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): January 13, 2025

RELAY THERAPEUTICS, INC.

(Exact name of Registrant as Specified in Its Charter)

Delaware	**001-39385**	**47-3923475**
(State or Other Jurisdiction of Incorporation)	**(Commission File Number)**	**(IRS Employer Identification No.)**

399 Binney Street **Cambridge, Massachusetts**	**02142**
(Address of Principal Executive Offices)	**(Zip Code)**

Registrant's Telephone Number, Including Area Code: (617) 370-8837

(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 (17 CFR 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**
Common Stock, par value $0.001 per share	RLAY	Nasdaq Global Market

Indicate by check mark whether the registrant is an emerging growth company as defined in Rule 405 of the Securities Act of 1933 (§ 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 7.01 Regulation FD Disclosure.

Relay Therapeutics, Inc. (the "Company") will be conducting meetings with participants attending the 43rd Annual J.P. Morgan Healthcare Conference (the "Conference") during the week of January 13, 2025. A copy of the slides to be presented by the Company at the Conference is furnished as Exhibit 99.1 to this Current Report on Form 8-K, which is incorporated herein by reference.

The information in this Item 7.01, including Exhibit 99.1 attached hereto, is intended to be furnished and 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 in any filing under the Securities Act of 1933, as amended, or the Exchange Act, except as expressly set forth by specific reference in such filing.

Item 9.01 Financial Statements and Exhibits.

99.1	43rd Annual J.P. Morgan Healthcare Conference Company Presentation, dated January 2025, furnished herewith.
104	Cover Page Interactive Data File (embedded within 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 hereunto duly authorized.

RELAY THERAPEUTICS, INC.

Date: January 13, 2025

By: /s/ Brian Adams
Brian Adams
Chief Legal Officer

Exhibit 99.1

RELAY®
THERAPEUTICS

J.P. Morgan Conference Presentation

January 2025

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Disclaimer

This presentation contains forward-looking statements within the meaning of the Private Securities Litigation Reform Act of 1995, as amended, including, without limitation, implied and express statements regarding the progress and timing of the clinical development of the programs across our portfolio, including the expected therapeutic benefits of our programs, and potential efficacy and tolerability; the timing of clinical data updates across our pipeline, including the progress of doublet and triplet combinations for RLY-2608, the timing of clinical updates for RLY-2608; the timing of clinical initiation of our various programs, including a potential pivotal trial for RLY-2608, clinical development in vascular malformations, clinical development of our non-inhibitory chaperone for Fabry disease, and clinical development of our NRAS-selective inhibitor; the potential of our product candidates to address a major unmet medical need; expectations regarding our pipeline, operating plan, use of capital, expenses and other financial results; our cash runway projection; the competitive landscape and potential 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, including its role in identifying product candidates; our plans to develop, manufacture and commercialize our current product candidates and any future product candidates; and the implementation of our business model and strategic plans for our business, current product candidates and any future product candidates. The words "may," "might," "will," "could," "would," "should," "plan," "anticipate," "intend," "believe," "expect," "estimate," "seek," "predict," "future," "project," "potential," "continue," "target" and similar words or expressions, or the negative thereof, are intended to identify forward-looking statements, although not all forward-looking statements contain these identifying words.

Any forward-looking statements in this presentation are based on management's current expectations and beliefs and are subject to a number of risks, uncertainties and important factors that may cause actual events or results to differ materially from those expressed or implied by any forward-looking statements contained in this presentation, including, without limitation, risks associated with: the impact of global economic uncertainty, geopolitical instability and conflicts, or public health epidemics or outbreaks of an infectious disease on countries or regions in which we have operations or do business, as well as on the timing and anticipated results of our clinical trials, strategy, future operations and profitability; the delay or pause of any current or planned clinical trials or the development of our drug candidates; the risk that the preliminary results of our preclinical or clinical trials may not be predictive of future or final results in connection with future clinical trials of our product candidates; our ability to successfully demonstrate the safety and efficacy of our drug candidates; the timing and outcome of our planned interactions with regulatory authorities; and obtaining, maintaining and protecting our intellectual property. 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 and 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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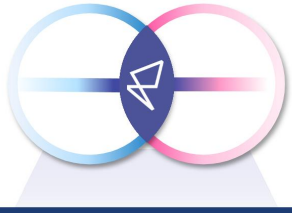
Relay Tx – Clear Path to Address Large, Near-Term Commercial Opportunities

Productive Platform & Strong Balance Sheet



- 8 DCs & 4 INDs
- 2 clinical POC datasets
- ~$840M cash as of end 3Q 2024

Anticipated 2025 Corporate Milestones

Breast Cancer *RLY-2608*	• Pivotal trial start – 2025 • Full Ph1-2 data – 2025
Vascular Malformations *RLY-2608*	Clinical start – 1Q 2025
NRAS *Pre-clinical*	Clinical start – 2H 2025
Fabry Disease *Pre-clinical*	Clinical start – 2H 2025
Progress 4 unnamed research programs	

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RLY-2608 Unlocks Large Breast Cancer Market

Significant Breast Cancer Commercial Opportunity

$6B+ Current PI3Kα Pathway Total Addressable Market[1]
(Metastatic HR+/HER2- Breast Cancer)

Robust RLY-2608 Clinical Data

RLY-2608 (600mg BID) + fulvestrant[2]
Interim data as of 04 Nov 2024

- 2L+: 9.2mo mPFS
- 2L only: 11.4mo mPFS

5.5mo mPFS for capivasertib + fulv in pt with prior CDK4/6[3]

Relay Tx's Extensive Global Clinical Experience

- 13 countries worldwide
- ~100 clinical sites
- 800+ patients dosed across trials

Capital to Execute

~$840M cash as of end 3Q 2024

RLY-2608 Breast Cancer Combinations

- Fulvestrant doublet — Expected pivotal start
- CDKi + fulv triplets — ongoing
- Other novel combos

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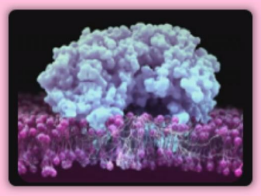
1. Relay Tx PIK3CA internal market forecast (patient-based – US, EU5, Japan). Forecast includes estimates for genetic testing, class share, market access, compliance, duration of therapy and assumes current PIK3CA therapy net price (primary sources: SEER; GloboCan; Global Data; Evaluate Pharma; DRG Market Forecast; PIK3CAi PIs); 2. PI3KCAmut, HR+/HER2- Advanced / Metastatic Breast Cancer (post CDK4/6) ; 3. Turner N Engl J Med 2023; 388:2058-2070 (n=355); Note: data shown are not from head-to-head studies, and no head-to-head studies have been conducted

ReDiscover preliminary data as of 11/04/2024

Relay Tx – 2025 Priorities

BREAST CANCER	GENETIC DISEASE	SOLID TUMORS	GENETIC DISEASE
PI3Kα-Driven Breast Cancer	PI3Kα-Driven Vascular Malformations	NRAS-Driven Solid tumors	Fabry Disease
			
