

generation bio™

Changing What's Possible

FOR PEOPLE LIVING WITH T CELL-DRIVEN
AUTOIMMUNE DISEASE



Forward Looking Statements

Any statements in this presentation about future expectations, plans and prospects for the company, including statements about our strategic plans or objectives, technology, research and clinical development plans, and preclinical data and other statements containing the words “believes,” “anticipates,” “plans,” “expects,” and similar expressions, constitute forward-looking statements within the meaning of The Private Securities Litigation Reform Act of 1995. Actual results may differ materially from those indicated by such forward-looking statements as a result of various important factors, including: uncertainties inherent in the identification and development of product candidates, including the anticipated timing of identification of the company's product candidates, the conduct of research activities, the initiation and completion of preclinical studies and clinical trials and clinical development of the company's product candidates; uncertainties as to the availability and timing of results from preclinical studies and clinical trials; whether results from preclinical studies will be predictive of the results of later preclinical studies and clinical trials; uncertainties regarding the anticipated timing of the submission of an investigational new drug application; uncertainties regarding our novel technologies; whether the company's cash resources are sufficient to fund the company's operating expenses and capital expenditure requirements for the period anticipated; as well as the other risks and uncertainties set forth in the “Risk Factors” section of our most recent annual report on Form 10-K and quarterly report on Form 10-Q, which are on file with the Securities and Exchange Commission, and in subsequent filings the company may make with the Securities and Exchange Commission. In addition, the forward-looking statements included in this presentation represent the company's views as of the date hereof. The company anticipates that subsequent events and developments will cause the company's views to change. However, while the company may elect to update these forward-looking statements at some point in the future, the company specifically disclaims any obligation to do so. These forward-looking statements should not be relied upon as representing the company's views as of any date subsequent to the date on which they were made.

**We are creating
first-in-class
targeted siRNA
therapeutics to
address T cell-
driven autoimmune
disease**

**SELECTIVE
REDOSABLE
DELIVERY TO
T CELLS**

**KNOCK DOWN OF
UNDRUGGABLE
T CELL TARGETS**

**LASER FOCUS ON
PATH TO IND 2H26**

Breakthrough access to new cell types happens once a decade

generation bio™



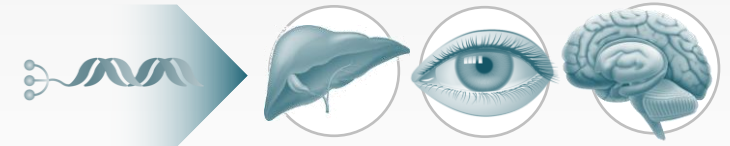
T cells for autoimmune diseases

Novel cell-targeted LNP (ctLNP) drives potent and selective T cell delivery



Muscle

Advanced antibody-siRNA conjugate targeting muscle



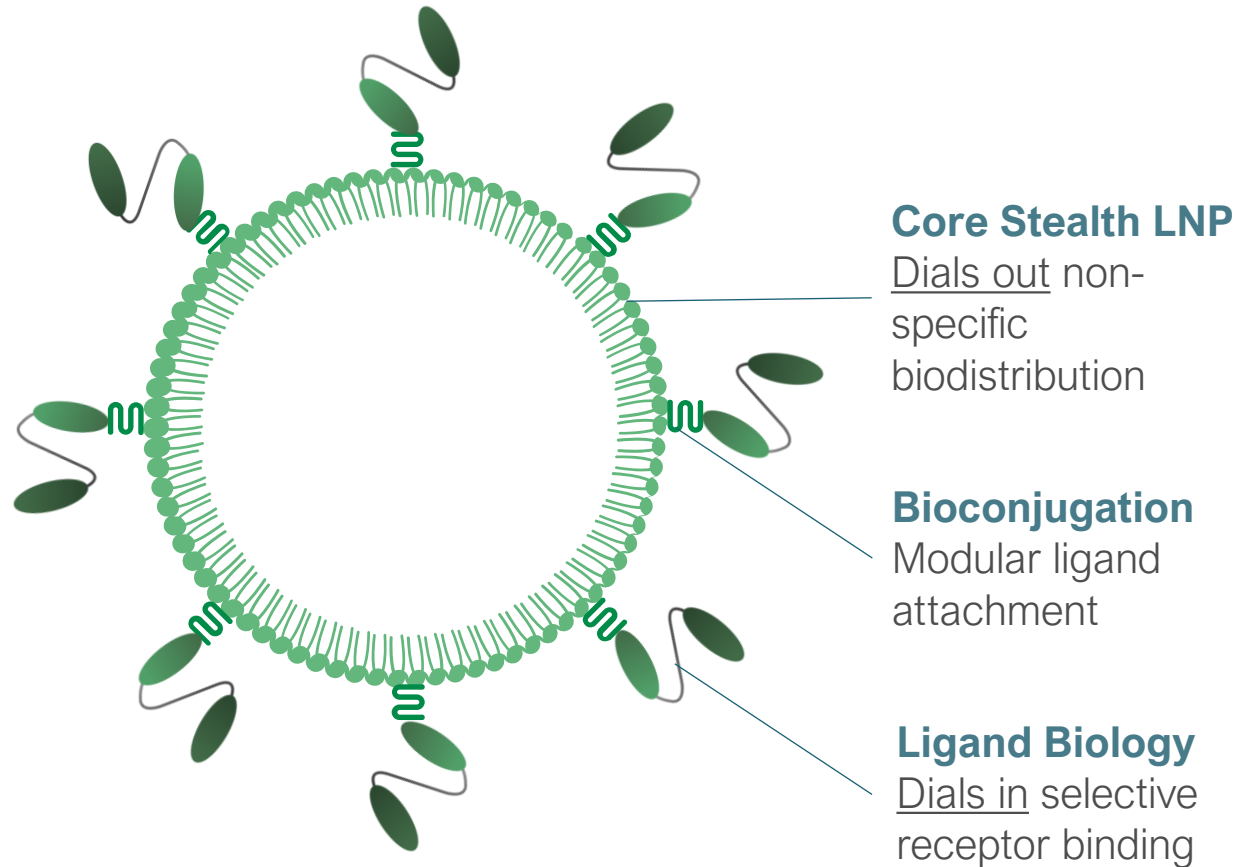
Liver

Eye

CNS

Pioneering siRNA platform to reach liver and non-liver tissues

ctLNP selectivity is driven by dialing out non-specific biodistribution with core stealth and by precisely dialing in specific cells with a targeting ligand



