

from absci import de_novo_model
model = de_novo_model.load_latest()
antigen = model.load_pdb("7olz.pdb",
chain="A")
antibodies = model.predict(antigen, N=300000)

from absci_library import codon_optimizer
library
= codon_optimizer.reverse_translate(library)
library.to_csv("covid-antibody-designs.csv")
library.to_wet_lab(assay="ACE")

from absci import lead_opt_model
lead_optimizer = lead_opt_model.load_latest()
library.naturalness =
lead_optimizer.naturalness(library)
lead_optimizer.optimize(library).to_wet_lab(as
say="SPR")



CORPORATE PRESENTATION WINTER 2023 ABSCI CORPORATION 2023 ALL RIGHTS RESERVED from absci import genetic_algorithm; parameters=["maximizelbinding_affinity:pH=7.5", "minimizelbinding_affinity:pH=6.0",
"maximizelhuman_naturalness"]; library = genetic_algorithm.multiparametric_optimization(library, parameters, evolutions=100);
library.to_wet_lab(assays=["ACE", "SPR", "Bioassays"])

Disclaimers

Forward-Looking Statements

Certain statements in this presentation that are not historical facts are considered forward-looking within the meaning of Section 27A of the Securities Act of 1933, as amended, and Section 21E of the Securities Exchange Act of 1934, as amended, including statements containing the words "will," "may," "anticipates," "plans," "believes," "forecast," "estimates," "expects," "predicts," "advancing," "aim," "potential," and "intends," or similar expressions. We intend these forward-looking statements, including statements regarding our strategy, estimated speed, cost advantages, improved success rates, and expanded intellectual property opportunities from developing therapeutics leveraging our Al drug creation platform, the effective incorporation of our technology in drug design and discovery to accelerate drug development and increase probability of success, advancements toward in silico drug design and creation, research and technology development collaboration efforts, potential milestone and royalty payments due under our collaboration agreements, projected costs, prospects, plans and objectives of management, to be covered by the safe harbor provisions for forward-looking statements contained in Section 27A of the Securities Act and Section 21E of the Securities Exchange Act, and we make this statement for purposes of complying with those safe harbor provisions. These forward-looking statements reflect our current views about our plans, intentions, expectations, strategies, and prospects, which are based on the information currently available to us and on assumptions we have made. We can give no assurance that the plans, intentions, expectations, or strategies will be attained or achieved, and, furthermore, actual results may differ materially from those described in the forward-looking statements and will be affected by a variety of risks and factors that are beyond our control, including, without limitation, risks and uncertainties relating to the development of our technology, our ability to secure milestone payments and royalties, our ability to effectively conduct research, drug discovery and development activities with respect to our internal programs and to collaborate with our partners or potential partners with respect to their research, drug discovery and development activities; along with those risks set forth in our most recent periodic report filed with the U.S. Securities and Exchange Commission, as well as discussions of potential risks, uncertainties, and other important factors in our subsequent filings with the U.S. Securities and Exchange Commission. Except as required by law, we assume no obligation to update publicly any forward-looking statements, whether as a result of new information, future events, or otherwise.

Market and Statistical Information

This presentation also contains estimates and other statistical data made by independent parties and by us relating to market size and growth and other industry data. These data involve a number of assumptions and limitations, and you are cautioned not to give undue weight to such estimates. We have not independently verified the data generated by independent parties and cannot guarantee their accuracy or completeness.

Trademark usage

This presentation/document/webpage contains references to our trademarks and service marks and to those belonging to third parties. Absci@, the Absci logo mark (∂), SoluPro@, Bionic SoluPro@, and SoluPure@ are Absci registered trademarks with the U.S. Patent and Trademark Office. We also use various other trademarks, service marks and trade names in our business, including the the Absci Al logo mark (∂), the Unlimit with us mark (Unitation), the unlimit symbol (Unitation), Bionic protein M, Bionic Enzyme M, Bionic Antibody Denovium M, Denovium Engine M, Drug Creation M, Integrated Drug Creation M, HiPrBind M, HiPrBind Assay M, Translating Ideas into Drugs M, Translating Ideas into Impact M, Better biologics for patients, faster M, Breakthrough therapeutics at the click of a button, for everyone M, and We Translate Ideas into Impact^M. All other trademarks, service marks or trade names referred to in this presentation/document/webpage are the property of their respective owners. Solely for convenience, the trademarks and trade names in this presentation/document/webpage may be referred to with or without the trademark symbols, but references which omit the symbols should not be construed as any indicator that their respective owners will not assert, to the fullest extent under applicable law, their rights thereto.



