CAR-T cell therapy for refractory autoimmune diseases

Maxime TEISSEYRE MD, PhD

Laboratoire d'Immunologie et de Thérapie Cellulaire

Centre de Référence Maladies Rares Syndrome Néphrotique Idiopathique et Glomérulonéphrite Extra-Membraneuse

Centre Hospitalier Universitaire de Nice

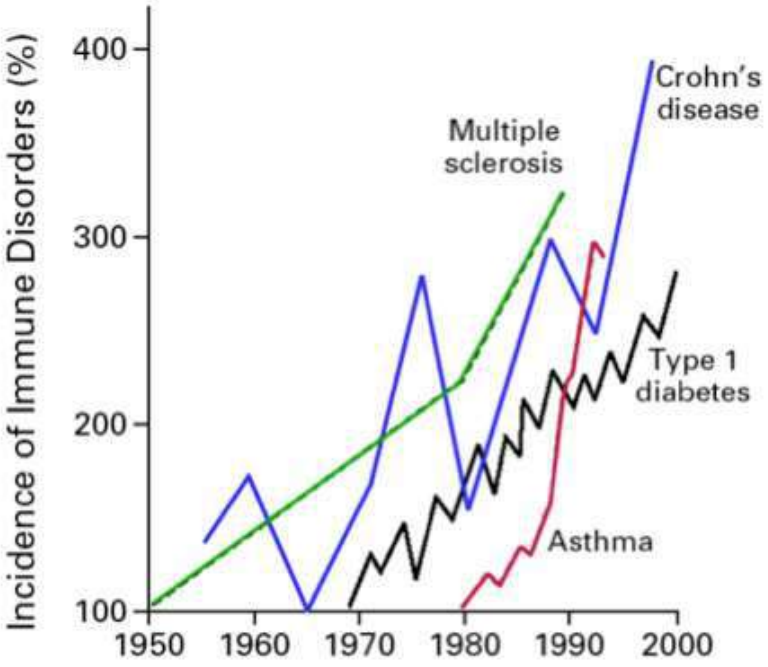
Institute for Research on Cancer and Aging in Nice UMR7284 CNRS INSERM U1081

Université Côte d'Azur

Autoimmune diseases are a major and growing therapeutic challenge

Global prevalence: 5–10% in developed countries

A major public-health burden alongside cancer and cardiovascular disease

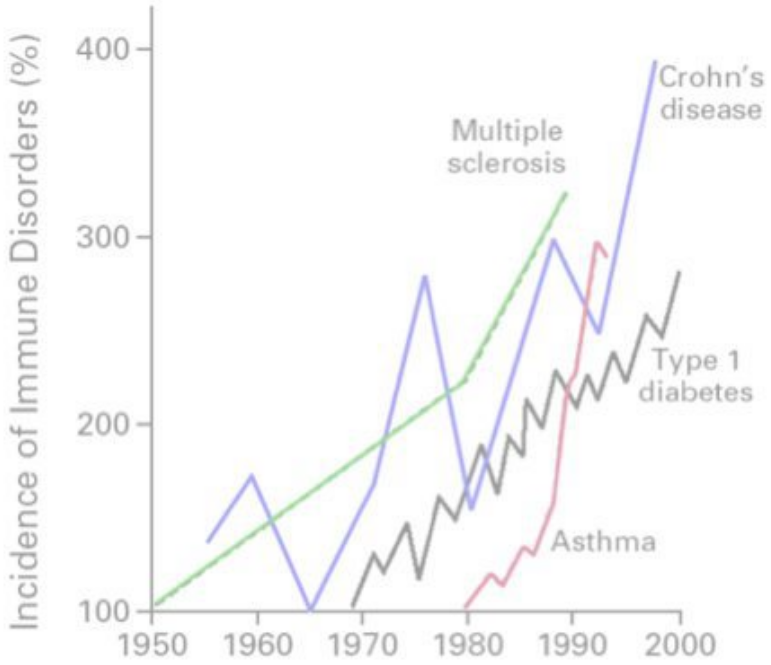


Bach et al. NEJM 2002

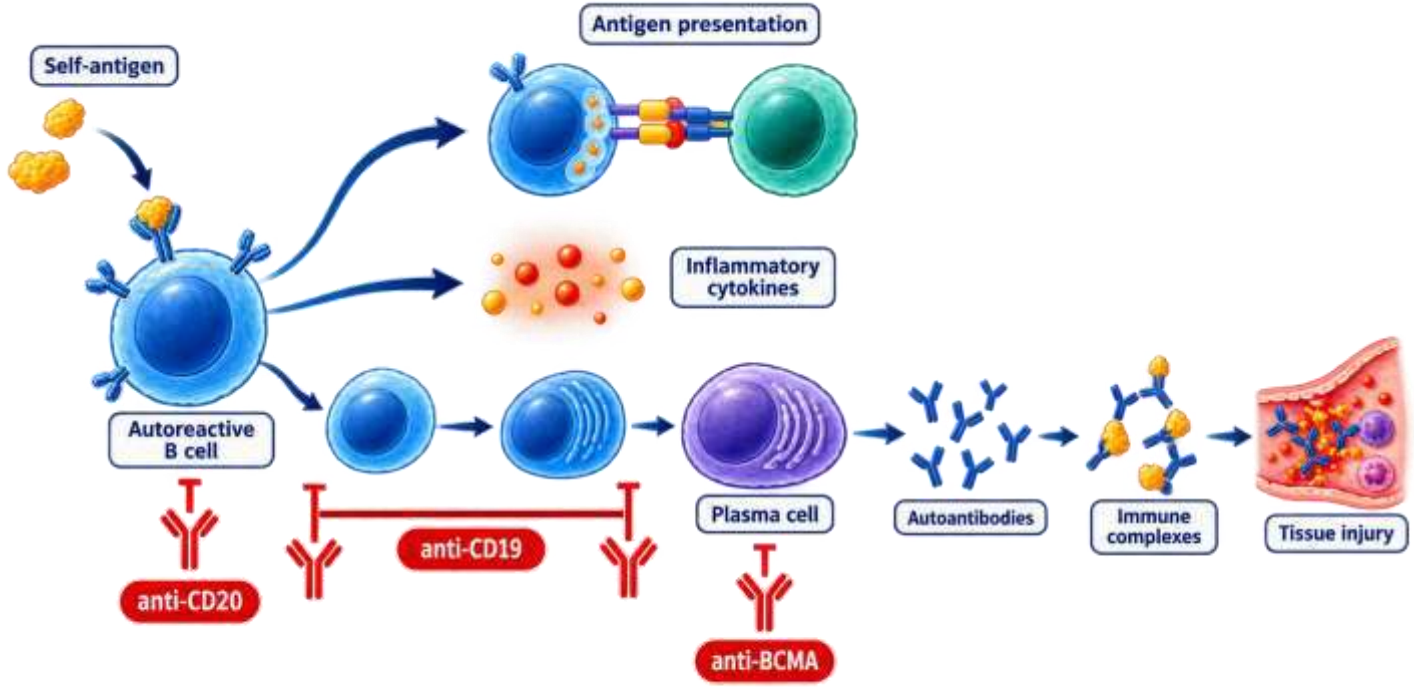
Autoimmune diseases are a major and growing therapeutic challenge

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Why target the B-cell compartment in autoimmune disease?

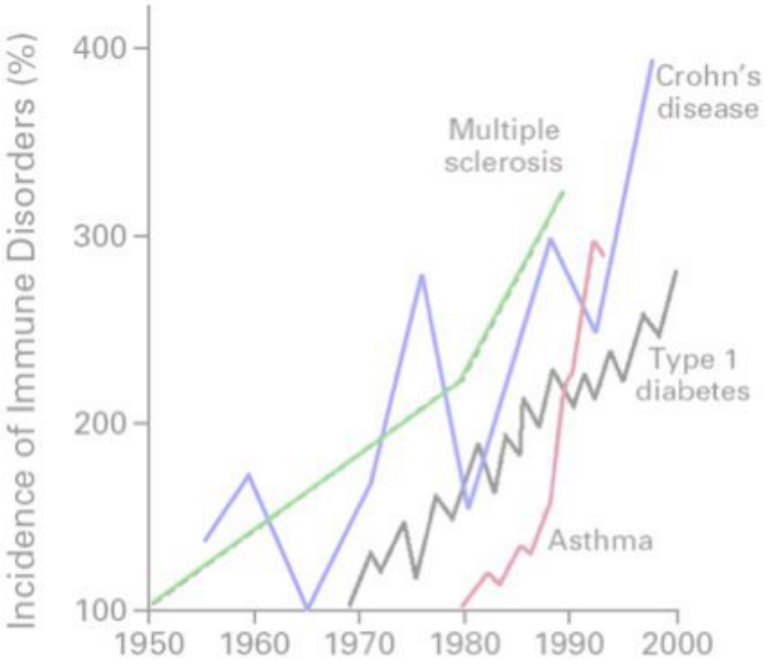


Bach et al. NEJM 2002

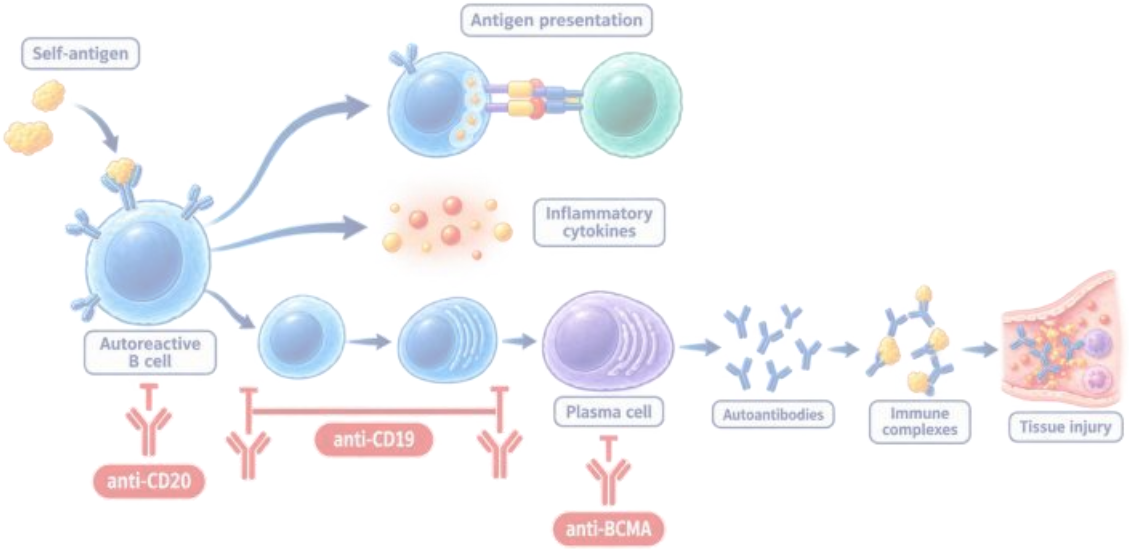
Autoimmune diseases are a major and growing therapeutic challenge

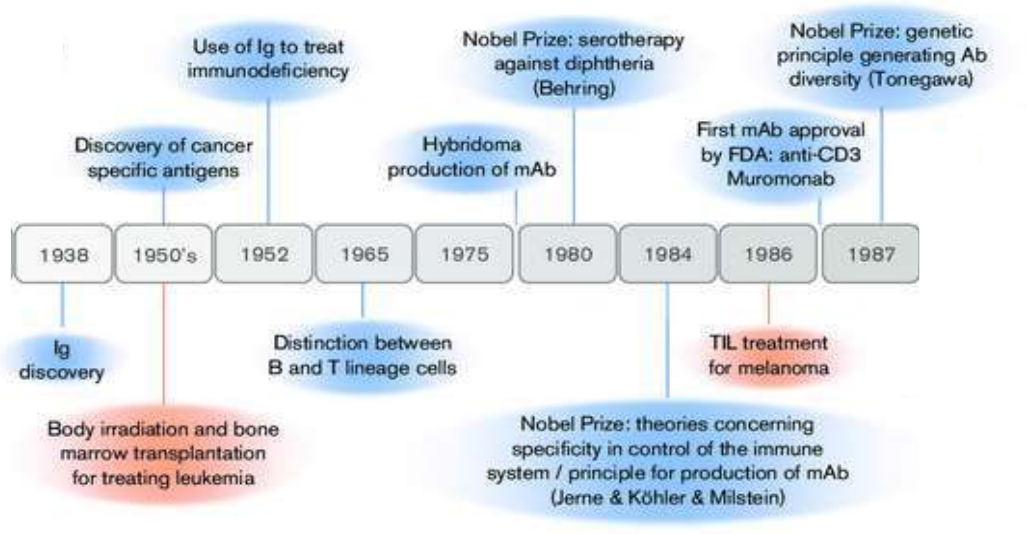
Global prevalence: 5–10% in developed countries

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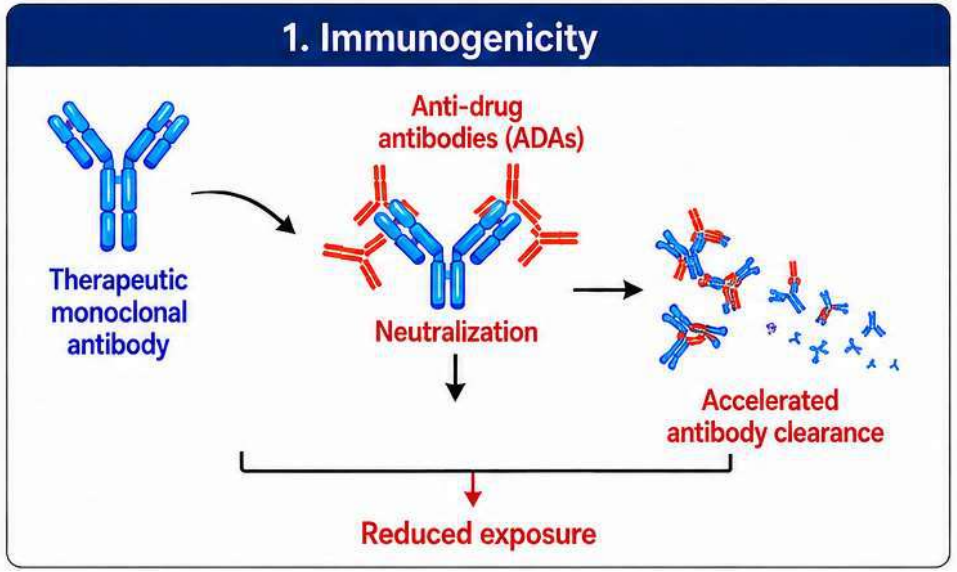
Bach et al. NEJM 2002



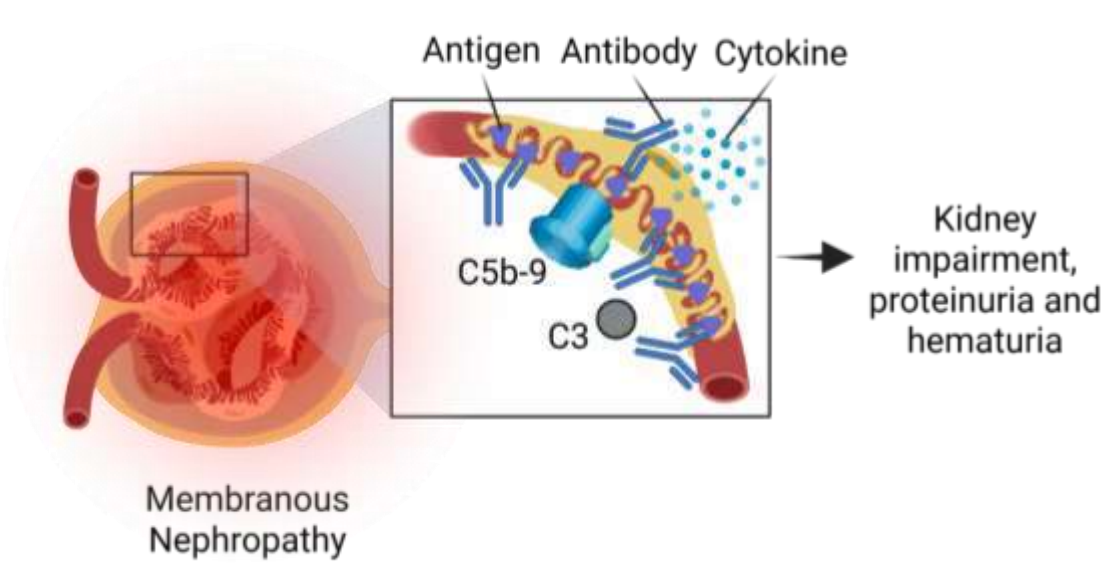


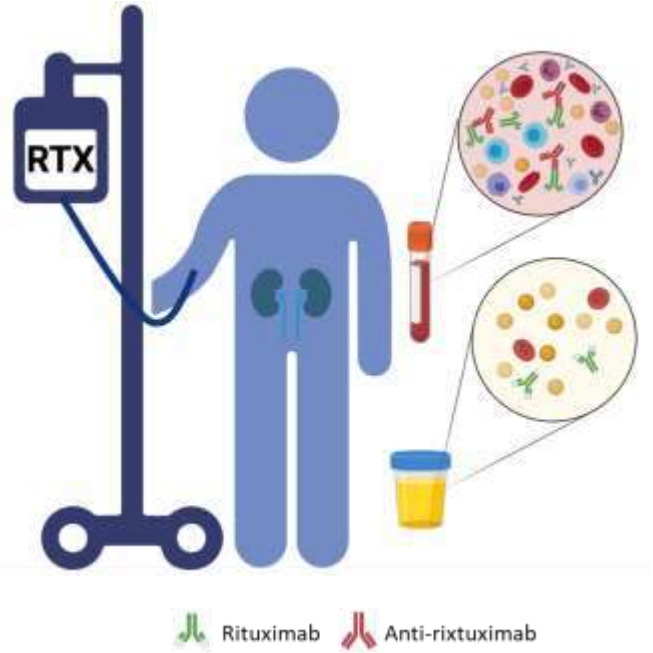
Monoclonal antibodies transformed autoimmune disease management but without allowing for a permanent immune reset

Mechanisms of resistance to anti-CD20 monoclonal antibodies



Immunization against anti-CD20 monoclonal antibodies: the case of MN

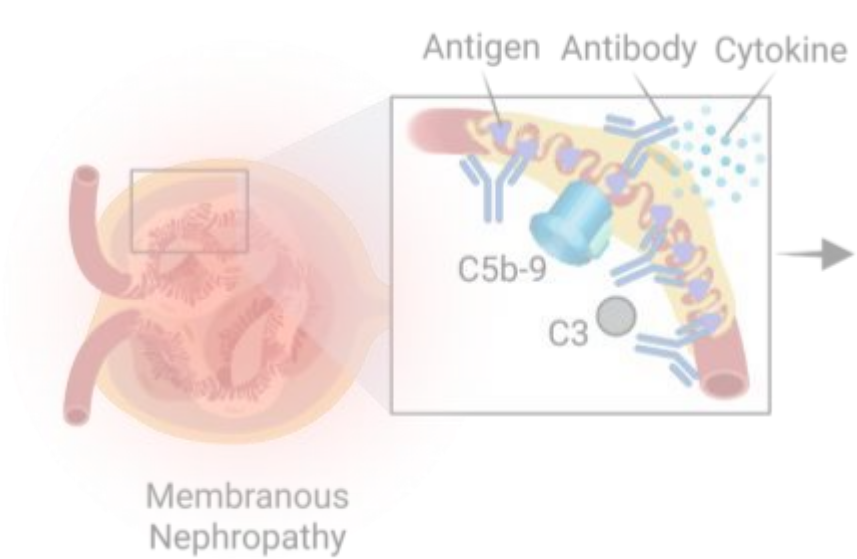




Prevalence of ADA in MN: 23–47%

Boyer-Suavet et al. Front immunol 2020

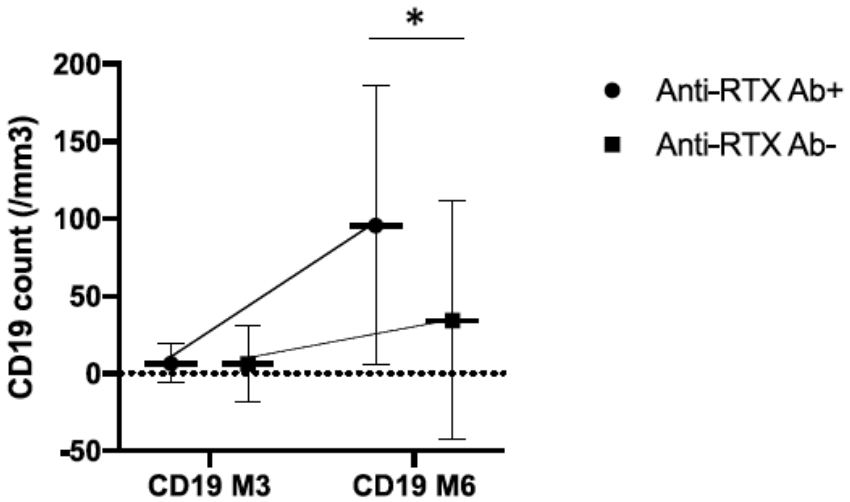
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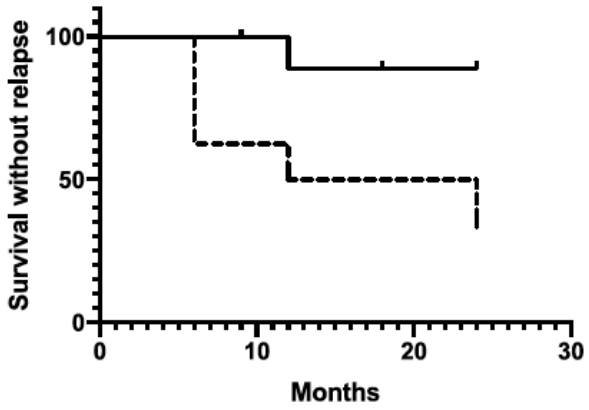


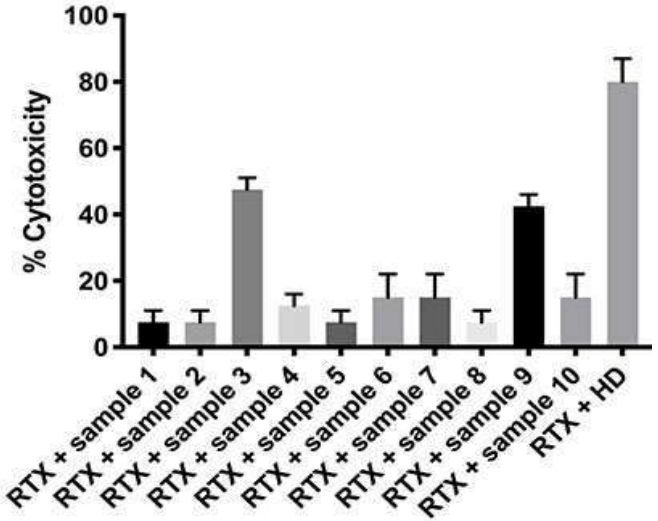
Kidney impairment, proteinuria and hematuria