1st mutant-selective PI3Kα inhibitor	1st mutant-selective PI3Kα inhibitor	1st NRAS-selective inhibitor	1st non-inhibitory αGal chaperone

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PI3Kα Mutations Represent a Large Commercial Opportunity

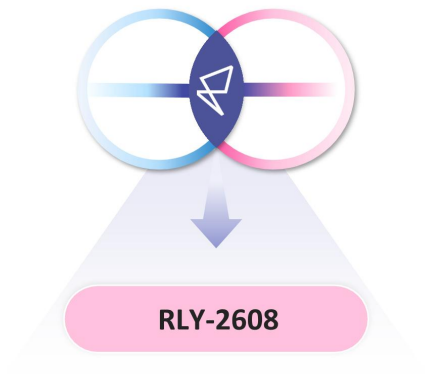
PI3Kα mutations represent a large commercial opportunity

- Breast Cancer — ~140k pts (prevalence[1])
- Vascular Malformations — ~170k pts (prevalence[2])
- Non-Breast Cancer Solid Tumors — ~90k pts (incidence[3])

Non-selective PI3Kα targeting has significant limitations

- Challenging Tolerability
- Limited Efficacy
- Limited Combinability

Relay Tx's Dynamo® Platform created mutant selective molecule



1. Prevalent US patient population with a PIK3CA mutation in each line of therapy, excluding PTEN co-mutations (Global Data HR+/HER2- Breast Cancer Global Forecast, November 2023; 3rd party source for alteration rate); 2. Prevalent US patient population of vascular malformation patients with a PIK3CA mutation (multiple sources); 3. Incident US patient population solid tumors annually with a PIK3CA mutation, excluding PTEN and KRAS co-mutations (SEER; 3rd party source for alteration rate, May 2024)

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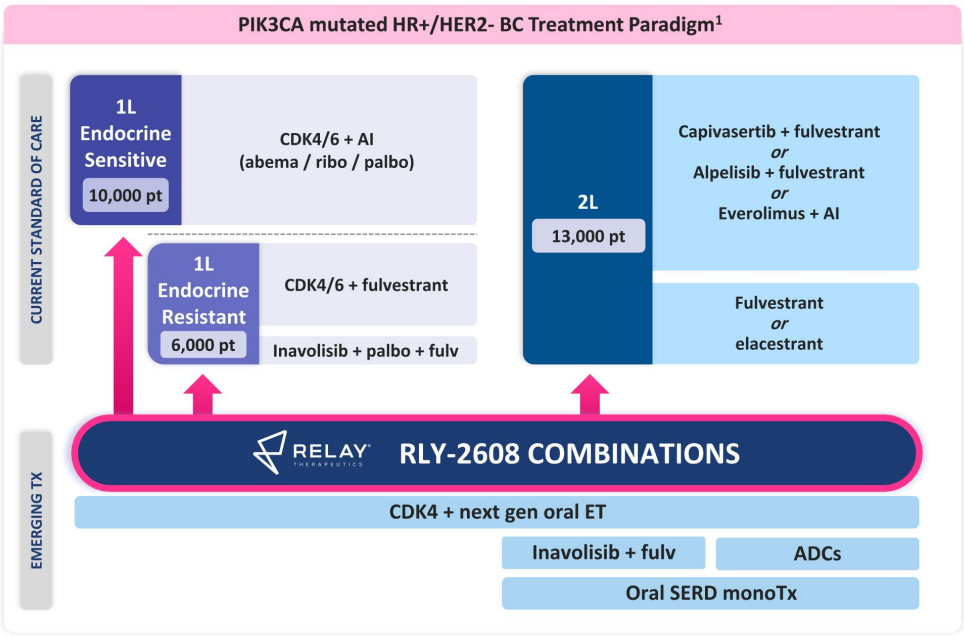
Breast Cancer – Large Market for Mutant-Selective PI3Kα Targeted Therapies



$6B+

Current PI3Kα Pathway Total Addressable Market[2]

(Metastatic HR+/HER2- Breast Cancer)

1. Prevalent US patient population with a PIK3CA mutation in each line of therapy, excluding PTEN co-mutations (Global Data HR+/HER2- Breast Cancer Global Forecast, November 2023; 3rd party source for alteration rate); 2. Relay Tx PIK3CA internal market forecast (patient-based – US, EU5, Japan). Forecast includes estimates for genetic testing, class share, market access, compliance, duration of therapy and assumes current PIK3CA therapy net price (primary sources: SEER; GloboCan; Global Data; Evaluate Pharma; DRG Market Forecast; PIK3CAi PIs)

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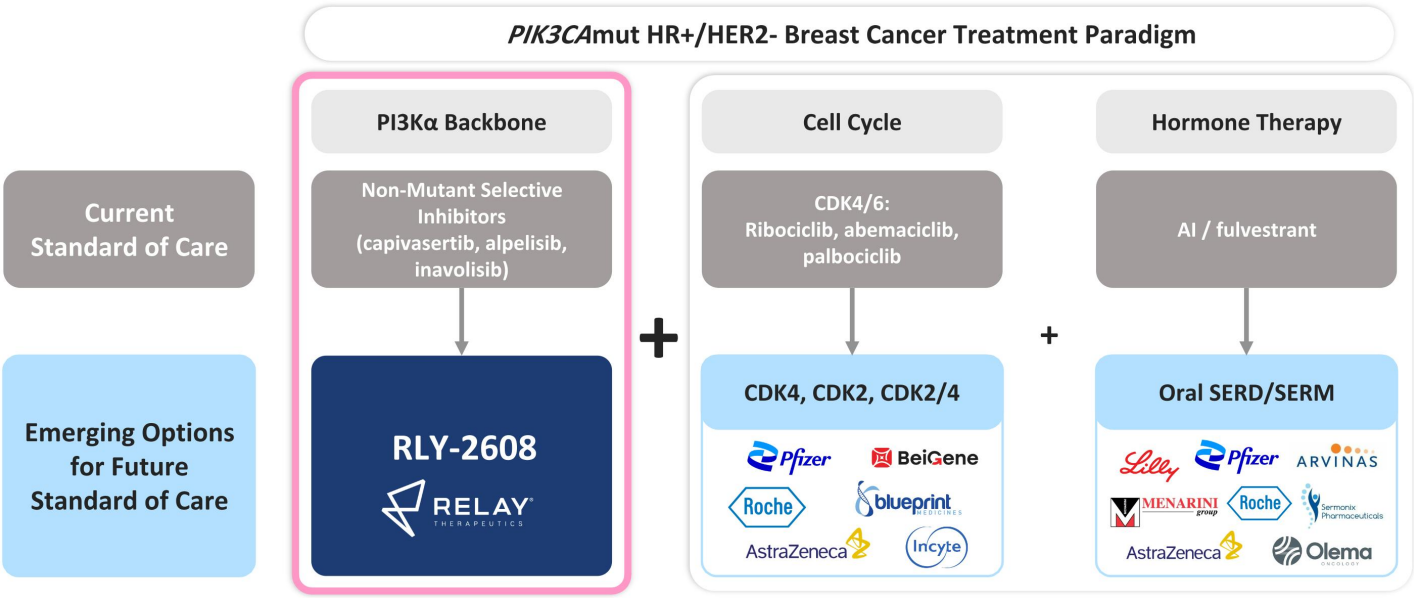
RLY-2608 – Mutant-Selective PI3Kα Additive to Many Potential Combinations



