RELAY®
THERAPEUTICS

Analyst & Investor Event

June 27, 2022

Disclaimer

This presentation contains forward-looking statements and information about our current and future prospects and our operations and financial results, which are based on currently available information. All statements other than statements of historical facts contained in this presentation, including statements regarding our strategy, future financial condition, future operations, projected costs, prospects, plans, objectives of management and expected market growth, are forward-looking statements. In some cases, you can identify forward-looking statements by terminology such as ''aim,'' ''anticipate,'' ''assume,'' ''believe,'' ''contemplate,'' ''continue,'' ''could,'' ''design,'' ''due,'' ''estimate,'' ''expect,'' ''goal,'' ''intend,'' ''may,'' ''objective,'' ''opportunity,'' ''plan,'' ''predict,'' ''positioned,'' ''potential,'' ''seek,'' ''should,'' ''target,'' ''will,'' ''would'' and other similar expressions that are predictions of or indicate future events and future trends, or the negative of these terms or other comparable terminology. These forward-looking statements include express or implied statements about the initiation, timing, progress and results of our current and future clinical trials and current and future preclinical studies of our product candidates; the timing of disclosures regarding our pipeline and additional clinical data for RLY-4008 and initial clinical data for RLY-2608; the potential therapeutic benefits of our product candidates, including potential efficacy and tolerability, and combination potential of our product candidates; whether preliminary results from our preclinical or clinical trials will be predictive of the final results of the trials or any future clinical trials of our product candidates; the possibility that unconfirmed results from these trials will not be confirmed by additional data as the clinical trials progress; the competitive landscape and market opportunities for our product candidates; the expected strategic benefits under our collaborations; our ability to successfully establish or maintain collaborations or strategic relationships for our product candidates; expectations regarding current and future interactions with the U.S. Food and Drug Administration (FDA); our ability to manufacture our product candidates in conformity with the FDA's requirements; the capabilities and development of our Dynamo™ platform; our financial performance; the effect of the COVID-19 pandemic, including mitigation efforts and economic effects, on any of the foregoing or other aspects of our business operations, including but not limited to our preclinical studies and future clinical trials; our plans to develop, manufacture and commercialize our current product candidates and any future product candidates; and the implementation of our business model and operating plans as well as the strategic plans for our business, current product candidates and any future product candidates.

Actual results or events could differ materially from the plans, intentions and expectations disclosed in the forward-looking statements we make due to a number of risks and uncertainties. These and other risks, uncertainties and important factors are described in the section entitled "Risk Factors" in our most recent Annual Report on Form 10-K or most recent Quarterly Report on Form 10-Q, as well as any subsequent filings with the Securities and Exchange Commission. Any forward-looking statements represent our views only as of the date of this presentation and we undertake no obligation to update or revise any forward-looking statements, whether as a result of new information, the occurrence of certain events or otherwise. We may not actually achieve the plans, intentions or expectations disclosed in our forward-looking statements, and you should not place undue reliance on our forward-looking statements. No representations or warranties (expressed or implied) are made about the accuracy of any such forward-looking statements.

Certain information contained in this presentation relates to or is based on studies, publications, surveys and other data obtained from third-party sources and our own internal estimates and research. While we believe these third-party studies, publications, surveys and other data to be reliable as of the date of this presentation, we have not independently verified, and make no representation as to the adequacy, fairness, accuracy or completeness of, any information obtained from third-party sources. In addition, no independent source has evaluated the reasonableness or accuracy of our internal estimates or research and no reliance should be made on any information or statements made in this presentation relating to or based on such internal estimates and research.

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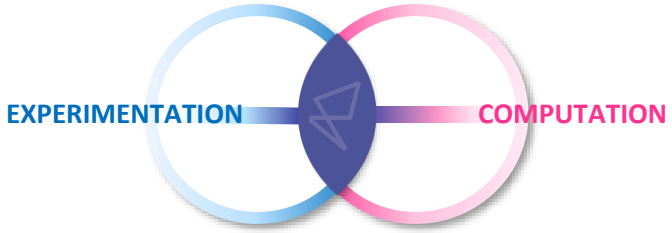
Relay Tx – Patient-Driven & Execution Focused

New Breed of Biotech



Clear Focus

Validated Targets	Therapeutic Areas	Modalities
Innovators	Oncology	Small molecules
Challengers	Genetic diseases	Degraders

Validated Approach

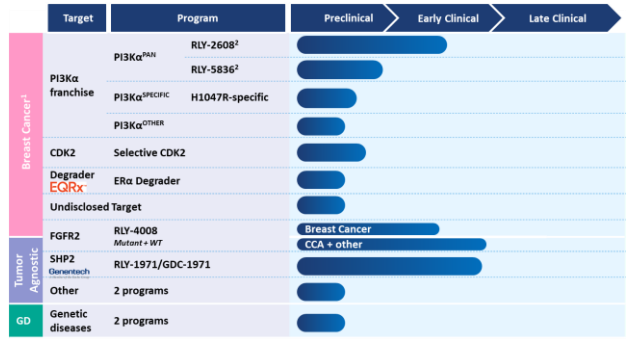
Clinical

- FGFR2 *RLY-4008*
- PI3Kα^{PAN} *RLY-2608*
- SHP2 *RLY-1971*

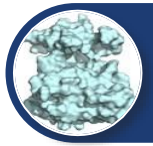
Pre-clinical

- PI3Kα^{PAN} *RLY-5836*
- Selective CDK2
- ERα Degrader

Execution-Focused



2022 Commitments & Disclosures to be Made Today

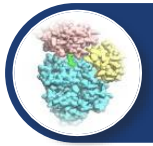


RLY-4008 (FGFR2)

- ✓ Expansion cohorts open
- Additional data update in 2H 2022
- \+ Regulatory & data update
- \+ Pivotal cohort commenced

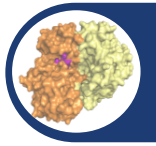
RLY-2608 (PI3Kα^{PAN})

- ✓ Clinical trial initiated
- \+ RLY-5836 - PI3Kα^{PAN}



RLY-1971 (SHP2)

- ✓ GDC-6036 (KRAS G12C) combination trial initiated in July 2021



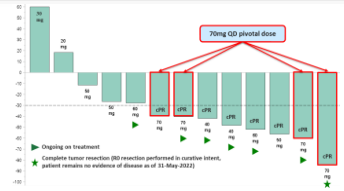
Next target in pipeline

- → Selective CDK2 inhibitor
- \+ ERα degrader

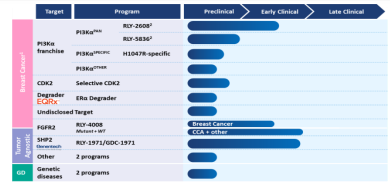
✓ Previously disclosed → To be disclosed today \+ Additional disclosure today

Agenda

1. RLY-4008 Regulatory Update



2. Breast Cancer Portfolio



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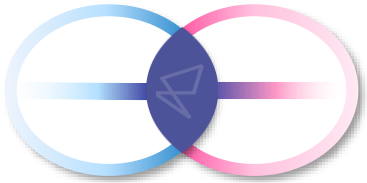


4. Future Guidance and Q&A

1

RLY-4008: FGFR2 Selective Inhibitor – Alignment on Registrational Trial Design

Extensive Dose Finding Completed

Dose Escalation (Opened Sep 2020)
Twice-daily, intermittent, & once daily schedules explored
70 mg QD selected

Dose Expansion (Opened Dec 2021)
70 mg QD ongoing

Pivotal Expansion (Commenced)
70 mg QD selected

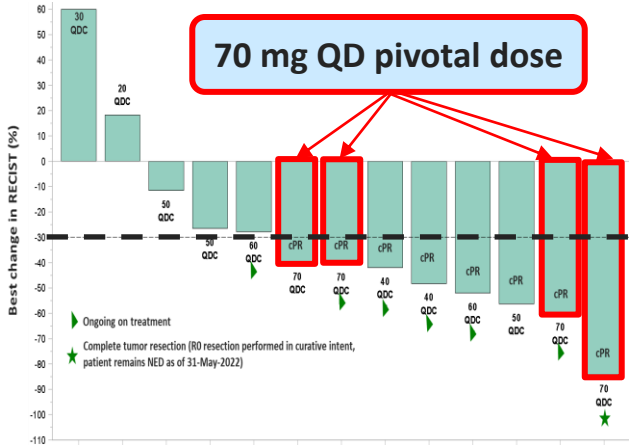
Pivotal Study Aligned with FDA

Pivotal Expansion
FGFR2-fusion+ cholangiocarcinoma (CCA) **without prior FGFRi** (n=100)

Supportive cohorts
- FGFR2-fusion+ CCA **with prior FGFRi** (n=50)
- FGFR2-fusion+ CCA **with no prior treatment** (n=20)
- FGFR2 amps/mut CCA (n=20)

Encouraging Efficacy

***FGFR2*-fusion+ cholangiocarcinoma (CCA) without prior FGFRi**



Project Optimus shaped trial design

Alignment with FDA on single arm, trial design for FGFRi-naïve FGFR2-fusion CCA to potentially support accelerated approval

Potential for RLY-4008 as an important treatment option for patients

Preliminary data as of 19-April-2022

2

Relay Tx's Emerging Breast Cancer Franchise

Goals: Greater selectivity → Better combinability → Increased efficacy

Relay Tx's PI3Kα Franchise

PI3Kα^{PAN}

- RLY-2608* Pan-mutant selective allosteric inhibitor
- RLY-5836* Pan-mutant selective allosteric inhibitor
- Additional chemically distinct programs

PI3Kα^{SPECIFIC}

- H1047R-specific allosteric inhibitor
- Additional chemically distinct programs

PI3Kα^{OTHER}

- Other mutant-selective mechanisms

Relay Tx Rational Combination Partners

- Selective CDK2 Inhibitor
- ERα Degrader
- RLY-4008 (Selective FGFR2)
- Pan-mutant + Mutant Specific PI3Kα Combinations
- RLY-1971 (SHP2)
- Undisclosed Target

New programs disclosed today

*Covers H1047X, E542X, E545X hot spots

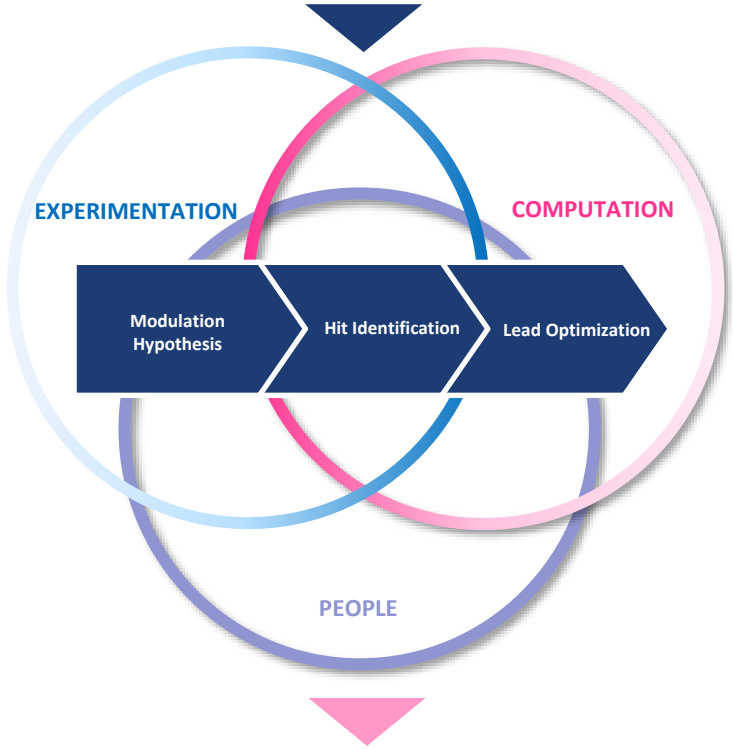
Relay Tx – Understanding Next Generation Drug Discovery: 4 Questions

The "What"

What problems do we work on?

The "Where"

Where do we focus?



The "How"

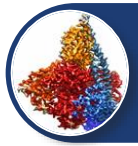
How do we work to solve problems?

The Impact

How do we measure output?

