolizumab
IND Status / Phase	**Phase I/IIa – Ongoing**	Phase I (ANGELICA trial ongoing, dose level 2 Q3 2025)	Phase 1 (ongoing metastatic / advanced ccRCC)	Phase I dose escalation expansion (ongoing since Feb-2022)	Phase I (ongoing dual antigen and BCMA programs)	Phase 1b was on clinical hold in March, 2022; resumed trials on August, 2022

Milestone of CAR001



New CAR-T(CAR001)

- Allogeneic Cell Origin (來自健康人細胞來源)
- For Solid Tumor (可用於實體癌佔90%)
- Reasonable Prices (未來價格更親民)

國際CAR-T療法授權狀況

單位: 百萬美元

產品	標靶抗原	細胞來源	適應症	授權方	被授權方	簽約金	總授權金額	日期
UCART19	CD19	異體	慢性淋巴性白血病(CLL)、急性淋巴性白血病(ALL)	Cellectis	Servier	38.2	338.2	2015/11/19
異體 CAR-T	-	異體	癌症	Precision BioSciences	Baxalta	105	1,705	2016/2/25
LCAR-B38M	BCMA	自體	多發性骨髓瘤(MM)	Legend Biotech	Janssen	350	-	2017/12/21
異體 CAR-T	-	異體	癌症	Cellectis	Allogene Therapeutics	-	2,800	2018/4/3
ALLO-501A	CD19	異體	B 淋巴癌	Cellectis	Servier	27.6	437.6	2020/2/18
Azer-cel	CD19	異體	瀰漫性大 B 細胞淋巴瘤	Precision BioSciences	Imugene	21	372	2023/8/16
LB2102	DLL-3	自體	小細胞肺癌(SCLC)	Legend Biotech	Novartis	100	1,110	2023/11/13

資料來源：公司資料、元大投顧整理

- **CAR001** 於異體 CAR-T 治療實體腫瘤領先且具競爭優勢，國際授權金額多落在 **3–11 億美元**簽約金與里程碑金。
- 目前全球已有多家藥廠正與長聖洽談 CAR001 授權，預期 2027 年在臨床概念驗證（Proof-of-Concept）後授權金可達 10 億美元。

外泌體平臺

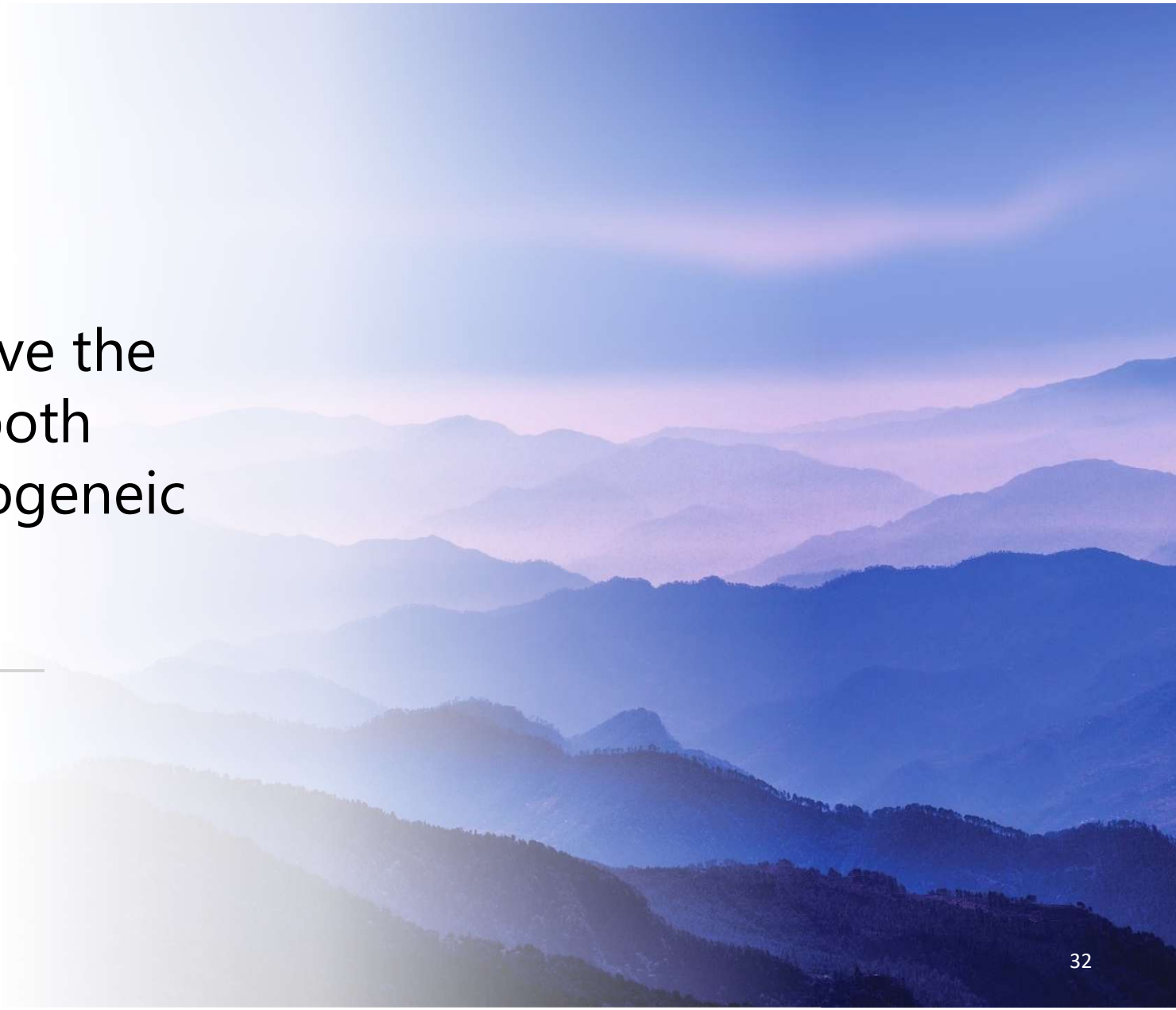
02

長聖國際生技股份有限公司
Ever Supreme Bio Technology Co.,Ltd

What is the next generation of allogeneic CAR-T therapy?

長聖國際生技股份有限公司
Ever Supreme Bio Technology Co.,Ltd

Is it possible to have the advantages of both autologous and allogeneic CAR-T??



長聖國際生技股份有限公司
Ever Supreme Bio Technology Co.,Ltd

外泌體體內 **CAR-T** → 體內免疫工廠、
對多種實體腫瘤均具潛力!

EXO001

in vivo, exosome-based, CAR-T Therapy

A more biocompatible CAR transgene delivery platform!

In Vivo CAR-T: Next tide of CAR-T therapy?

abbvie

Umoja BIOPHARMA

capstan therapeutics

AbbVie buys $2.1bn Capstan, adding new in vivo CAR-T to pipeline

AbbVie and Umoja announce CAR-T cell therapy agreements worth over $1.4bn

One of the deals gives AbbVie licensing rights to Umoja's CD19-directed therapy for blood cancers

Capstan Therapeutics Announces Initiation of Phase 1 Trial of Lead *In Vivo* CAR-T Therapy, CPTX2309, for Treating Autoimmune Disease

CD19 CAR (**liquid tumor** or **lupus**)
Single target
Lentiviral particles or **LNPs**

AstraZeneca EsoBiotec

Acquisition of EsoBiotec completed

BCMA CAR (**liquid tumor**)
Single target
Lentiviral particles

Financial considerations

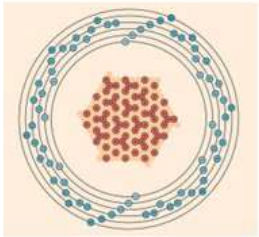
AstraZeneca has acquired all outstanding equity of EsoBiotec for a total consideration of up to $1bn, on a cash and debt free basis. This includes an initial payment of $425m, and up to $575m in contingent consideration based on development and regulatory milestones.

長聖生技
Ever Supreme Bio Technology

In Vivo CAR-T: potential marketing size

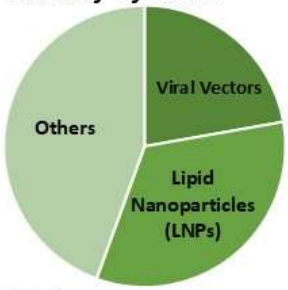
Global In vivo CAR T-cell Market Research Report

Largest Region:
North America

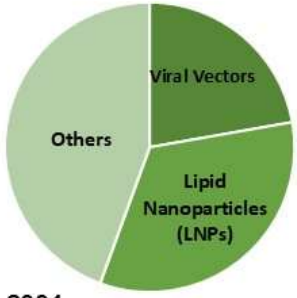


CAGR
(2025-2034)
32.9%

By Delivery Systems:

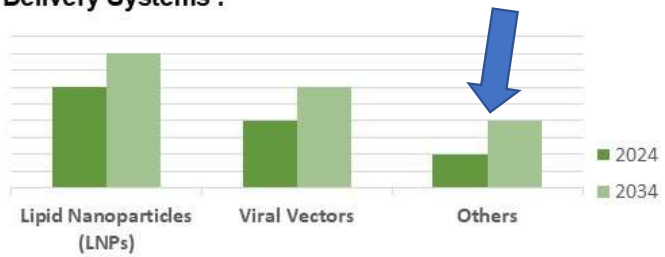


2024

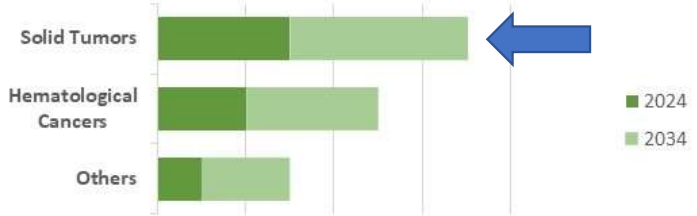


2034

By Delivery Systems :



By Targets :



Pie Charts and Bar Graphs are for illustration only and do not represent actual data.

Key Players: interius capstan therapeutics EsoBiotec POSEIDA THERAPEUTICS Umoja BIOPHARMA

US: +1 551 226 6109

Email: info@insightaceanalytic.com

INSIGHT ACE ANALYTIC

In vivo CAR-T cell therapy

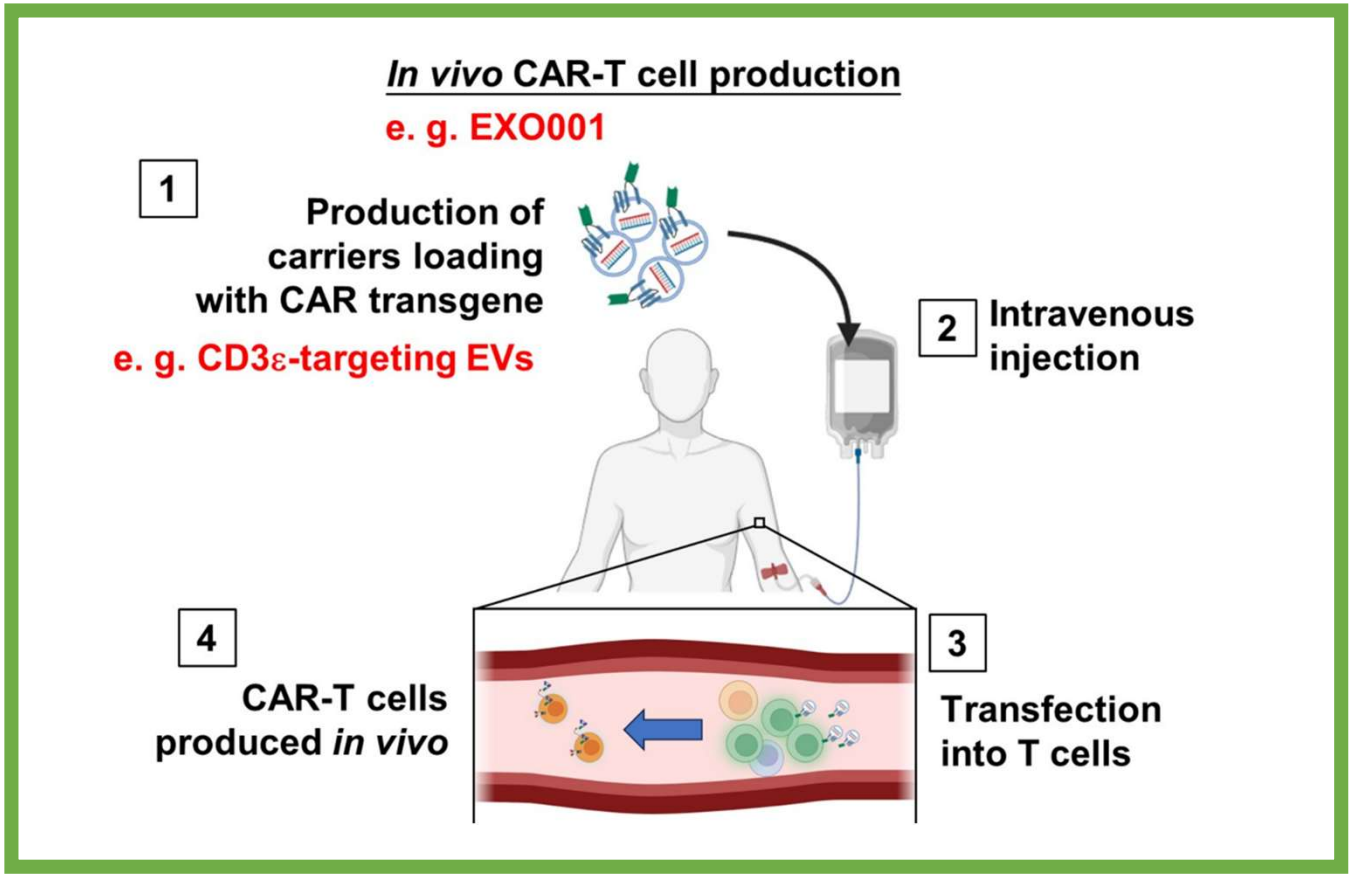
長聖生技
Ever Supreme Bio Technology

***In vivo* CAR-T**
Directly generate CAR-T cells within the patient's body

In vivo CAR-T features

1. Off-the-shelf drug product
2. Transgene delivery into T cells in patient's body
3. *in vivo* CAR-T generation

*Extracellular Vesicles = EVs



EXO001_ Nb-CAR.BiTE@CD3ε-Nb EVs

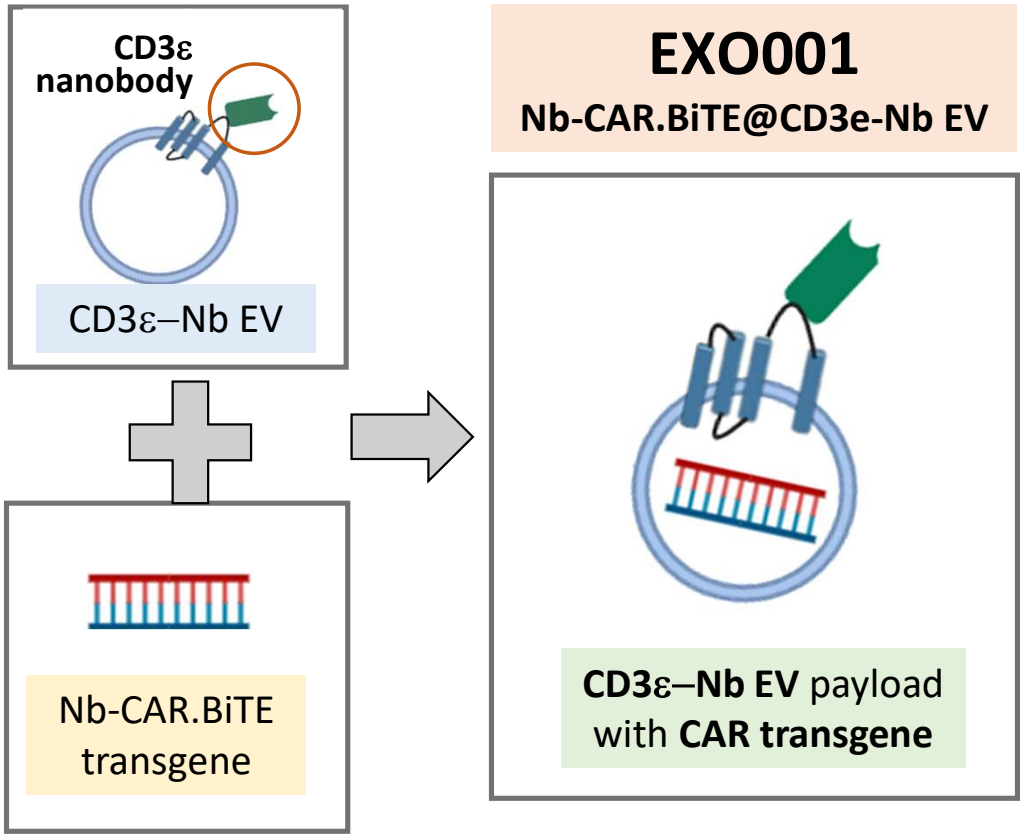
1. An EV-based **CAR-transgene** delivery system
2. **Directly generate CAR-T cells within the patient's body**