Prevalence of ADA in MN: 23–47%

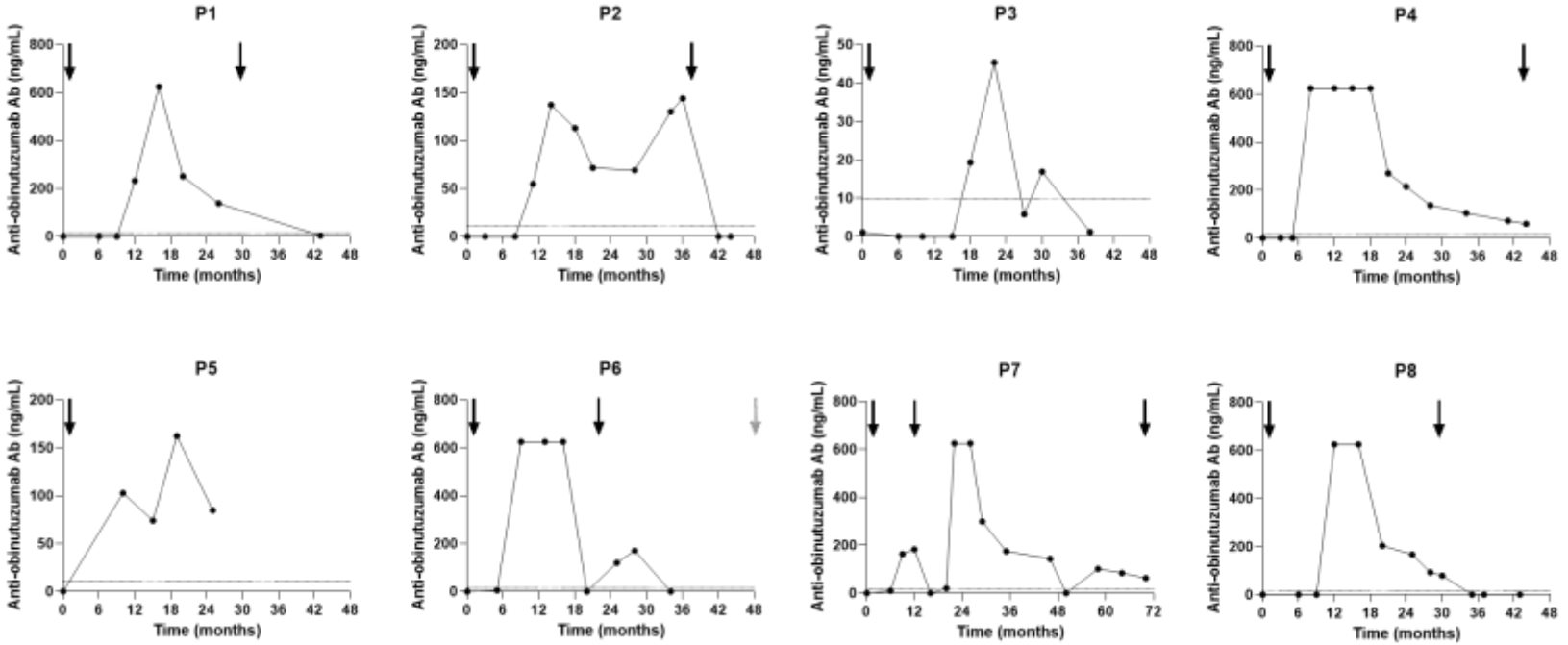


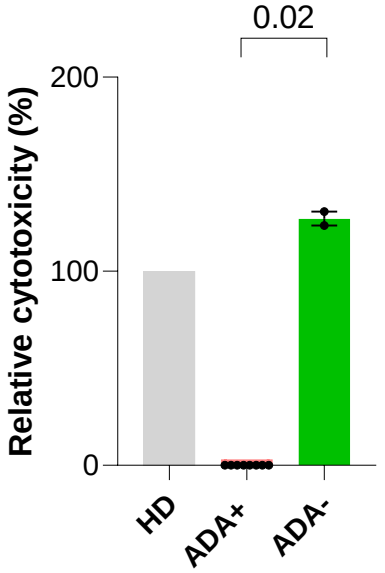


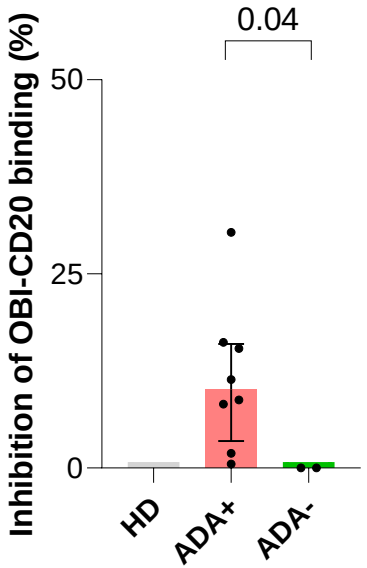


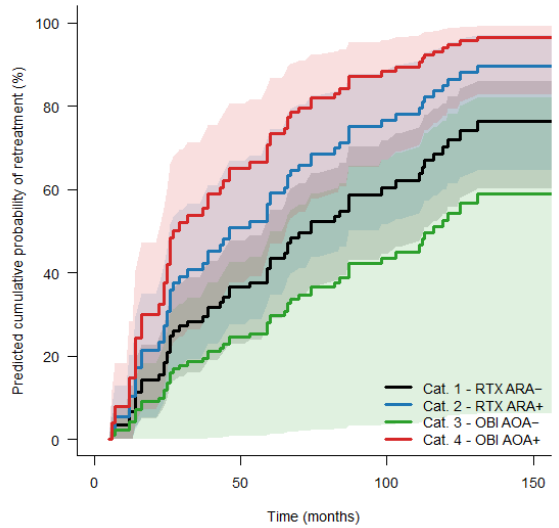
Boyer-Suavet et al. Front immunol 2020

Immunization against obinutuzumab in MN



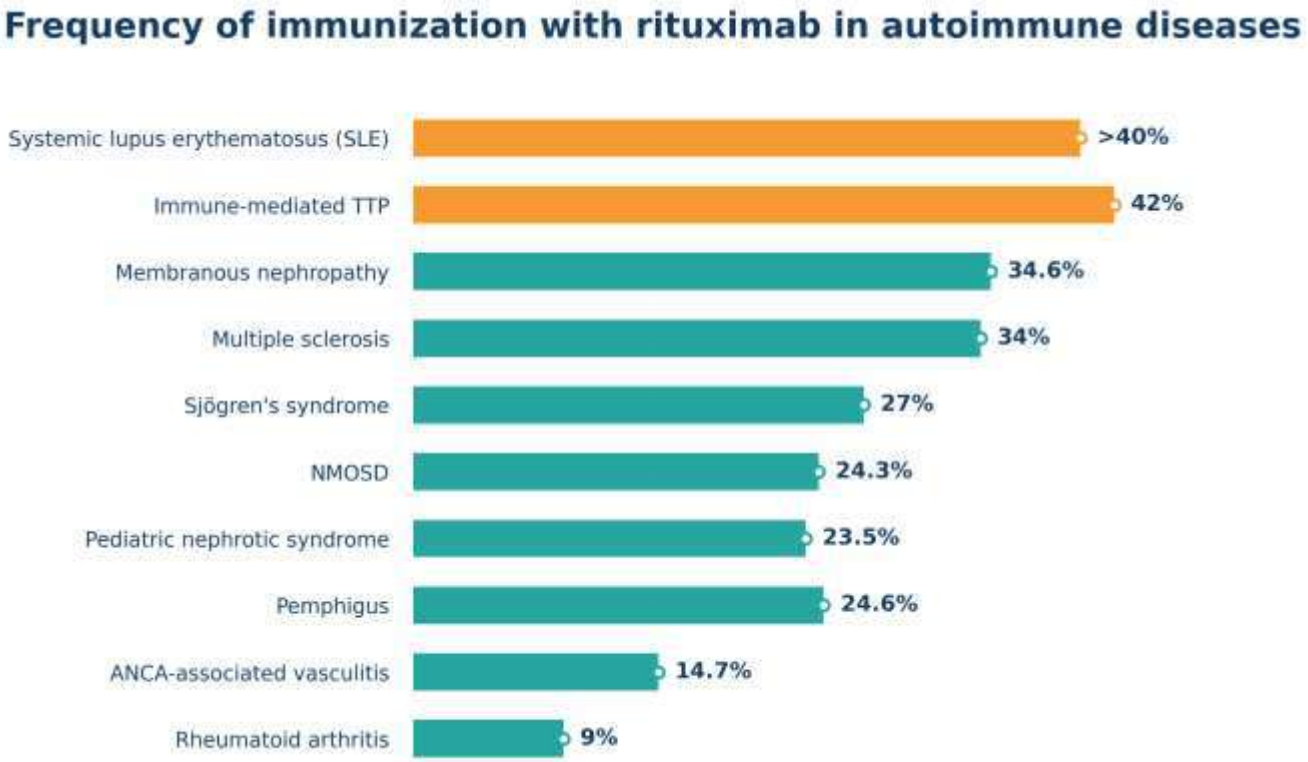


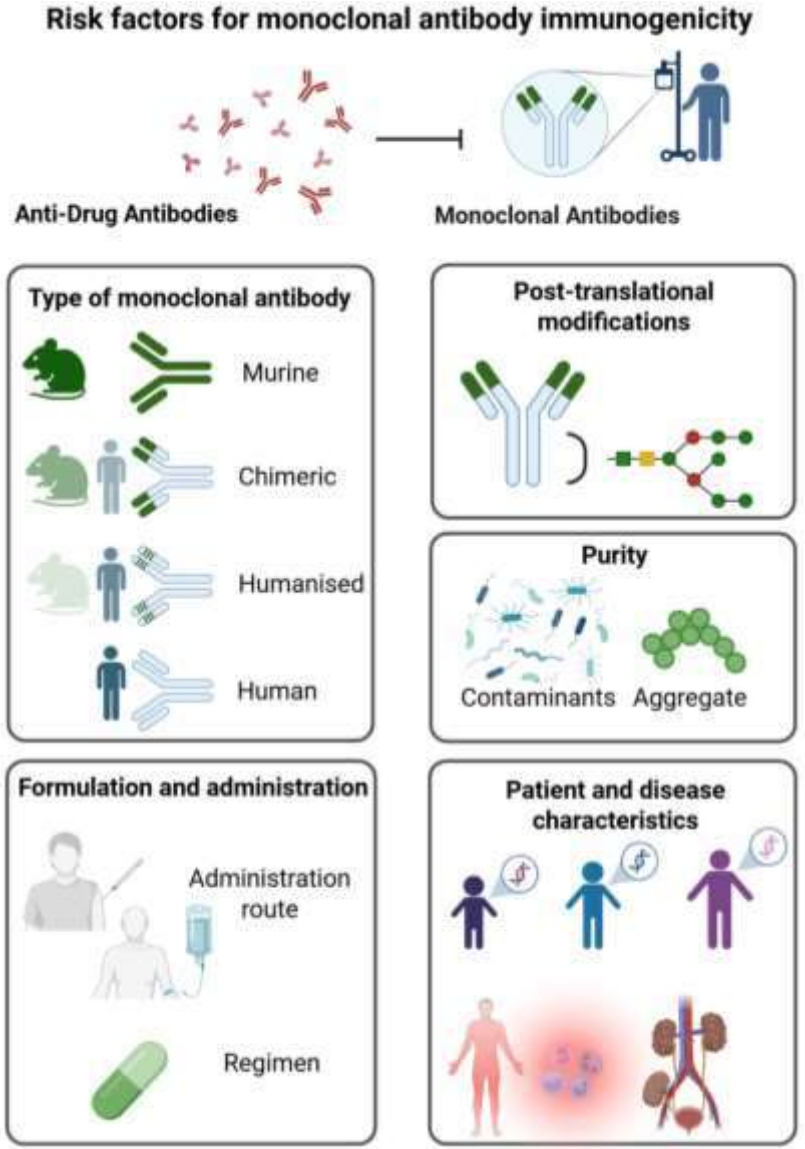




unpublished data

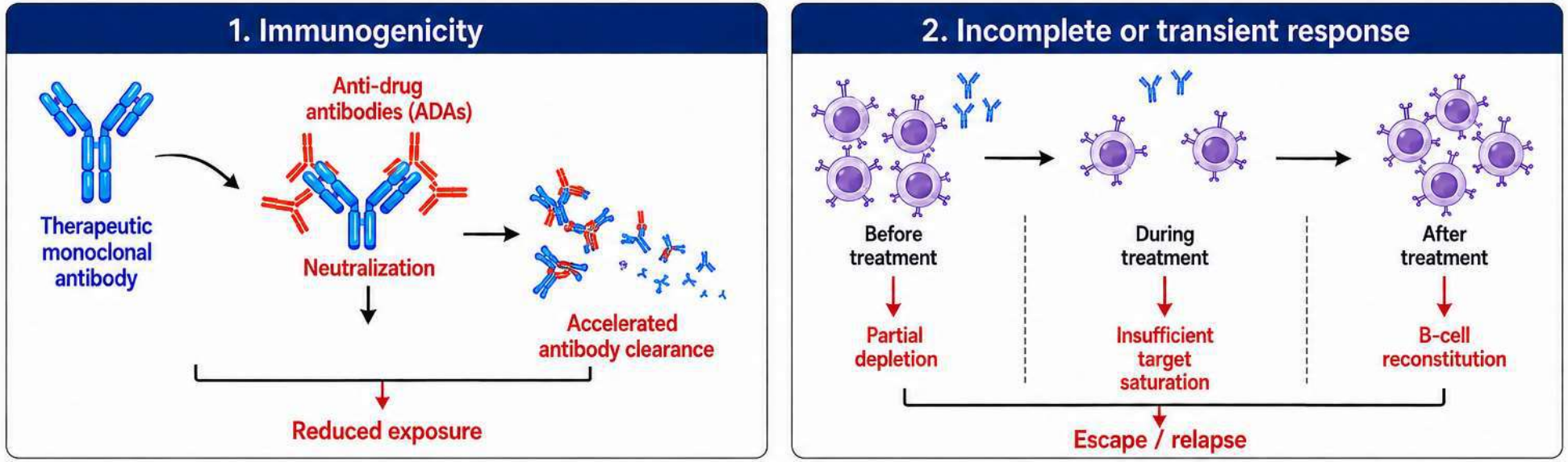
Immunization against monoclonal antibodies in auto-immune diseases



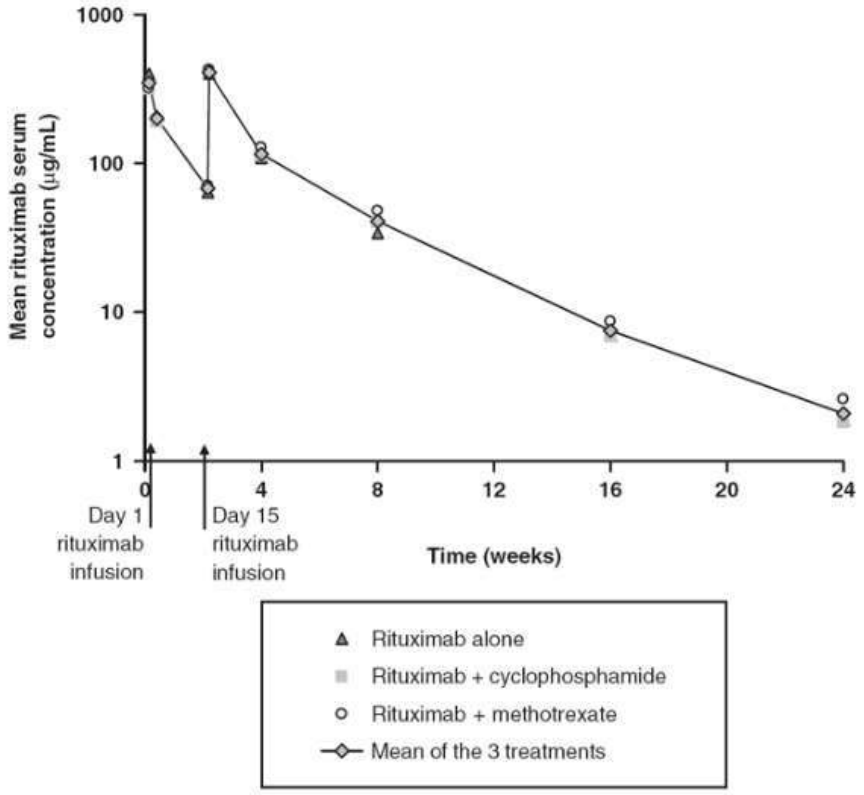


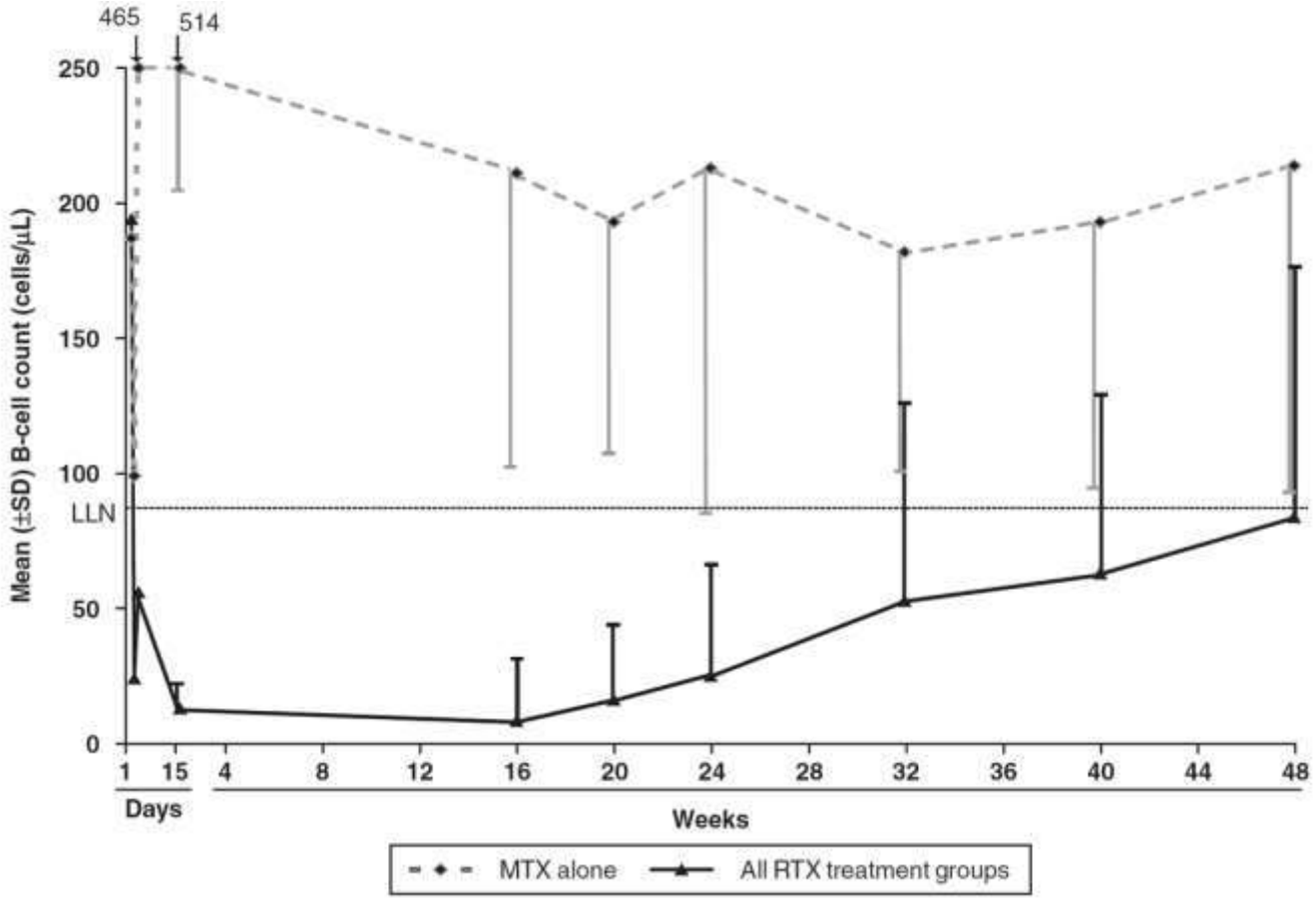
Teisseyre et al. Rev Med Int 2025
Allinovi et al. Front in Immunol 2026

Mechanisms of resistance to anti-CD20 monoclonal antibodies



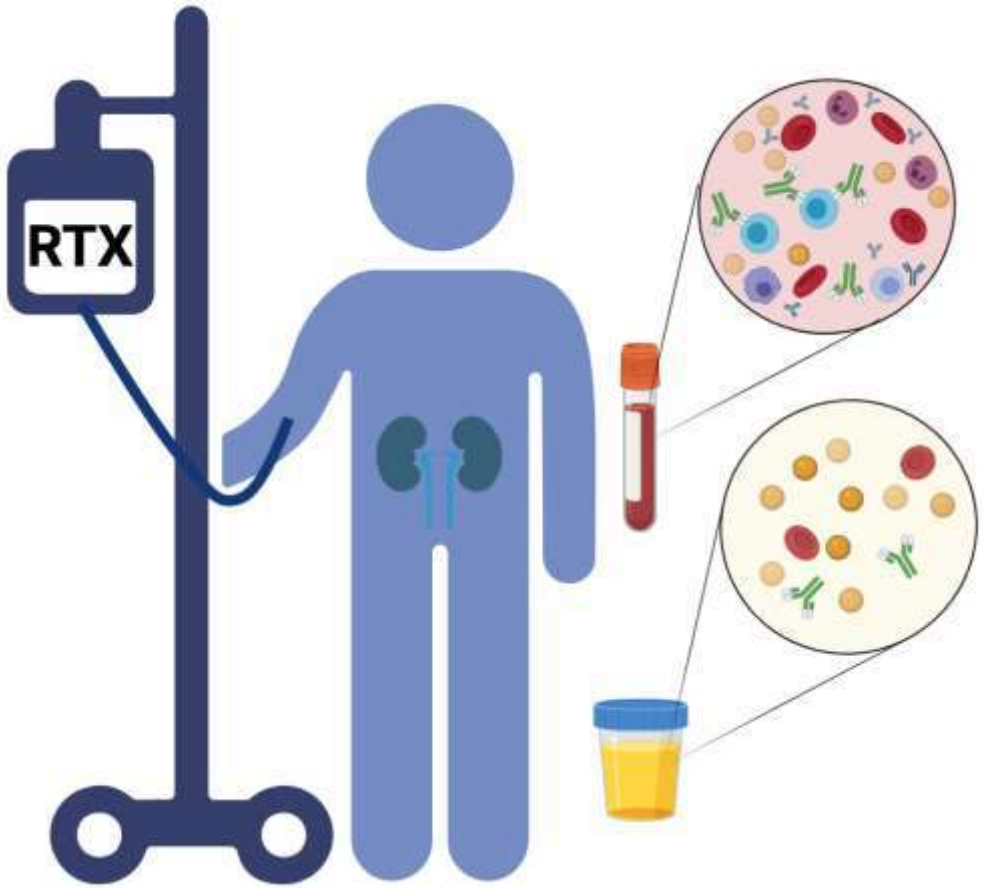
Bioavailability of rituximab

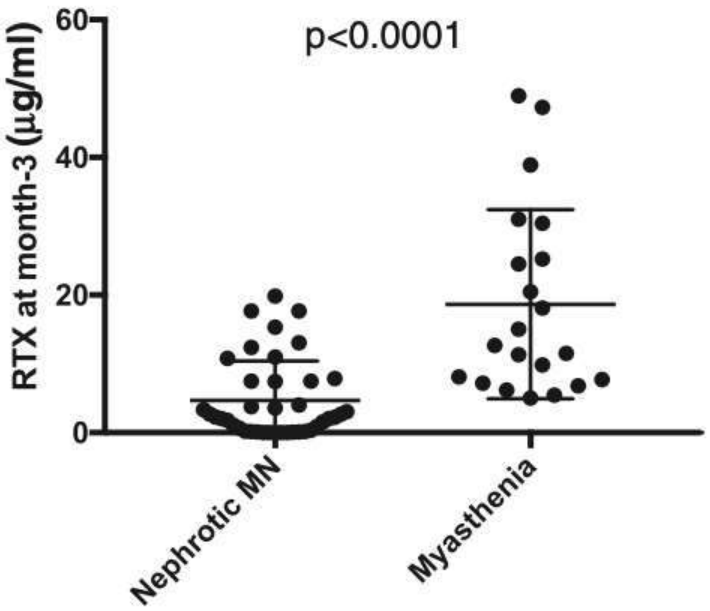




Breedveld et al. J Clin Pharmacol. 2007

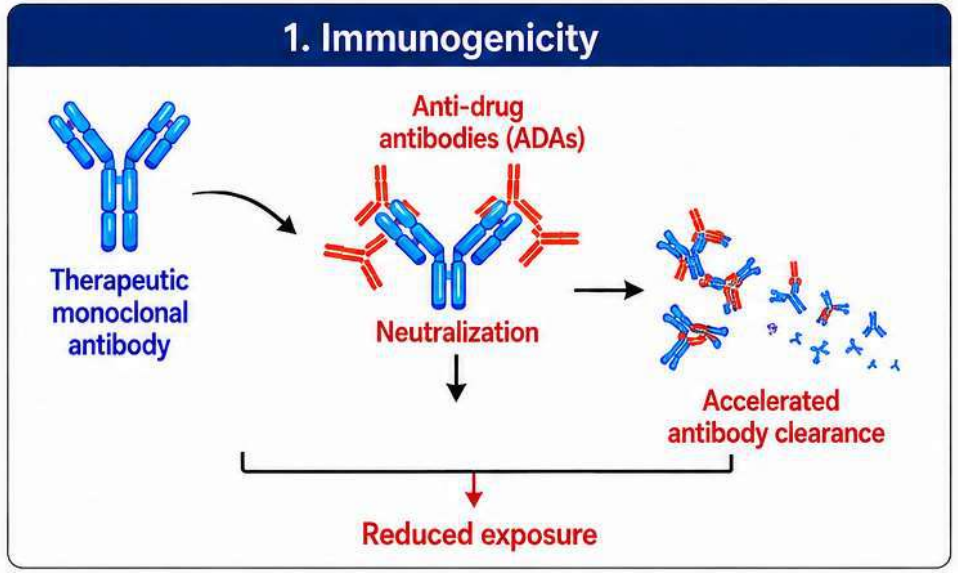
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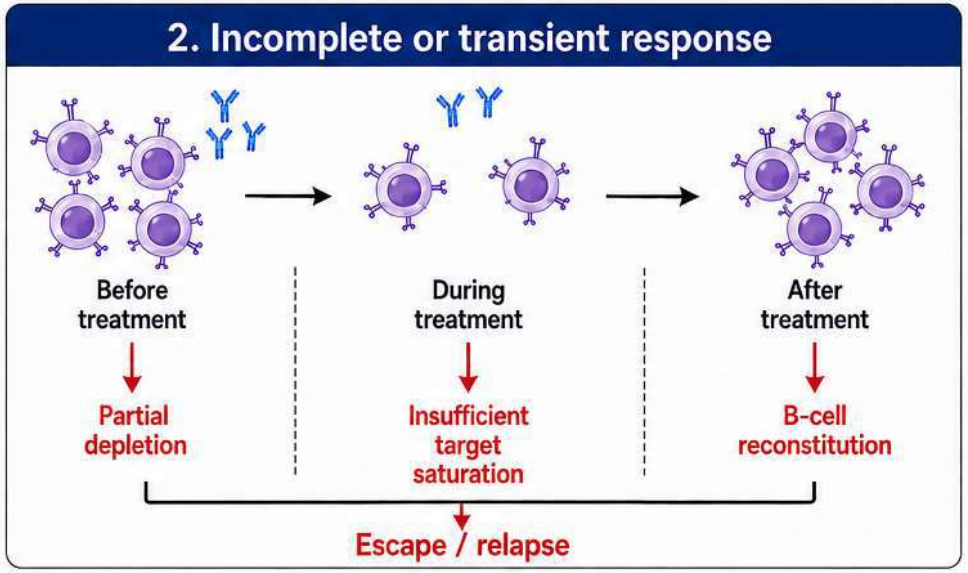


