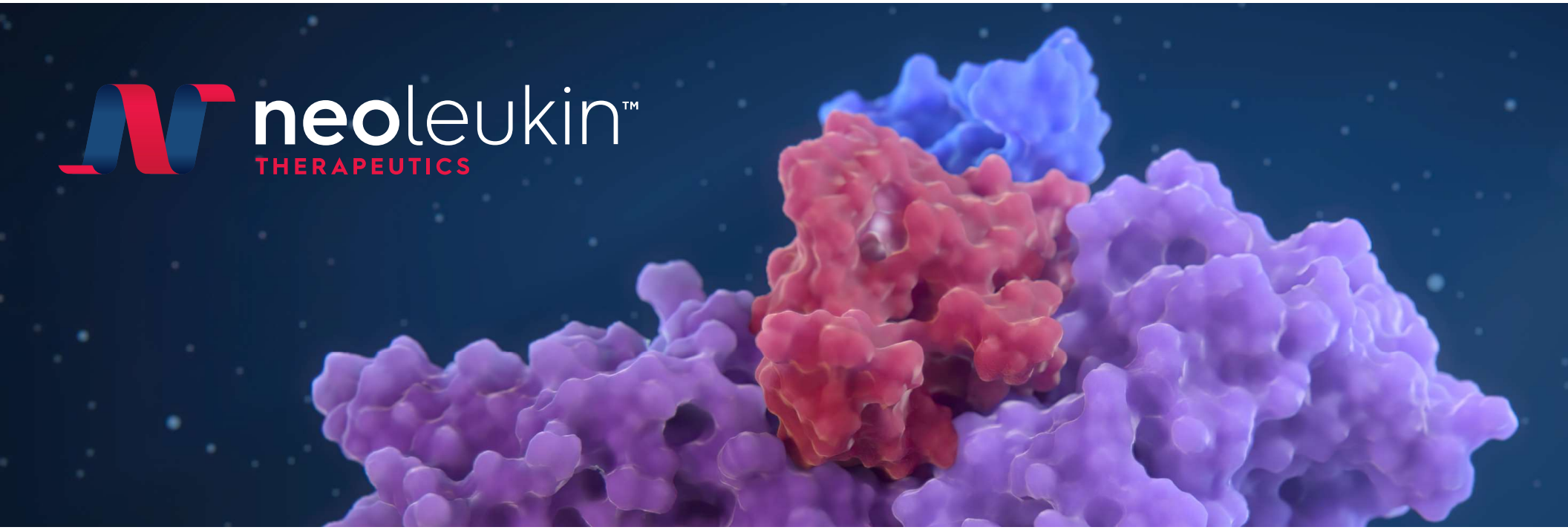

Corporate Presentation

August 2022

Forward Looking Statements

Certain of the statements made in these slides and the accompanying oral presentation are forward looking, including those relating to Neoleukin's business, strategy, future operations, advancement of its product candidates and product pipeline, clinical development of its product candidates, including expectations regarding timing of regulatory submissions and initiation of clinical trials, regulatory requirements for initiation of clinical trials and registration of product candidates, properties of its product candidates, availability of data, the use and sufficiency of its cash resources, and other statements containing the words "anticipate," "believe," "expect," "may," "plan," "project," "potential," "will," "would," "could," "continue," and similar expressions. These statements are subject to risks and uncertainties that could cause actual results and events to differ materially from those anticipated, including, but not limited to, risks and uncertainties related to: whether results of early clinical trials or preclinical studies will be indicative of the results of future trials, the adequacy of any clinical models, uncertainties associated with regulatory review of clinical trials, its ability to identify or acquire additional clinical candidates, its ability to obtain and maintain regulatory approval for any product candidates and the potential safety, efficacy or clinical utility of or any product candidates; further impacts of COVID-19, supply chain disruptions, or other global economic and geopolitical events on its operations; and other factors discussed in the "Risk Factors" section and elsewhere in the Company's Quarterly Report on Form 10-Q for the quarter ended June 30, 2022, Annual Report on Form 10-K for the fiscal year ended December 31, 2021, and subsequent reports as filed with the Securities and Exchange Commission. Actual results or developments may differ materially from those projected or implied in these forward-looking statements. The Company disclaims any intention or obligation to update or revise any forward-looking statements, whether as a result of new information, future events or otherwise.

We use protein design to reinvent how therapies are created with a goal to meaningfully improve patients' lives

Neoleukin is a pioneer in *de novo* protein development, leveraging computational methods to create new therapies. This new approach has unlimited potential to treat human disease by improving on nature, designing for life. We are building a company with a vibrant and inclusive culture that we believe will make a meaningful impact for patients, our people and our community.

Neoleukin: Leader in *de novo* Protein Therapeutics

2018

NEOLEUKIN FOUNDED

Computational methods enable fully *de novo* protein design

Scientists and technology spun out of University of Washington

2019

MERGER COMPLETED

NASDAQ listing (NLTX) after merger with Aquinox

More than $140M raised through merger and follow-on offering

2020

FIRST IND SUBMITTED

First IND of fully *de novo* protein (NL-201)

Neoleukin scientists create second fully *de novo* protein (NL-CVX1)

2021

PHASE 1 TRIAL INITIATED

First patients treated with fully *de novo* protein

Experienced drug-developers added in Clinical and Research

2022

MACHINE LEARNING

Machine learning/neural network technology enables rapid drug discovery

FUTURE

EXPAND *DE NOVO* PROTEIN PIPELINE

Multiple fully *de novo* molecules expected to enter development in oncology and autoimmune diseases

Innovative approaches to drug delivery, conditional activation, and affinity optimization to improve therapeutic index

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Leadership Team

Jonathan Drachman, M.D.

Chief Executive Officer

PRIOR
CMO, EVP R&D
Seagen

Bill Arthur, Ph.D.

VP & Head of Research

PRIOR
Seagen
Merck & Co.

Priti Patel, M.D., M.S.

Chief Medical Officer

PRIOR
AstraZeneca
Acerta Pharma

Donna Cochener

General Counsel, SVP Legal

PRIOR
HomeStreet
Davis Wright Tremaine

Carl Walkey, Ph.D.

Senior VP, Corporate Development

PRIOR
Postdoctoral Fellow, UW-IPD

Sean Smith

VP, Finance

PRIOR
Aptevo Therapeutics
KPMG

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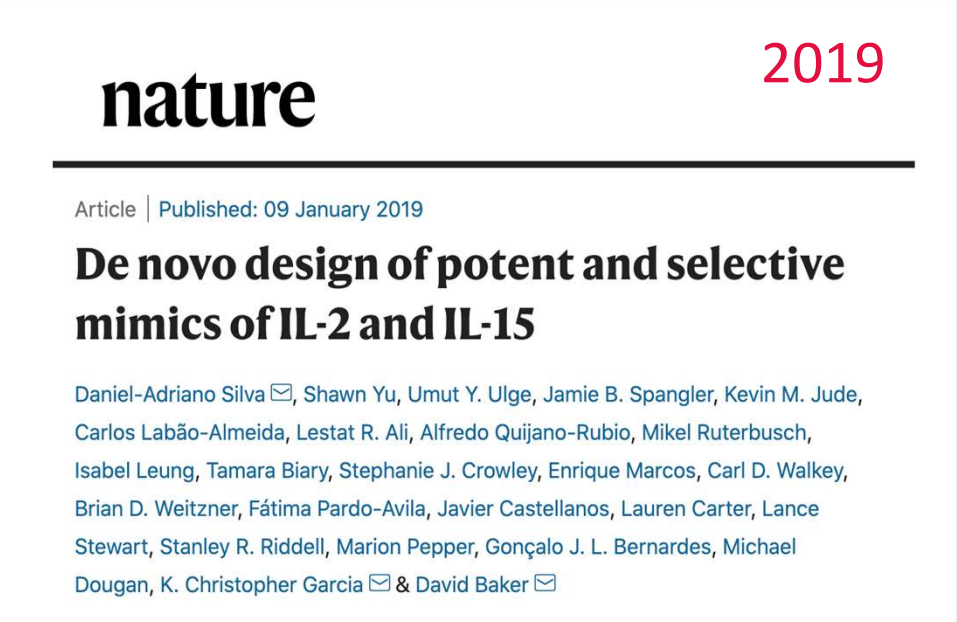
Better Therapies by Design

Functional de novo proteins



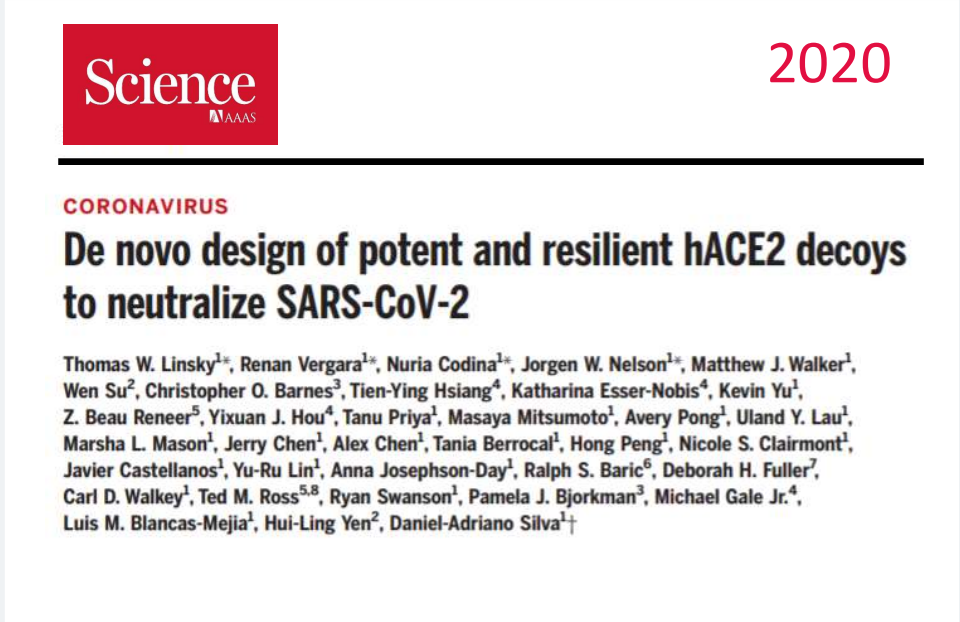
nature

2019

Article | Published: 09 January 2019

De novo design of potent and selective mimics of IL-2 and IL-15

Daniel-Adriano Silva, Shawn Yu, Umut Y. Ulge, Jamie B. Spangler, Kevin M. Jude, Carlos Labão-Almeida, Lestat R. Ali, Alfredo Quijano-Rubio, Mikel Ruterbusch, Isabel Leung, Tamara Biary, Stephanie J. Crowley, Enrique Marcos, Carl D. Walkey, Brian D. Weitzner, Fátima Pardo-Avila, Javier Castellanos, Lauren Carter, Lance Stewart, Stanley R. Riddell, Marion Pepper, Gonçalo J. L. Bernardes, Michael Dougan, K. Christopher Garcia & David Baker