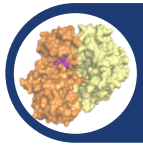
Relay Tx – Capital, Team & Execution Focus to Deliver on Anticipated Milestones

Breast Cancer Franchise



RLY-2608
(PI3Kα^{PAN})

Initial data
in 1H 2023



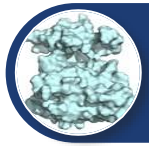
Selective CDK2

Clinical start in
Q4 2023 or Q1 2024

ERα Degrader

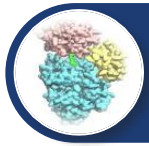
Development candidate
nomination
in 2023

Tumor Agnostic



RLY-4008
(Selective FGFR2)

Additional
data updates
in 2H 2022 & 2023



RLY-1971
(SHP2)

Atezolizumab combo
trial to be initiated
in 2H 2022

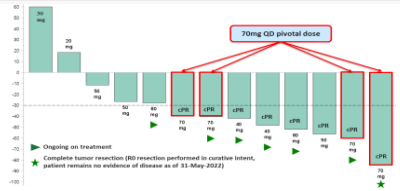
$898M

Cash, cash equivalents and investments
as of the end of Q1 2022

Current cash, cash equivalents and investments are expected to be sufficient to fund current operating plan into 2025

Agenda

1. RLY-4008 Regulatory Update



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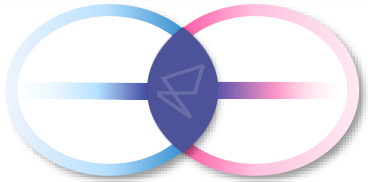


4. Future Guidance and Q&A

RLY-4008 – Context: October 2021 Clinical Data Disclosure - Dose Escalation

Dose Escalation
(Opened September 2020)

Bayesian Optimal Interval Escalation (BOIN) design

- Unresectable or metastatic solid tumors
- FGFR2-alterations per local assessment (tumor tissue or blood)
- Both FGFRi-naïve & FGFRi-treated allowed

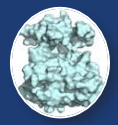
Once & twice daily schedules explored across 6 different doses

October 2021 Disclosure

Data from 2021 AACR-NCI-EORTC Molecule Targets Presentation (October 2021, n = 49 patients)

Execution → **49** patients (through October 2021)

RLY-4008 Data



- **Selectivity** → No significant hyperphosphatemia (FGFR1) or diarrhea (FGFR4) observed to-date
- **Safety and Tolerability** → Robust inhibition of FGFR2 with promising initial tolerability data
- **Early Efficacy** → 3 out of 6 fusion+ CCA FGFRi naïve patients with confirmed PRs

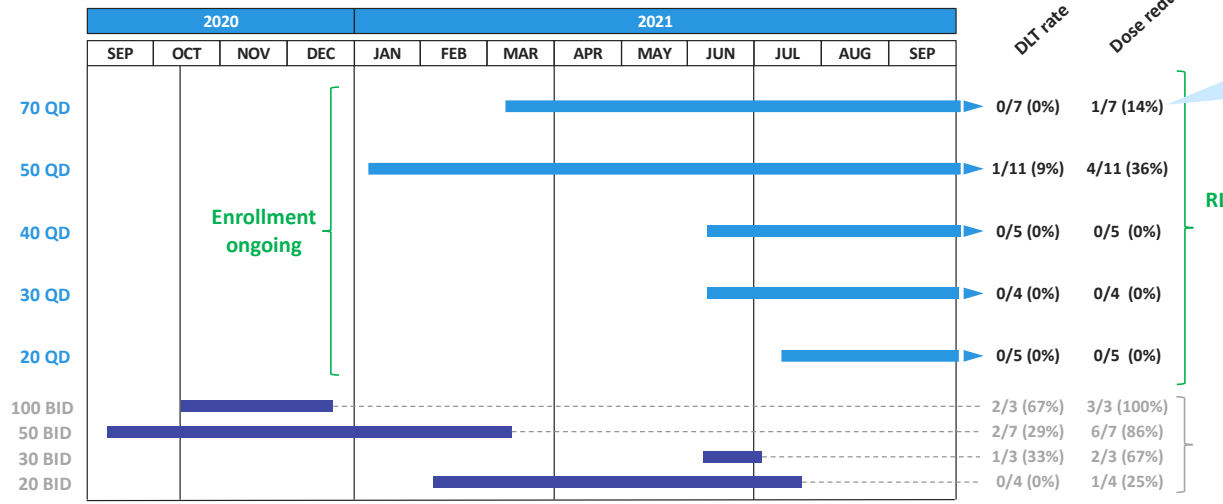
Source: RLY-4008 data as presented at 2021 AACR-NCI-EORTC Molecular Targets Conference

RLY-4008 - Dose Escalation
BID Schedule De-Prioritized & 70 mg QD Selected For Expansion Cohorts

Data from 2021 AACR-NCI-EORTC Molecule Targets Presentation (October 2021)

FGFR2 – RLY-4008 FIH Study:
Parallel Bayesian Dose Optimization Ongoing

Dose cohort enrollment periods – Bayesian dose optimization with enrichment (ongoing)



70 mg QD selected for expansion cohorts with goal to optimize efficacy given sustained 95% target engagement

BID schedule de-prioritized

In addition, intermittent dose schedule explored and deprioritized

Doses at ≥40mg resulted in 90%+ target inhibition

RLY-4008 – Continued Clinical Execution

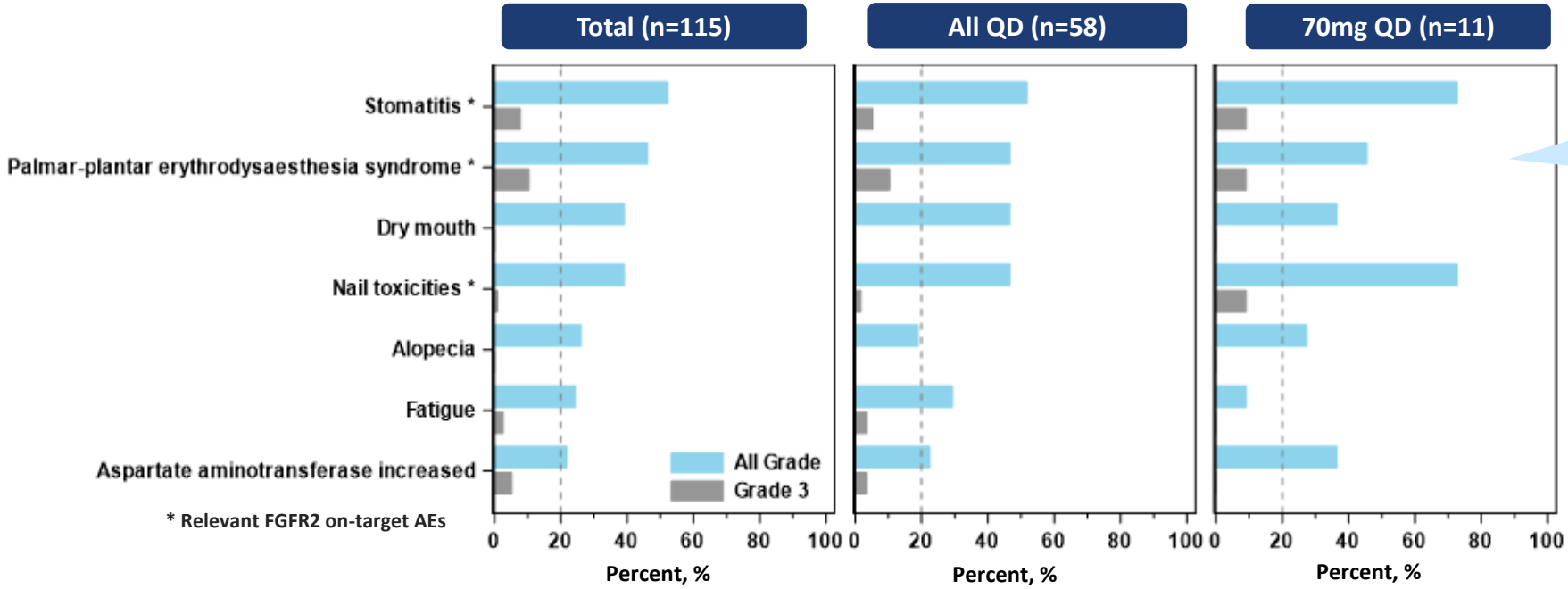
	Presentation at EORTC NCI AACR in Oct 2021 (as of 9 Sept 2021)	Relay Tx Analyst and Investor Event in June 2022 (as of 19 April 2022)		
	Total	Total	QD (once daily)	70 mg QD
Total Patients Dosed	49	115	58	11
Cholangiocarcinoma (CCA) Patients				
FGFRi pre-treated				
Fusion	25	49	25	1
Other FGFR2 alteration	3	6	2	1
FGFRi naïve				
Fusion	7*	24	13	4
Other FGFR2 alteration	5	11	6	2
Non-Cholangiocarcinoma				
Fusion	0	7	2	1
Mutation	6	13	7	1
Amplification	1	3	2	0
Other FGFR2 driven tumor	2	2	1	1
Countries Open	1	11		
Sites	11	35		

*6 evaluable

Continued robust clinical execution since the October disclosure

RLY-4008 – Treatment Emergent Adverse Events (TEAEs) Profile

TEAEs ≥20%



Most TEAEs are expected FGFR2-on target, low grade, monitorable, manageable and largely reversible

Median time on treatment (wks)	16	18	16
Dose modification due to related TEAEs			
Dose interruption (%)	38	38	55
Dose reduction (%)	21	19	36
Dose discontinuation (%)	0	0	0

70 mg QD actual dose intensity of 65 mg/day

No drug related dose discontinuation

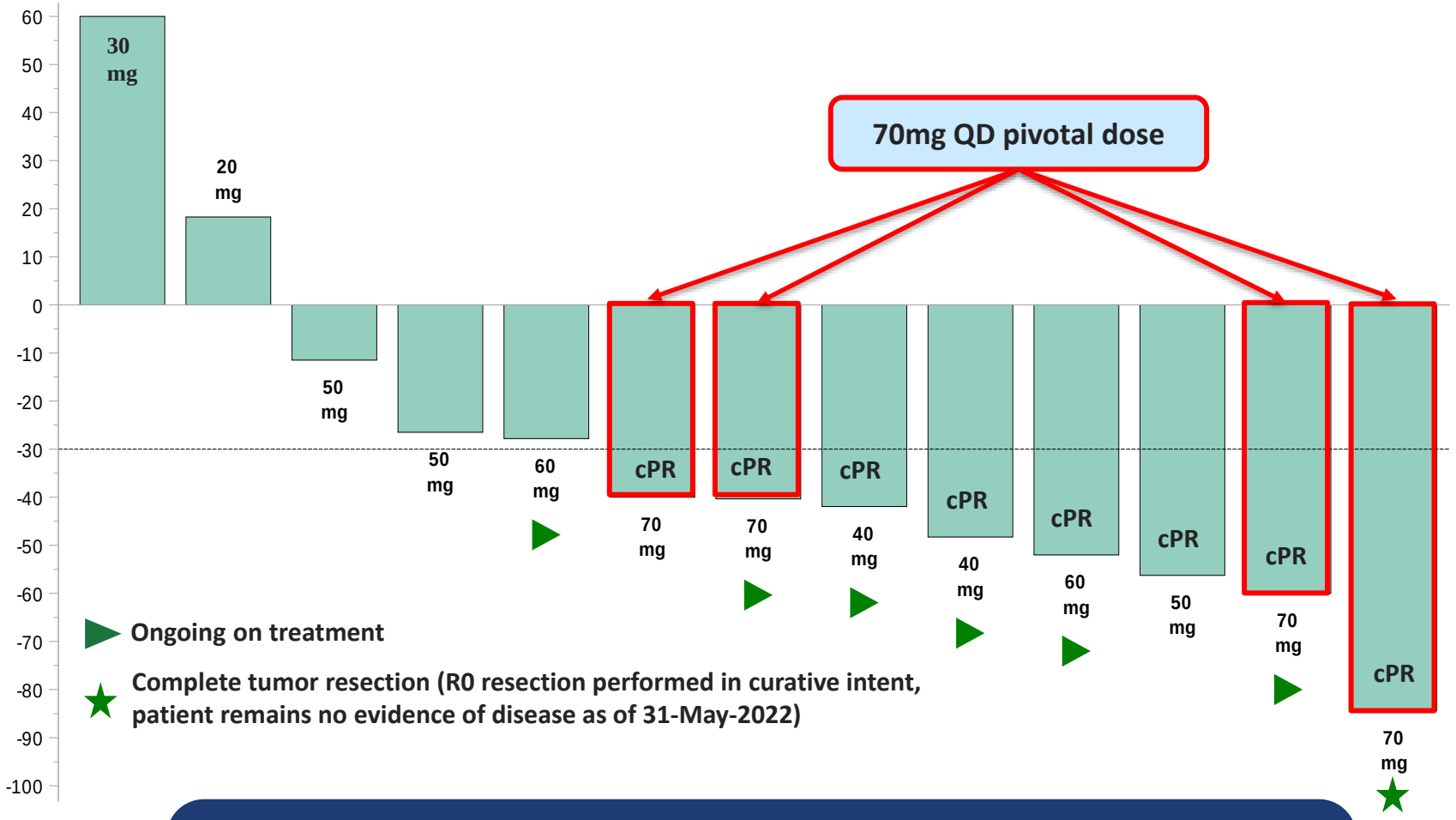
Clinically insignificant off-target hyperphosphatemia (14%, all Gr 1-2) and diarrhea (10%, all Gr 1-2) allow for optimization of FGFR2 inhibition

Note: Treatment-emergent adverse events (TEAEs) ≥ 20% in total population

Preliminary data as of 19-April-2022

RLY-4008 – Radiographic Tumor Regression Data Continue to Show Promise for FGFRi-Naïve Cholangiocarcinoma QD Patients

Best RECIST Change (%) from Baseline Based on Investigator Evaluated Response for FGFRi-Naïve Cholangiocarcinoma Patients



In October 2021 disclosure:
- **3 out of 6 fusion+ CCA FGFRi naïve patients with confirmed PRs**

