
**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): May 26, 2021

Syros Pharmaceuticals, Inc.
(Exact Name of Registrant as Specified in its Charter)

Delaware
(State or Other Jurisdiction
of Incorporation)

001-37813
(Commission
File Number)

45-3772460
(IRS Employer
Identification No.)

35 CambridgePark Drive
Cambridge, Massachusetts
(Address of Principal Executive Offices)

02140
(Zip Code)

Registrant's telephone number, including area code: (617) 744-1340

(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 (*see* General Instruction A.2. below):

- 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 or to be 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, \$0.001 par value	SYRS	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 (§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.

From time to time, we intend to conduct meetings with third parties in which our current corporate slide presentation is presented. A copy of this slide presentation, dated May 2021, is furnished as Exhibit 99.1 to this Current Report on Form 8-K. The information responsive to Item 7.01 of this Form 8-K and Exhibit 99.1 hereto shall not be deemed "filed" for purposes of Section 18 of the Securities Exchange Act of 1934 (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 or the Exchange Act, except as expressly set forth by specific reference in such a filing.

Item 9.01 Financial Statements and Exhibits.

<u>Exhibit No.</u>	<u>Description</u>
99.1	Slide presentation dated May 2021
104	Cover Page Interactive Data File (embedded within the Inline XBRL document)

SIGNATURE

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.

SYROS PHARMACEUTICALS, INC.

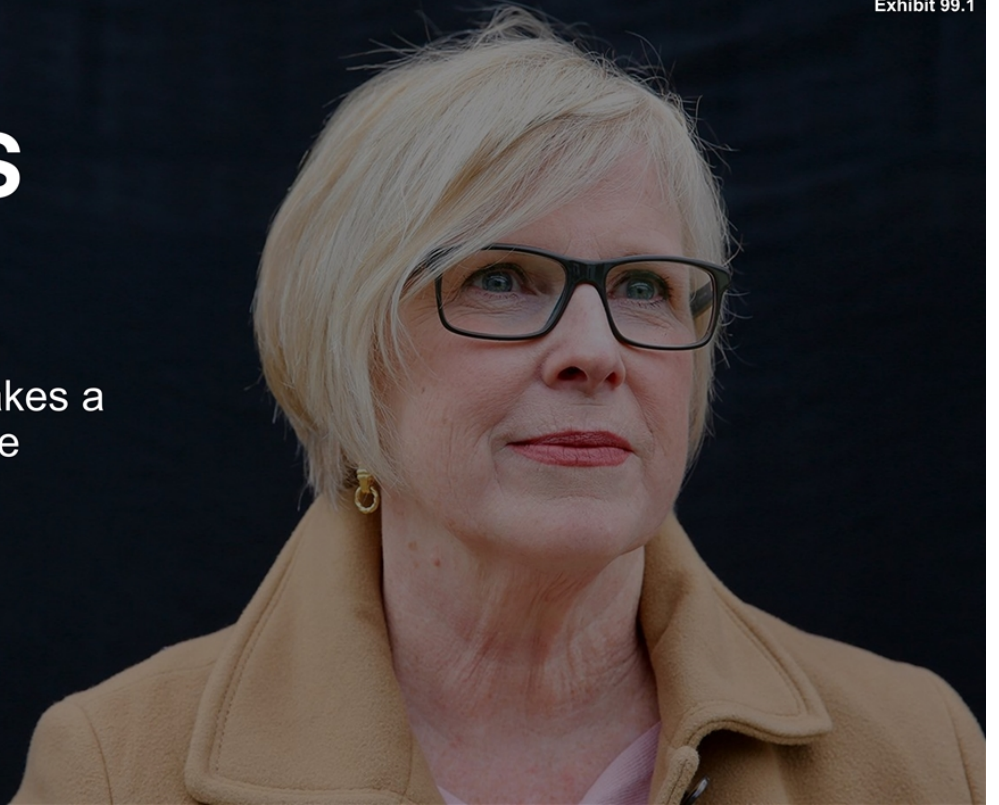
Date: May 26, 2021

By: /s/ Gerald E. Quirk
Gerald E. Quirk
Chief Legal & Administrative Officer

SYR:OS

An Expression Makes a
World of Difference

May 2021



Forward-looking statements

This presentation contains forward-looking statements within the meaning of the Private Securities Litigation Reform Act of 1995 that involve substantial risks and uncertainties. All statements, other than statements of historical facts, contained in this presentation, including statements regarding our strategy, research and clinical development plans, collaborations, future operations, future financial position, future revenues, projected costs, prospects, plans and objectives of management, are forward-looking statements. The words "anticipate," "believe," "estimate," "expect," "intend," "may," "plan," "predict," "project," "target," "potential," "will," "would," "could," "should," "continue," and similar expressions are intended to identify forward-looking statements, although not all forward-looking statements contain these identifying words.

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. Actual results or events could differ materially from the plans, intentions and expectations disclosed in these forward-looking statements as a result of various important factors, including our ability to: advance the development of our programs, including SY-1425, SY-2101 and SY-5609, under the timelines we project in current and future clinical trials; demonstrate in any current and future clinical trials the requisite safety, efficacy and combinability of our drug candidates; replicate scientific and non-clinical data in clinical trials; successfully develop a companion diagnostic test to identify patients with the RARA biomarker; obtain and maintain patent protection for our drug candidates and the freedom to operate under third party intellectual property; obtain and maintain necessary regulatory approvals; identify, enter into and maintain collaboration agreements with third parties, including our ability to perform under our collaboration agreements with Incyte Corporation and Global Blood Therapeutics; manage competition; manage expenses; raise the substantial additional capital needed to achieve our business objectives; attract and retain qualified personnel; and successfully execute on our business strategies; risks described under the caption "Risk Factors" in our Annual Report on Form 10-K for the year ended December 31, 2020 and our Quarterly Report on Form 10-Q for the quarter ended March 31, 2021, each of which is on file with the Securities and Exchange Commission (SEC); and risks described in other filings that we may make with the SEC in the future.