CD3ε-Nb EV

- **CD3ε Nb-expressing extracellular vesicles**
- Generated from engineered HEK-293T cells
- Served as **a carrier** to deliver the **CAR-transgene**

Nb-CAR.BiTE transgene

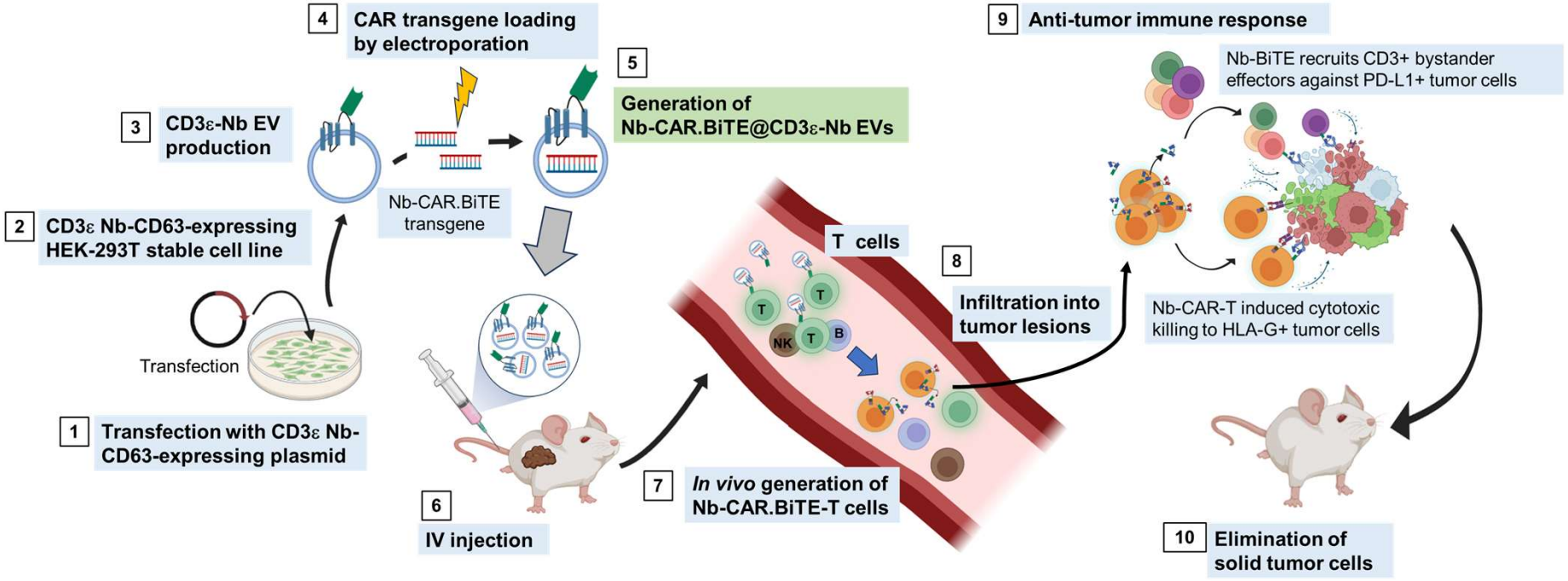
- Bicistronic construct of Nb-based chimeric antigen receptor with a secretable bispecific T-cell engager



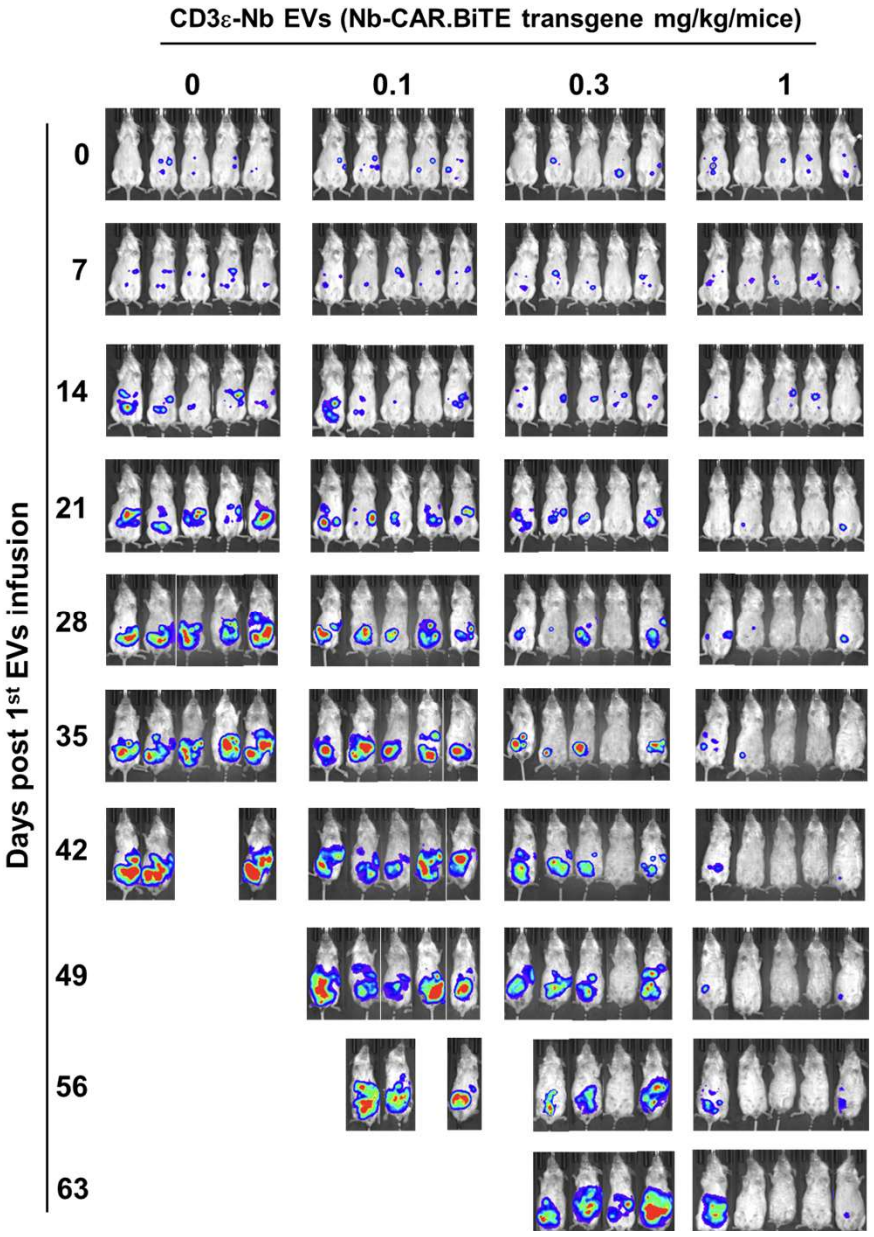
Summary

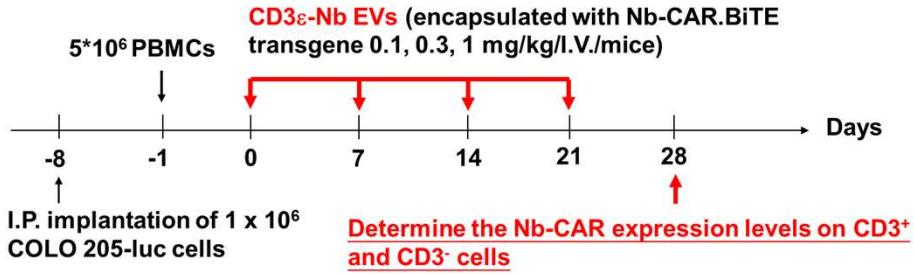
EXO001-mediated *in vivo* CAR-T therapy

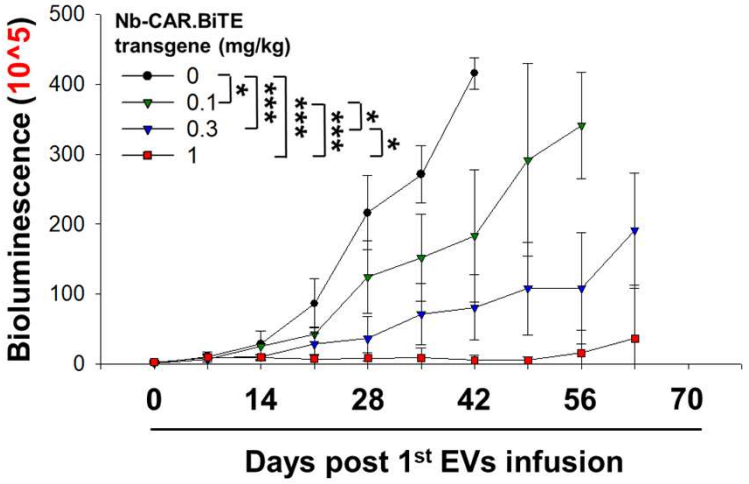
- CD3ε Nb-EVs produced from genetic engineered-HEK 293T stable cells
- Payload with the Nb-CAR.BiTE transgene for the treatment of solid tumors with HLA-G and/or PD-L1 ICP dilemma
- Effectively fight against various solid tumors *in vivo*
- Lower immunogenicity compared to current lipid- and viral-based *in vivo* CAR-T platforms

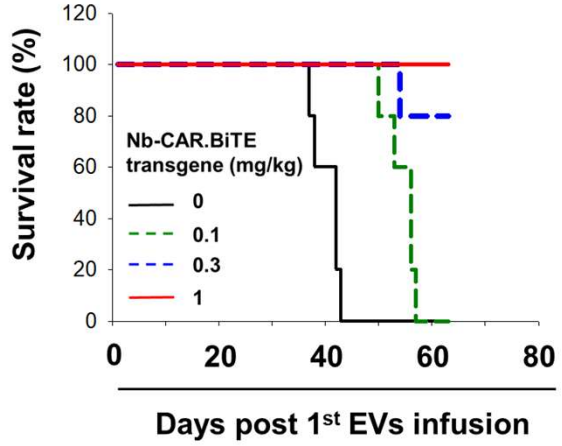


In vivo CAR (EXO001)









The achievement of **Nb-CAR.BiTE@CD3ε-Nb EVs**

長聖生技
Ever Supreme Bio Technology

Patent

The current status is as follows:

- ✅ **Granted in the United States** (filed in January 2024)
- ✅ **Granted in Japan** (filed in April 2024)
- ⏳ **Pending in Taiwan** (filed in March 2024)
- 🔍 **Under examination in China** (filed in May 2024)
- ⏳ **Pending in the European Union** (filed in March 2024)

As the data has not yet been released, only limited information can be disclosed at this stage. Subsequent updates will be provided after the data is released.

Competitions and our advantages

Types of cell therapy	EXO001 (Ever Supreme)	VivoVec (Umoja Biopharma)	CPTX2309 (Capstan Therapeutics)	ESO-T01 (Interius BioTherapeutics)
Platform	EVs	Lentivirus	LNPs	Lentivirus
Target	HLA-G & PD-L1	CD19	CD19	BCMA
Indications	Solid tumors	Hematopoietic cancers	Autoimmune disease	Hematopoietic cancers
Effector cells	CD3+	CD3+	CD3+	CD3+
Safety	Low immunogenicity, minimal toxicity	Higher immunogenicity, B-cell dysplasia	May be immunogenic, B-cell dysplasia	Higher immunogenicity, B-cell dysplasia
Status	Preclinical	Phase I	Phase I	Phase I

幹細胞技術平臺

03

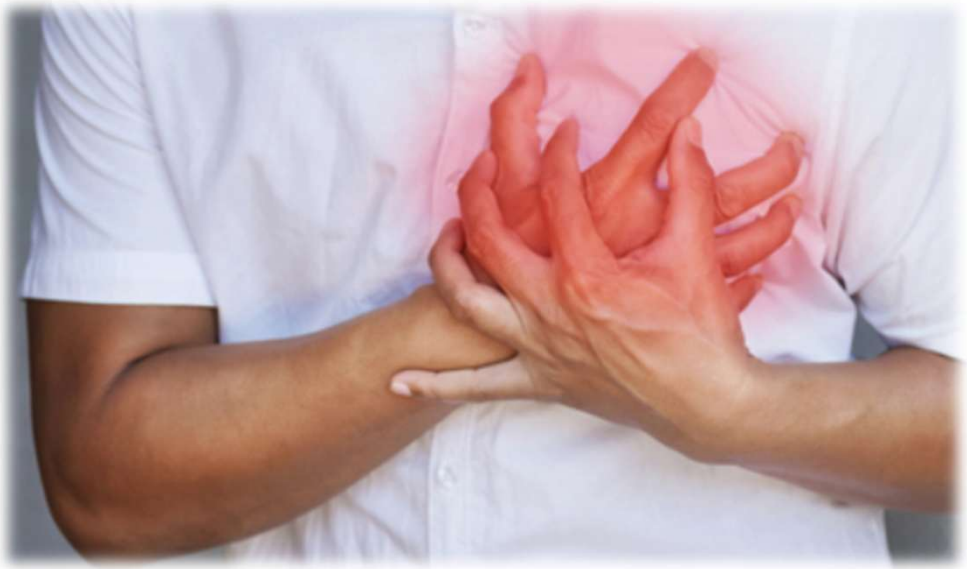
臍帶間質幹細胞(UMSC01)之多項臨床試驗

臍帶間質幹細胞
(Umbilical Cord MSC)

- ✓ **AMI** FDA、TFDA approved
  - Phase I completed
  - Phase IIa ongoing
- ✓ **Acute ischemic stroke**
  - FDA、TFDA approved
  - Phase I completed
- ✓ **Multiple sclerosis**
  - FDA、TFDA approved
  - Phase I/IIa ongoing

開發「未被滿足的醫療需求」
Unmet Medical Need

UMSC01 treats Acute Myocardial Infarction(AMI)



