

**UNITED STATES
SECURITIES AND EXCHANGE COMMISSION**
Washington, D.C. 20549

FORM 8-K

**CURRENT REPORT
Pursuant to Section 13 OR 15(d)
of The Securities Exchange Act of 1934**

Date of Report (Date of earliest event reported): February 27, 2023

Recursion Pharmaceuticals, Inc.
(Exact name of registrant as specified in its charter)

Delaware
(State or other jurisdiction of incorporation or organization)

001-40323
(Commission File Number)

46-4099738
(I.R.S. Employer Identification No.)

41 S Rio Grande Street
Salt Lake City, UT 84101
(Address of principal executive offices) (Zip code)

(385) 269 - 0203
(Registrant's telephone number, including area code)

Not Applicable
(Former name or former address, if changed since last report.)

Check the appropriate box below if the Form 8-K filing is intended to simultaneously satisfy the filing obligation of the registrant under any of the following provisions:

- Written communications pursuant to Rule 425 under the Securities Act (17 CFR 230.425)
- Soliciting material pursuant to Rule 14a-12 under the Exchange Act (17 CFR 240.14a-12)
- Pre-commencement communications pursuant to Rule 14d-2(b) under the Exchange Act (17CFR 240.14d-2(b))
- Pre-commencement communications pursuant to Rule 13e-4(c) under the Exchange Act (17 CFR 240.13e-4(c))

Securities registered pursuant to Section 12(b) of the Act:

Title of each class	Trading symbol(s)	Name of each exchange on which registered
Class A Common Stock, par value \$0.00001 per share	RXRX	Nasdaq Global Select Market

Indicate by check mark whether the registrant is an emerging growth company as defined in Rule 405 of the Securities Act of 1933 or (§230.405 of this chapter) or Rule 12b-2 of the Securities Exchange Act of 1934 (§240.12b-2 of this chapter).

Emerging growth company

If an emerging growth company, indicate by check mark if the registrant has elected not to use the extended transition period for complying with any new or revised financial accounting standards provided pursuant to Section 13(a) of the Exchange Act.

Item 2.02. Results of Operations and Financial Condition.

On February 27, 2023, Recursion Pharmaceuticals, Inc. (the "Company") issued a press release announcing its results of operations and financial condition for the fourth quarter and fiscal year ended December 31, 2022. A copy of the press release is furnished as Exhibit 99.1 and is incorporated herein by reference.

Item 7.01. Regulation FD Disclosure.

On February 27, 2023, the Company released an updated investor presentation. The investor presentation will be used from time to time in meetings with investors. A copy of the presentation is attached hereto as Exhibit 99.2.

The Company announces material information to its investors using filings with the Securities and Exchange Commission (the "SEC"), the investor relations page on the Company's website, at <https://ir.recursion.com/>, press releases, public conference calls and webcasts. The Company uses these channels, as well as social media, to communicate with investors and the public about the Company, its products and services and other matters. Therefore, the Company encourages investors, the media and others interested in the Company to review the information it makes public in these locations, as such information could be deemed to be material information.

The information furnished pursuant to Item 2.02 (including Exhibit 99.1) and 7.01 (including Exhibit 99.2) on this Form 8-K, shall not be deemed "filed" for purposes of Section 18 of the Securities Exchange Act of 1934, as amended (the "Exchange Act"), or otherwise subject to the liabilities of that section, nor shall it be deemed incorporated by reference into any other filing under the Securities Act of 1933, as amended, or the Exchange Act, except as expressly set forth by specific reference in such a filing.

Item 9.01. Financial Statements and Exhibits.

(d) Exhibits.

Exhibit Number	Description
99.1	Press release issued by Recursion Pharmaceuticals, Inc. dated February 27, 2023
99.2	Investor presentation of Recursion Pharmaceuticals, Inc. dated February 27, 2023
104	Cover Page Interactive Data File (embedded within the Inline XBRL document)

SIGNATURES

Pursuant to the requirements of the Securities Exchange Act of 1934, the registrant has duly caused this report to be signed on its behalf by the undersigned thereunto duly authorized on February 27, 2023.

RECURSION PHARMACEUTICALS, INC.

By: /s/ Michael Secora
Michael Secora
Chief Financial Officer

Recursion Provides Business Updates and Reports Fourth Quarter and Fiscal Year 2022 Financial Results

- Initiated five clinical trials in 2022, including three Phase 2 programs, and provided guidance on the timing of clinical data readouts
- Delivered against core elements of our Roche-Genentech collaboration (neuroscience and an indication in gastrointestinal oncology) and Bayer collaboration (fibrosis) in 2022
- Continued to build-out the Recursion OS with scaled transcriptomic technologies, industry-leading hiPSC-derived cell production, and additional in-house chemistry capabilities
- Released RXRX3 (largest public dataset of its kind) and MolRec™ (application to explore compound and gene relationships in RXRX3) - framing how proprietary biological and chemical data built fit-for-the purpose of training ML models can be a value driver

SALT LAKE CITY, February 27, 2023 — Recursion (Nasdaq : RXRX), a clinical stage TechBio company leading the space by decoding biology to industrialize drug discovery, today reported business updates and financial results for its fourth quarter and fiscal year ended December 31, 2022.

"2022 was a fantastic year for Recursion where we continued to deliver on the promise of our pipeline with five clinical trial initiations, continued execution of our Bayer and Roche-Genentech partnerships, and continued to grow our proprietary data moat through our scale and accelerating capabilities across transcriptomics, digital in vivo tolerability, and chemistry," said Chris Gibson, Ph.D., Co-Founder & CEO at Recursion. "I believe that the work we have done in 2022 is setting the stage for significant value-creation in the coming 12-24 months. What is most exciting to me is the rapid uptick in the world's curiosity around ML and AI due to advances in other industries. I think it is important to reflect on the tremendous advancements taking place around us and I believe we are best positioned to deploy similar tools across the drug discovery and development process."

Therapeutic Area	Indication	Late Discovery	Preclinical	Phase 1	Phase 2	Phase 3	
Rare & Other	CEREBRAL CAVERNOUS MALFORMATION (CCM, est. 360K ⁽¹⁾)	[Progress bar from Late Discovery to Phase 2]					
	NEUROFIBROMATOSIS TYPE 2 (NF2, est. 53K ⁽²⁾)	[Progress bar from Late Discovery to Phase 2]					
	CLOSTRIDIODES DIFFICILE INFECTION (est. 730K ⁽³⁾)	[Progress bar from Late Discovery to Phase 1]					
Oncology	FAMILIAL ADENOMATOUS POLYPOSIS (APC, est. 50K ⁽⁴⁾)	[Progress bar from Late Discovery to Phase 2]					
	AXIN1 or APC MUTANT CANCERS (AXIN1 or APC mutant cancers; est. 65K ⁽⁵⁾)	[Progress bar from Late Discovery to Phase 1]					
	CANCER IMMUNOTHERAPY, TARGET DELTA (Multiple, 88K ⁽⁶⁾)	[Progress bar from Late Discovery to Phase 1]					
	HR-PROFICIENT OVARIAN CANCER, RBM39 (HR-proficient ovarian cancer; 13K ⁽⁷⁾)	[Progress bar from Late Discovery]					
	CANCER IMMUNOTHERAPY, TARGET ALPHA (Multiple, 72K ⁽⁸⁾)	[Progress bar from Late Discovery]					
	MYC-DRIVEN ONCOLOGY (MYC; est. 54K ⁽⁹⁾)	[Progress bar from Late Discovery]					

More than a dozen early discovery and research programs in oncology, neuroscience, inflammation & immunology, and rare disease

All populations defined above are US and EUS incidence unless otherwise noted. EUS is defined as France, Germany, Italy, Spain and UK. (1) Prevalence for hereditary and sporadic symptomatic population. (2) Annual US and EUS incidence for all NF2-driven meningiomas. (3) Our program has the potential to address a number of indications in this space. (4) Our program has the potential to address a number of indications driven by MYC alterations, totaling 54,000 patients in the US and EUS annually. We have not finalized a target product profile for a specific indication.

Summary of Business Highlights

Internal Pipeline

- Cerebral Cavernous Malformation (CCM) (REC-994):** Our Phase 2 SYCAMORE clinical trial is a double-blind, placebo-controlled safety, tolerability and exploratory efficacy study of this drug candidate in 60 participants with CCM. At this time, we continue to actively enroll participants. We expect to share top-line data in 2H 2024.
- Neurofibromatosis Type 2 (NF2) (REC-2282):** Our Phase 2/3 POPLAR clinical trial is a parallel group, two stage, randomized, multicenter study of this drug candidate in approximately 90 participants with progressive NF2-mutated meningiomas. At this time, we continue to actively enroll participants. We expect to share a Phase 2 interim safety analysis in 2024.
- Familial Adenomatous Polyposis (FAP) (REC-4881):** Our Phase 2 TUPELO clinical trial is a multicenter, randomized, double-blind, placebo-controlled two-part clinical trial to evaluate efficacy, safety, and pharmacokinetics of this drug candidate in patients with FAP. Recent protocol amendments are aimed at accelerating the quality and pace of the trial.
- AXIN1 or APC Mutant Cancers (REC-4881):** In October 2022, we announced the nomination of REC-4881 for the potential treatment of AXIN1 or APC mutant cancers with an initial focus on hepatocellular carcinoma and ovarian cancer. We

- expect to initiate a Phase 1b/2 biomarker enriched basket study across select AXIN1 or APC mutant tumors in early 2024.
- **Clostridioides difficile Colitis (REC-3964):** Our Phase 1 clinical trial is a first-in-human protocol evaluating single and multiple doses of REC-3964 in healthy volunteers and will assess the safety, tolerability and pharmacokinetic profile of REC-3964. At this time, we continue to actively enroll participants. We expect to share safety and PK data in 2H 2023.
- **HR-Proficient Ovarian Cancer:** In January 2023, we disclosed that RBM39 (previously identified as Target Gamma) is the novel CDK12-adjacent target identified by the Recursion OS. We believe that modulating RBM39 could lead to a potential treatment of HR-proficient ovarian cancer. We expect this program to reach IND-enabling studies in 2023.
- **Enhancing Anti-PD-(L)1 Response by Inhibiting Novel Targets (Target Alpha):** This program is a potential first-in-class novel chemical entity with a novel polypharmacologic mechanism of action for which we have not yet disclosed the targets. We expect this program to reach IND-enabling studies in 2023.
- **Transformational Collaborations**

We continue to advance efforts to discover potential new therapeutics with our strategic partners in the areas of fibrotic disease (Bayer) as well as neuroscience and a single indication in gastrointestinal oncology (Roche-Genentech). In the near-term, there is the potential for option exercises associated with partnership programs, option exercises associated with map building initiatives or data sharing and additional partnerships in large, intractable areas of biology or technological innovation.
- **Recursion OS**
 - **Cell and Tissue Culturing:** In 2022, we industrialized stem cell production and produced over 500 billion hiPSC-derived cells in-house to enable neurology research. We believe that this volume of biological material could make Recursion one of the largest producers of neural hiPSC-derived cells in the world and could give Recursion flexibility around its consumables and collaboration activities.
 - **Chemical Technology:** We have begun configuring our automated drug metabolism and pharmacokinetics (DMPK) wet-lab module into the Recursion OS. Once fully onboarded, this module will enable scaled, automated processing and evaluation of compounds for plasma protein binding, microsomal stability, and cell permeability. With an operational capacity of up to 500 compounds per week, this module lays the foundation for us to generate additional proprietary data moats that enable the training of ML and AI algorithms.
 - **Publicly Available Dataset and Application:** In January 2023, Recursion released RxRx3, its largest open-source cellular imaging dataset to date, as well as MolRec™, an interactive application to explore compound and gene relationships. Both of these offerings are free to the public and can be found at www.rxrx.ai.
- **Additional Corporate Updates**
 - **Letter to Shareholders:** Recursion Co-Founder & CEO Chris Gibson, Ph.D. wrote an annual letter to shareholders which may be found in the 10-K report filed with the SEC, ahead of Part I.

- **Download Day:** In January 2023, Recursion hosted Download Day, a R&D-focused event highlighting aspects of Recursion's platform, data, programs, partnerships and culture. Materials from this event can be found at www.Recursion.com/download-day.
- **Facilities:** Recursion completed an expansion of its headquarters in Salt Lake City, making room for research and development activities related to expanding our human tissue culture and chemical compound handling capabilities, enabling new biological contexts for map building and scaling sequencing and automated DMPK assays.
- **ESG Reporting:** In October 2022, Sustainalytics ranked Recursion in the top 100 of pharmaceutical companies with respect to its ESG efforts (approximately top 10%). In March 2023, Recursion plans to release an updated ESG report.
- **Annual Shareholder Meeting:** The Recursion Annual Shareholder Meeting will be held on June 16, 2023 at 12:00 pm Mountain Time.

Fourth Quarter and Fiscal Year 2022 Financial Results

- **Cash Position:** Cash, cash equivalents and investments were \$549.9 million as of December 31, 2022, compared to \$516.6 million as of December 31, 2021.
- **Revenue:** Total revenue, consisting primarily of revenue from collaborative agreements, was \$13.7 million for the fourth quarter of 2022, compared to \$2.5 million for the fourth quarter of 2021. Total revenue, consisting primarily of revenue from collaboration agreements, was \$39.8 million for the year ended December 31, 2022, compared to \$10.2 million for the year ended December 31, 2021. The increase in both periods in 2022 was due to revenue recognized from our Roche-Genentech collaboration.
- **Research and Development Expenses:** Research and development expenses were \$44.0 million for the fourth quarter of 2022, compared to \$48.3 million for the fourth quarter of 2021. Research and development expenses were \$155.7 million for the year ended December 31, 2022, compared to \$135.3 million for the year ended December 31, 2021. The increase in 2022 research and development expenses compared to the prior year was due to increased clinical costs as studies progressed.
- **General and Administrative Expenses:** General and administrative expenses were \$19.8 million for the fourth quarter of 2022, compared to \$19.2 million for the fourth quarter of 2021. General and administrative expenses were \$81.6 million for the year ended December 31, 2022, compared to \$57.7 million for the year ended December 31, 2021. The increase in 2022 general and administrative expenses compared to the prior year was due to the growth in size of the company's operations, including an increase in salaries and wages of \$14.3 million, a fixed asset write-down of \$2.8 million, increased rent expense of \$2.4 million and increases in other administrative costs associated with operating a growing company.
- **Net Loss:** Net loss was \$57.5 million for the fourth quarter of 2022, compared to a net loss of \$64.9 million for the fourth quarter of 2021. Net loss was \$239.5 million for the year ended December 31, 2022, compared to a net loss of \$186.5 million for the year ended December 31, 2021.

About Recursion

Recursion is a clinical stage TechBio company leading the space by decoding biology to industrialize drug discovery. Enabling its mission is the Recursion OS, a platform built across

diverse technologies that continuously expands one of the world's largest proprietary biological and chemical datasets. Recursion leverages sophisticated machine-learning algorithms to distill from its dataset a collection of trillions of searchable relationships across biology and chemistry unconstrained by human bias. By commanding massive experimental scale — up to millions of wet lab experiments weekly — and massive computational scale — owning and operating one of the most powerful supercomputers in the world, Recursion is uniting technology, biology and chemistry to advance the future of medicine.

Recursion is headquartered in Salt Lake City, where it is a founding member of BioHive, the Utah life sciences industry collective. Recursion also has offices in Toronto, Montreal and the San Francisco Bay Area. Learn more at www.Recursion.com, or connect on Twitter and LinkedIn.