In addition, the extent to which the COVID-19 outbreak continues to impact our workforce and our discovery research, supply chain and clinical trial operations activities, and the operations of the third parties on which we rely, will depend on future developments, which are highly uncertain and cannot be predicted with confidence, including the duration and severity of the outbreak, additional or modified government actions, and the actions that may be required to contain the virus or treat its impact.

Any forward-looking statements contained in this presentation speak only as of the date this presentation is made, and we expressly disclaim any obligation to update any forward-looking statements, whether because of new information, future events or otherwise.

Accelerating our vision

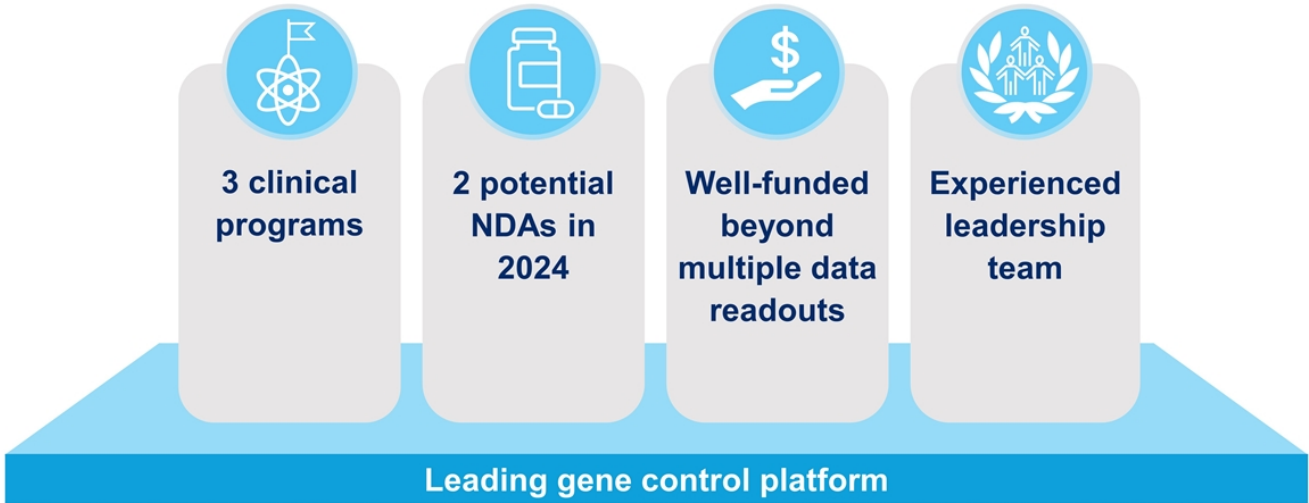
Targeted hematology therapy franchise

Selective CDK inhibitor franchise

Gene control discovery engine



Rapidly advancing toward being a commercial-stage company



Advancing a growing clinical-stage pipeline for targeted patient populations

Program	Indication	Early Clinical	Mid-Clinical	Pivotal	Commercial Rights
SY-1425 (oral RAR α agonist)	Newly diagnosed HR-MDS (w/aza)				 Americas, Europe, Australia, Israel & Russia
	Newly diagnosed unfit AML (w/ven+aza)			Ph2 2H2021	
SY-2101 (oral ATO)	Newly diagnosed APL (w/ATRA)	Dose confirm 2H2021; Ph3 2022			
SY-5609 (oral CDK7 inhibitor)	Select solid tumors	Expansion 2H 2021			

SY-1425 is approved in Japan as Amnolake® (tamibarotene) for patients with relapsed/refractory APL



SY-1425
Selective oral RAR α agonist

Clear vision for SY-1425 in RARA-positive cancers

Now

Pivotal trial in
MDS

Triplet strategy in
unfit AML

Next

NDA in MDS

Pivotal trial in AML

Commercialization

Vision

Foundation of care for
all RARA+ patients

Compelling data and clear path forward for SY-1425

Strong rationale in targeted subset

~ 30% of AML and MDS patients RARA+

SY-1425/aza induces high CR rates, rapid onset of action and meaningful durability in RARA+ ND unfit AML¹

SY-1425 safety profile supports multiple combination opportunities

New translational data suggest RARA biomarker selects for AML patients less likely to respond to ven/aza²

HR-MDS is closely related to AML with opportunity to set new standard of care



Phase 3 trial w/ aza
in RARA+ ND HR-MDS

Phase 2 trial with ven/aza
in RARA+ ND unfit AML

¹de Botton, ASH 2020; ²Fiore, ASH 2020

High CR rates, rapid onset of action, and clinically meaningful durability in RARA-positive ND unfit AML