UMSC01幹細胞一期臨床長期追蹤五年成效

異體幹細胞雙徑注射急性心梗病人　心衰竭風險下修幾乎全消！

亞太新聞網 ATA News
2022年08月26日 22:27

▲73歲的急性心肌梗塞患者吳德麟在中國附醫細胞治療醫護團隊採用全球首創的心臟治療臨床試驗法，成功輔助心臟恢復效能，術後11天出院，重啟健康人生。（圖／中國附醫提供）

長聖3月營收年增20% 今年營運展望樂觀

2025/04/01 17:44

長聖3月營收創同期新高，長聖研發的異體臍帶間質幹細胞（UMSC01）療法，進入臨床2a期試驗，參加臨床一期試驗的75歲吳姓患者（右），近期分享接受UMSC01幹細胞施打以來已近五年，至今回診追蹤心臟超音波功能維持正常。圖左為長聖資深經理許錦婷。（長聖提供）

吳先生2020年7月加入一期臨床試驗至今近五年，至今回診追蹤心臟超音波功能維持正常，甚至仍可進行如溪頭爬山等

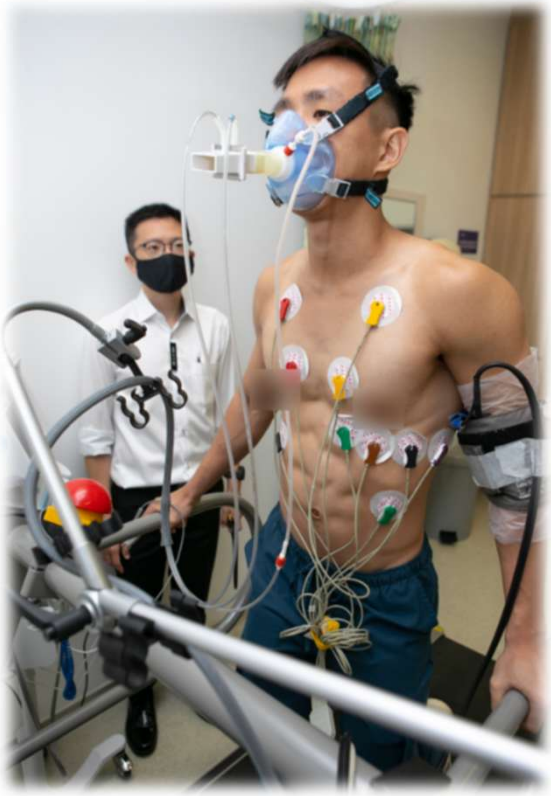
UMSC01 for AMI (Phase IIa is recruiting)

Protocol Title:

A Phase IIa, Dose-Escalation Followed by Randomized, Open-Label, Parallel-Group Study to Evaluate the Efficacy and Safety of Allogeneic Umbilical Cord Mesenchymal Stem Cells as an Add-On Treatment for Acute ST-elevation Myocardial Infarction (STEMI) Patients.

Primary Endpoint

Change in peak oxygen consumption (VO2) at the end of maximal exercise from Visit 2 (Day 6) to Visit 5(Day 169)

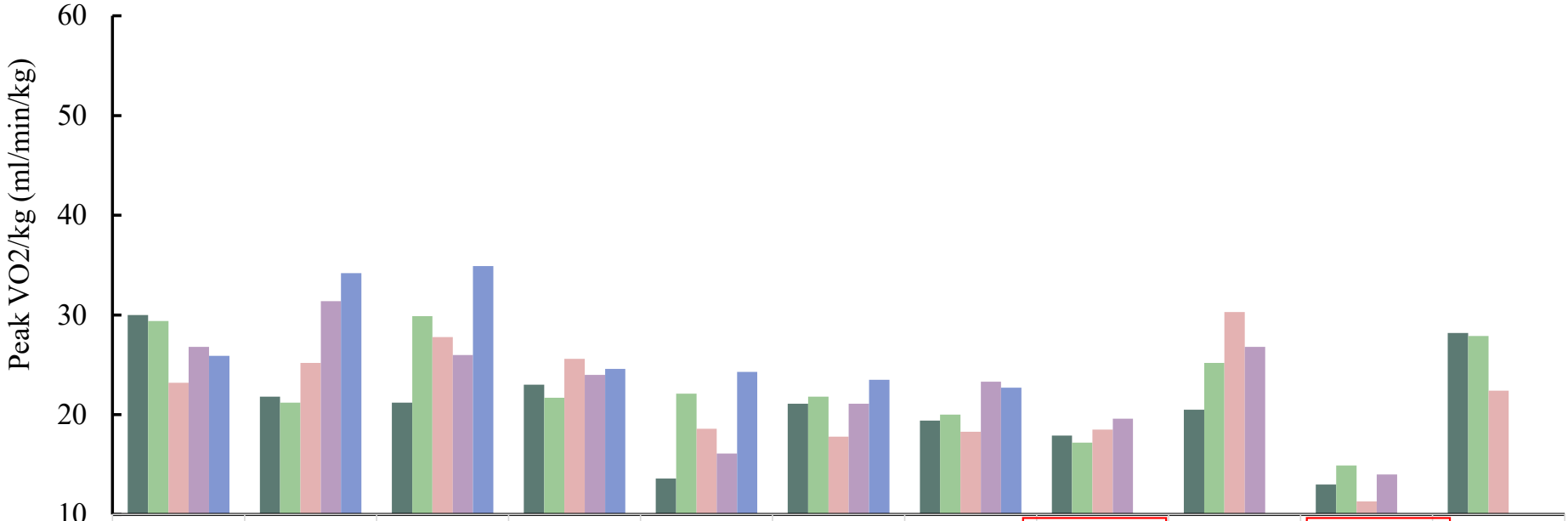


運動心肺測試 (Cardiopulmonary Exercise Test, CPET)

Cardiopulmonary exercise testing(CPET)-Max Watts

Peak VO2 is the maximum amount of oxygen that an individual can utilize during intense or maximal exercise.

Higher is better



	A01001	A01002	A01003	A01004	A01005	A01006	B01001	B01002©	B01003	B01004©	B01006
V2D6	30	21.8	21.2	23	13.6	21.1	19.4	17.9	20.5	13	28.2
V3D29	29.4	21.2	29.9	21.7	22.1	21.8	20	17.2	25.2	14.9	27.9
V4D85	23.2	25.2	27.8	25.6	18.6	17.8	18.3	18.5	30.3	11.3	22.4
V5D169	26.8	31.4	26	24	16.1	21.1	23.3	19.6	26.8	14	
V6D356	25.9	34.2	34.9	24.6	24.3	23.5	22.7				

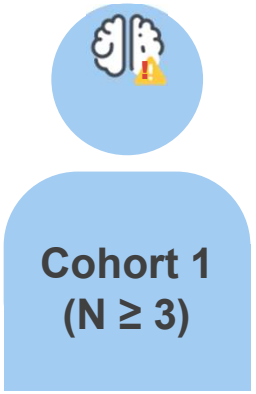
Stage 1_Cohort 1 (3位)
IC $3x10^7$ cells ；IV $1x10^8$ cells

Stage 1_Cohort 2 (3位)
IC $5x10^7$ cells ；IV $1x10^8$ cells

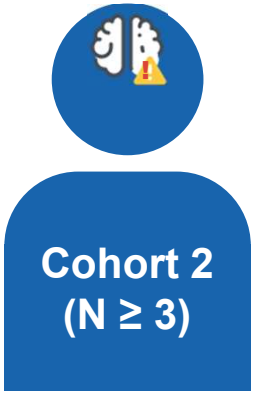
Stage 2：IC $5x10^7$ cells ；IV $1x10^8$ cells

UMSC01 treats Stroke

新藥研發:UMSC01治療急性腦中風一期臨床試驗進度



(已收案完成)



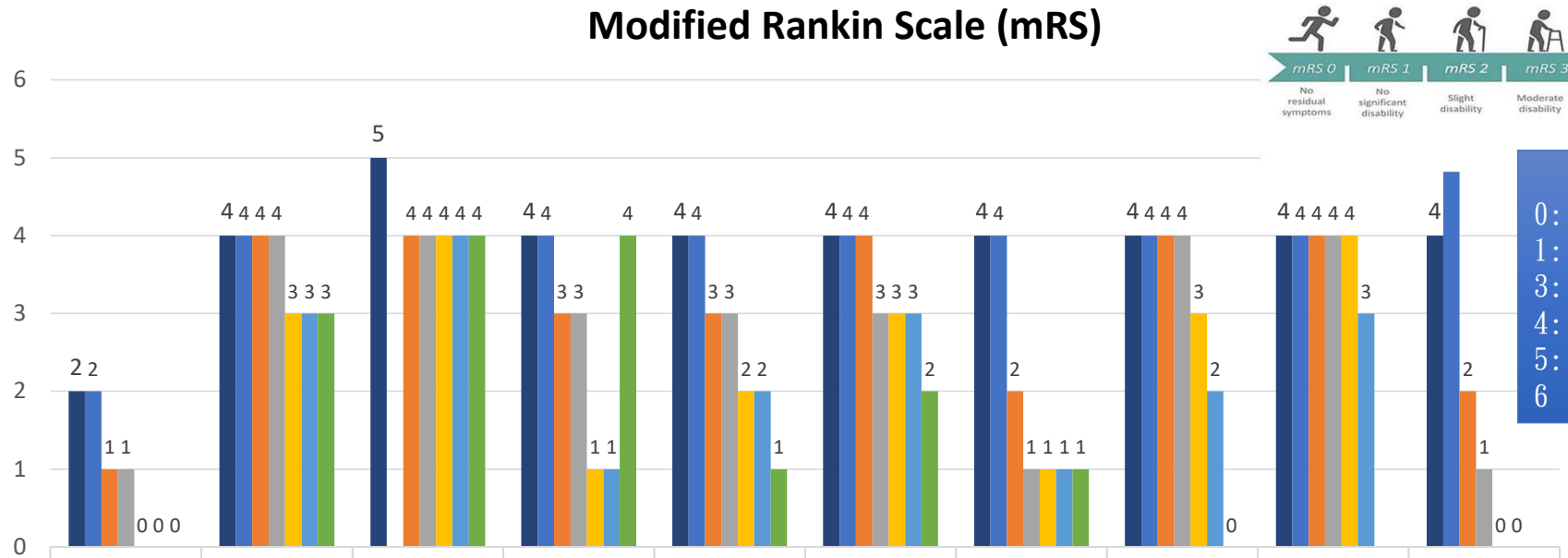
(已收案完成)

(已收案完成)

USMC01 administration	**IV infusion** (within 24 - 36 hrs after stroke onset)	低劑量	中劑量	高劑量
	IA infusion (7^{th} ± 3 day after IV infusion)	無	中劑量	高劑量

Modified Rankin Scale (mRS)

Lower is better



中風失能患者評估
0: 無任何症狀
1: 有症狀但無明顯殘障
3: 中度殘障
4: 中重度殘障
5: 重度殘障
6 : 死亡

	01-002-001	01-003-002	01-004-003	01-006-004	01-007-005	01-008-006	01-009-007	01-010-008	01-011-009	01-012-010
V1 day0	2	4	5	4	4	4	4	4	4	4
V2 day1	2	4		4	4	4	4	4	4	5
V3 day7	1	4	4	3	3	4	2	4	4	2
V4 day28	1	4	4	3	3	3	1	4	4	1
V5 day84	0	3	4	1	2	3	1	3	4	0
V6 day168	0	3	4	1	2	3	1	2	3	0
V7 day364	0	3	4	4	1	2	1	0		

V1 day0
V2 day1
V3 day7
V4 day28
V5 day84
V6 day168
V7 day364

Cohort 1
IV(1x10^8 cells)

Cohort 2
IV(8x10^7 cells)/IA(1x10^7 cells)

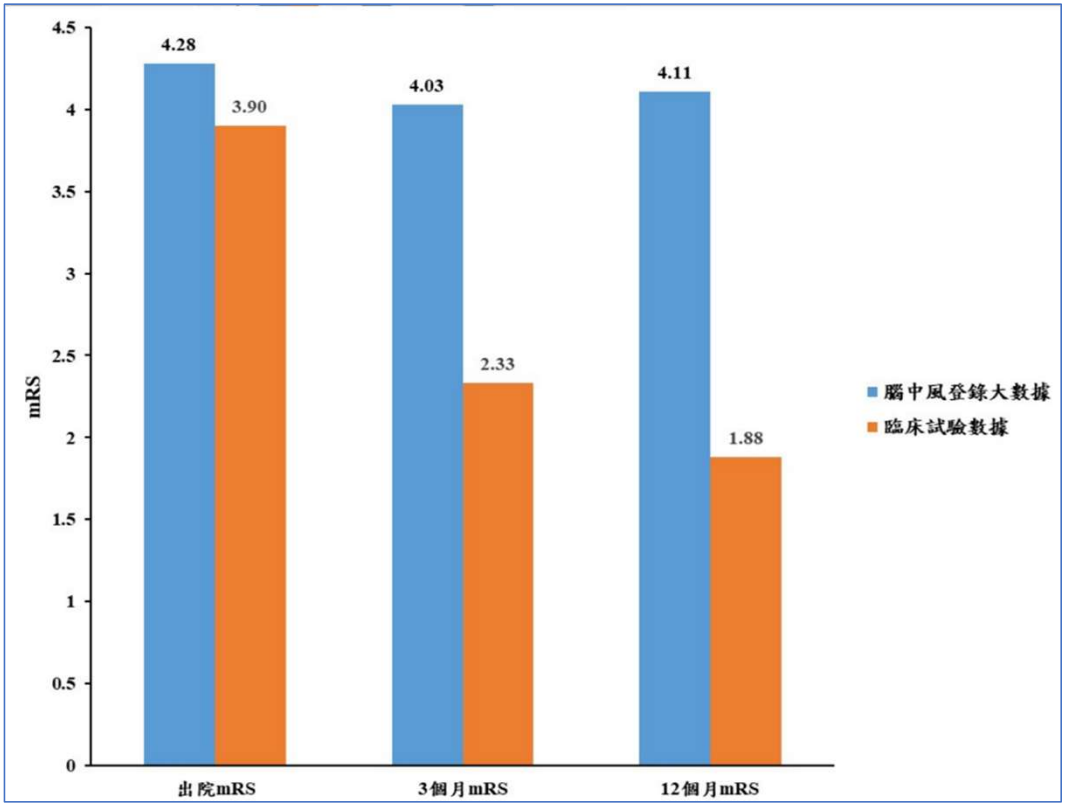
Cohort3
IV(8x10^7 cells)/IA(2x10^7 cells)

Modified Rankin Scale (mRS)

Lower is better

雷氏修正量表 (0~6分)：評估中風後失能程度，患者在日常生活活動中的依賴程度來量化失能程度。

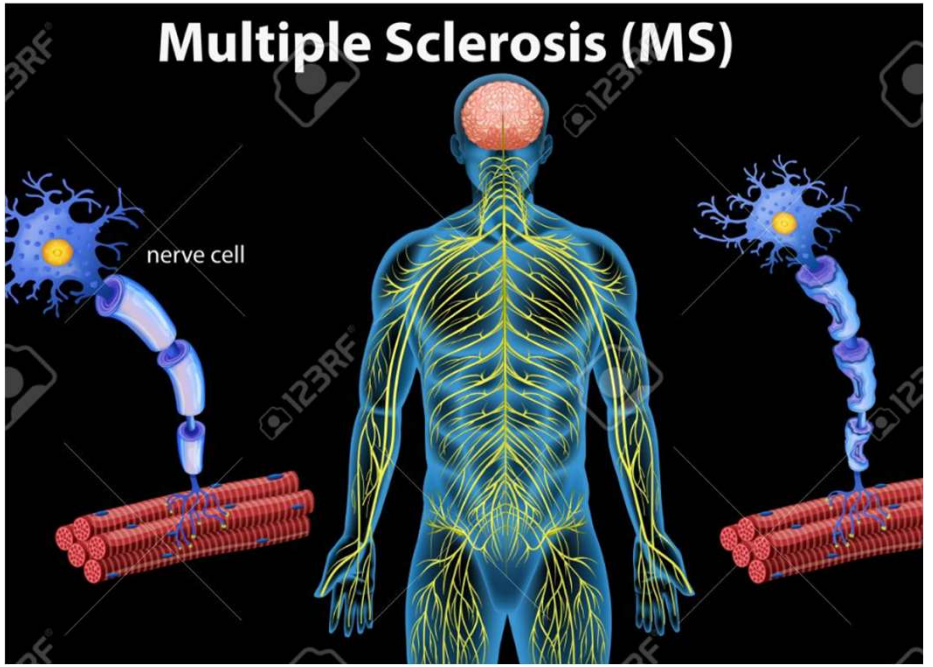
變項	腦中風登錄大數據		臨床試驗數據	
N	39		10	
	Mean	±SD	Mean	±SD
出院mRS	4.28	0.92	3.90	0.74
3個月MRS	4.03	1.22	2.33	1.41
12個月MRS	4.11	1.60	1.88	1.64



根據大數據平台資料庫分析，UMSC01治療組在第3個月及第12個月的mRS評分均較常規治療組顯著改善，顯示其具明顯治療成效。

The MRS (Modified Rankin Scale) between the in-hospital data and clinical trial groups for repeated measurements at baseline, 3 months, and 12 months among acute ischemic stroke patients shows significant results (<0.001) using a mixed linear model based on these data.