Media Contact

Media@Recursion.com

Investor Contact

Investor@Recursion.com

Recursion Pharmaceuticals, Inc.
Consolidated Statements of Operations (unaudited)
(in thousands, except share and per share amounts)

	Three months ended		Years ended	
	December 31,		December 31,	
	2022	2021	2022	2021
Revenue				
Operating revenue	13,676	2,500	\$ 39,681	\$ 10,000
Grant revenue	—	33	162	178
Total revenue	13,676	2,533	39,843	10,178
Operating costs and expenses				
Cost of revenue	10,840	—	48,275	—
Research and development	43,980	48,291	155,696	135,271
General and administrative	19,838	19,202	81,599	57,682
Total operating costs and expenses	74,658	67,493	285,570	192,953
Loss from operations	(60,982)	(64,960)	(245,727)	(182,775)
Other income (loss), net	3,490	27	6,251	(3,704)
Net loss	\$ (57,492)	\$ (64,933)	\$ (239,476)	\$ (186,479)
Per share data				
Net loss per share of Class A and B common stock, basic and diluted	\$ (0.31)	\$ (0.38)	\$ (1.36)	\$ (1.49)
Weighted-average shares (Class A and B) outstanding, basic and diluted	185,669,683	169,368,999	175,537,487	125,348,110

Recursion Pharmaceuticals, Inc.
Consolidated Balance Sheets (unaudited)
(in thousands)

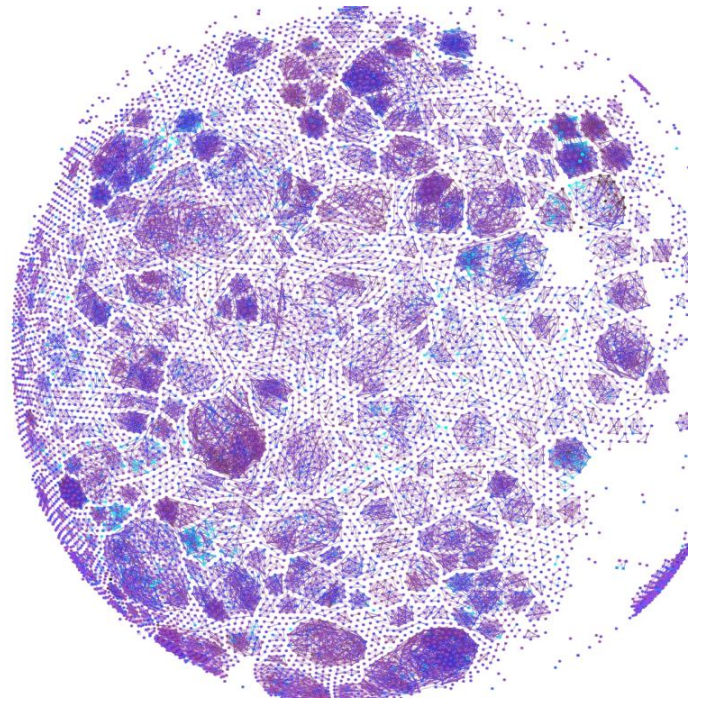
	December 31,	
	2022	2021
Assets		
Current assets		
Cash and cash equivalents	\$ 549,912	\$ 285,116
Restricted cash	1,280	1,552
Accounts receivable	—	34
Other receivables	2,753	9,056
Investments	—	231,446
Other current assets	15,869	7,514
Total current assets	569,814	534,718
Restricted cash, non-current	7,920	8,681
Property and equipment, net	88,192	64,725
Operating lease right-of-use-assets	33,255	—
Intangible assets, net	1,306	1,385
Goodwill	801	801
Other non-current assets	—	35
Total assets	\$ 701,288	\$ 610,345
Liabilities and stockholders' equity		
Current liabilities		
Accounts payable	\$ 4,586	\$ 2,819
Accrued expenses and other liabilities	32,904	32,333
Unearned revenue	56,726	10,000
Notes payable	97	90
Operating lease liabilities	5,952	—
Lease incentive obligation	—	1,416
Total current liabilities	100,265	46,658
Deferred rent	—	4,110
Unearned revenue, non-current	70,261	6,667
Notes payable, non-current	536	633
Operating lease liabilities, non-current	44,420	—
Lease incentive obligation, non-current	—	9,339
Total liabilities	215,482	67,407
Commitments and contingencies		
Stockholders' equity		
Common stock (Class A and B)	2	2
Additional paid-in capital	1,125,360	943,142
Accumulated deficit	(639,556)	(400,080)
Accumulated other comprehensive loss	—	(126)
Total stockholders' equity	485,806	542,938
Total liabilities and stockholders' equity	\$ 701,288	\$ 610,345

Forward-Looking Statements

This document contains information that includes or is based upon "forward-looking statements" within the meaning of the Securities Litigation Reform Act of 1995, including, without limitation, those regarding early and late stage discovery, preclinical, and clinical programs; the timing of data from our studies or initiating IND studies; licenses and collaborations, including whether additional partnerships are entered into, existing partner options are exercised and the timing of such exercises; prospective products and their potential future indications and market opportunities; Recursion OS and other technologies; business and financial plans and performance; the release of an updated ESG report; and all other statements that are not historical facts. Forward-looking statements may or may not include identifying words such as "plan," "will," "expect," "anticipate," "intend," "believe," "potential," "continue," and similar terms. These statements are subject to known or unknown risks and uncertainties that could cause actual results to differ materially from those expressed or implied in such statements, including but not limited to: challenges inherent in pharmaceutical research and development, including the timing and results of preclinical and clinical programs, where the risk of failure is high and failure can occur at any stage prior to or after regulatory approval due to lack of sufficient efficacy, safety considerations, or other factors; our ability to leverage and enhance our drug discovery platform; our ability to obtain financing for development activities and other corporate purposes; the success of our collaboration activities; our ability to obtain regulatory approval of, and ultimately commercialize, drug candidates; our ability to obtain, maintain, and enforce intellectual property protections; cyberattacks or other disruptions to our technology systems; our ability to attract, motivate, and retain key employees and manage our growth; inflation and other macroeconomic issues; and other risks and uncertainties such as those described under the heading "Risk Factors" in our filings with the U.S. Securities and Exchange Commission, including our most recent Quarterly Report on Form 10-Q and our Annual Report on Form 10-K. All forward-looking statements are based on management's current estimates, projections, and assumptions, and Recursion undertakes no obligation to correct or update any such statements, whether as a result of new information, future developments, or otherwise, except to the extent required by applicable law.

Decoding Biology To Radically Improve Lives

End of Q4 2022



Disclaimers

This presentation and any accompanying discussion and documents contain information that includes or is based upon "forward-looking statements" within the meaning of the Securities Litigation Reform Act of 1995. These forward-looking statements are based on our current expectations, estimates and projections about our industry and our company, management's beliefs and certain assumptions we have made. The words "plan," "anticipate," "believe," "continue," "estimate," "expect," "intend," "may," "will" and similar expressions are intended to identify forward-looking statements. Forward-looking statements made in this presentation include statements about Recursion's use of the proceeds from its private placement, the initiation, timing, progress, results, and cost of our research and development programs and our current and future preclinical and clinical studies, the potential size of the market opportunity for our drug candidates, our ability to identify viable new drug candidates for clinical development and the accelerating rate at which we expect to identify such candidates, our expectation that the assets that will drive the most value for us are those that we will identify in the future using our datasets and tools, and many others. Forward-looking statements made in this presentation are neither historical facts nor assurances of future performance, are subject to significant risks and uncertainties, and may not occur as actual results could differ materially and adversely from those anticipated or implied in the forward-looking statements. For a discussion of factors that could affect our business, please refer to the "Risk Factors" sections in our filings with the U.S. Securities and Exchange Commission, including our Annual Report on Form 10-K. This presentation does not purport to contain all the information that may be required to make a full analysis of the subject matter. We undertake no obligation to correct or update any forward-looking statements, whether as a result of new information, future events or otherwise.

Certain information contained in this presentation relates to or is based on studies, publications, surveys and other data obtained from third-party sources and the company's own internal estimates and research. While the company believes these third-party sources to be reliable as of the date of this presentation, it has not independently verified, and makes no representation as to the adequacy, fairness, accuracy or completeness of, any information obtained from third-party sources. In addition, all of the market data included in this presentation involves a number of assumptions and limitations, and there can be no guarantee as to the accuracy or reliability of such assumptions. Finally, while the company believes its own internal research is reliable, such research has not been verified by any independent source.

Any non-Recursion logos or trademarks included herein are the property of the owners thereof and are used for reference purposes only.

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Maturing the TechBio value proposition in 2022

Initiated 5 clinical trials in 2022 (3 Ph2, 2 Ph1) and planning to initiate a **6th clinical trial** (Ph1b/2) for AXIN1 or APC mutated oncology in early 2024

Expecting REC-3964 Ph1 readout in 2H 2023, REC-994 Ph2 top-line data in 2H 2024, and REC-2282 Ph2 interim analysis in 2024

Novel oncology programs (RBM39, Target Alpha) nearing **IND-enabling studies**

Advancing collaborations in **Fibrosis (Bayer)** and **Neuroscience (Roche-Genentech)**

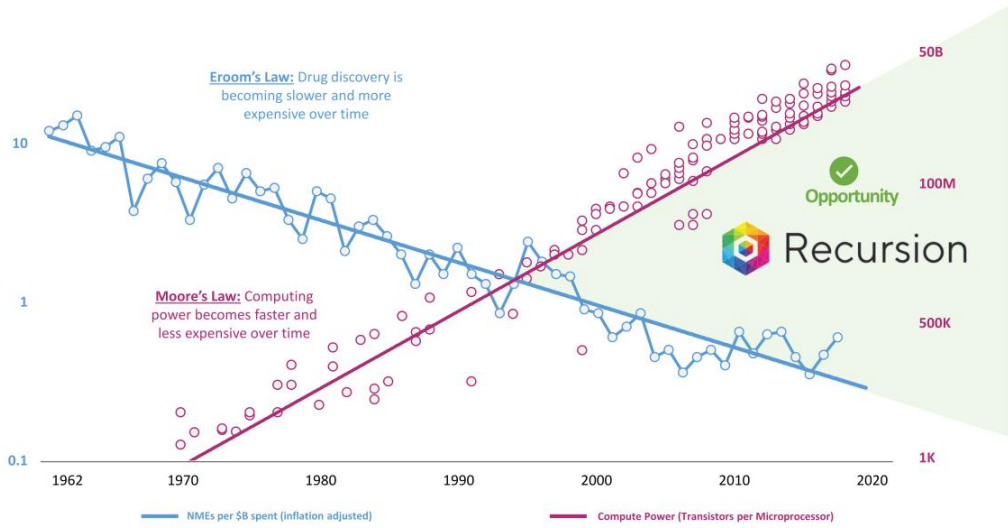
- \$13B in potential milestones across 50+ possible programs plus royalties
-

We believe that we have built one of the **largest proprietary & reliable** in-vitro biological and chemical **datasets on Earth**

- >21 petabytes of data and
- >3 trillion searchable relationships













Recursion has an opportunity for arbitrage at the intersection of technology and biology

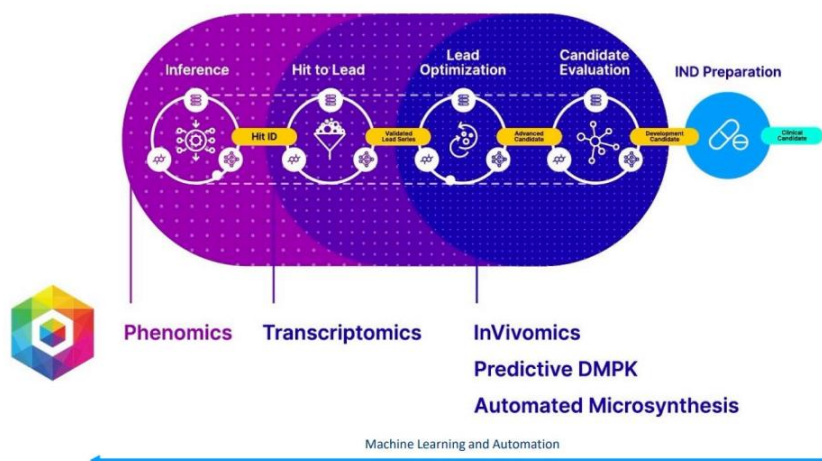


Adapted from Scannell, J et al (2012). Diagnosing the decline in pharmaceutical R&D efficiency. *Nat Rev Drug Discov*, 11, 191-200.

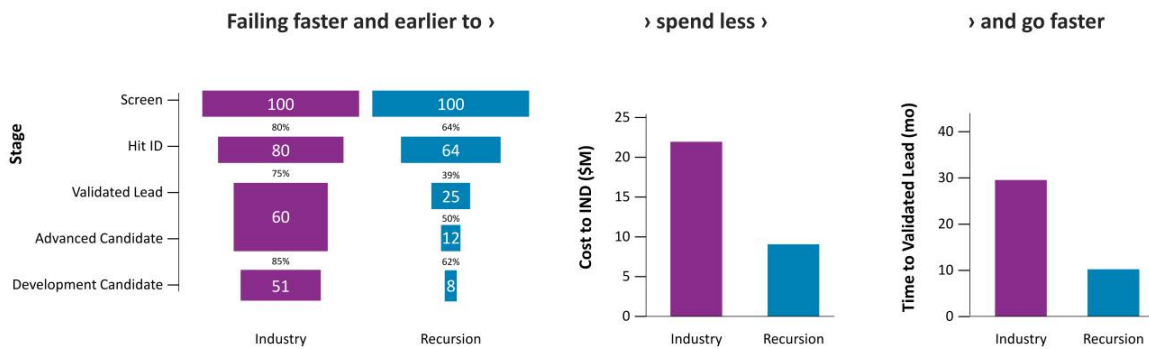
Recursion's map-based approach is designed to set the standard for drug discovery in the 21st century

Traditional Drug Discovery		Recursion Approach
 <p>Literature drives discovery. <i>Informs target-based hypotheses</i></p>	vs	 <p>Platforms drive discovery. <i>Unbiased & target agnostic</i></p>
 <p>Data are an exhaust. <i>Limited to testing hypotheses</i></p>	vs	 <p>Data are our fuel. <i>Shape our hypotheses</i></p>
 <p>Disparate data generation. <i>Siloed to individual programs and diseases</i></p>	vs	 <p>Connected data across programs. <i>Relatable high-dimensional data</i></p>
 <p>Linear process. <i>Little cross-program learning or iteration</i></p>	vs	 <p>Virtuous cycles of atoms & bits. <i>Iterative feedback accelerates learning</i></p>
 <p>Bespoke processes. <i>Low-dimensional assays & biomarkers</i></p>	vs	 <p>Industrialized to scale. <i>Automation & standardization</i></p>

How we aim to industrialize drug discovery



Mapping and navigating the complex systems of biology and chemistry has demonstrated leading indicators of efficiency



Data shown is the average of all our programs since late 2017. All industry data adapted from Paul, et al. Nature Reviews Drug Discovery, (2010) 9, 203-214

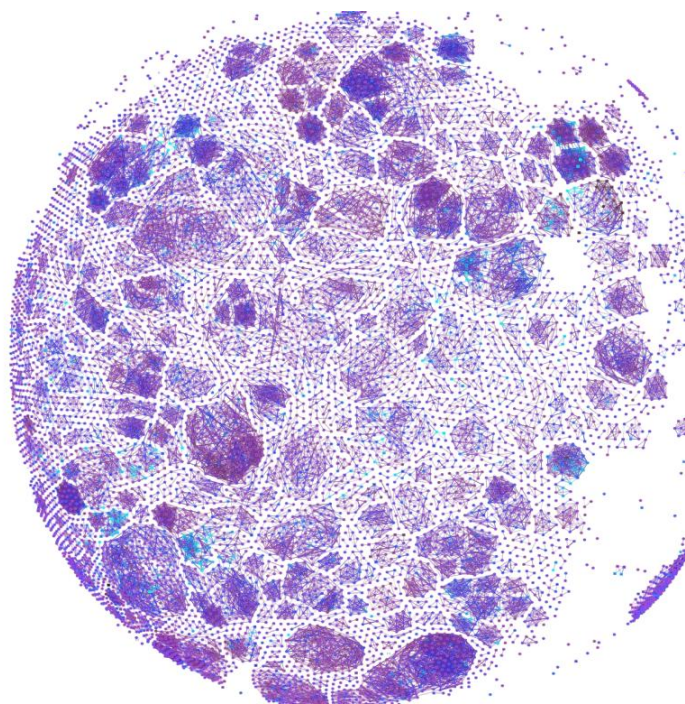
Our pipeline reflects the scale and breadth of our approach



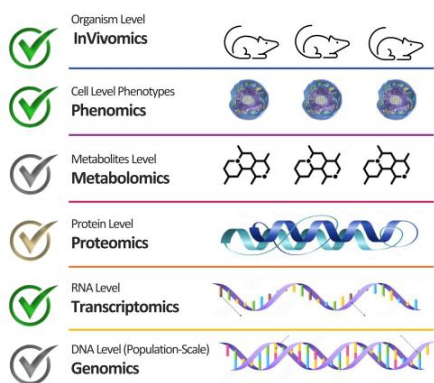
More than a dozen early discovery and research programs in oncology, neuroscience, inflammation & immunology, and rare disease

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**How we build maps
of biology and
chemistry to turn
drug discovery into
a search problem**



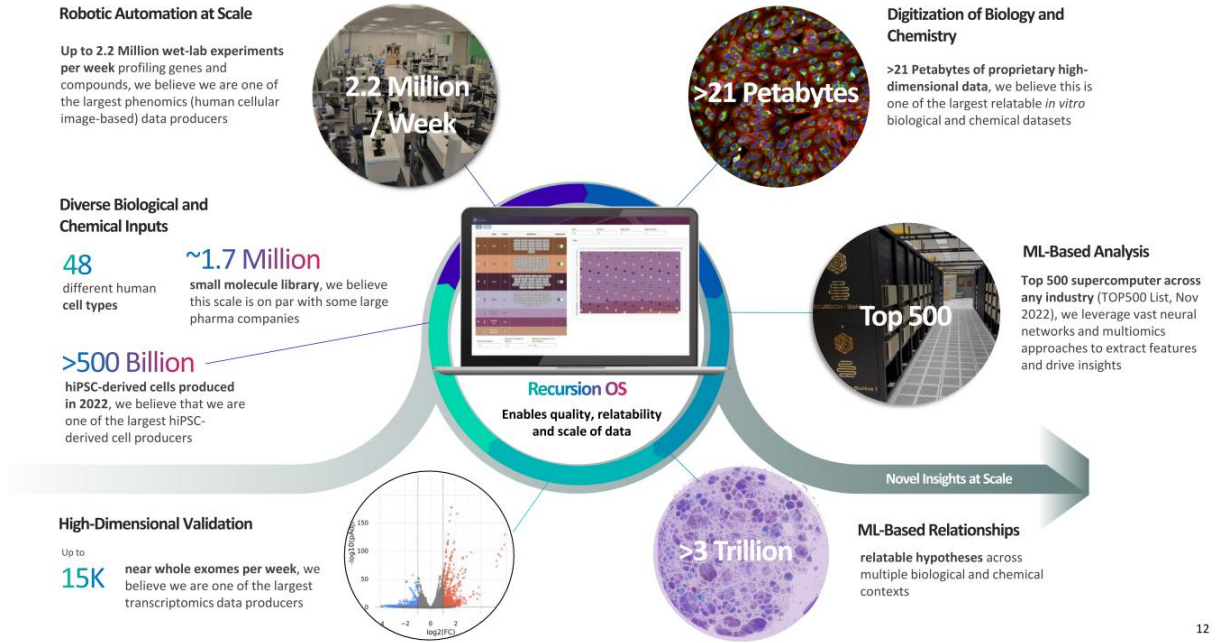
We build biological and chemical datasets to map relationships across scales and understand the connectivity of the system



✓ Built and scaled
✓ Exploratory
✓ Aspirational

Image adapted from D'Orazio, M., et al. Nature Scientific Reports 2022.