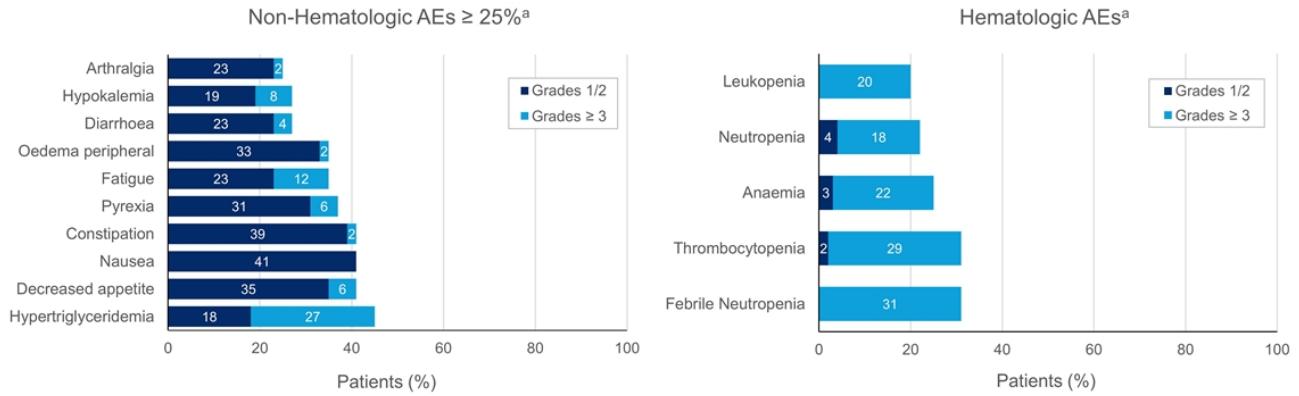
- 89% of CRs were deep molecular or cytogenetic CRs
- Responses seen irrespective of mutation or cytogenetic risk
- Response rates in RARA-negative patients comparable to historical rates for single-agent aza¹⁻³



Data from 18 response evaluable RARA-positive and 28 response evaluable RARA-negative patients presented at ASH 2020 meeting

¹Dombret, Blood 2015; ²Fenaux, JCO 2010; ³Thepot, American Journal of Hematology 2014

Generally well-tolerated combination in ND unfit AML patients



- No increase in neutropenia, anemia and thrombocytopenia compared to single-agent aza
- Majority of non-hematologic AEs are low grade and reversible

^aIncludes all enrolled ND unfit patients, N=51.
Data presented at ASH 2020 meeting



ND HR-MDS represents ideal opportunity for SY-1425 in combination with azacitidine

HR-MDS is closely related to AML

- HR-MDS and AML on a disease continuum; distinguished by % blasts in marrow
- More than half of patients progress to AML¹
- Neutropenia may lead to infection-related complications, including death²

Opportunity to set new standards of care

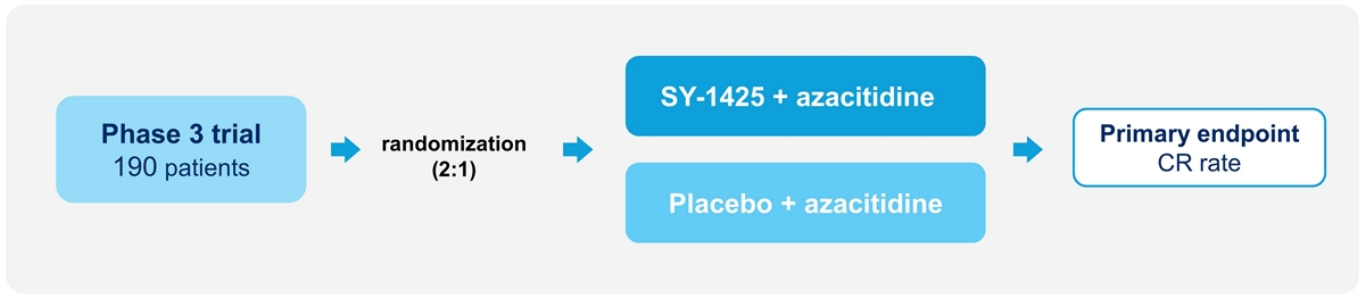
- HMAs are only approved agents
- Low CR rates ranging from 5-25%, with OS estimated between 15-25 months^{1, 3-4}
- Only 45% of patients achieve transfusion independence³

Our data suggest strong potential for SY-1425 in MDS

- 60% (n=5) response-evaluable RARA-positive R/R HR-MDS patients achieved hematologic responses with single agent SY-1425
- 67% (n=6) of response-evaluable RARA-positive low blast count AML patients achieved CR with SY-1425/aza
 - 27% (n=11) of response-evaluable RARA-negative low blast count AML patients achieved CR
- No additive neutropenia/anemia

¹Greenberg, Blood 2012; ²Toma, Haematologica 2012; ³VIDAZA (azacitidine) USPI; ⁴DACOGEN (deitabine) USPI

Ongoing placebo-controlled Phase 3 trial in RARA-positive ND HR-MDS patients



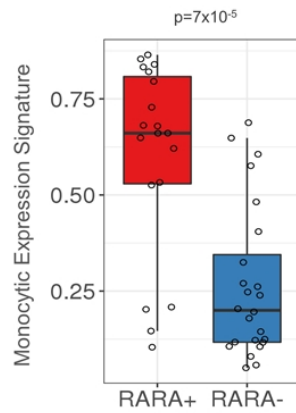
- Robustly designed, double-blind, placebo-controlled study
- 90% power to detect a difference in CR rates between experimental and control arms
- 2:1 randomization with one-sided alpha of 0.025
- FDA feedback supports:
 - Focus on RARA+ population
 - CR as primary endpoint for accelerated/full approval
 - Azacitidine as appropriate comparator