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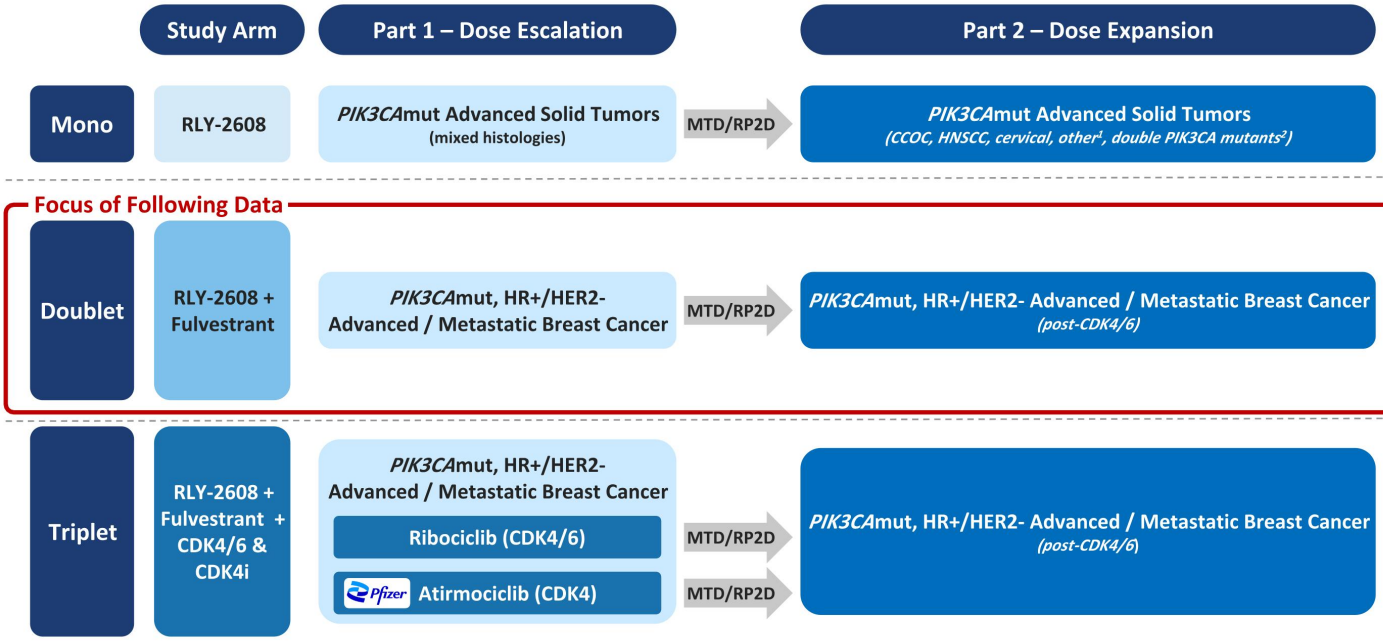
RLY-2608 – ReDiscoverTrial Overview



1. Excludes PIK3CAmut clear cell OvCA, HNSCC, Cervical cancer, and colorectal patients; 2. Double mutation defined as one major PIK3CA mutation (E542X, E545X, H1047X) + ≥1 additional PIK3CA mutation per local assessment; CCOC = clear cell ovarian cancer

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PI3Kα Inhibitors – Efficacy Profiles

Doublet Combination Regimens

Data Benchmark	Inavolisib + fulvestrant *not approved*	Alpelisib + fulvestrant *approved 2019*	Capivasertib + fulvestrant *approved 2023*	RLY-2608 + fulvestrant *(600mg BID, RP2D)*
	Ph1b Arm D[1] (N=60)	BYLieve Cohort C[2] (N=126)	CAPItello-291[3,6] (N=355)	ReDiscover (N=52)
% pt with >=2 prior LoT	57%	63%	23%	39%
% prior SERD[5]	47%	33%	0%	52%
mPFS	7.1mo	5.6mo	5.5mo[4]	9.2mo
CBR	48%	37%	56%	67%
ORR	19%	24%	26%[6]	39%

Capi ORR & CBR include 30% of pts who are CDK4/6-naïve

1. SABCS 2021 #P5-17-05 (n=60); 2. SABCS 2021 #PD-13-05; 3. Turner N Engl J Med 2023; 388:2058-2070 (n=355); 4. 5.5mo mPFS reported in CDK4/6-experienced patient sub-population of CAPItello-291; 5. Prior SERD includes fulvestrant and next-generation SERDs; 6. FDA Prescribing Information.
Note: These data are derived from different clinical trials at different points in time, with differences in molecule composition, trial design and patient populations. As a result, cross-trial comparisons cannot be made, and no head-to-head clinical trials have been conducted.

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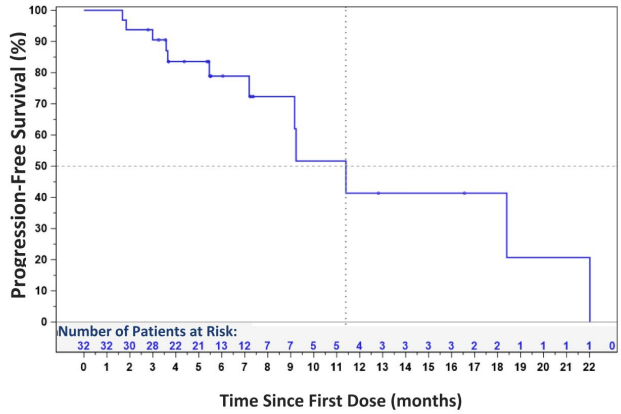
ReDiscover preliminary data as of 11/04/2024

RLY-2608 – Efficacy: 11.4 Month Median PFS in 2L & Kinase Patients

RLY-2608 600 mg BID (RP2D) + Fulvestrant
Post-CDK4/6 Patients, excluding PTEN / AKT Co-Mutations

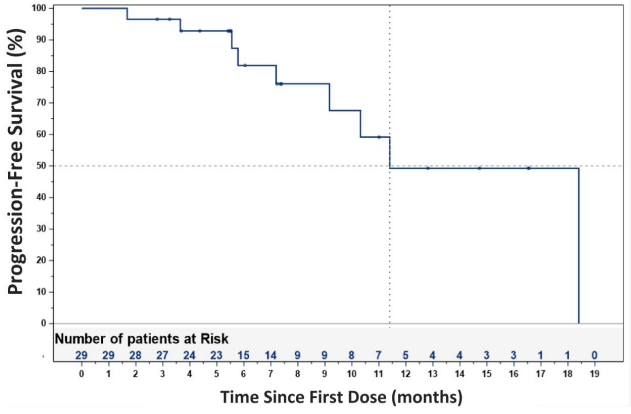
2L Patients (N=32)



11.4mo mPFS
(95% CI: 7.2, NR)

40% ORR
(8/20 pt)

Kinase Mutations (N=29)



11.4mo mPFS
(95% CI: 9.2, NR)

67% ORR
(10/15 pt)

Note: Follow-up estimated based on reversed KM. PFS estimates based on KM methods.