Proprietary ionizable lipid and anchored polymer enable key features of ctLNP

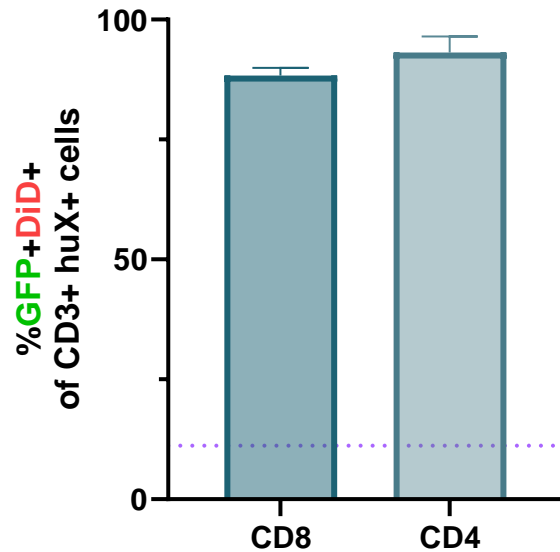
- ✔ Efficient endosomal escape
- ✔ Modular for new tissue ligands
- ✔ Redosable
- ✔ Works with all nucleic acid cargos

T cell ctLNP delivery is highly efficient, selective, and specific



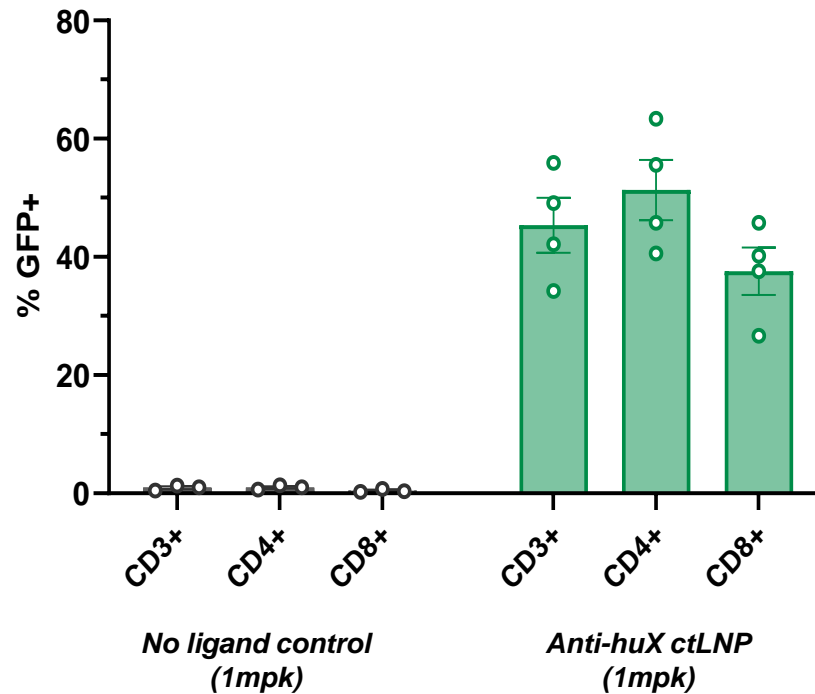
High efficiency

>90% delivery to receptor positive T cells



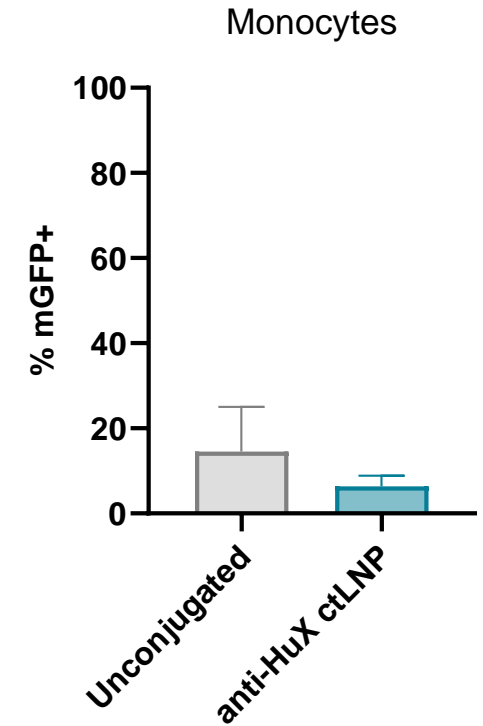
Ligand-driven selectivity

T cell targeting in NHP is only driven by ligand-receptor engagement

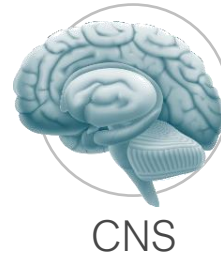
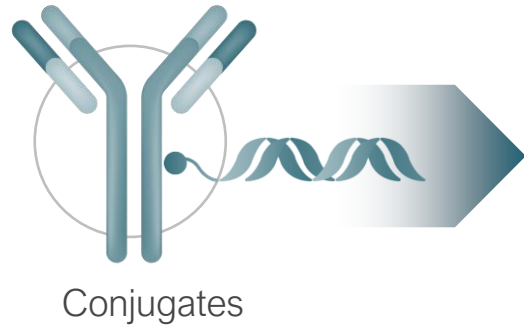