Like digital maps of Earth, **connections within and between layers add useful context.** Similarly, Recursion is **mapping different multiomic layers of biology** and identifying connections within and between layers to **better understand biology at scale.**



Genome-scale mapping

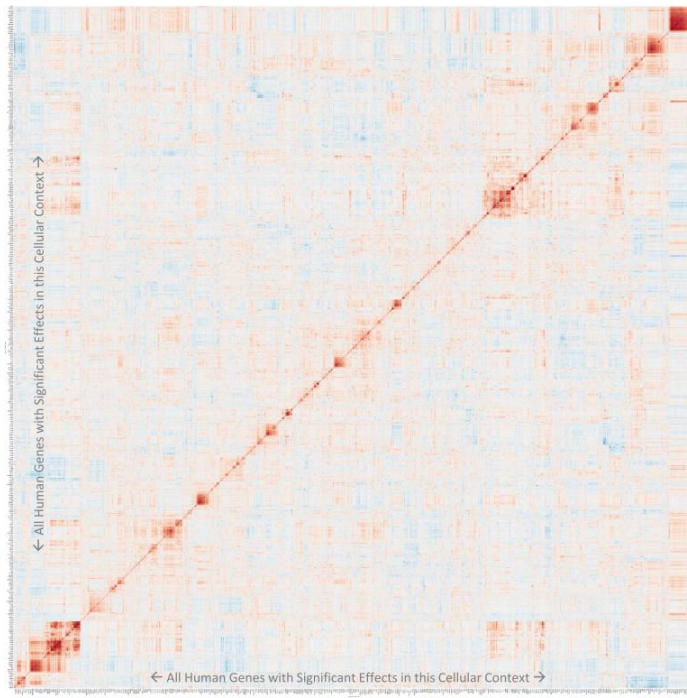
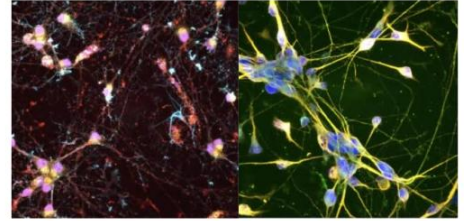
This is a **whole-genome arrayed CRISPR knock-out Map** generated in primary human endothelial cells

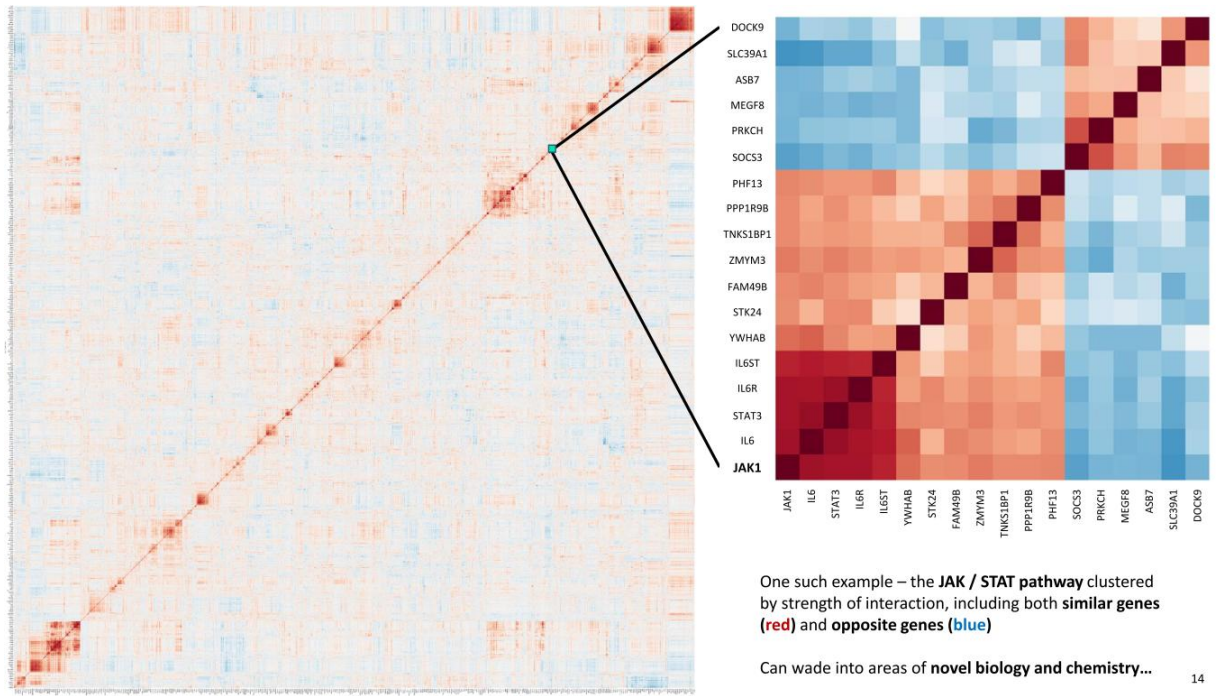
Every gene is represented in a pairwise way (each is present in columns and rows)

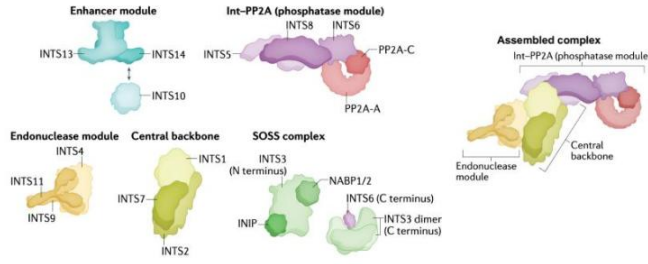
Dark Red indicates phenotypic similarity according to our neural networks while **Dark Blue** indicates phenotypic anti-similarity (which in our experience often suggests negative regulation)

We can add the phenotypes of hundreds of thousands of small molecules at multiple doses and query and interact with these maps using a web application

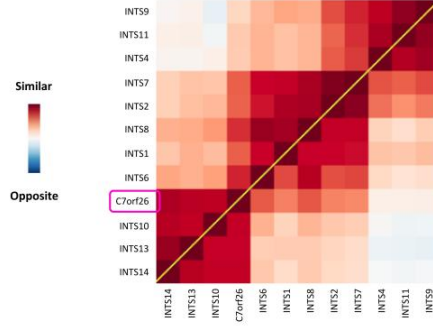
Thousands of examples of known biology and chemistry







Phenomics TVN (below diagram) vs. Centerscale (above diagram)



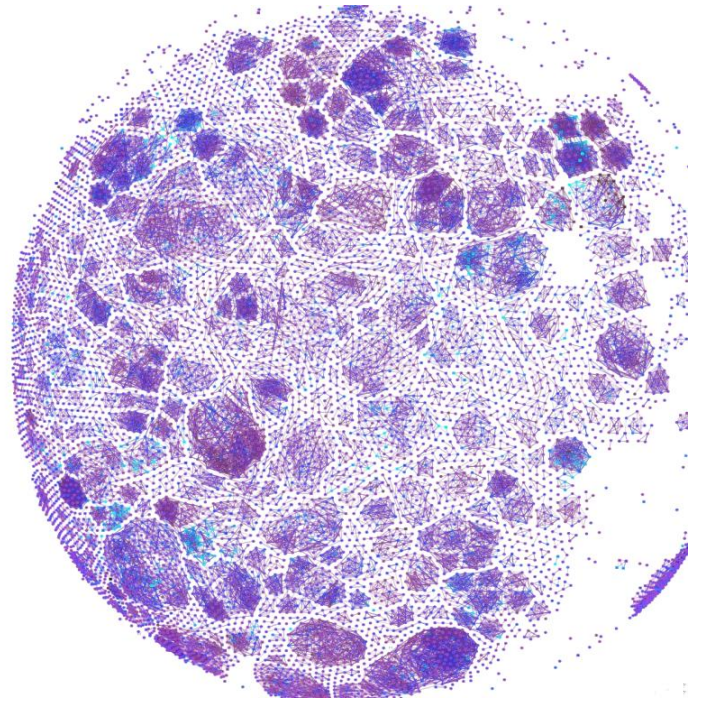
Maps reveal known and novel biology

- In 2022, new independent research identified a previously unknown gene, C7orf26, as part of the Integrator complex
- Maps jointly developed by Recursion and Genentech replicated this same result
- Demonstrates accuracy and consistency across different map building approaches

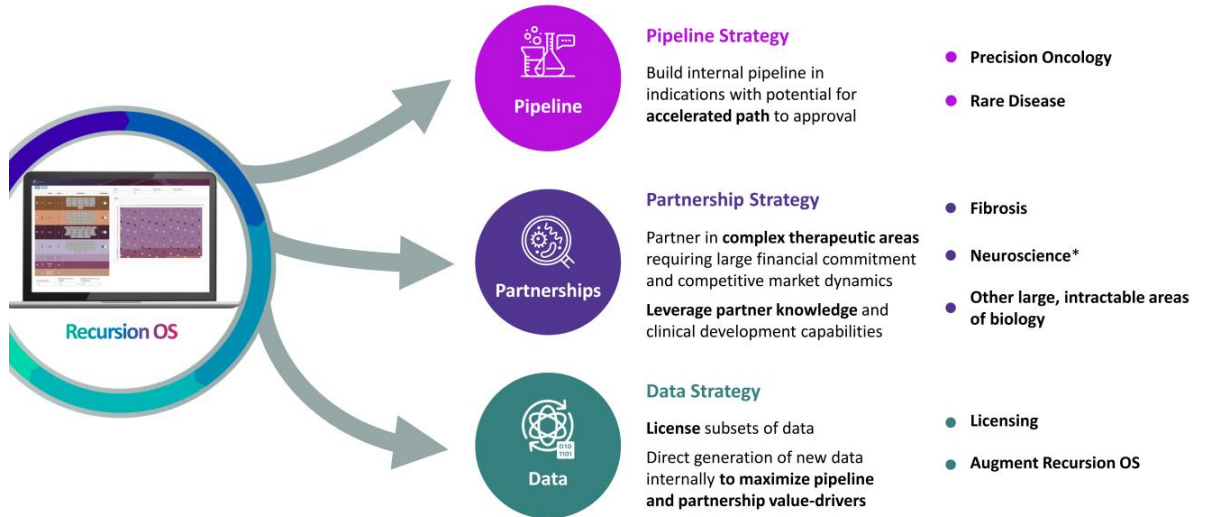


Trademarks are the property of their respective owners and used for informational purposes only.

**How we create
value using our
maps of biology
and chemistry**

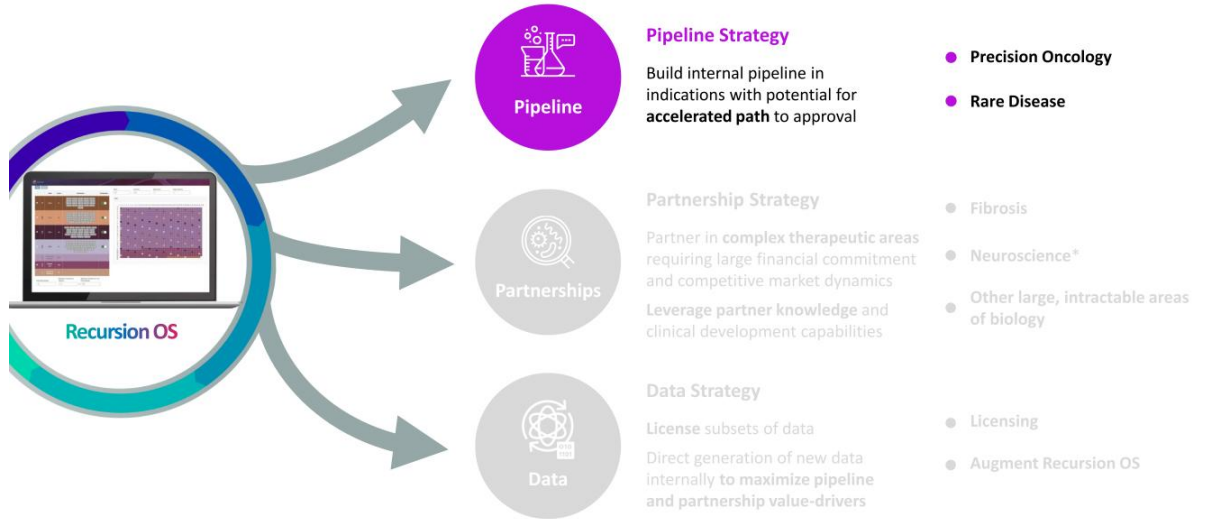


Harnessing value with a capital efficient business strategy



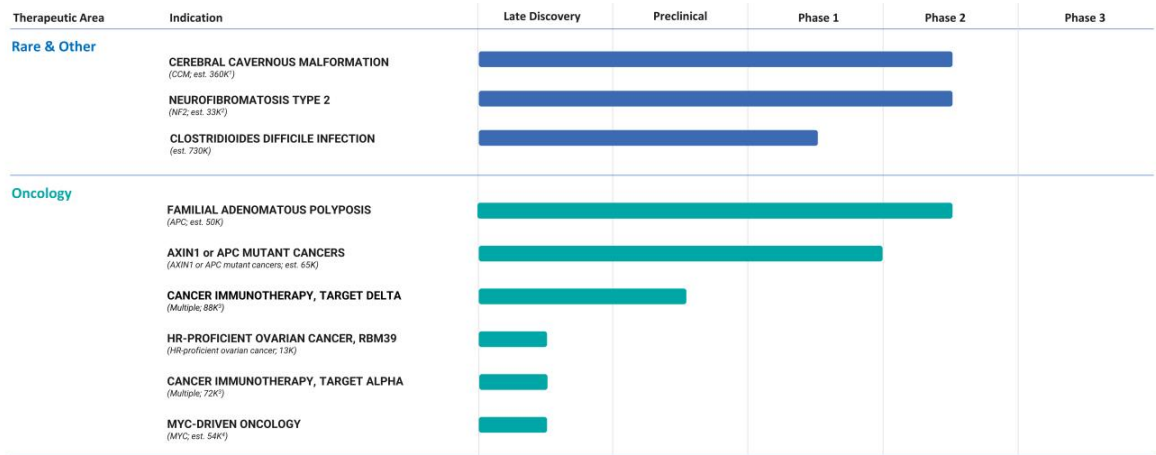
*Includes a single oncology indication from our Roche and Genentech collaboration.

Harnessing value with a capital efficient business strategy



*Includes a single oncology indication from our Roche and Genentech collaboration.

Our pipeline reflects the scale and breadth of our approach



More than a dozen early discovery and research programs in oncology, neuroscience, inflammation & immunology, and rare disease

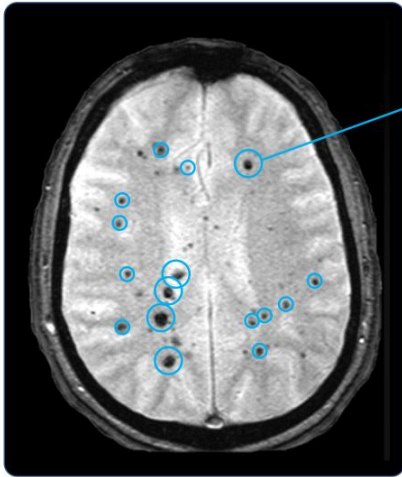
All populations defined above are US and EUS incidence unless otherwise noted. EUS is defined as France, Germany, Italy, Spain and UK. (1) Prevalence for hereditary and sporadic symptomatic population. (2) Annual US and EUS incidence for all NF2-driven meningiomas. (3) Our program has the potential to address a number of indications in this space. (4) Our program has the potential to address a number of indications driven by MYC alterations, totaling 54,000 patients in the US and EUS annually. We have not finalized a target product profile for a specific indication.