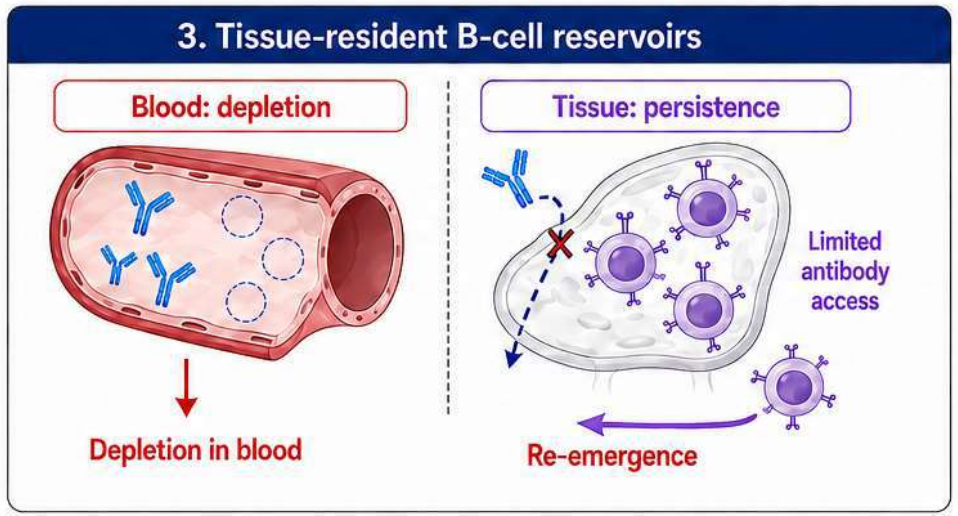


Jacobs et al. J Immunol Methods 2017
Boyer-Suavet et al. NDT 2019
Teisseyre et al. Kidney Int Rep 2021

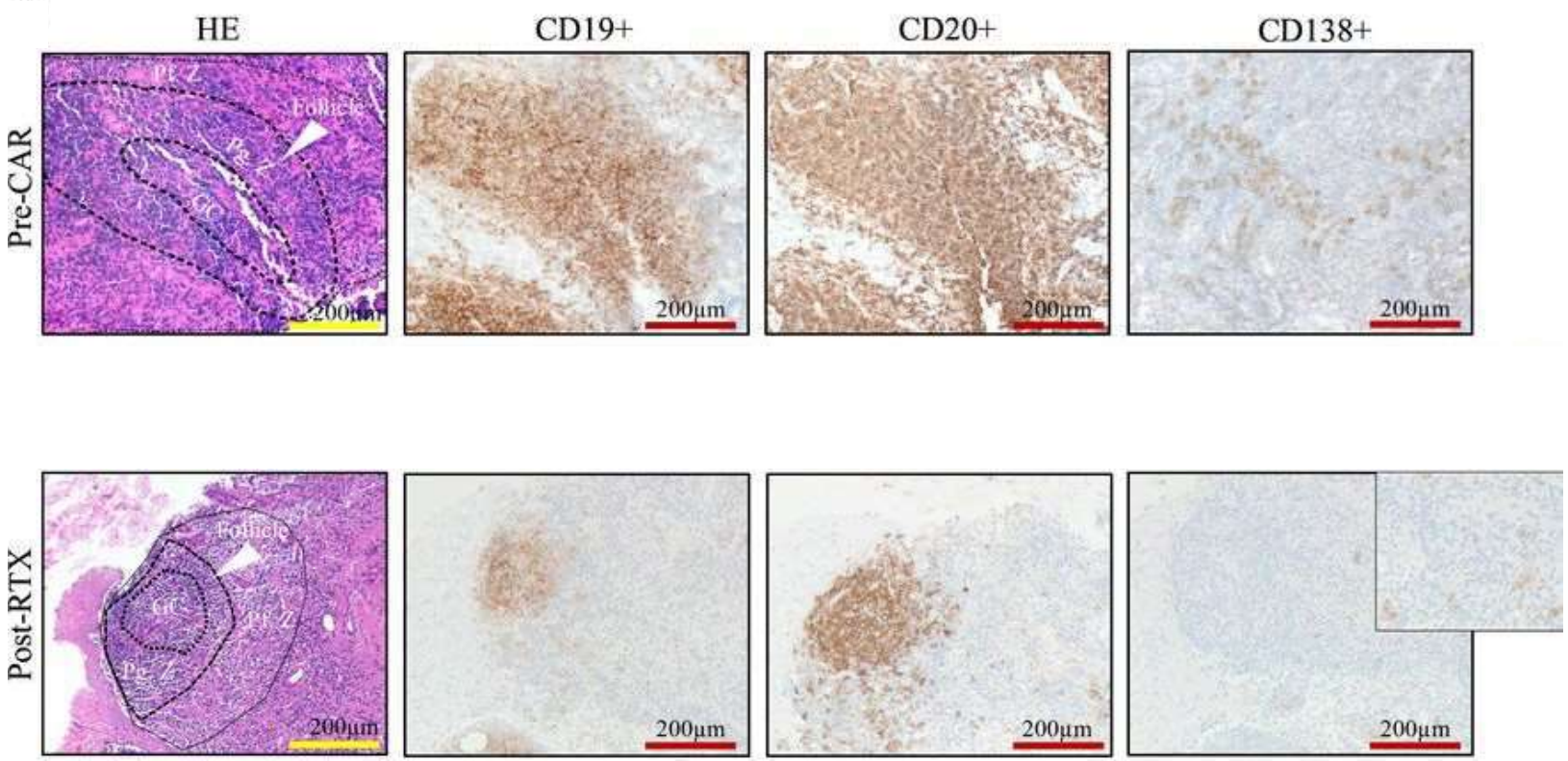
Mechanisms of resistance to anti-CD20 monoclonal antibodies

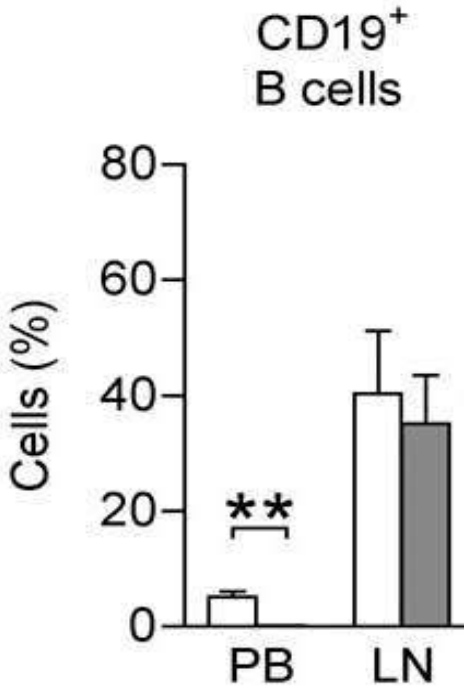






Monoclonal antibodies do not reach the lymphoid organs

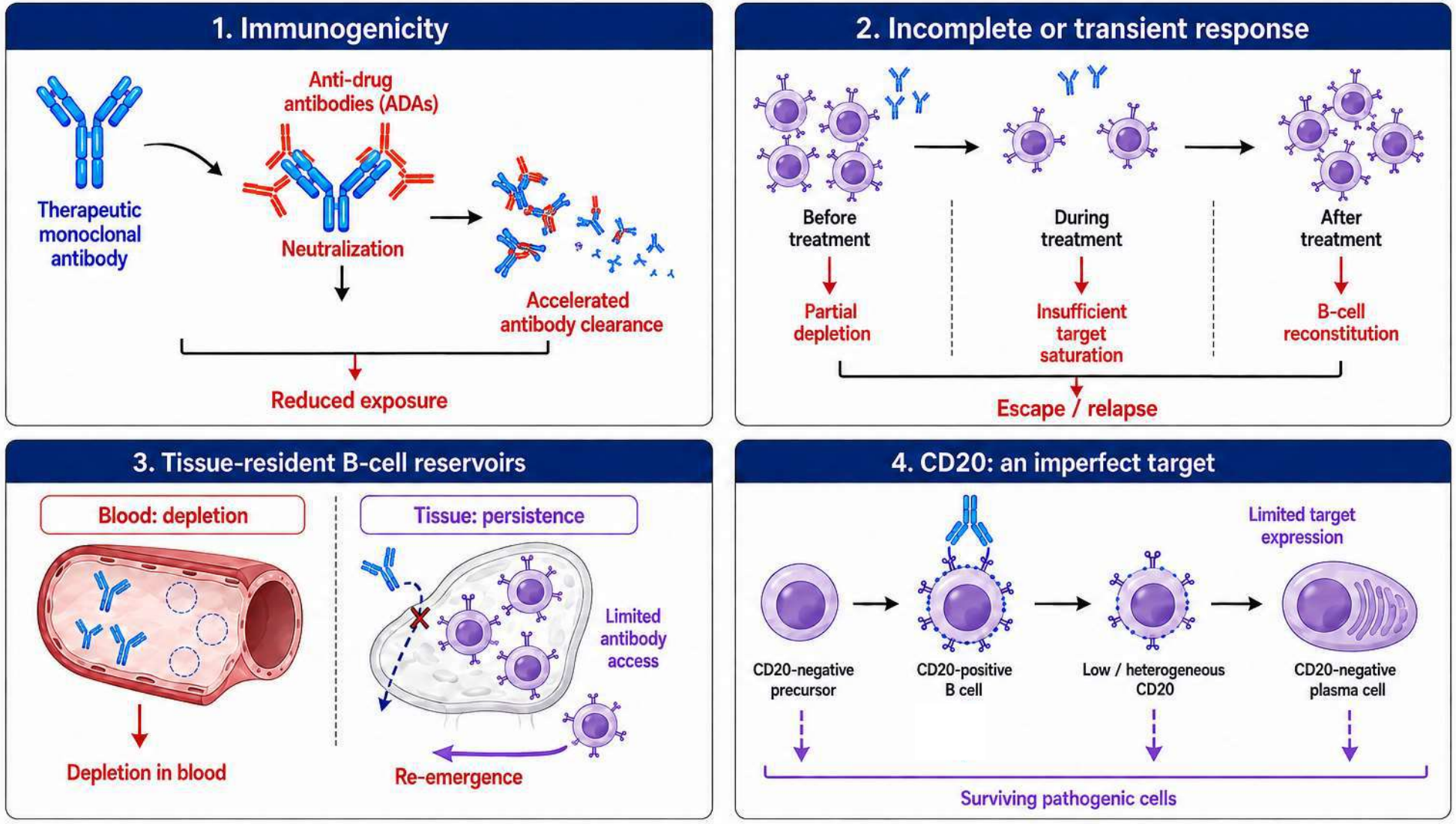




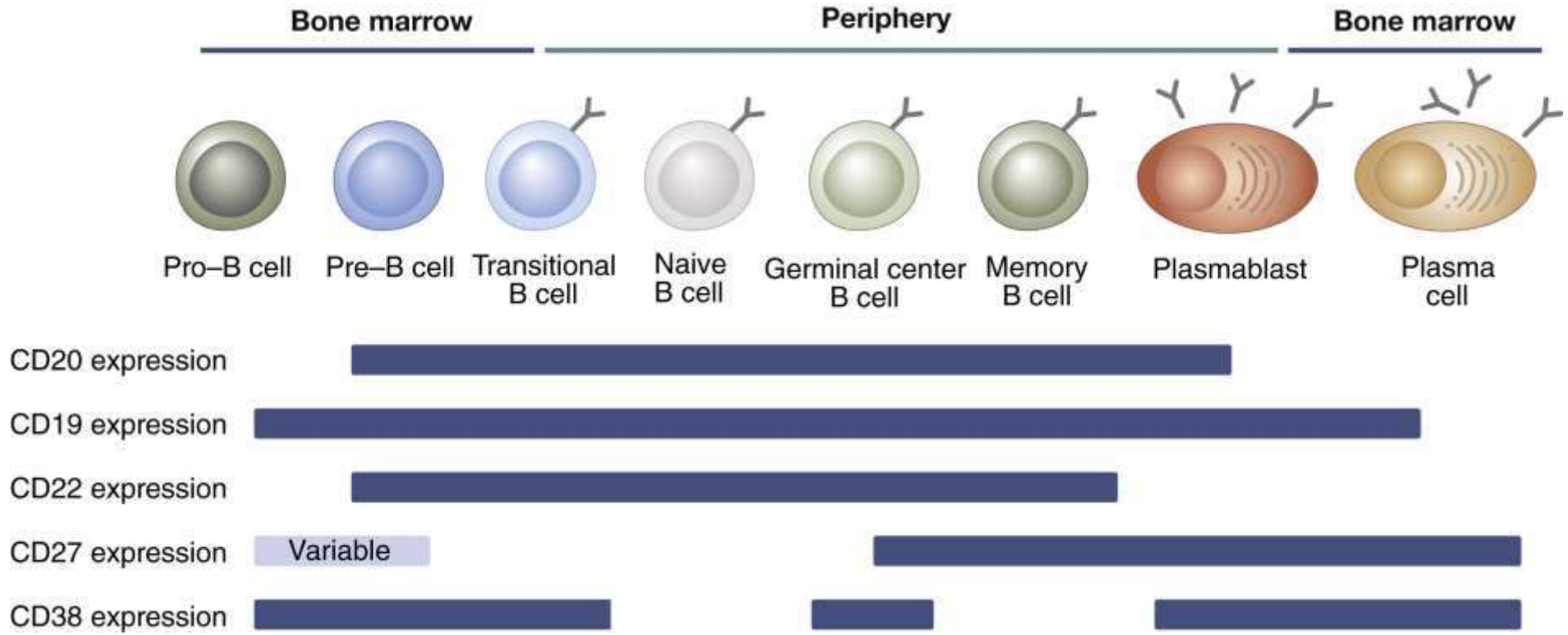
Tur et al. Annals of the Rheumatic 2024

Kamburova et al. AJT. 2013

Mechanisms of resistance to anti-CD20 monoclonal antibodies



CD20: An Imperfect Target?