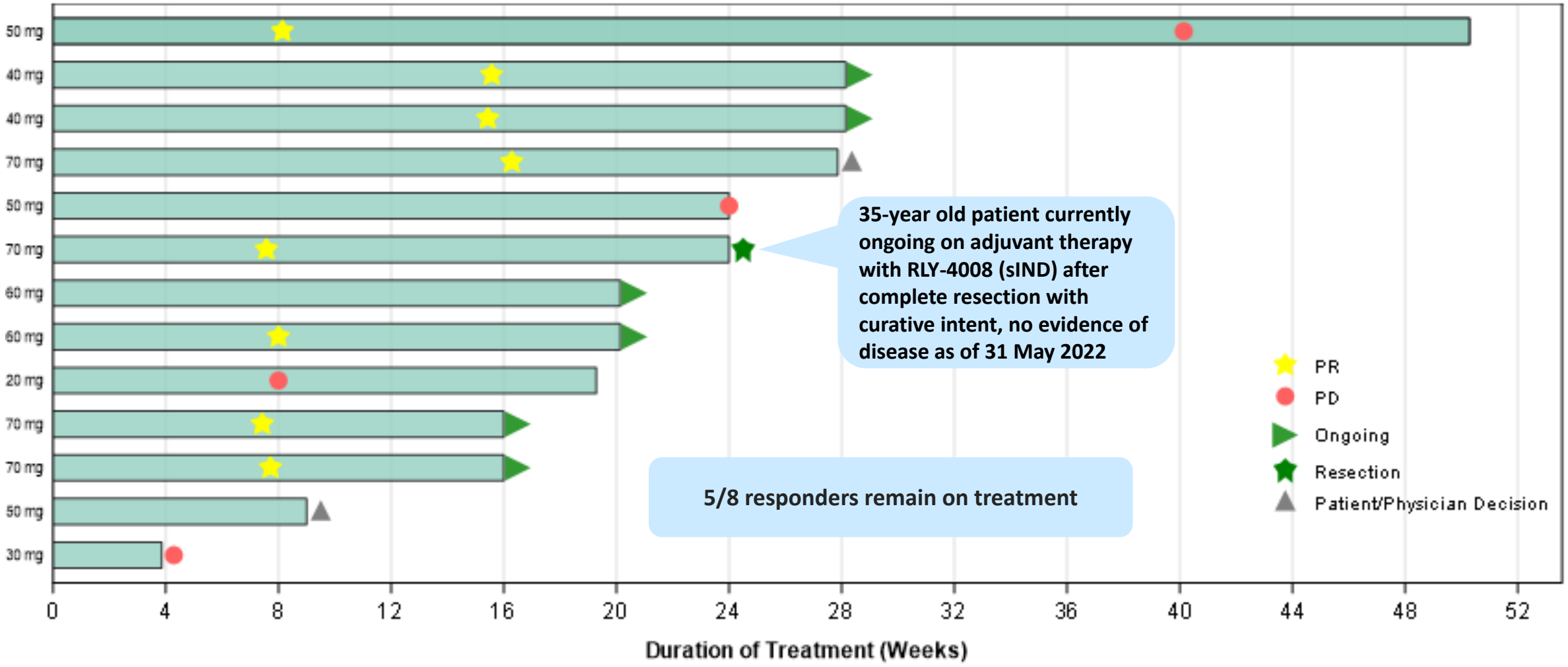
In June 2022 disclosure:
- **8/13 pts with confirmed PRs, 6 pts ongoing (62% ORR) across all once daily doses**

Approved Pan-FGFR inhibitors demonstrate 23-36% ORR in this population

cPR = confirmed partial response; ORR = overall response rate

Preliminary data as of 19-April-2022

RLY-4008 – Time on Treatment for FGFRi-Naïve Cholangiocarcinoma QD Patients



Note: All PRs in this cohort have been confirmed.

PR = partial response; PD = progressive disease

Preliminary data as of 19-April-2022

RLY-4008 - Patient with Near Complete Regression of FGFR2-Fusion, FGFRi-Naïve CCA Underwent Resection with No Evidence of Disease as of May 2022

Treatment with RLY-4008 (70 mg QD)

Treatment with RLY-4008

First Dose *Mar 2021*

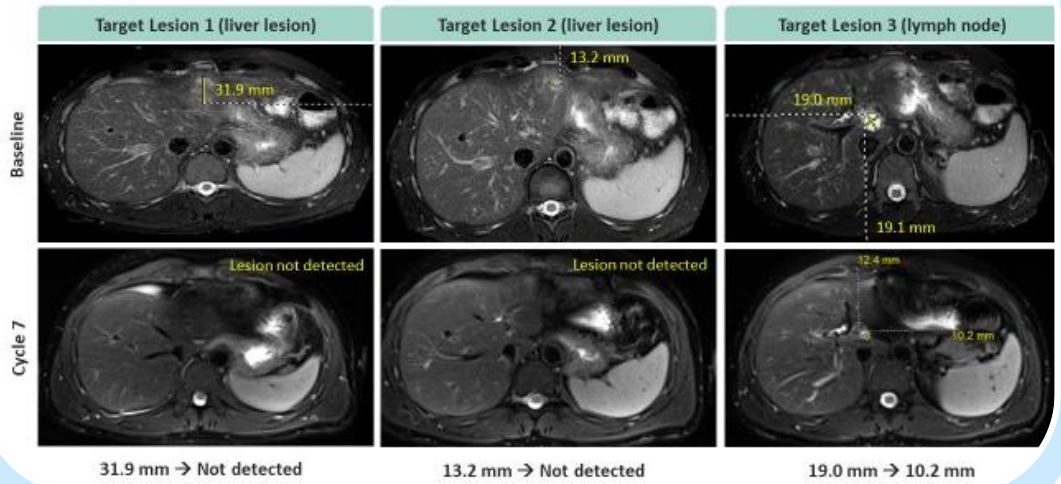
Resection *Sept 2021*

Single Patient IND *Dec 2021*

May 2022

35-year-old male with FGFR2-FLIP1 fusion ICC. Prior treatment: Gemcitabine/Cisplatin

70 mg QD dosing (no dose modification). Relevant AEs: Gr 1 dry eye, Gr 1 onycholysis, Gr 2 stomatitis



Confirmed PR -83% by RECIST v1.1

No evidence of disease

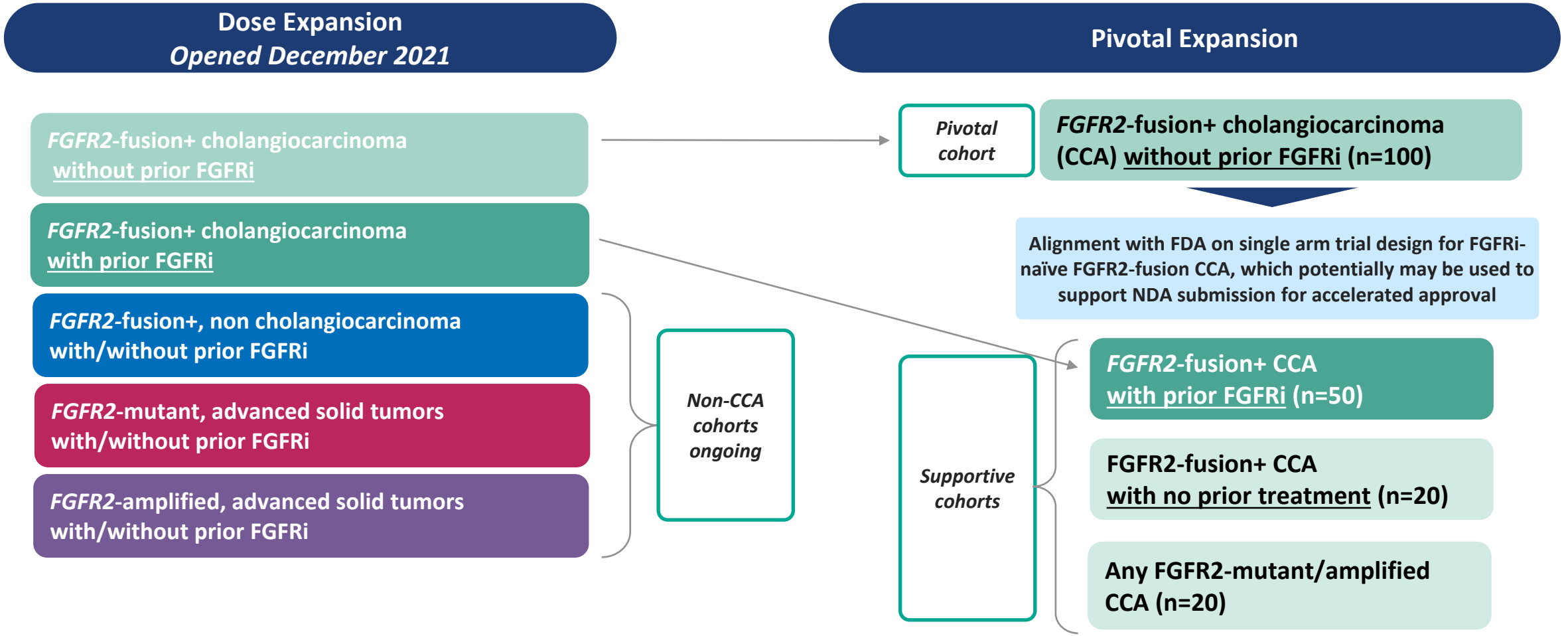
Source: RLY-4008 data as presented at 2021 AACR-NCI-EORTC Molecular Targets Conference

Courtesy: Dr. V. Sahai (U Michigan)

Absence of ctDNA was determined by the Signatera™ Residual disease test (MRD).

Preliminary data as of May 2022

RLY-4008 – Pivotal Study Design



RLY-4008 – Exemplary Clinical Execution

Completed extensive dose exploration

Twice Daily (BID) *n = 17*	Intermittent *n = 40*	Once Daily (QD) *n = 58*
100 mg	100 mg	70 mg
50 mg	90 mg	60 mg
30 mg	70 mg	50 mg
20 mg	60 mg	40 mg
	50 mg	30 mg
		20 mg

Pivotal dose

115 patients enrolled across **39** sites and **11** countries over **19** months

- Continued promising safety and tolerability profile
- Signs of promising efficacy
- Defined regulatory plan

QD: once daily, Intermittent: 3 wks on – 1 wk off, BID: twice daily

Agenda

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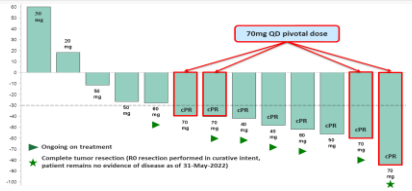

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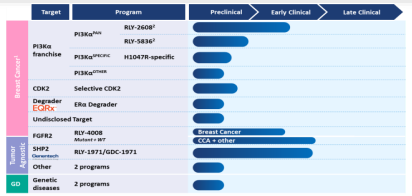

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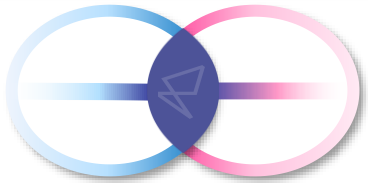


4. Future Guidance and Q&A

Breast Cancer – Challenges with Current Treatment Landscape

Current standard of care in HR+/HER2-/PI3Kαmut breast cancer

Line of Therapy	Therapies		Treatment Outcomes
Adjuvant	Multiple ETs	CDK 4/6	~25% recurrence in 5 years[1]
First Line	Multiple ETs	CDK 4/6s	PFS: ~24 months[2]
Second and Third Line	Alternative ET	Alternative CDK 4/6	PFS: 4-13 months[3]
	Alpelisib		
	Chemo		

Multiple challenges today

- Toxicity of CDK4/6 inhibitors limits potential for higher order combinations
- Lack of approved targeted therapies

Need more tolerable and durable treatment options

Goals:

- Greater selectivity
- Better combinability
- Increased efficacy

ET - Endocrine Therapy

[1]Adjuvant treatment outcome sources: SEER; van de Velde 2011 Lancet 377:321; Morden 2017 J Clin Oncol 35:2507; Jakesz 2005 Lancet 366:455; Margolese 2016 Lancet 387:849; Blok 2017 J Natl Cancer Inst 1:110; Anastrozole; Davies 2013 Lancet 381:805. [2]First Line treatment outcome sources: ESMO 2022 169P; PALOMA-2; Hortobagyi 2016 N Engl J Med 375:1738; Hortobagyi 2018 Ann Oncol 29:1541; Goetz 2017 J Clin Oncol35:3638; Johnston 2019 NPJ Breast Cancer 5:5. [3]Second and third line treatment outcome sources: Andre 2021 Ann Oncol 32:208; Rugo 2021 Lancet 22:489; Turner 2021 Oncologist; ASCO 2022 #1005.