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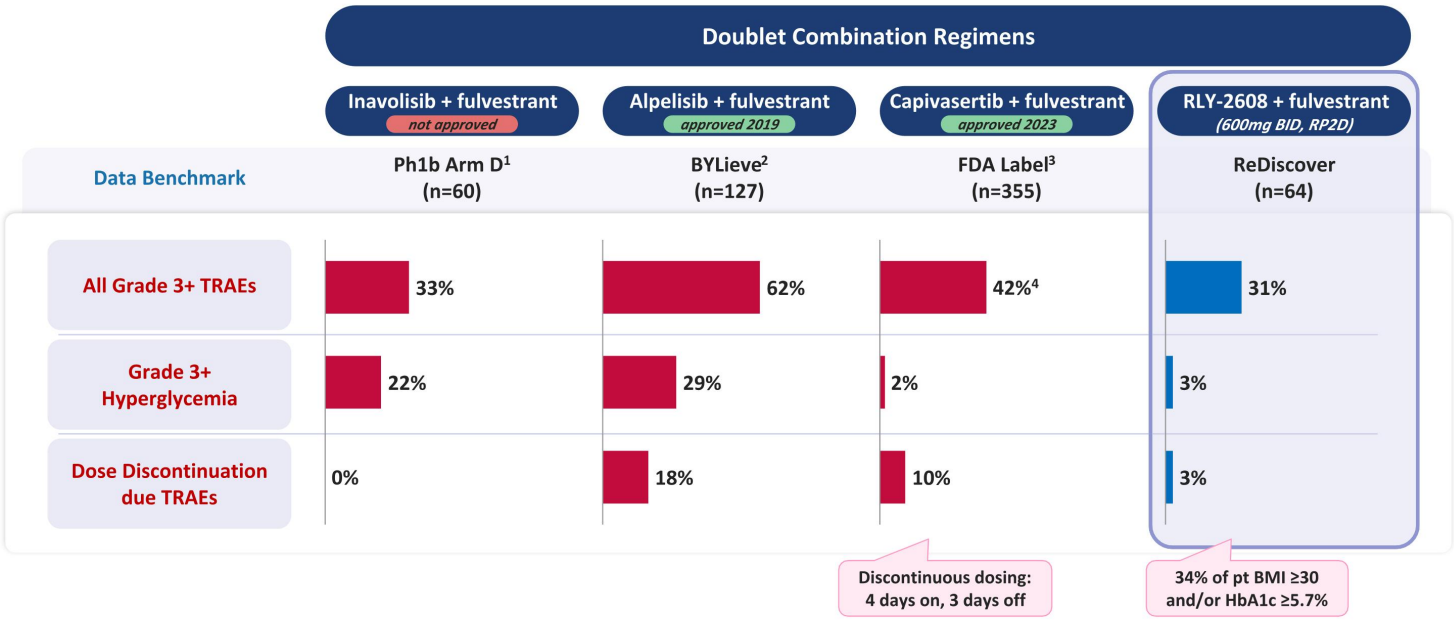
ReDiscover preliminary data as of 11/04/2024

PI3Kα Inhibitors – Tolerability Profiles



1. SABCS 2021 #P5-17-05; 2. Rugo 2021 Lancet Oncol 22:489; 3. FDA Prescribing Information; 4. CAPItello-291: Turner N Engl J Med 2023; 388:2058-2070.
Note: These data are derived from different clinical trials at different points in time, with differences in molecule composition, trial design and patient populations. As a result, cross-trial comparisons cannot be made, and no head-to-head clinical trials have been conducted.

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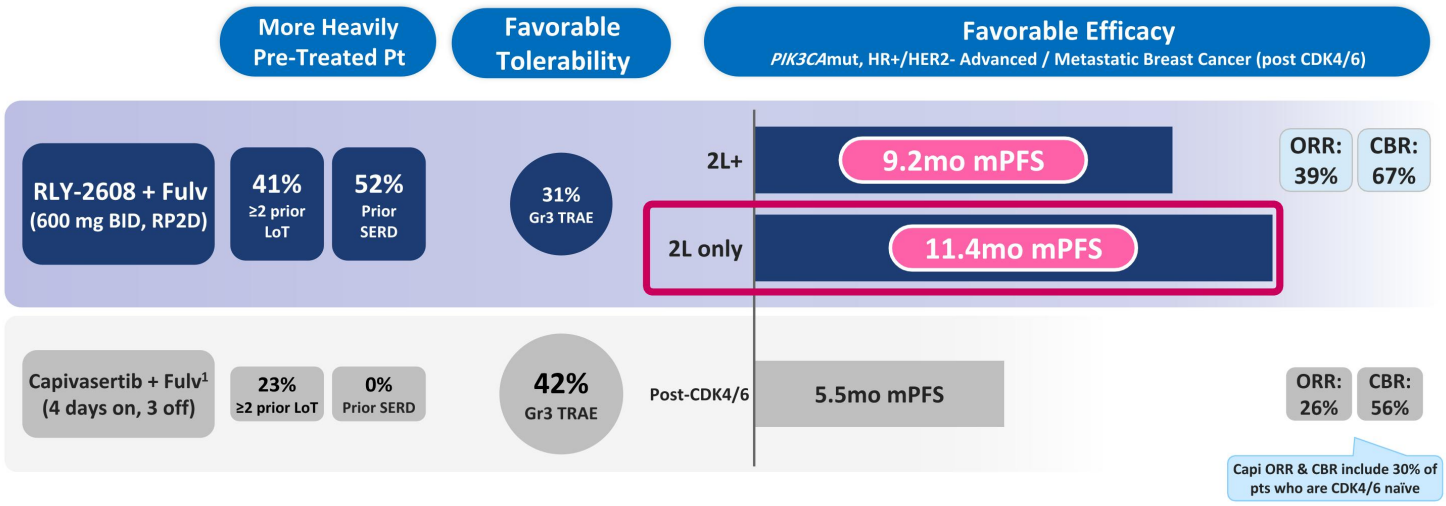
ReDiscover preliminary data as of 11/04/2024

RLY-2608 – Interim Clinical Data Continue to Show Clinically Meaningful PFS



Interim RLY-2608 data supportive of pivotal trial in post-CDK4/6 Breast Cancer against capivasertib

1. CAPItello-291: Turner N Engl J Med 2023; 388:2058-2070; 2. In CAPItello-291, CBR and ORR not reported for CDK4/6-experienced patient population; ORR = objective response rate, mPFS = median progression free survival, LoT = line of therapy (metastatic setting), SoC = Standard of Care, TRAE = treatment related adverse effects, RP2D = recommended Phase 2 dose, CBR = clinical benefit rate, SERD = selective estrogen receptor degrader; Note: data shown are not from head-to-head studies, and no head-to-head studies have been conducted.