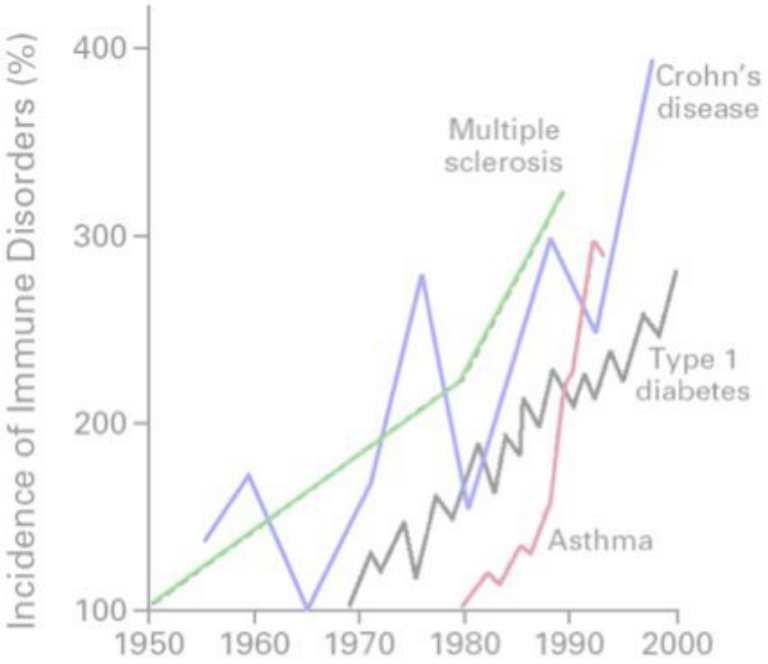


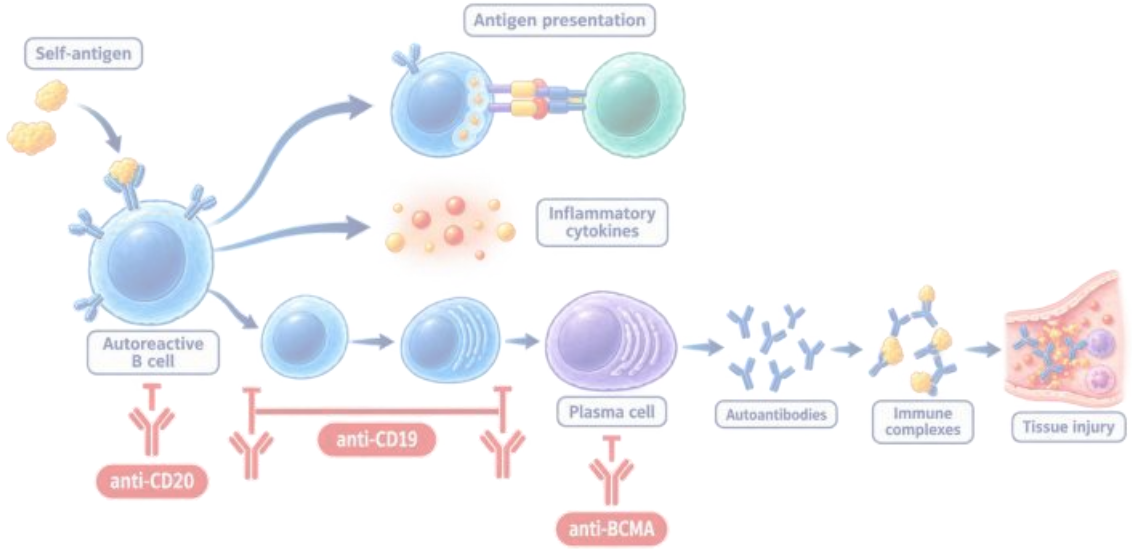
Crickx et al. Kidney Int. 2020

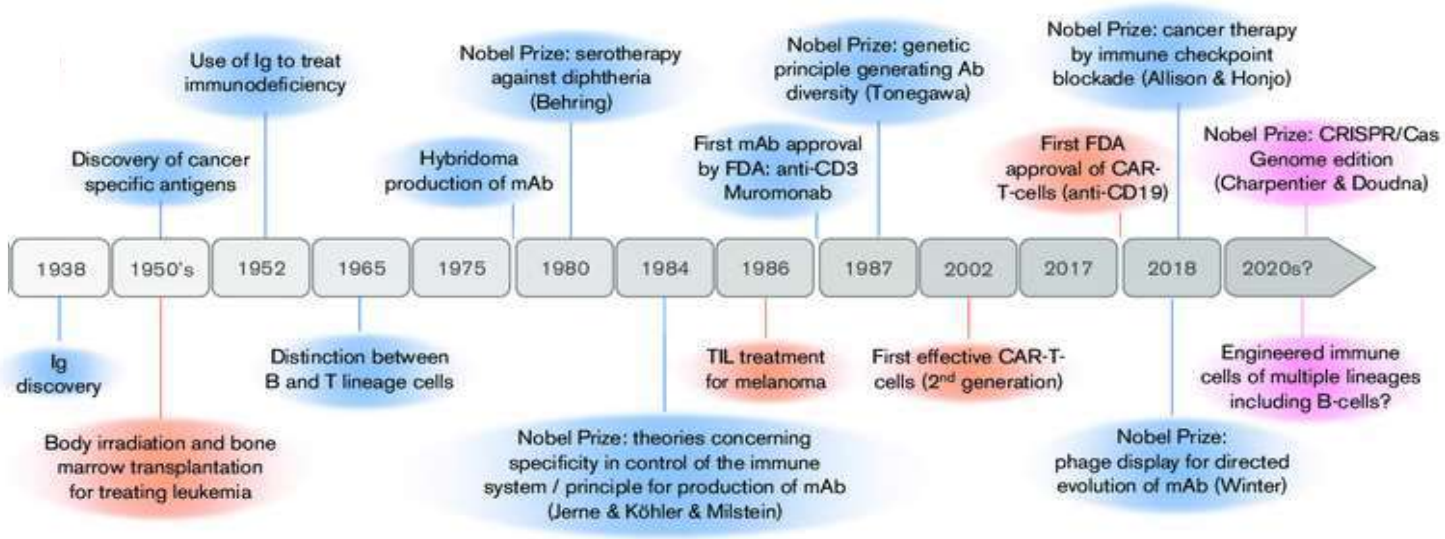
CAR-T Cells: A New Immunotherapy

Global prevalence: 5–10% in developed countries

A major public-health burden alongside cancer and cardiovascular disease

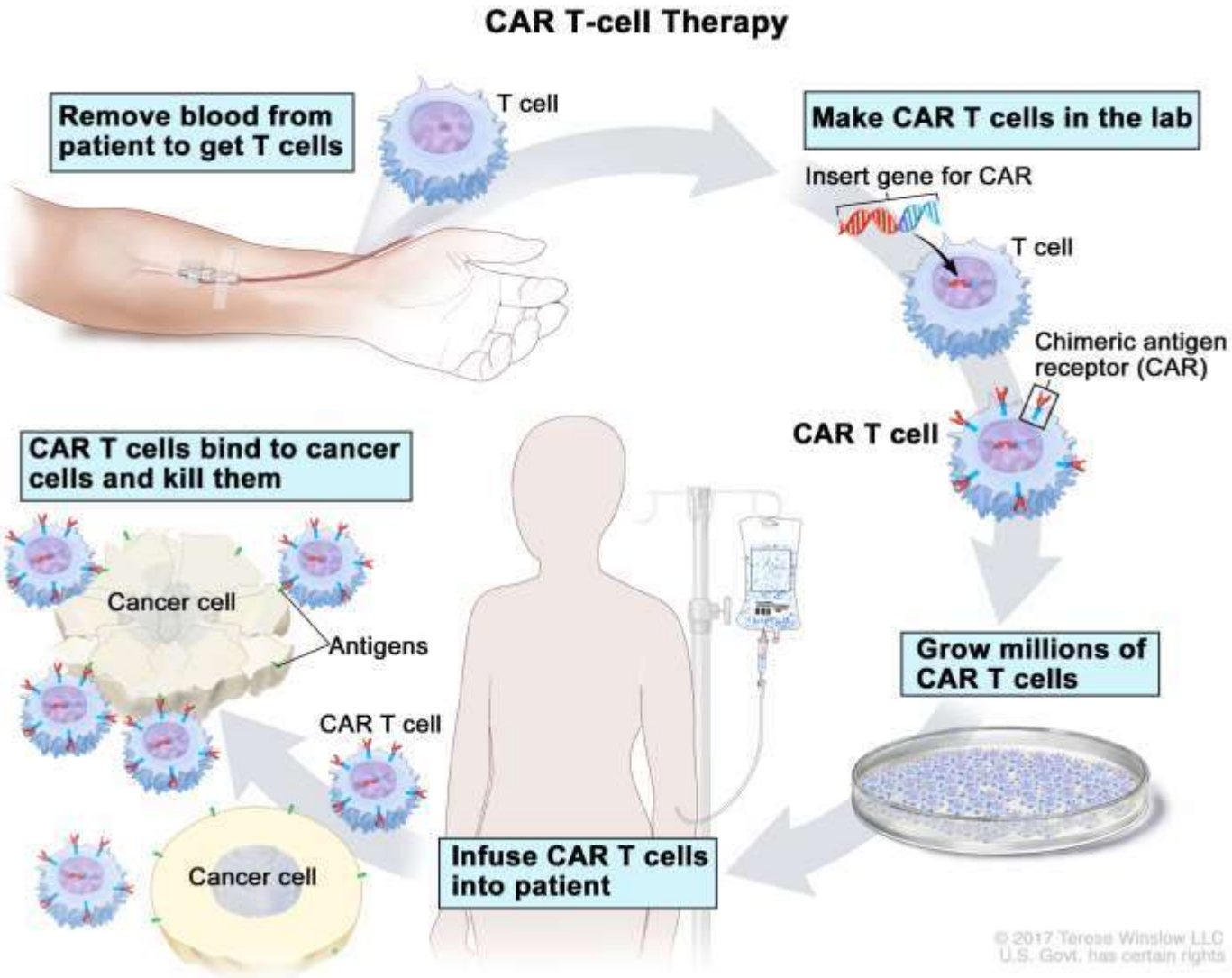






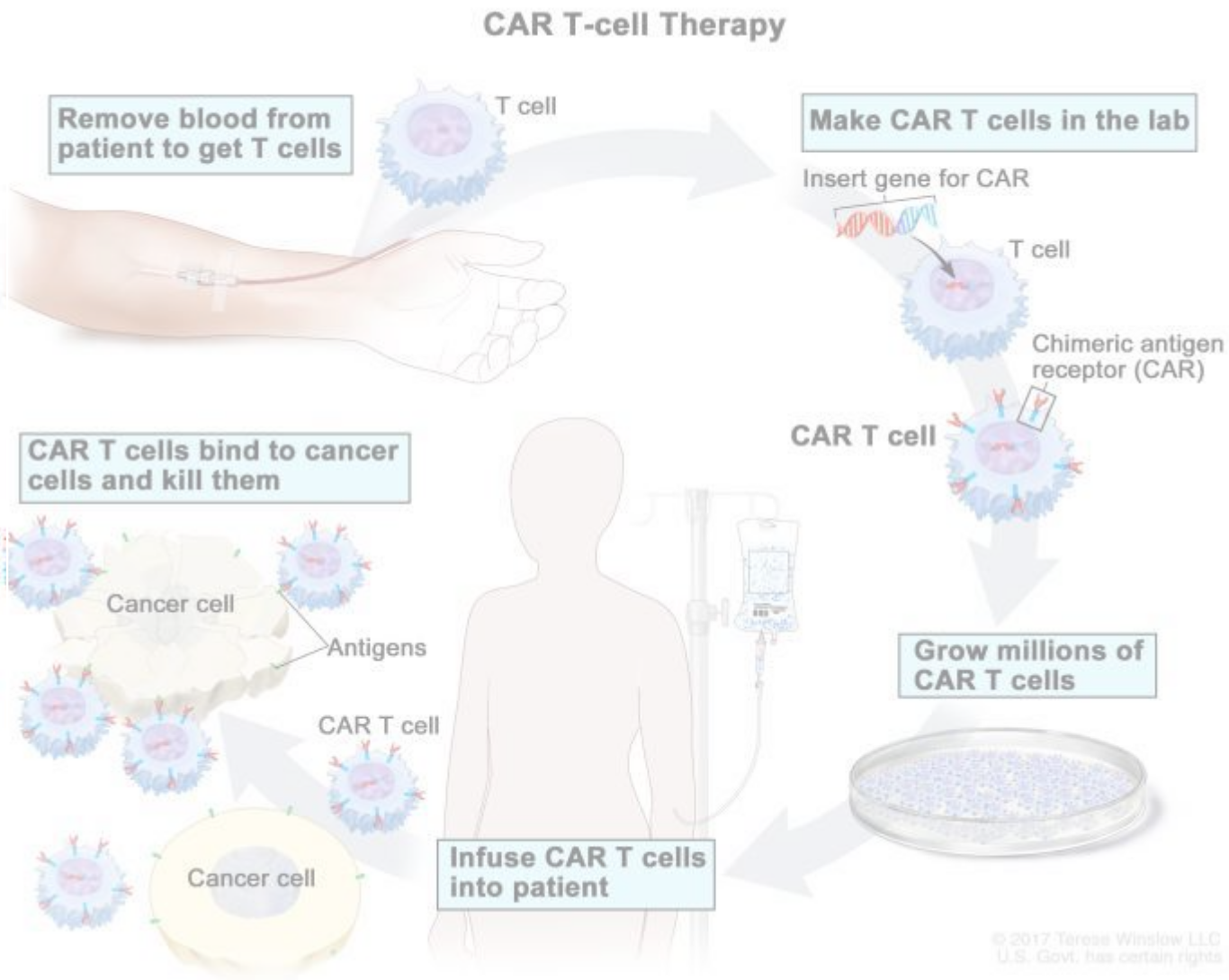
Bach et al. NEJM 2002

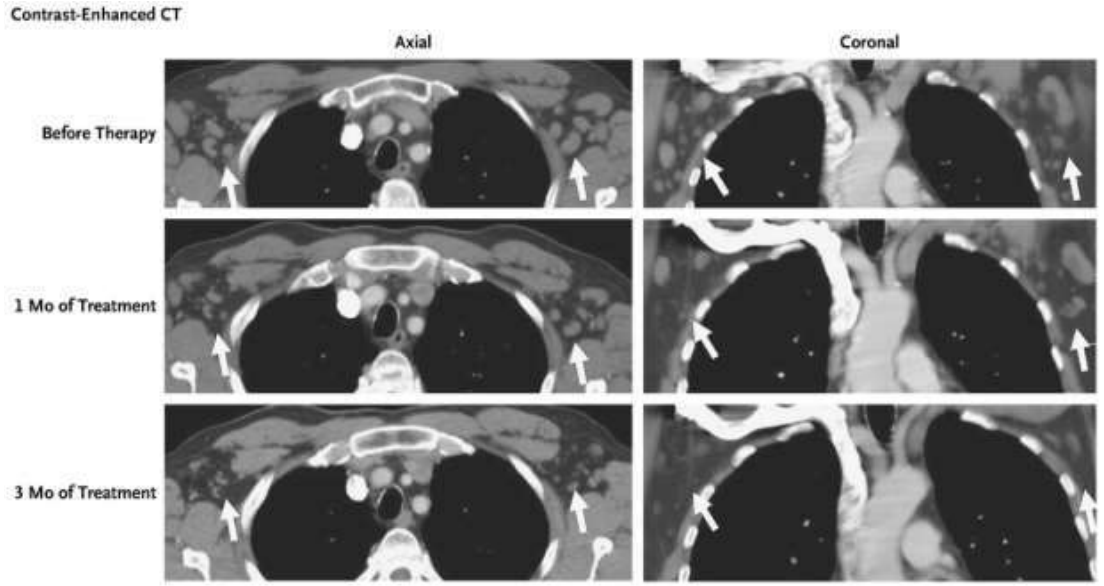
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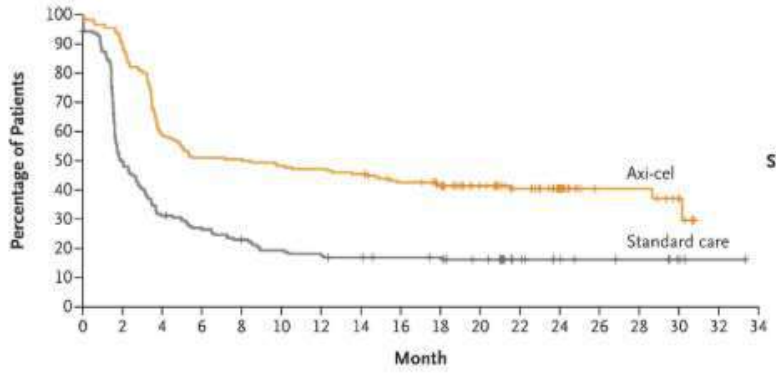


Porter et al. NEJM 2011
Locke et al. NEJM 2022

CAR-T Cells: A New Immunotherapy







	No. of Patients	Median Event-free Survival (95% CI) mo
Axi-cel	180	8.3 (4.5–15.8)
Standard Care	179	2.0 (1.6–2.8)

Stratified hazard ratio for event or death, 0.40 (95% CI, 0.31–0.51)
P<0.001

Porter et al. NEJM 2011
Locke et al. NEJM 2022

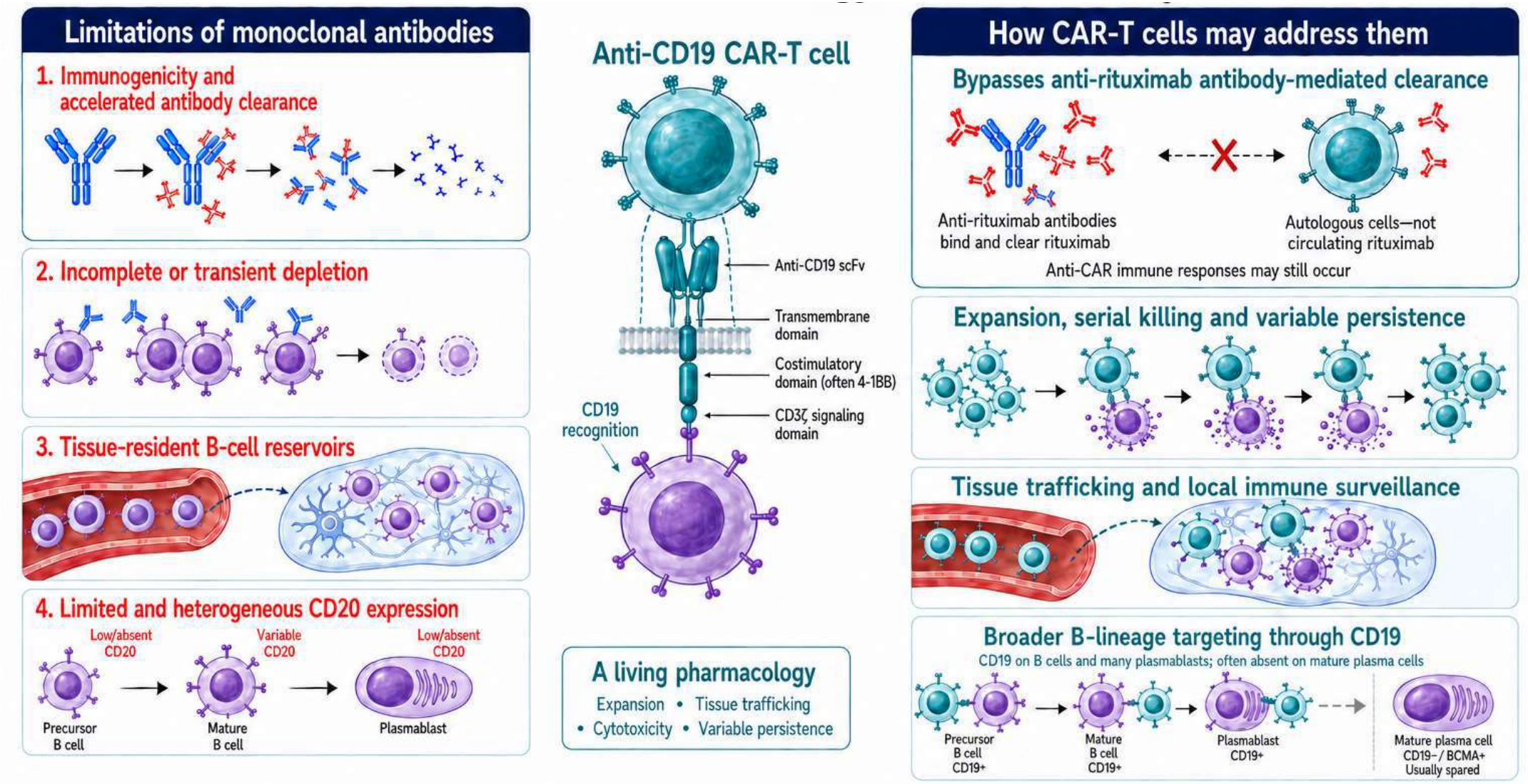
CAR-T Cells: A New Immunotherapy

FDA Approved CAR T cell therapies.

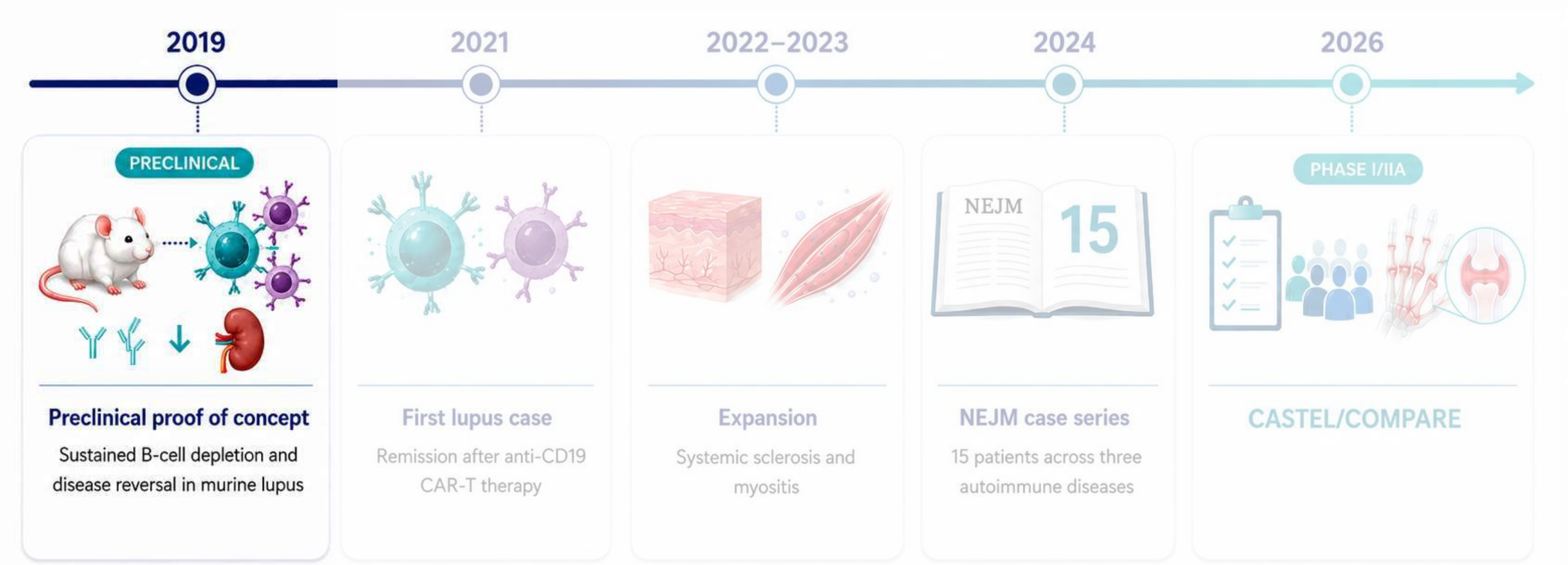
Brand name / Generic Name / Target	Updated Indication	First Approval Date	Vector	Pivotal trial	Complete remission
Kymriah *Tisagenlecleucel* CD19	r/r B-ALL (P/A) r/r DLBCL (A) r/r FL (A)*	August 2017	Lentiviral	ELIANA	81%
Yescarta *Axicabtagene ciloleucel* CD19	r/r LBCL (A) r/r DLBCL (A) r/r FL (A)*	October 2017	Gamma-retroviral	ZUMA −1	58%
Tecartus *Brexucabtagene autoleucel* CD19	r/r B-ALL (A) r/r MCL (A)	July 2020	Gamma-retroviral	ZUMA-2	67%
Breyanzi *Lisocabtagene maraleucel* CD19	r/r LBCL (A) r/r FL (A)* r/r MCL (A) r/r CLL/SLL (A)	February 2021	Lentiviral	TRASCEND NHL001	53%
Abecma *Idecabtagene vicleucel* BCMA	r/r MM (A)	March 2021	Lentiviral	KARMMA	33%
Carvykti Ciltacabtagene autoleucel BCMA	r/r MM (A)	February 2022	Lentiviral	CARTITUDE	82.5%**
Aucatzyl Obecabtagene autoleucel CD19	r/r B-ALL (A)	November 2024	Lentiviral	FELIX	55%

Rosetti et al. Autoimmunity Reviews 2026

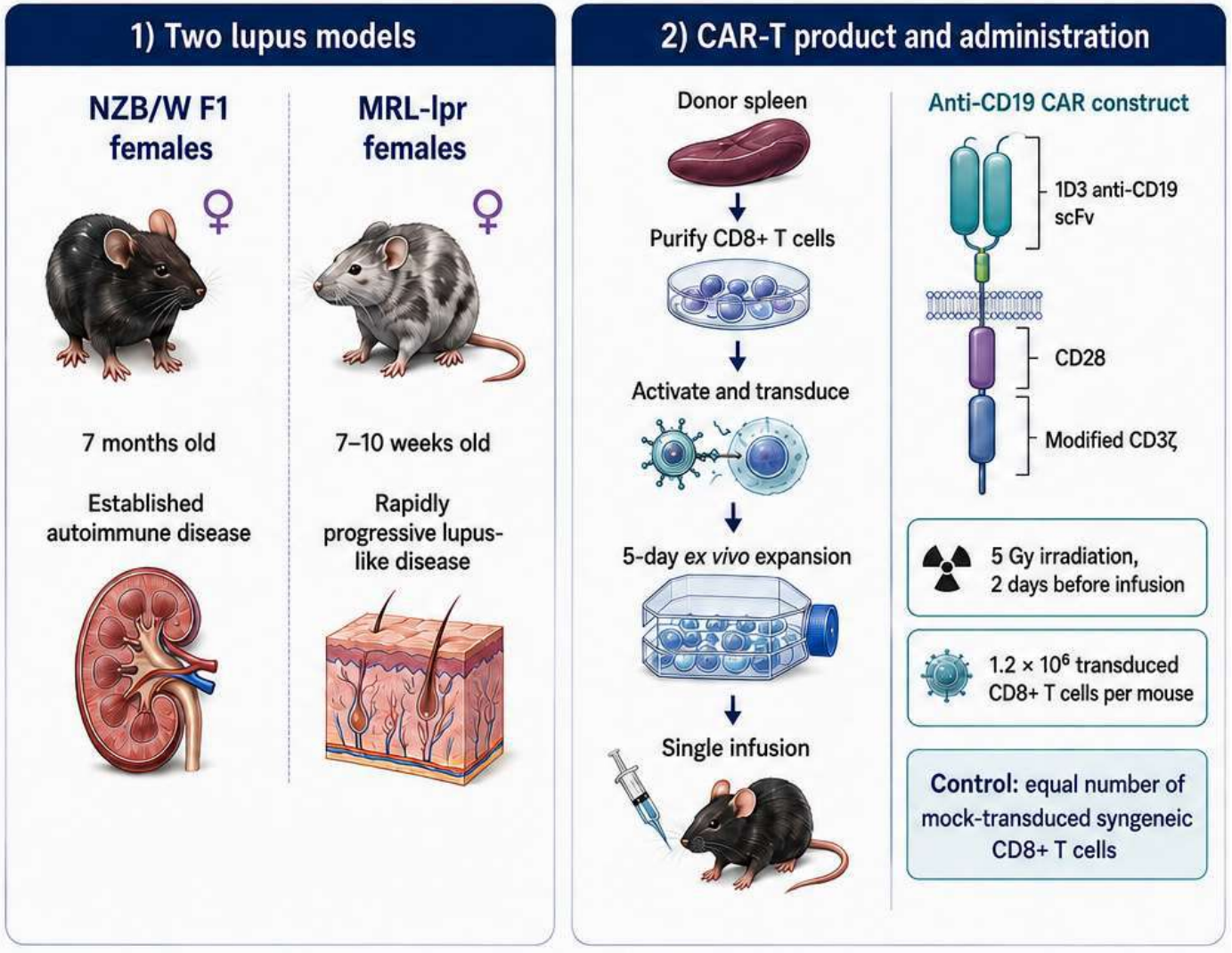
Are CAR-T cells a solution to the limitations of monoclonal antibodies?

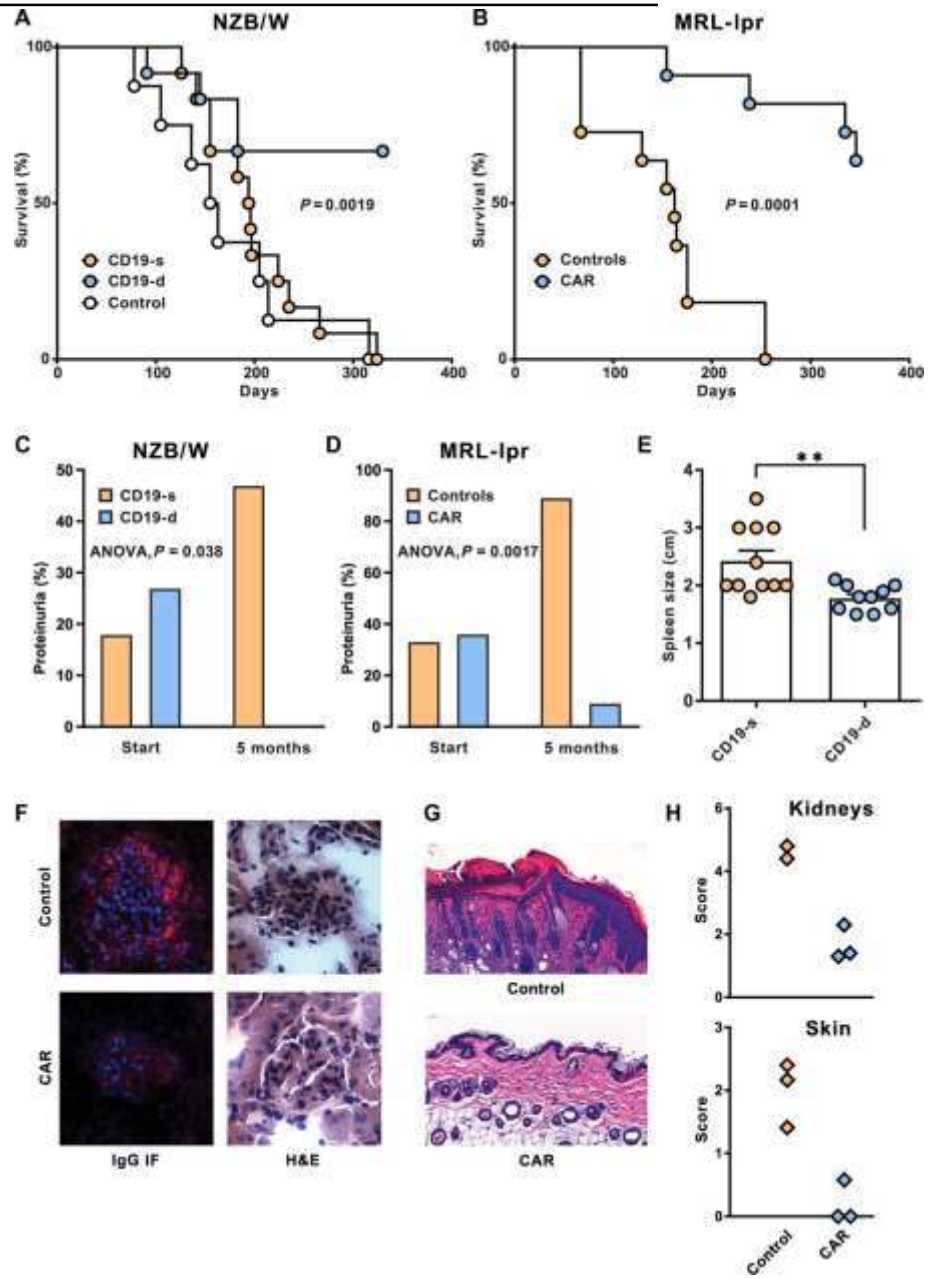


CAR-T Cells in Autoimmune Diseases: From Preclinical Studies to Prospective Trials



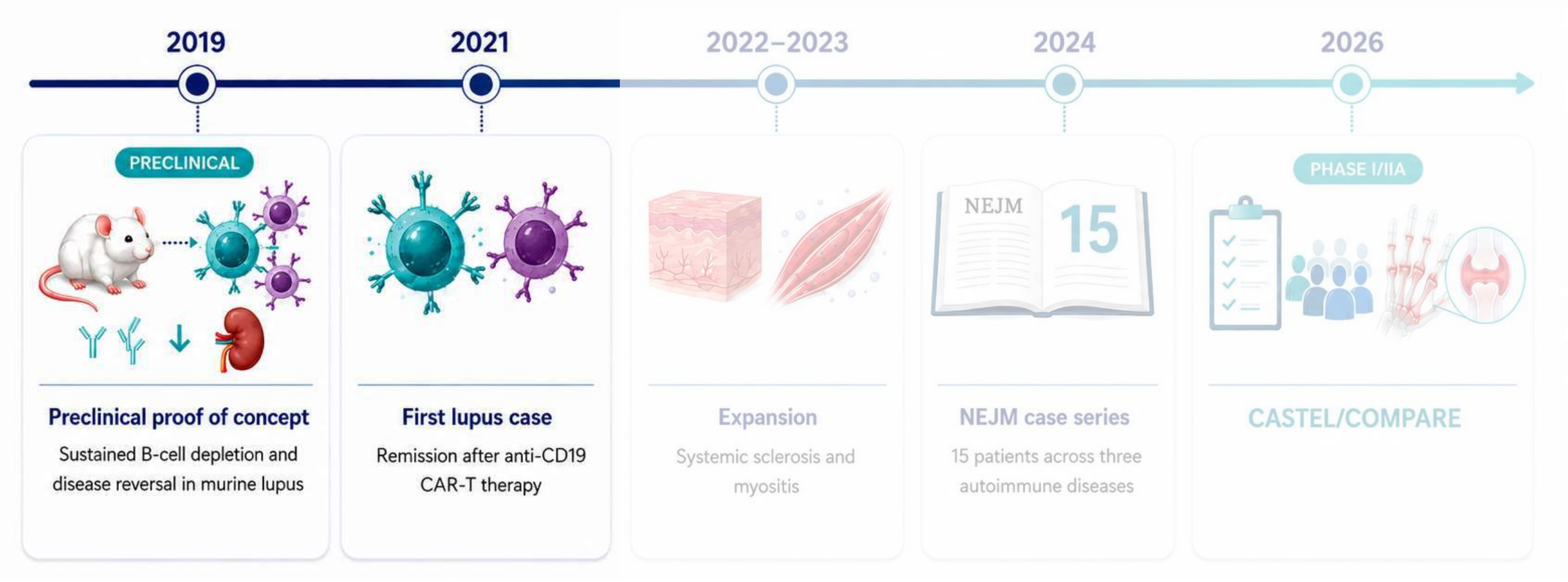
Anti-CD19 CAR-T Cells in a Preclinical Lupus Model