Relay Tx's Emerging Breast Cancer Franchise

Goals: Greater selectivity → Better combinability → Increased efficacy

Relay Tx's PI3Kα Franchise

PI3Kα^{PAN}

- **RLY-2608*** Pan-mutant selective allosteric inhibitor
- **RLY-5836*** Pan-mutant selective allosteric inhibitor
- Additional chemically distinct programs

PI3Kα^{SPECIFIC}

- H1047R-specific allosteric inhibitor
- Additional chemically distinct programs

PI3Kα^{OTHER}

- Other mutant-selective mechanisms

Relay Tx Rational Combination Partners

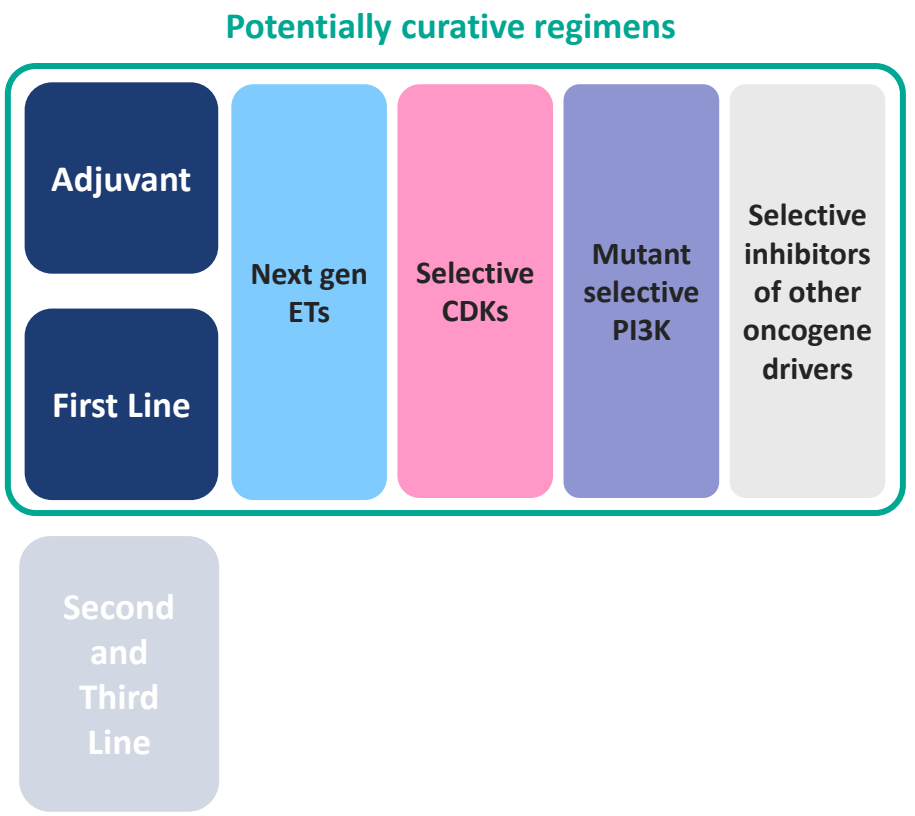
- Selective CDK2 Inhibitor
- ERα Degrader
- RLY-4008 (Selective FGFR2)
  - Demonstrated activity in FGFR2-mutant BC patient (Oct 2021 disclosure)
- Pan-mutant + Mutant Specific PI3Kα Combinations
- RLY-1971 (SHP2)
- Undisclosed Target

*Covers H1047X, E542X, E545X hot spots

Seeking to Transform the Breast Cancer Treatment Paradigm

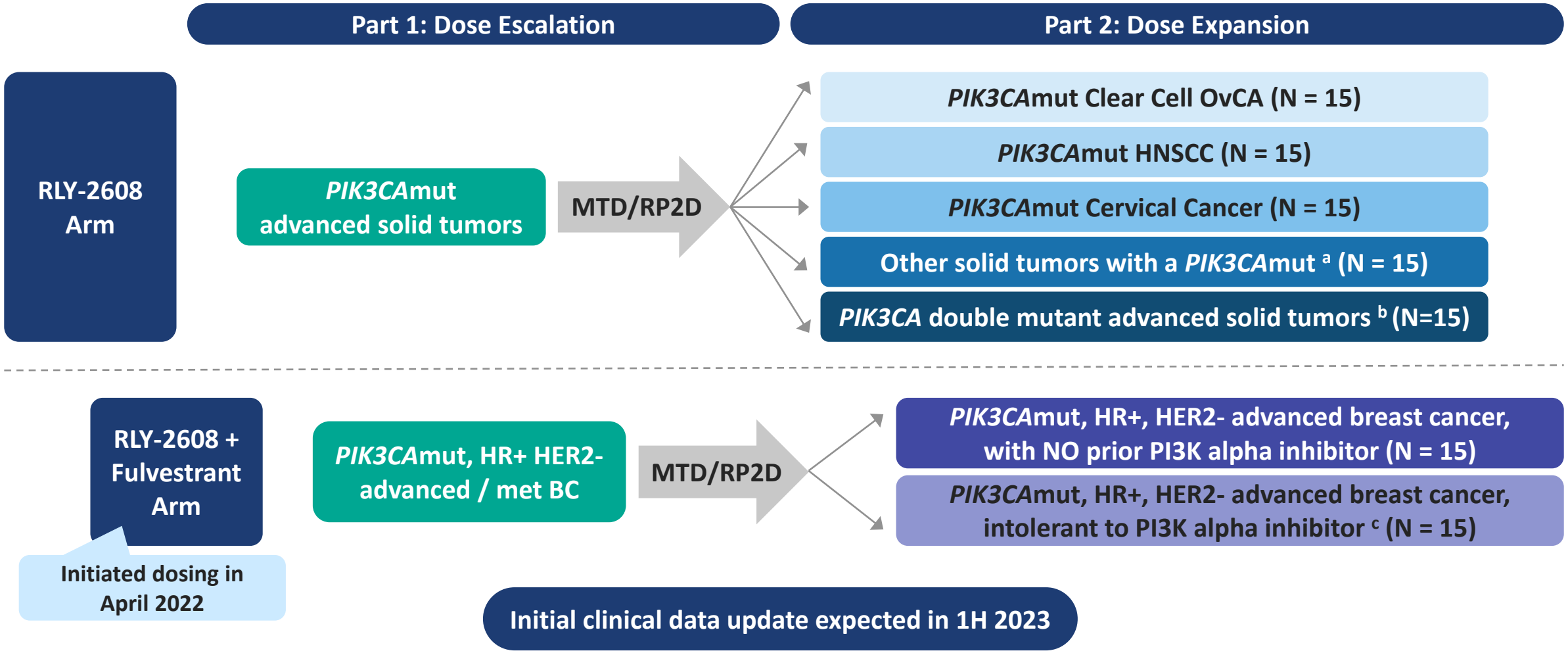
Potential near-term augmentation of standard of care*

Aspirational future standard of care



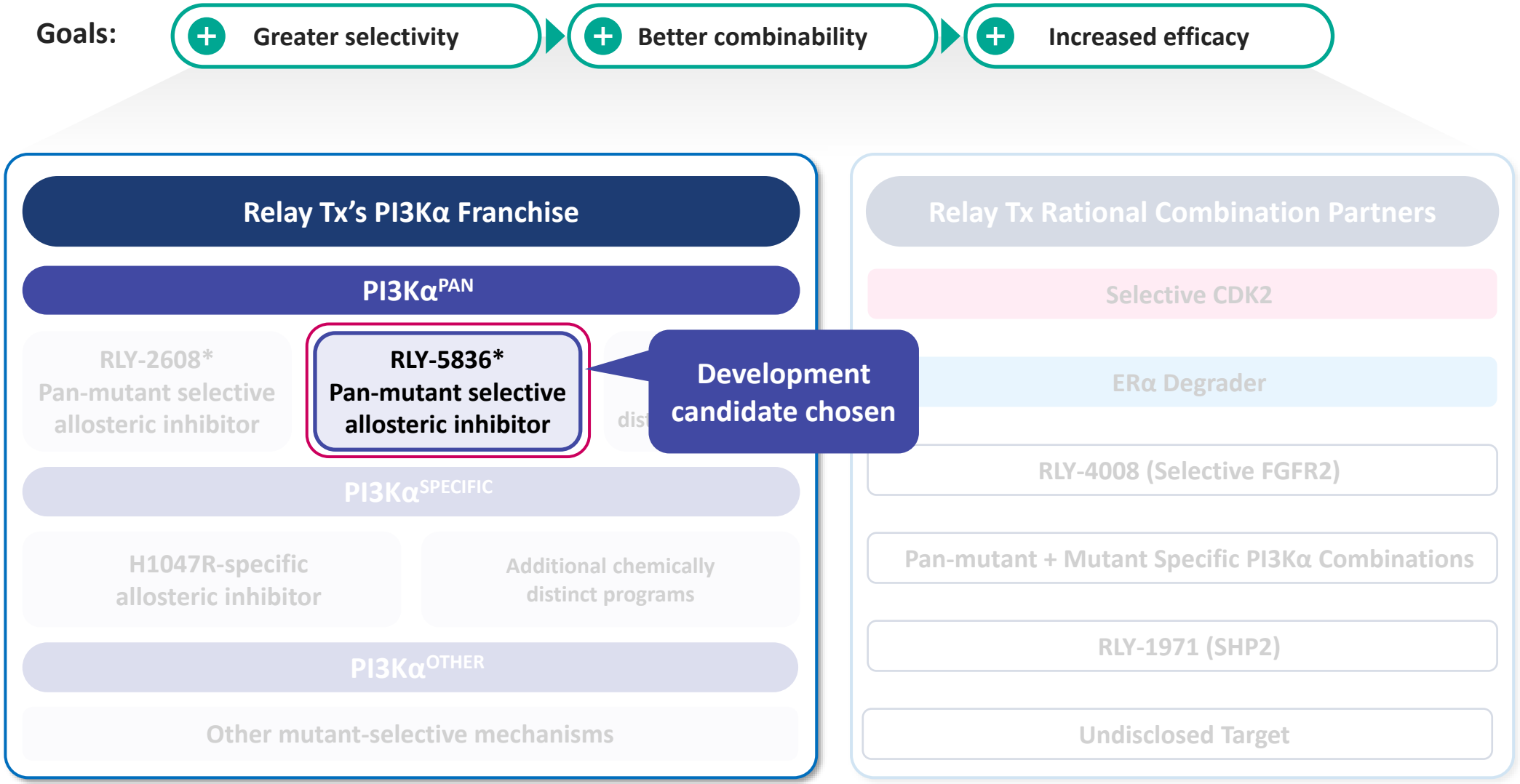
*If approved

PI3Kα – RLY-2608 Trial Design



a. Excludes PIK3CAmut clear cell OvCA (ovarian cancer), HNSCC (head & neck squamous cell carcinoma), and Cervical cancer patients; b. Double mutation defined as one major PIK3CA mutation (E542X, E545X, H1047X) + ≥1 additional PI3KCA mutation per local assessment; c. Intolerance to PI3K alpha inhibitors is defined as treatment discontinuation due to treatment-related AE (e.g., hyperglycemia, rash, diarrhea, stomatitis) other than severe hypersensitivity reaction and/or life-threatening reactions, such as anaphylaxis and Stevens-Johnson syndrome. MTD = maximum tolerated dose; RP2D = recommended phase 2 dose

Relay Tx's Emerging Breast Cancer Franchise



*Covers H1047X, E542X, E545X hot spots

Relay Tx's Emerging Breast Cancer Franchise

Goals: Greater selectivity → Better combinability → Increased efficacy

Relay Tx's PI3Kα Franchise

PI3Kα^{PAN}

- RLY-2608* Pan-mutant selective allosteric inhibitor
- RLY-5836* Pan-mutant selective allosteric inhibitor
- Additional chemically distinct programs

PI3Kα^{SPECIFIC}

- H1047R-specific allosteric inhibitor
- Additional chemically distinct programs

PI3Kα^{OTHER}

- Other mutant-selective mechanisms

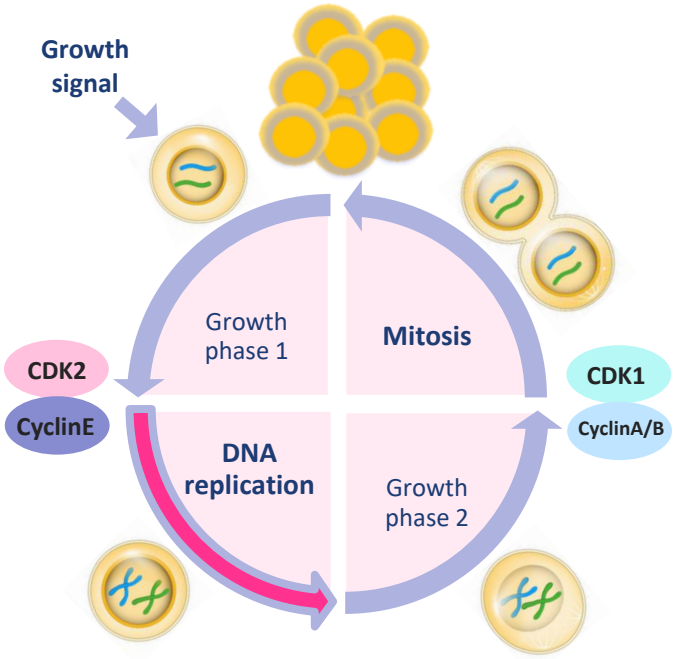
Relay Tx Rational Combination Partners

- **Selective CDK2 Inhibitor**
- ERα Degrader
- RLY-4008 (Selective FGFR2)
- Pan-mutant + Mutant Specific PI3Kα Combinations
- RLY-1971 (SHP2)
- Undisclosed Target