Science AAAS

2020

CORONAVIRUS

De novo design of potent and resilient hACE2 decoys to neutralize SARS-CoV-2

Thomas W. Linsky[1*], Renan Vergara[1*], Nuria Codina[1*], Jorgen W. Nelson[1*], Matthew J. Walker[1], Wen Su[2], Christopher O. Barnes[3], Tien-Ying Hsiang[4], Katharina Esser-Nobis[4], Kevin Yu[1], Z. Beau Reneer[5], Yixuan J. Hou[4], Tanu Priya[1], Masaya Mitsumoto[1], Avery Pong[1], Uland Y. Lau[1], Marsha L. Mason[1], Jerry Chen[1], Alex Chen[1], Tania Berrocal[1], Hong Peng[1], Nicole S. Clairmont[1], Javier Castellanos[1], Yu-Ru Lin[1], Anna Josephson-Day[1], Ralph S. Baric[6], Deborah H. Fuller[7], Carl D. Walkey[1], Ted M. Ross[5,8], Ryan Swanson[1], Pamela J. Bjorkman[3], Michael Gale Jr.[4], Luis M. Blancas-Mejia[1], Hui-Ling Yen[2], Daniel-Adriano Silva[1†]

- Scientific founders are world leaders in *de novo* protein design
- Technology originated at University of Washington Institute for Protein Design
- Exclusive license obtained for commercialization of NL-201 and other *de novo* protein assets

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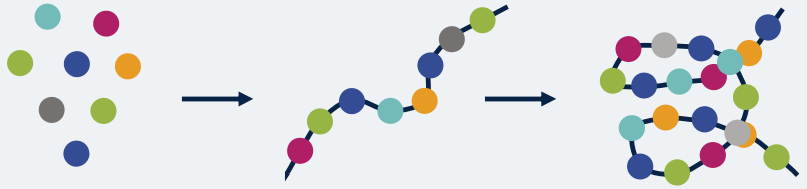
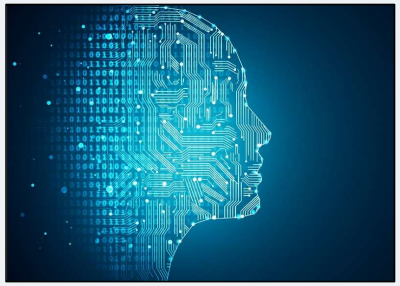
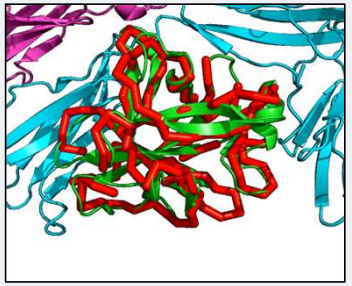
De Novo Protein Design

- Amino acids are nature's building blocks for proteins
- The order they are arranged in determines how a protein folds, what it binds to, and what it does
- Decades of research into protein folding, thermodynamics, and advances in computational power has resulted in the ability to design proteins that have never existed before

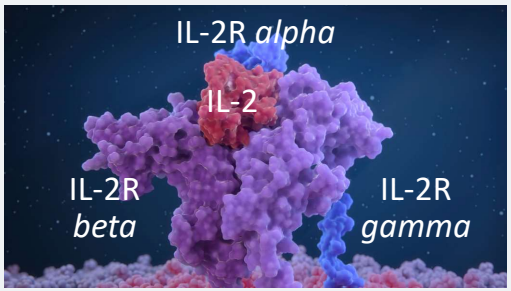


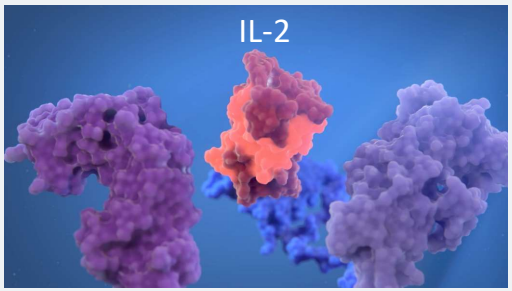


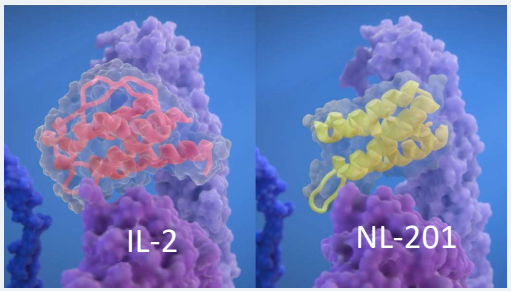


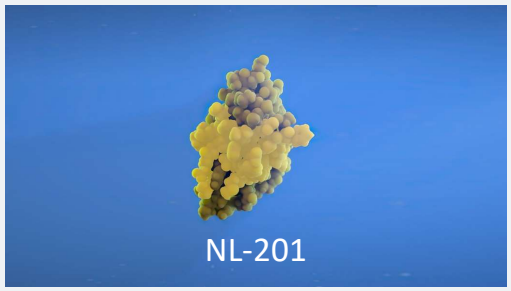
Neoleukin is leading the revolution in *de novo* protein therapeutics

Neoleukin™ *de novo* design methodology









1 Develop an accurate structural model of target

2 Identify regions of intermolecular contact

3 Design an idealized topology

4 Assign optimal amino acid sequences

- High-resolution structural models of native ligand-receptor interactions guide design
- Iterative process from multiple scientific disciplines to refine designs
- Early methods focused on less complex structures

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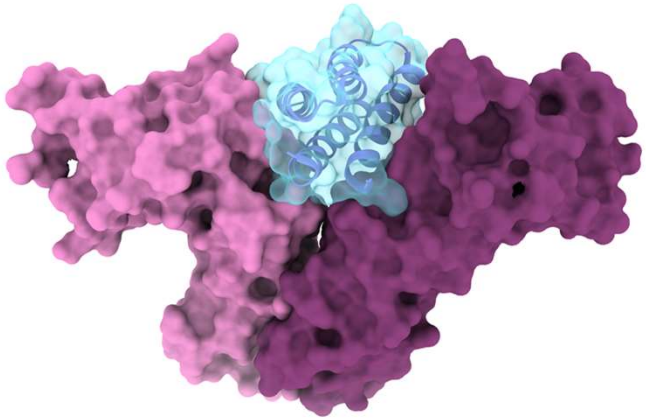
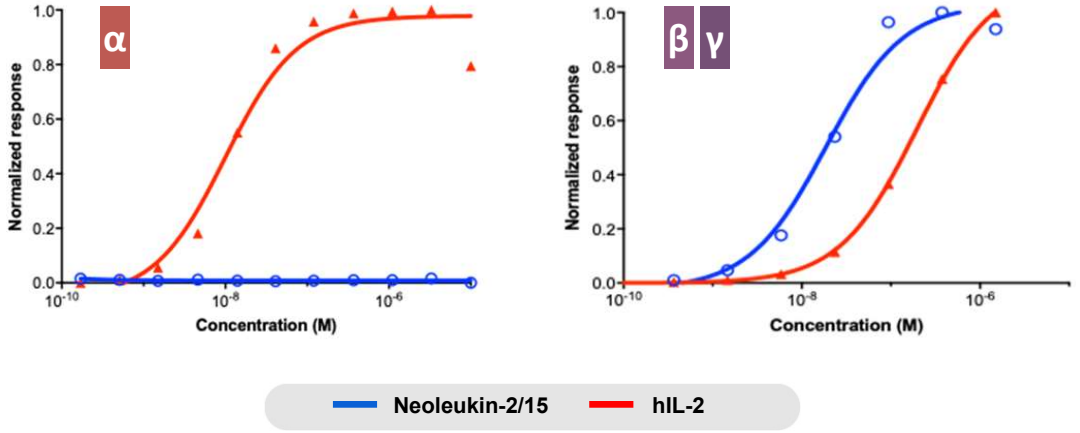
NL-201: *de novo* non-alpha IL-2/IL-15 agonist

Potent, stable, no bias toward Tregs or endothelial cells

14% Conserved sequence



Source: Silva et al. *Nature*, 565, 186-191 (2019)



NL-201 is a de novo protein designed with no alpha subunit interaction and increased beta/gamma binding