What if the next transformative drug was not discovered, but created at a click of a button?



The drug discovery paradigm is ripe for disruption



Long iterative process resulting in drug candidates with suboptimal attributes

WHY HASN'T GENERATIVE AI TRANSFORMED BIOLOGIC DRUG DISCOVERY?

Unlocking the potential of generative AI in biology requires scalable biological data



Absci's scalable biological data enables true generative AI for biologics drug discovery

Absci's ACE Assay[™] generates data at >4,000x the throughput of traditional HT assays

Massive Training Data Sets



vroved, 11.2% of drugs entering clinical trials approved 2006: 22 approved, 11.2% 2007: 18 approved, 10.7% 2008: 24 approved, 6 approved, 7.8% 2010: 21 approved, 6.8% 2011: 35 approved, 6.1% 2012: 39 approved, 5.3% 2013: 27 approved, 5.2% 2014: 41 7% 2015: 45 approved, 13.8%

Instead sf finding the needle in the haystack, Absci is creating the needle.

Truba

DUR - LA OURO =

The Solution

At Absci, the future is now with our Integrated Drug Creation™ platform

DATA TO TRAIN

Proprietary wet-lab assays generate massive quantities of high-quality data for generative AI model training

WET LAB TO VALIDATE

Scalable wet-lab infrastructure capable of validating millions of unique AIgenerated designs a week



AI TO CREATE

Integrated Drug Creation[™] platform



DATA TO TRAIN

Proprietary wet-lab assays generate massive quantities of high-quality data for generative AI model training

Driven by our proprietary ultra high throughput ACE Assay[™] which screens millions of antibody sequence variants + billions of parameters in weeks



Integrated Drug Creation[™] platform



Integrated Drug Creation[™] platform



WET LAB TO VALIDATE

Scalable wet-lab infrastructure capable of validating millions of unique AI-generated designs a week

Developability

- Self association
- Hydrophobicity
- Tm
- Solubility
- Stability (multiple conditions)

THE FLYWHEEL EFFECT WITH SCALABLE BIOLOGICAL DATA AND AI

Cycles completed within weeks



Absci is the first to design and validate novel antibodies* using zero-shot generative Al

*March 2023



Designed and validated novel antibodies by CDRs design using zero-shot generative AI - unlocking the potential to go from target to therapeutic antibody at a click of a button

(Shanehsazzadeh et al. 2023)

Feb 2023



Solved longstanding codon optimization problem and created largest expression database of its kind to optimize DNA codon sequences and maximize protein yield. Important for biomanufacturing. (Constant et al. 2023)

Aug 2022



Used artificial intelligence to simultaneously optimize multiple parameters important to drug discovery and development (Bachas et al. 2022)



Unlocking de novo antibody design with generative artificial intelligence

don optimization with large

sets enables generalized

r Shanehsazzadeh", Sharrol Bachas", Matt McPartlon", George Kasun ohn M. Sutton, Andrea K. Steiger, Richard Shuai, Christa Kohnert, ohm M. Sutton, Andrea N. Steiger, Richard Shau, Ghrista Kohnert, Jonn Haboveri, Jahl M. Guitterer, Glades Chang, Bersuma K. Laton, Nicolas Dias, Simon Lovine, Julian Aberio, Bally Knight, Macey Ratach, Med Mershead, Katherine Batsmann, Jowid A. Spenerz, *Rachard*, Webargh, A. Bullon Chang, and K. Sharan, *Calabar M. Chang, Ch* Rodante Caguiat, Amber Brown, Shaheed Abdulhaqq, Zheyuan Guo, Lillian R. Klug Itles Cander, Joshua Meter⁸³

Absci Corporation, New York (NY) and Vancouver (WA), USA

Equal contribution Corresponding author (imeier@absci.com)