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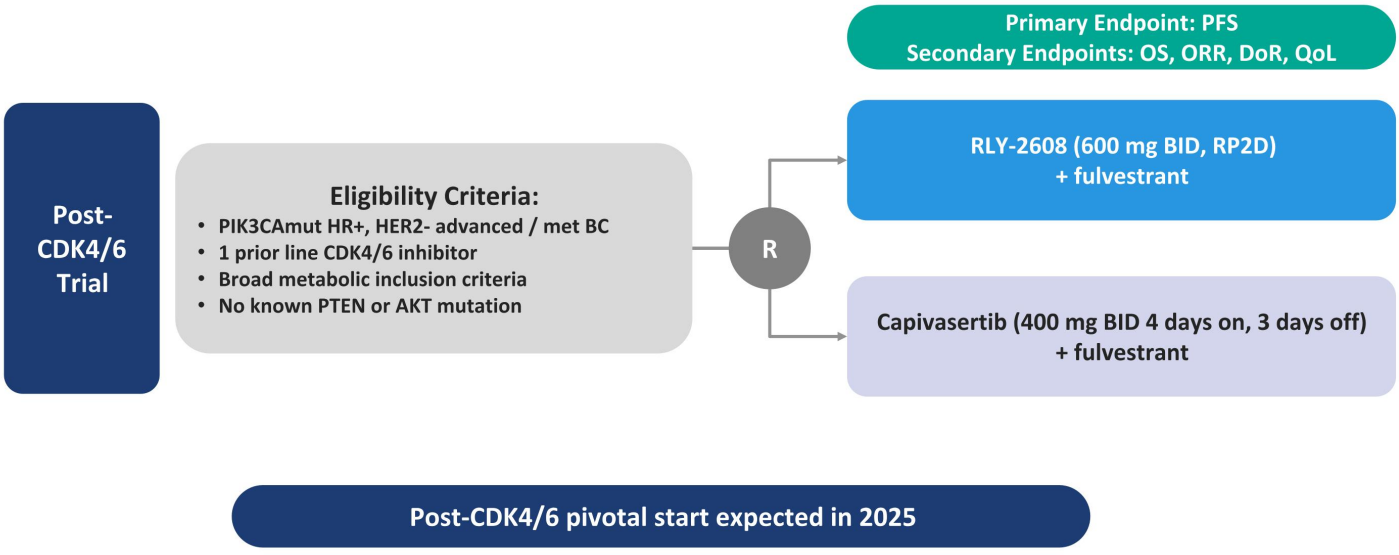
ReDiscover preliminary data as of 11/04/2024

RLY-2608 – Initial Pivotal Trial Planned for Post-CDK4/6 Patients in 2025*



Post-CDK4/6 pivotal start expected in 2025

*Subject to discussions with regulators; eligibility criteria, endpoints, RP2D, and other aspects of trial design have not yet been finalized; OS = overall survival, DoR = duration of response, QoL = quality of life, met BC = metastatic Breast Cancer; 2L = 2nd line

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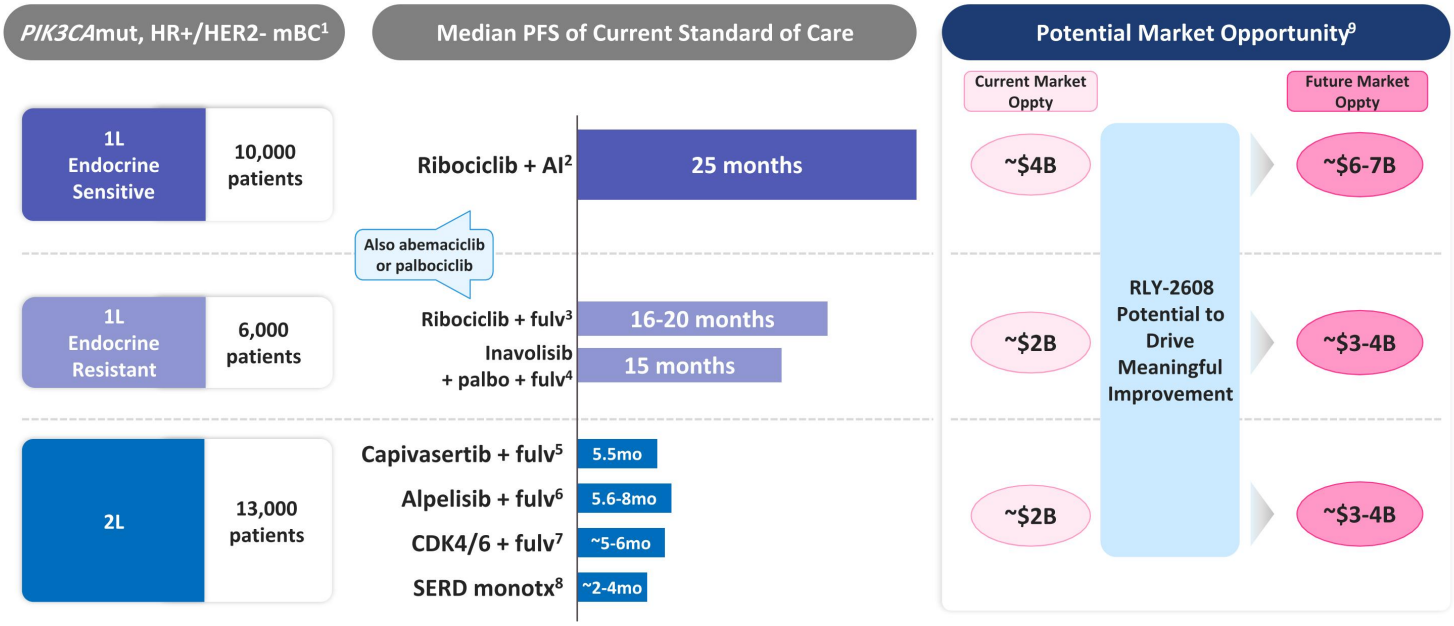
Large Unmet Need in Metastatic Breast Cancer



Notes: 1. Prevalent US patient population with a PIK3CA mutation in each line of therapy, excluding PTEN co-mutations (Global Data HR+/HER2- Breast Cancer Global Forecast, November 2023; 3rd party source for alteration rate); 2. All-comers and PIK3CAmut sub-group, MONALEESA-2; 3. All-comers and PIK3CAmut sub-group, MONALEESA-3; 4. INAVO120: SABCS 2023 GS03-13; 5. Turner N Engl J Med 2023; 388:2058-2070 (n=355); 6. Rugo 2021 Lancet Oncol 22:489, SABCS 2021 #P1-18-03; 7. MAINTAIN: Kalinsky 2023 J Clin Oncol 41:4004, postMONARCH: Kalinsky 2024 ASCO; 8. Elacestrant Prescribing Information; 9. Informed by qualitative and quantitative primary market research performed in Q2 2024