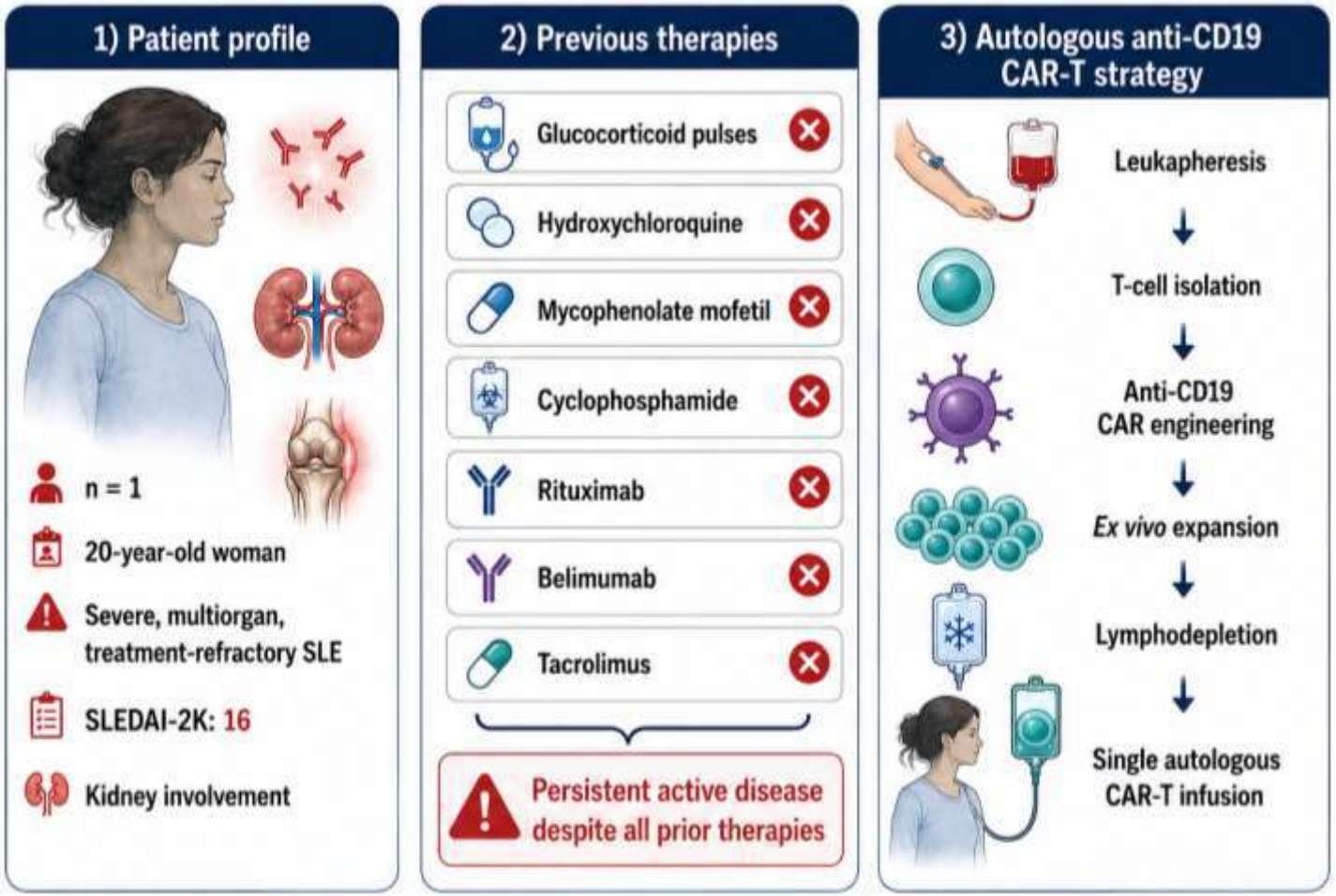
Kansal et al. Sci Transl Med 2019

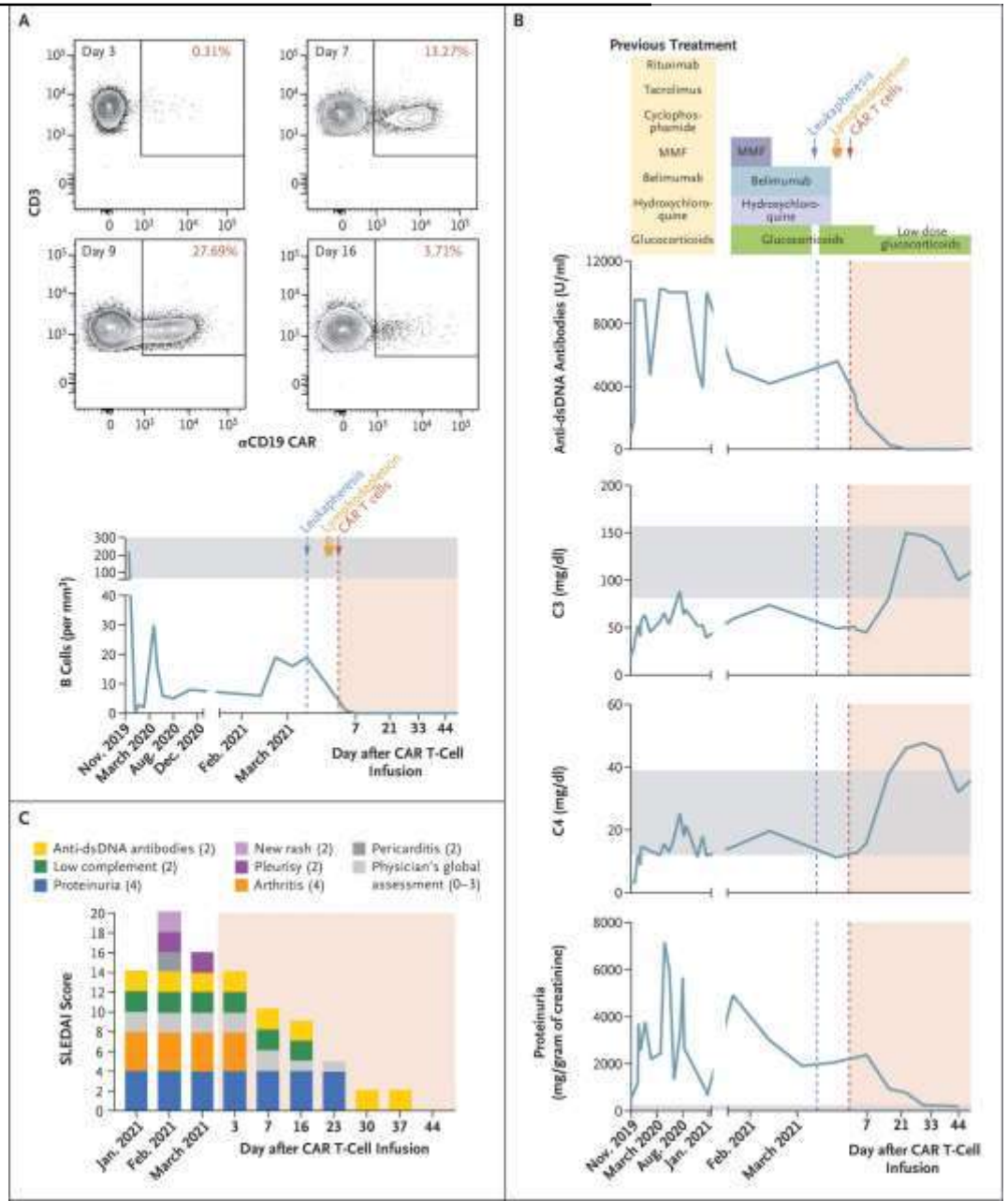
CAR-T Cells in Autoimmune Diseases: From Preclinical Studies to Prospective Trials



First Use of Anti-CD19 CAR-T Cells to Treat Autoimmune Diseases in Humans

Academic Production of CAR-T Cells





Mougiakakos et al. NEJM 2021

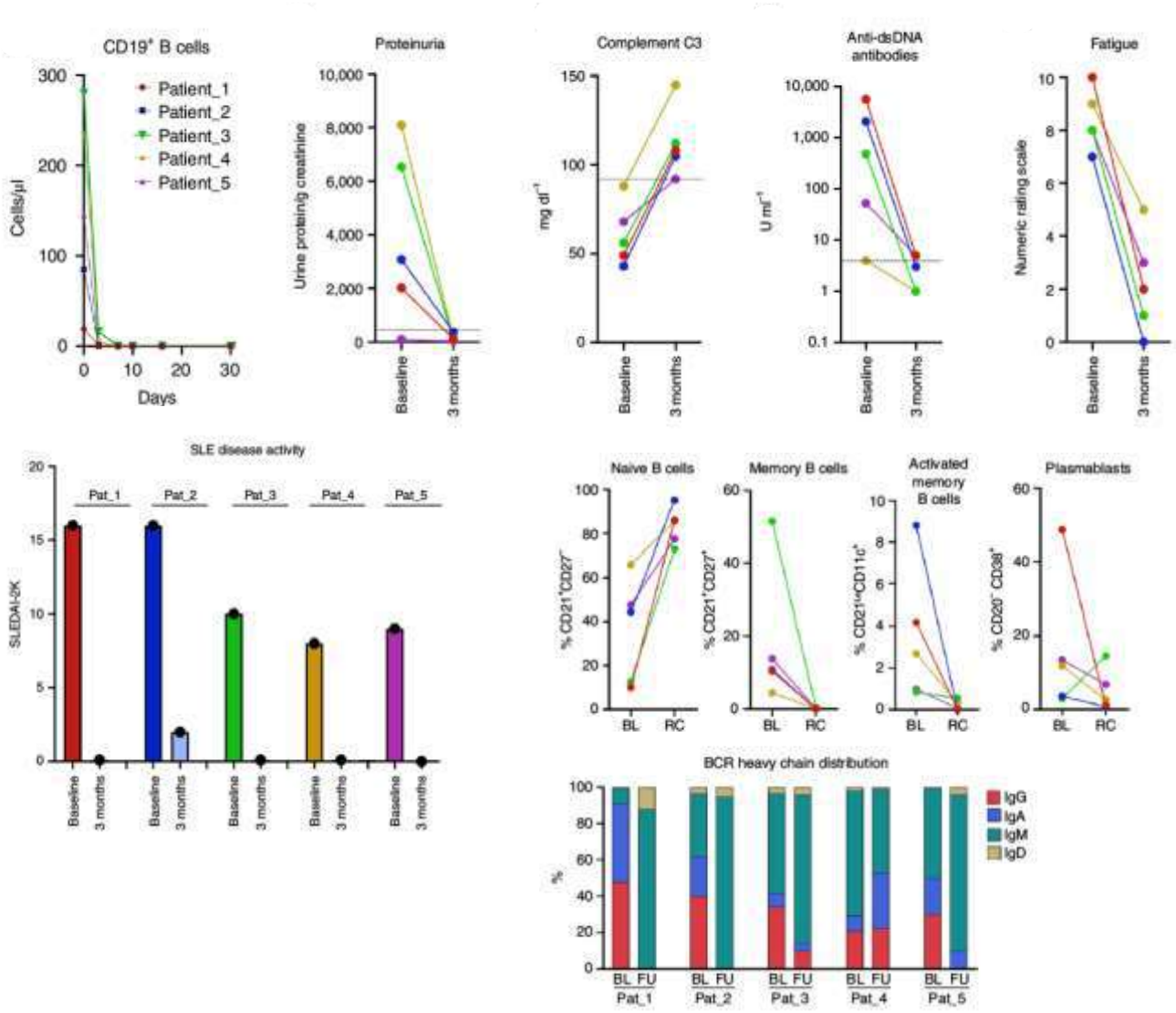
Additional Data on Human Lupus

Academic Production of CAR-T Cells

Table 1 | Patient characteristics at baseline

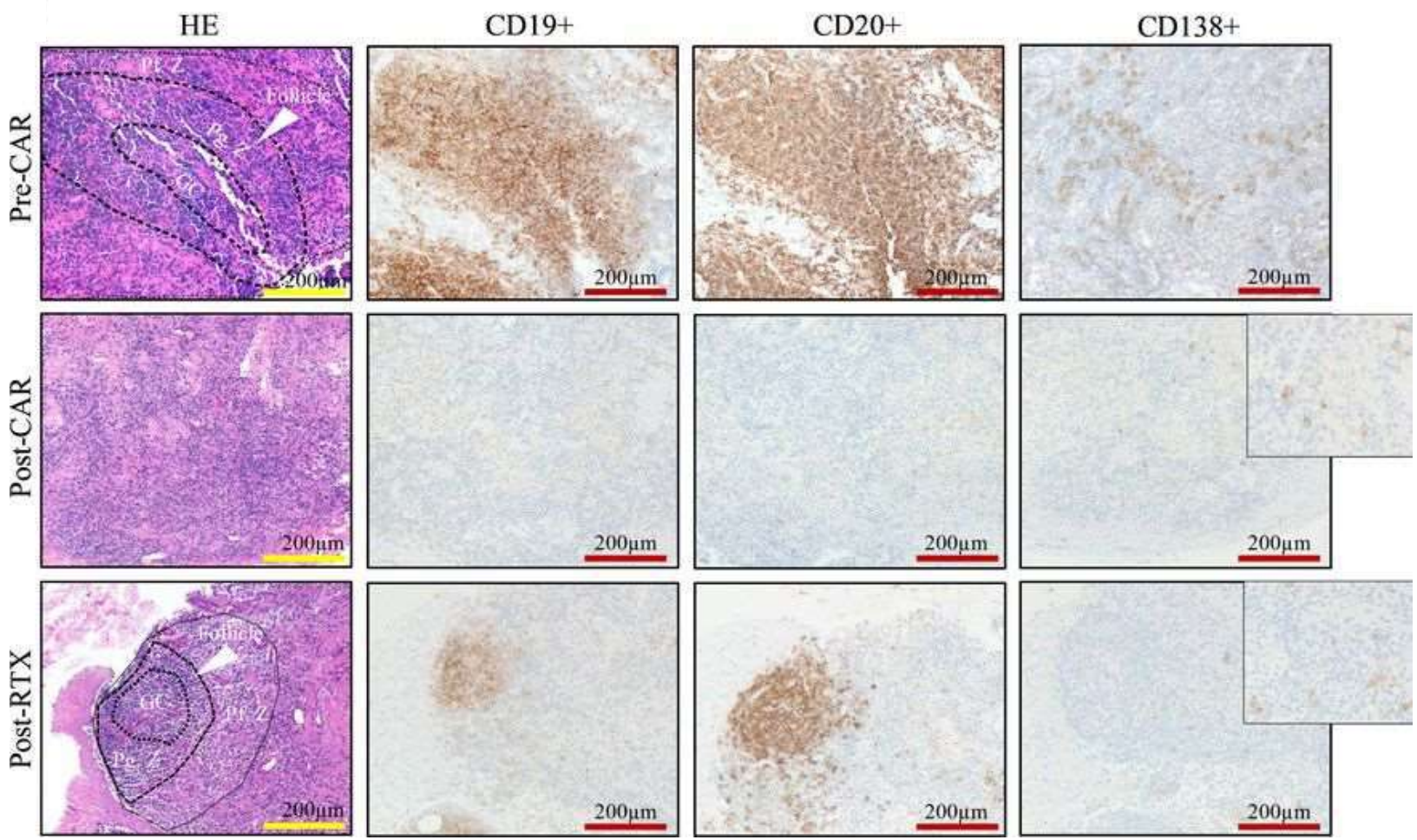
	Patient 1	Patient 2	Patient 3	Patient 4	Patient 5
Demographics					
Age (years)	22	23	22	24	18
Sex (female/male)	F	M	F	F	F
Disease duration (years)	4	1	6	9	3
Disease activity SLEDAI-2K (score)	16	16	10	8	9
Laboratory values					
Baseline hemoglobin (g dl^{-1})	10.0	14.60	9.60	13.10	12.20
Baseline white blood cells (*N* μl^{-1})	8.69	5.36	5.85	3.88	7.25
Baseline lymphocytes (*N* μl^{-1})	0.7	1.2	1.4	1.4	1.4
Baseline platelets (*N* μl^{-1})	279	188	198	398	278
Baseline C3 (mg dl^{-1})	49	43	56	88	68
Baseline anti-dsDNA (U ml^{-1})	5,600	2,060	479	4	52
Baseline ANA (titer)	1:10,000	1:3,200	1:10,000	1:3,200	1:1,000
Proteinuria (mg per 24 h)	2,015	3,080	6,539	8,096	88
Other autoantibodies	NUC, Sm	NUC, Sm Ro60	NUC, PCNA	NUC, Sm, Ro60	NUC, Sm, Ku
Organ involvement					
Skin (presence/absence)	+	+	+	+	+
Kidney (presence/absence)	+ (stage III)	+ (stage III)	+ (stage IV)	+ (stage III/V)	+ (stage III/V)
Joints (presence/absence)	–	+	+	+	+
Lungs (presence/absence)	+	–	+	+/–	–
Heart (presence/absence)	+	–	–	+	–
Other (presence/absence)	HEM	–	SER	MYO	HEM
Treatments					
Glucocorticoid pulses (yes/no)	+	+	+	+	+
Hydroxychloroquine (yes/no)	+	+	+	+	+
MMF (yes/no)	+	+	+	+	+
Azathioprine (yes/no)	–	–	–	+	+
Cyclophosphamide (yes/no)	+	+	+	–	–
Rituximab (yes/no)	+	–	–	–	–
Belimumab (yes/no)	+	+	+	+	+
Other (yes/no)	TAC	–	–	MTX, LEF	–

ANA, antinuclear antibody; C3, complement factor C3; HEM, hematologic abnormalities of SLE; LEF, leflunomide; MTX, methotrexate; MYO, myositis; NUC, anti-nucleosome antibodies; PCNA, proliferating cell nuclear antigen; SER, serositis; TAC, tacrolimus.



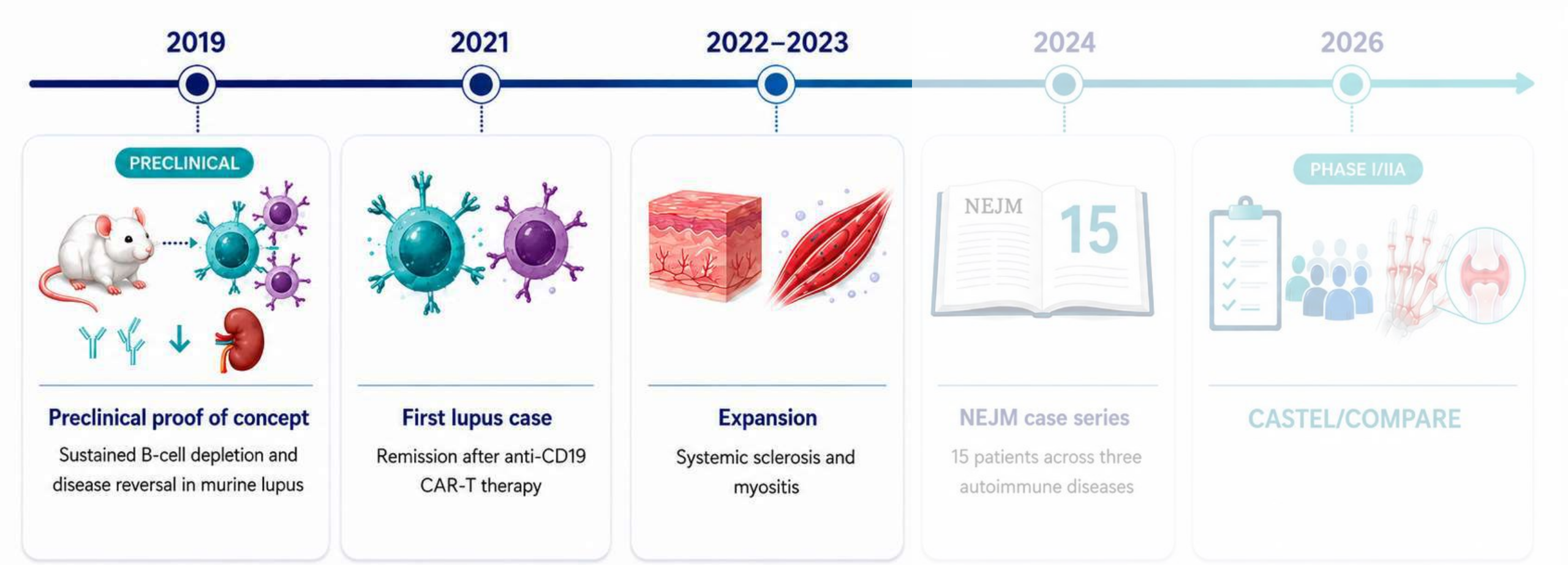
Mackensen et al. Nature Med 2022

Additional Data on Human Lupus



Tur et al. Annals of the Rheumatic 2024

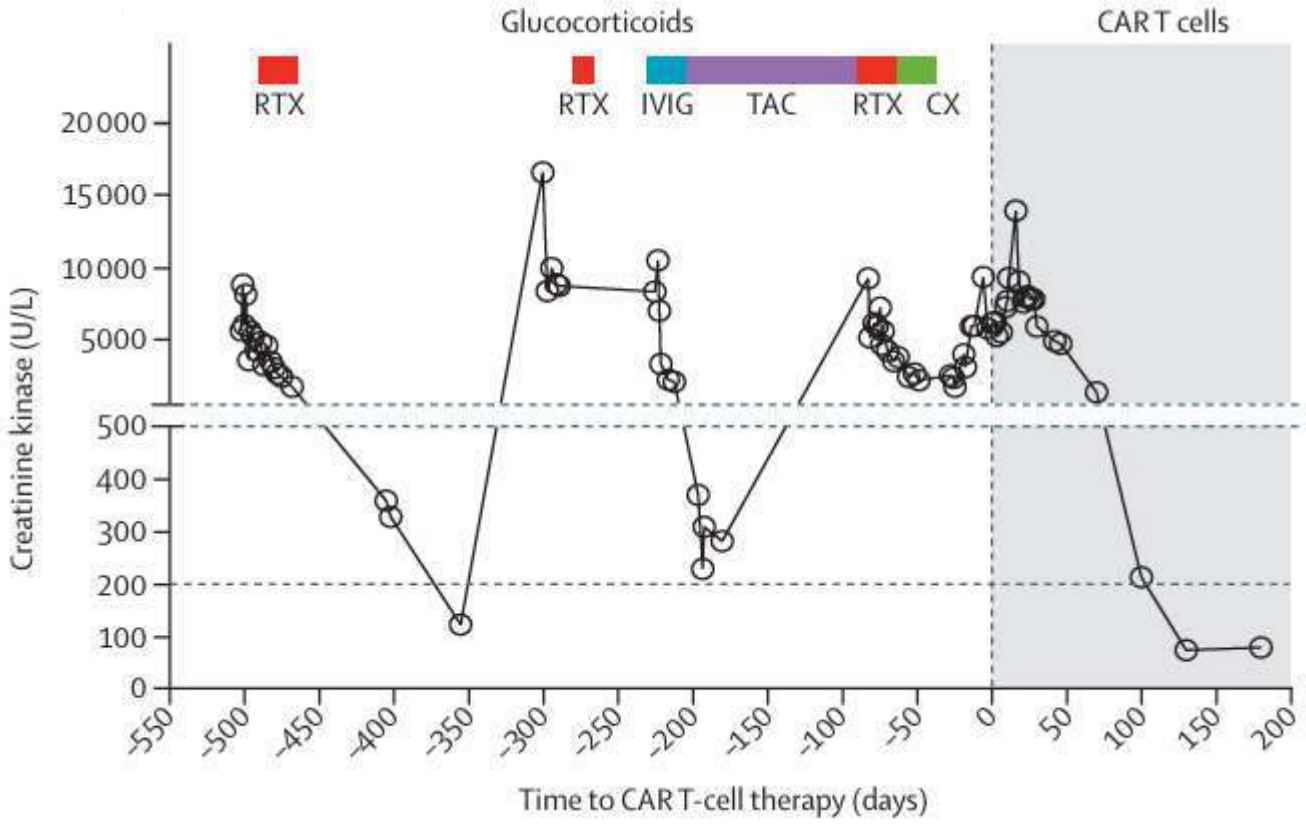
CAR-T Cells in Autoimmune Diseases: From Preclinical Studies to Prospective Trials

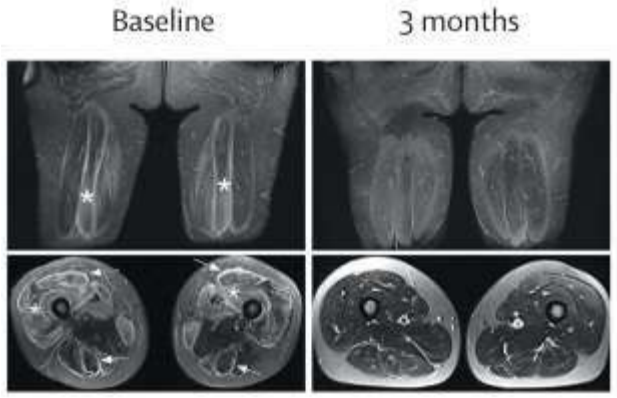


First use in the treatment of systemic sclerosis and myositis



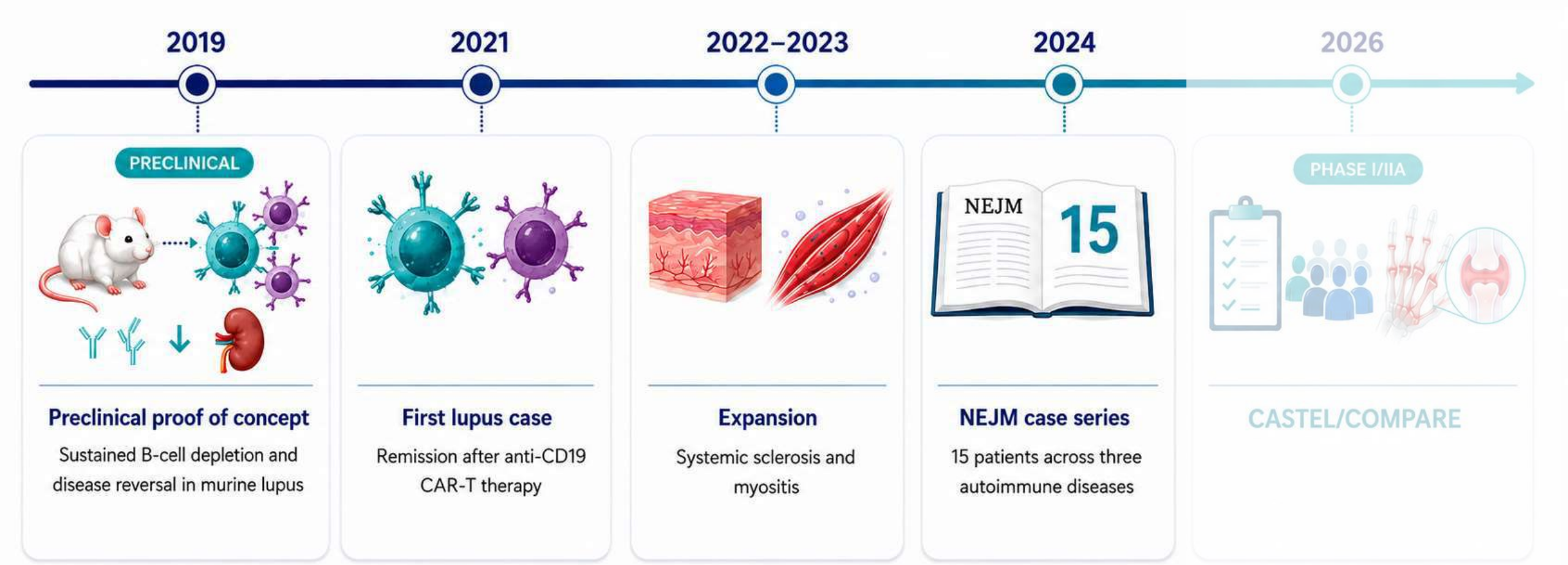
	Baseline	3 months follow-up	6 months follow up
FVC	3,27 l (73% pred.)	3,45 l (77% pred.)	3,21 (72% pred.)
DLCO	49 mmol/(min*kPa)	52 mmol/(min*kPa)	59 mmol/(min*kPa)
KCO	58 mmol/(min*kPa*l)	68 mmol/(min*kPa*l)	80 mmol/(min*kPa*l)





Bergmann et al. Ann Rheum Dis. 2023
Müller et al. Lancet 2023

CAR-T Cells in Autoimmune Diseases: From Preclinical Studies to Prospective Trials



First cohort of CD19 CAR-T therapy in refractory autoimmune diseases

1) Study framework

15 patients

Age range: 18–60 years

German expanded-access program

Severe, progressive autoimmune disease

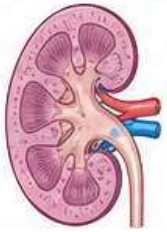
Resistance to ≥2 standard-care immunomodulators

Case series

2) Three disease cohorts

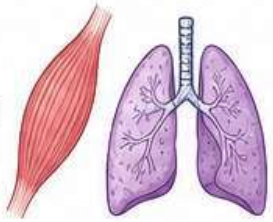
SLE n = 8

Active SLE with lupus nephritis



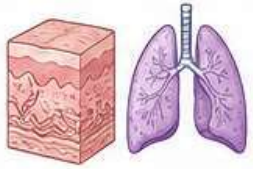
IIM n = 3

Active myositis and interstitial lung disease



SSc n = 4

Active skin disease and interstitial lung disease



3) Prior treatment burden

Median: 5 prior treatments

Range: 2–14

8/15 received prior B-cell–depleting therapy

9/15 received prior cyclophosphamide

- Glucocorticoids
- Conventional immunosuppressants
- Cyclophosphamide
- B-cell–directed therapies
- IVIG and disease-specific agents

Treatments varied by patient.