Abstract

Generative artificial intelligence (AI) has the potential to greatly increase the speec quality and controllability of antibody design. Traditional *de novo* antibody discovery

ABSCI CORPORATION 2023 ALL RIGHTS RESERVED

ABSCI'S END-TO-END PLATFORM SOLUTION

The leading full-stack AI platform for biologics drug creation



De novo antibody development using generative Al



De novo drug creation with 'zero-shot' generative Al



Al de novo design of HER2 antibodies

Case study goals

Test 'zero shot' model by designing HCDR3 and HCDR123 for HER2 binding

Assess multiple parameters:

- Binding rates
- Sequence diversity
- Immunogenicity
- Functionality
- Developability





Delivers diverse, novel, high affinity binders



Maintains high level of specificity



Outperforms biological baseline



Enables multi-dimensional lead optimization

- Desired cross-species reactivity and specificity
- Optimal developability
- Higher potency than Trastuzumab as demonstrated in vitro

Data highlights



Diverse, novel, high affinity binders

• Up to 12 mutations in a CDR region of 13 amino-acids (Search space of 20¹³)



3 Outperforms biological baseline

• *De nov*o designed HCDR3s achieve a 4-fold improvement over random OAS baseline



Affinity of novel binders up to 3.4 nM measured by SPR in mAb format

Data highlights



Higher or equal potency binders than trastuzumab

• Verified binders form biologically relevant interactions and possess desired functional attributes

SK-OV-3 (HER2 +ve) cell-based assays

Cell Surface Binding ADCC 1.2×10⁶ – 2.5 Absorbance, 450 nm, AU P.4×10⁵ -9.4×10⁵ -6.8×10⁵ -4.2×10⁵ -1.6×10⁵ -2.0 1.5 1.0. 0.5 0.0 -1.0×10⁵ 10^{0} 10^{2} 10^{3} 10⁵ 10^{6} 10 10² 10³ 10⁰ 10^{-1} 10¹ $10^4 \ 10^5 \ 10^6$ Antibody (pM) Antibody (pM) trastuzumab 🔶 Variant B oint A* 🗕 Variant C ATION 2023 ALL RIGHTS

Epitope mapping

Trastuzumab WT



Scaling our *de novo* development with high throughput validation



Successfully scaled wet lab

- Scaled wet lab throughput to test 15 targets in 10 weeks
 - 12/15 targets successfully screened
 - 8/12 validated binders
- Capability to generate diverse datasets quickly powers our innovation pipeline

Leveraging wet lab and AI for multi-parametric lead optimization



From *de novo* designs to optimized therapeutics







Clone & Express 10³ - 10⁶ CDR variant libraries expressed in SoluPro® strain

VARIANT LIBRARY SCREENING



Large libraries ACE Assay™ platform

Small libraries Surface Plasmon Resonance (SPR)

Multi-valent lead co-optimization towards a broad spectrum antibody



Improve binding towards beta without loss of binding towards alpha and delta

	K _p (nM)			
Fab	WT RBD	alpha RBD	beta RBD	delta RBD
Parental Antibody	8.5	8.0	607	5.4

Generate information rich libraries for model training



Generate target-specific training data from triple mutant libraries



ABSCI CORPORATION 2023 ALL RIGHTS RESERVED



Model searches up to 48 trillion options and identifies many potentially novel high affinity hits



Traditional training sets Absci 100k training set in 10⁷ combinatorial space Absci lab confirmed hits in 10¹³ combinatorial space



Absci's ACE Assay[™] platform generates large, high quality training sets enabling *in silico* affinity predictions



Hold out data sets demonstrate strong model performance following training with AI-predicted affinity correlating well with experimental measurements

Representative holdout set (beta) earson R = 0.84= 26134Score Parent Antibody AC Al-predicted Wet lab ACE Score™ (affinity) Pearson R delta alpha beta 0.84¹ 0.78 0.75

1 High correlation between ACE Score™ and SPR-measured -log10 KD values observed

Al model searches mutational space and top predictions are validated

Binders predicted to have the best binding towards all three SARS-CoV-2 variants are assessed in the lab by SPR

79% (31/39) of evaluated predictions exhibit higher binding affinity than parent antibody to alpha and beta and delta