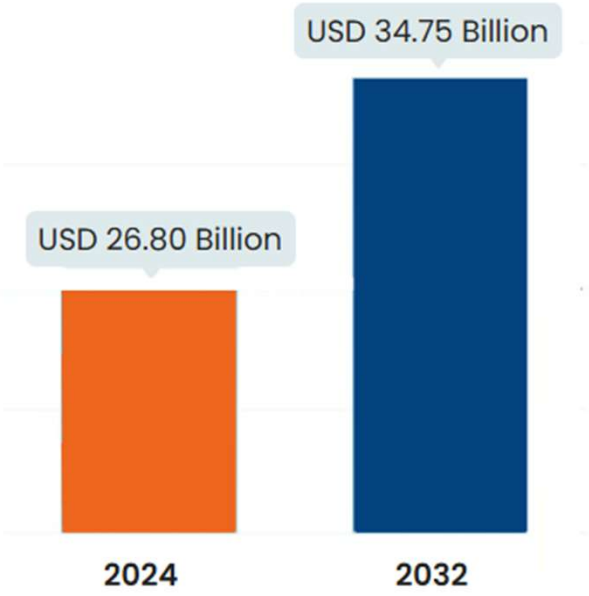
UMSC01 treats Multiple Sclerosis



Global Multiple Sclerosis Treatment Market

市场规模（十亿美元）

CAGR : 3.30%



Forecast Period	2025 –2032
Market Size (Base Year)	USD 26.80 Billion
Market Size (Forecast Year)	USD 34.75 Billion
CAGR	3.30 %
Major Markets Players	• F. Hoffmann-La Roche Ltd • Abbott • Siemens • Danaher • bioM&eacute

2024 年全球多發性硬化症治療市場規模為268 億美元 ，預計 到 2032 年將達到 347.5 億美元，預測期複合年增長率為 3.30%。

UMSC01 MS (完成一期臨床試驗)

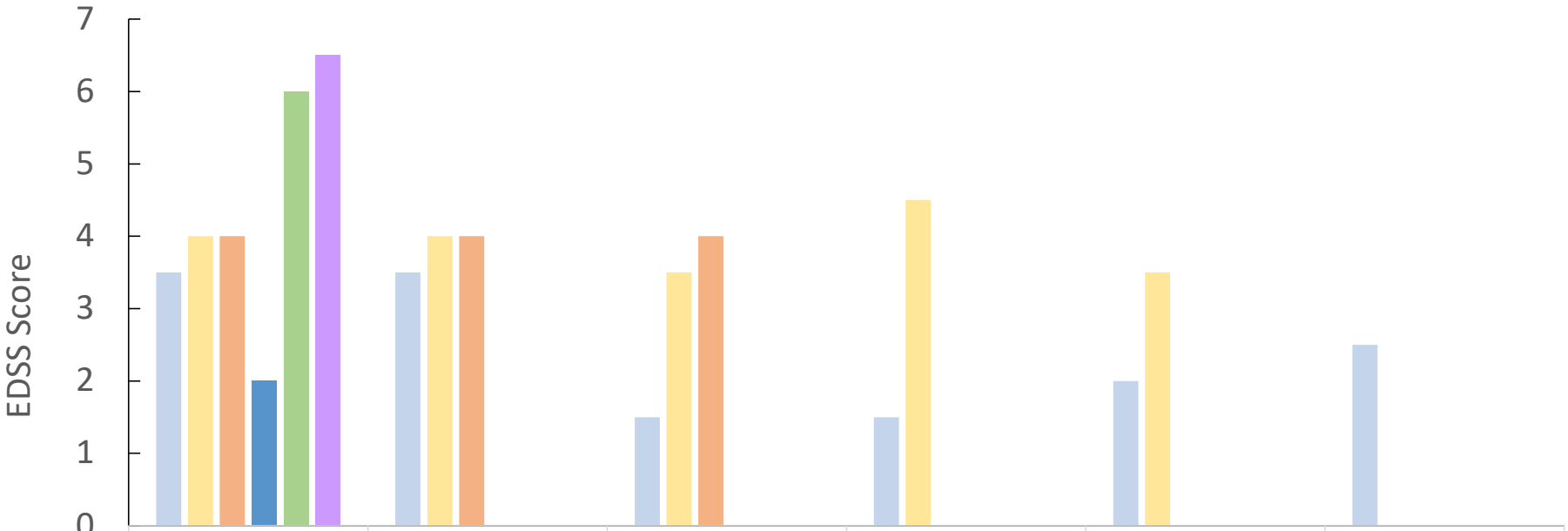
Protocol Title	• **A seamless phase I/IIa clinical study to evaluate the safety and efficacy of allogeneic umbilical cord mesenchymal stem cells in patients with multiple sclerosis**
Study phase	• **Phase I: One arm, Single center study in Taiwan.** • **Phase IIa: Two arms, Multi-center study in Taiwan.**
Sample Size	• **Phase I: Approximately 6 subjects will be enrolled to the study to receive UMSC01 treatment.** • **Phase IIa: Approximately 28 subjects will be enrolled to the study and subjects will be randomized to receive placebo or UMSC01 in a 1: 1 ratio.**

預計今年執行二期A臨床試驗!

Expanded Disability Status Scale (EDSS)

0 到 10 分的量表，評估 MS 患者的神經功能障礙與日常活動能力。
(visual, brainstem, pyramidal, cerebellar, sensory, cerebral and bowel/bladder)

Lower is better

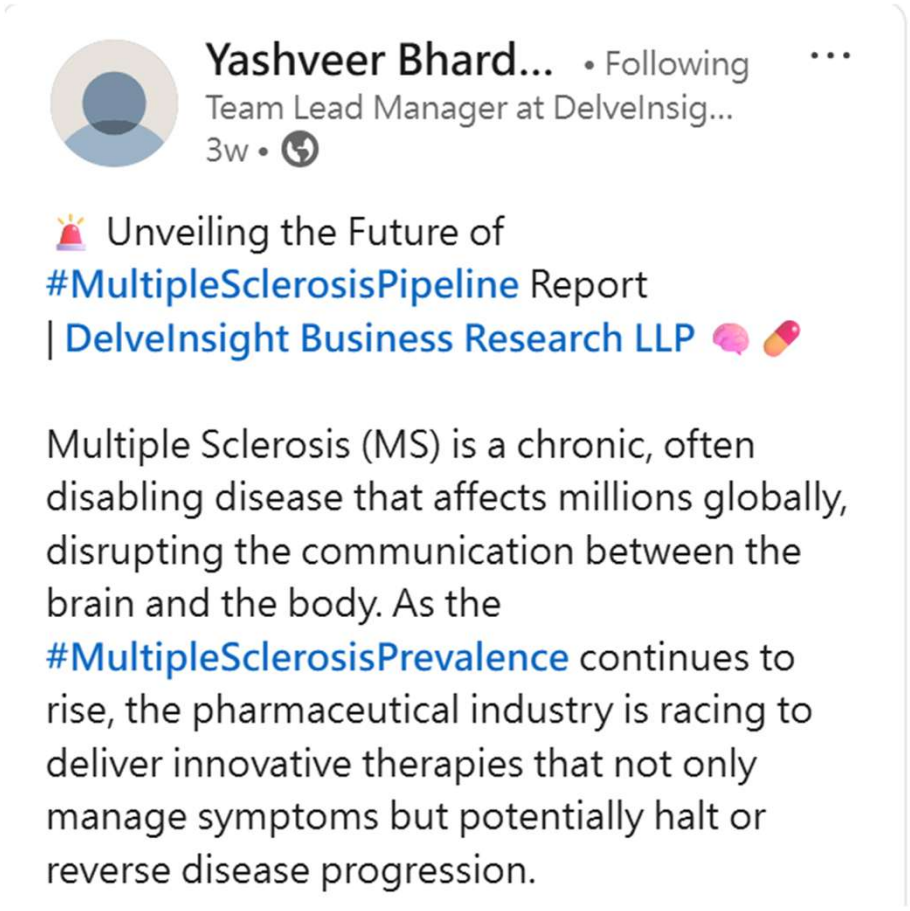


	V2 (Day 0)	V6(Day 63)	V7 (Day 147)	V8(Day 231)	V9(Day 315)	V10(Day 399)
E01001	3.5	3.5	1.5	1.5	2	2.5
E01002	4	4	3.5	4.5	3.5	
E01003	4	4	4			
E01004	2					
E01005	6					
E01006	6.5					

來自英國的受試者

已有5位來自國外（法國、英國、香港、澳門）的受試者來信詢問臨床試驗

Ever Supreme 名列全球 MS 創新療法研發公司之一



Yashveer Bhard... • Following
Team Lead Manager at DelveInsig...
3w •

🚨 Unveiling the Future of #MultipleSclerosisPipeline Report | DelveInsight Business Research LLP 🧠💊

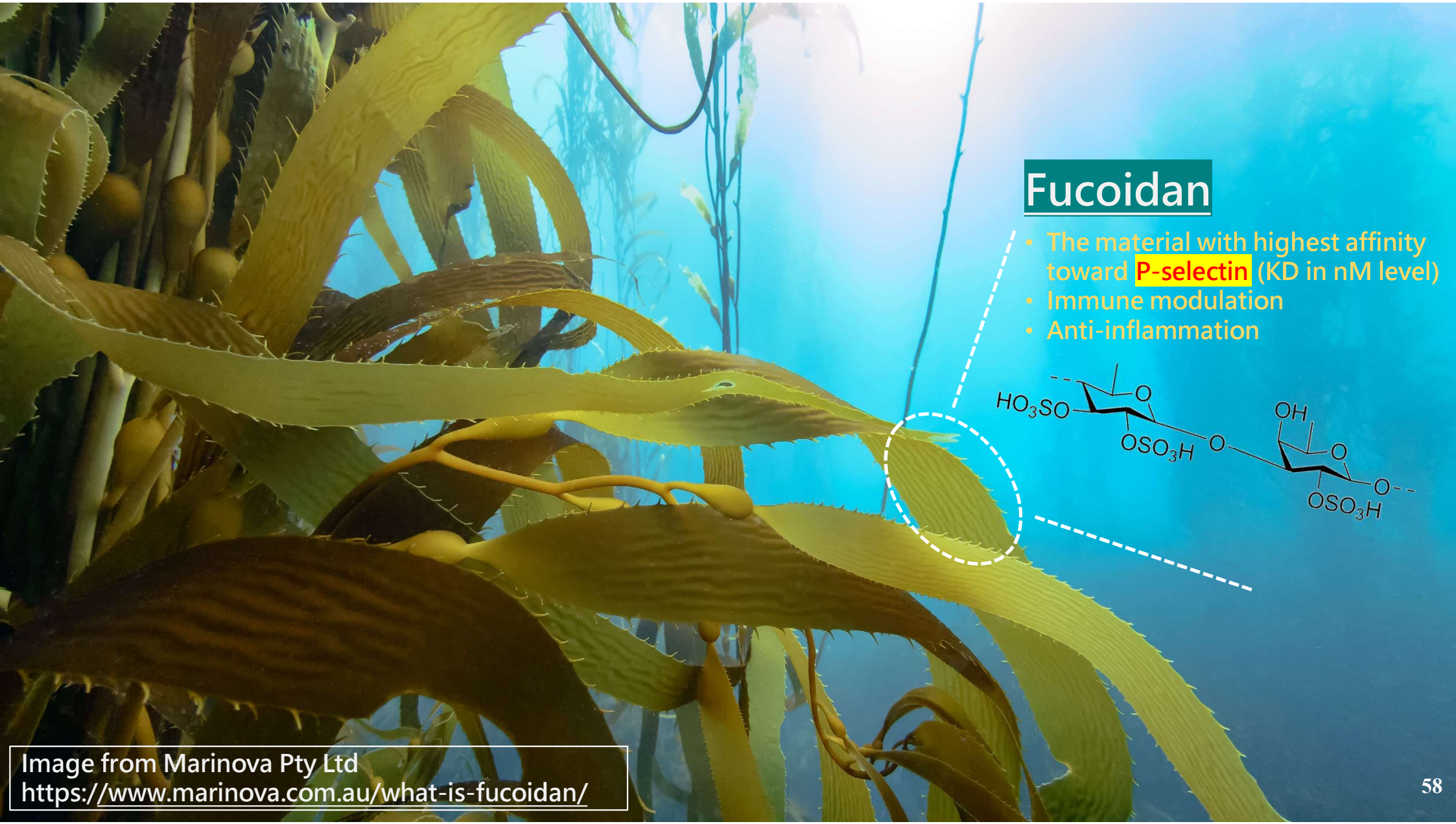
Multiple Sclerosis (MS) is a chronic, often disabling disease that affects millions globally, disrupting the communication between the brain and the body. As the #MultipleSclerosisPrevalence continues to rise, the pharmaceutical industry is racing to deliver innovative therapies that not only manage symptoms but potentially halt or reverse disease progression.

The leading #MultipleSclerosisCompanies such as Novartis, Sanofi, Immunic Therapeutics, BIOCAD, Apimeds Pharmaceuticals US (NYSE:APUS), Genentech (Roche), Merck, AB Science, Apurano Pharmaceuticals GmbH, Biogen, Tiziana Life Sciences, Worg Pharmaceuticals, Antisense Pharma Therapeutics, RemeGen Biosciences, Atara Biotherapeutics, Contineum Therapeutics, Stem Cell Medicine Ltd., Ever Supreme Bio Technology Co., Ltd. (6712.TWO) Co., Ltd., Imcyse SA and others.