Key Milestones

Trial initiated	1Q 2021
Potential NDA	2024

New translational data support the potential for the RARA biomarker to enrich for patients unresponsive to standard of care

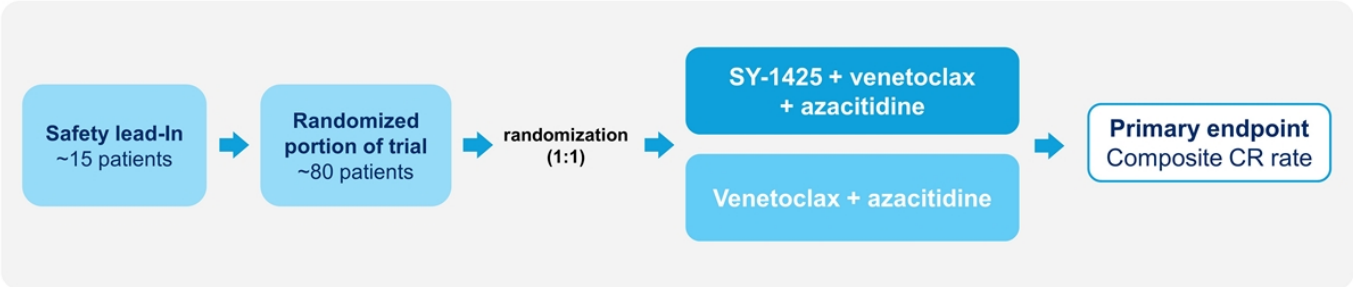
Analysis of SY-1425 Trial Patient Samples



- 30% of patients do not respond to upfront treatment with ven/aza
- Venetoclax resistance associated with monocytic phenotype,¹⁻³ which includes low BCL2 and high MCL-1 expression
- Most RARA+ patients, including those who achieved CR/CRi in SY-1425 trial, have this monocytic phenotype⁴

¹Zhang, Nature 2018; ²Kuusanmäki, Haematologica 2019; ³Pei, Cancer Discovery 2020; ⁴Fiore, ASH 2020

Initiating randomized Phase 2 trial of triplet regimen in ND RARA-positive unfit AML patients



Plan to also evaluate triplet as salvage strategy for patients in control arm who don't respond to ven/aza

Key Milestones

Initiate Phase 2 trial w/safety lead-in	2H 2021
Initial data from Phase 2 trial	2022

ND HR-MDS and unfit AML represent significant market opportunities

~30% of all AML and MDS patients are RARA-positive



Newly diagnosed HR-MDS

- ~15,000 new cases annually in US and EU
- Expected to grow into \$1B+ market
- No new approved agents, aside from HMAs, in a decade
- Existing options offer limited efficacy

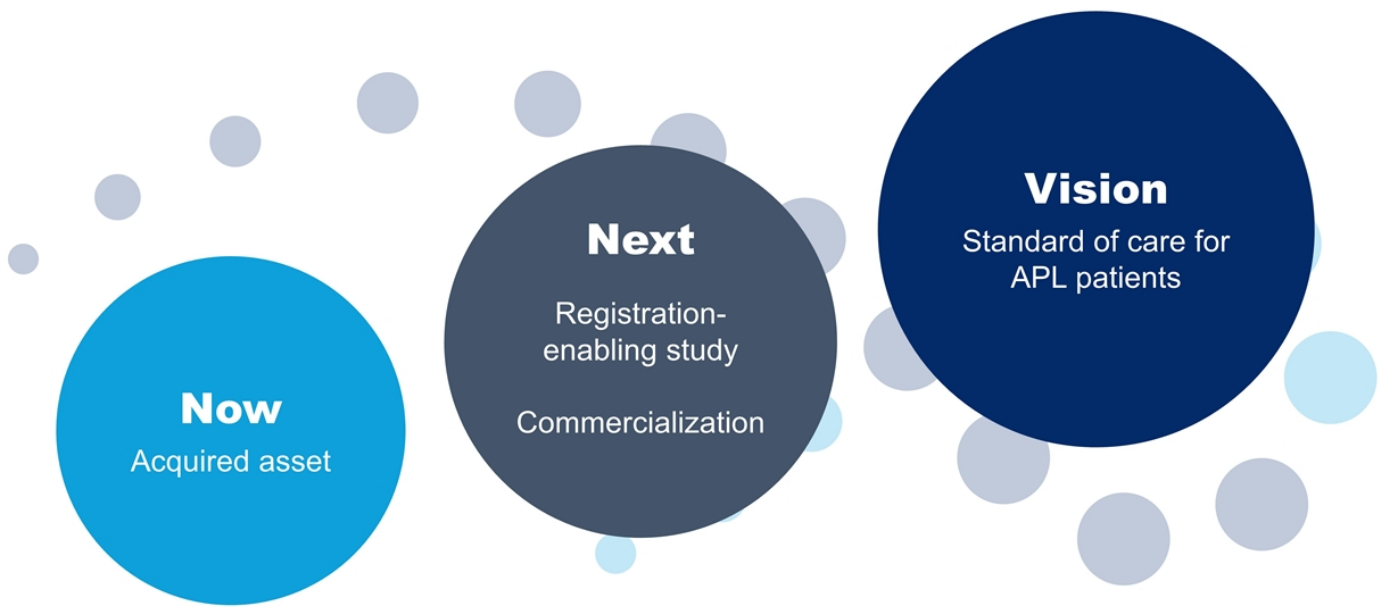
Newly diagnosed unfit AML

- Over 18,000 new cases annually in US and EU
- Expected to grow into \$2B+ market
- ~1/3 of patients don't respond to SOC ven/aza and have poor prognosis