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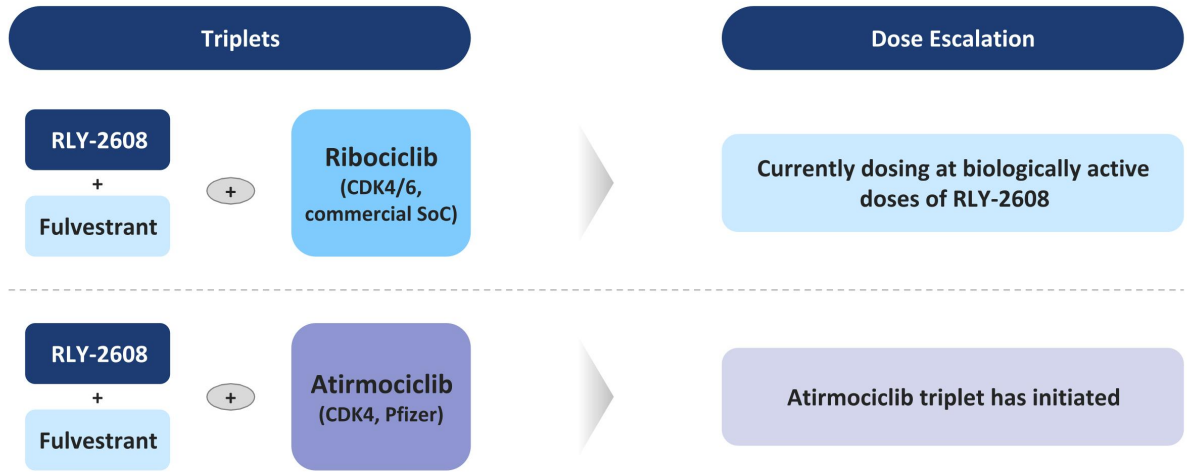
RLY-2608 – On Track to Realize 1L Potential with Triplet Combinations



Phase 1 Aim for Triplets: Demonstrate safety, tolerability and preliminary efficacy with both current generation CDK4/6 and next-gen CDK4 to enable pivotal development potential in both

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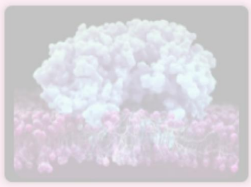
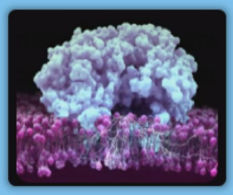
Relay Tx – 2025 Priorities

BREAST CANCER	GENETIC DISEASE	SOLID TUMORS	GENETIC DISEASE
PI3Kα-Driven Breast Cancer	**PI3Kα-Driven Vascular Malformations**	NRAS-Driven Solid tumors	Fabry Disease
			
1st mutant-selective PI3Kα inhibitor	**1st mutant-selective PI3Kα inhibitor**	1st NRAS-selective inhibitor	1st non-inhibitory αGal chaperone

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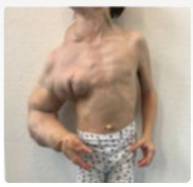
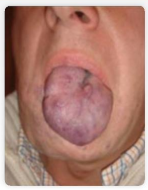
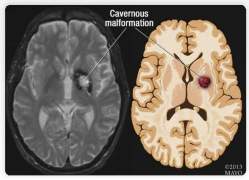
Vascular Malformations – Over 170,000 US Patients

Vascular Malformation Types

	PIK3CA-Related Overgrowth Spectrum (PROS)	Lymphatic Malformation (LM)	Venous Malformation (VM)	Cerebral Cavernous Malformation (CCM)	Total US pt across types
					
US Patients	~5-15k	~80k	~100k	~120k	>300k pt
% *PIK3CA*mut	100% *~5-15k pt*	80% *~65k pt*	~20-25% *~20-25k pt*	40-55% *~50-65k pt*	~170k pt *PIK3CA*mut
Approved Therapies	Vijoice® (alpelisib)	No approved systemic therapy			

Sources: ISSVA classification, NORD, Mayo Clinic, Novartis, Penington et al 2023, Gallagher et al 2022, Luks et al 2015, Limaye et al 2015, Peyre et al 2021, Hong et al 2021. Photo sources: Venot et al. Nature 2018, Wenger et al Genet Med 2022, Limaye et al Nature Genetics 2008, Mayo Clinic

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PI3Kα-Driven Vascular Malformations – Patient Treatment Journey

Referral Pathway

- **Symptom presentation** — PCP, Dermatologist, Surgeon, ENT, etc.
- **Diagnosis** — Geneticist, "Vascular Anomalist"
- **Treatment** — Surgeon, Int. Radiologist, Dermatologist, Heme-Onc

Treatment & Ongoing Management

Frequency of use

Watch and wait; Compression Therapy	Temporary; 50-75% of diagnosed pts receive local or systemic Tx
Local treatment: sclerotherapy, surgery	Invasive, recurrence is common (~25-40% recurrence rate)
Systemic therapy: Alpelisib, sirolimus	Incomplete responses, side effects & toxicities limit widespread use

Current unmet need for selective, systemic therapy for Vascular Malformations

Source: primary research

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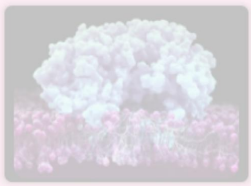
Relay Tx – 2025 Priorities

BREAST CANCER	GENETIC DISEASE	SOLID TUMORS	GENETIC DISEASE
PI3Kα-Driven Breast Cancer	PI3Kα-Driven Vascular Malformations	**NRAS-Driven Solid tumors**	Fabry Disease
			
1st mutant-selective PI3Kα inhibitor	1st mutant-selective PI3Kα inhibitor	**1st NRAS-selective inhibitor**	1st non-inhibitory αGal chaperone

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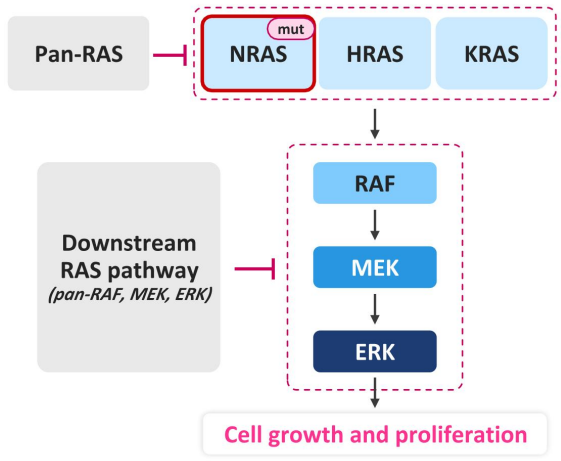
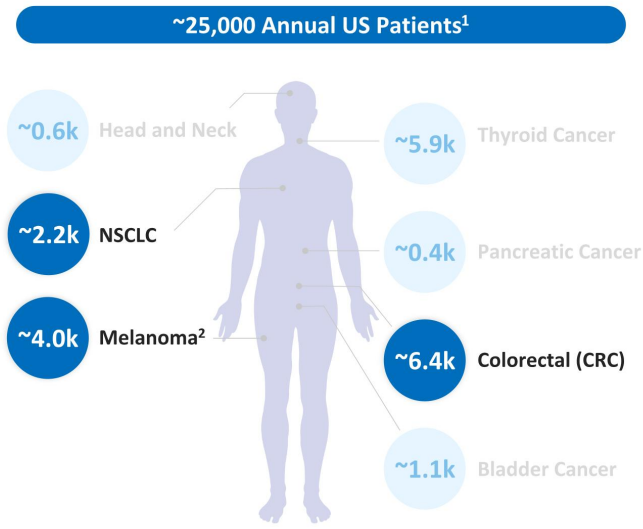
NRAS – Large Validated Market With Significant Unmet Need