DelveInsight Business Research LLP 是一家專注於生技醫藥領域市場研究與分析的國際機構分析全球MS研發公司

04

奈米包覆技術平臺



Fucoidan

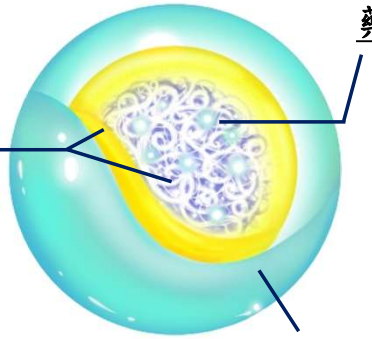
- The material with highest affinity toward P-selectin (KD in nM level)
- Immune modulation
- Anti-inflammation

Image from Marinova Pty Ltd
https://www.marinova.com.au/what-is-fucoidan/

創新紫杉醇、高療效與低毒性
Innovative Docetaxel, High Efficacy and Low Toxicity

實現跨腫瘤別的奈米精準高療效化療
Realizing precision chemotherapy on multiple cancer types

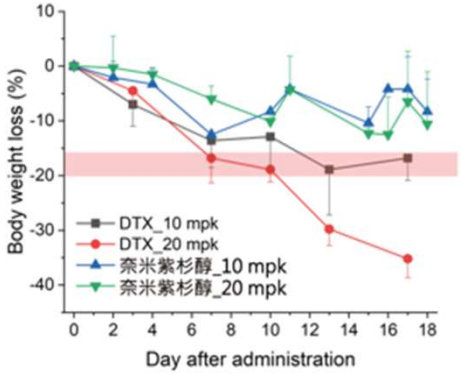
INSP 精準醫療平台式技術

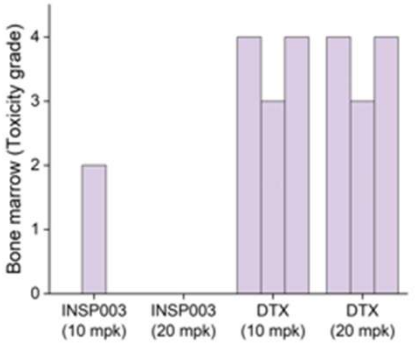


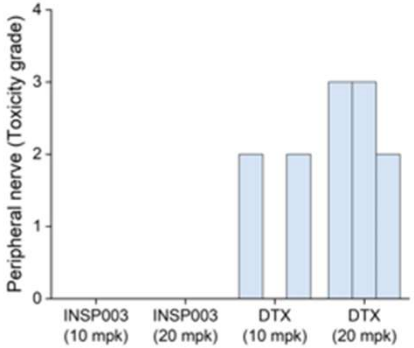
藥物封裝層
- 化療藥物
- 多胜肽
- 核酸

高分子精密夾層
- 穩度藥物包覆
- 精準控制釋放

伏剋藻
- CD62P 標靶
- 高度生物相容性







解決紫杉醇(docetaxel)副作用
Low Toxicity

59

細胞受託開發製造(CDMO)

05

免疫細胞與幹細胞委託製造

核心技術平臺

免疫細胞治療　幹細胞治療

新藥開發 (IND)

將仍處在新藥開發產品提早應用於醫療市場

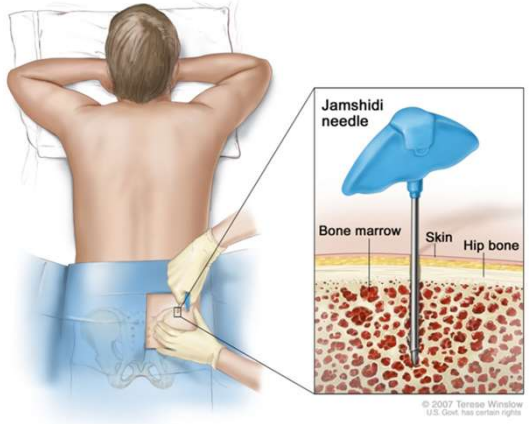
細胞委託製造服務 (CDMO)

免疫細胞	DC 治療實體癌
	DC-CIK 治療實體癌
	CIK 治療血液腫瘤與實體癌
	Gamma Delta-T 治療實體癌
幹細胞	BMSC 治療退化性關節炎、脊髓損傷
	ADSC 治療慢性傷口

特定醫療技術檢查檢驗醫療儀器施行或使用管理辦法 (特管辦法)

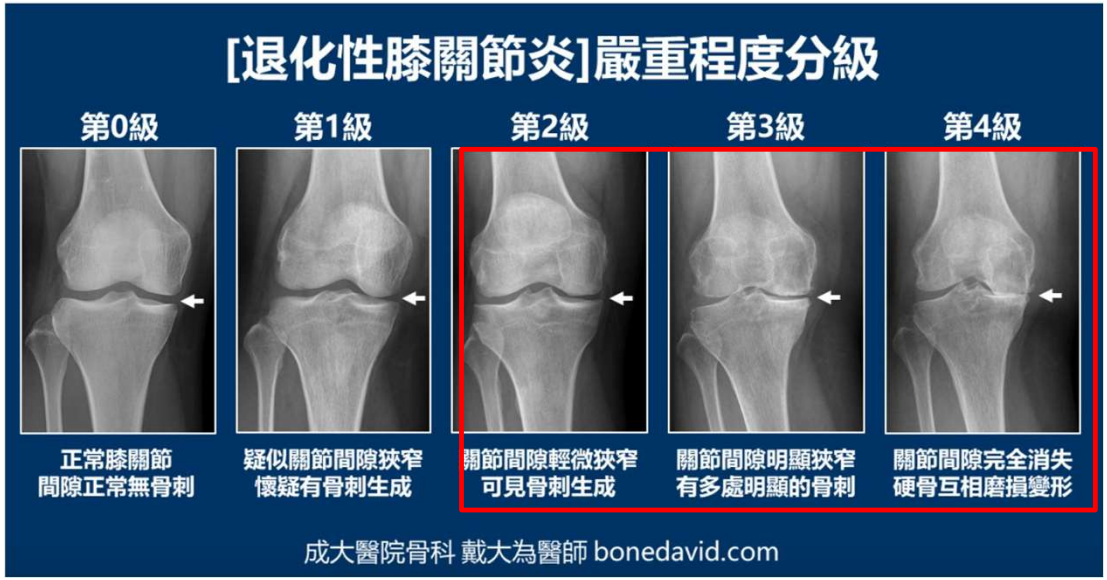
自體骨髓間質幹細胞(CDMO)

- ◆自體來源避免免疫排斥
- ◆骨髓相對安全與技術成熟

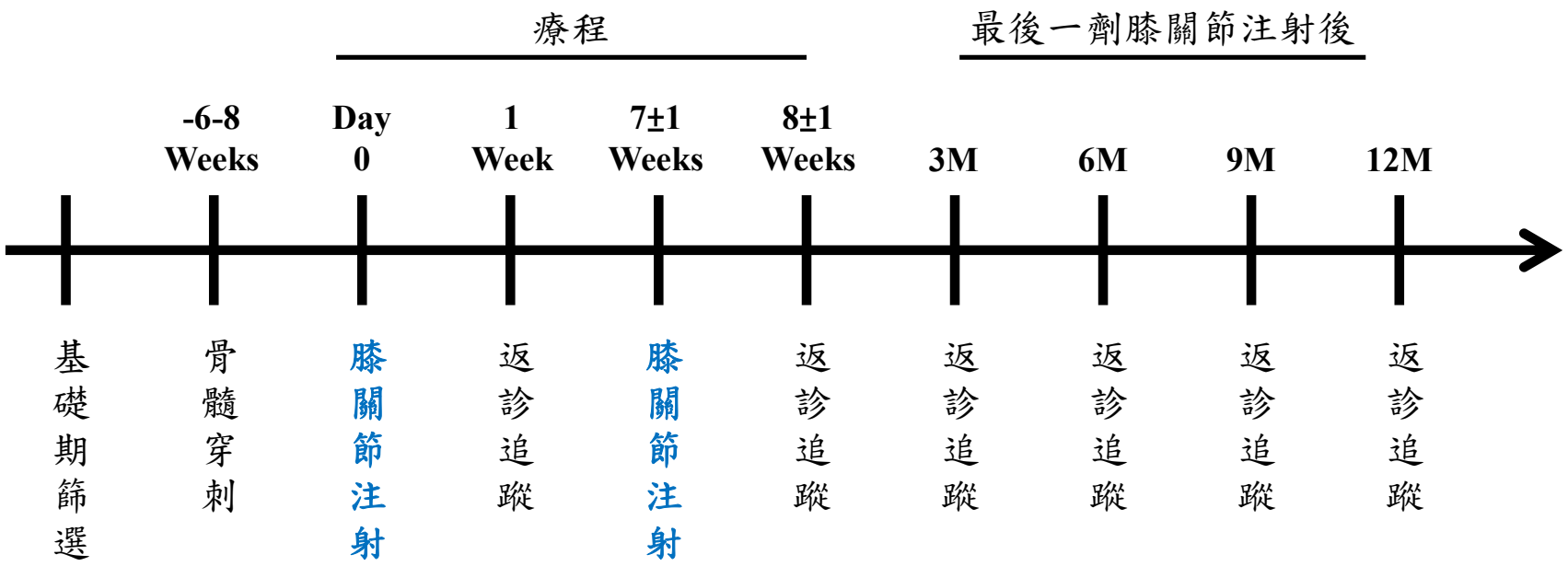


骨髓間質幹細胞治療退化性膝關節炎_納入條件

項次	內容
1.	已簽署細胞治療技術同意書者。
2.	男性或女性年齡介於**20至80歲間**。
3.	**X-**光證實為 **Kellgren Lawrence grade≧II** 的關節炎病患，且經標準治療無效或反應不佳者。
4.	**Visual Analogue Scale (VAS)**評估≧**4** 之關節痛感。



骨髓間質幹細胞治療退化性膝關節炎標準治療流程

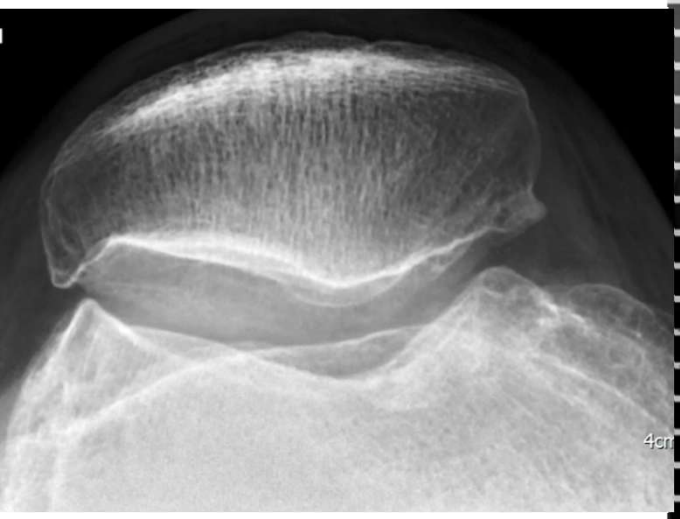


- 關節腔內注射：單一療程兩次注射，每次一劑$5x10^7$ cell in 2ml normal saline共**2**劑，間隔 6~8 週
- 病患可依膝關節炎嚴重程度，選擇單膝或雙膝治療。
  - 單側膝治療，單一療程共施打**2**劑幹細胞
  - 雙側膝治療，單一療程則施打**4**劑幹細胞

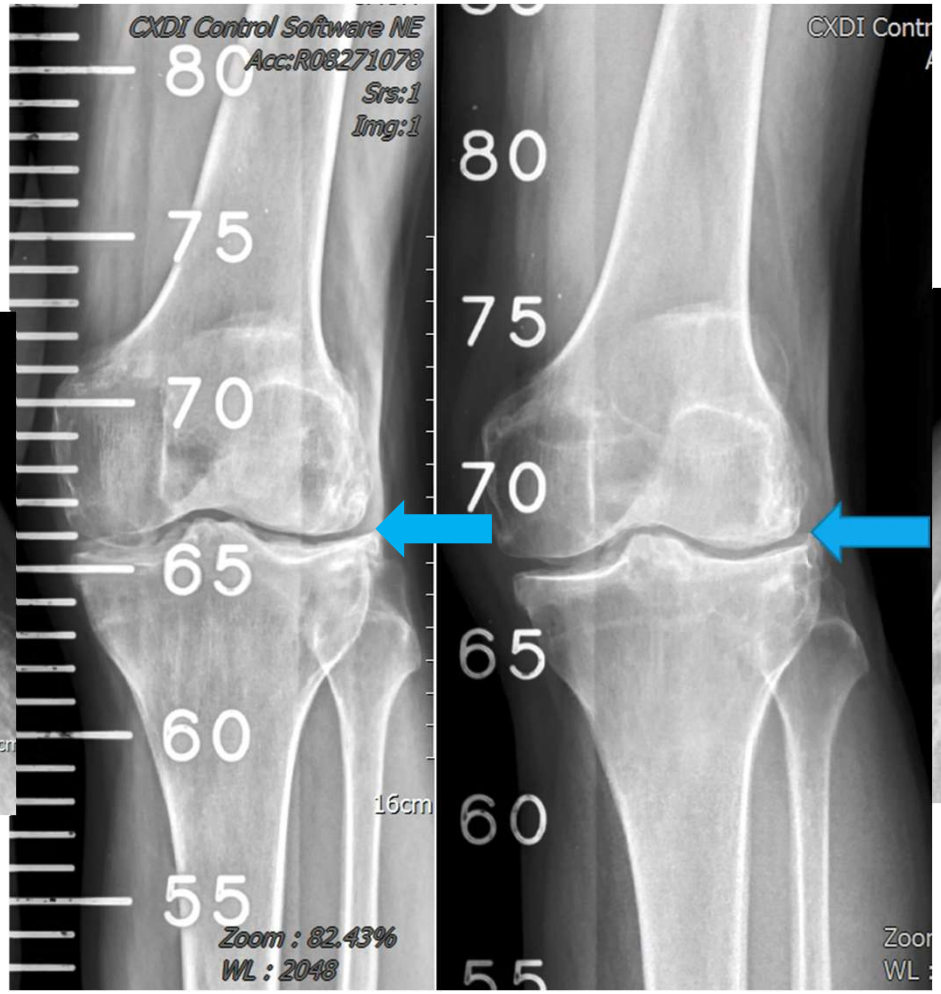
50歲周先生，因打籃球導致左膝關節前十字韌帶斷裂、半月狀軟骨損傷及關節炎嚴重疼痛，診斷第3級外傷性關節炎，曾接受關節鏡手術、玻尿酸、PRP及止痛藥等治療，疼痛仍持續存在，周先生希望能在不手術下有更多選擇的治療方法。