Sources: Epidemiology and Sales projections from DRG Myelodysplastic Syndromes-Landscape & Forecast-Report 2020 and from DRG Acute Myelogenous Leukemia-Landscape & Forecast-Report 2020; Prevalence of RARA-positive patients based on data presented at ESH 2017 and ESH 2019; Resistant Ven population - Dinardo, NEJM 2020; Dinardo, Blood 2019

SY-2101
Novel oral form of arsenic trioxide

Our vision for SY-2101

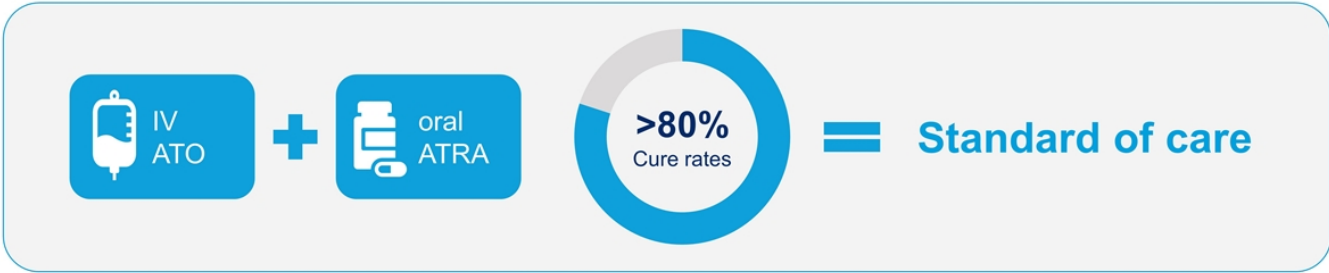


SY-2101: Highly synergistic with our advancing targeted heme franchise

- Strategic opportunity as we accelerate toward becoming a commercial-stage company
- Potential to become standard of care in APL
 - Novel oral capsule of arsenic trioxide (ATO)
- Clinical-stage asset with opportunity for accelerated approval based on molecular CR
 - Potential NDA filing in 2024
- Orphan drug designation granted in US and EU
- Issued patents provide opportunity to extend exclusivity

Capitalizes on our expertise to build a leadership position in targeted therapies for hematologic disorders

IV ATO is transformative therapy for APL patients but comes with heavy treatment burden



- Current course of treatment involves up to 140 two- to four-hour infusions over nearly a year
 - Induction – up to 60 days of daily infusions until CR is achieved
 - Consolidation – 80 days of 5 days/week for 4 weeks/cycle for 4 cycles/treatment course

Significant opportunity to reduce treatment burden, increase access and reduce health care costs and utilization

NCCN AML treatment guidelines (Nov 2020)
Trisenox (arsenic trioxide) USP



Opportunity for SY-2101 to become standard of care in significant market

APL is ~10 % of AML



Newly diagnosed APL

- Genetic fusion of RARA and PML genes
- ~2,000 patients diagnosed in US and Europe annually^{1,2}
- ~\$250 million overall market opportunity based on current pricing for IV ATO³
- Opportunity to become the standard of care and be served with targeted sales force

¹Tallman 2008 Semin Hematol
²NCI Surveillance, Epidemiology and End Results Program – 2020 Acute Myeloid Leukemia
³IBM Truven Redbook pricing for Trisenox

Completed Phase 1 PK study of SY-2101

Dosing	Three dosing cohorts: 5, 10 and 15 mg orally Once daily
Patient population	12 patients with advanced hematologic malignancies Median age: 76.5 Prior lines of therapy: Up to 5
Safety	Generally well-tolerated with low-grade AEs Lower adverse events in liver enzymes (8.3%) compared to IV ATO (~44%) Lower QTc prolongation (8.3%) compared to IV ATO (25%)
Pharmacokinetics	Good bioavailability, with generally dose proportional PK Achieves exposure levels (AUC and Cmax) in range of approved IV ATO dose

Advancing SY-2101 toward registration-enabling Phase 3 trial



- FDA feedback supports:
 - Molecular CR as primary endpoint for accelerated approval
 - Event-free survival (EFS) as primary endpoint for full approval

Key Milestones

Initiate dose confirmation study	2H 2021
Confirmatory dose/PK data	1H 2022
Initiate Phase 3	2022
Potential NDA	2024