REC-994 for the Treatment of Symptomatic Cerebral Cavernous Malformations (CCM)

Target / MOA	Superoxide Scavenger
Molecule Type	Small Molecule
Lead Indication(s)	Cerebral Cavernous Malformations
Status	Phase 2
Designation(s)	US & EU Orphan Drug
Source of Insight	Recursion OS

Clinical: CCM

Disease Overview : Cerebral Cavernous Malformations (CCM)



Description

- Large unmet need for a novel nonsurgical treatment
- Vascular malformations (cavernomas) in the brain and spinal cord
- High-risk for hemorrhage creates “ticking time bomb”
- Progressive increase in CCM size and number over time in those with familial disease
- Debilitating symptoms, including intractable seizure, intracerebral hemorrhage, focal neurological deficits

“Historically, cavernomas have been managed primarily with observation, surgical resection, and occasionally radiotherapy. However, for a number of reasons, many patients with cavernomas must endure a life with neurologic symptoms”

- Ryan Kellogg, MD, Investigator at the University of Virginia

Clinical: CCM

Disease Overview : Cerebral Cavernous Malformations (CCM)



Julia – living with CCM

Patient Population – Large and Diagnosable

- **>1 million patients** worldwide live with these lesions today
- Caused by loss of function mutation in one of three genes: *CCM1* (60%), *CCM2* (20%), and *CCM3* (20%)
- Inherited autosomal dominant mutation in 30-40%; or sporadic
- US symptomatic population is more than 5 times larger than other rare diseases like **Cystic Fibrosis** (>31k patients) and **Spinal Muscular Atrophy** (>33k patients)

No Approved Medical Therapy

- **No approved drugs** for CCM and *no other* potential therapeutic in industry-sponsored clinical development
- Most patients receive **no treatment** or only **symptomatic therapy**
- Surgical resection or stereotactic radiosurgery not always feasible because of location of lesion and is not curative

~360,000

Symptomatic US + EU5 patients

Sources: Angioma Alliance ; Flemming KD, et al. Population-Based Prevalence of Cerebral Cavernous Malformations in Older Adults: Mayo Clinic Study of Aging. *JAMA Neurol.* 2017 Jul 1;74(7):801-805. doi: 10.1001/jamaneurol.2017.0439. PMID: 28492932; PMCID: PMC5647645 ; Spiegler S, et al Cerebral Cavernous Malformations: An Update on Prevalence, Molecular Genetic Analyses, and Genetic Counselling. *Mol Syndromol.* 2018 Feb;9(2):60-69. doi: 10.1159/000486292. Epub 2018 Jan 25. PMID: 29593473; PMCID: PMC5836221.

Clinical: CCM

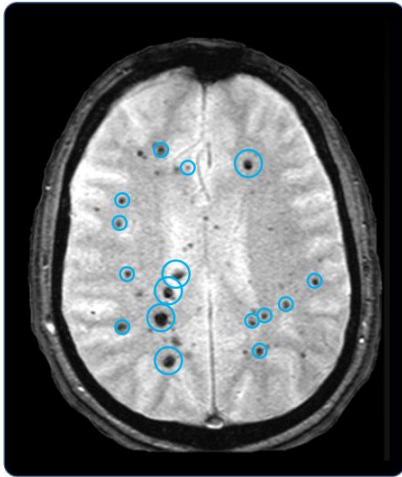
Disease Overview : CCM is an Under-Appreciated Orphan Disease

Non-oncology Orphan Indication	Product	U.S. + EU5 Prevalence
Cerebral cavernous malformation (CCM)	REC-994 (Recursion)	>1,800,000 (Symptomatic: ~360,000)
Idiopathic pulmonary fibrosis (IPF)	Esbriet (pirfenidone)	>160,000
Cystic fibrosis (CF)	VX-669/ VX-445 + Tezacaftor + Ivacaftor - Vertex	>55,000
Spinal muscular atrophy (SMA)	SPINRAZA (nusinersen)	>65,000

Sources: Angioma Alliance ; Flemming KD, et al. Population-Based Prevalence of Cerebral Cavernous Malformations in Older Adults: Mayo Clinic Study of Aging. *JAMA Neurol.* 2017 Jul 1;74(7):801-805. doi: 10.1001/jamaneurol.2017.0439. PMID: 28492932; PMCID: PMC5647645 ; Spiegel S, et al Cerebral Cavernous Malformations: An Update on Prevalence, Molecular Genetic Analyses, and Genetic Counselling. *Mol Syndromol.* 2018 Feb;9(2):60-69. doi: 10.1159/000486292. Epub 2018 Jan 25. PMID: 29593473; PMCID: PMC5836221; Maher T, et al Global incidence and prevalence of idiopathic pulmonary fibrosis. *Respir Res.* 2021 Jul 7;22(1):97. Doi: 10.1186/s12931-021-01791-z. PMID: 34238665. DRG 2022 Solutions, Report: Epidemiology, Cystic Fibrosis. CDC: SMA

Clinical: CCM

Therapeutic Approach to Cerebral Cavernous Malformations (CCM)

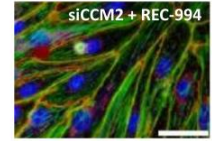
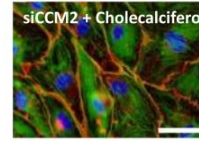
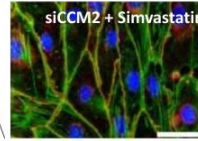
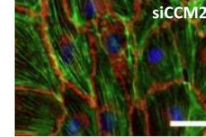
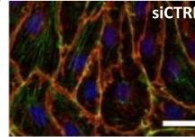
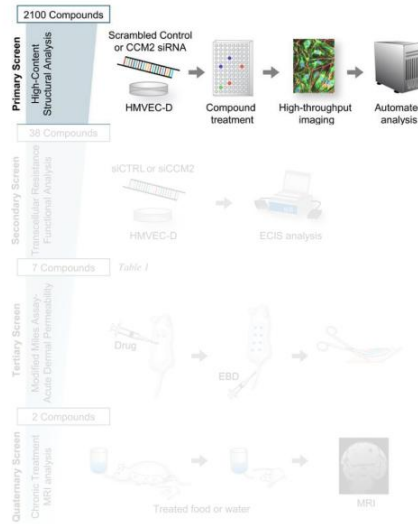


Novel therapeutic approach

- Symptoms associated with both increased size of lesions, but also inflammation or activation of lesions within the immunoprivileged environment of the brain
- Lesions arise from the capillary bed and are not high-pressure (e.g., the lesion growth is unlikely to be primarily driven by the *law of Laplace*)
- *The Recursion Vascular Stability Hypothesis:*
 - Eliminating the lesions may not be required for significant patient benefit
 - Slowing or halting the growth of the lesions while mitigating lesion leakiness and endothelial cell activation to halt the feed-forward inflammatory reaction *may* mitigate some symptoms and be beneficial to patients

Clinical: CCM

CCM – Applied prototyping of the Recursion OS

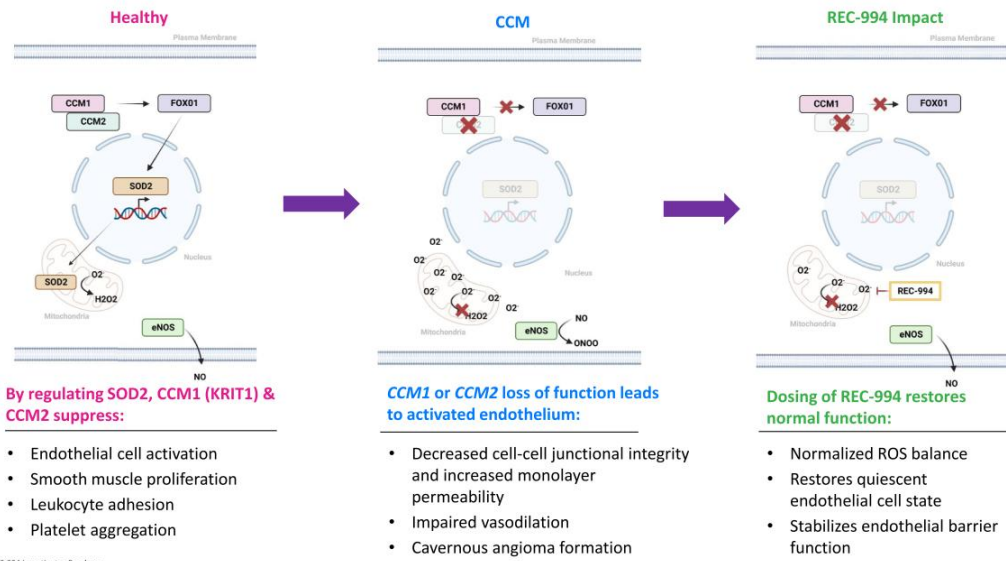


Using an early version of our Recursion OS in an academic setting, we identified about 39 molecules out of 2,100 screened that according to a machine learning classifier rescued a complex unbiased phenotype associated with CCM2 loss of function.

Through a set of follow-on confirmatory assays of increasing complexity, REC-994 stood out as one of two compounds we tested in a 5-month chronic CCM animal model where both compounds demonstrated significant benefit.

Clinical: CCM

REC-994 – Mechanism of Action

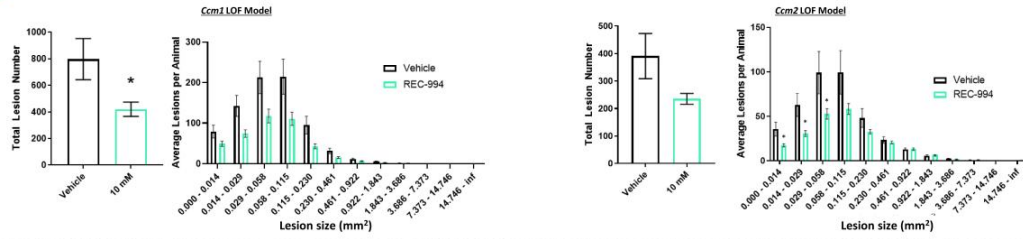


Clinical: CCM

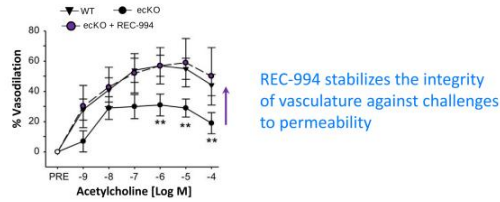
Further Confidence : Preclinical Studies Confirm Insight

Preclinical Studies: REC-994 reduces lesion burden and ameliorates vascular defects in genetic mouse models of CCM

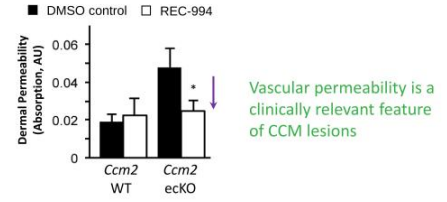
1 Reduces lesion number and size in *Ccm1* and *Ccm2* LOF mouse models



2 Completely rescues acetylcholine-induced vasodilation defect



3 Rescues dermal permeability defect in CCM2 mice



Source: Data above from Gibson, et al. Strategy for identifying repurposed drugs for the treatment of cerebral cavernous malformation. Circulation, 2015 or Recursion internal data (Ccm1 mouse model)

Clinical: CCM

Further Confidence : Clinical Studies Confirming Safety

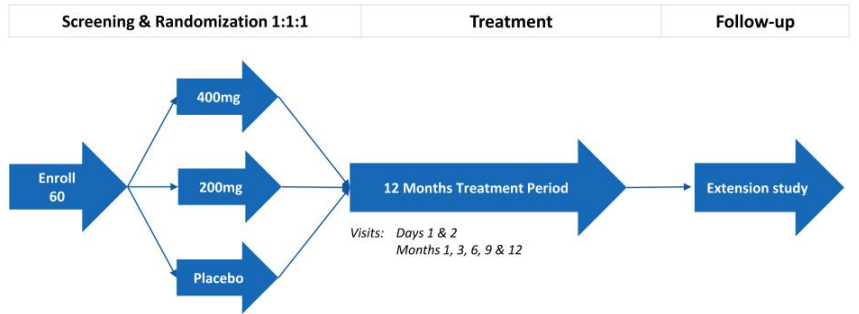
REC-994 Phase 1 Studies - well-tolerated with no dose-dependent adverse events in SAD and MAD

MAD Study	Placebo	50 mg	200 mg	400 mg	800 mg
Total Number of TEAEs	5	0	10	4	15
Total Subjects with ≥ one TEAE	4	0	3	3	4
Severity					
Mild	3	0	3	3	3
Moderate	1	0	0	0	1
Severe	0	0	0	0	0
Relationship to Study Drug					
None	3	0	0	2	1
Unlikely	1	0	1	1	2
Possibly	0	0	0	0	0
Likely	0	0	2	0	1
Definitely	0	0	0	0	0
Total Number of SAEs	0	0	0	0	0
Total Subject with ≥ one TEAE	0	0	0	0	0
Discontinued Study Drug Due to AE	0	0	0	0	0

Source: REC-994 for the Treatment of Symptomatic Cerebral Caverosus Malformation (CCM) Phase 1 SAD and MAD Study Results. Oral Presentation at Alliance to Cure Scientific Meeting, 2022 Nov 17

Phase 2 trial initiated in Q1 2022

- Enrollment Criteria**
- MRI-confirmed CCM lesion(s)
 - Familial or sporadic
 - Symptoms directly related to CCM
- Outcome Measures**
- Primary: Safety and tolerability
 - Adverse events & symptoms
 - Secondary: Efficacy
 - Clinician-measured outcomes (CGI and PGI)
 - Imaging of CCM lesions – number, size & rate of change
 - Impact of acute stroke (mRS, NIHSS)
 - Patient reported outcomes (SMSS, PROMIS-29, CCM HI, symptom questionnaires)
 - Exploratory: Biomarkers



Trial Update

- Enrollment is progressing
- Top-line data expected 2H 2024

Source: <https://www.clinicaltrials.gov/ct2/show/NCT05130866?term=recursion&draw=2&rank=3>; <https://www.sycamoreCCM.com/>

REC-2282 for the Treatment of Progressive Neurofibromatosis Type 2 (NF2) Mutated Meningiomas

Target / MOA	HDAC Inhibitor
Molecule Type	Small Molecule
Lead Indication(s)	NF2 Mutated Meningiomas
Status	Phase 2/3
Designation(s)	Fast Track; US and EU Orphan Drug
Source of Insight	Recursion OS

Clinical: NF2

Disease Overview : Neurofibromatosis Type 2 (NF2)



Ricki - living with NF2

Source: <https://rare-diseases.org/rare-diseases/neurofibromatosis-2>

Patient Population – Large and Diagnosable

- Rare autosomal dominant tumor syndrome resulting from biallelic inactivation of the *NF2* gene which leads to deficiencies in the tumor suppressor protein merlin
- **NF2 can be inherited or spontaneous** (>50% of patients represent new mutations); up to 1/3 are mosaic
- CNS manifestations: meningiomas and vestibular schwannomas; mean age at presentation: **~20 years**

No Approved Medical Therapy

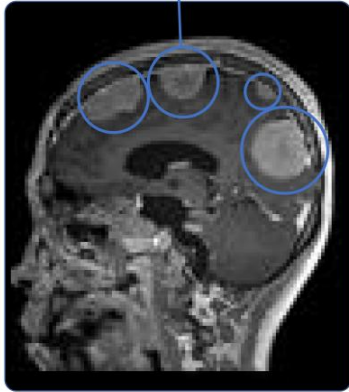
- **No approved drugs** for NF2
- **Surgery** is standard of care (when feasible)
- Location may make complete resection untenable, leading to hearing loss, facial paralysis, poor balance and visual difficulty

Clinical: NF2

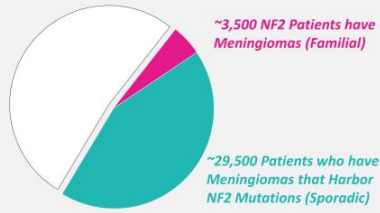
Disease Overview : Neurofibromatosis Type 2 (NF2) Meningiomas

- Most tumors are benign and slow growing but location in CNS leads to serious morbidity or mortality
- Prognosis is adversely affected by early age at onset, a higher number of meningiomas and having a truncating mutation

Intracranial Meningioma



>66,000 Patients have Meningiomas



~33,000

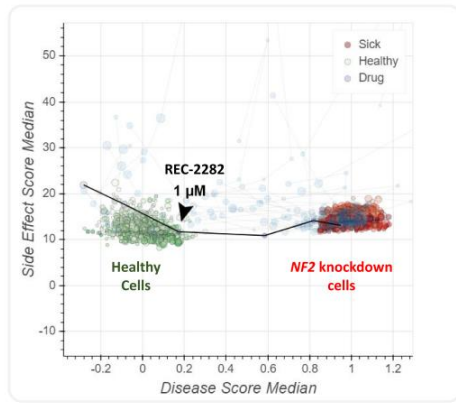
Treatable US + EU5 patients

- Threatens mortality; if amenable, surgical excision is primary intervention
- Many patients have multiple meningiomas that exhibit heterogenous behavior and asynchronous growth
- Stasis or shrinkage of tumor could improve prognosis

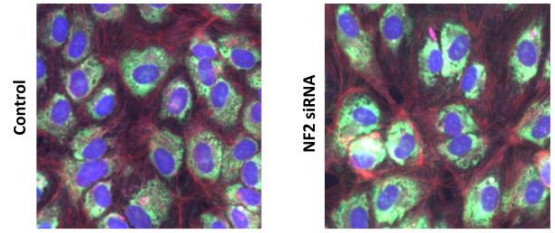
Source: Pevov, et al. Comparative clinical and genomic analysis of neurofibromatosis type 2-associated cranial and spinal meningiomas. Nature. 2020 Jul 28;10(12563). Doi: <https://doi.org/10.1038/s41598-020-69074-z>; NORB

Clinical: NF2

Insight from OS : REC-2282 Rescued Loss of NF2



REC-2282 identified as rescuing HUVEC cells treated with NF2

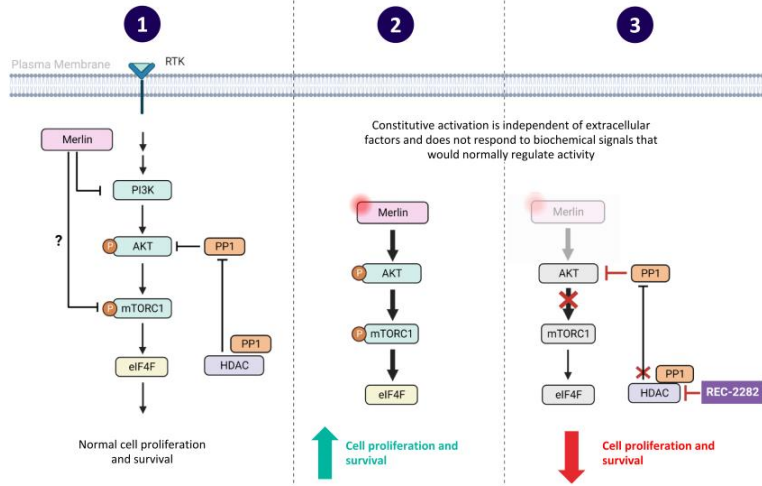


HUVEC, human umbilical vein endothelial cells; NF2, neurofibromatosis type 2; siRNA, small interfering RNA.