Persistent severe disease despite treatment

4) CAR-T intervention and follow-up

Leukapheresis

↓

CD4+/CD8+ T-cell enrichment

↓

MB-CART19.1 manufacturing

↓

Lymphodepletion

Fludarabine + cyclophosphamide

↓

Single autologous CD19 CAR-T infusion

Planned monitoring

- Daily safety monitoring: days 0–10
- Disease-specific assessment every 3 months
- Follow-up planned for up to 2 years

SLE: SLEDAI-2K • LLDAS • DORIS

IIM: ACR–EULAR TIS • CK • MMT-8

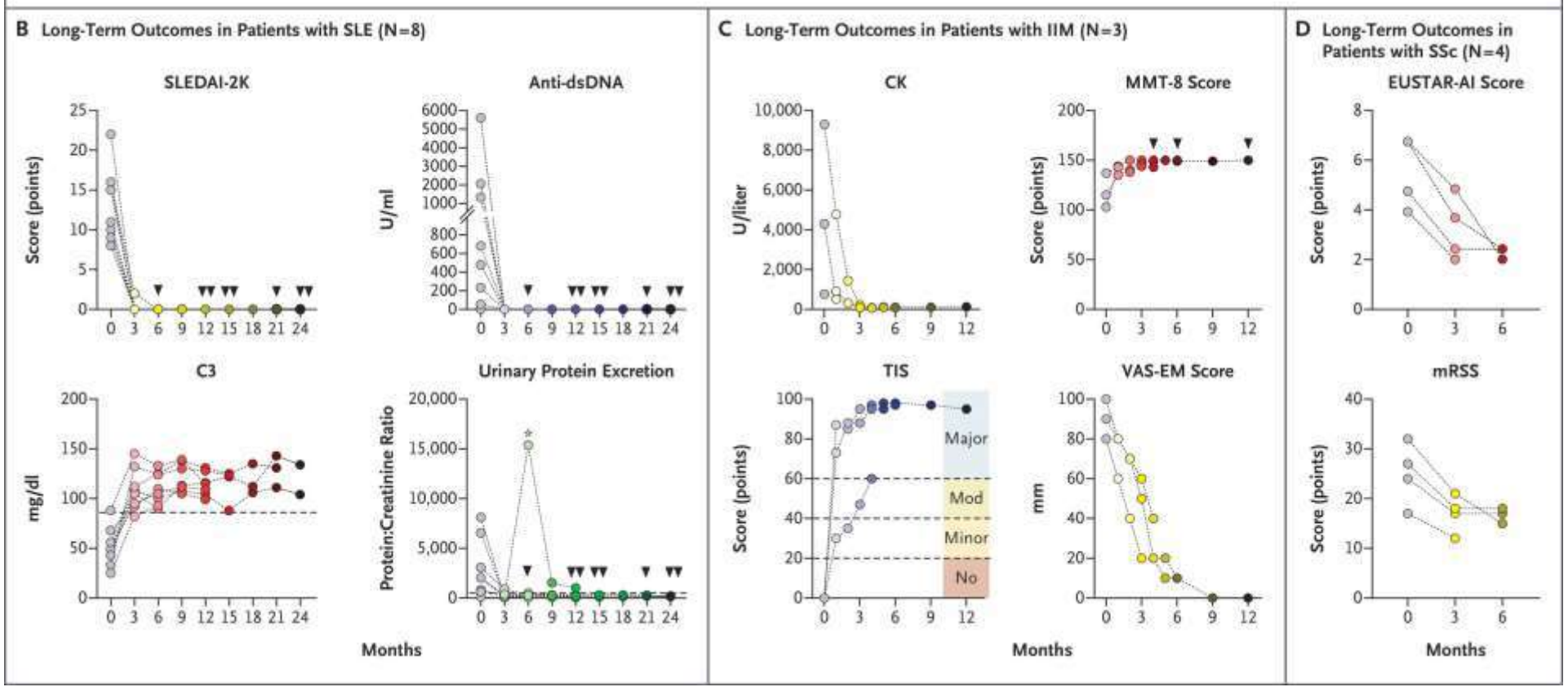
SSc: EUSTAR • modified Rodnan skin score

Müller et al. NEJM 2024

First cohort of CD19 CAR-T therapy in refractory autoimmune diseases

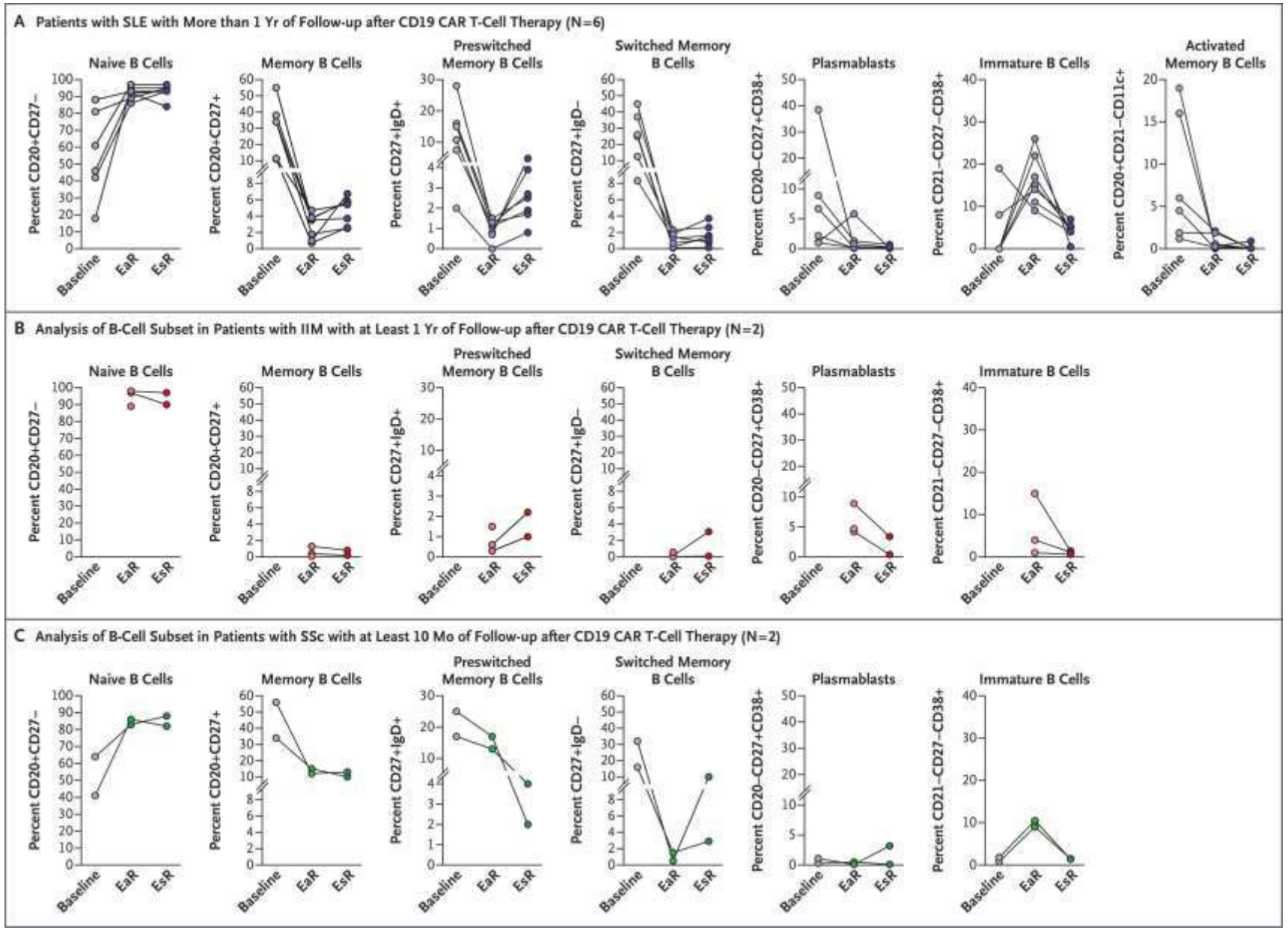
A Short-Term Efficacy of CD19 CAR T-Cell Therapy in Autoimmune Disease

Patient No.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Disease	SLE								IIM			SSc			
DORIS Remission	+	+	+	+	+	+	+	+*							
LLDAS	+	+	+	+	+	+	+	+*	N/A						
SLEDAI-2K Score	0	0	0	0	0	0	0	0				N/A			
ACR–EULAR Major Clinical Response									+	+	+*				
Normalization of CK Level									+	+	+*				
Change in EUSTAR-AI Score				N/A						N/A		−2.3	−4.7	−4.3	−1.9*
Change in mRSS												−7	−9	−17	−5*
Glucocorticoid-free State	+	+	+	+	+	+	+	+*	+	+	+*	+	+	+	+*
No Immunosuppressive Drugs	+	+	+	+	+	+	+	+*	+	+	+*	+	+	+	+*



Müller et al. NEJM 2024

First cohort of CD19 CAR-T therapy in refractory autoimmune diseases



Müller et al. NEJM 2024

First cohort of CD19 CAR-T therapy in refractory autoimmune diseases

Table 2. Short-Term Safety of CD19 CAR T-Cell Therapy in Autoimmune Disease.*

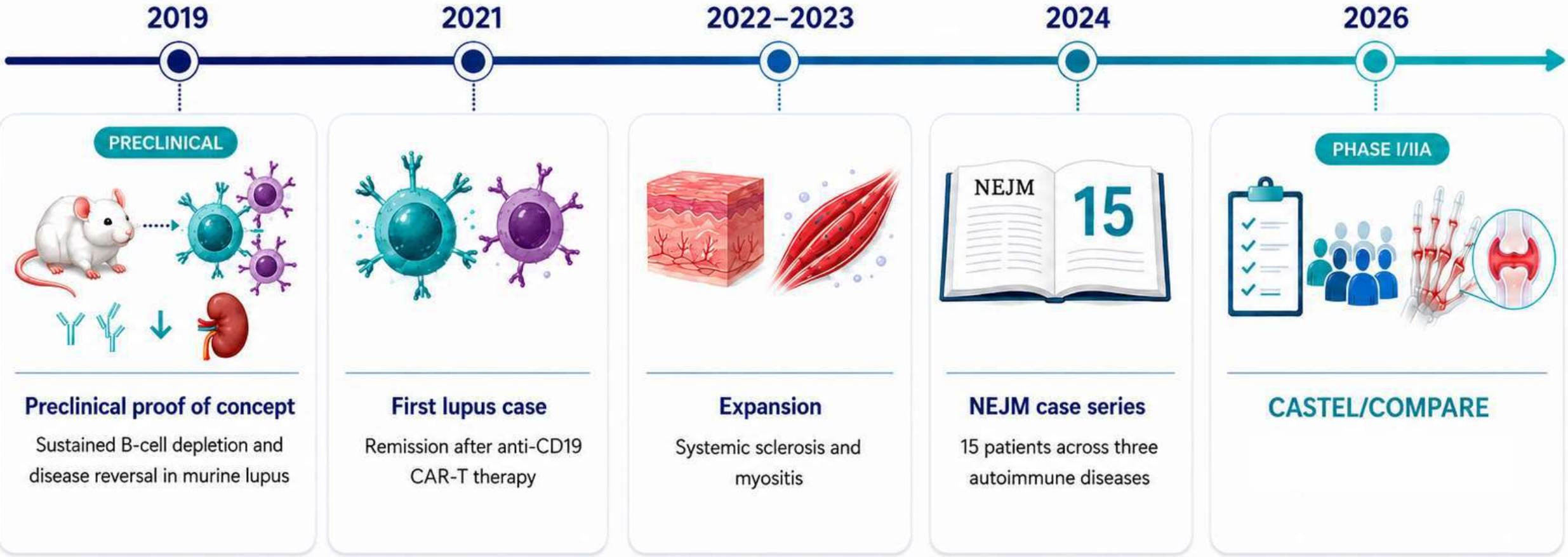
Variable	Patient 1	Patient 2	Patient 3	Patient 4	Patient 5	Patient 6	Patient 7	Patient 8	Patient 9	Patient 10	Patient 11	Patient 12	Patient 13	Patient 14	Patient 15
Disease	SLE	SLE	SLE	SLE	SLE	SLE	SLE	SLE	IIM	IIM	IIM	SSc	SSc	SSc	SSc
CRS (grade)	0	1	1	1	0	1	0	1	1	1	2	1	1	1	0
ICANS (grade)	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0
Bone marrow toxicity†	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TOC treatment	0	0	0	+	0	+	0	+	+	+	+	0	0	0	0
GLC treatment	0	0	0	0	0	0	0	0	0	+	0	0	0	0	0
Low IgG	+	+	+	0	0	0	0	+‡	+‡	0	0	0	0	0	0
IgG substitution	0	+	0	0	0	0	0	+	0	0	0	0	0	0	0

Table 3. Long-Term Safety of CD19 CAR T-Cell Therapy in Autoimmune Disease.*

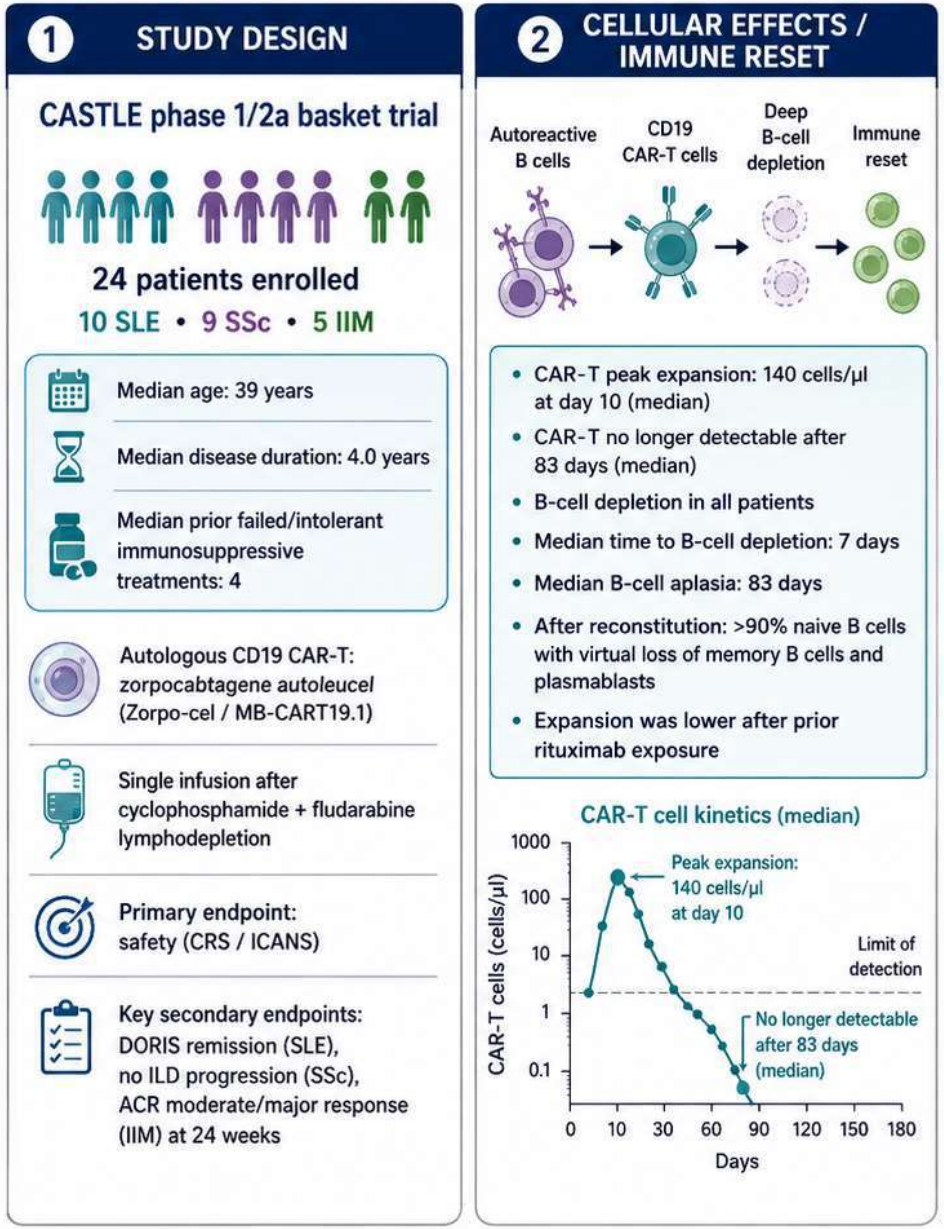
Patient No.	Disease	<3 Months	3–6 Months	6–12 Months	>12 Months
1	SLE	UTI	0	0	URTI (nonspecified)
2	SLE	0	0	URTI (SARS-CoV-2†)	URTI (nonspecified)
3	SLE	URTI (SARS-CoV-2)	0	URTI (nonspecified)	URTI (SARS-CoV-2) and herpes zoster
4	SLE	0	0	0	Otitis
5	SLE	0	URTI (SARS-CoV-2†)	0	0
6	SLE	0	URTI (SARS-CoV-2† and RSV)	URTI (SARS-CoV-2†)	URTI (nonspecified)
7	SLE	0	0	0	
8	SLE	Pneumonia	0		
9	IIM	0	Enteritis (nonspecified)	0	0
10	IIM	0	Herpes simplex	0	0
11	IIM	URTI (nonspecified)	0		
12	SSc	0	URTI (*Haemophilus influenzae*)	0	0
13	SSc	0	Cellulitis	Herpes zoster	
14	SSc	URTI (SARS-CoV-2†)	0		
15	SSc	0			

Müller et al. NEJM 2024

CAR-T Cells in Autoimmune Diseases: From Preclinical Studies to Prospective Trials

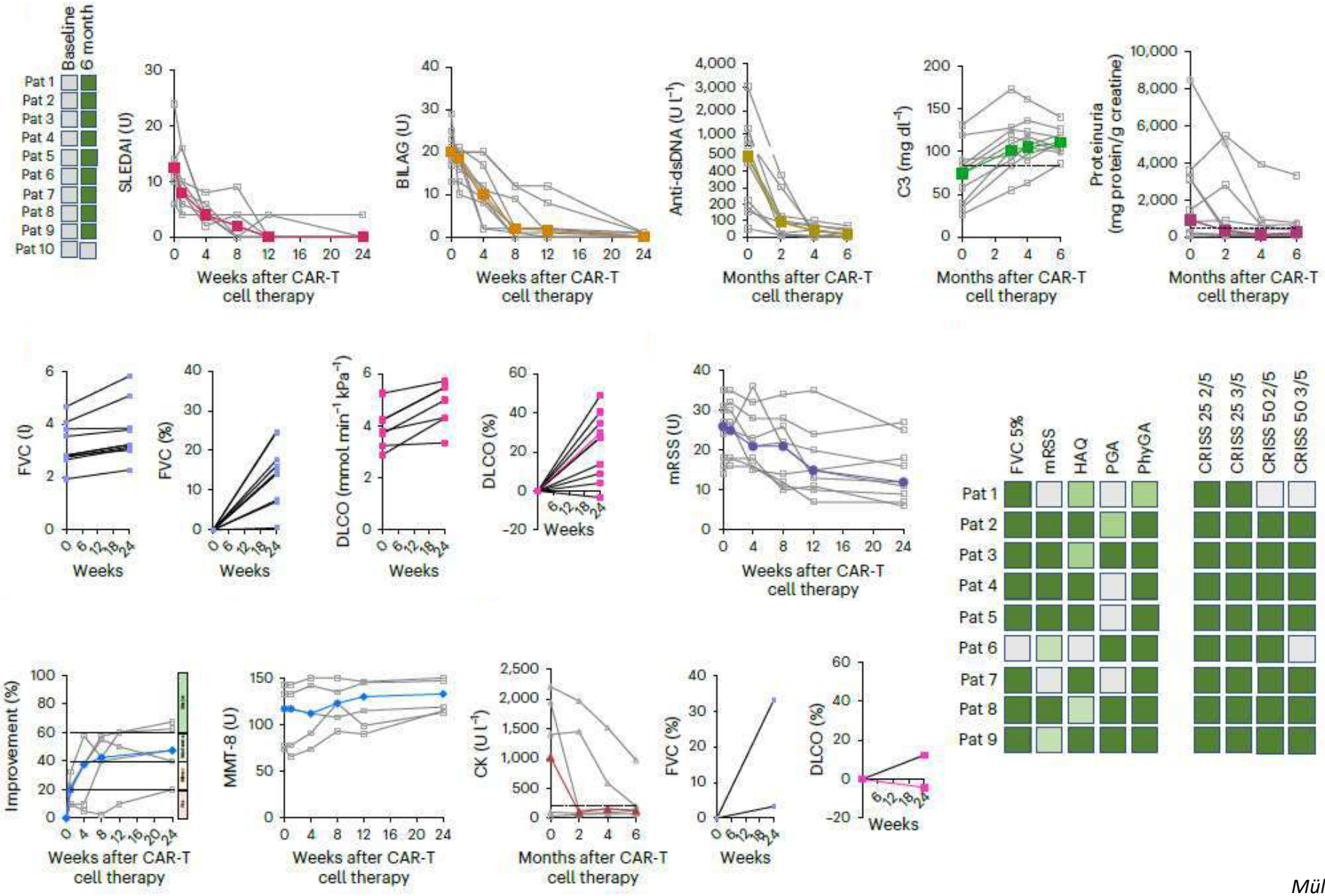


From case series to clinical trial: the CASTLE study



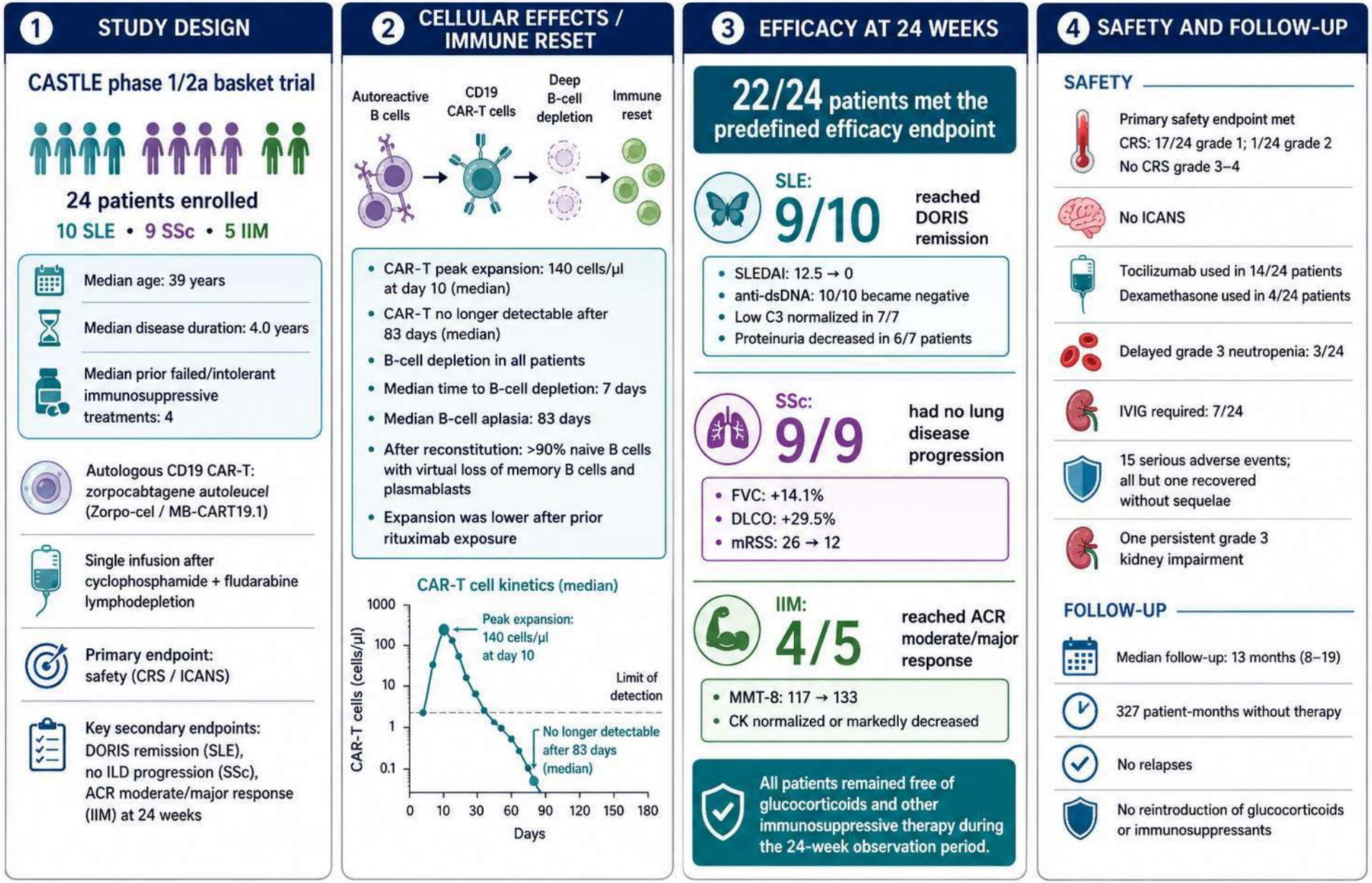
Müller et al. Nature Med 2026

From case series to clinical trial: the CASTLE study



Müller et al. Nature Med 2026

From case series to clinical trial: the CASTLE study



Müller et al. Nature Med 2026

From case series to clinical trial: the COMPARE study

1 Population

- 6 patients
- Severe refractory RA
- Autologous anti-CD19 CAR T cells

2 Safety

- Acceptable short-term safety profile
- Low-grade CRS in all patients
- No severe CRS
- No ICANS
- No LICATS