SY-5609
Selective oral CDK7 inhibitor

Our vision for SY-5609

Now

Phase 1 trial
Initial combination
with fulvestrant

Next

Phase 1 expansion
Additional
combinations

Vision

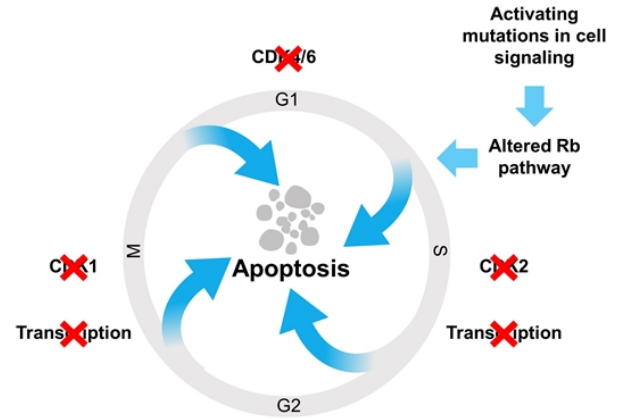
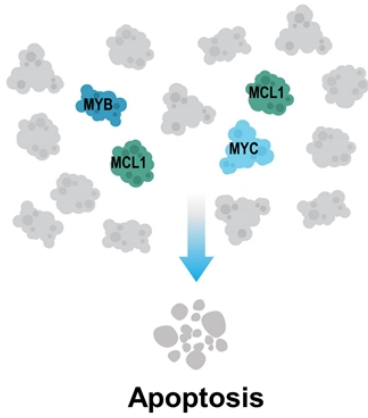
Transformative
targeted therapy for
difficult-to-treat
cancers

Selective CDK7 inhibition attacks two fundamental processes in cancer

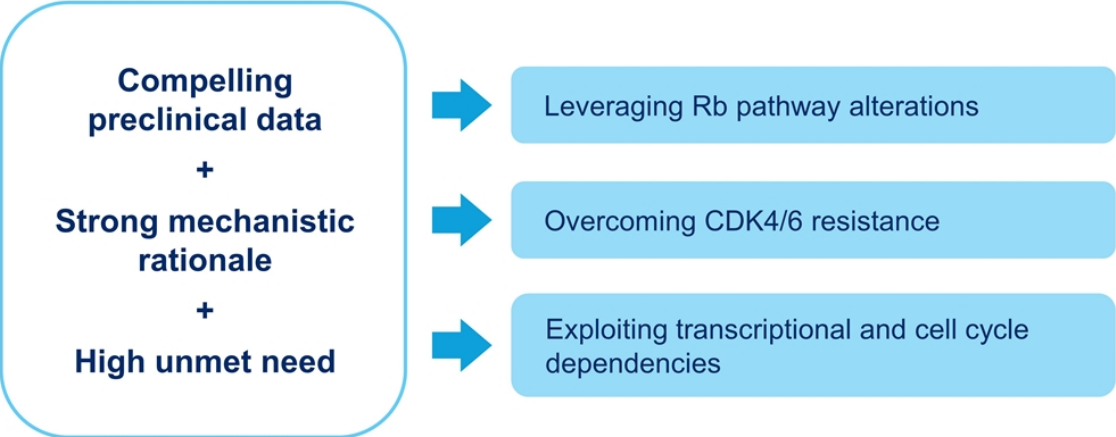
Transcription CDK7i Cell Cycle

CDK7i has been shown preclinically to decrease expression of these transcription factors and proteins

CDK7i disrupts the CDK and transcriptional activity needed to progress through the cell cycle

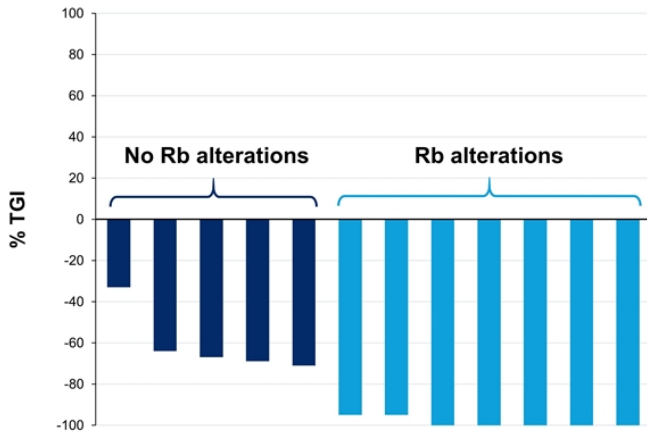


Three-pronged development strategy to maximize potential of SY-5609



Rb alterations associated with deeper and more sustained responses in preclinical studies of breast, lung and ovarian cancers

Tumor growth inhibition in all breast, lung and ovarian cancer PDX models tested



Supports Phase 1 trial enriched for populations with Rb alterations

29% of basal breast cancer patients¹

~1/3 of HR+ breast cancer patients post CDK4/6 inhibitors²

75-90% of small cell lung cancer patients³

67% of high-grade serous ovarian cancer patients⁴

¹TCGA Breast Cancer Integrated Analysis, Nature 2012

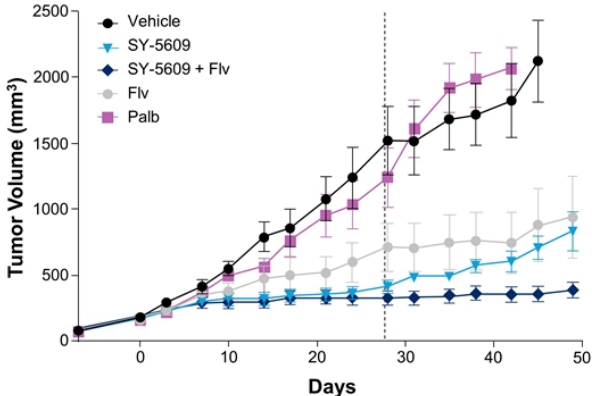
²Spring et al., San Antonio Breast Cancer Symposium 2018