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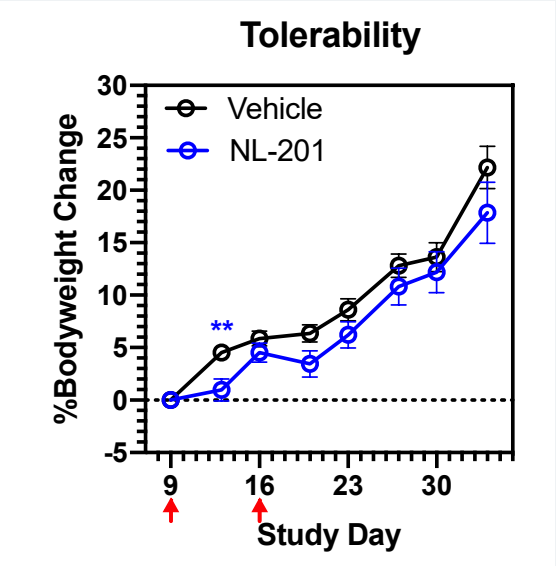
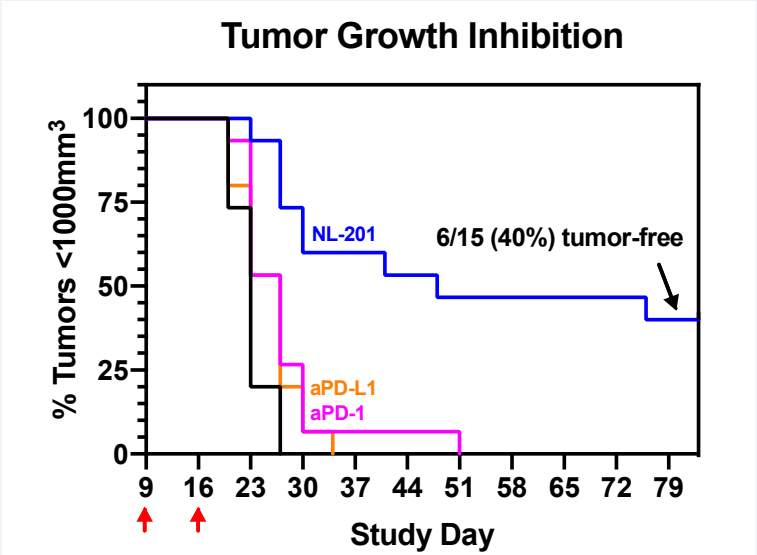
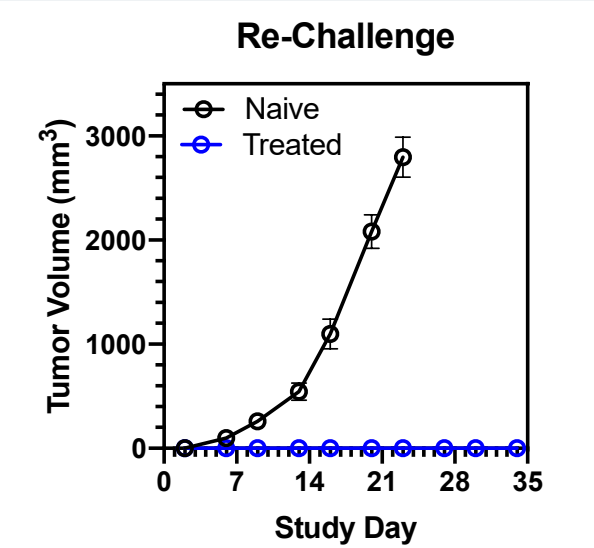
NL-201: Durable Antitumor Activity at Well-tolerated Doses

CT26 syngeneic murine colon cancer model



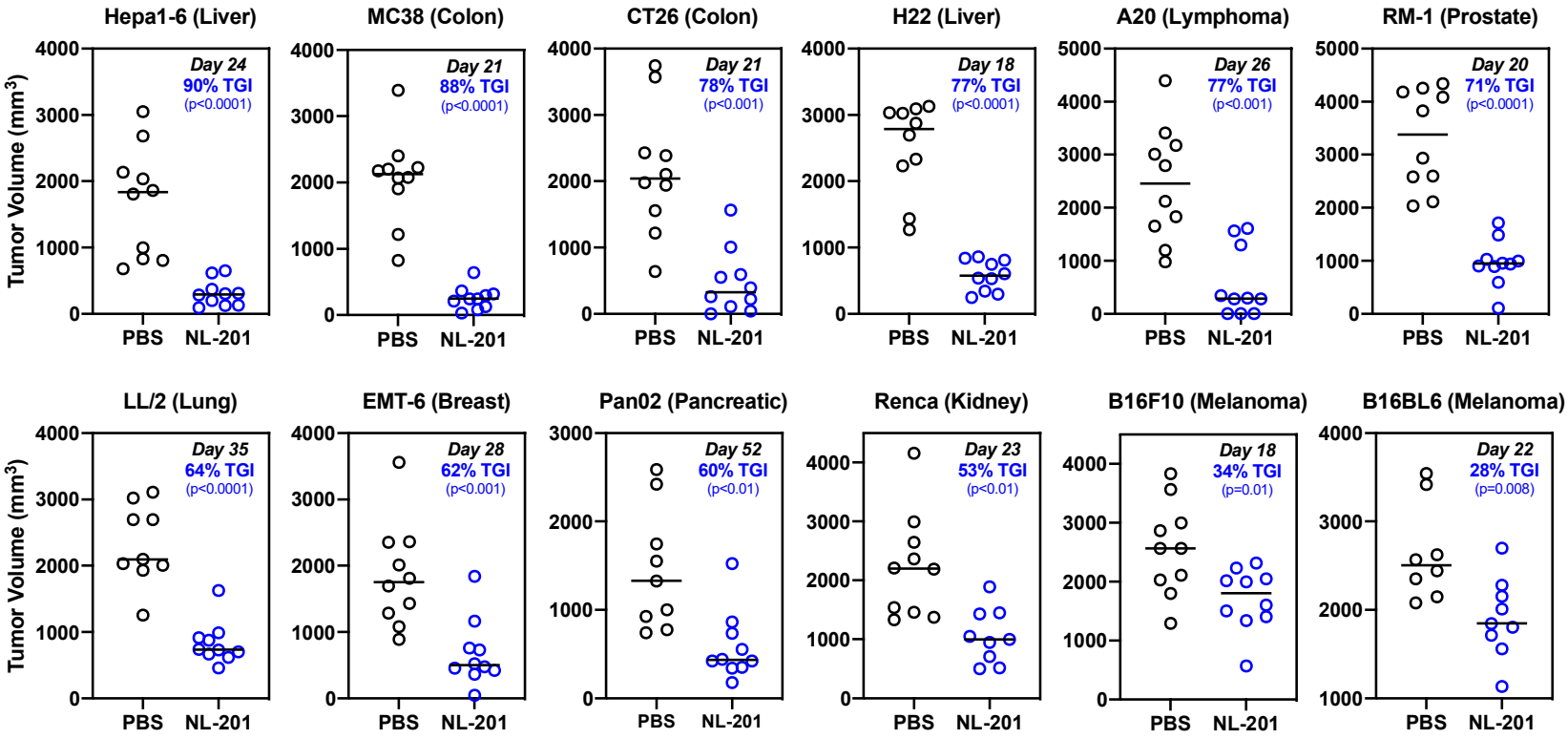




- NL-201 is well-tolerated at therapeutic doses
- Single-agent activity observed
- Tumor-free mice reject CT26 upon re-challenge

Walkey et. al, AACR Virtual Annual Meeting II, Abstract #4518, June 2020

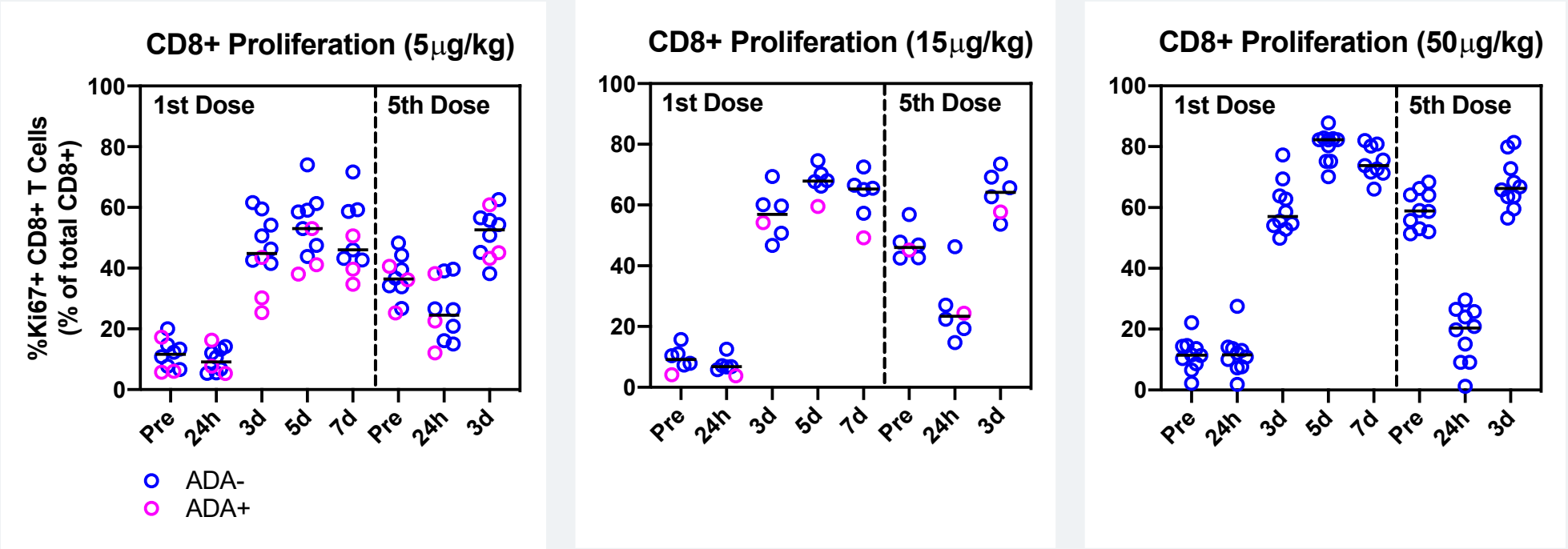
NL-201 Demonstrates Robust Single-Agent Activity in Multiple Tumor Models