High specificity (no off-target)

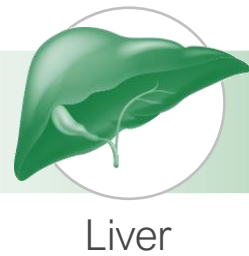
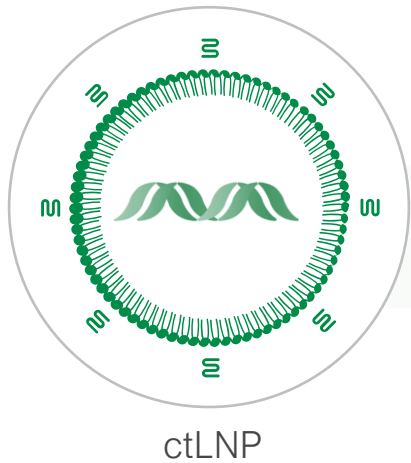
Off-target immune cells do not take up T cell ctLNP



ctLNP uniquely unlocks potent and selective delivery of siRNA to T cells



T cells have been a challenge for siRNA conjugate delivery



ctLNP drives endosomal escape and release of siRNA in T cells

ctLNP delivery of siRNA to T Cells results in robust, dose-dependent knockdown *in vitro* and *in vivo* with potent, persistent *in vivo* knockdown at 0.1 mg/kg



B2M Protein KD (*in vitro*)

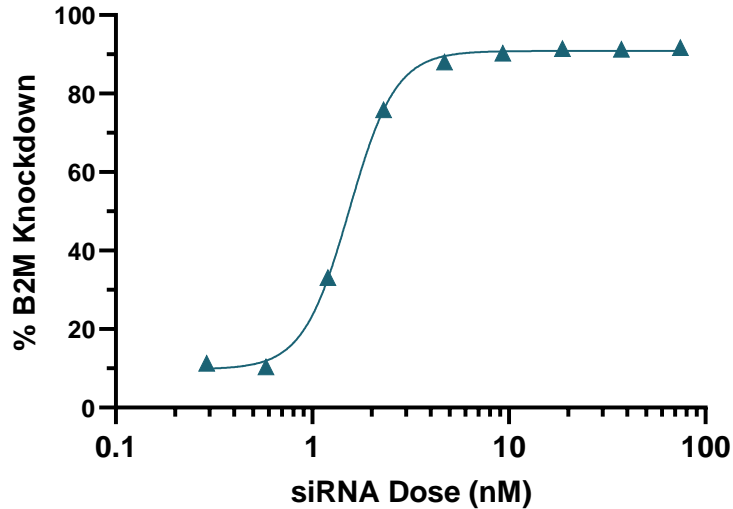


B2M Protein KD (*in vivo*)

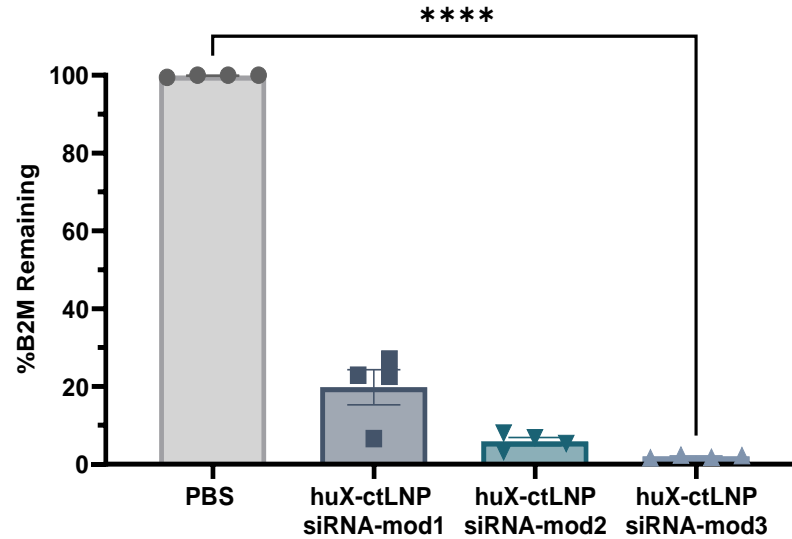


Persistent B2M Protein KD *in vivo*

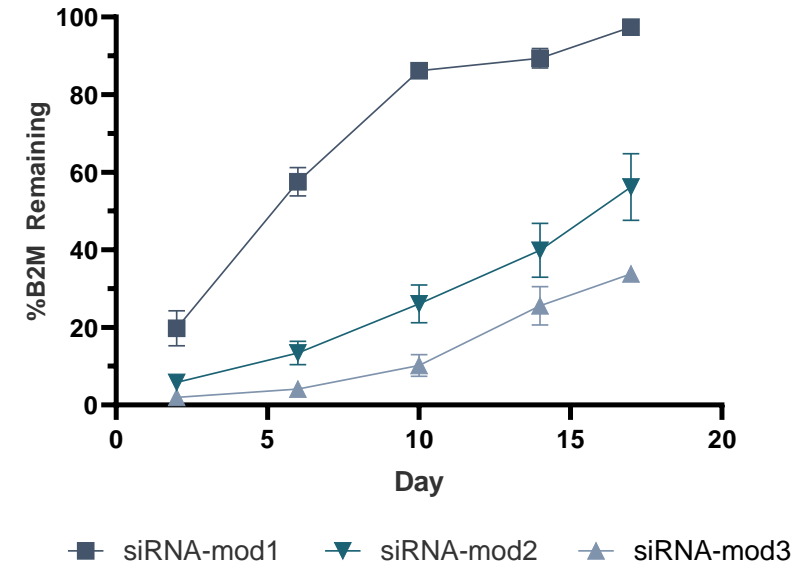
B2M Protein KD
(Primary huT-cells; 48hr)