³Cancer Med. 2019 Apr; 8(4): 1459–146

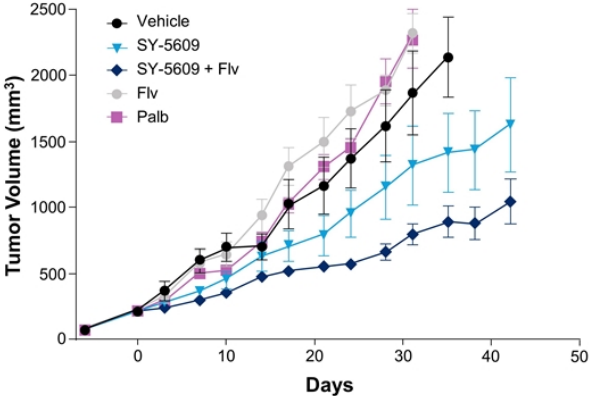
⁴TCGA Ovarian Cancer Integrated Analysis, Nature 2011

Overcoming treatment resistance: SY-5609 induces robust responses in preclinical HR+ breast cancer models

CDK4/6 inhibitor resistant model



CDK4/6 inhibitor and hormonal resistant model

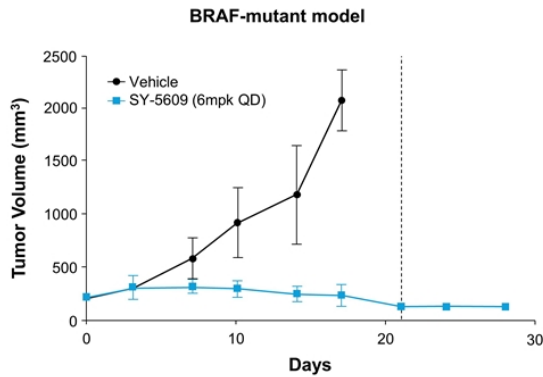


Palb: palbociclib, 50mg/kg once daily, oral; Flv: fulvestrant, 2.5mg/kg once weekly, sub-cutaneous, SY-5609: 6 mg/kg once daily, oral



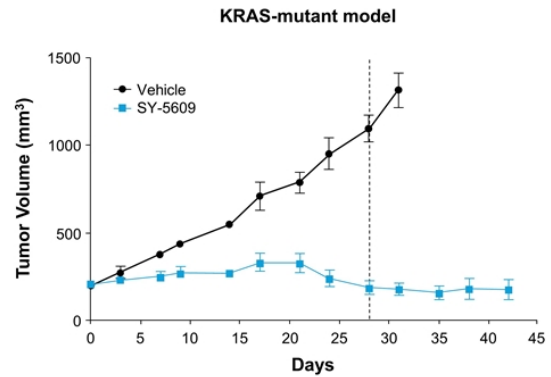
Targeting dependencies on transcription and cell cycle control induces robust responses in preclinical colorectal and pancreatic cancer models

Colorectal Cancer



- 67% (20/30) of models demonstrated $\geq 50\%$ TGI
- 23% (7/30) demonstrated deep responses of $\geq 90\%$ TGI
- Deep responses enriched in BRAF-mutant (5/10) models

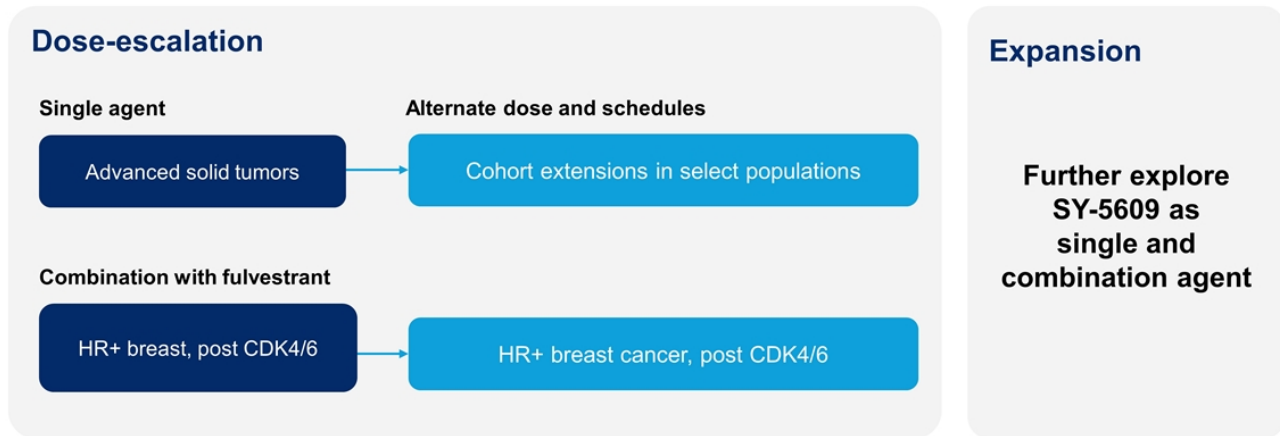
Pancreatic Cancer



- 75% (6/8) of models demonstrated $\geq 50\%$ TGI
- Regressions seen in 50% (4/8) of models
- Responses observed in CDKN2A-mutant and non-mutant and TP53-mutant and non-mutant models