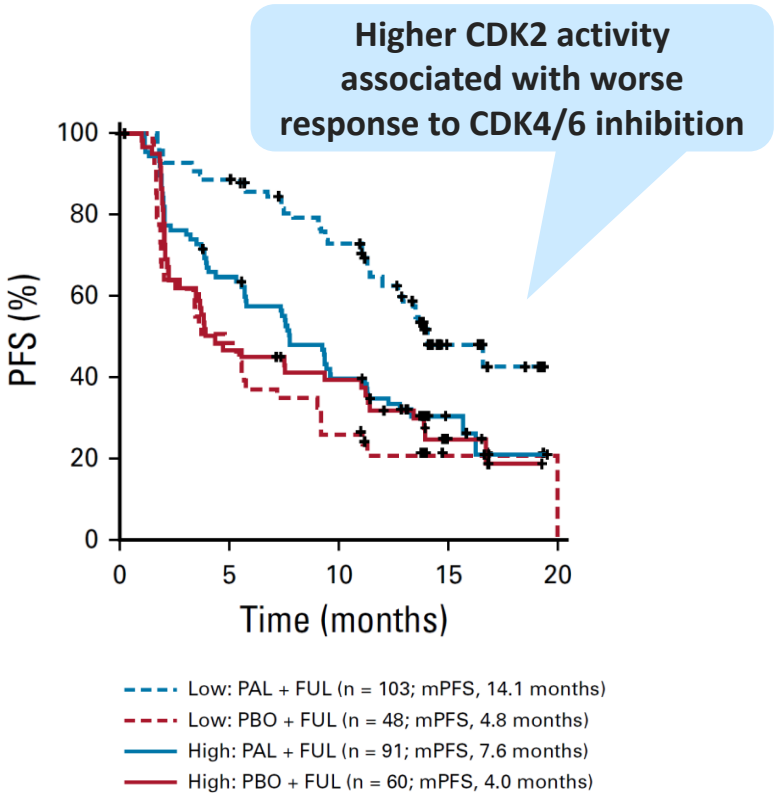
*Covers H1047X, E542X, E545X hot spots

CDK2 – A Validated Target in ER+ Breast Cancer

Cyclin E activates CDK2 to drive cancer



Clinical data demonstrate the importance of CDK2 in ER+ breast cancer



Turner, N.C., *et al*. JCO 2019

~45K patients receiving CDK4/6 inhibitors in the US

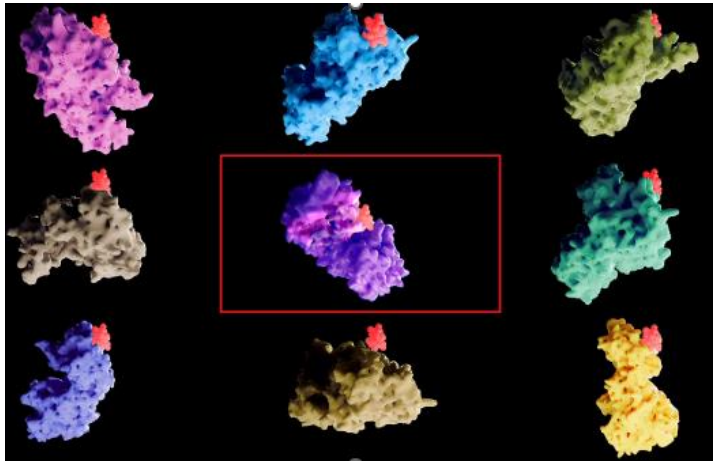
Patients receiving adjuvant CDK 4/6i	~23K
Patients receiving 1L CDK 4/6i	~18K
Patients receiving 2L CDK 4/6i	~5K

Source: Foundation Medicine Insights; SEER 2022; Decision Resources Group Breast Cancer Market Forecast, Feb 2022 (above corresponds to 2023 forecasted patient numbers); Scheidemann, 2021; Li, 2020

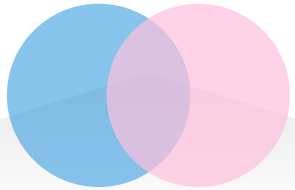
CDK2 – Relay Tx Unlocking Insights Into the Drivers of CDK2 Selectivity

Traditional approach

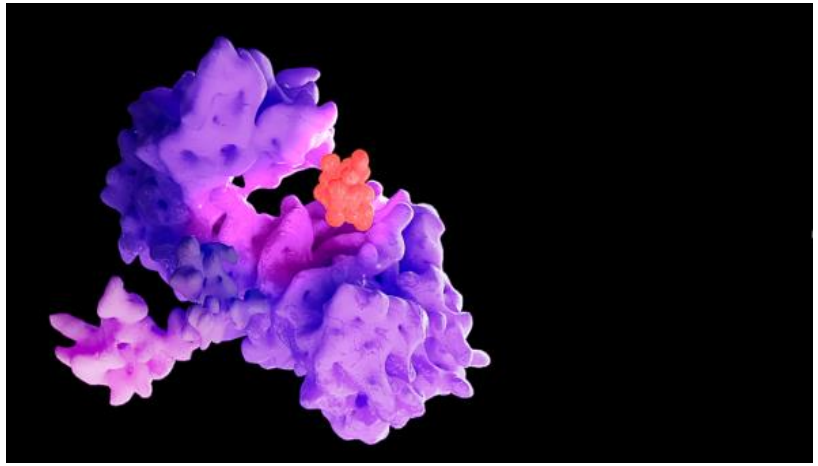
Non-selective CDK inhibitors



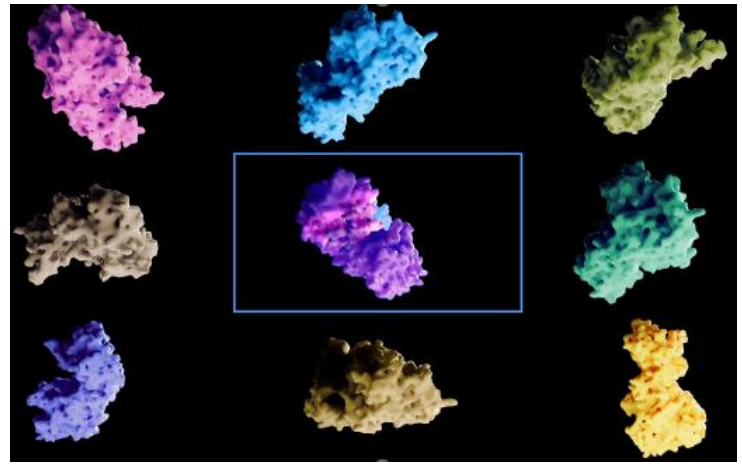
Relay Tx Approach



Motion-based insights into drivers of CDK2 selectivity…



…leveraged to design highly selective CDK2 inhibitors



CDK2 – Computational Modeling Designed to Enable Breakthrough Speed

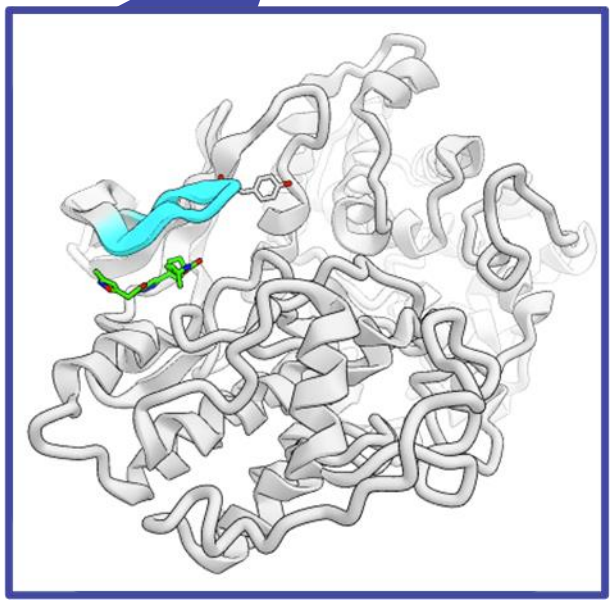
Collect MD frames
500 frames / MD
1000's of MDs

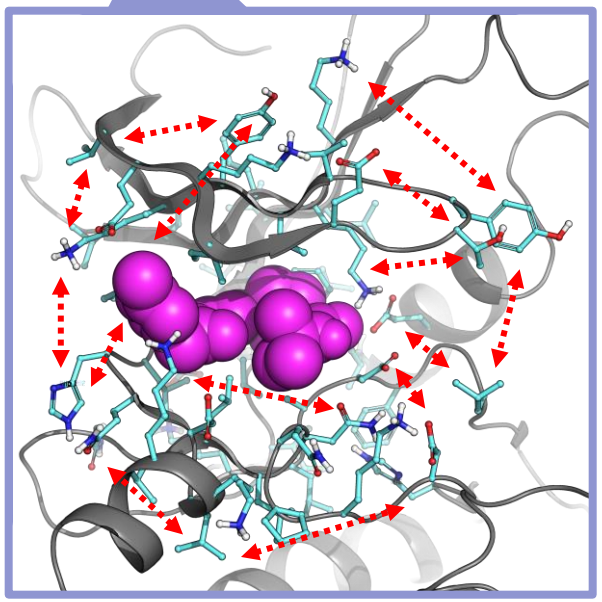
Extract features
~50,000 distances / frame

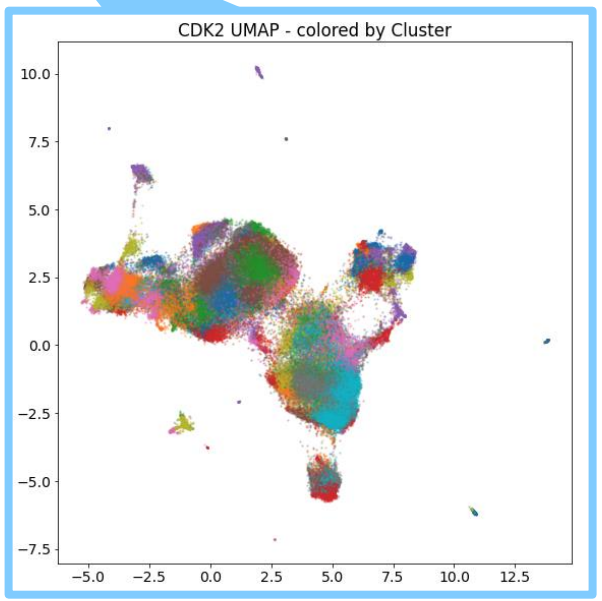
Cluster frames
100 clusters / CDK

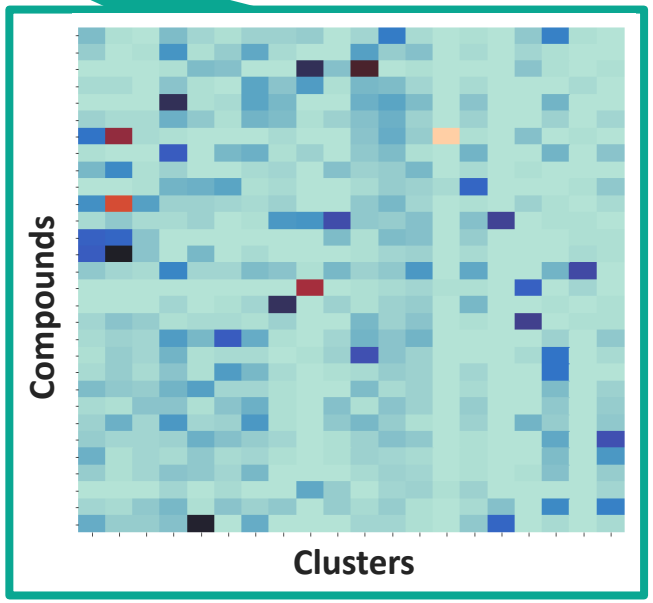
Assign cluster populations
200 cl. pops / ligand

Predict selectivity









First compound synthesized to identification of a lead compound in <1 year

CDK2 – Relay Tx's CDK2 Inhibitors Observed to be Highly Selective and Demonstrated Combination Potential with RLY-2608 in Breast Cancer

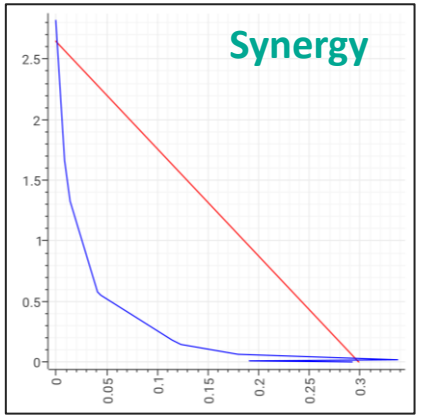
RTX-1 and RTX-2 achieved exquisite selectivity for a CDK2 inhibitor

		RTX-1	RTX-2
Biochemical Potency	CDK2/CycE IC_{50} (μM)	0.002	0.004
Biochemical Selectivity (fold over)	CDK1/CycB	300x	94x
	CDK4/CycD1	810x	270x
	CDK6/CycD3	830x	280x
	CDK9/CycT1	7900x	2400x
	GSK3β	59000x	68000x

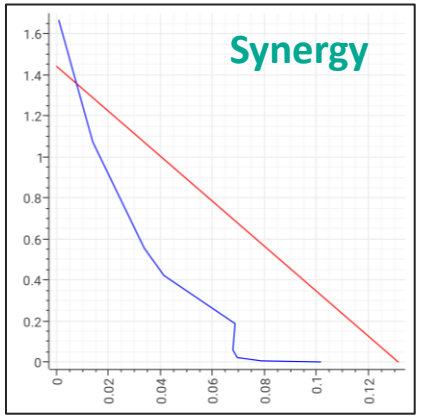
RTX-2 was synergistic with RLY-2608 ($PI3K\alpha^{PAN}$) in HR+ *PIK3CA*-mut breast cancer resistant to CDK4/6 inhibitors

RTX-2 (CDK2 inhibitor) + RLY-2608 (PI3Kα inhibitor)

CDK4/6i Sensitive



CDK4/6i Resistant



Clinical start expected in Q4 2023 or Q1 2024

Relay Tx's Emerging Breast Cancer Franchise

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Relay Tx's PI3Kα Franchise

PI3Kα^{PAN}

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*Covers H1047X, E542X, E545X hot spots