NRAS mutations are a key driver of solid tumors, though no NRAS-selective agent exists



NRAS mutations observed in broad range of tumor types



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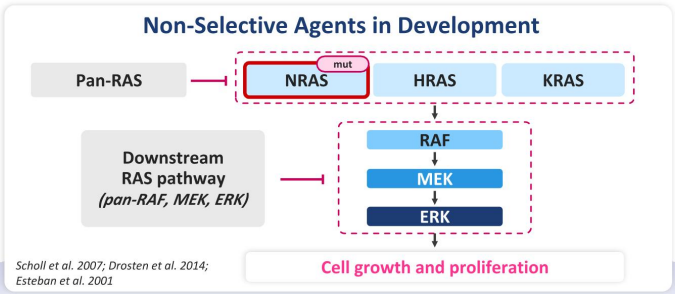
1. Newly diagnosed (incident) patients with an NRAS mutation for each tumor type (SEER, 3rd party source for alteration rate, Jan 2024); 2. Melanoma includes incident stage III and IV patients only (excludes stage 0-II patients)

Limited Therapeutic Window of Current Agents – Pan-RAF/RAS & MEK Inhibitors



Limited Tolerability

	Rash	Liver Toxicity
MEK + RAFi	25 – 80%	Inc. ALT: <10 – 22% Inc. AST: <10 – 20%
Pan-RAS *(PDAC)*	91%	Inc. ALT: 7% Inc. AST: 5%

KRAS KO is embryonic lethal in mice, whereas NRAS KO is tolerated

Limited Target Inhibition

	Dose Modifications
MEK + RAFi	62 – 100%
Pan-RAS *(PDAC)*	42%

Limited Efficacy

Regimen (2L *NRAS*mut melanoma)	ORR	PFS (mo)
Naporafenib (RAFi) + trametinib (MEKi)	13 – 47%	4.2 – 5.5
Exarafenib (RAFi) + binimetinib (MEKi)	33%	--

Belvarafenib (RAFi) + cobimetinib (MEKi) had shown 39% ORR (n=13), but belvarafenib development discontinued

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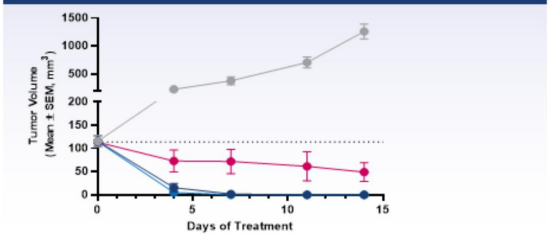
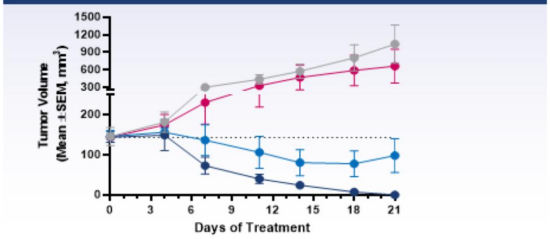
Sources: ESMO 2024 #613MO (exarafenib + binimetinib - efficacy evaluable n=33 and 35% of total n=52 received prior MAPKi), ASCO 2021 #3007 (Belvarafenib + cobimetinib, n=32 all, 13 for efficacy), de Braud 2023 J Clin Oncol 41:2651 (naporafenib + trametinib, n=30 expansion arm), ASCO 2023 #9510 (tunlametinib, n=95), ESMO 2023 652O (RMC-6236, n=111 pts at ≥80mg); Scholl et al. 2007; Drosten et al. 2014; Esteban et al. 2001; Revolution Medicines Corporate Presentation 12/02/2024.

Deep Regressions in PDXs Across Histologies & NRAS Genotypes

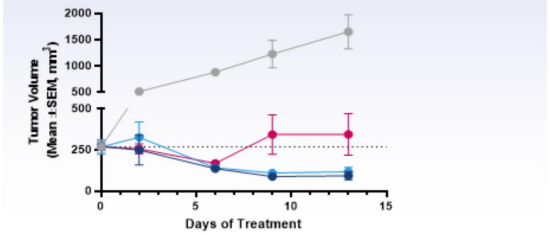
ME12175 Melanoma (NRAS$^{Q61R/R}$)



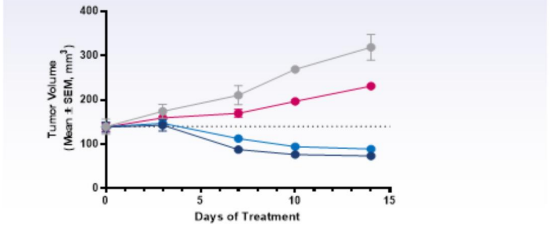
ME11972 Melanoma (NRAS$^{Q61K/WT}$)

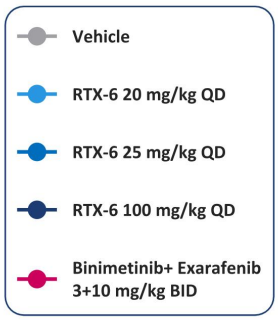


CTG-1282 Endometrial (NRAS$^{Q61K/WT}$)



ME11978 Melanoma (NRAS$^{Q61K/WT}$)





Relay Tx compounds well tolerated in exploratory animal toxicology studies at exposures >10X above the predicted efficacious exposure level

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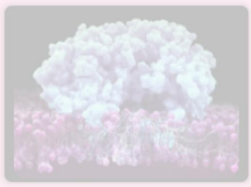
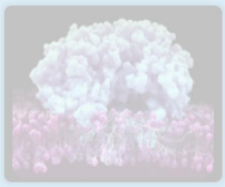
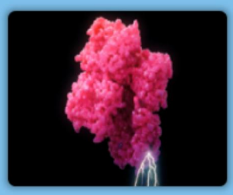
Exposure margin based on clinical findings from dose range finding data in dogs and rats; pending final histopathology results; PDX = patient derived xenografts

Relay Tx – 2025 Priorities

BREAST CANCER	GENETIC DISEASE	SOLID TUMORS	GENETIC DISEASE
PI3Kα-Driven Breast Cancer	PI3Kα-Driven Vascular Malformations	NRAS-Driven Solid tumors	Fabry Disease
			