Knockdown of B2M in Circulating T-cells
(0.1mpk; 48hr; hCD34+ mice)



B2M KD in Circulating T-cells
(0.1mpk huX-ctLNP, hCD34+ Mice)

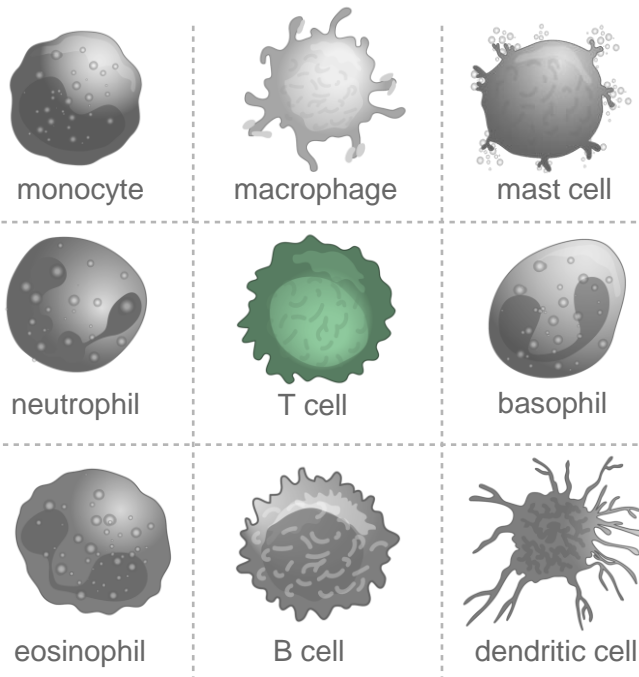


Potent B2M knockdown in primary resting human T cells with unoptimized tool siRNA

We aim to reach T cell targets without impacting other immune cell types, leveraging our ctLNP to harness the power of siRNA therapeutics

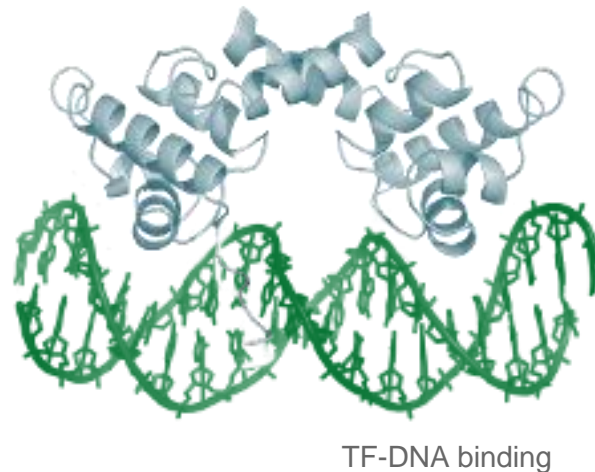
Cell Specific

Selective knockdown in pathogenic T cells avoids broad off-target immunosuppression



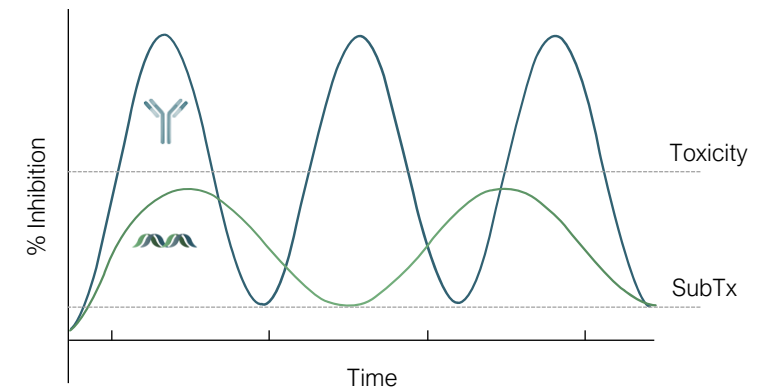
Undruggable Targets

siRNA can precisely inhibit targets, including those unreachable with small molecules or antibodies