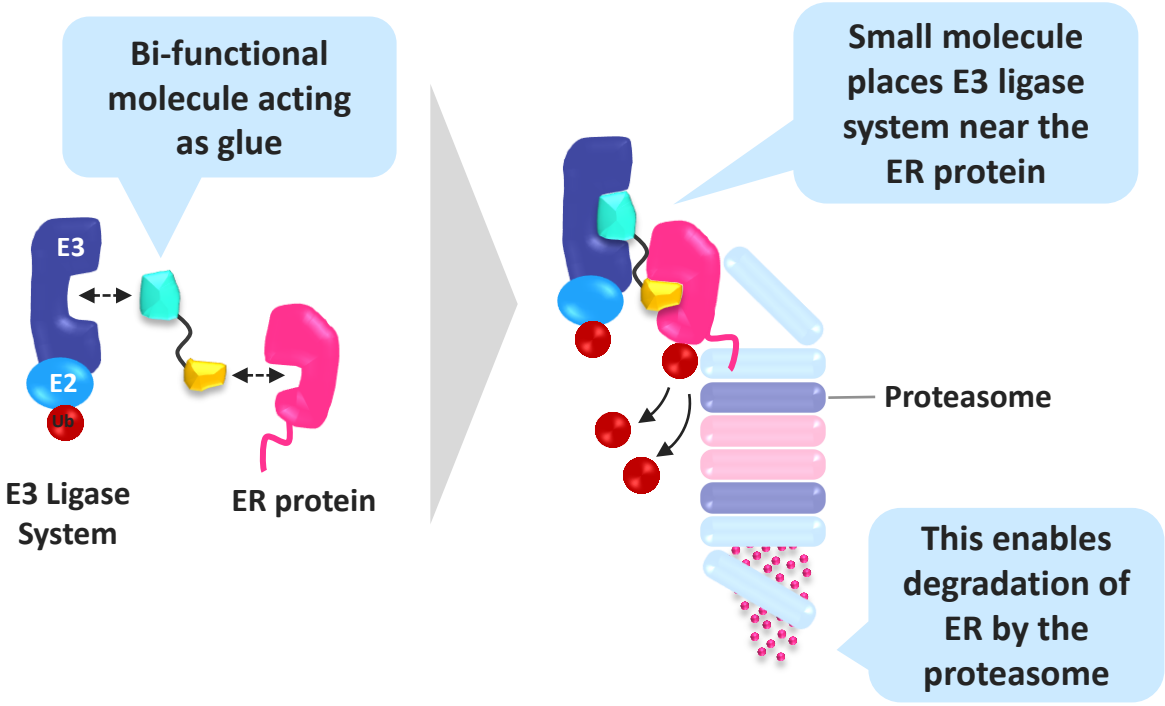
ERα Degrader – Endocrine Therapy is Central in the Treatment of HR+/HER2- Breast Cancer

Endocrine therapies are currently used in every line of therapy in HR+/HER2- Breast Cancer

Line of Therapy	Endocrine Tx
Adjuvant	Use of Endocrine Therapies
First Line	
Second Line +	

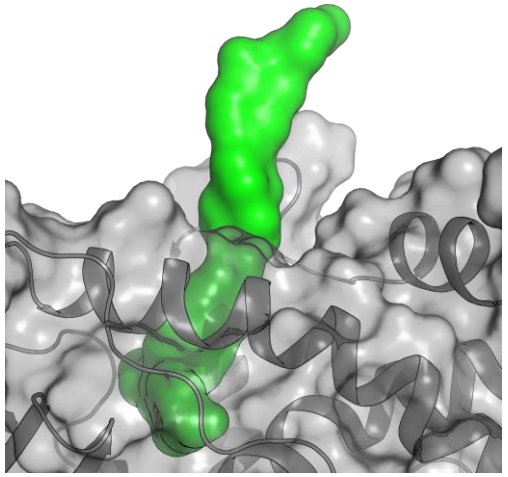
In-house ERα Degrader would further strengthen Relay Tx's Breast Cancer franchise

Enabling degradation of the estrogen receptor (ER) protein



ERα Degrader – Rational Design of Targeted Protein Degraders

Traditional Approach

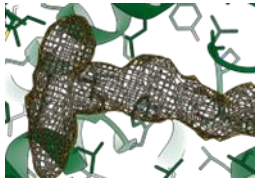


Relay Tx Approach

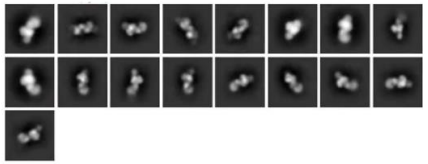
Multiple experimental tools deployed….

…to inform long-time scale MD models

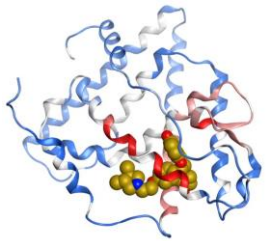
X-ray Crystallography

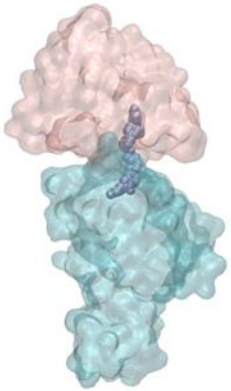


Cryo-EM



Binary complex HDX-MS

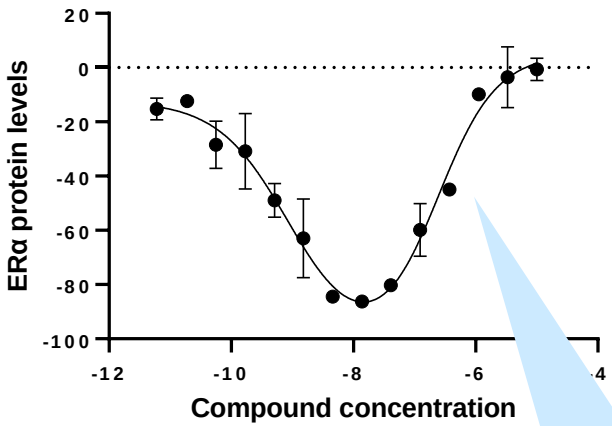




Conformational models enable effective triage of degrader design ideas

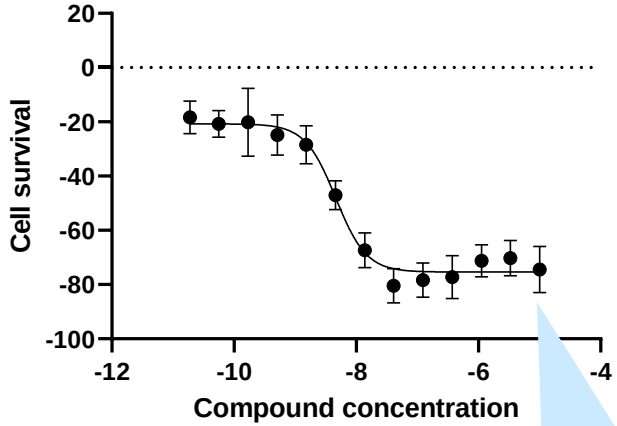
ERα Degrader – Relay Tx has Rapidly Obtained Potent Degraders of ERα

Protein degradation*



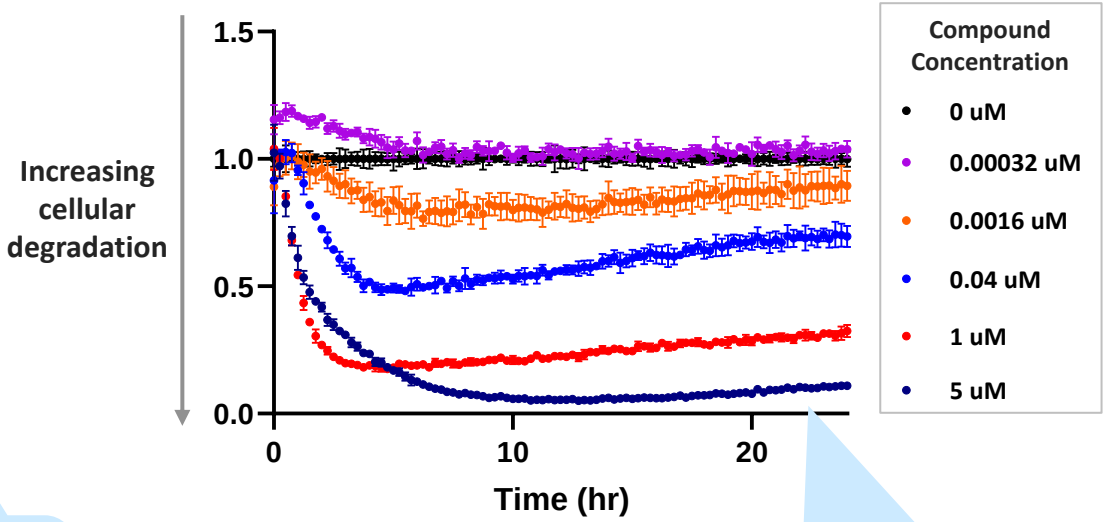
Hook effect characteristic of degraders observed with Relay Tx compound

Cellular proliferation*



Relay Tx compound potently inhibits cellular proliferation

Cellular degradation kinetics

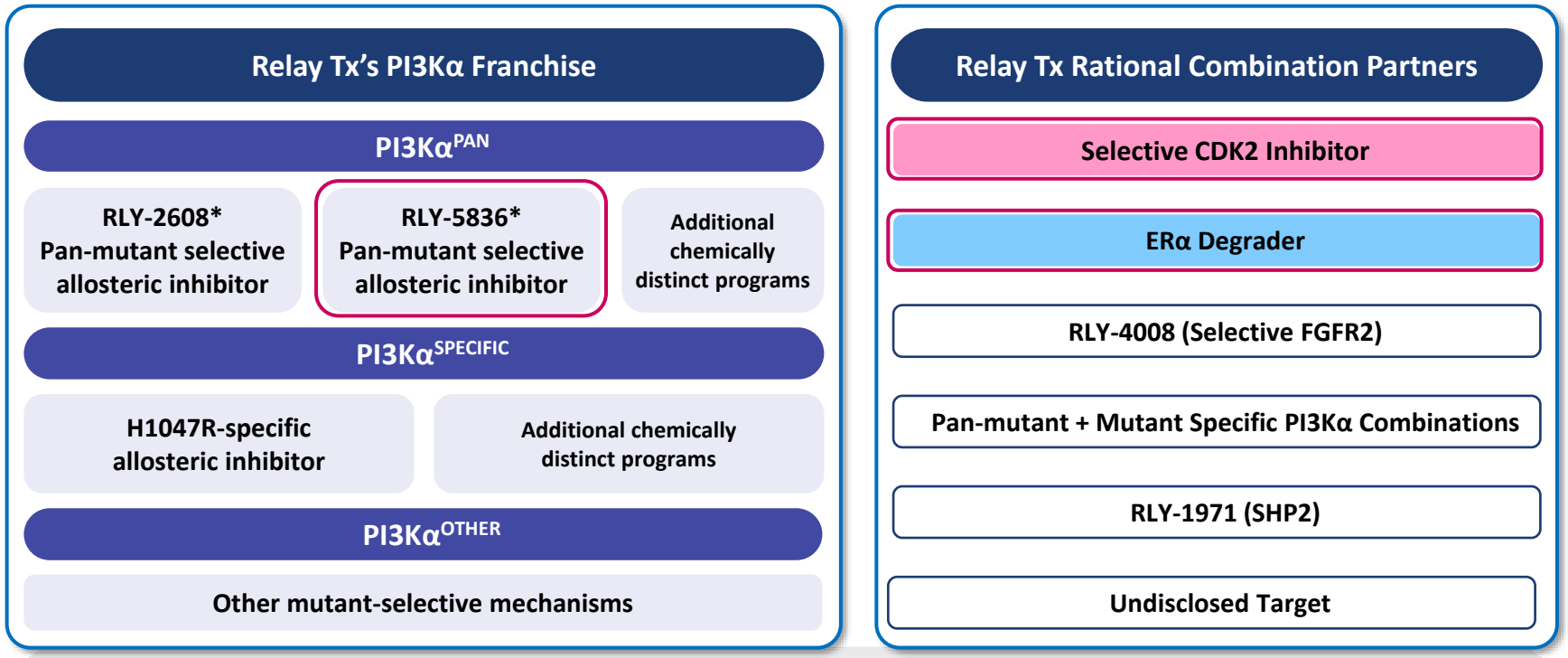


Increasing compound concentration yields faster and deeper protein degradation

Development candidate nomination expected in 2023

*MCF7-ERα -HiBiT cells

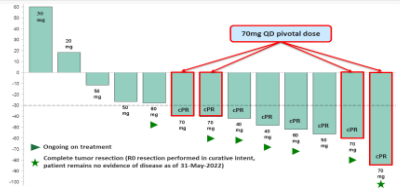
Large Breast Cancer Patient Population



~195K patients diagnosed annually in the US with HR+, HER2- breast cancer

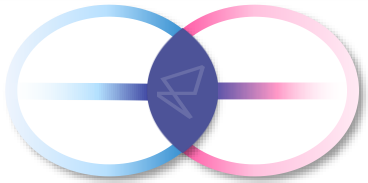
Agenda

1. RLY-4008 Regulatory Update



2. Breast Cancer Portfolio

3. Overview of Dynamo™ Platform



4. Future Guidance and Q&A

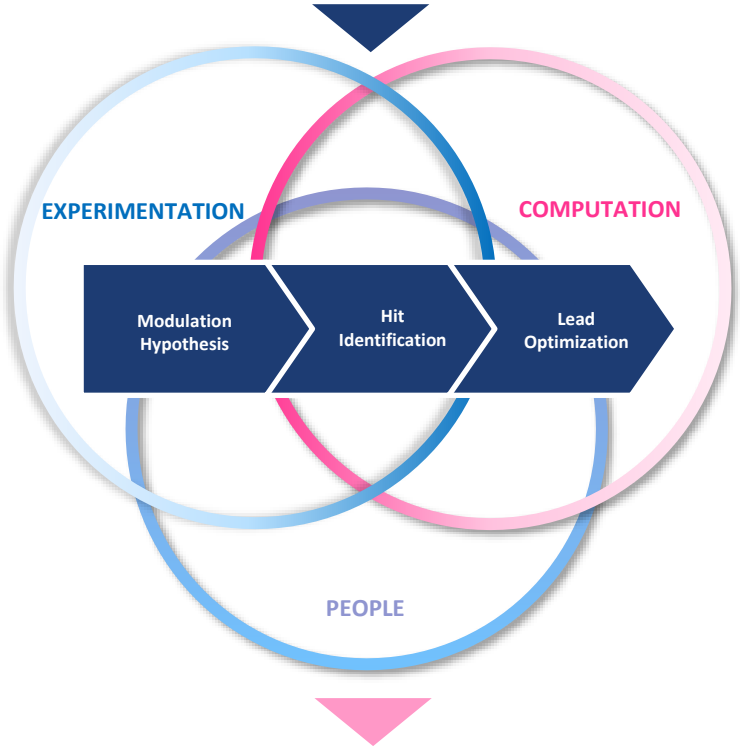
Relay Tx – Understanding Next Generation Drug Discovery: 4 Questions

The "What"

What problems do we work on?