- NL-201 was administered QWx2 when tumors reached ~100mm3
- Tumor growth inhibition (TGI) is reported in each graph vs. control.
- NL-201 significantly inhibited tumor growth in all models, including those that are refractory to checkpoint inhibitors

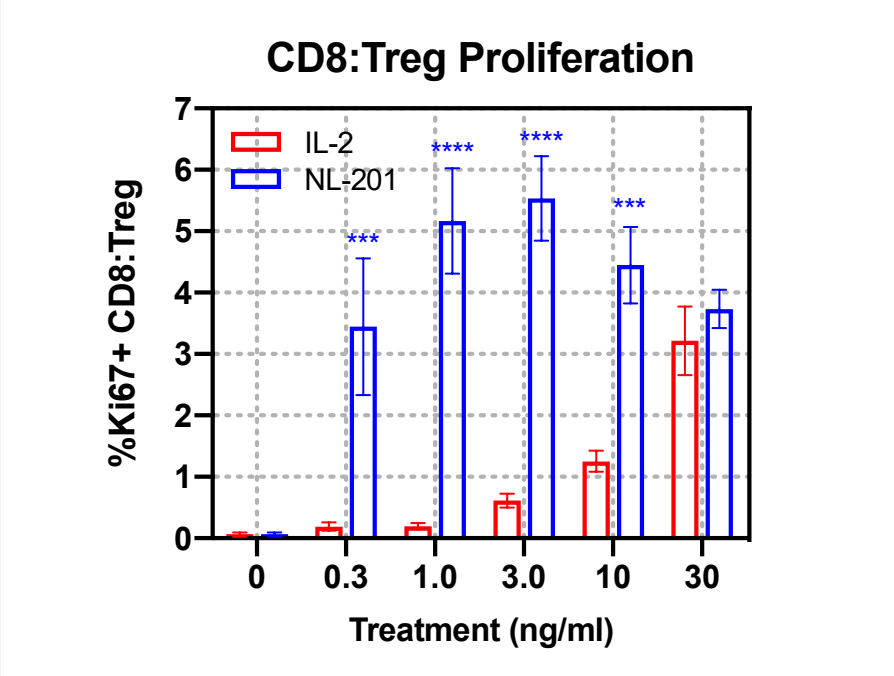
Walkey et. al, AACR Virtual Annual Meeting II, Abstract #4518, June 2020

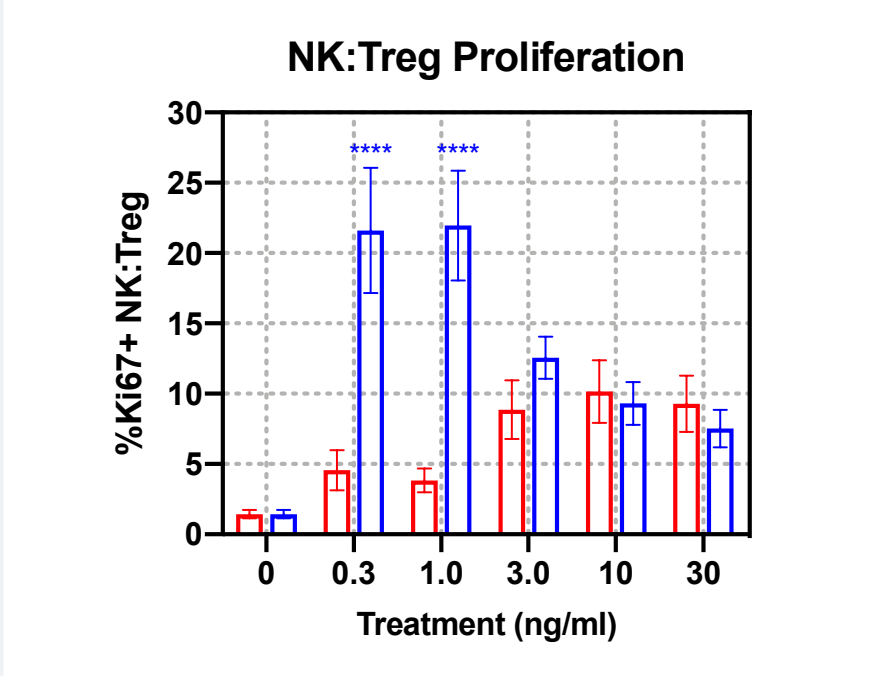
Similar Pharmacodynamic Response in ADA+ vs ADA- NHPs



Walkey et. al, AACR Virtual Annual Meeting II, Abstract #4518, June 2020

NL-201: High CD8:Treg and NK:Treg Ratios at Low Concentration



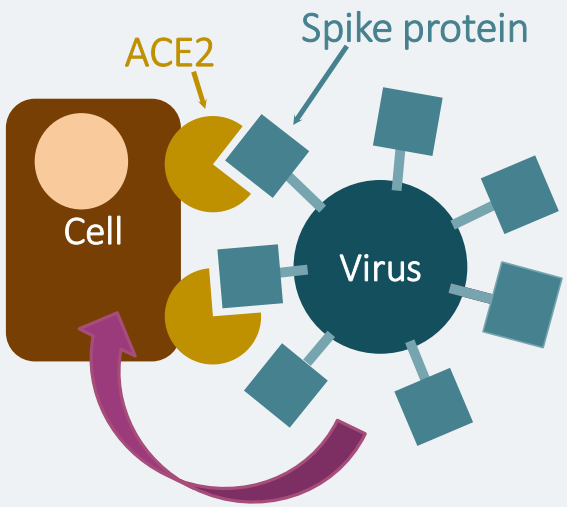


NL-201 vs IL-2: * p<0.05; ** p<0.01; *** p<0.001; **** p<0.0001

Walkey et. al, AACR Virtual Annual Meeting II, Abstract #4518, June 2020

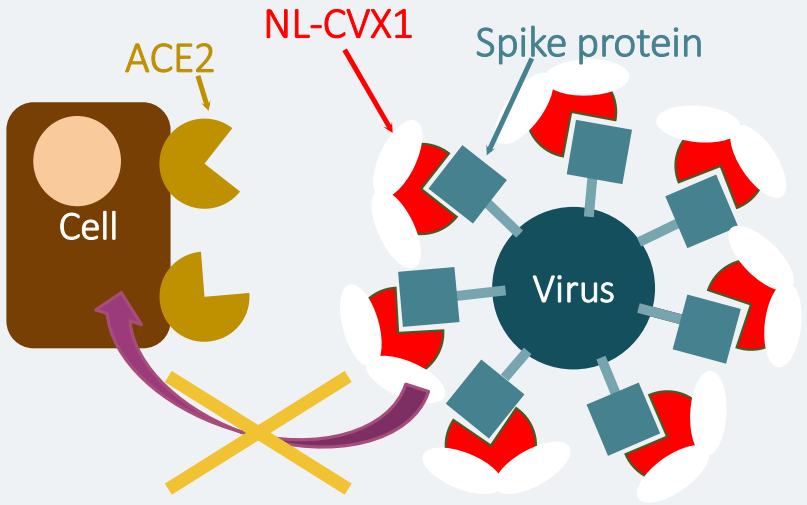
De Novo Platform Potential: COVID-19

SARS-CoV-2 uses **ACE2** as a receptor to gain access to and infect cells



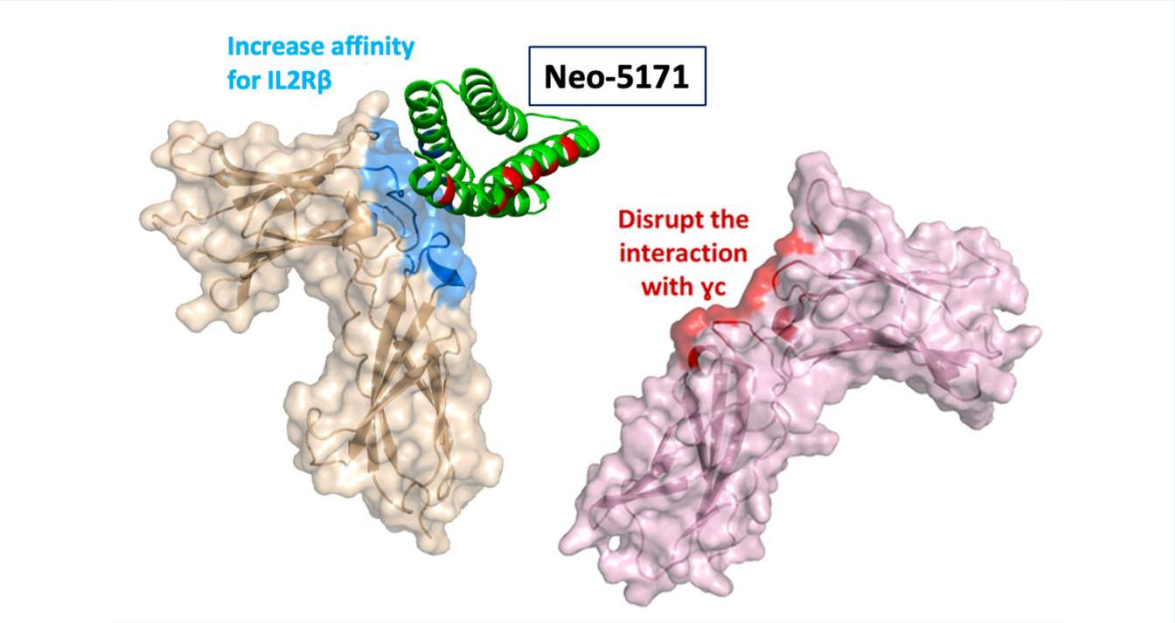
NL-CVX1 - *de novo* ACE2 decoy:

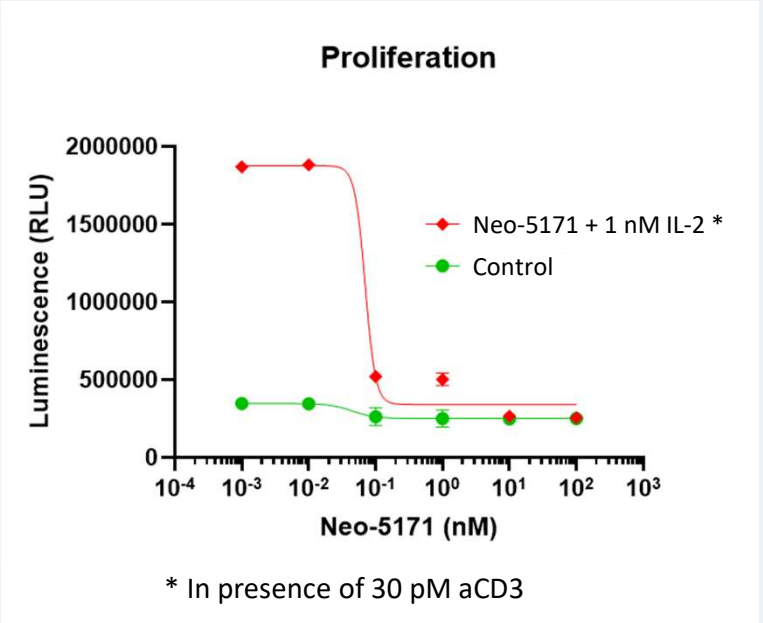
- *Binds to SARS-CoV2 spike protein*
- *Inhibits viral infection in vitro*



De Novo protein designed, tested, and optimized in the pre-clinical setting in ~10 weeks

Neo-5171: A computationally designed *de novo* protein inhibitor of IL-2 and IL-15 signaling



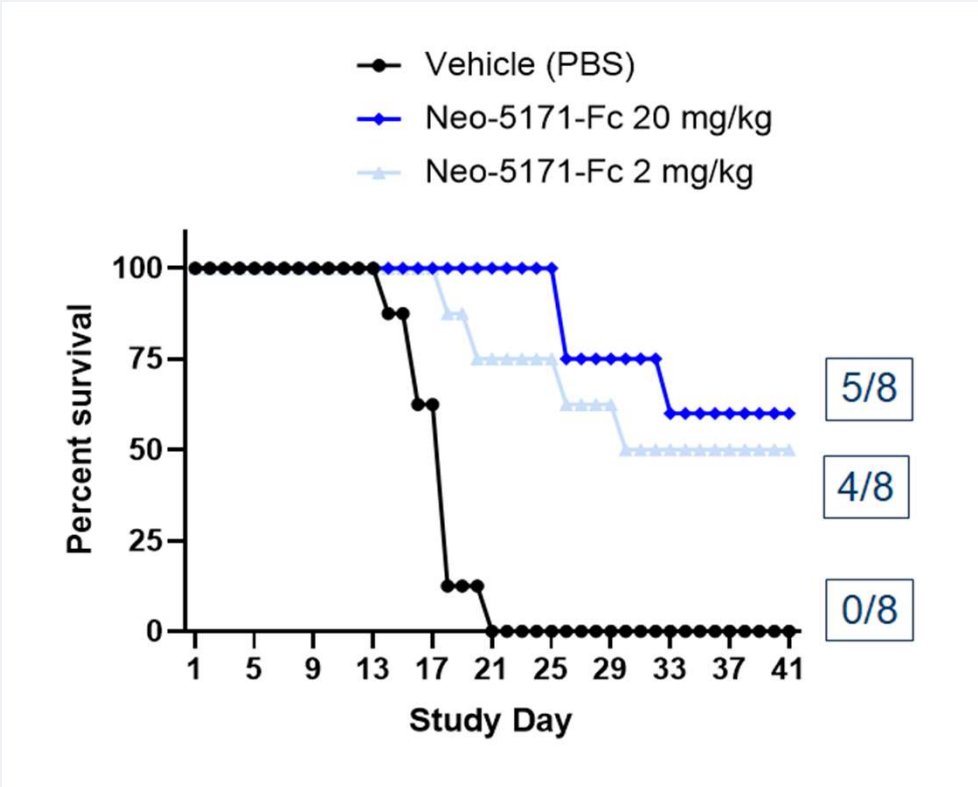


* In presence of 30 pM aCD3

- Potent inhibitor of CD8 T-cell proliferation and IFN-g production
- Resistant to proteases and low pH
- Less impact on T-regulatory cells

R. Swanson et. al. Am. Coll Rheum. (ACR) 2021; Abstract 1438, Nov 2021

Neo-5171-Fc prolongs survival in a preclinical model of graft-vs-host disease (GVHD)

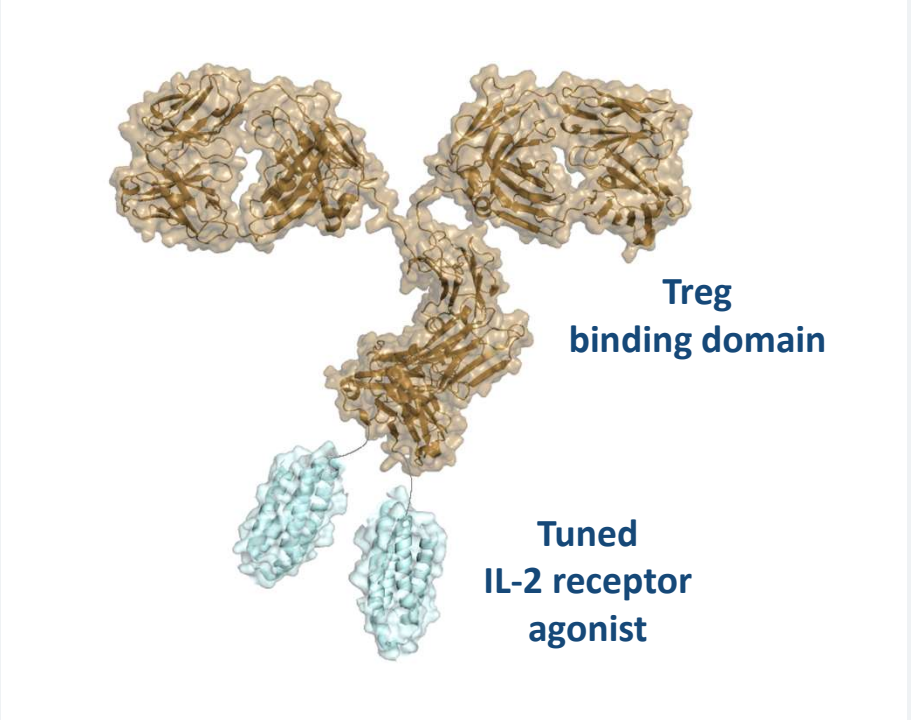


- Immunodeficient NSG mice were irradiated, received 10^7 human PBMC on Day -1
- Intraperitoneal dosing with Neo-5171-Fc q3d, beginning Day 0
- Mice were euthanized when experiencing >20% body weight loss
- At high dose 62.5% of mice survived at study end (Day 42)

R. Swanson et. al. Am. Coll Rheum. (ACR) 2021; Abstract 1438, Nov 2021

Highly Selective *De Novo* Treg Expander and Activator

- Highly tuned CD122/CD132 activator fused to Treg-targeting domain
- Potential to specifically expand Tregs for the treatment of autoimmune diseases and inflammation
- Finely tuned *de novo* protein to achieve optimal affinity and potency for specificity and cis-activation
- Demonstrated ability to drive specificity by targeting *de novo* cytokine mimetics



Evolution of Neoleukin™ *De Novo* Protein Technology

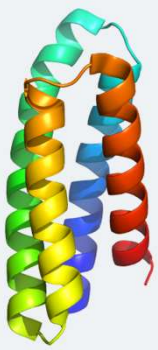
Accelerating speed and accuracy

- New methodology combines machine-learning (ML) based sequence design and structure prediction with high-throughput screening.
- ML-based methods enable more efficient protein design with higher success rates and using a fraction of the computing power.
- We can now develop from a more expanded landscape of protein topologies that were not accessible by traditional methods.

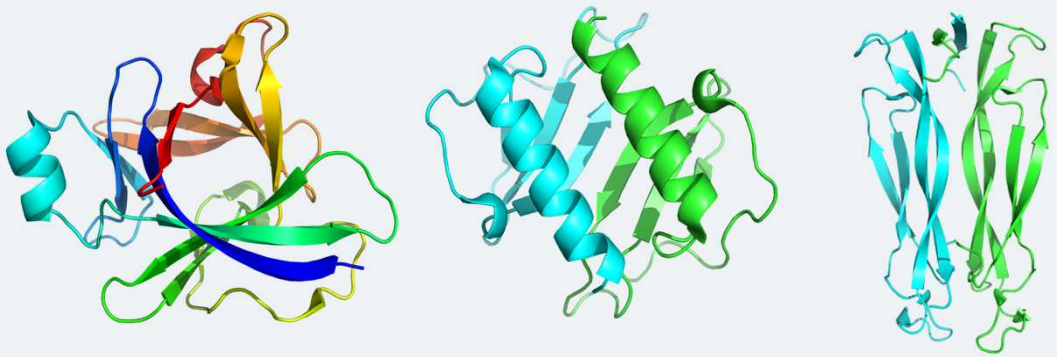
Adding Machine Learning to Protein Design