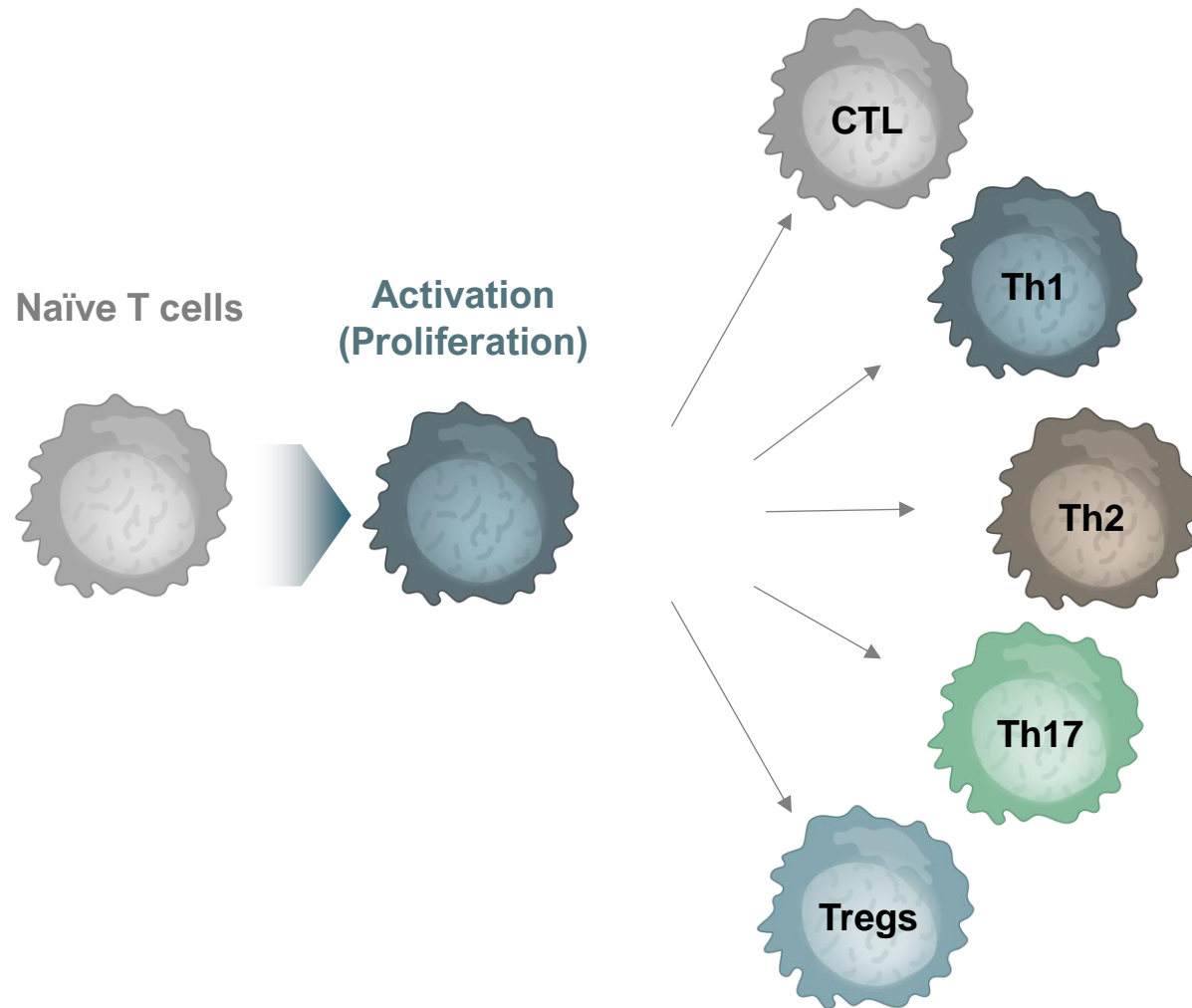
Differential Pharmacology

ctLNP-siRNA would allow more durable, controllable target inhibition

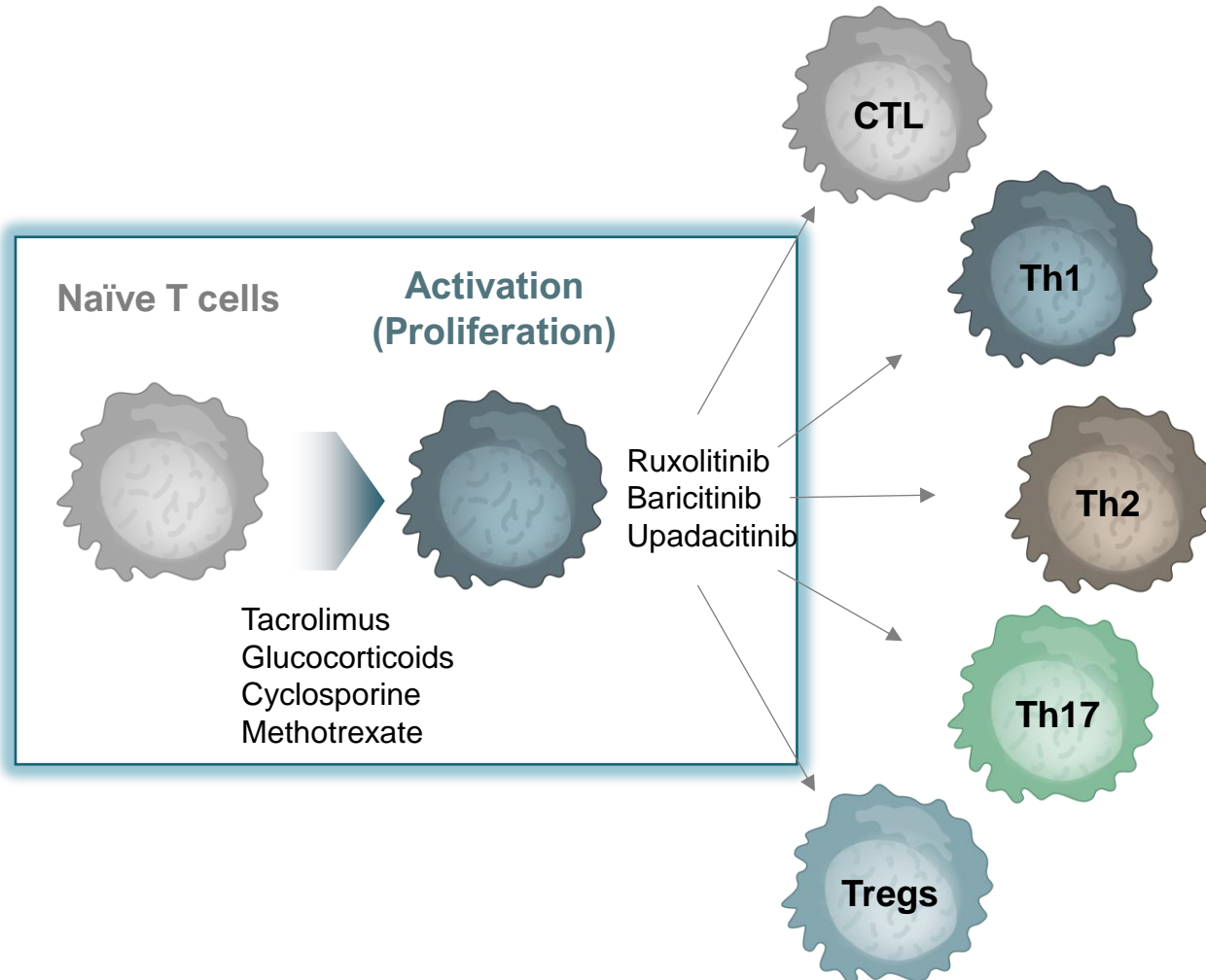


Avoids C_{max}-driven toxicity for immune targets that drive disease pathogenesis but are also required for normal immune surveillance