The "Where"

Where do we focus?



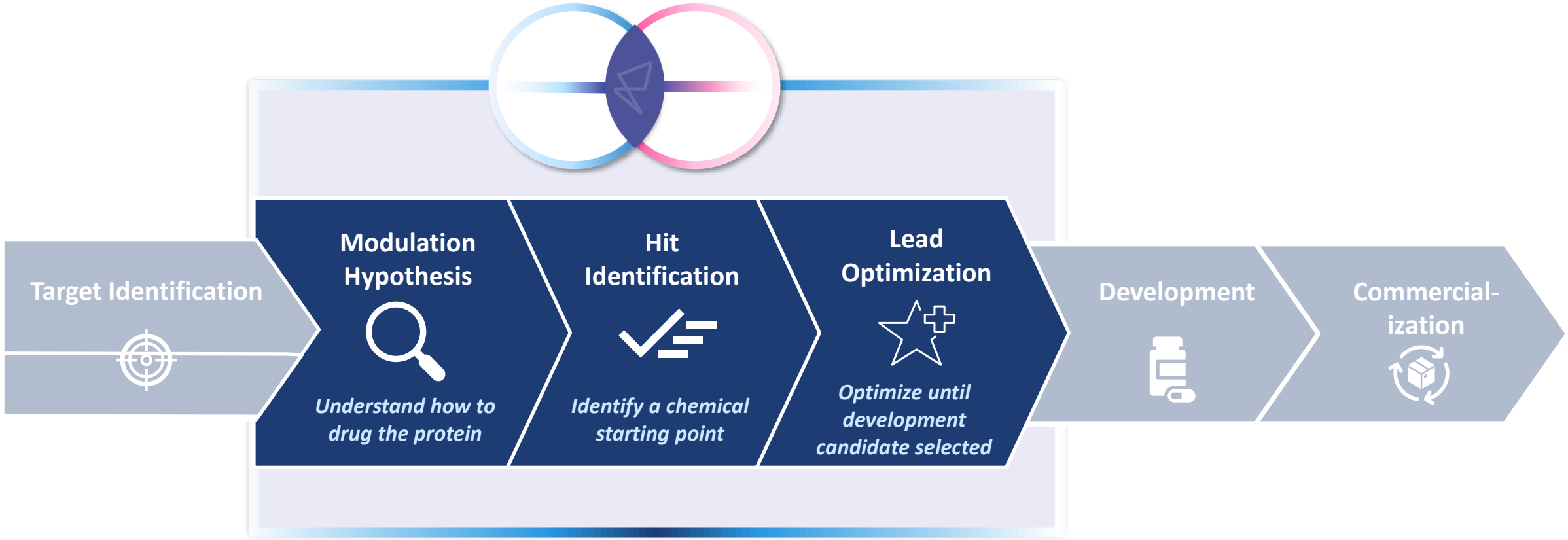
The "How"

How do we work to solve problems?

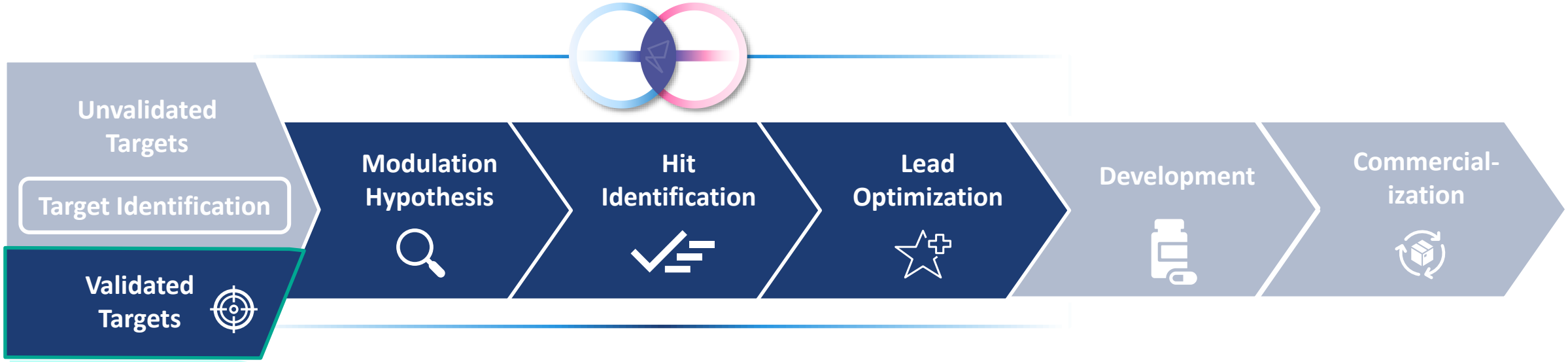
The Impact

How do we measure output?

Relay Tx – Where We Focus Our Dynamo™ Platform Today

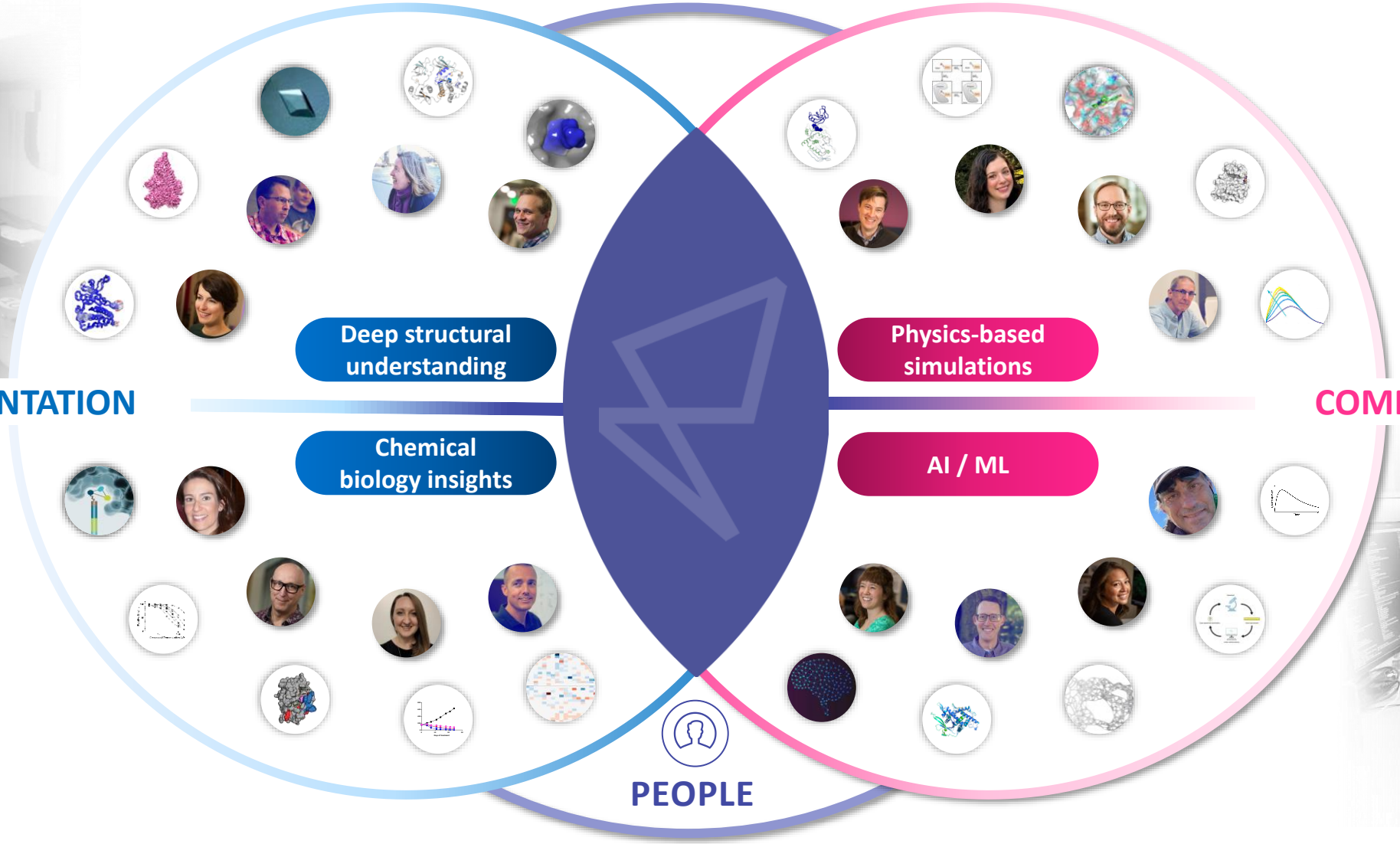


Relay Tx – What Problems We Tackle



- Target is known driver of disease
- Amenable to Dynamo platform
- Clear patient selection strategy
- Anticipated rapid path to clinical POC

Relay Tx – How Our Team Solves Problems – The Dynamo™ Platform



Relay Tx – How Our Team Solves Problems – Our 3-Step Drug Discovery Process

RELAY THERAPEUTICS

Experimental tool examples:

Structural Biophysics

Nanoscale Chemistry

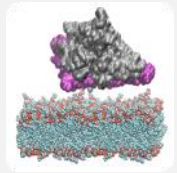
Library Synthesis

1 **Modulation Hypothesis** — ***Proteins***

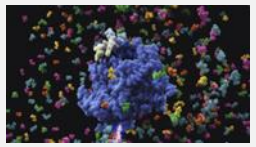
2 **Hit Identification** — ***Small Molecules***

3 **Lead Optimization** — ***Oral Administration***

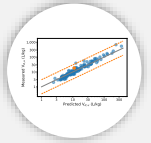
Computational tool examples:



Long Time Scale MD[1]



ML-DEL Screen[2]



ML ADME Models[3]

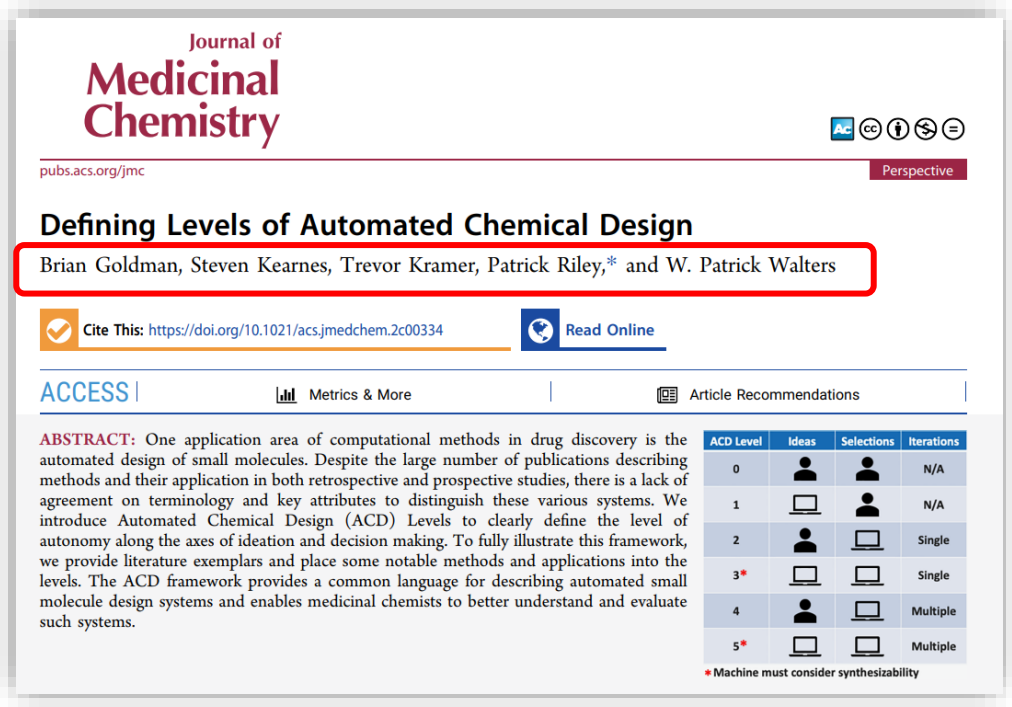
PEOPLE

[1]MD - molecular dynamics. [2]ML-DEL - machine-learning DNA-encoded small-molecule libraries. [3]ML ADME - machine learning adsorption, distribution, metabolism and excretion.