病例 8

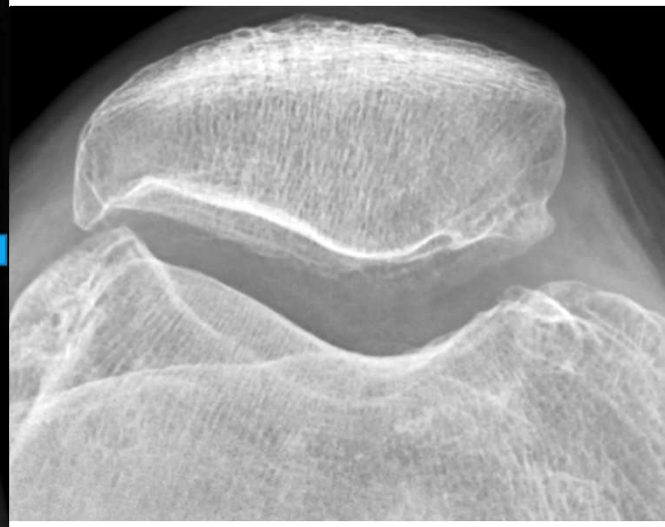
左膝治療前



左膝治療前　左膝治療一年後

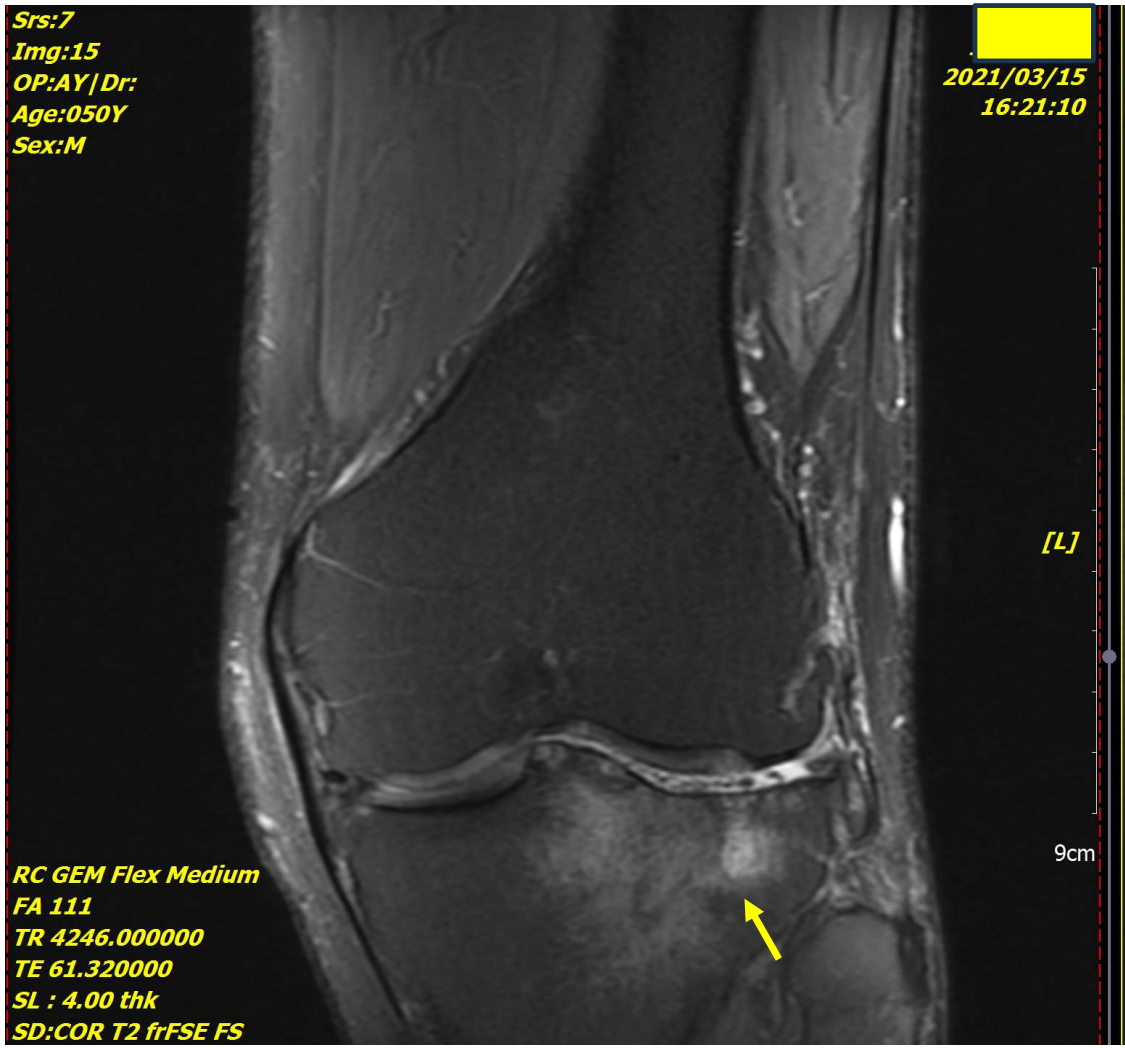


左膝治療一年後

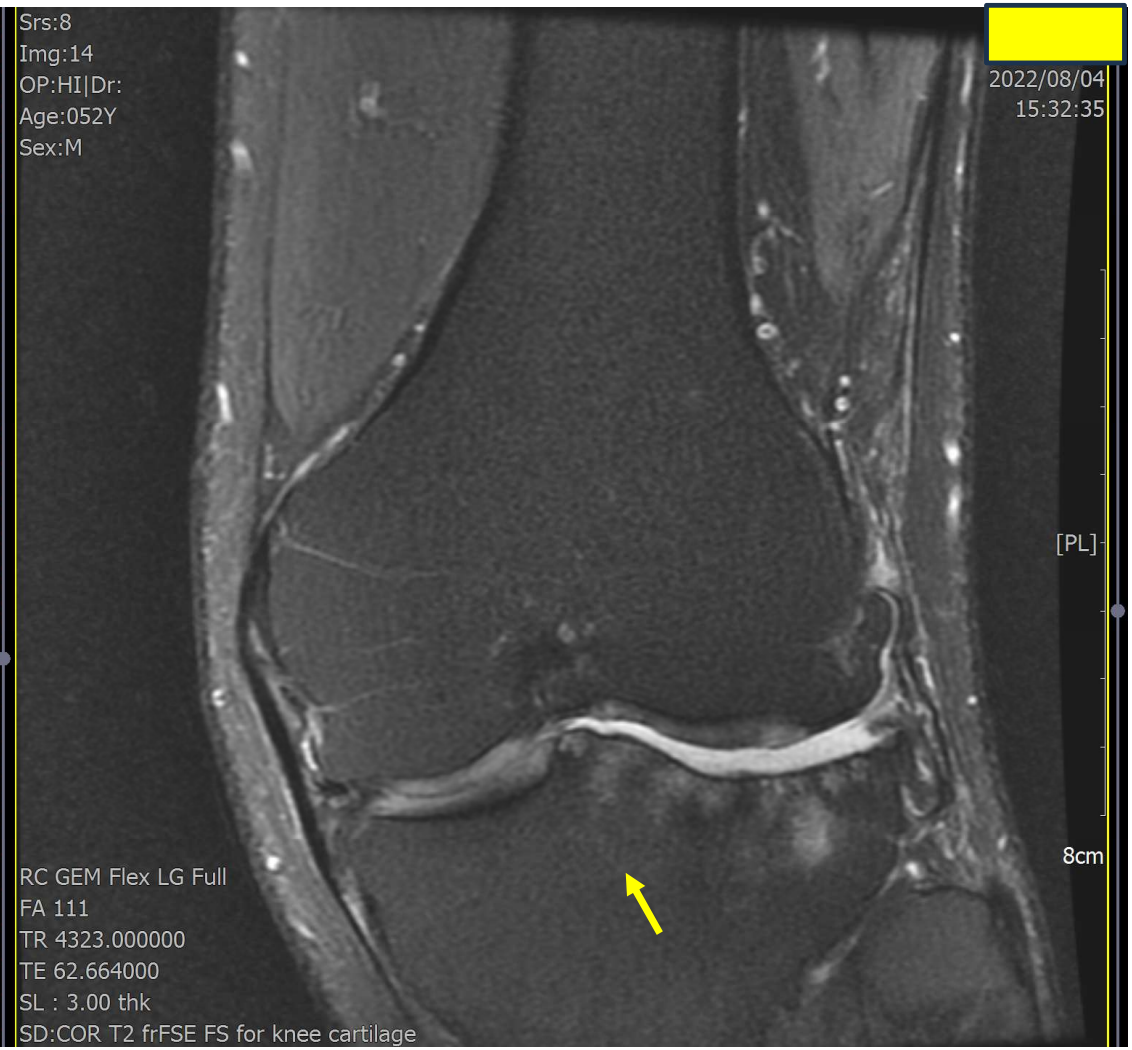


病例 8

左膝治療前



左膝治療後

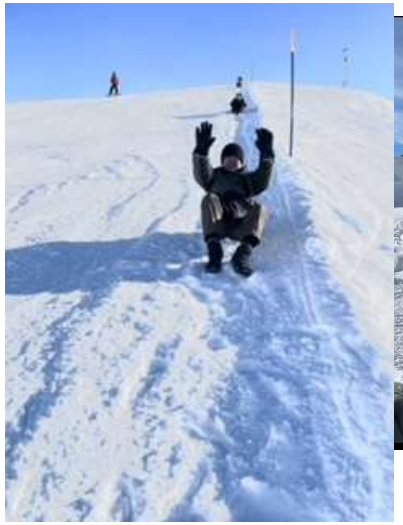


病例 8

高爾夫球



瑞士滑雪




溯溪

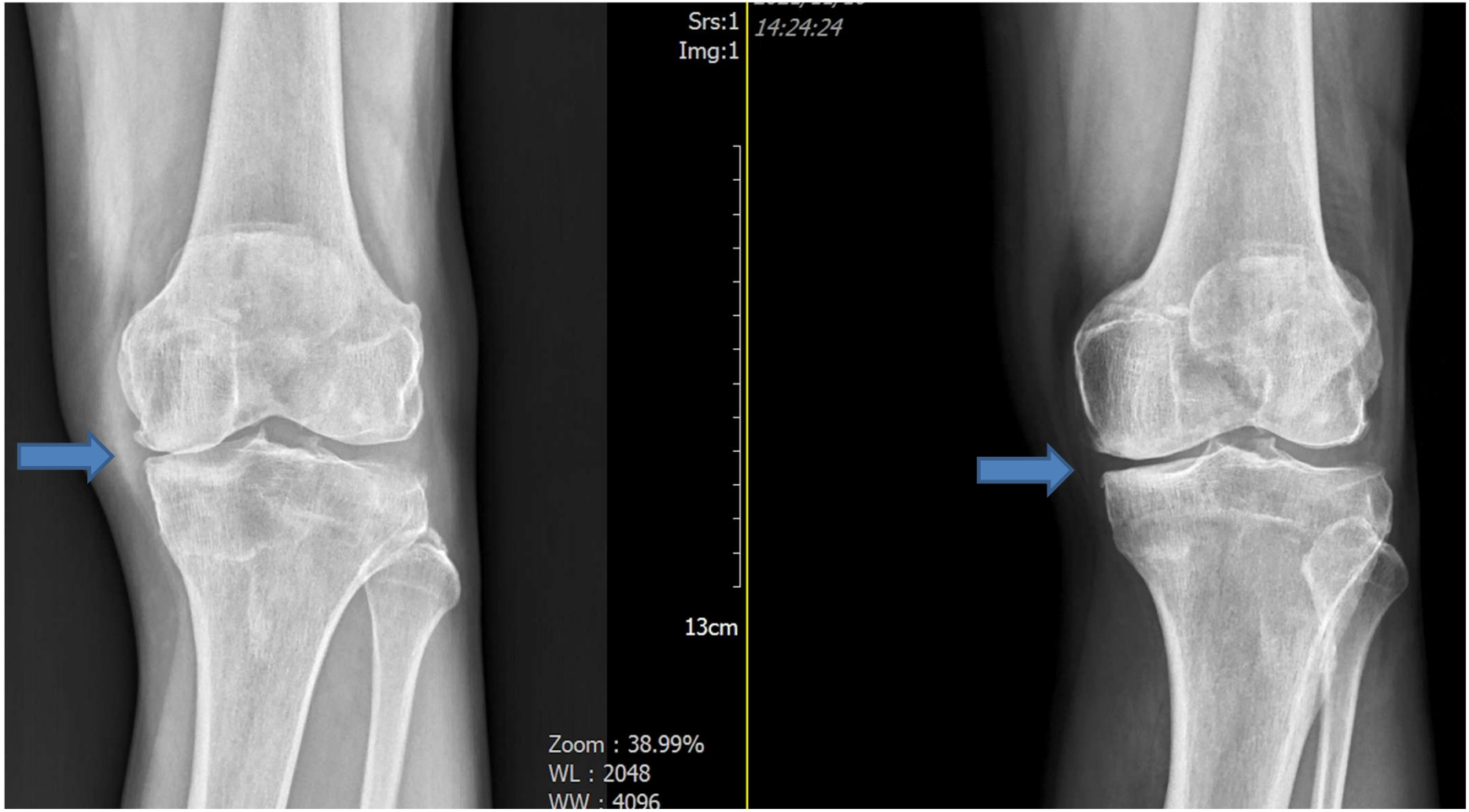


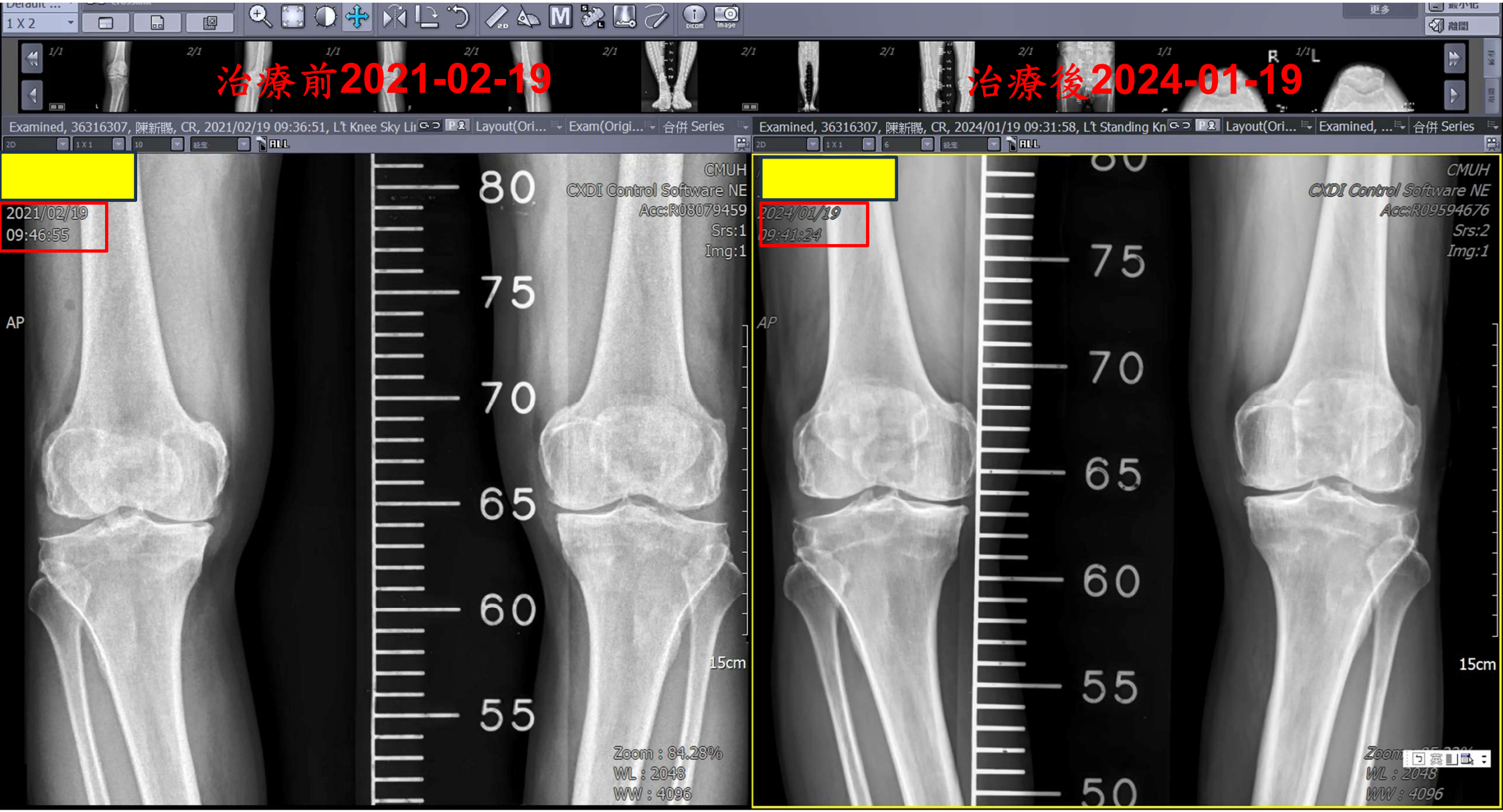
69歲陳先生因長時間上下樓梯、走路出現膝疼痛、腫脹、僵硬等症狀，安排X光、核磁共振等影像學檢查，診斷雙膝第3-4級退化性關節炎，已施打玻尿酸, PRP及服用止痛藥