T cells are at the heart of balancing our immune responses



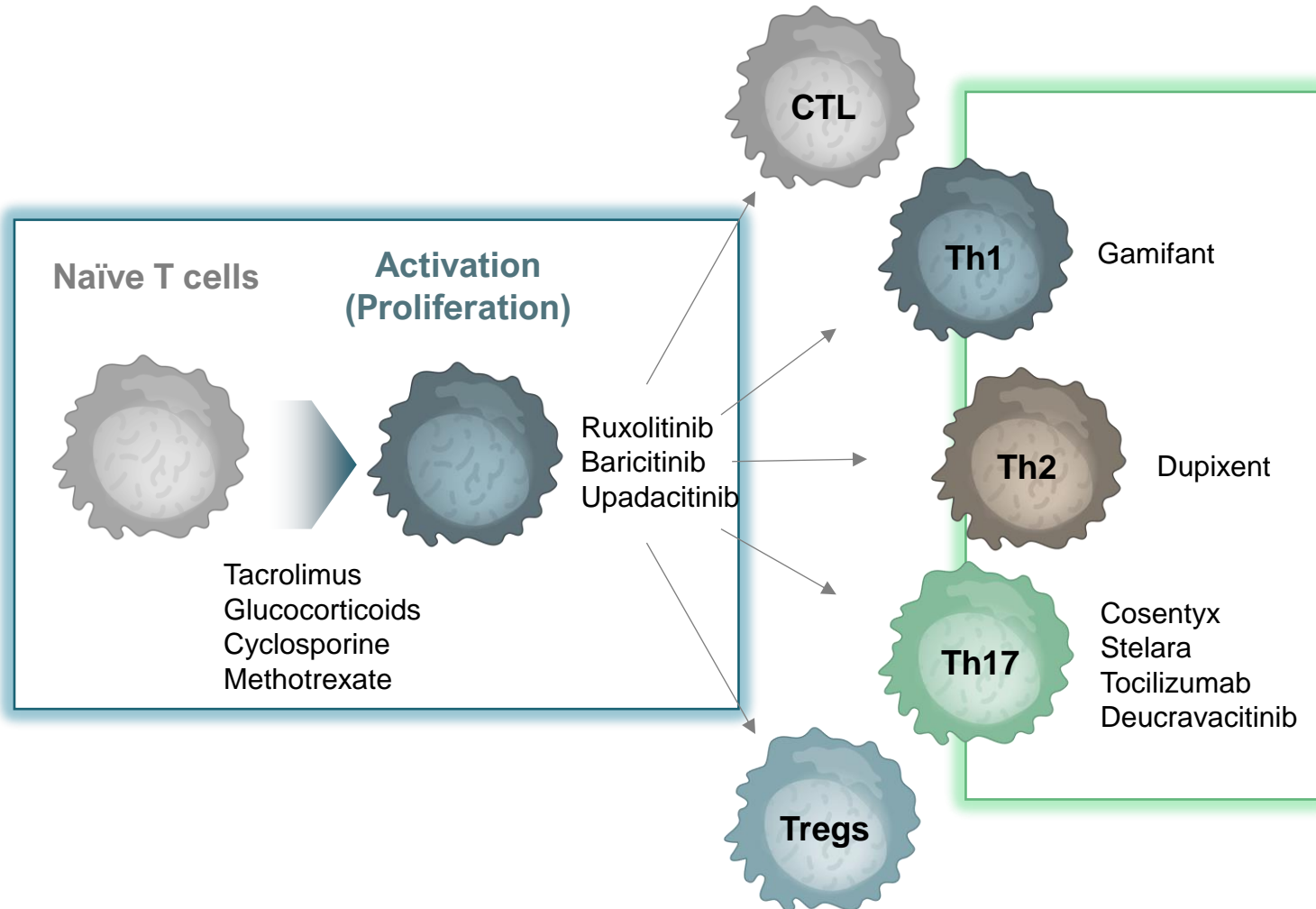
Current T cell-modulating therapies do not restore immune balance



1

Broad spectrum immunosuppressant drugs affect all T-cells and carry significant toxicities