3

AI co-optimized binding to multiple SARS-CoV-2 variants

Case study outcome

AI-guided lead optimization platform delivers antibodies with improved binding towards all three desired variants



Eab	nM KD (fold improvement)			
Fab	alpha RBD	beta RBD	delta RBD	
Parental antibody	8.0	607	5.4	
ABSCI001	2.7 (3x)	16 (37x)	1.9 (3x)	
ABSCI002	1.5 (5x)	24 (25x)	0.8 (7x)	
ABSCI003	0.9 (9x)	32 (19x)	0.6 (9x)	
ABSCI004	1.1 (7x)	37 (16x)	1.4 (4x)	
ABSCI005	1.3 (6x)	40 (15x)	0.8 (7x)	



Al-optimization for dual- or multivalent biologics increases potential

INFECTIOUS DISEASES

Broad spectrum antibodies with simultaneous binding to multiple viral variants



PRECLINICAL DEVELOPMENT

MOUSE-AG

HUMAN-AG

CYNO-AG

Cross-species binding for improved success rates and speed

IMMUNOLOGY

Increased potential efficacy by simultaneous binding to multiple desired isoforms



CASE STUDY: AI-DRIVEN LEAD OPTIMIZATION 85% of Top 100 **"natural**" Trastuzumab variants exhibit higher binding-affinity than wild-type



- AI predicts the affinity of unseen variants from libraries generated using diverse mutational strategies and combinatorial sequence space
- AI models make predictions with actionable performance using <0.1% of the combinatorial sequence space as training set
- Naturalness is associated with developability metrics and expression titer
- Enables one-shot multiparametric lead optimization potentially accelerating time to clinic

Bachas, S., Rakocevic, G. et al., "Antibody optimization enabled by artificial intelligence predictions of binding affinity and naturalness," 2022 pre-print in bioRxiv.

ABSCI CORPORATION 2023 ALL RIGHTS RESERVED

AI-DRIVEN LEAD OPTIMIZATION

Al-optimization for dual- or multivalent biologics increases potential

PRECLINICAL DEVELOPMENT

Cross-species binding for improved success rates and speed

IMMUNOLOGY

Increased efficacy by simultaneous binding to multiple desired isoforms

INFECTIOUS DISEASES

Broad spectrum antibodies with simultaneous binding to multiple viral variants

Reverse Immunology platform unifies target and antibody discovery in a single workflow enabling potential "first-inclass" biotherapeutics

Reverse immunology: simultaneous target and antibody discovery

Tertiary lymphoid structures (TLS): the cornerstone of Absci's Reverse Immunology approach

TLS are centers of immune activity (B-cell proliferation and antibody production) that develop in chronically inflamed tissues [1].

Antibodies from TLS are specialized for local antigens and play a significant role in the progression of chronic diseases and cancer, setting them apart from the general population of antibodies in the peripheral blood [2].

The presence of TLS is associated with longer progression-free survival and better response to immune checkpoint inhibitors [2,3].

- Rapidly growing evidence illustrates correlation between TLSderived antibodies in the tumor microenvironment and positive clinical outcomes [2].
- TLS-derived antibodies have been shown to be associated with apoptosis of cancer cells in patients [2].

[1] Pipi et al. "Tertiary lymphoid structures: autoimmunity goes local." Frontiers in immunology (2018)
[2] Meylan et al. "Tertiary lymphoid structures generate and propagate anti-tumor antibody-producing plasma cells in renal cell cancer." Immunity (2022)
[3] Helmink et al. "B cells and tertiary lymphoid structures promote immunotherapy response." Nature (2020)

Ways to work together on target discovery

Target + Antibody discovery partnership for your indication of interest utilizing Reverse Immunology Platform (patient data sourced from Absci's data partnerships).

Screen our TLS-derived Ab library consisting of fully human mAbs against *your* targets of interest. Discover mAbs and simultaneously validate your novel targets within weeks.