Clinical: NF2

REC-2282 – Mechanism of Action

Orally Bioavailable, CNS-penetrating, Small Molecule HDAC Inhibitor



- 1 NF2 encodes for the protein Merlin and negatively regulates mTOR signaling
- 2 Loss of Merlin leads to increased signaling in the PI3K/AKT/mTOR pathway
- 3 Oncogenic mTOR signaling arrested with HDAC inhibitors

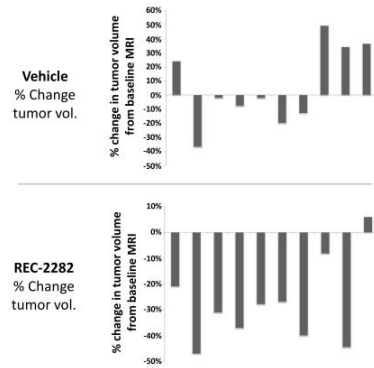
AKT, protein kinase B; eIF4F, eukaryotic initiation factor 4F; HDAC, histone deacetylase; mTor, mammalian target of rapamycin; mTORC1, mammalian target of rapamycin complex 1; NF2, neurofibromatosis type 2; PI3K, phosphoinositide 3-kinase; PP1, protein phosphatase 1; Ras, reticular activating system.

Clinical: NF2

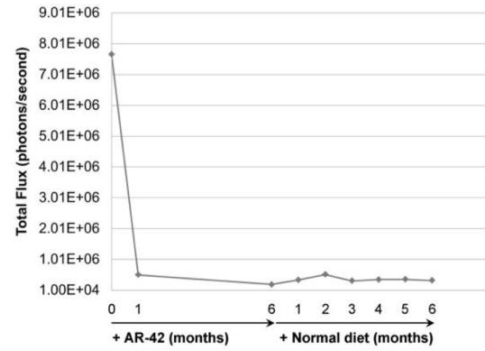
Further Confidence : Preclinical Studies Confirming Insight

REC-2282 preclinical studies demonstrated clear in-vivo efficacy in multiple NF2 tumor types

1 Shrinks vestibular schwannoma xenografts in nude mice



2 Prevents growth & regrowth of NF2-deficient meningioma model in mice



<https://link.springer.com/article/10.1007/s00280-020-04229-3>

Clinical: NF2

Further Confidence : Prior Studies Suggest Potential Therapeutic Benefit

- **Evaluable Patients: CNS Solid Tumors: NF2 N=5; Non-CNS Solid Tumors: N=10**
- PFS: CNS solid tumors = **9.1 months**; Non-CNS solid tumors = **1.7 months**
- Best overall response = **SD in 8/15 patients** (53%; 95% CI 26.6–78.7)
- Longest duration of follow-up without progression: > **27 months** (N=1)
- Most common AEs: **cytopenia, fatigue, nausea**



Well understood clinical safety ...



Multiple investigator-initiated studies in oncology indications



Lengthy human clinical exposure in NF2 – multiple patients on drug for several years



Well-characterized side effect profile

... with a drug-like profile



Established and scalable API manufacturing process



Multiple cGMP batches of 10mg and 50mg tablets have been manufactured

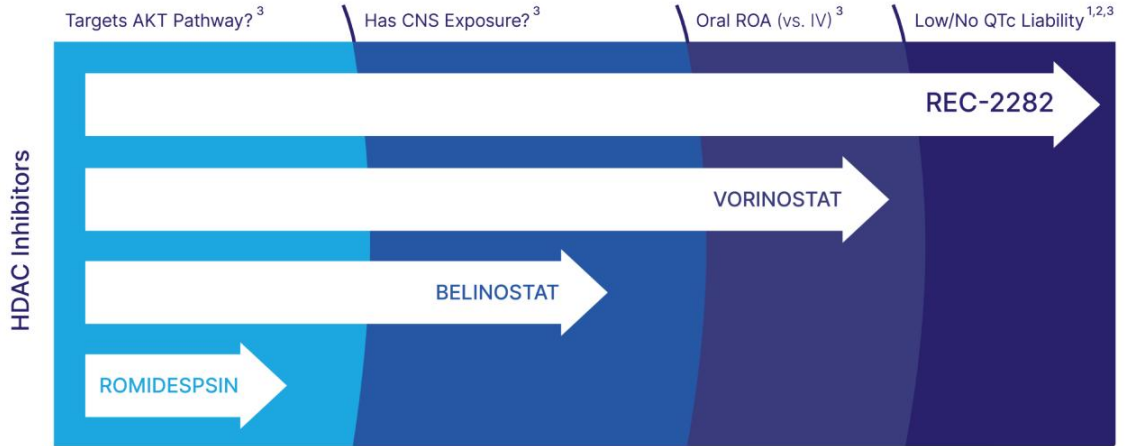


Excellent long-term stability

Clinical: NF2

REC-2282 Appears Well Suited for NF2 vs Other HDAC Inhibitors

REC-2282 Would be First-In-Class HDAC Inhibitor for Treatment of NF2 Meningiomas



¹Sborov DW, et al. A phase 1 trial of the HDAC inhibitor AR-42 in patients with multiple myeloma and T- and B-cell lymphomas. *Leuk Lymphoma*. 2017 Oct;58(10):2310-2318.
²Collier KA, et al. A phase 1 trial of the histone deacetylase inhibitor AR-42 in patients with neurofibromatosis type 2-associated tumors and advanced solid malignancies. *Cancer Chemother Pharmacol*. 2021 May;87(5):599-611.
³Prescribing information of Vorinostat/Belinostat/Romidespin respectively

Clinical: NF2
POPLAR Clinical Trial : REC-2282 for NF2 Phase 2/3 Underway

Phase 2/3 trial initiated in Q2 2022

Enrollment Criteria

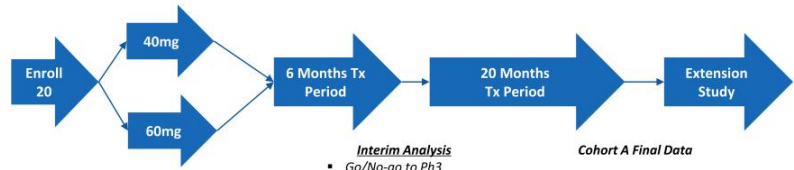
- MRI-confirmed progressive meningioma
- Either of the below
 - Sporadic meningioma with confirmed NF2 mutation
 - Confirmed diagnosis of NF2 disease

Outcome Measures

- Primary: Safety and tolerability
 - Progression-free survival
 - Time to progression
 - Duration of response
 - Overall response rate

Phase 2 (Cohort A)

Screening & Randomization 1:1	Treatment	Follow-up
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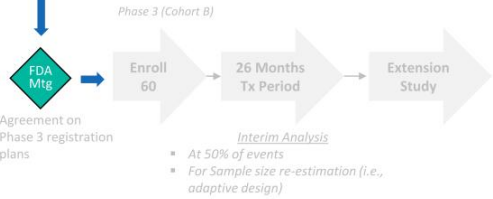
Interim Analysis

- Go/No-go to Ph3
- PFS
- Safety/Tolerability
- PK

Cohort A Final Data

Trial Update

- Enrollment is progressing
- Interim safety analysis expected 2024



Agreement on Phase 3 registration plans

Interim Analysis

- At 50% of events
- For Sample size re-estimation (i.e., adaptive design)

<https://clinicaltrials.gov/ct2/show/NCT05130866>

REC-4881 for the Treatment of Familial Adenomatous Polyposis (FAP)

Target / MOA	MEK Inhibitor
Molecule Type	Small Molecule
Lead Indication(s)	Familial Adenomatous Polyposis
Status	Phase 2
Designation(s)	Fast Track; US and EU Orphan Drug
Source of Insight	Recursion OS

Clinical: FAP

Disease Overview : Familial Adenomatous Polyposis



Polyps Found in Colon and Upper GI Tract

Patient Population – Easily Identifiable

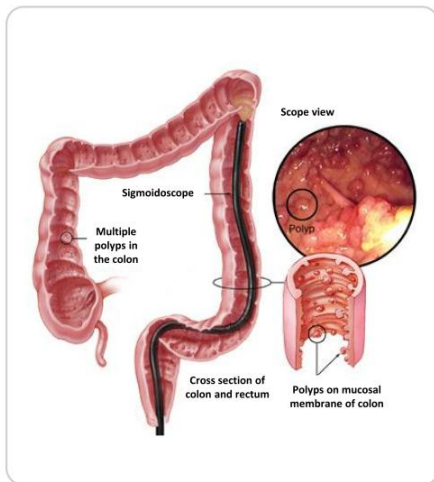
- Autosomal dominant tumor predisposition syndrome caused by a mutation in the APC gene
- Classic FAP (germline mutation) :
 - Hundreds to thousands of polyps in colon and upper GI tract
 - Extraintestinal manifestations (e.g., desmoid tumors)
 - 100% likelihood of developing colorectal cancer (CRC) before age 40, if untreated

~50,000

Diagnosed US + EU5 patients

Clinical: FAP

Disease Overview : Familial Adenomatous Polyposis – Standard of Care



No Approved Medical Therapy

- Standard of care: colectomy during adolescence (with or without removal of rectum)
- Post-colectomy, patients still at significant risk of polyps progressing to GI cancer
- Significant decrease in quality-of-life post-colectomy; continued endoscopies and surgical intervention

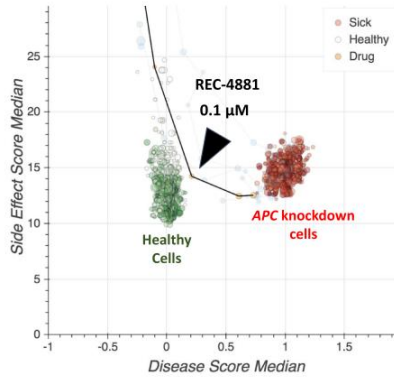
“Despite progress with surgical management, the need for effective therapies for FAP remains high due to continued risk of tumors post-surgery”

- Niloy Jewel Samadder, MD, Mayo Clinic

Clinical: FAP

Insight from OS : Rescued Loss of APC, Inhibited Tumor Growth

REC-4881 rescued phenotypic defects of cells with APC knockdown

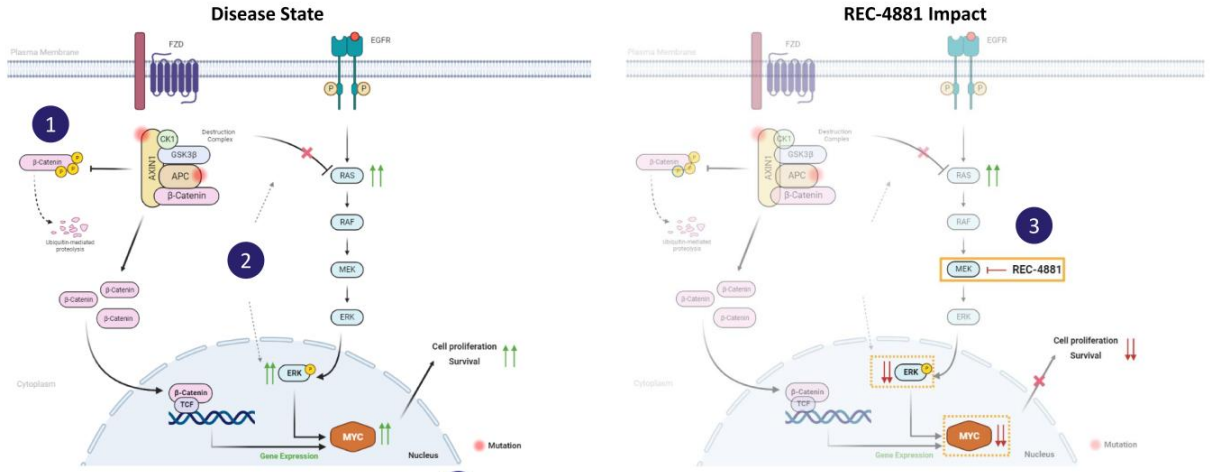


- Compared to thousands of other molecules tested, REC-4881 rescued phenotypic defects substantially better (including better rescue than other MEK inhibitors) for APC specific knockdown
- Findings validated in tumor cell lines and spheroids grown from human epithelial tumor cells with APC mutation
 - 1,000x more selectivity in tumor cell lines with APC mutation
 - Inhibited growth and organization of spheroids

Clinical: FAP

MoA : REC-4881 Blocks Wnt Mutation Induced MAPK Signaling

Orally Bioavailable, Small Molecule MEK Inhibitor



3 REC-4881 inhibits MEK 1/2 and recovers the destabilization of RAS by the β-Catenin destruction complex, restoring the cell back to a Wnt-off like state

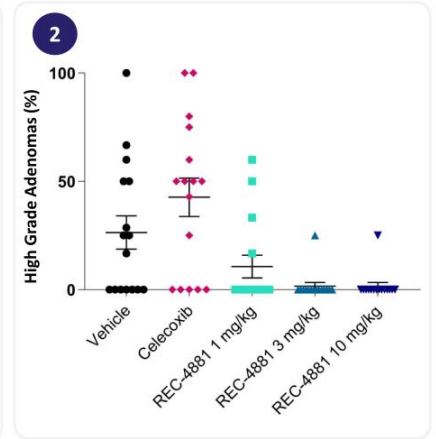
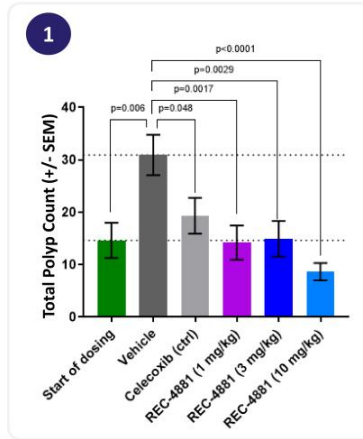
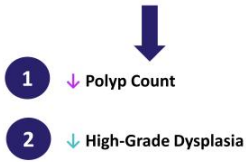
Jean, WJ, et al. (2018). Interaction between Wnt/β-catenin and RAS-ERK pathways and an anti-cancer strategy via degradations of β-catenin and RAS by targeting the Wnt/β-catenin pathway. *npj Precision Oncology*, 2(5).

Clinical: FAP

Further Confidence : Preclinical Studies Confirming Reduction in Polyp Count and High-Grade Dysplasia

- In-vivo efficacy in APC^{min} mouse model
- Apc^{min} = FAP disease model
- Mice treated once daily for 8 weeks

After 8 weeks of treatment:



APC, adenomatous polyposis coli; ERK, extracellular signal-regulated kinase; FAP, familial adenomatous polyposis.

Clinical: FAP

Further Confidence : Clinical Data Generated by Recursion

REC-4881-101: Single-center, double-blind, placebo-controlled, dose-escalation study in healthy volunteers

- Group 1 (n=13): Food effect crossover (REC-4881 4 mg/PBO [fed/fasted]), followed by single dose REC-4881 8 mg/PBO [fed]
- Group 2 (n=12): Matched single ascending dose (REC-4881 4 mg/PBO; REC-4881 8 mg/PBO; REC-4881 12 mg/PBO)

Accomplished



Recursion formulation yields exposures comparable to Takeda's formulation (molecule in-licensed from Takeda)



No food effect



Dose proportional increases in exposure



Similar to C20001 study, observed pERK inhibition (i.e., target engagement) at 8 mg and 12 mg doses



Acceptable safety profile

Note: AE, adverse event; MEK, mitogen-activated protein kinase; NHV, normal healthy volunteer; pERK, phosphorylated extracellular signal-regulated kinase; SAE, serious adverse event.