Current T cell-modulating therapies do not restore immune balance



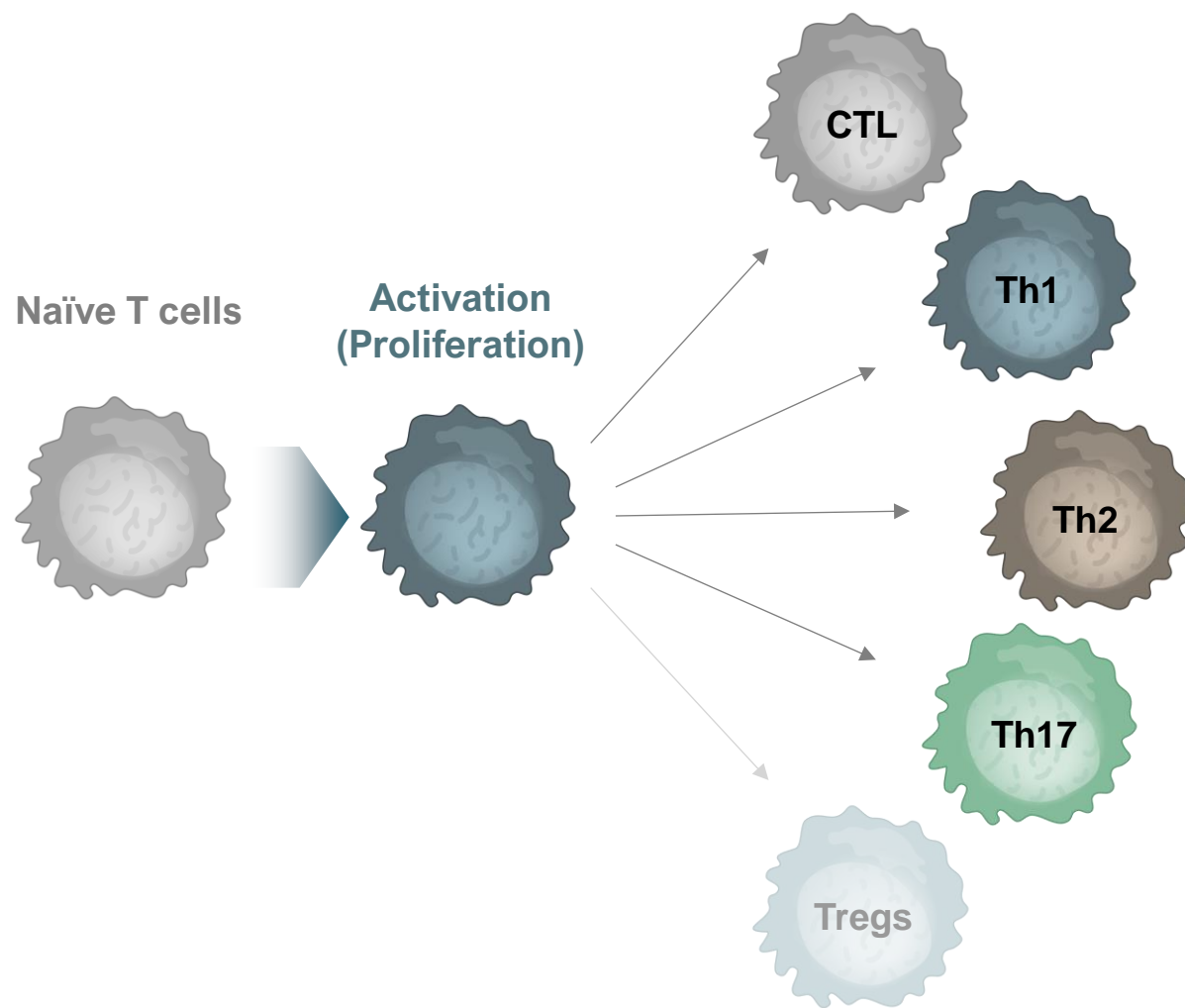
1

Broad spectrum immunosuppressant drugs affect all T-cells and carry significant toxicities

2

2nd generation I&I drugs target individual inflammatory T-cell subtypes, capping efficacy

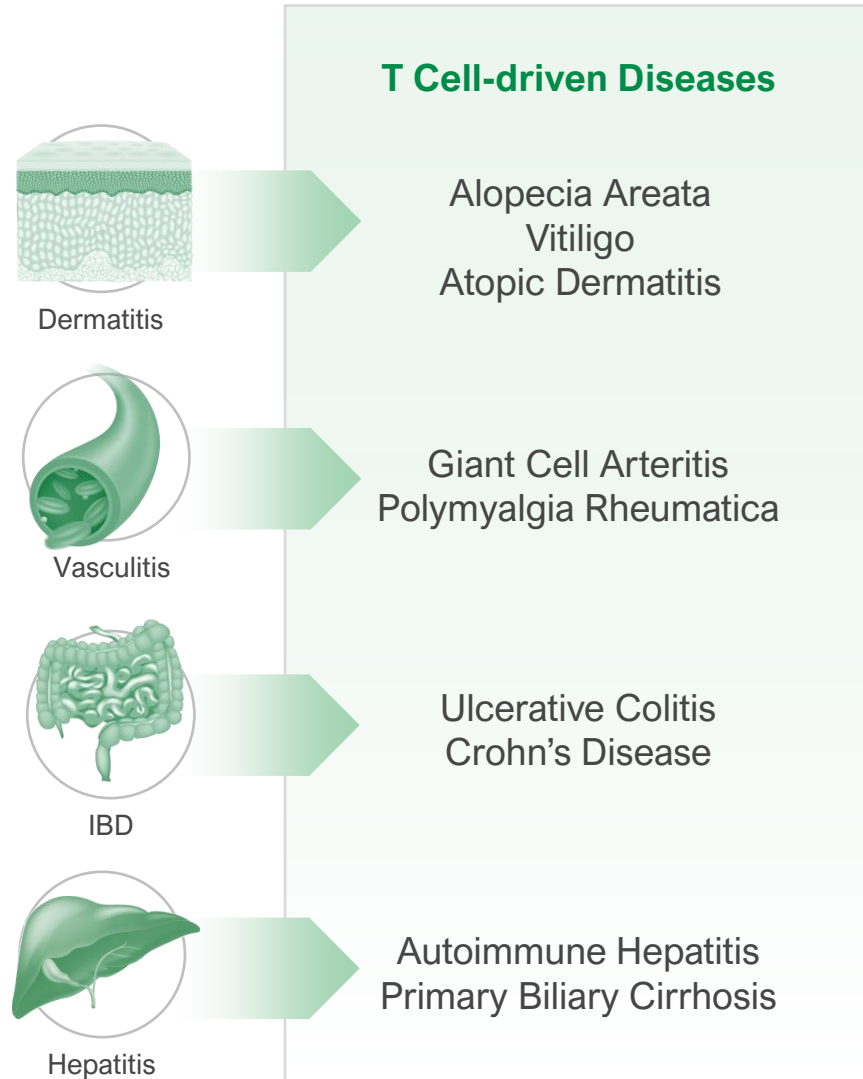
T cell selective delivery of siRNA opens mechanisms that can powerfully modulate autoreactive T cell activity, while supporting immune homeostasis