1st mutant-selective PI3Kα inhibitor	1st mutant-selective PI3Kα inhibitor	1st NRAS-selective inhibitor	1st non-inhibitory αGal chaperone

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Fabry Disease – Large Validated Market With Significant Unmet Need

Fabry disease is a lysosomal storage disorder affecting ~8,000 patients in US

Over 1,000 different *GLA* gene mutations

↓

Reduces αGal protein levels

↓

Leads to accumulation of toxic Gb3 substrate

↓

Broad clinical manifestations; Life threatening cardiac & renal disfunction

Current therapies have established a market but have key limitations

Current Therapies	Limitations of Inhibitory Chaperone
Enzyme Replacement Therapy (ERT, intravenous) ~$1.6B peak sales[1]	
Inhibitory Chaperone Therapy (migalastat) 40% of pts → ~$780M peak sales[2]	1. Limited αGal activation 2. Limited mutational coverage 3. Not combined with ERT

Need for a non-inhibitory αGal chaperone

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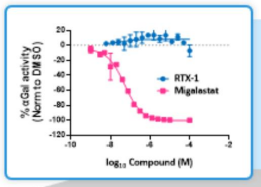
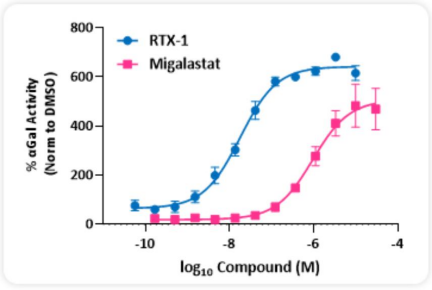
1. Combination of Fabrazyme® (~$1,100M) and Replagal® (~$480M) 2030 forecasted WW sales per EvaluatePharma, April 2024; 2. Galafold® 2030 forecasted WW sales per EvaluatePharma, April 2024

Fabry Disease – Potential Benefits of Non-Inhibitory Chaperone Approach

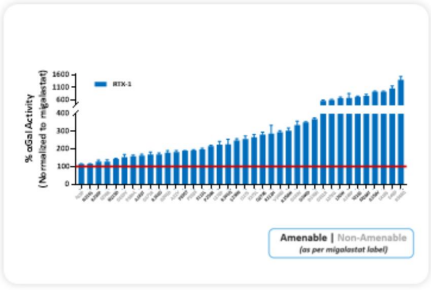


Relay Tx Solution:
Non-Inhibitory Chaperone to Stabilize Protein and Increase Activity

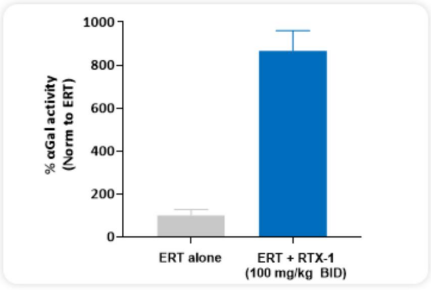
1 Superior αGal activation[1]



2 Broad mutational coverage[2]



3 Combinable with ERT[3]



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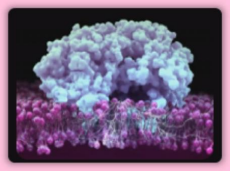
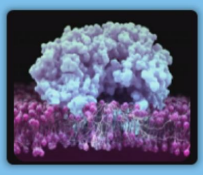
Notes: 1. R301Q mut αGal (2hr post compound washout, expressed in *GLA* KO HEK293 cells); In vitro αGal activity assay (4MU) across multiple GLA mutations expressed in HEK293 GLA KO cells (assessed at 1uM); 3. *GLA* KO mouse model, activity assessed following single dose of ERT and 14-day treatment with RTX-1

Relay Tx – 2025 Priorities

	BREAST CANCER	GENETIC DISEASE	SOLID TUMORS	GENETIC DISEASE
	PI3Kα-Driven Breast Cancer 	PI3Kα-Driven Vascular Malformations 	NRAS-Driven Solid tumors 	Fabry Disease 
Program	1st mutant-selective PI3Kα inhibitor	1st mutant-selective PI3Kα inhibitor	1st NRAS-selective inhibitor	1st non-inhibitory αGal chaperone
Large US opportunity	~140,000 pts[1]	~170,000 pts[2] *(chronic treatment)*	~28,000 pts[4]	~8,000 pts[3] *(chronic treatment)*
Anticipated Milestone	• Pivotal trial start – 2025 • Full Ph1-2 data – 2025	Clinical start – 1Q 2025	Clinical start – 2H 2025	Clinical start – 2H 2025

Progress 4 unnamed research programs

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1. Prevalent US patient population with a PIK3CA mutation (excluding PTEN co-mutations) in adjuvant, first line metastatic and second line metastatic settings (Global Data HR+/HER2- Breast Cancer Global Forecast, November 2023; 3rd party source for alteration rate); 2. Prevalence of vascular malformations with a PIK3CA mutation (Gallagher et al 2022 and several other sources); 3. Prevalence of Fabry patients (National Fabry Disease Foundation, Jan 2024); 4. Newly diagnosed (incident) solid tumors with an NRAS mutation, excluding melanoma stages 0-II (SEER, 3rd party source for alteration rate, Jan 2024); 5. Fabry disease forecasted 2024 market size per EvaluatePharma, includes Galafold® and ERTs (May 2024)

RLY-2608 Unlocks Large Breast Cancer Market

Significant Breast Cancer Commercial Opportunity

$6B+ Current PI3Kα Pathway Total Addressable Market[1]
(Metastatic HR+/HER2- Breast Cancer)

Robust RLY-2608 Clinical Data

RLY-2608 (600mg BID) + fulvestrant[2]
Interim data as of 04 Nov 2024

- 2L+: 9.2mo mPFS
- 2L only: 11.4mo mPFS

5.5mo mPFS for capivasertib + fulv in pt with prior CDK4/6[3]

Relay Tx's Extensive Global Clinical Experience

- 13 countries worldwide
- ~100 clinical sites
- 800+ patients dosed across trials

Capital to Execute

~$840M cash as of end 3Q 2024

RLY-2608 Breast Cancer Combinations

- Fulvestrant doublet — Expected pivotal start
- CDKi + fulv triplets — ongoing
- Other novel combos

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1. Relay Tx PIK3CA internal market forecast (patient-based – US, EU5, Japan). Forecast includes estimates for genetic testing, class share, market access, compliance, duration of therapy and assumes current PIK3CA therapy net price (primary sources: SEER; GloboCan; Global Data; Evaluate Pharma; DRG Market Forecast; PIK3CAi PIs); 2. PI3KCAmut, HR+/HER2- Advanced / Metastatic Breast Cancer (post CDK4/6) ; 3. Turner N Engl J Med 2023; 388:2058-2070 (n=355); Note: data shown are not from head-to-head studies, and no head-to-head studies have been conducted

ReDiscover preliminary data as of 11/04/2024