3 Biological effects

- CD19+ B-cell depletion
- In blood and tissues
- Decrease in autoantibodies
- Seroconversion: ACPA 4/6
- Seroconversion: RF-IgM 5/6

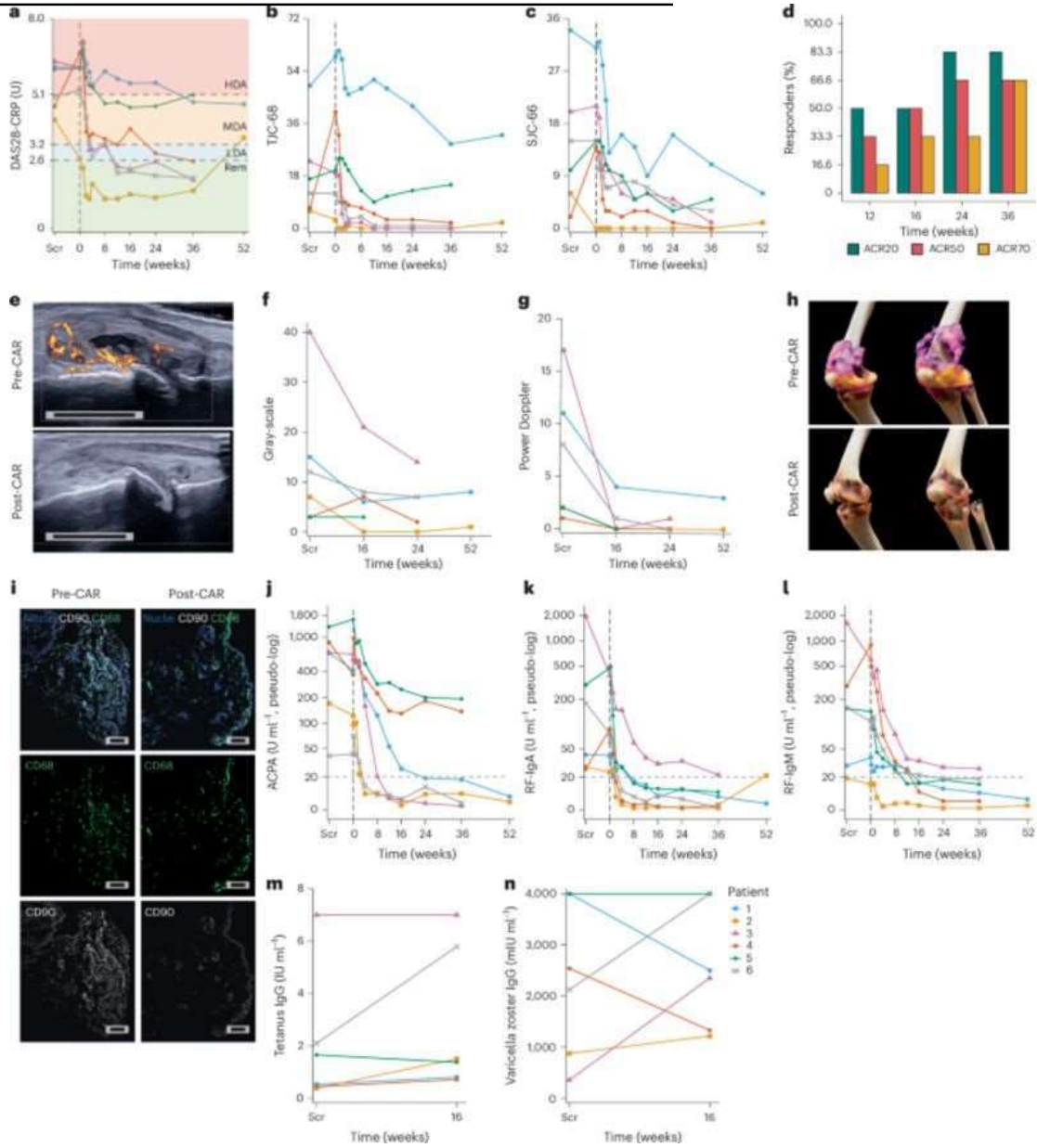
4 Clinical response

- 3/6 : sustained drug-free remission
- 2/6 : improvement but residual disease activity
- 1/6 : remission then relapse

Heterogeneous clinical responses

5 Interpretation

- Established RA is not driven solely by B cells
- Probable role of autoreactive T cells
- Role of activated synovial fibroblasts
- May explain less consistent efficacy than in SLE



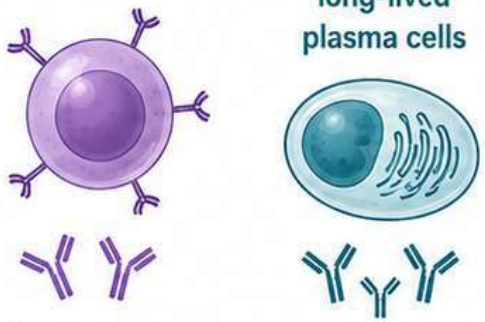
Albach et al. Nature Med 2026

Dual CD19 et BCMA CAR-T therapy in treatment of refractory SLE

1) Biological rationale

Peripheral CD19+ B cells

Bone marrow CD19– BCMA+ long-lived plasma cells



Dual targeting aims to eliminate both pathogenic autoantibody sources

Motivation for co-infusion of CD19 CAR-T + BCMA CAR-T

2) Trial design

15 patients with treatment-refractory SLE

14 female • 1 male

Phase 1 dose-escalation trial

- Leukapheresis
- Fludarabine/ cyclophosphamide lymphodepletion
- Co-infusion of autologous anti-CD19 and anti-BCMA CAR-T cells

Primary: DLTs within 28 days; adverse events within 12 weeks

Key secondary: LLDAS + DORIS remission by week 12

3) Clinical efficacy

12/15 (80%)

achieved both LLDAS and DORIS remission at week 12

- Anti-dsDNA / ANA decreased
- Complement levels improved
- Proteinuria and clinical manifestations improved

Median follow-up: **712 days** (range 613–1,134)

4) Safety and immune reset

Safety

- No dose-limiting toxicities
- Grade 1 CRS: 86.7%
- No neurotoxicity
- No treatment-related deaths
- Most common grade ≥3 AEs: neutropenia 100%, thrombocytopenia 40%, anemia 13.3%
- Hematologic toxicities were reversible with supportive care

Immune reset

- Elimination of autoreactive CD19+BCMA+ clones
- Reconstitution of naive IgM/IgD B cells
- Downregulation of interferon-stimulated and BAFF-dependent signatures

1-year monitoring in 3 patients showed sustained eradication of pathogenic clones

Feng et al. Nature Med 2025

Transient BCMA-directed mRNA CAR-T therapy in generalized myasthenia gravis

STUDY DESIGN

Population
Generalized myasthenia gravis (gMG)
MGFA class II–IV

Design
Randomized, double-blind, placebo-controlled
phase 2b

Primary efficacy population
26 patients
Descartes-08: n = 15
Placebo: n = 11

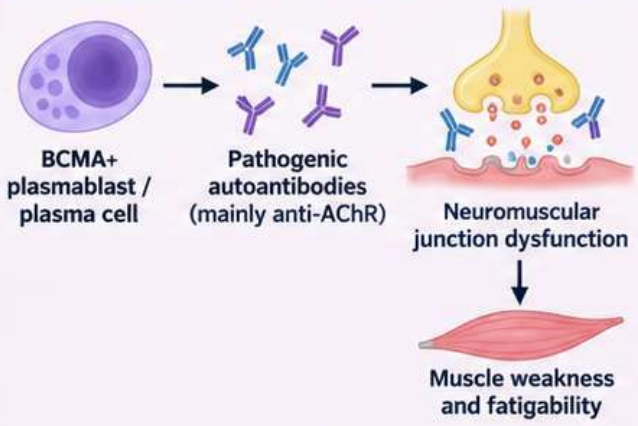
Descartes-08
- Autologous anti-BCMA CAR-T encoded by mRNA
- Non-integrating and transient expression

No lymphodepletion

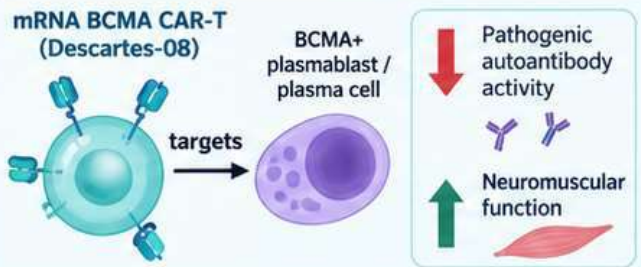
Dosing
6 once-weekly
IV infusions

BIOLOGICAL RATIONALE

Pathophysiology in gMG



Mechanism of Descartes-08



Transient mRNA CAR expression
(non-integrating, no genomic integration)

EFFICACY

Primary endpoint
MGC improvement ≥5 points at Month 3



AChR+ subgroup
MGC improvement ≥5 points at Month 3



Mean change from baseline at Month 4 (Descartes-08)



Minimal symptom expression (MG-ADL ≤1) at Month 6



5/15 (33%)
sustained through Month 12

Sustained clinically meaningful response at Month 12



SAFETY
(safety population)

Any adverse event



Mostly grade 1–2

Infusion-related reactions (IRRs)



Mostly mild–moderate

1 treatment-related grade 3 IRR
(fever 40°C), resolved within 48 h

Serious adverse events (SAEs)



Vu et al. Nature Med 2026

Allogeneic γδ CAR-T in Lupus

Press Releases

Adicet Bio Announces Positive Safety and Efficacy Data from Prula-cel (formerly ADI-001) Study in Patients with Systemic Lupus Erythematosus with or without Lupus Nephritis

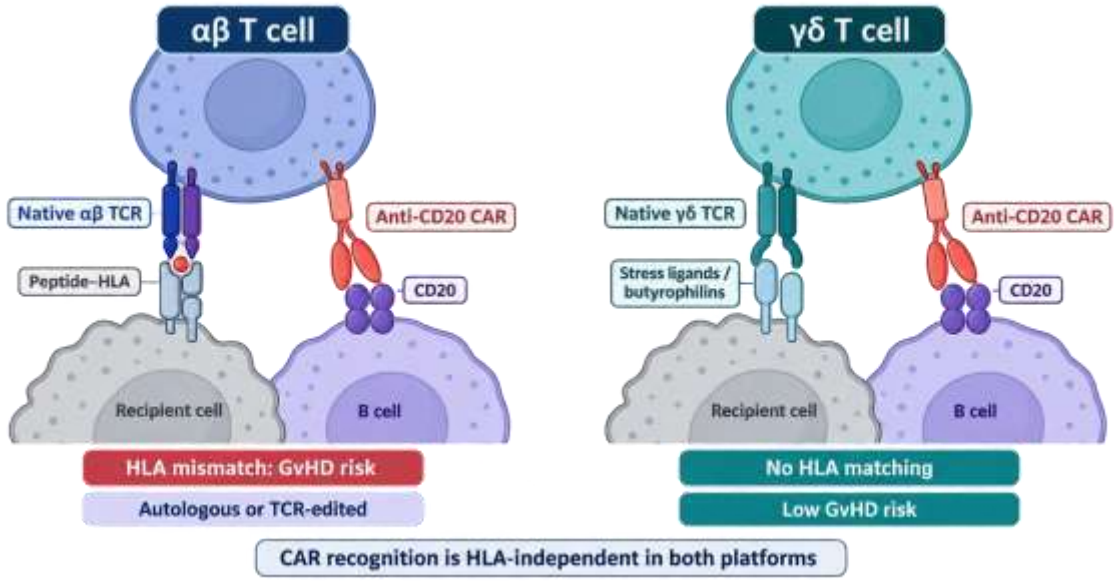
September 28, 2026 | 11 min read

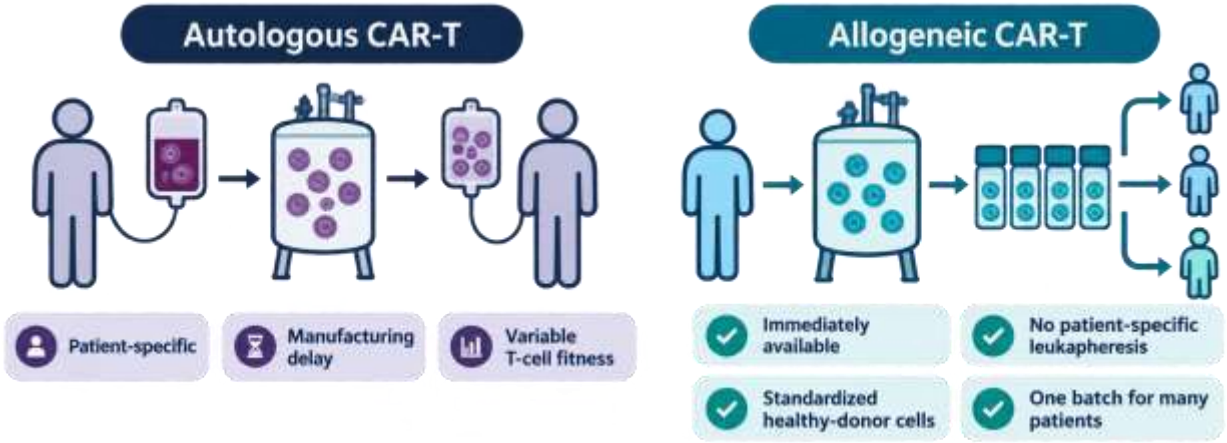
- Prula-cel shown to be generally well tolerated with no CRS greater than Grade 2 and no IEC-HS or ICANS -

-At 12-months, 54% of evaluable patients achieved DORIS remission and 50% of patients achieved CRR-

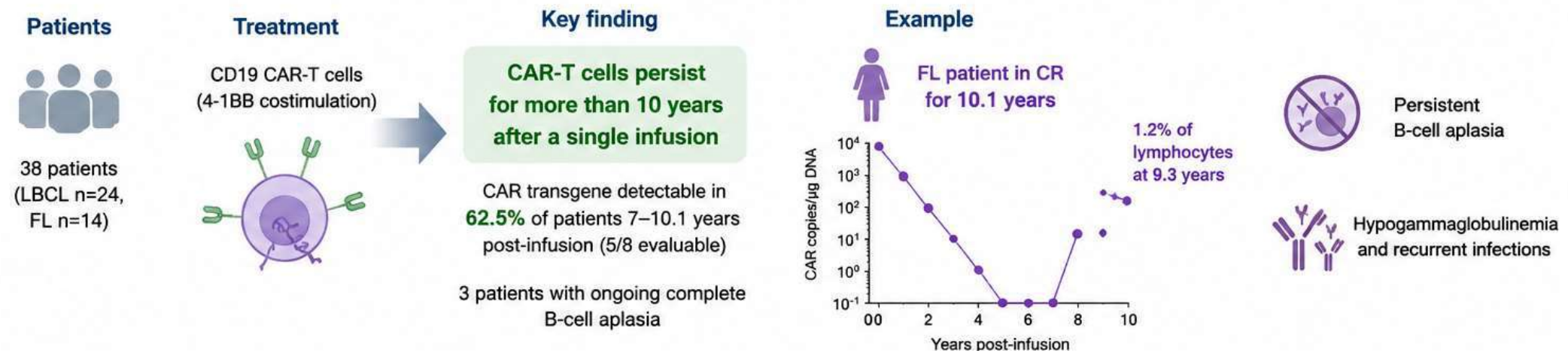
-All patients discontinued immunosuppressants –

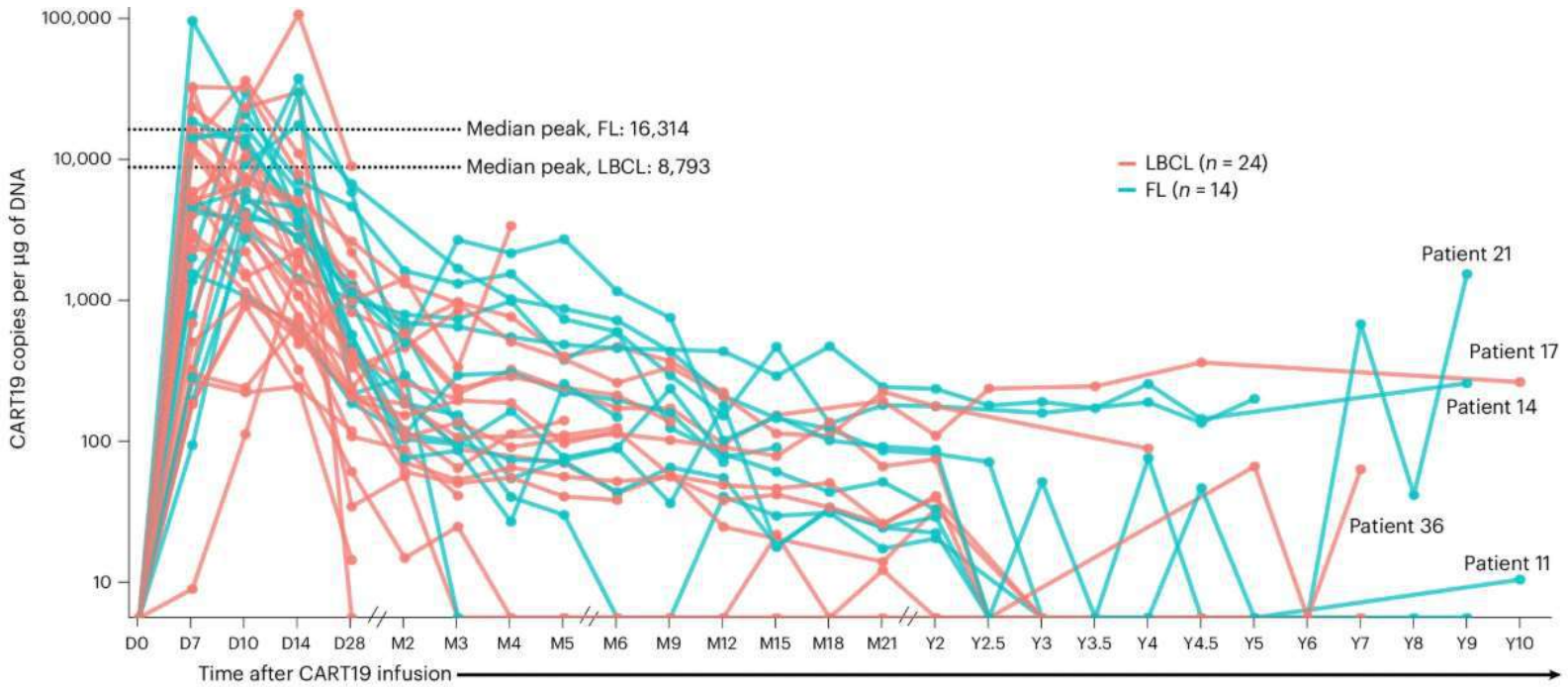
- All but one patient tapered background steroids to ≤5 mg prednisone equivalent per day-