Building the next generation of de novo proteins

New methods are required to tackle more complex topologies



4-helix bundle



Some cytokine families have complex structures

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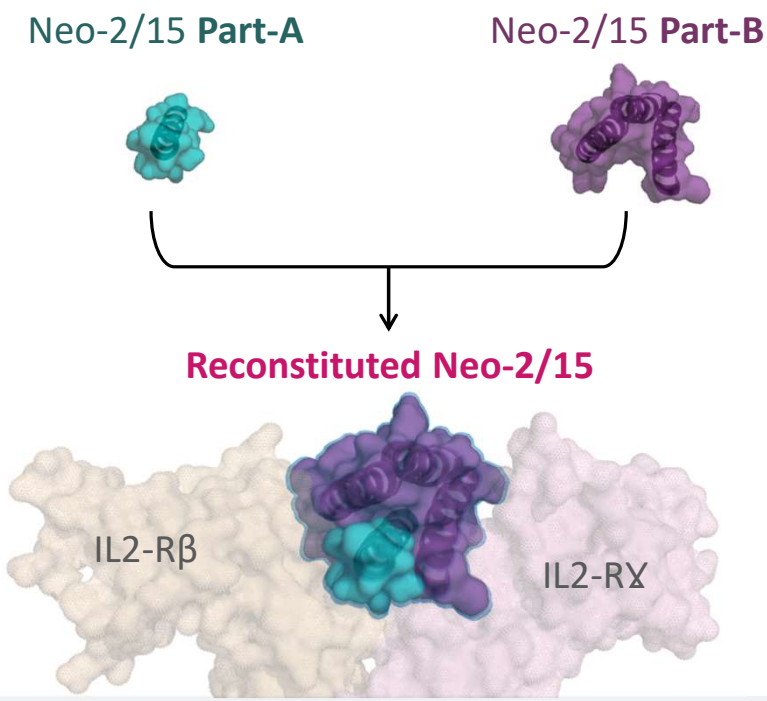
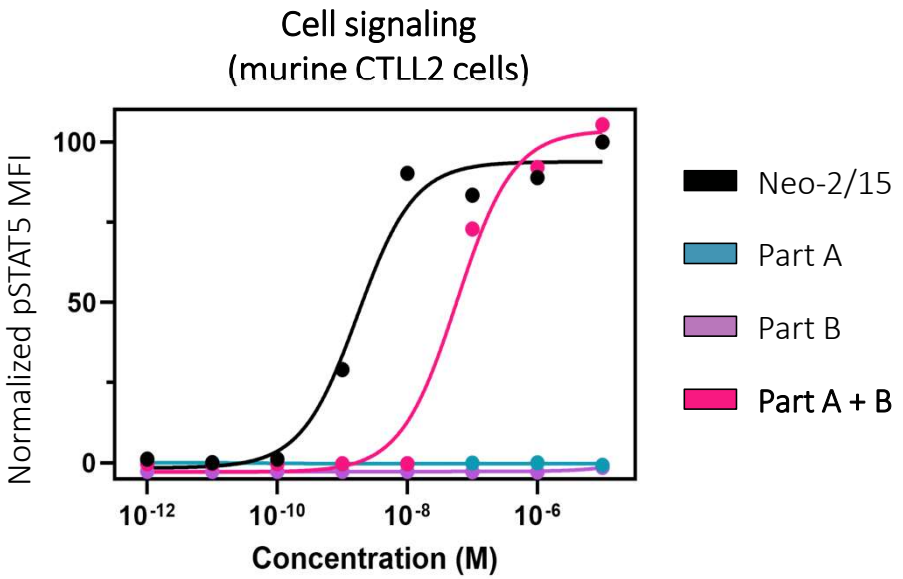
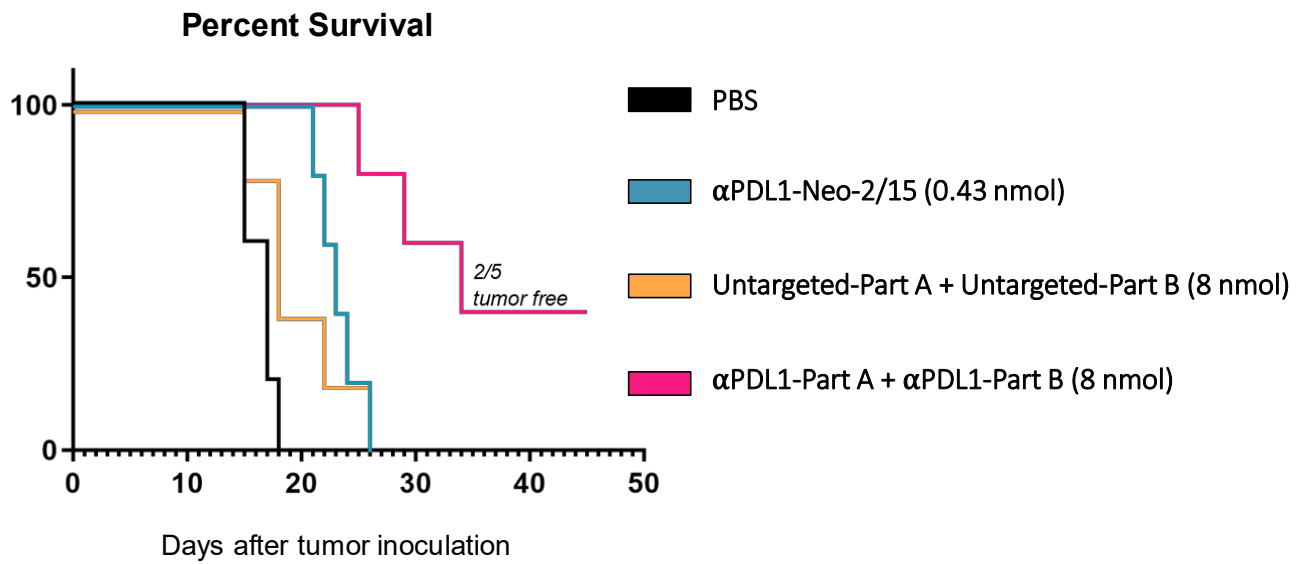
De Novo Split Technology: Conditionally Active IL-2 Mimetic

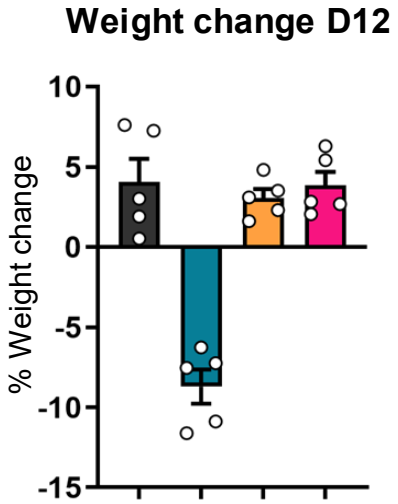




Quijano-Rubio et. al., AACR Virtual Annual Meeting II, Abstract #1075, Jun 2020

Targeted Split Neo-2/15 Increases Therapeutic Window



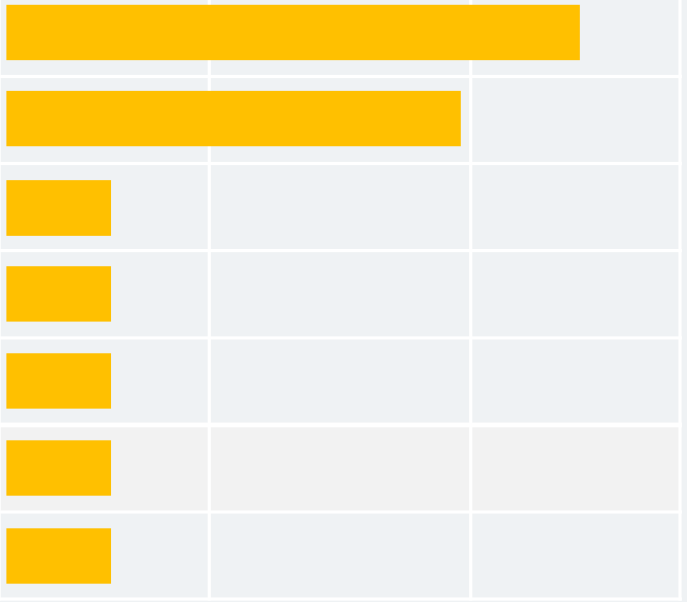


- C57BL/6J mice bearing B16 PDL1Hi melanoma cells in flank
- All groups were co-treated biweekly with Ta99 mAb (150µg/mice)
- Targeted Neo-2/15 variants and Part-A fusions administered i.p.; Part-B fusions administered s.c. opposite flank of tumor

Quijano-Rubio et. al., AACR Virtual Annual Meeting II, Abstract #1075, Jun 2020

Pipeline

	Program	Mechanism	Discovery	Preclinical Development	Phase 1
Oncology	NL-201	IL-2/15 Agonist Solid Tumors			
		IL-2/15 Agonist Heme Malignancies			
	Neo-202	Next-gen IL-2/15 Agonist			
	Neo-XX	*De Novo* Cytokine Mimetic Undisclosed Target			
	Neo-YY	*De Novo* Cytokine Mimetic Undisclosed Target			
Inflammation	Neo-5171	IL-2/15 Antagonist Autoimmune / Inflammatory Conditions			
	Neo-TRA	T-reg Agonist Autoimmune / Inflammatory Conditions			