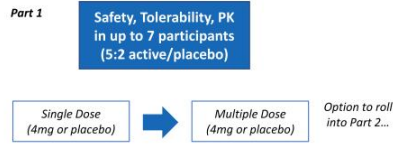
Phase 2 trial initiated in Q3 2022

Enrollment Criteria

- Confirmed APC mutation
- Post-colectomy/proctocolectomy
- No GI cancer present
- Polyps in either duodenum (including ampulla of Vater) or rectum/pouch

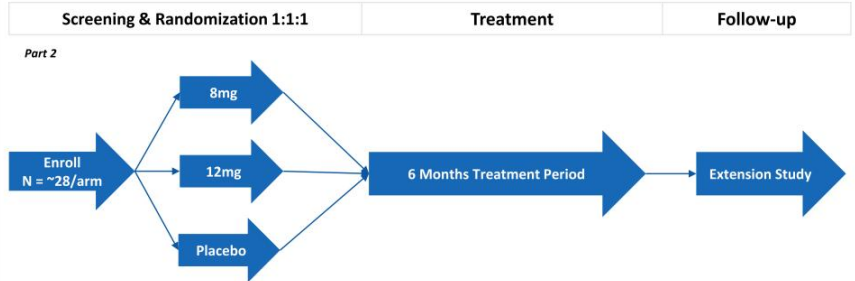
Outcome Measures

- Primary:
 - Part 1: PK
 - Part 2: % change from baseline in polyp burden
- Secondary:
 - Part 1: Safety & tolerability
 - Part 2: PK; PD; change from baseline in polyp number, histological grade, disease scoring
- Exploratory:
 - Part 1: PD
 - Part 2: Time to first occurrence of FAP-related event; change from baseline in extent of desmoid disease



Trial Update

- Recent protocol amendments aimed at accelerating quality and pace of the trial



<https://clinicaltrials.gov/ct2/show/NCT05527555>

REC-4881 for the Treatment of Solid Tumors with AXIN1 or APC Mutant Cancers

Target / MOA	MEK Inhibitor
Molecule Type	Small Molecule
Lead Indication(s)	Solid Tumors with AXIN1 or APC Mutant Cancers
Status	Phase 1b/2
Source of Insight	Recursion OS

Clinical: AXIN1 or APC

Disease Overview : *AXIN1* or *APC* Mutant Cancers



Gross morphology of HCC tumor

- **Sustained Wnt signaling** is a frequent driver event found across a wide variety of solid tumors
- Dysregulation of β -catenin destruction complex due to inactivating mutations in *AXIN1* or *APC* **leads to sustained Wnt signaling promoting** cancer progression and survival¹
- *AXIN1* or *APC* **mutant solid tumors** are considered clinically aggressive and resistant to standard treatments

“Nothing in HCC has immediate therapeutic relevance and the most common mutations are TERT, TP53, and Wnt (CTNNB1/*AXIN1*/*APC*) and combined these alterations define almost 80% of patients and are not targetable”

- KOL, Clinical Investigator, Texas

¹ Bagter, J.M., et al. *Net Rev Cancer*, 2021, 21, pp.5-21

Clinical: AXIN1 or APC

Disease Overview : AXIN1 or APC Mutant Cancers

Tumor Type	AXIN1 Mutation Frequency ¹	APC Mutation Frequency ¹	Treatable Population ² (US+EU5)
CRC	3%	70%	27,450
LUAD	4%	11%	14,000
Prostate	2%	11%	6,700
Bladder	3%	8%	5,100
HCC	12%	5%	3,100
Endometrial	8%	12%	2,600
Esophageal	2%	7%	2,600
PDAC	1%	2%	1,500
Ovarian	1%	3%	1,400
TNBC	1%	2%	300
			~65,000

Flexible Patient Selection Strategy and Study Design

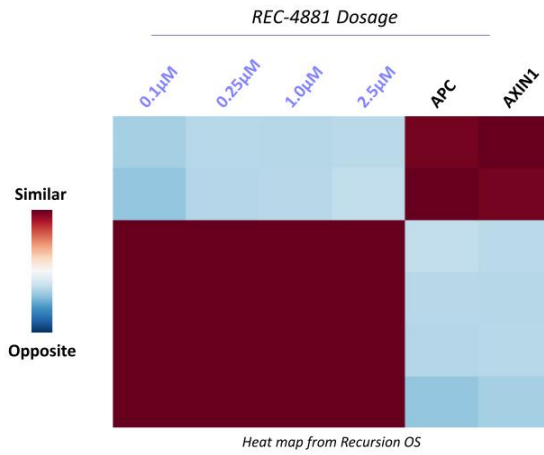
- AXIN1 and APC genes covered by commercially available NGS panels and liquid biopsy detection assays
- FDA guidance supports utility of ctDNA as patient selection for the detection of alterations for eligibility criteria and as a stratification factor for trials enrolling marker-positive and marker-negative populations³
- Multiple tumor types will inform study design and patient selection

Preclinical data with REC-4881 at clinically relevant exposures in HCC and Ovarian PDX mouse models gives confidence to pursue other mutant cancer types

¹ Obtained from cbiportal.org. ² Represents 2L treatable population estimates; obtained from DRG. ³ <https://www.fda.gov/media/158072/download>

Clinical: AXIN1 or APC

Insight from OS : Novel Insight around Established MoA



Hypothesis: Rescue of *AXIN1* may impact tumor progression and/or restore checkpoint sensitivity in cancers driven by *AXIN1* loss

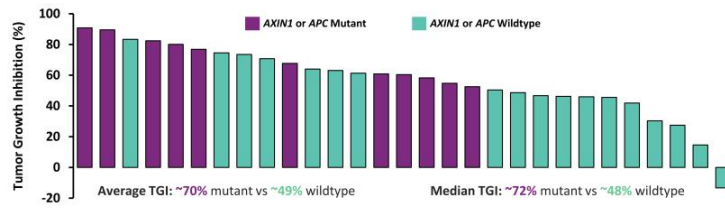
Recursion Differentiation: REC-4881 rescues tumor suppressor genes *APC* and *AXIN1*

- *APC* and *AXIN1* are negative regulators of Wnt signaling
- Both proteins form part of the B-catenin destruction complex. Strong clustering suggests map recapitulation of this biology

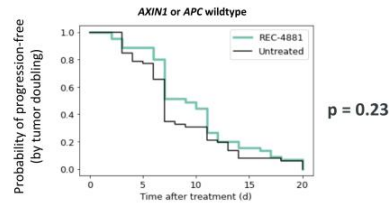
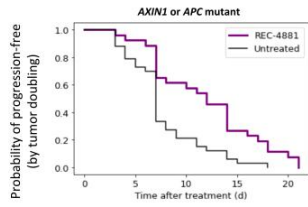
Clinical: AXIN1 or APC

Further Confidence : Preclinical Studies Confirming Insight

Efficacy found in In Vivo Mice Models ...



... Led to Significant Progression Free Survival



Note: REC-4881 dosed at 3 mg/kg QD for up to 21 days. 3 mice per treatment per model (3 x 3 x 3) design

Next Steps

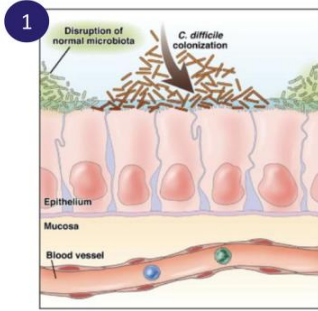
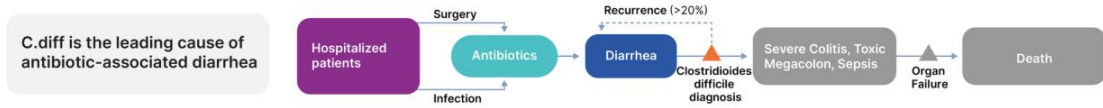
- ❑ Finalize design of a Phase 1b/2 biomarker-enriched trial
- ❑ Initiate Phase 1b/2 trial in select tumor types in early 2024
- ❑ Identify suitable partners for genetic testing capabilities
- ❑ Evaluate REC-4881 in combination with targeted and/or immune modulating agents

REC-3964 for the Treatment of C. Difficile Infection

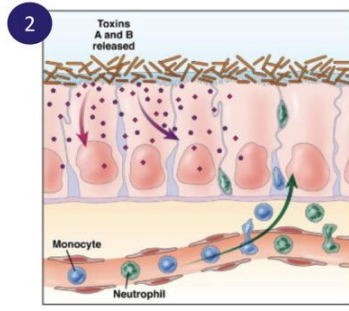
Target / MOA	Selective C. diff Toxin Inhibitor
Molecule Type	Small Molecule
Lead Indication(s)	C. Difficile Infection
Status	Phase 1
Source of Insight	Recursion OS

Clinical: C. Difficile

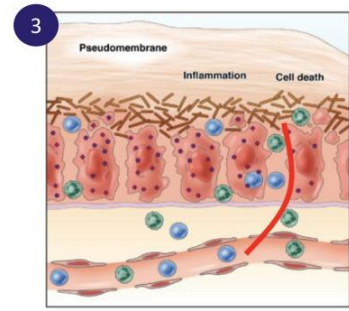
Disease Overview : C. Difficile Infection (CDI)



1 Disruption of microbiota and colonization of C. diff



2 Release of C. diff toxins



3 Degradation of colon cell junction & toxin transit to bloodstream

Source: McCallum, D., Rodriguez, JM. Detection, Treatment, and Prevention of Clostridium difficile Infection. Clinical Gastroenterology and Hepatology 2012 Mar 19. <https://doi.org/10.1016/j.cgh.2012.03.008>

Clinical: C. Difficile

Disease Overview : C. Difficile Infection (CDI)



Colleen – lived with rCDI

Source, CDC **NAAT = Nucleic Acid Amplification Test; ***rCDI = recurrent CDI

Patient Population – Large, Diagnosable and Easy to Identify

- Symptoms caused by clostridioides difficile tissue-damaging toxins released in the colon
- Patients who experience >3 unformed stools are diagnosed via NAAT* for toxin gene or positive stool test for toxins
- Patients who are at highest risk are those on antibiotics, and frequently visit hospitals or are living in a nursing home
- More than **80% of cases** occur among patients **age 65** or older

Large, Unmet Need with Significant Cost Burden

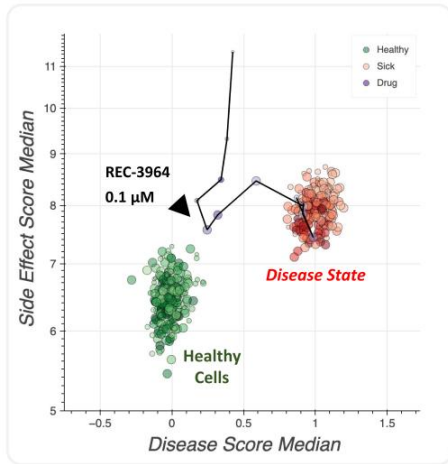
- RCDI** occurs in **20-30%** of patients treated with standard of care
 - 40% of those patients will continue to recur with 2+ episodes
- **>29,000 patients** die in the US each year from CDI
- Cost burden of up to **\$4.8bn annually**

~730,000

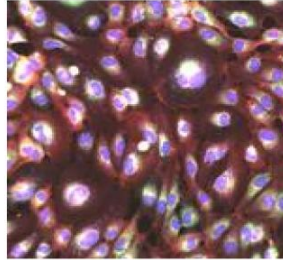
Diagnosed US + EU patients

Clinical: C. Difficile

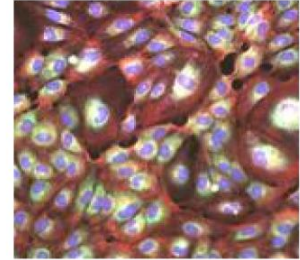
Insight from OS : REC-3964 Rescued Cells Treated with C. Difficile Toxins



REC-3964 identified as a NCE that demonstrated strong rescue in HUVEC cells treated with C. diff toxin



C. diff toxin B phenotype

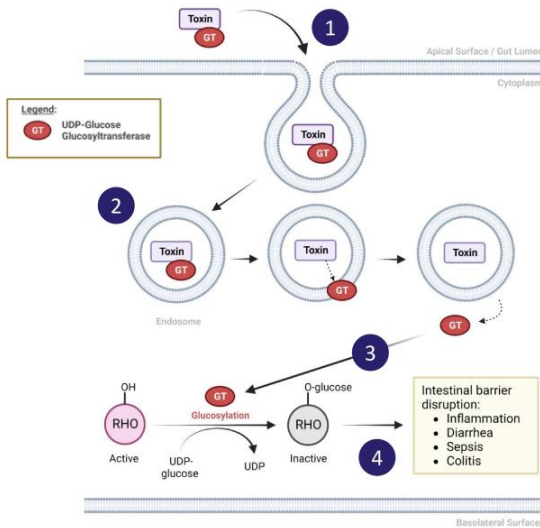


Healthy Control

Clinical: C. Difficile

REC-3964 : Selective Inhibitor of C. Difficile Toxins

REC-3964 is Recursion's 1st Small Molecule NCE to Reach the Clinic



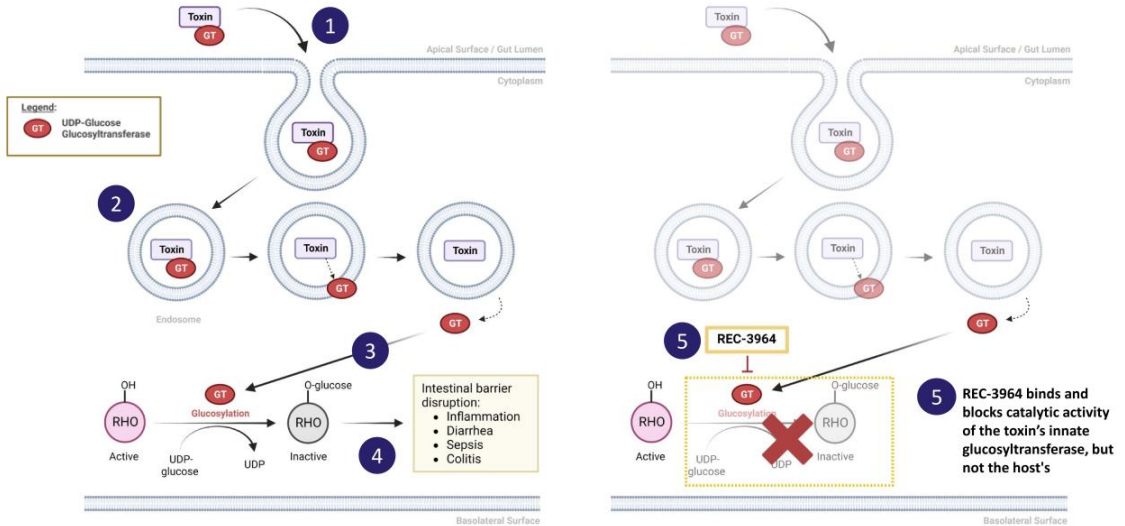
Adapted from Awad et al. 2014

- 1 C.diff toxins bind to cell surface receptors and trigger endocytic event
- 2 Autocatalytic cleavage event releases C.diff toxin's glucosyltransferase enzymatic domain into the cytosol of the infected cell
- 3 The glucosyltransferase locks Rho family GTPases in the inactive state
- 4 Inactivation of Rho GTPases alters cytoskeletal dynamics, induces apoptosis, and impairs barrier function which drives the pathological effects of C.diff infection

Clinical: C. Difficile

REC-3964 : Selective Inhibitor of C. Difficile Toxins

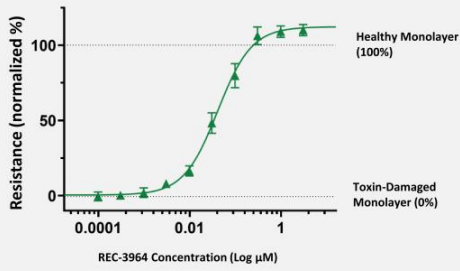
REC-3964 is Recursion's 1st Small Molecule NCE to Reach the Clinic



Clinical: C. Difficile

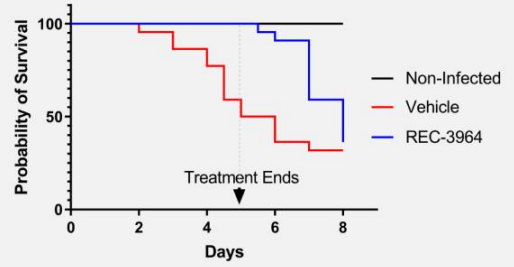
Further Confidence : Preclinical Studies Confirmed Recursion OS Insight

REC-3964 rescues barrier integrity with increasing concentrations



- ✓ REC-3964 restores gut epithelial barrier integrity, which when disrupted causes inflammation and diarrhea

REC-3964 improved probability of survival in a hamster model of C. difficile infection



- ✓ Improved probability of survival beyond treatment completion

Clinical: C. Difficile

Clinical Trial : REC-3964 for C. difficile Phase 1 Study Underway

Phase 1 FIH SAD/MAD Trial initiated in Q3 2022

Trial Design

- Randomized, Double-blind Trial

Population

- Healthy Subjects
- SAD (n = 56)
- MAD (n = 50)

Primary Objectives

- ✓ Assess the safety & tolerability of SAD and MAD of REC-3964
- ✓ Evaluate the PK profile of REC-3964 after single and multiple doses

Trial Update

- Enrollment is progressing
- In several SAD cohorts and at least one MD cohort, REC-3964 has been extremely safe and well tolerated
- **Complete safety and PK data readout expected 2H 2023**

Preclinical Programs

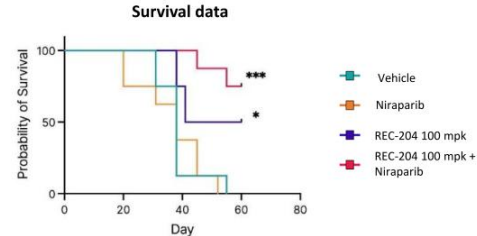
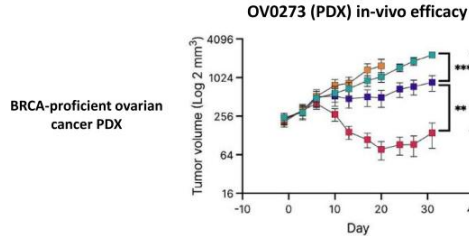
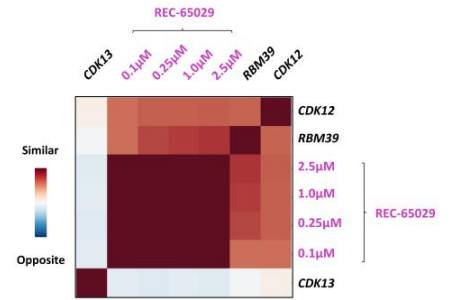
RBM39 : HR-Proficient Ovarian Cancer

Target α : Immunotherapy

Preclinical: HR-Proficient Ovarian Cancer

RBM39: Novel CDK12-Adjacent Target for Potentially Treating HR-Proficient Ovarian Cancer

GOAL	Identify potential first-in-class tumor-targeted precision therapeutic NCE with novel MOA capable of potentially treating HR-proficient ovarian cancer
INSIGHT FROM OS	Inhibition of target RBM39 (previously referred to as Target γ) may mimic the inhibition of CDK12 while mitigating toxicity related to CDK13 inhibition
FURTHER CONFIDENCE	A Recursion-generated NCE showed single agent efficacy that is enhanced in combination with Niraparib in a BRCA-proficient PDX model
NEXT STEPS	Program anticipates reaching IND-enabling studies in 2023

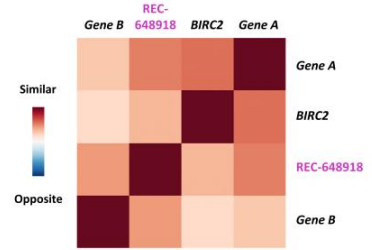


Note: in the OV0273 PDX model, mice were treated with a representative lead molecule REC-1170204 (100 mg/kg, BID, PO) & Niraparib (40 mg/kg, QD, PO) for 32 days. Single agent REC-1170204 or in combination with Niraparib resulted in a statistically significant response vs either Niraparib or vehicle arms. In addition, there was a statistically significant improvement in survival > 30 days post final dose. *p<0.05, ** p<0.01, *** p<0.0001.