Relay Tx – How Our Team Solves Problems – Using Industry-Leading Expertise

RELAY THERAPEUTICS

We believe the Relay Tx Team is leading the field of Automated Chemical Design (ACD)



Journal of Medicinal Chemistry

pubs.acs.org/jmc

Perspective

Defining Levels of Automated Chemical Design

Brian Goldman, Steven Kearnes, Trevor Kramer, Patrick Riley,* and W. Patrick Walters

Cite This: https://doi.org/10.1021/acs.jmedchem.2c00334

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ABSTRACT: One application area of computational methods in drug discovery is the automated design of small molecules. Despite the large number of publications describing methods and their application in both retrospective and prospective studies, there is a lack of agreement on terminology and key attributes to distinguish these various systems. We introduce Automated Chemical Design (ACD) Levels to clearly define the level of autonomy along the axes of ideation and decision making. To fully illustrate this framework, we provide literature exemplars and place some notable methods and applications into the levels. The ACD framework provides a common language for describing automated small molecule design systems and enables medicinal chemists to better understand and evaluate such systems.

ACD Level	Ideas	Selections	Iterations
0			N/A
1			N/A
2			Single
3*			Single
4			Multiple
5*			Multiple

*Machine must consider synthesizability

ACD Framework describes automated small molecule design systems

ACD Level	Ideas	Selections	Iterations
0			N/A
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2			Single
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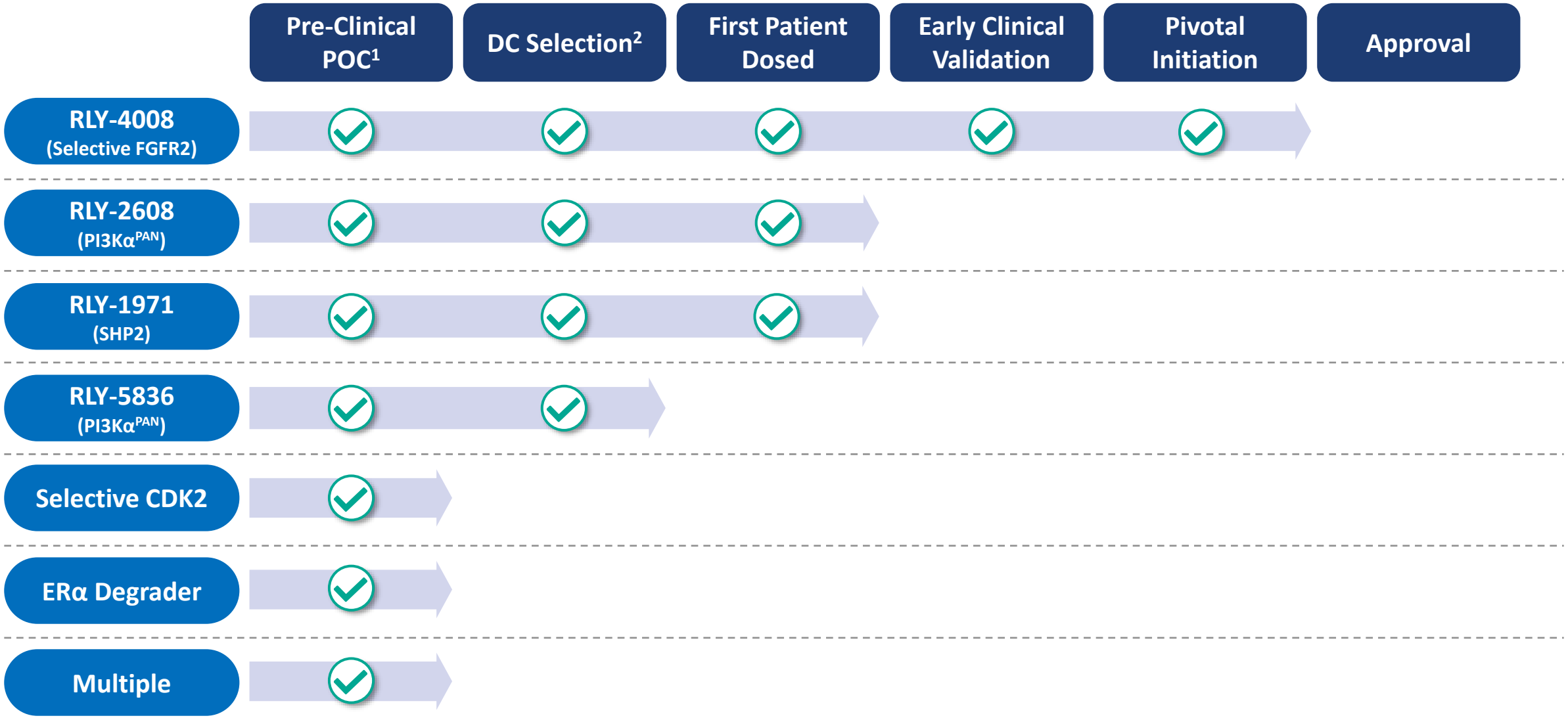
4			Multiple
5*			Multiple

*Machine must consider synthesizability

Relay Tx – Measuring our Impact



[1]POC - proof-of-concept. [2]DC - development candidate.

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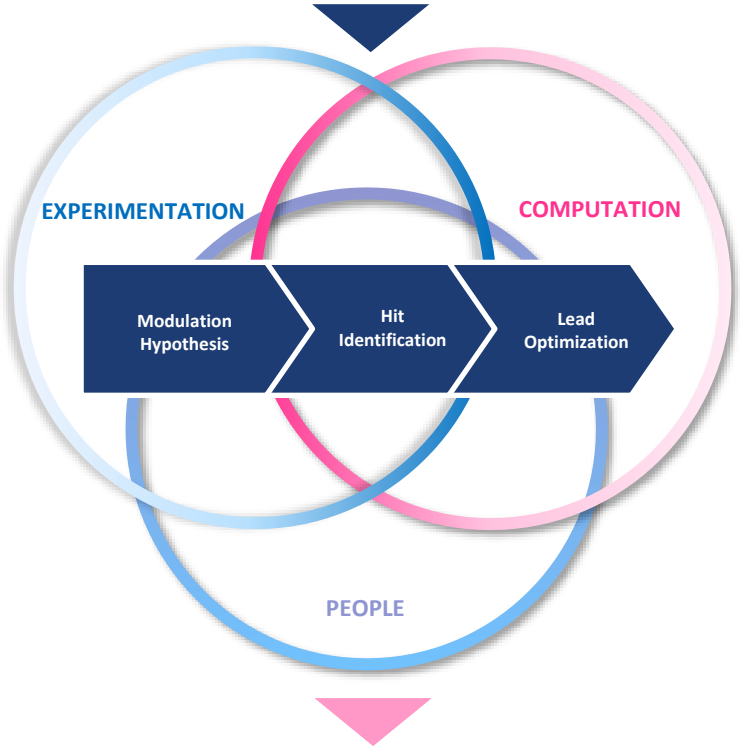

The "How"

How do we work to solve problems?

The Impact

How do we measure output?

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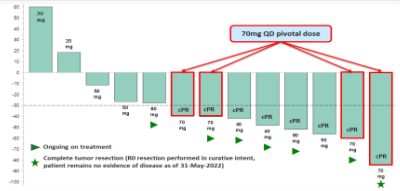
1. RLY-4008 Regulatory Update



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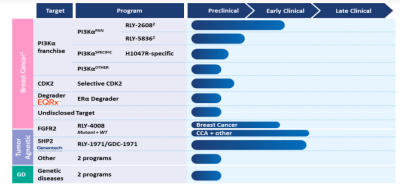

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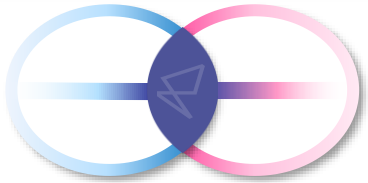

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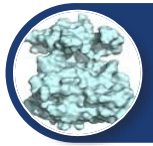
2022 Milestones – Proven Execution Focus

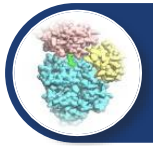


RLY-4008 (FGFR2)

- Expansion cohorts open
- Additional data update in 2H 2022
- Regulatory & data update
- Pivotal cohort commenced

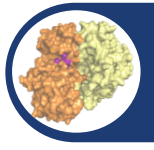
RLY-2608 (PI3Kα^{PAN})

- Clinical trial initiated
- RLY-5836 - PI3Kα^{PAN}



RLY-1971 (SHP2)

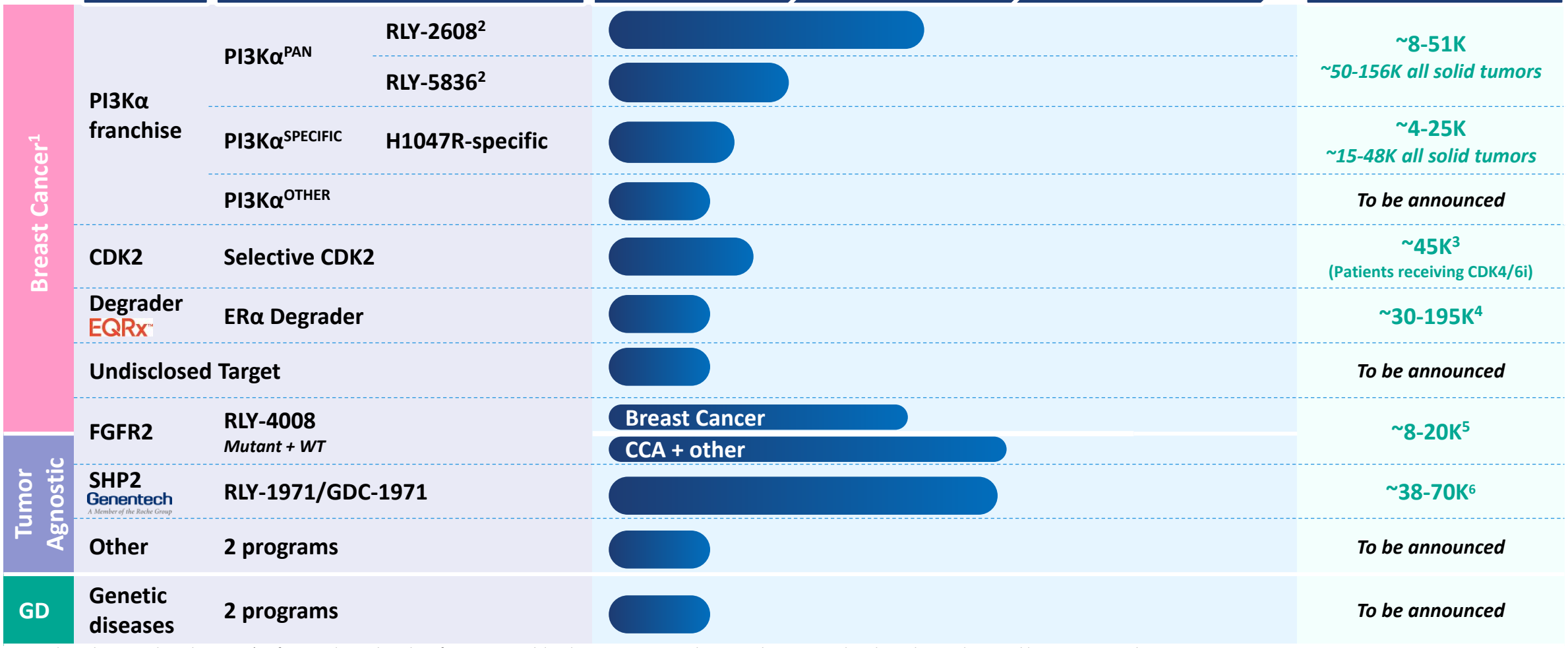
- GDC-6036 (KRAS G12C) combination trial initiated in July 2021



Next target in pipeline

- Selective CDK2
- ERα Degrader

Relay Tx – Extensive Precision Medicine Focused Pipeline

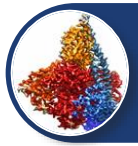


Note: Unless otherwise indicated, patient #'s refer to total annual number of US patients with late-line cancers compared to comprehensive annual incidence that may be amenable to treatment with our programs

1. Unless otherwise indicated, all breast cancer patient numbers refer to HR+/HER2- breast cancer tumors 2. RLY-2608 covers H1047X, E542X, E545X hot spots 3. ~45k HR+/HER2- breast cancer patients expected to receive CDK 4/6 inhibitors in adjuvant setting, first-line setting, and second-line setting in 2023, per Decision Resources Breast Cancer Market Forecast, report dated February 2022 4. HR+/HER2- US late-line breast cancer patients compared to HR+/HER2- US incident breast cancer patients 5. FGFR2 altered late-line solid tumors compared to comprehensive annual FGFR2 altered incident solid tumors 6. SHP2 combo only includes KRAS G12C in lung and CRC, EGFR mutations in lung, and ALK fusions in lung

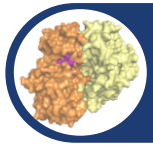
Relay Tx – Capital, Team & Execution Focus to Deliver on Anticipated Milestones

Breast Cancer Franchise



RLY-2608
(PI3Kα^{PAN})

Initial data
in 1H 2023



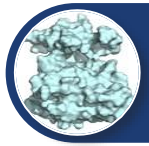
Selective CDK2

Clinical start in
Q4 2023 or Q1 2024

ERα Degrader

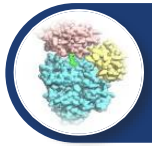
Development candidate
nomination
in 2023

Tumor Agnostic



RLY-4008
(Selective FGFR2)

Additional
data updates
in 2H 2022 & 2023



RLY-1971
(SHP2)

Atezolizumab combo
trial to be initiated
in 2H 2022

$898M

Cash, cash equivalents and investments
as of the end of Q1 2022

Current cash, cash equivalents and investments are sufficient to fund current operating plan into 2025

Q&A