****** ****** ******* ******* ******

Potential to enable our partners with

ACCESS TO NOVEL DISEASE BIOLOGY

Ability to address elusive drug targets, e.g. GPCRs, ion channels

Enabling "first-in-class"

SUPERIOR DRUG ATTRIBUTES

Multi-valent biologics, increased half-life, conditional pH dependent binding

Enabling "best-in-class"

INCREASED SUCCESS RATE

Multi-parametric optimization creates higher quality biologics

EXPANDED INTELLECTUAL PROPERTY SPACE

AI-drug creation generates broader IP for "first-in-class" and finds new IP for fast follower / "best-in-class"

Defense + "best-in-class"

PARTNERSHIPS

Technology validated through industryleading collaborations

"Merck leans into AI with \$610M in biobucks for Absci drug discovery pact"

"Absci's platform offers a compelling opportunity to design new biologic candidates and explore the expression of complex proteins."*

Dr. Fiona Marshall

Merck, Former SVP, Head of Discovery, Preclinical and Translational Medicine

"AstraZeneca types up \$247M, Al-enabled oncology antibody design pact, joining Absci's list of pharma allies"

"This collaboration is an exciting opportunity to utilize Absci's de novo AI antibody creation platform to design a potential new antibody therapy in oncology."

Dr. Puja Sapra

AstraZeneca, SVP, Biologics Engineering & Oncology Targeted Delivery

"Absci collaborates with NVIDIA to accelerate vision of creating drugs *in silico*"

"Absci's powerful data generation and AI protein engineering platform is already helping the drug discovery industry, and NVIDIA is excited to help power and scale Absci's in silico technologies to achieve the best positive impact."

Kimberly Powell

Vice President of Healthcare

"Absci inks deal worth \$650M with drug maker Almirall"

"Almirall chose Absci because their de novo platform brings truly novel innovation in solving the industry's most challenging targets facing high unmet medical need."

Dr. Karl Ziegelbauer Almirall, EVP of R&D and CSO

1 https://investors.absci.com/news-releases/news-release-details/absci-announces-research-collaboration-merck 2 https://www.fiercebiotech.com/biotech/astrazeneca-inks-247m-ai-enabled-oncology-antibody-design-pact-joining-abscis-list-pharma 3 https://investors.absci.com/news-releases/news-release-details/absci-develops-groundbreaking-machine-learning-models-silico 4 https://www.bizjournals.com/portland/news/2023/11/14/absci-almirall-vancouver-biotech.html

Accelerating time to clinic while increasing probability of success Better biologics for patients, faster

Ultra-Efficient IND Generation

Leverage AI Drug Creation™ Platform to:

- Design First-in-Class and Best-in-Class programs
- Exploit Speed Advantage (2 years to IND vs. 4-6 years for industry) more programs per unit time
- Exploit Cost Advantages

 (\$14-16M to IND vs. \$30-50M for industry)
 more programs per unit cost

absci | 38

Sources: Unlocking the potential of AI in drug discovery Wellcome Trust & BCG, 2023; Van der Schans, et al., 2022; Young et al., 2018, How to improve R&D productivity: the pharmaceutical industry's grand challenge, Paul et al., 2010; Estimate does not include capitalization costs or assumed failure rate costs; the wide range reflects variability in discovery-to-candidate phase ABSCI CORPORATION 2023 ALL RIGHTS RESERVED

Internal program partnerships have attractive risk-return profiles

Team of innovators and trailblazers to achieve the impossible

EXECUTIVE LEADERSHIP TEAM

SEAN MCCLAIN Founder, CEO & Director ANDREAS BUSCH, PHD Chief Innovation Officer

ZACH JONASSON, PHD Chief Financial Officer, Chief Business Officer & Director

JACK GOLD ef Chief Marketing Officer

DAN RABINOVITS.

Connectivity, Meta

Vice President

KARIN WIERINCK Chief People Officer AMARO TAYLOR-WEINER, PHD SVP, Chief Al Officer

PENELOPE Chief Morale Officer

BOARD OF DIRECTORS

KAREN MCGINNIS, CPA

Former CAO.

Illumina

FRANS VAN HOUTEN Former CEO, Royal Phillips AMRIT NAGPAL Managing Director, Redmile Group

JOSEPH SIROSH, PHD Vice President, Amazon Search and Alexa Shopping, Amazon

The AI Drug Creation Revolution is only just beginning

absci. 41

absci

This revolution is only just beginning.