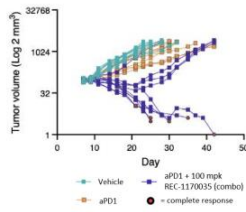
Preclinical: Target α

Target α : Potential First-in-Class NCE with Novel MOA to Enhance Anti-PD-(L)1 Response

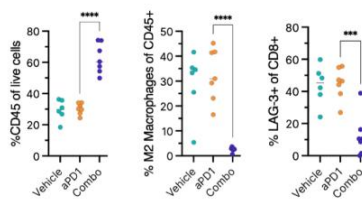
GOAL	Identify novel compounds capable of enhancing the therapeutic benefit of checkpoint therapy without concomitant inflammatory side effects
INSIGHT FROM OS	Novel compound identified with similarity to knockout of potential immunotherapy resistance gene targets (Gene A, Gene B)
FURTHER CONFIDENCE	A Recursion-generated NCE showed reduction in tumor growth vs. anti-PD-1 alone in CT26 checkpoint resistance model - including 60% complete responses
NEXT STEPS	Program anticipates reaching IND-enabling studies in 2023



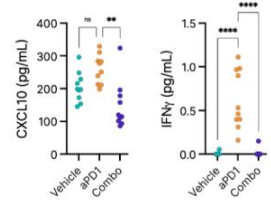
(A) CT26 in vivo efficacy



(B) Tumor Microenvironment Modulation

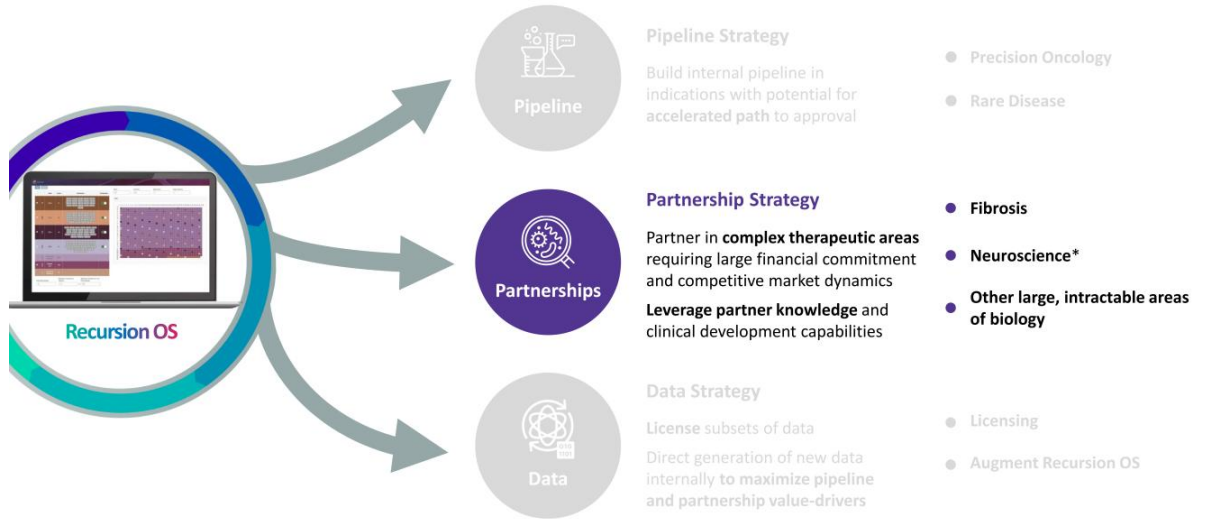


(C) Suppressed Peripheral Inflammation



Note: (A) Mice harboring CT26 tumors show 60% complete tumor regressions upon treatment with 100 mpk REC-1170035 in combination with 10 mpk anti-PD-1. (B) Flow cytometric analysis of the CT26 tumor microenvironment following 11 days of dosing. One-way ANOVA and Tukey's post test. ***p<0.001, ****p<0.0001. (C) Blood levels of CXCL10 (left) and IFN γ (right) in CT26 tumor bearing mice following 10 days of dosing. Statistical analysis performed using one-way ANOVA and Tukey's post test against aPD1 alone, **p<0.01, ****p<0.0001.

Harnessing value with a capital efficient business strategy



*Includes a single oncology indication from our Roche and Genentech collaboration.

Our existing partnerships represent some of the most significant scientific collaborations in biopharma



(Announced Sep 2020; Expanded Dec 2021)

Fibrosis

- **\$30M upfront and \$50M equity investment**
- **Up to or exceeding \$1.2B in milestones for up to or exceeding 12 programs**
- **Mid single-digit royalties on net sales**
- **Recursion owns all algorithmic improvements**

Trademarks are the property of their respective owners and used for informational purposes only.



Genentech
A Member of the Roche Group

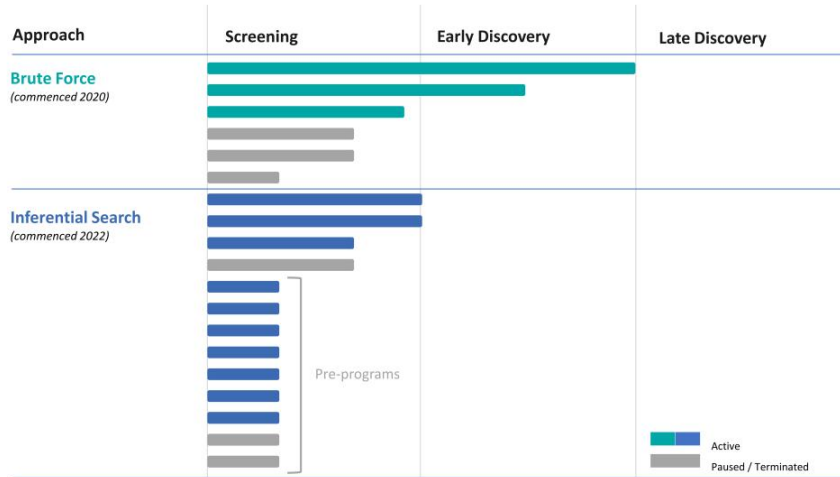
(Announced Dec 2021)

Neuroscience
**and a single oncology indication*

- **\$150M upfront and up to or exceeding \$500M in research milestones and data usage options**
- **Up to or exceeding \$300M in possible milestones per program for up to 40 programs**
- **Mid to high single-digit tiered royalties on net sales**
- **Recursion owns or co-owns all algorithmic improvements**

Multiple programs advancing in parallel to near-term milestones

Transition to Inferential Search has accelerated new program initiation in 2022



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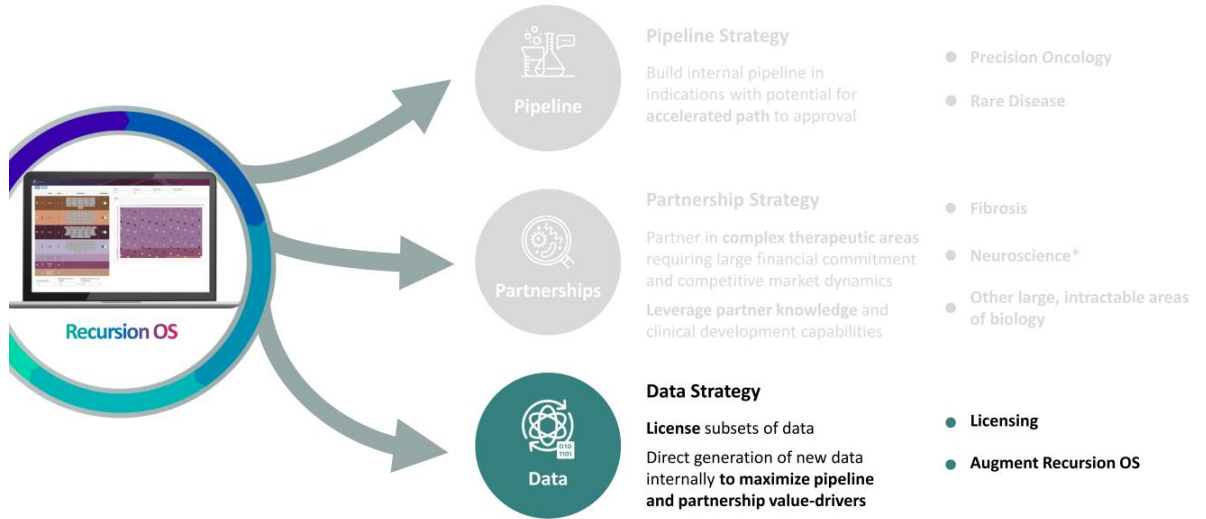
(Announced Dec 2021)

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Harnessing value with a capital efficient business strategy



*Includes a single oncology indication from our Roche and Genentech collaboration.

Data that is reliable and scalable is the Recursion differentiator

Recursion Data Universe: >21 PB of proprietary biological and chemical data, spanning phenomics, transcriptomics, invivomics, and more

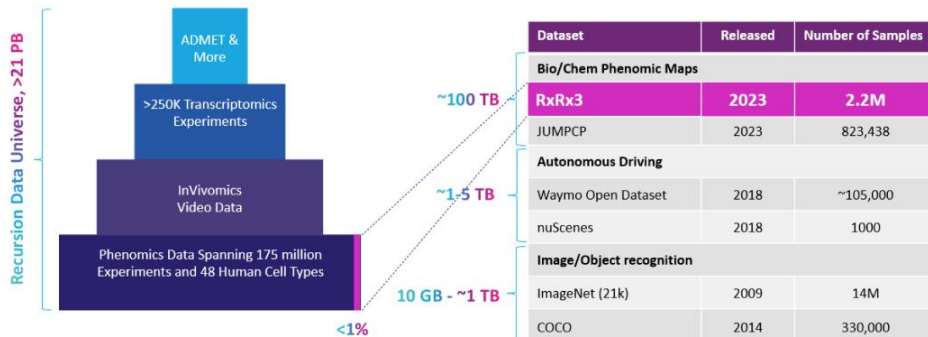
- We believe one of the largest biological and chemical datasets **fit for the purpose of training large-scale ML models**

RXR3: CRISPR knockouts of most of the human genome, 1,600 FDA approved / commercially available bioactive compounds

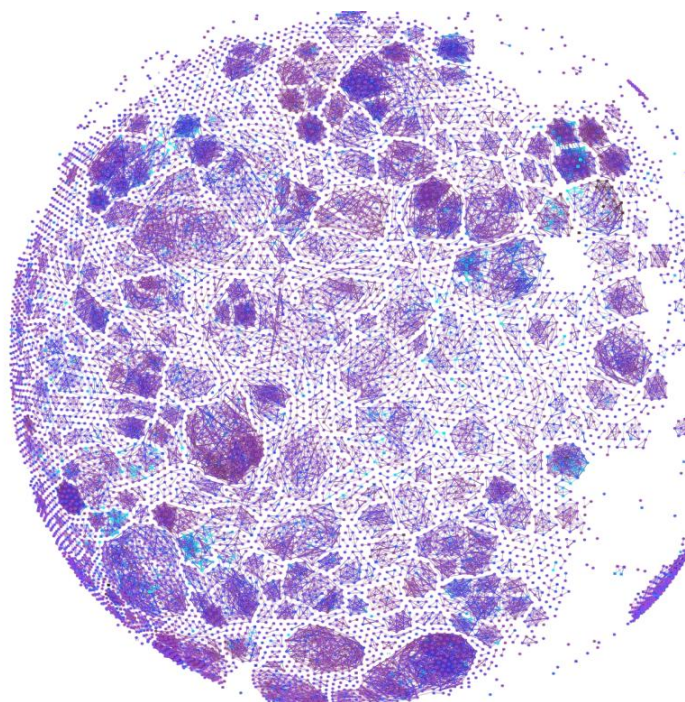
- We believe the **largest public dataset of its kind**, <1% of Recursion Data Universe, what Recursion can generate in ~1 week

MolRec™: freemium web-based **application to explore compound and gene relationships** in RXR3

Start working with RXR3 and MolRec™: www.rxr3.ai



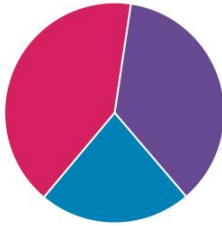
**Value driven by
our team and
our milestones**



What it takes to make this happen – a new kind of team and culture

Team Members

~500 Employees



43% Advanced degrees

- Life Sciences—biology, chemistry, development, etc.
- Technology—data science, software engineering, automation, etc.
- Strategic Operations

43% Female
55% Male
1% Non-Binary

Parity Pledge Signer
gender parity and people of color parity

Data shown reflective of Q4 2022 and Recursion's 2022 ESG report

ESG Highlights

- ✓ Inaugural ESG report in 2022 – reporting on **Healthcare and Technology Metrics**
- ✓ **100% of electricity** powering our Biohive-1 supercomputer comes from renewable sources

Community Impact

altitude ▲ lab
Founding Partner,
Life Science Accelerator

biohive
Founding Member,
Life Science Collective

Committed to ESG Excellence



What to watch for at Recursion

Upcoming Potential Milestones

Near-Term

- Potential **option exercises** for partnership **programs**
- Potential **option exercises** for **map building** initiatives or data sharing
- Potential for **additional partnership(s)** in large, intractable areas of **biology and / or technological innovation**
- **Ph1 clinical trial readout** for **C. difficile Infection** program expected **2H 2023**
- Potential for **additional INDs and clinical starts**, including **Ph1b/2 trial initiation** for **AXIN1/APC** program
- Potential for consolidation of **technologies, talent and assets** to accelerate the Recursion OS

Medium-Term

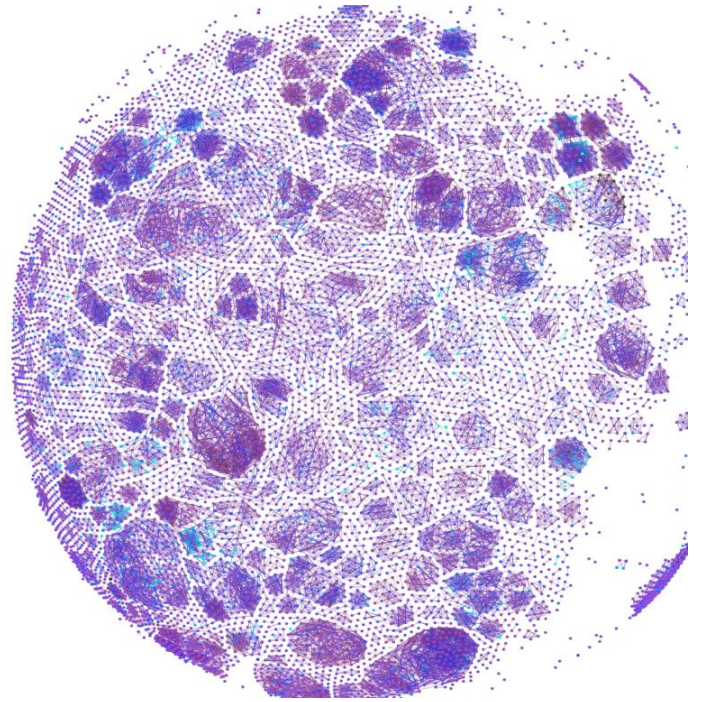
- Multiple **POC readout(s)** for AI-discovered programs
 - **NF2 interim safety** analysis expected **2024**
 - **CCM** top-line data expected **2H 2024**
- Potential for **additional INDs and clinical starts**
- Potential **option exercises** for partnership **programs**
- Potential **option exercises** for **map building** initiatives or data sharing
- Potential **additional partnership(s)** in large, intractable areas of **biology and / or technological innovation**
- Recursion OS moves towards **autonomous map building and navigation** with digital and micro-synthetic chemistry