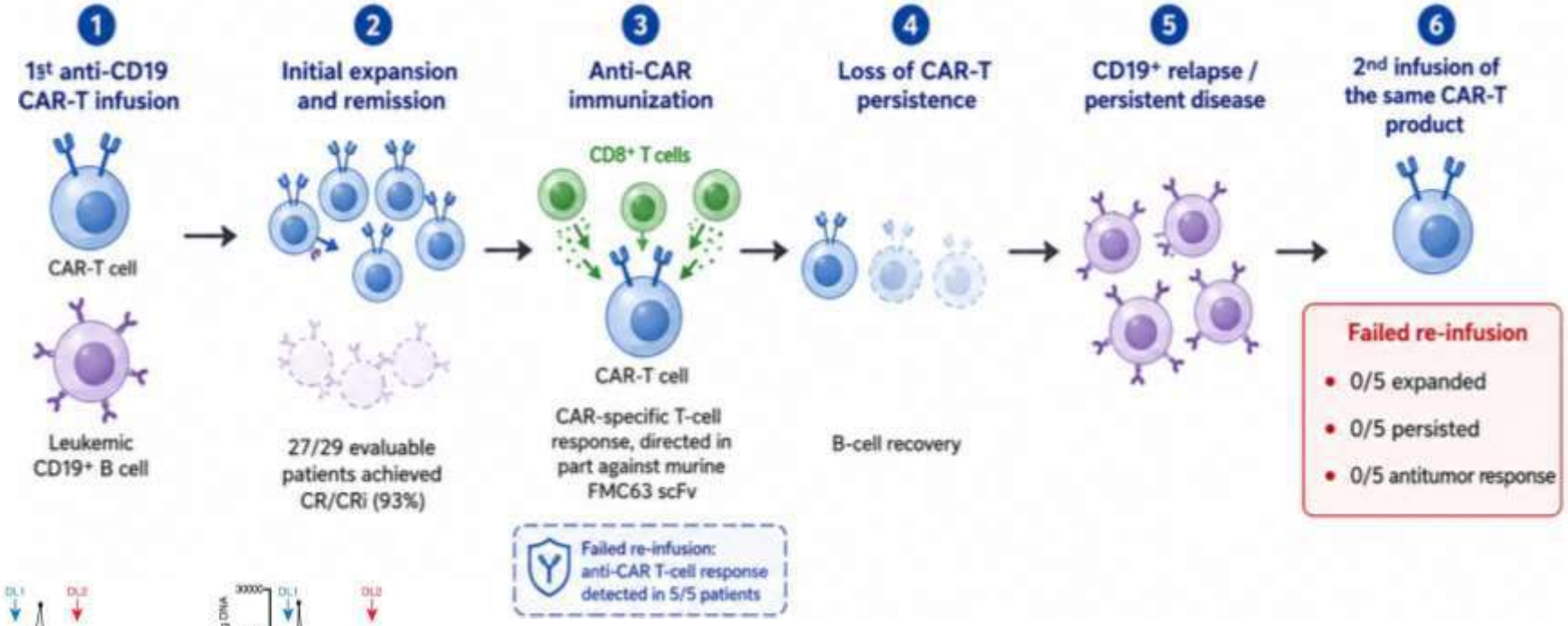
Long-term persistence of CAR-T cells

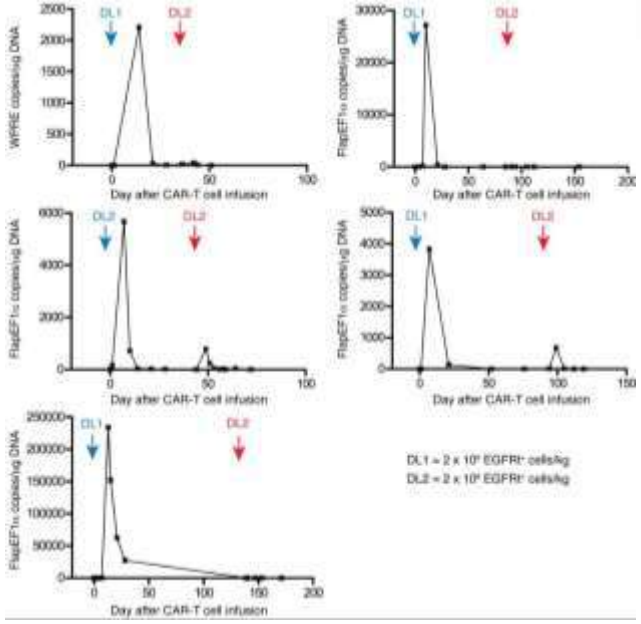


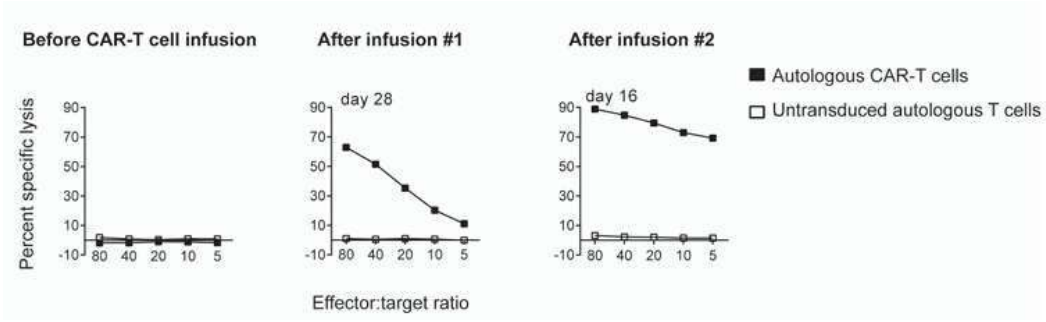


Paruzzo et al. Nature Medicine. 2026

Immunization against CAR-T

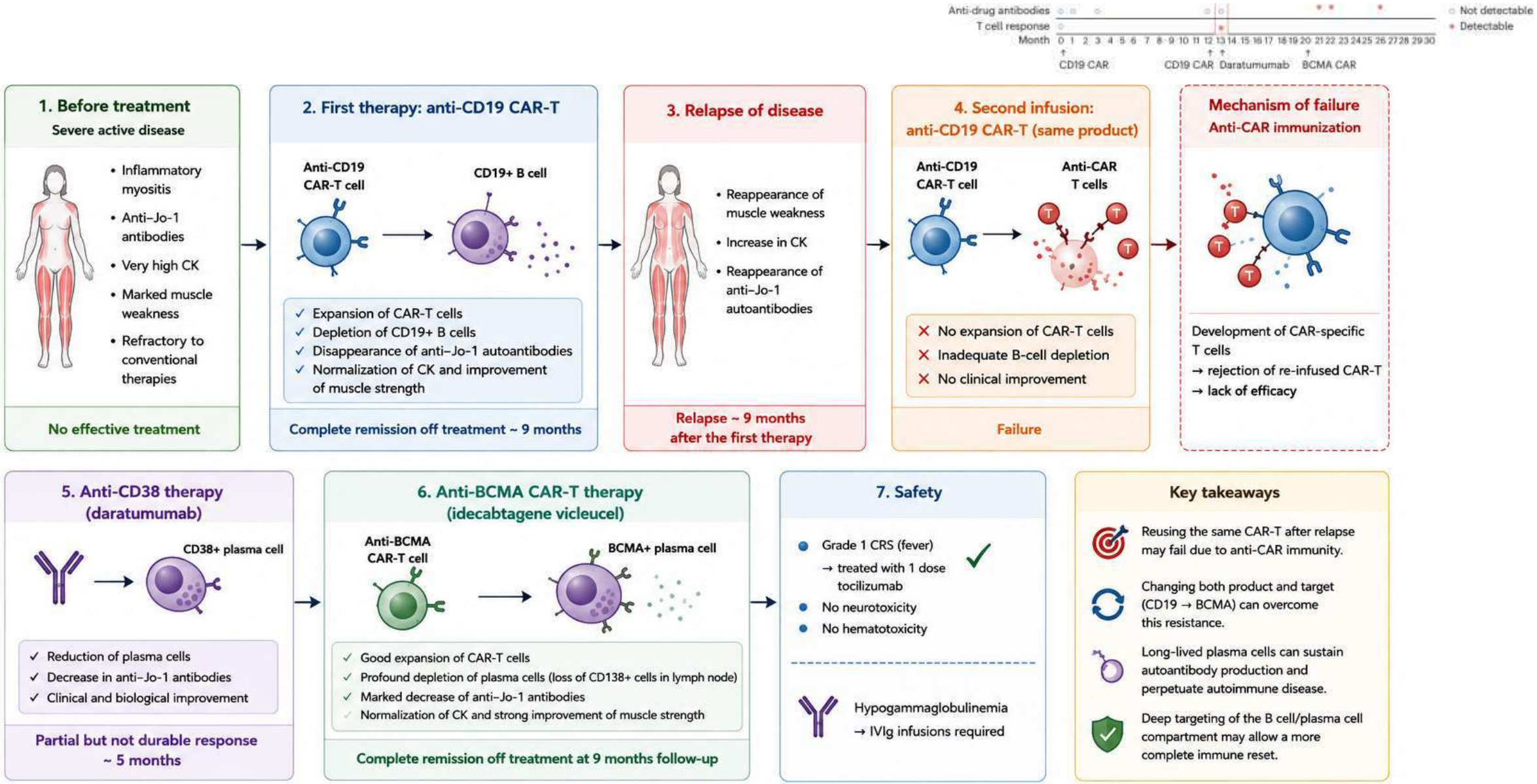






Turtle et al. J Clin Invest 2016

BCMA CAR-T therapy after immunization against CD19 CAR-T



Müller et al. Nature Med 2025

Emerging safety concerns challenge the reassuring early data

Novartis pauses trials of experimental cell therapy after three deaths

By **Reuters**

September 1, 2026 6:38 AM GMT+2 · Updated September 1, 2026



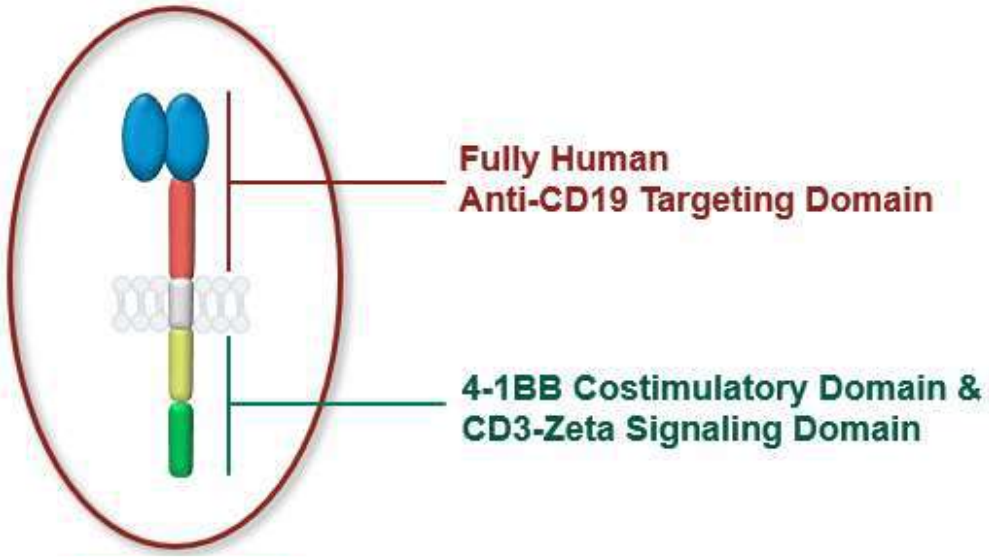
A view of the Novartis booth and logo at the BIO International Convention 2026, a meeting of pharmaceutical and biotechnology leaders in San Diego, California, U.S. June 23, 2026. REUTERS/Mike Blake Purchase Licensing Rights

From broad B-cell depletion to antigen-specific targeting: CAAR-T cells

CARTA

Chimeric **A**ntigen **R**eceptor **T** cells for **A**utoimmunity

*Potential to '**reset the immune system**' in patients with **autoimmune diseases driven by B cells**, through generalized transient B cell depletion and **repopulation of healthy B cells**[1,2]*

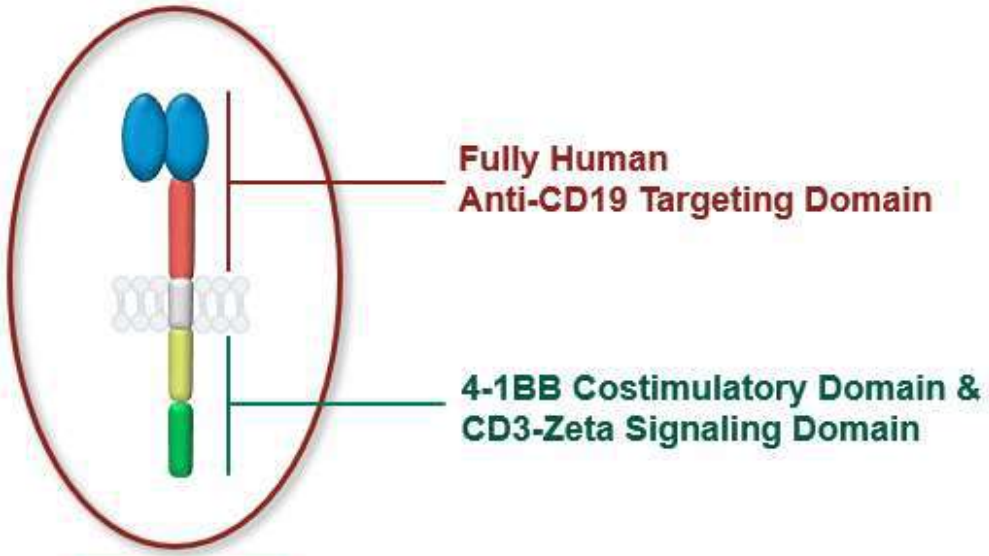


From broad B-cell depletion to antigen-specific targeting: CAAR-T cells

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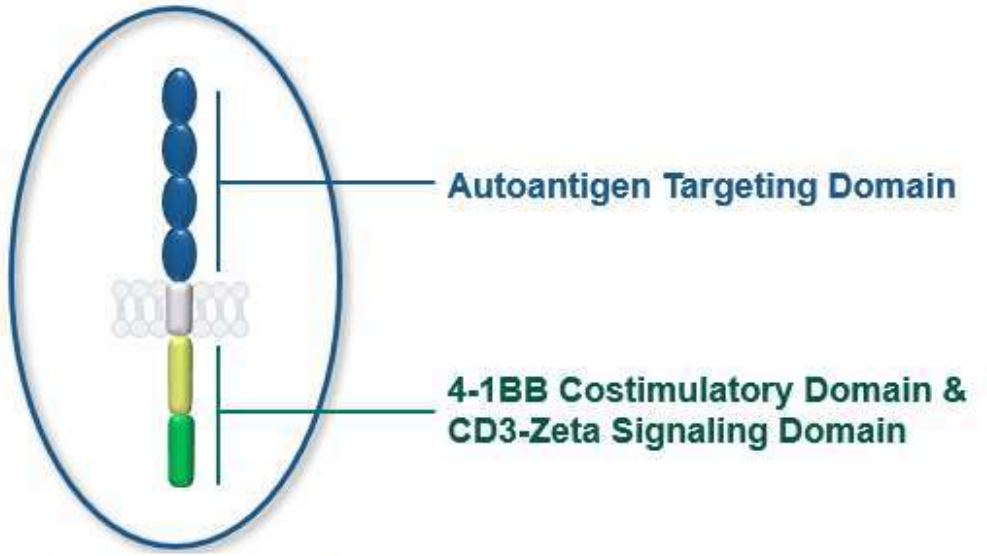
*Potential to '**reset the immune system**' in patients with **autoimmune diseases driven by B cells**, through generalized transient B cell depletion and **repopulation of healthy B cells**[1,2]*



CAART

Chimeric **A**uto**A**ntibody **R**eceptor **T** cells

*In autoimmune diseases with a **limited number of well-defined pathogenic autoantibodies**, permanent **antigen-specific B cell depletion** may provide an **elegant biologic solution** to disease*[3]



CAAR-T cells: the case of MN

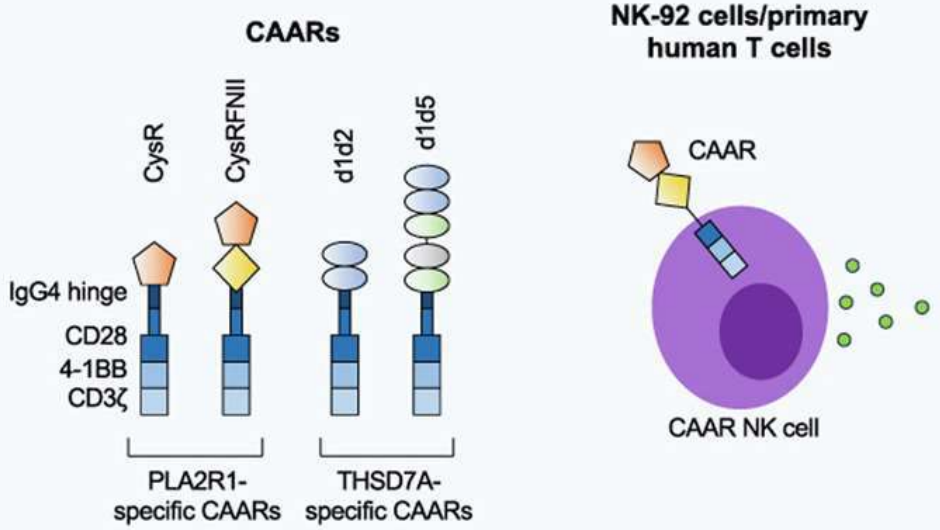
An antigen-specific chimeric autoantibody receptor (CAAR) NK cell strategy for the elimination of anti-PLA2R1 and anti-THSD7A antibody-secreting cells

kidney INTERNATIONAL

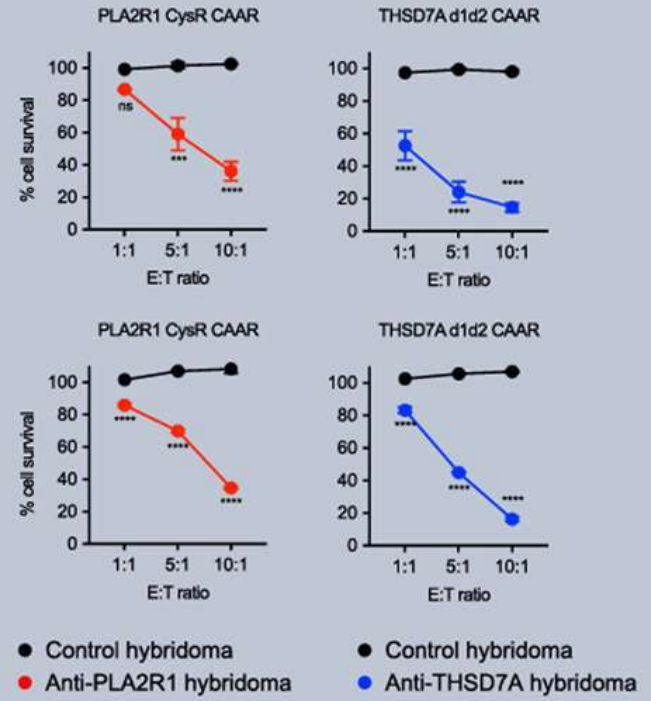
ISN INTERNATIONAL SOCIETY OF NEPHROLOGY

Methods

- Design of PLA2R1- and THSD7A-specific chimeric autoantibody receptors (CAARs)
- Transduction of NK-92 cells and primary human T cells



Findings



Seifert, 2023

PLA2R1- and THSD7A specific CAAR cells eliminate antibody-secreting target cells in an antigen-specific way.

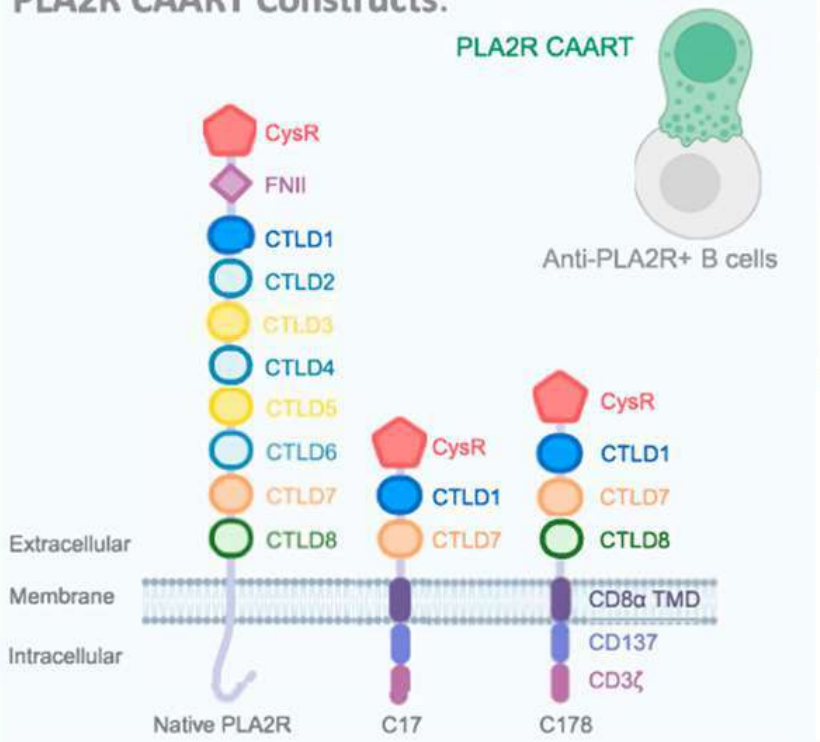
CAAR-T cells: the case of MN

Preclinical evaluation of antigen-specific B-cell depletion for phospholipase A2 receptor membranous nephropathy with chimeric autoantibody receptor T cells

kidney INTERNATIONAL

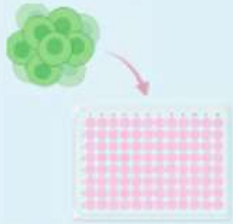
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PLA2R CAART Constructs:



Findings

In Vitro Cytotoxicity and Specificity



- Specific cytolysis of CysR, CTLD1, and CTLD-specific Nalm-6 cells and primary membranous nephropathy (MN) patient B cells
- Median 84.3-87.9% adsorption of MN patient plasma anti-PLA2R IgG
- No off-target binding detected by human membrane proteome array

In Vivo Cytotoxic Activity and Engraftment



- Significant anti-PLA2R Nalm-6 target cell reduction by CAART
- Superior cytotoxicity and persistence by C17-CAART, comparable to anti-CD19 CAR T cells
- No specific off-target cytotoxicity detected by comprehensive pathologic analysis

Altun, Zhao et al, 2025

Visual Abstract by Gexin Zhao, MD, PhD

CONCLUSION C17-CAART selectively targets anti-PLA2R B cells without global B cell depletion, representing a precision immunotherapy approach for PLA2R membranous nephropathy.

The Current and Future Landscape of CAR T Cells in SLE

Source: Clinicaltrials.gov 10/13/25
Search: Phase I/II/III in LN **[-Chimeric antigen receptor therapies (CAR T)]**



149 trials wordwide

Source: Clinicaltrials.gov 10/13/25
Search: Phase I/II/III CAR T in LN

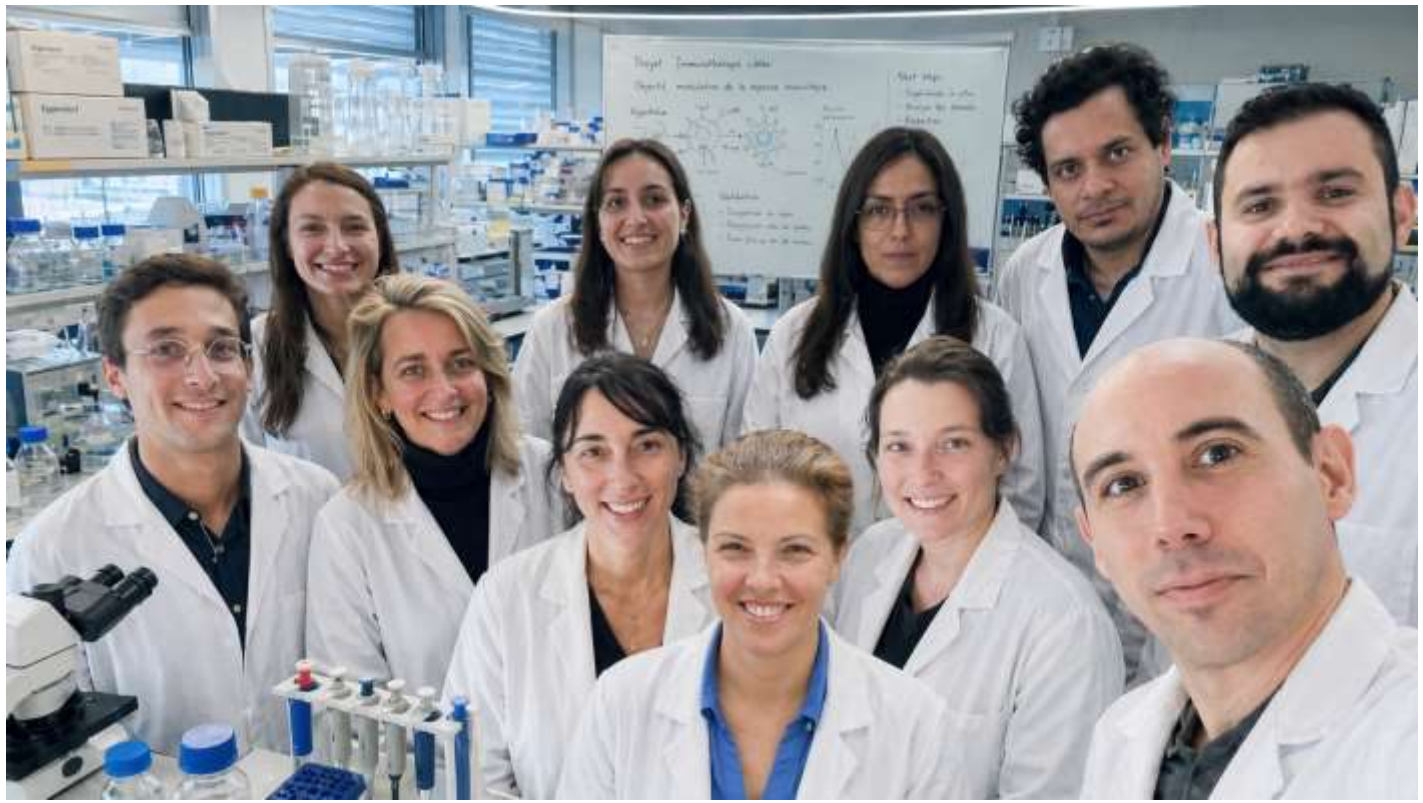


34 trials wordwide

Koumpouras and Caricchio. Curr Opin Rheumatol. 2026

CAR-T therapy is rapidly expanding into autoimmune kidney diseases

NCT Number	Study Title	Study Status	Conditions	Interventions	Sponsor
NCT06590545	Anti-CD 19 CAR-T Cell Therapy in Patients with ANCA Vasculitis	NOT_YET_RECRUITING	ANCA-IgG-positive ANCA Associated Vasculitis	DRUG: KYV-101, an autologous fully-human anti-CD19 CAR T-cell immunotherapy	David Simon
NCT06508346	Study of Therapeutic Efficacy of Anti-CD19 CAR-T Cells in Children With Refractory Refractory AAV	RECRUITING	ANCA Associated Vasculitis|CAR-T Cell Therapy	BIOLOGICAL: anti-CD19-CAR-T cells	The Children's Hospital of Zhejiang University School of Medicine
NCT06277427	Refractory ANCA Associated Vasculitis and Lupus Nephritis Treated With BCMA-targeting CAR-T Cells	RECRUITING	Lupus Nephritis|ANCA Associated Vasculitis	DRUG: PRG-1801 （CAR-T against BCMA)	Lingli Dong
NCT06685042	Anti-CD19 CAR T-Cell Therapy in Refractory Systemic Autoimmune Diseases	NOT_YET_RECRUITING	Lupus Erythematosus, Systemic|System; Sclerosis|ANCA Associated Vasculitis|Dermatomyositis|Polymyositis	BIOLOGICAL: CAR T cell	Fondazione Policlinico Universitario Agostino Gemelli IRCCS
NCT06056921	Safety and Efficacy of CD19 Targeted CAR-T Therapy for Refractory Autoimmune Disease	RECRUITING	SLE (Systemic Lupus)|Sjogren's Syndrome|Systemic Scleroderma|Dermatomyositis|Anti-Neutrophil Cytoplasmic Antibody-Associated Vasculitis	BIOLOGICAL: CD19 targeted CAR-T cells	Chongqing Precision Biotech Co., Ltd
NCT06420154	The Safety and Efficacy of Anti-CD19 CAR-T Cells in Patients With Relapsed/Refractory Autoimmune Diseases	NOT_YET_RECRUITING	Systemic Lupus Erythematosus (SLE)|Sjogren's Syndrome|Systemic Sclerosis|Inflammatory Myopathy|ANCA Associated Vasculitis|Antiphospholipid Syndrome	BIOLOGICAL: anti-CD19-CAR-T cells	First Affiliated Hospital of Wenzhou Medical University
NCT06373081	Anti-CD19-CD3E-CAR-T Cells in Relapsed/Refractory Autoimmune Disease	RECRUITING	Systemic Lupus Erythematosus (SLE)|Sjogren's Syndrome|Systemic Sclerosis|Inflammatory Myopathy|ANCA Associated Vasculitis|Antiphospholipid Syndrome	BIOLOGICAL: Anti-CD19-CD3E-CAR-T cells	Shanghai Changzheng Hospital
NCT06548607	Clinical Study on Targeted CD19 CAR-T Therapy for Autoimmune Diseases	RECRUITING	SLE (Systemic Lupus)|Systemic Sclerosis|ANCA Associated Vasculitis|Idiopathic Inflammatory Myopathies|Sjogren's Syndrome|Autoimmune Diseases	DRUG: RD06-04 CART Cell Injection	Nanjing Bioheng Biotech Co., Ltd.
NCT06462144	IMPT-514 in Systemic Lupus Erythematosus, Anca-associated Vasculitis, and Idiopathic Inflammatory Myopathy	RECRUITING	Systemic Lupus Erythematosus (SLE)|ANCA Associated Vasculitis (AAV)|Idiopathic Inflammatory Myopathy (IIM)	DRUG: IMPT-514 CART Cell Injection	The Affiliated Nanjing Drum Tower Hospital of Nanjing University Medical School
NCT05859997	Universal CAR-T Cells (BRL-301) in Relapse or Refractory Autoimmune Diseases	ENROLLING_BY_INVITATION	Systemic Lupus Erythematosus (SLE)|Sjogren's Syndrome|Systemic Sclerosis|Inflammatory Myopathy|ANCA Associated Systemic Vasculitis|Antiphospholipid Syndrome	BIOLOGICAL: BRL-301	Bioray Laboratories
NCT06350110	Fourth-gen CAR T Cells Targeting BCMA/CD19 for Refractory Systemic Lupus Erythematosus (SLE)	RECRUITING	Systemic Lupus Erythematosus|Lupus Nephritis|Autoimmune Diseases|Anti-Neutrophil Cytoplasmic Antibody-Associated Vasculitis|Granulomatous Polyangiitis|Microscopic Polyangiitis|Systemic Sclerosis|Idiopathic Inflammatory Myopathies|Sjogren's Syndrome	BIOLOGICAL: CD19- BCMA CAR-T cells	Essen Biotech
NCT06549296	Clinical Study on Targeted CD19CAR-T Therapy for Autoimmune Diseases	RECRUITING	Systemic Lupus Erythematosus|Systemic Sclerosis|ANCA Associated Vasculitis|Idiopathic Inflammatory Myopathies|Sjogren's Syndrome|Autoimmune Diseases	DRUG: RD06-04 CART Cell Injection	Nanjing Bioheng Biotech Co., Ltd.
NCT06285279	FKC288 in Participants With Autoimmune Kidney Diseases	RECRUITING	Lupus Nephritis|ANCA-associated Vasculitis|Membranous Nephropathy - PLA2R Induced|IgG4-Related Diseases	DRUG: FKC288	Nanjing University School of Medicine



P^r Barbara Seitz-Polski's team in Nice

Thank You

teisseyre.m@chu-nice.fr