NL-201 is believed to be the 1st *de novo* protein in clinic

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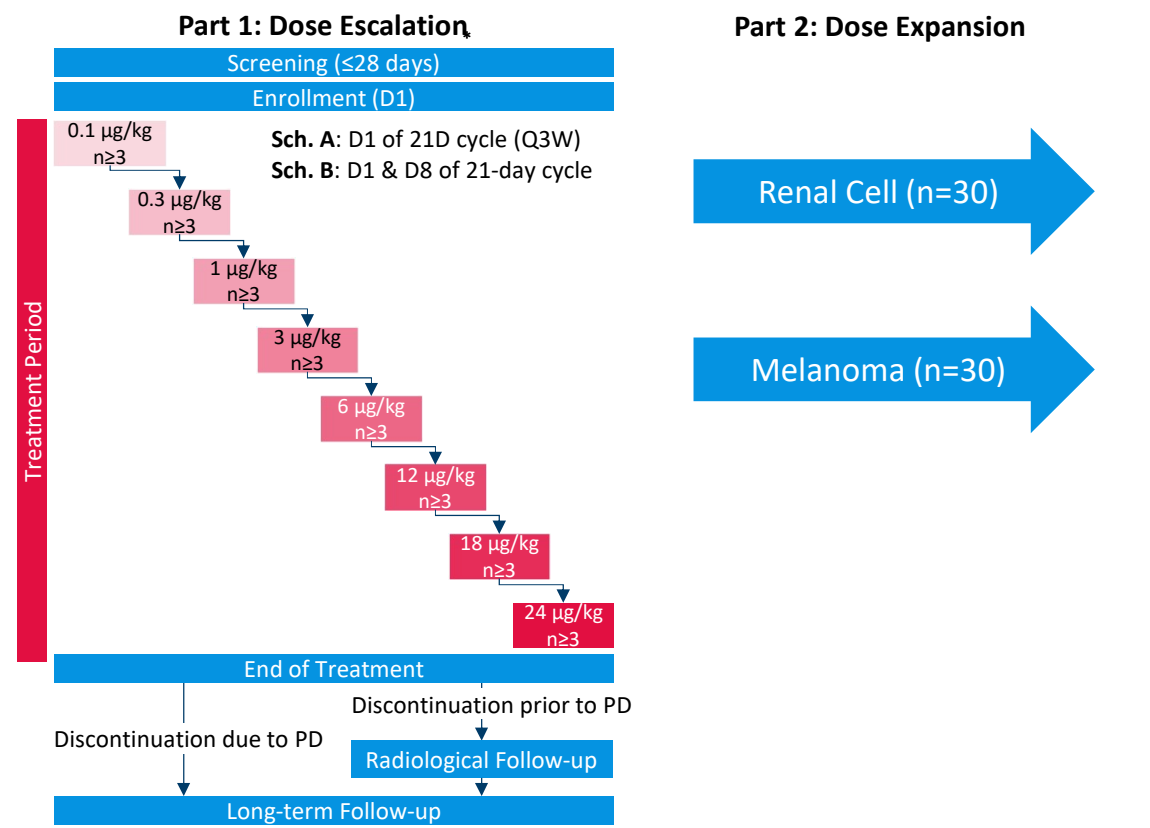
NL-201 Phase 1 Monotherapy Trial in Patients with Solid Tumors

- IV, monotherapy in patients with relapsed or refractory solid tumors
- Part 1: Identify optimal dose and schedule; assess safety, PK, PD, and antitumor activity
- Part 2: Indication-specific expansion cohorts, including renal cell carcinoma and melanoma
- Continuing to dose escalate; interim dose escalation data expected in 2023



Intermediate doses have been approved by the DMC and are being explored.

NL-201: Broad Opportunity in Cancer

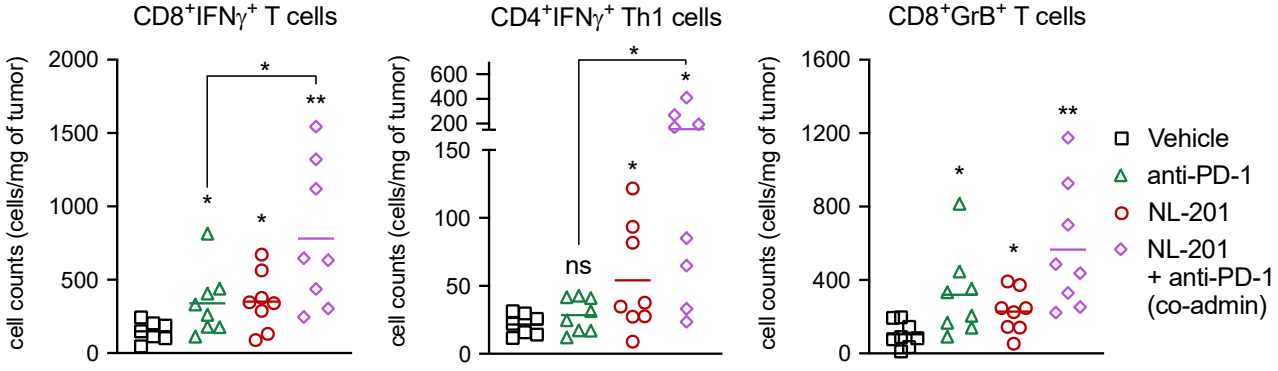
- Solid tumor monotherapy trial ongoing
- Combination dosing with pembrolizumab began May 2022
- Heme trial initiation pending outcome of safety data in dose escalation in solid tumors
- Consider future opportunities to combine with monoclonal antibodies, cellular therapies and other standard-of-care agents
- Potential advantages of NL-201 local administration presented at SITC 2021

NL-201 Turns ‘Cold’ Tumors ‘Hot’

Augments inflammatory milieu in preclinical B16 melanoma model

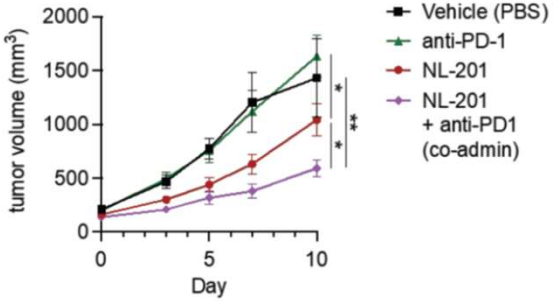
TCRβ Sequencing Summary

Mean (range)	Total T cells	Unique T cells	Simpson Clonality
Vehicle (n=5)	1,406 (358-2,708)	445 (196-807)	0.194 (0.106-0.411)
Anti-PD-1 (n=5)	2,456 (987-4,713)	464 (314-775)	0.34 (0.138-0.57)
NL-201 (n=5)	2,664 (1,578-3,816)	869 (611-1,064)	0.206 (0.11-0.292)
NL-201 plus anti-PD-1 (co-admin) (n=5)	2,865 (1,504-3,456)	1,042 (536-1,486)	0.128 (0.073-0.165)



NL-201

- increases T-cell diversity in the tumor microenvironment
- augments IFNγ and granzyme B expression in T-cells
- synergizes with anti-PD1 to inhibit tumor growth



Mortales et. al, SITC 2021, Abstract #716, Nov 2021

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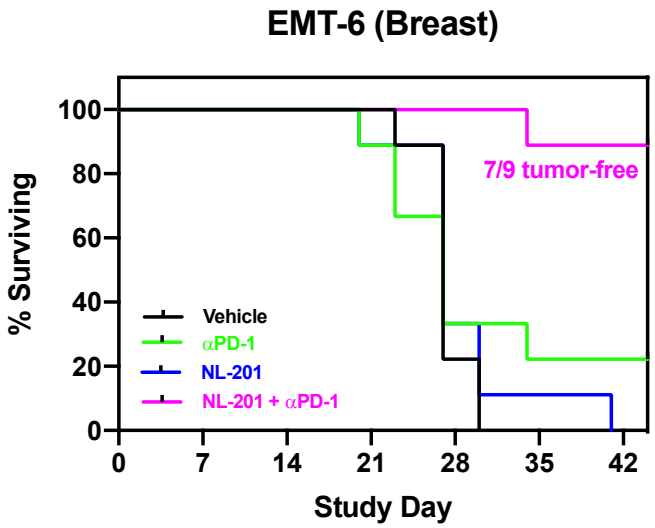
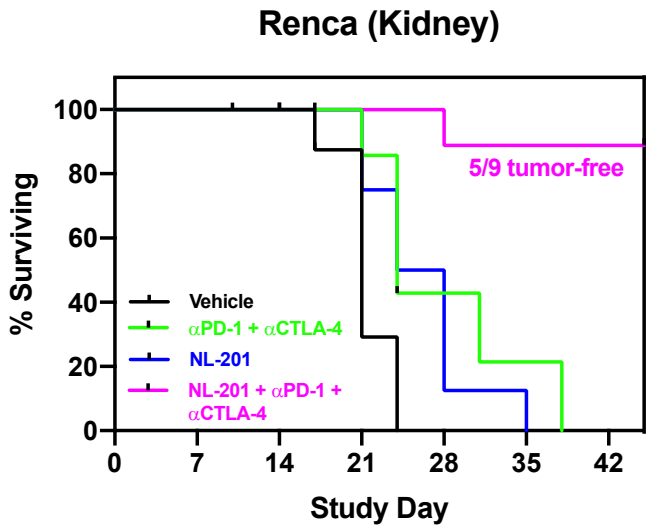
NL-201 Enhances Activity of Checkpoint Inhibitors in Preclinical Models

Combination with NL-201 in CPI-resistant syngeneic tumors



p=0.0029: αPD-1 vs NL-201 + αPD-1
p<0.0001: NL-201 vs NL-201 + αPD-1



p=0.0001: αPD-1 + αCTLA-4 vs NL-201 + αPD-1 + αCTLA-4
p=0.0006: NL-201 vs NL-201 + αPD-1 + αCTLA-4

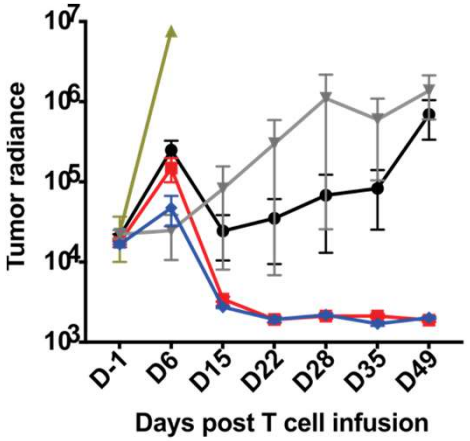
NL-201: 90µg/kg QWx2
αPD-1: 10mg/kg BiWx6
αCTLA-4: 10gm/kg BiWx6