病例 10

左膝治療前

左膝治療後1 年



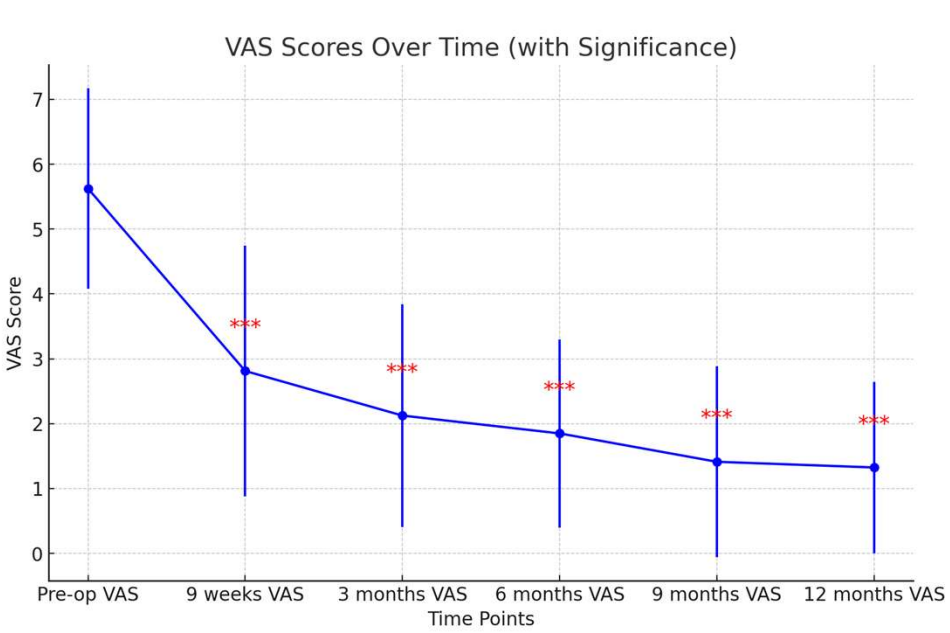

治療前2021-02-19
治療後2024-01-19
Examined, 36316307, 陳新鵬, CR, 2021/02/19 09:36:51, L't Knee Sky Li
Layout(Ori...
Exam(Origi...
合併 Series
Examined, 36316307, 陳新鵬, CR, 2024/01/19 09:31:58, L't Standing Kn
Layout(Ori...
Examined, ...
合併 Series
2021/02/19
09:46:55
CMUH
CXDI Control Software NE
Acc:R08079459
Srs:1
Img:1
AP
80
75
70
65
60
55
15cm
Zoom : 84.28%
WL : 2048
WW : 4096
2024/01/19
09:41:24
CMUH
CXDI Control Software NE
Acc:R09594676
Srs:2
Img:1
AP
75
70
65
60
55
50
15cm
WL : 2048
WW : 4096

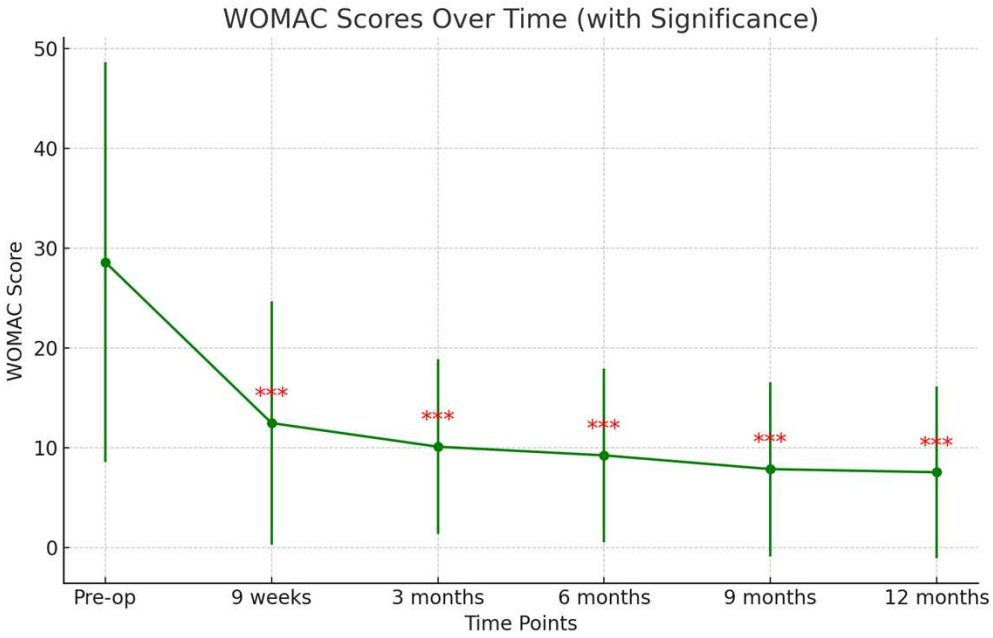
病例 10

重拾旅遊樂趣



Result





Evolution of test scores using the Visual Analogue Scale (VAS) and WOMAC over time.

- ✓ 完整追蹤超過1年共有54位患者(90個膝關節，平均年齡65歲)，發現做完第一個月後，VAS疼痛指數有感下降，三個月大幅改善
- ✓ 施打幹細胞一年後病患VAS疼痛指數與關節炎疼痛、僵硬、功能指數都有顯著WOMAC皆改善

自體骨髓間質幹細胞治療OA，成效初現

1. BMSC收案人數達54人，收案數佔全台自體骨髓間質幹細胞適應症總收案數的64%(衛福部統計至113年6月30)
2. 此幹細胞療法取自病人自身，排斥低及可有效促進患處修復再生，緩解疼痛並改善關節功能，未來有望減少關節置換手術與止痛藥的需求
3. 研究團隊正以Real World Data準備投稿國際期刊。

再生醫療雙法
長聖的潛在商機與優勢

再生醫療法

本法施行前，醫療機構經中央主管機關核准執行之再生技術

延續現有業績的特管辦法

DC,DC-CIK,CIK,DC-CIK(WT1),GDT

對於癌末或嚴重失能患者可先免完成人體試驗，可先進行異體細胞治療

恩慈療法

- CAR001治療癌症
- UMSC01治療急性心肌梗塞(AMI)、急性腦中風(Stroke)、多發性硬化症(MS)、新型冠狀病毒肺炎(Covid-19)

再生醫療製劑管理條例

將有機會符合危急生命或嚴重失能疾病，提供五年有條件許可，創造固定現金流，繼續完成後續臨床試驗開發

二期臨床試驗產品，有機會取得五年臨時藥證

- CAR001治療癌症
- UMSC01治療急性心肌梗塞(AMI)、急性腦中風(Stroke)、多發性硬化症(MS)、新型冠狀病毒肺炎(Covid-19)

06

經營績效

商業模式

前期研究 | 臨床研究開發 | 藥物上市

藥物探索 → 臨床前研究 → 臨床一期 → 臨床二期 → 臨床三期 → 藥證核准 → 上市許可

醫療機構合作

技術授權

特管辦法

暫時性藥證

投入新技術

特管辦法業務展望

長聖生技

中國附醫

以成功經驗模式複製到其他院所

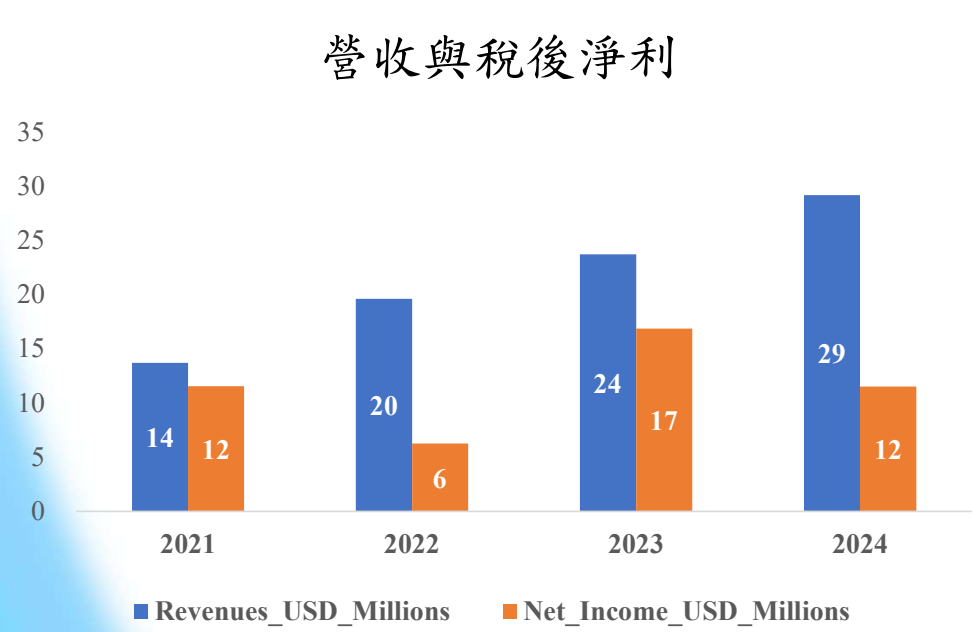
中部
中國附醫
台中慈濟
童綜合醫院
亞大附醫
澄清醫院
光田醫院
彰濱秀傳
彰化秀傳
北港附設醫院

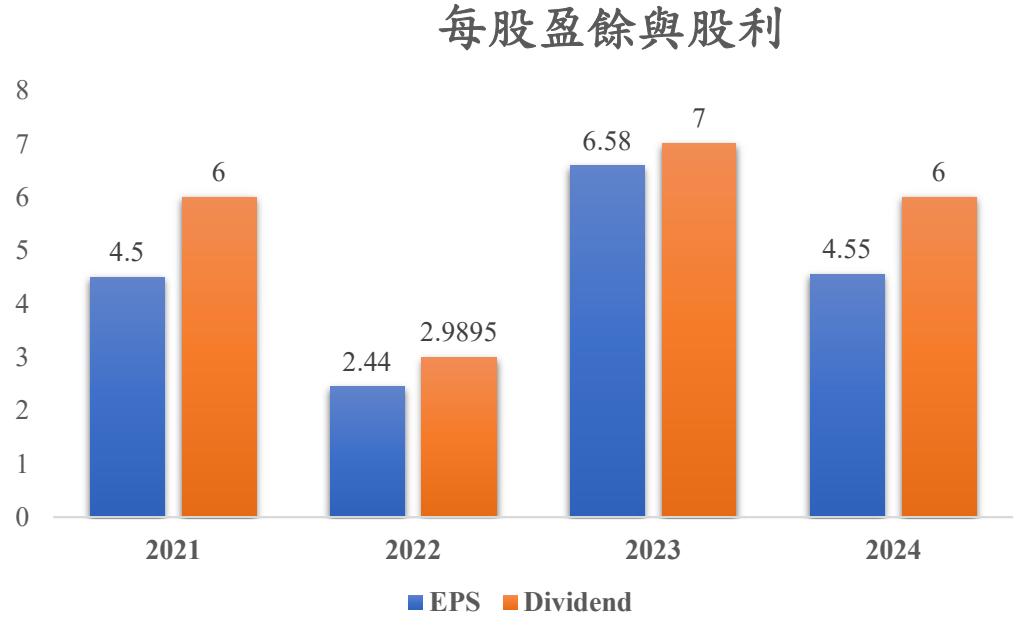
南部
高醫附醫
成大醫院
奇美醫院
柳營奇美
安南醫院
博正國際醫院

北部
台大醫院
台北榮總
三軍總醫院
耕莘醫院
新光醫院
國泰醫院
新竹附設醫院
聯新國際醫院

東部
花蓮慈濟

Ever Supreme (6712) Financial Metrics (2021-2024)





我們持續透過股票與現金股利與投資人共享利潤，展現我們對長期價值的承諾。

長聖業績動能

長聖的業績成長

✓ 細胞委託製造

- 多項優化產品

(可增加毛利10-15%)

✓ 儲存業務

- 免疫細胞
- 幹細胞

現有的業績

✓ 新藥授權

- CAR001
- CAR-MSC
- INSP
- EXO001

未來獲利動能

邁向全球的經營策略

引進國際資金創投

吸引策略合作夥伴，提升研發與市場拓展

技術授權

持續與國際藥廠洽談

加速技術商品化

併購

專注於技術整合與市場擴張，提升競爭力

新藥研發與全球營運模式

全球市場授權洽談中(新藥)

CAR001、Nano

- 與國際藥廠商談全球專屬授權中(技術授權)

CMO 技術授權

DC、DC-CIK、CIK、GDT與BMSC

- 整廠輸出(技術授權)

合資公司

幹細胞產品

- 與美國生技成立合資公司

台灣自行銷售

與各醫療機構結盟
建立銷售通路

長聖未來願景

過去

致力開發新藥研究

(2016/12-2018/9)

成立初期藉取得學研單位之專屬技術授權，致力研究細胞治療市場與未被滿足的醫療需求之新藥開發。

現在

台灣細胞治療領航者

(2018/9-2025/6)

長聖的兩項業務

1) 新藥開發
2) CDMO細胞製劑製具備具有相輔相成之效果，並持續引入高創新技術，為公司帶來價值提升。

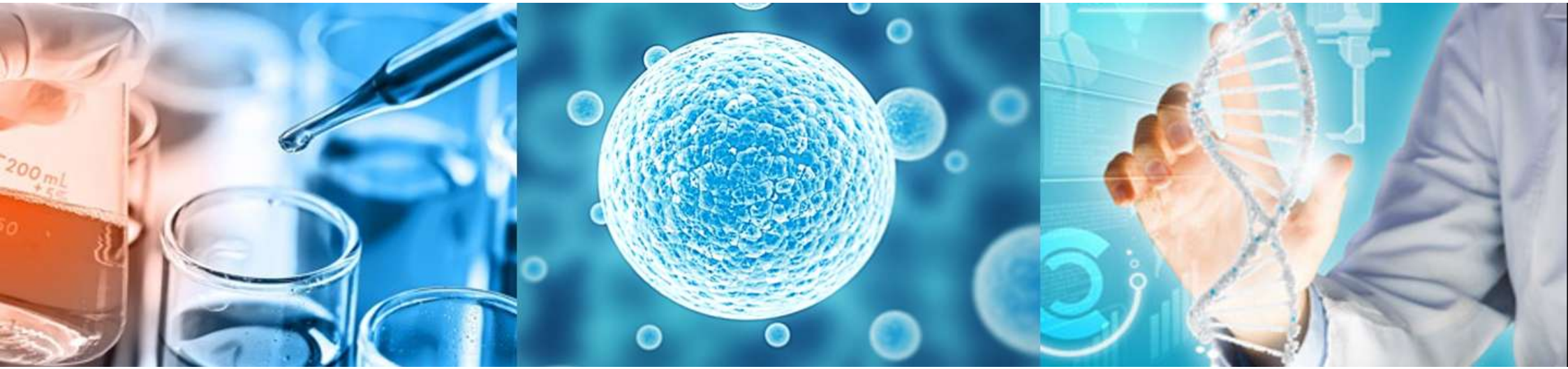
未來

全球高水準再生醫療製藥公司

(2025之後)