Learn more about Recursion's value proposition: www.recursion.com/download-day

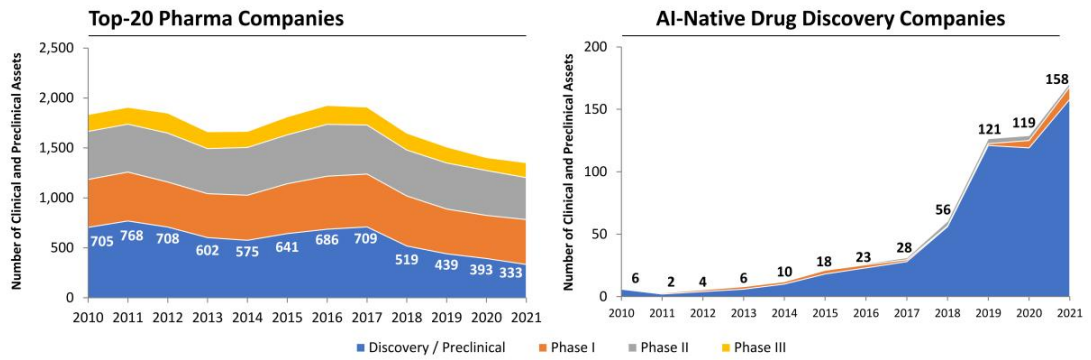
Strong Financials ~\$550M in cash and cash equivalents at the end of 2022 with potential for increased revenue in the near term



**Additional
scientific and
business context**



The biopharmaceutical industry faces pressure amidst declining efficiency in drug discovery

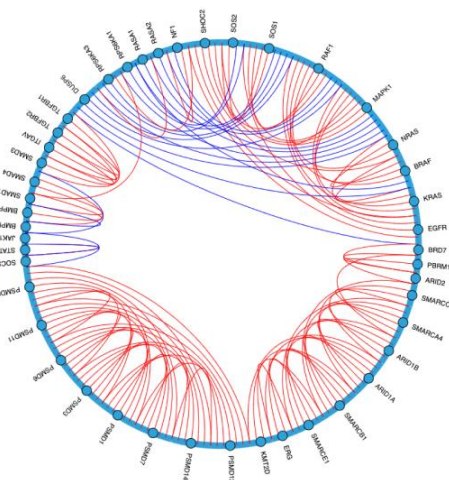


AI-enabled drug discovery efforts have proliferated alongside the declining efficiency of traditional approaches

Images adapted from Jayatunga, M., et al. Nature Reviews Drug Discovery 2022.

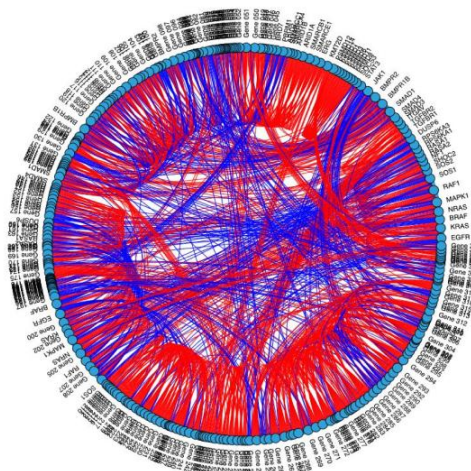
Historical tools and the limits of human cognition have led to oversimplifying complex biological systems

Traditional Approach to Biology



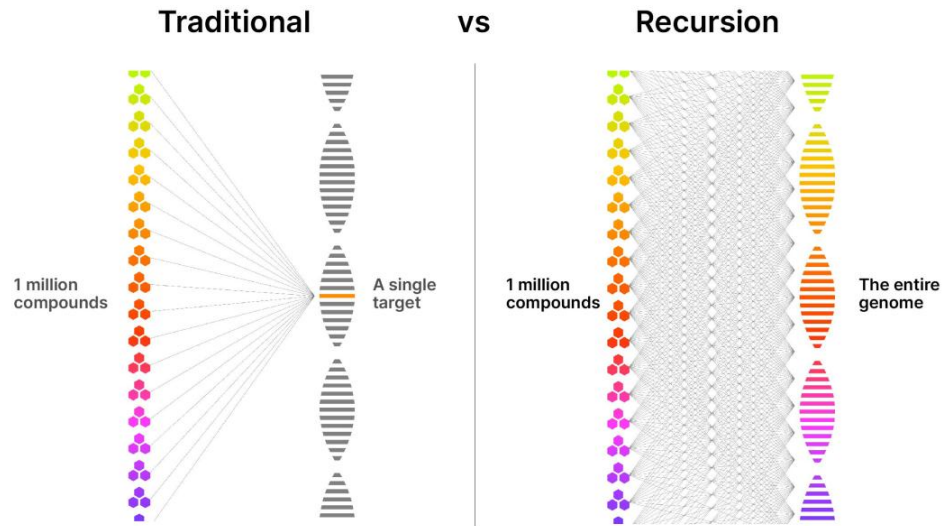
Well-known primary relationships
between key members of five pathways:
JAK/STAT | SWI/SNF | TGFβ | RAS | Proteasome

Recursion's Approach to Biology

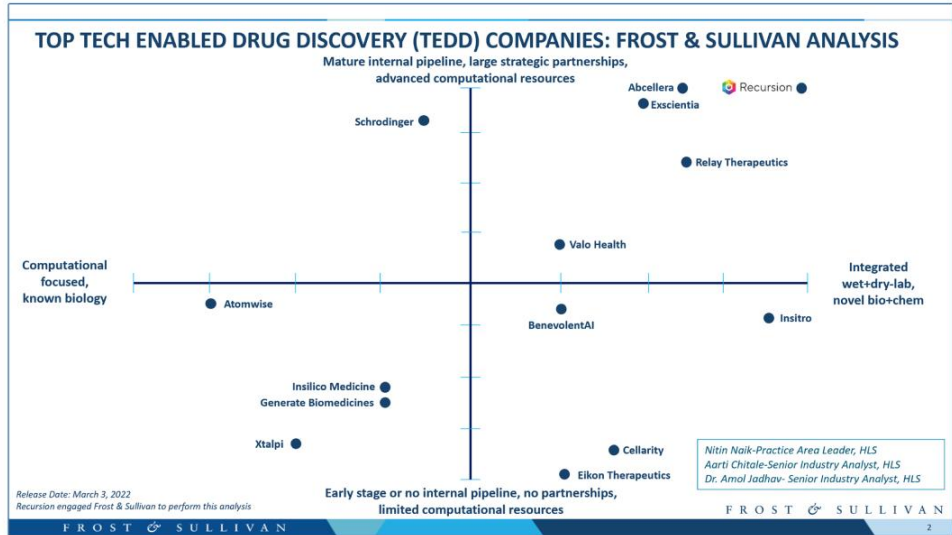


All primary relationships found by the Recursion OS
between key members of five pathways:
JAK/STAT | SWI/SNF | TGFβ | RAS | Proteasome

Historical tools and the limits of human cognition have led to oversimplifying complex biological systems



Recursion is a leading TechBio company



Biology and chemistry are complex – data that is reliable, relatable, and scalable is the Recursion differentiator

Year	2018	2019	2020	2021	2022
Total Phenomics Experiments (Millions)	8	24	56	115	175
Total Transcriptomics Experiments (Thousands)	NA	NA	2	91	258
Data (PB)	1.8	4.3	6.8	12.9	21.2
Cell Types	12	25	36	38	48
Unique Compounds Physically Housed at Recursion ¹ (Millions)	0.02	0.1	0.7	1.0	1.7
In Silico Chemistry Library (Billions)	NA	0.02	3	12	>1,000
Predicted Biological and Chemical Relationships ² (Trillions)	NA	NA	0.01	0.2	3.1

¹ Includes approximately 500,000 compounds from Bayer's proprietary library.

² "Predicted Relationships" refers to the number of Unique Perturbations that have been predicted using our maps.

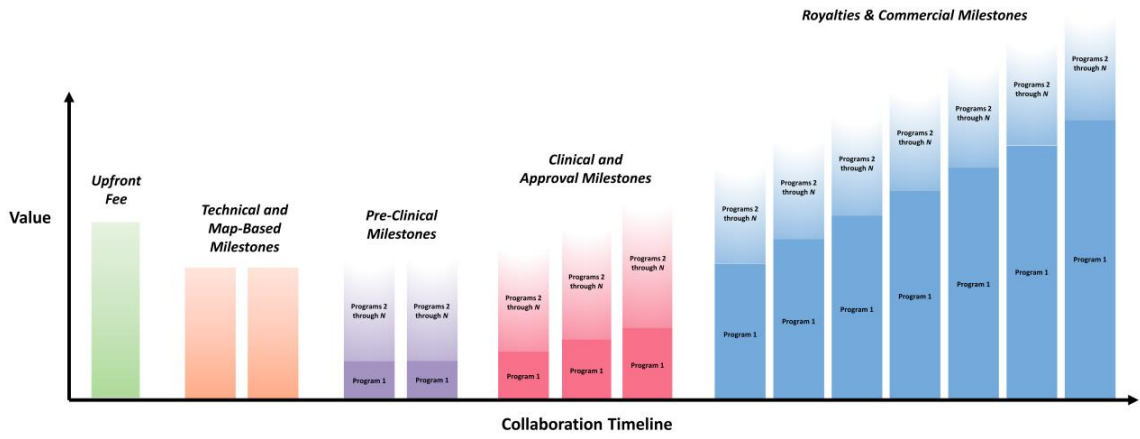
COVID-19 research

Drug	Prediction	Correct?
Hydroxychloroquine	x	✓
Lopinavir	x	✓
Ritonavir	x	✓
Remdesivir	✓	✓
Baricitinib	✓	✓
Tofacitinib	✓	✓
Ivermectin	x	✓
Fluvoxamine	x	✓
Dexamethasone	x	x

- Recursion conducted several AI-enabled experiments in April 2020 to investigate therapeutic potential for COVID-19
 - Included FDA-approved drugs, EMA-approved drugs, and compounds in late-stage clinical trials for the modulation of the effect of SARS-CoV-2 on human cells
- Experiments were compiled into the **RxRx19 dataset** (860+ GB of data) and **made publicly available** to accelerate the development of methods and pandemic treatments.
- **Recursion OS correctly predicted 8 of 9 clinical trials** associated with early and late-stage COVID-19

Transformational collaborations provide multiple potential value inflection points

Illustrative example of potential value inflection points





Clinical: CCM

SYCAMORE Clinical Trial : REC-994 for CCM Phase 2 Underway

PREVALENCE & STANDARD OF CARE

~360,000

Symptomatic US + EUS,
>1 million patients worldwide
live with these lesions today

>5x larger US patient population than other rare
diseases like Cystic Fibrosis (>31k patients)

No approved therapy

- No other potential therapeutic in industry-sponsored clinical development
- Most patients receive no treatment or only symptomatic therapy

CAUSE

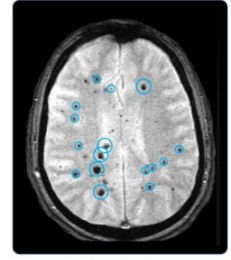
LOF mutations in genes *CCM1*, *CCM2* & *CCM3*, key for maintaining the structural integrity of the vasculature due to unknown mechanisms

PATHOPHYSIOLOGY & REASON TO BELIEVE

Vascular malformations of the CNS leading to focal neurological deficits, hemorrhage and other symptoms



Efficacy in Recursion OS as well as functional validation via scavenging of massive superoxide accumulation in cellular models; reduction in lesion number with chronic administration in mice



Vascular malformations (cavernomas)



Julia – living with CCM

KEY ELEMENTS

- Targeting **sporadic and familial symptomatic CCM** patients with *CCM1*, *CCM2*, and *CCM3* mutations
- Superoxide scavenger, small molecule
- Phase 2 trial initiated in Q1 2022
- US & EU **Orphan Drug Designation**
- Oral dosing



Clinical: NF2

POPLAR Clinical Trial : REC-2282 for NF2 Phase 2/3 Underway

PREVALENCE & STANDARD OF CARE

~33,000 Treatable US + EU

No approved therapy

- There are no approved drugs for NF2
- Surgery is standard of care (when feasible)
- Location may make complete resection untenable, leading to hearing loss, facial paralysis, poor balance and visual difficulty

CAUSE

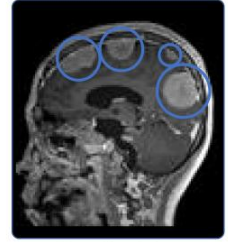
LOF mutations in NF2 tumor suppressor gene, leading to deficiencies in the tumor suppressor protein merlin

PATHOPHYSIOLOGY & REASON TO BELIEVE

Inherited rare CNS tumor syndrome leading to loss of hearing and mobility, other focal neurologic deficits



Efficacy in Recursion OS, cellular, and animal models; suppression of aberrant ERK, AKT, and S6 pathway activation in a Phase 1 PD Study in NF2 patient tumors



Intracranial meningiomas



Ricki – living with NF2

KEY ELEMENTS

- Targeting familial and sporadic NF2 meningioma patients
- HDAC inhibitor, small molecule
- Oral dosing
- Phase 2/3 trial initiated in Q2 2022
- Fast-Track and US & EU Orphan Drug Designation



Clinical: FAP

TUPELO Clinical Trial : REC-4881 for FAP Phase 2 Underway

PREVALENCE & STANDARD OF CARE

~50,000 Diagnosed US + EU

No approved therapy

- Colectomy during adolescence (with or without removal of rectum) is standard of care
- Post-colectomy, patients still at significant risk of polyps progressing to GI cancer
- Significant decrease in quality-of-life post-colectomy (continued endoscopies, surgical intervention)

CAUSE

Inactivating mutations in the tumor suppressor gene *APC*

PATHOPHYSIOLOGY & REASON TO BELIEVE

Polyps throughout the GI tract with extremely high risk of malignant transformation

Efficacy in the Recursion OS showed specific MEK 1/2 inhibitors had an effect in context of *APC* LOF. Subsequent *APC*^{min} mouse model showed potent reduction in polyps and dysplastic adenomas



Polyps Found in Colon and Upper GI Tract

KEY ELEMENTS

- Targeting **classical FAP patients (with *APC* mutation)**
- MEK inhibitor, small molecule
- Oral dosing
- Phase 2 trial initiated in Q3 2022
- **Fast-Track** and US & EU **Orphan Drug Designation**

Clinical: AXIN1 or APC

Clinical Program : REC-4881 for AXIN1 or APC Mutant Cancers

PREVALENCE & STANDARD OF CARE

~65,000 Treatable US + EU5

Substantial need for developing therapeutics for patients harboring mutations in *AXIN1* or *APC*, as **these mutations are considered undruggable**

To our knowledge, REC-4881 is the **only industry sponsored small molecule therapeutic** designed to enroll solid tumor patients harboring mutations in *AXIN1* or *APC*

CAUSE

LOF mutations in *AXIN1* or *APC* tumor suppressor genes

PATHOPHYSIOLOGY & REASON TO BELIEVE

Alterations in the **WNT pathway** are found in a **wide variety of tumors** and confer poor prognosis and resistance to standard of care



Efficacy in the Recursion OS and favorable results in PDX models harboring *AXIN1* or *APC* mutations vs wild-type leading to a significant PFS benefit in HCC and Ovarian tumors



KEY ELEMENTS

- Targeting **solid tumors with *AXIN1* or *APC* mutant cancers**
- MEK inhibitor, small molecule
- Oral dosing
- Finalize design of a Phase 1b/2 biomarker-enriched trial
- Initiate Phase 1b/2 trial in select tumor types in early 2024



Gross morphology of HCC

Clinical: C. Difficile

Clinical Trial : REC-3964 for C. Difficile Phase 1 Underway

PREVALENCE & STANDARD OF CARE

~730,000 Diagnosed US + EU5

Standard of care includes antibiotic therapies which can further impair gut flora, and lead to relapse

CAUSE

C. difficile toxins from colonizing bacterium causes degradation of colon cell junction, toxin transit to bloodstream, and morbidity to host

KEY ELEMENTS

- Selective C. diff toxin inhibitor, small molecule
- **Non-antibiotic approach** with potential for combination with SOC and other therapies
- Designed for **selective antitoxin pharmacology** to target infection
- FIH Phase 1 trial initiated in Q3 2022

PATHOPHYSIOLOGY & REASON TO BELIEVE

Highly recurrent infectious disease with severe diarrhea, colitis, and risk of toxic megacolon, sepsis, and death



Recursion OS identified a new chemical entity for recurrent C. difficile infection and potentially prophylaxis via glycosyl transferase inhibition with potential to be orally active



TRIAL UPDATE

- Enrollment is progressing
- In several SAD cohorts and at least one MD cohort, REC-3964 has been extremely safe and well tolerated
- Complete safety and PK data **readout expected 2H 2023**



Colleen – lived with rCDI