T cell selective delivery of siRNA unlocks powerful **upstream mechanisms** critical for **multiple arms of autoreactive T cell pathology**

MoA opens targets that **spare / re-enforce Treg function**, supporting immune tolerance for longer term remission

We are prioritizing high-value undruggable targets for indications where our approach could uniquely improve upon the standard of care



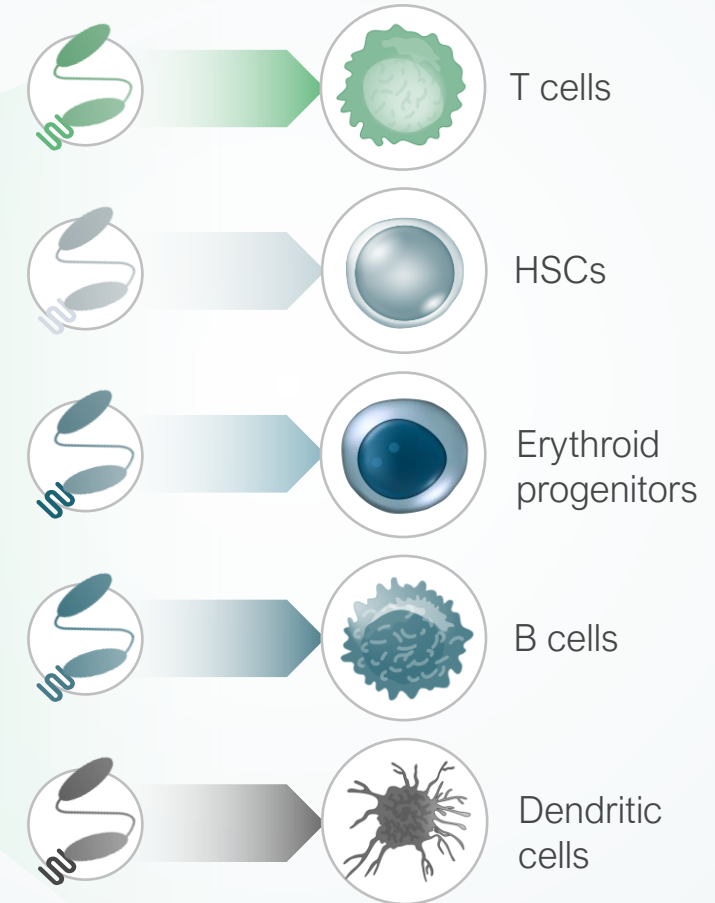
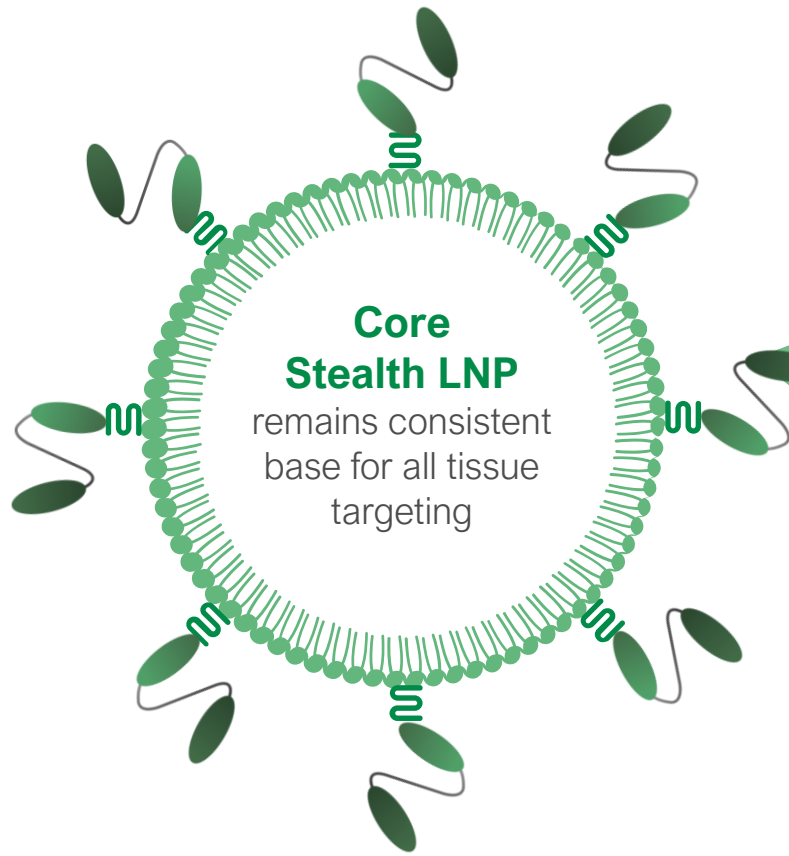
Lead Indication Selection Criteria

- ✓ Prominent role for T cell pathology
- ✓ Standard of care has therapeutic ceiling
- ✓ Standard of care has safety limitations
- ✓ Significant gaps exist in patient experience

T cells are just the beginning, ctLNP is a modular delivery platform to selectively reach many other cell types and therapeutic areas

Swapping in new ligands to reach new cell types

Each cell type opens its own indication pipeline



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