1) 再生醫療法通過後，以異體細胞治療，使用健康捐贈者的細胞患者不必再用自身較差的細胞進行治療，同時大批生產與檢驗，也能降低細胞治療成本。
2) 成為全球高水準再生醫療製藥公司，開發先進的尖端細胞產品。

1. 力拼為台灣第一家以異體CAR-T治療實體癌獲得再生醫療製劑藥證
2. 2024年累計營收至9.33億元，較去年的7.59億元成長22.9%
3. 2024年EPS 4.55元，配1元股票與5元股利
4. 法人預估今年EPS將突破6元

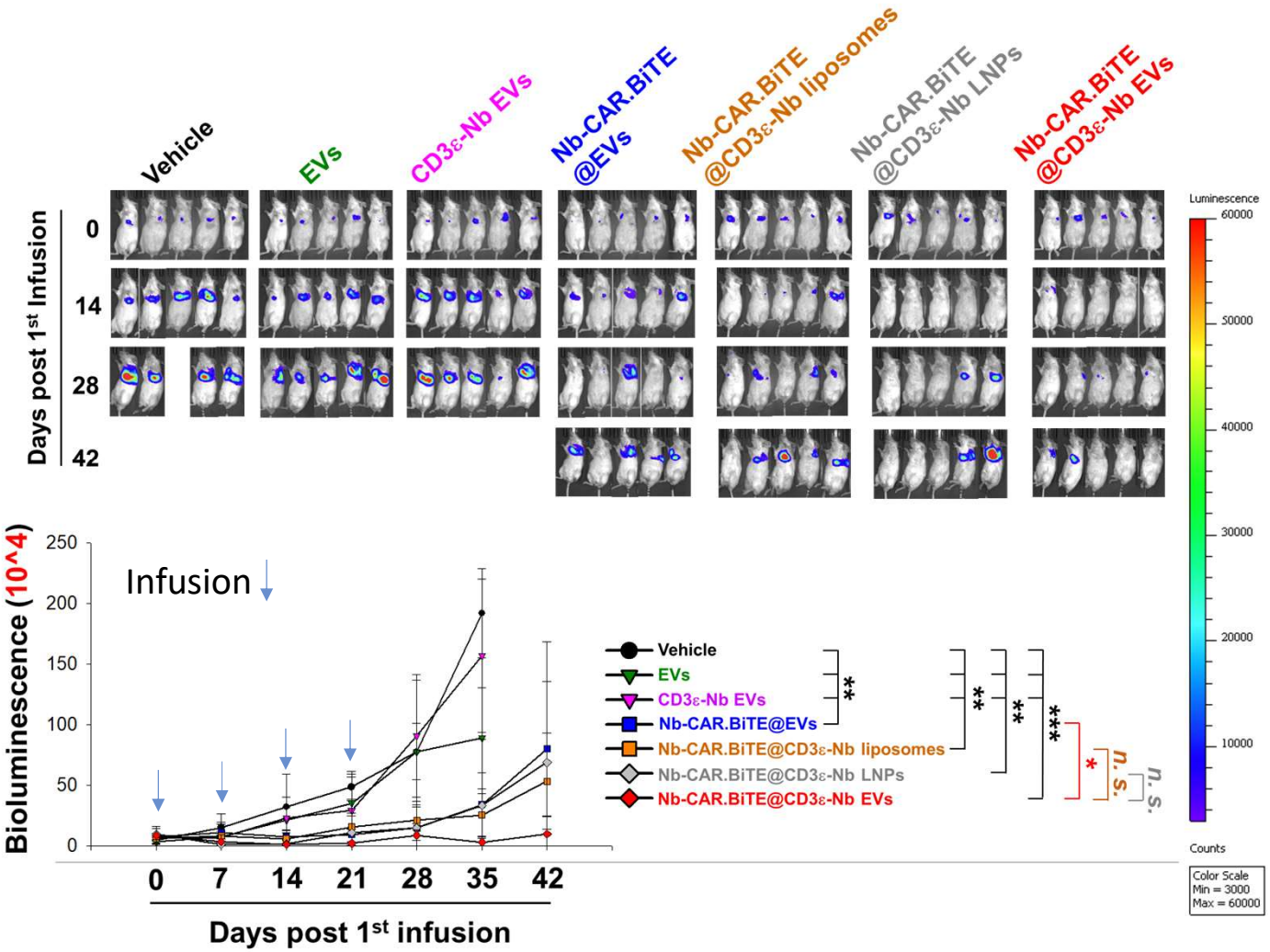


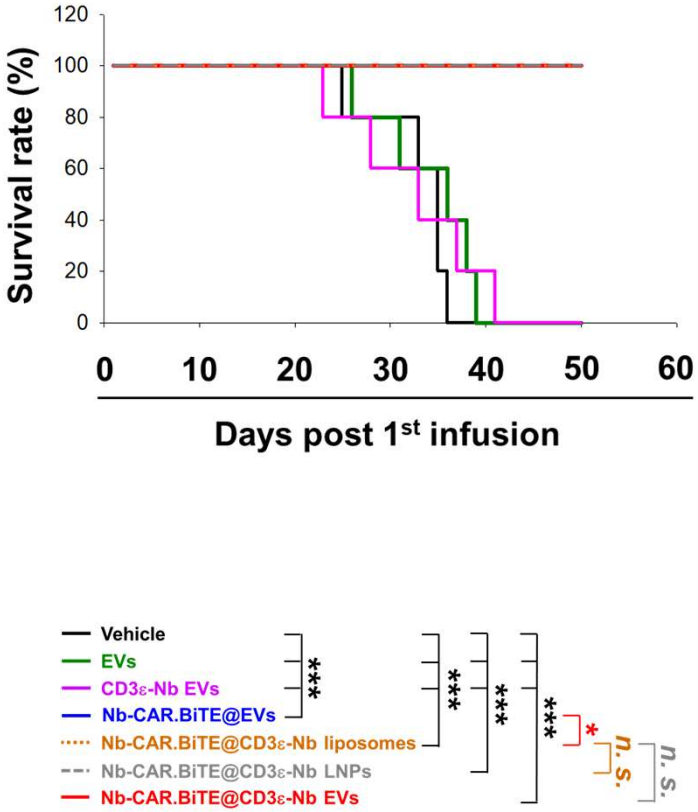
Thanks For Your Attention!

長聖國際生技股份有限公司
Ever Supreme Bio Technology Co.,Ltd

Comparable anti-tumor activity among liposome, LNP and EV-mediated *in vivo* CAR-T

Xenograft (NSCLC) PBMC-humanized mice

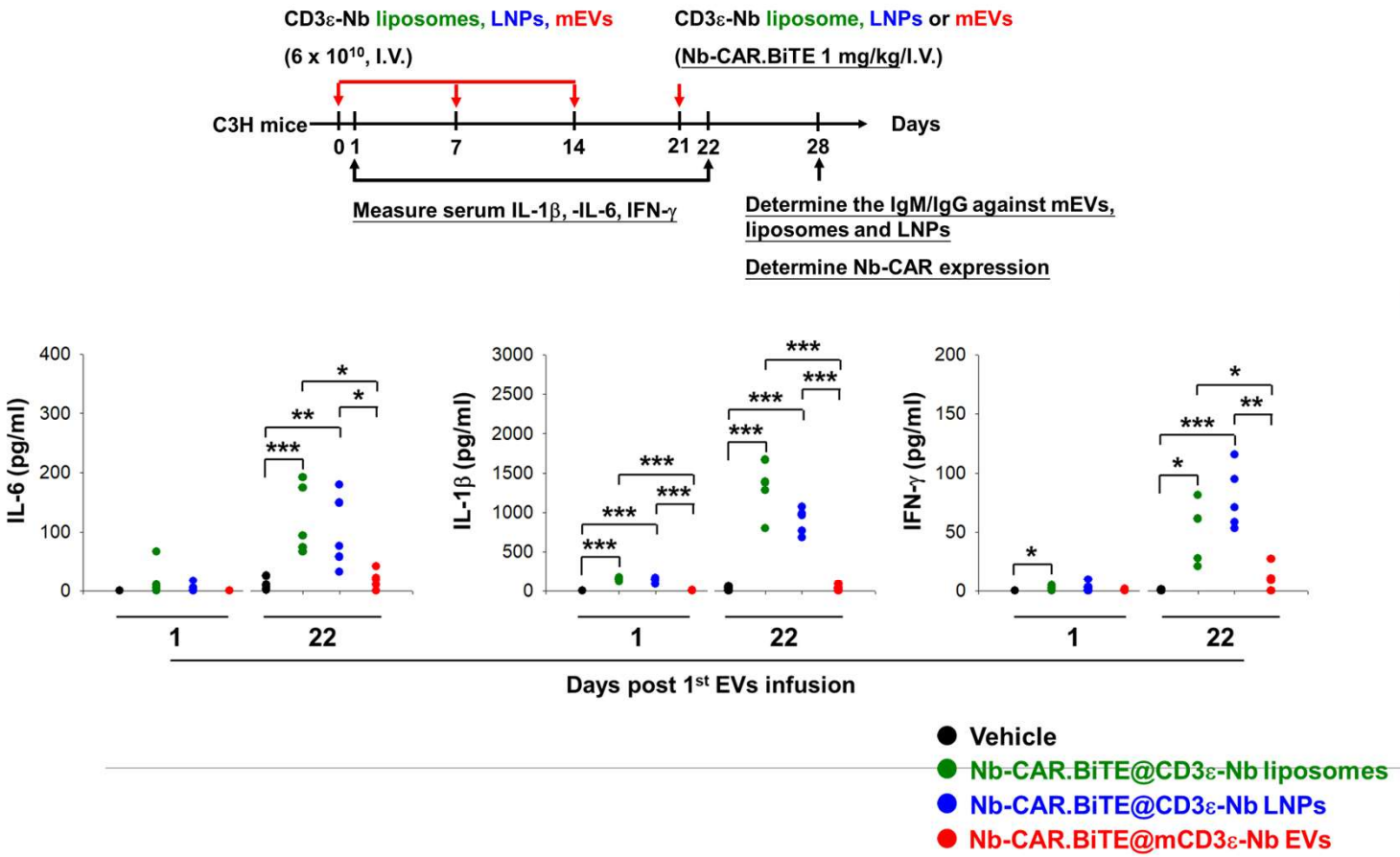




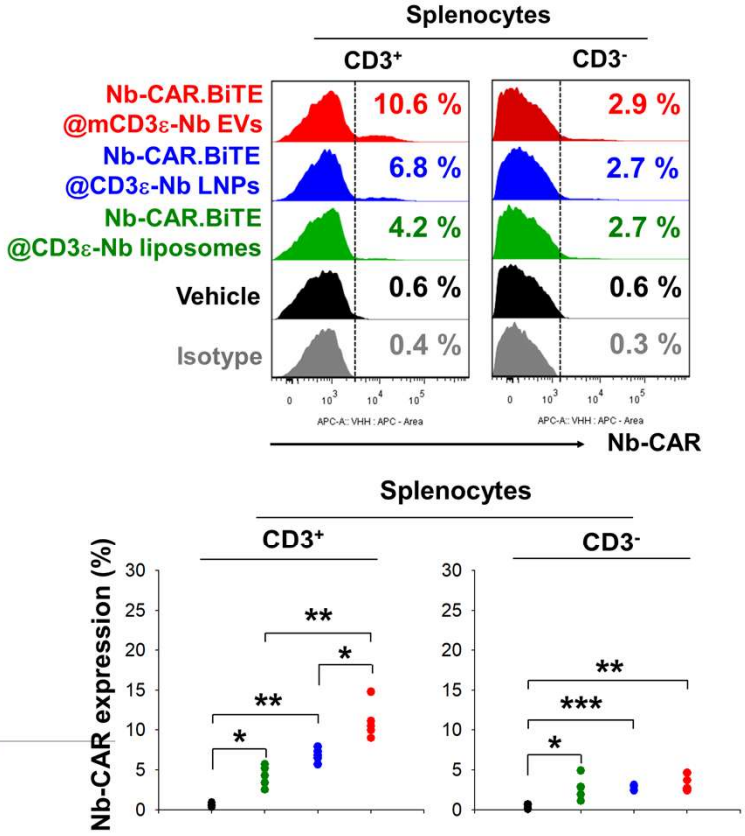
EV-mediated *in vivo* CAR-T showed lower immunogenic profiles compared to liposome and LNP approaches

C3H immunocompetent mice

Lower cytokine secretion compared to liposome and LNP approaches



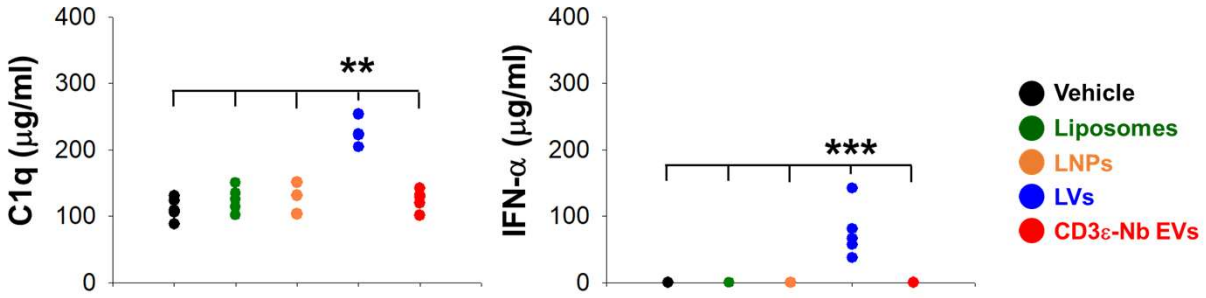
Retained transfection rate compared to liposome and LNP approaches



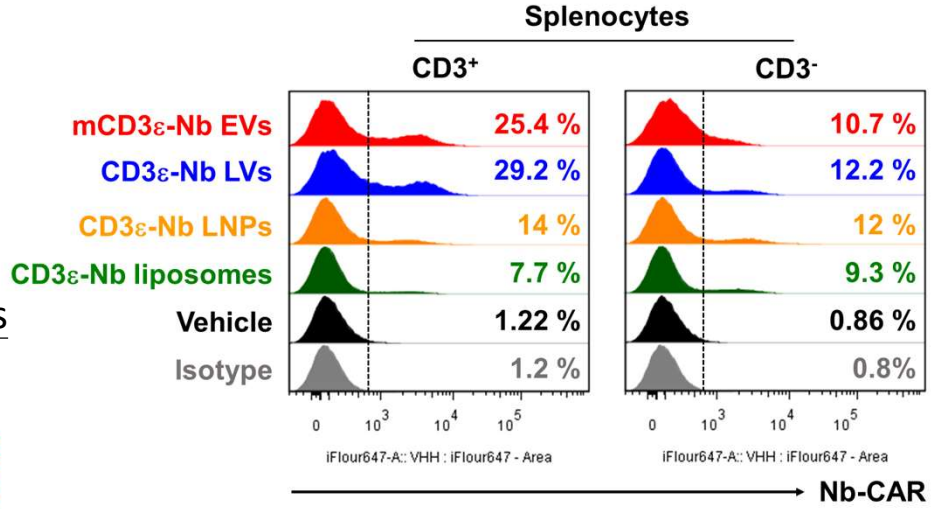
EV-mediated *in vivo* CAR-T showed lower immunogenic profiles compared to LV, liposome and LNP approaches

C56BL/6 immunocompetent mice

Lower cytokine secretion compared to LV approach



Retained transfection rate compared to liposome and LNP approaches



Lower antibody response compared to liposome, LNP and LV approaches