Treatment began when tumors reached ~90mm^3

Promising NL-201 Preclinical Combinations In Vivo

Enhanced antitumor activity with CAR-T cells and antibodies

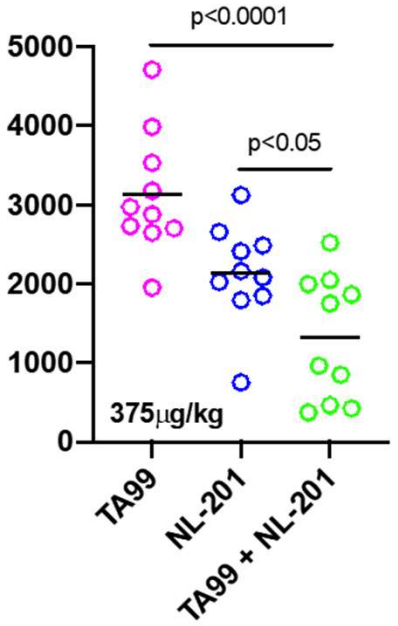
RAJI Lymphoma Model



- NL-201 combined with a subcurative dose of CAR-T cells achieve deep tumor control and 100% survival
- NL-201 enhances intratumoral CD8:Treg ratios (~1000x vs. ~50x for IL-2)

Leung et. al, AACR Annual Meeting II, Abstract #2222, June 2020

B16 Melanoma Model



- NL-201 + TA99 (mAb) significantly improved tumor growth inhibition when combined

Walkey et. al, SITC 2020, Abstract #576, November 2020

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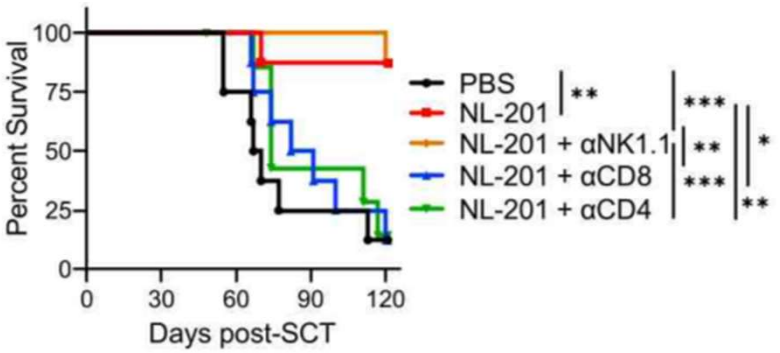
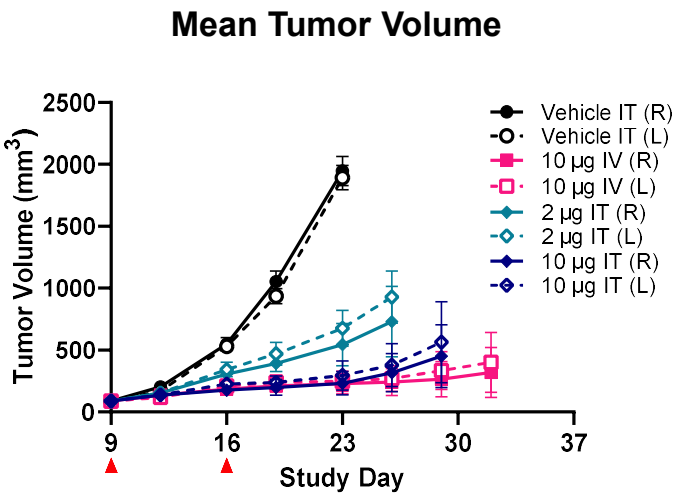
NL-201 in Hematologic Malignancies: Preclinical Data

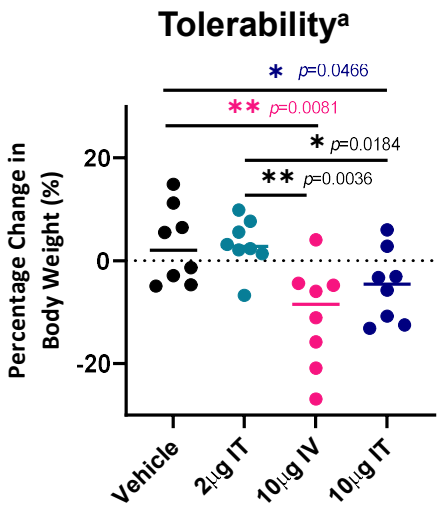


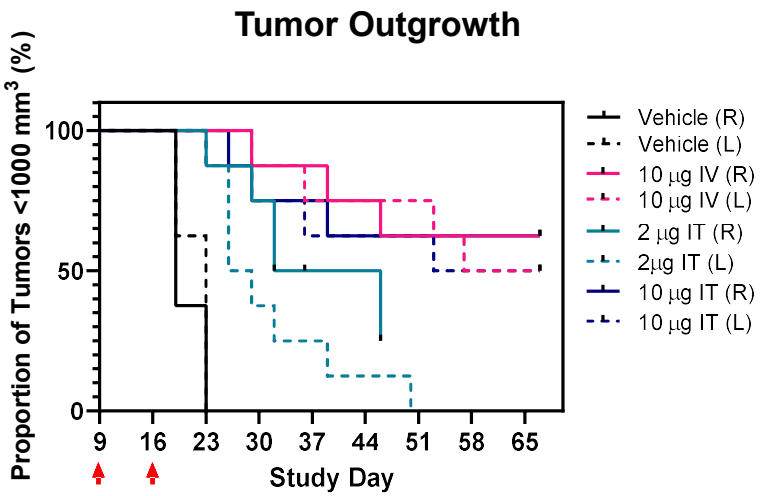
- NL-201 delays relapse in murine myeloma model following autologous stem cell transplant
- NL-201 induces expansion of cytotoxic CD8 T-cells and a decrease in T-regulatory CD4 cells in the bone marrow
- NL-201 treated mice had an increase in bone marrow T-cells expressing granzyme B and a decrease in the T-cell exhaustion phenotype
- Planning to initiate Phase 1 trial for NL-201 in patients with hematologic malignancies based on dosing and safety data expected from solid tumor trial

Minnie et al, American Society of Hematology 63rd Annual Meeting. Abstract 1609. December 2021

Intratumoral NL-201: Local and Distant Antitumor Control with Improved Tolerability







- CT26 syngeneic tumor model with bilateral tumor implants
- IT (R only) or IV NL-201 administered qWx2
- 10 mcg IV exceeded 20% weight loss in some mice

Tatalick et al, SITC 2021, Abstract #898, November 2021

Focusing Efforts to Preserve Cash Runway

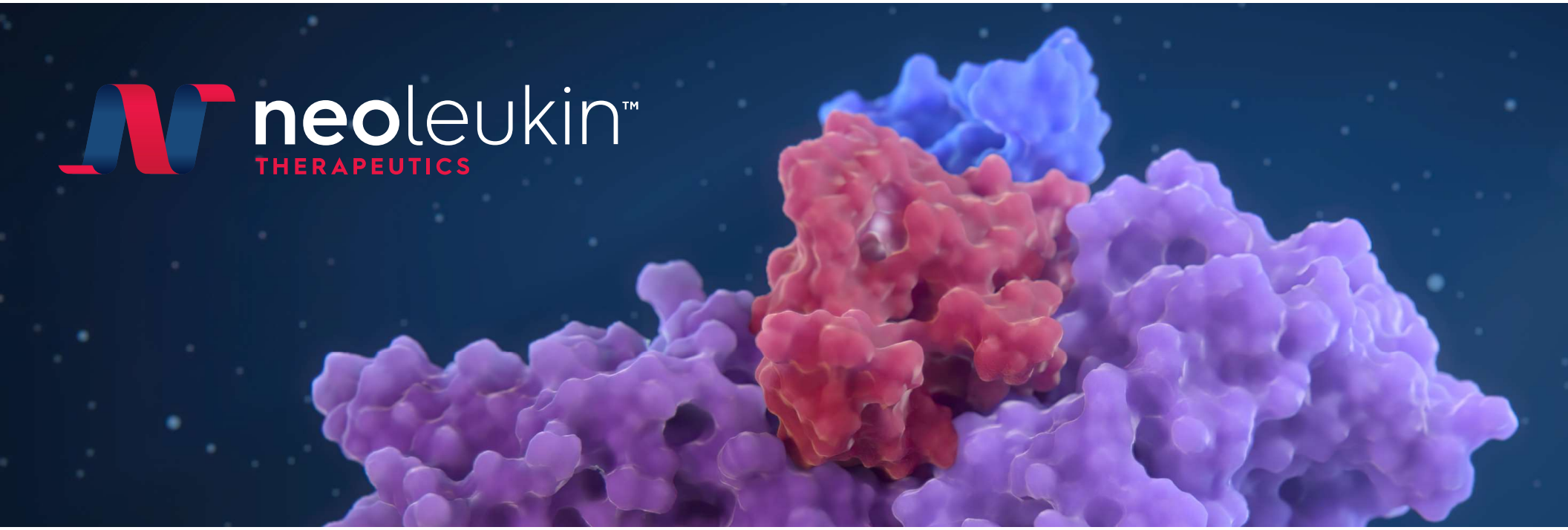
Financial Highlights

- $116.5 million cash, cash equivalents, and short-term investments as of June 30, 2022
- Cash and cash equivalents expected to fund operations through 2023
- 42.6M common shares outstanding and 12.7M pre-funded warrants[1]

Cash Runway Focus

- Goal to ensure adequate runway to support achievement of NL-201 clinical milestones through 2023
- Focused operating plan around core value driving activities
- Reduced personnel growth to limit expenses

1. Warrants to purchase common shares 1:1 with an exercise price of $0.000001 as of June 30, 2022.



Improving on nature.
Designing for life.