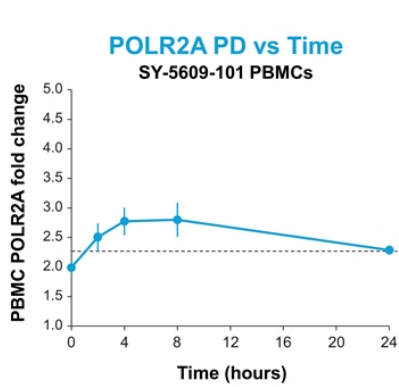


Ongoing Phase 1 dose-escalation trial in select solid tumors

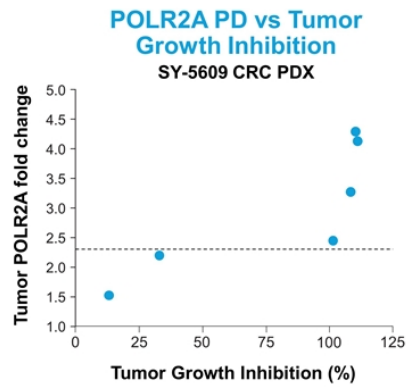


- Advanced solid tumor populations- breast, colorectal, lung, ovarian, pancreatic, and tumors with Rb alterations
- Established MTD for continuous daily dosing
- Additional dose escalation data, including clinical activity, expected in Q3 2021
- Expansion phase of Phase 1 trial expected to start in second half of 2021

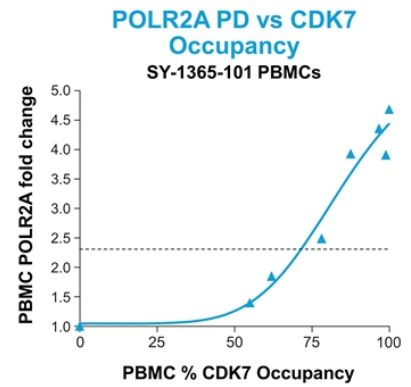
SY-5609 induced biological activity associated with tumor regressions in preclinical models and clinical activity with first-generation CDKi



- POLR2A fold-change measured at steady state (day 15) with 3 mg continuous daily dosing



- POLR2A fold-change measured at trough (24h) after single dose
- Tumor growth inhibition measured at end of 28 day cycle (cycle = SY-5609 qdx21d, 7d off)

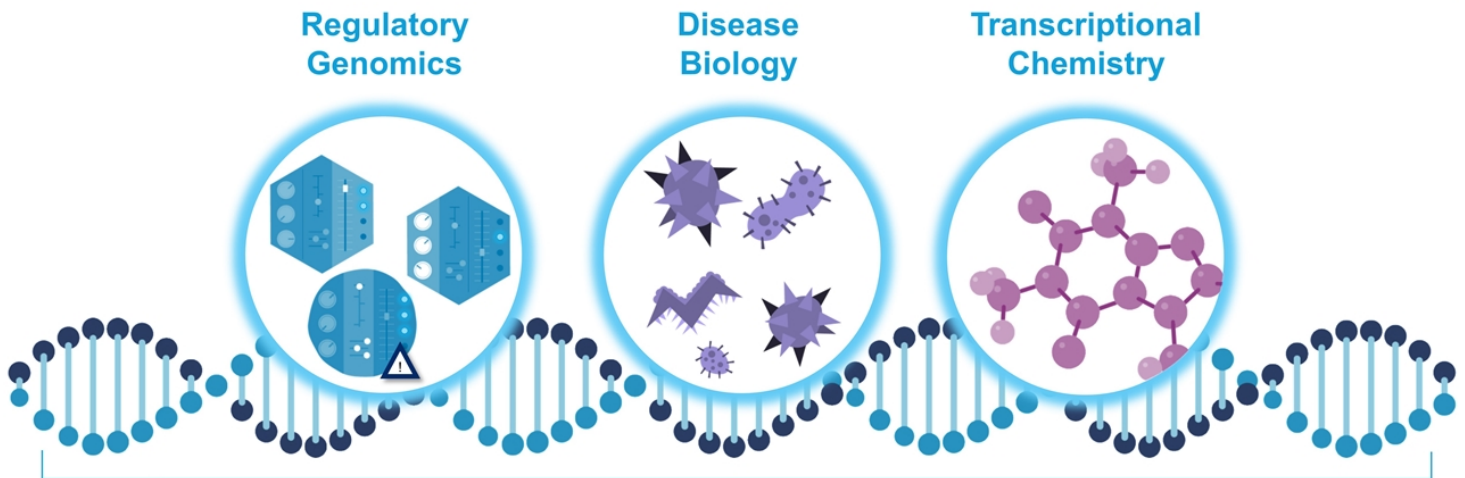


- POLR2A fold-change similar between PBMCs and tumor biopsies

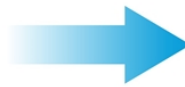
- AEs predominantly low grade; most frequent related AEs include nausea, diarrhea, fatigue, platelet count decrease and vomiting
- In patients treated in combination with fulvestrant, safety profile was consistent with single-agent treatment with SY-5609

Gene Control Discovery Engine

Redefining the power of small molecules to control expression of genes



98% Previously unexplored regulatory regions of the genome control expression of genes determining cell function; majority of disease variation found in these regions




Patient Impact

Medicines that control the expression of genes to provide profound benefit for patients with severe diseases

Robust early-stage pipeline to fuel long-term growth

Therapeutic Area	Program	Target Development	Drug Discovery	IND-Enabling	Commercial Rights
Cancer	CDK12 inhibitor				
	Target 1				
	Target 2				
Monogenic Disease	Myeloproliferative neoplasms				
	Sickle cell disease & beta thalassemia				 Syros US co-promote option
	Myotonic dystrophy type 1				

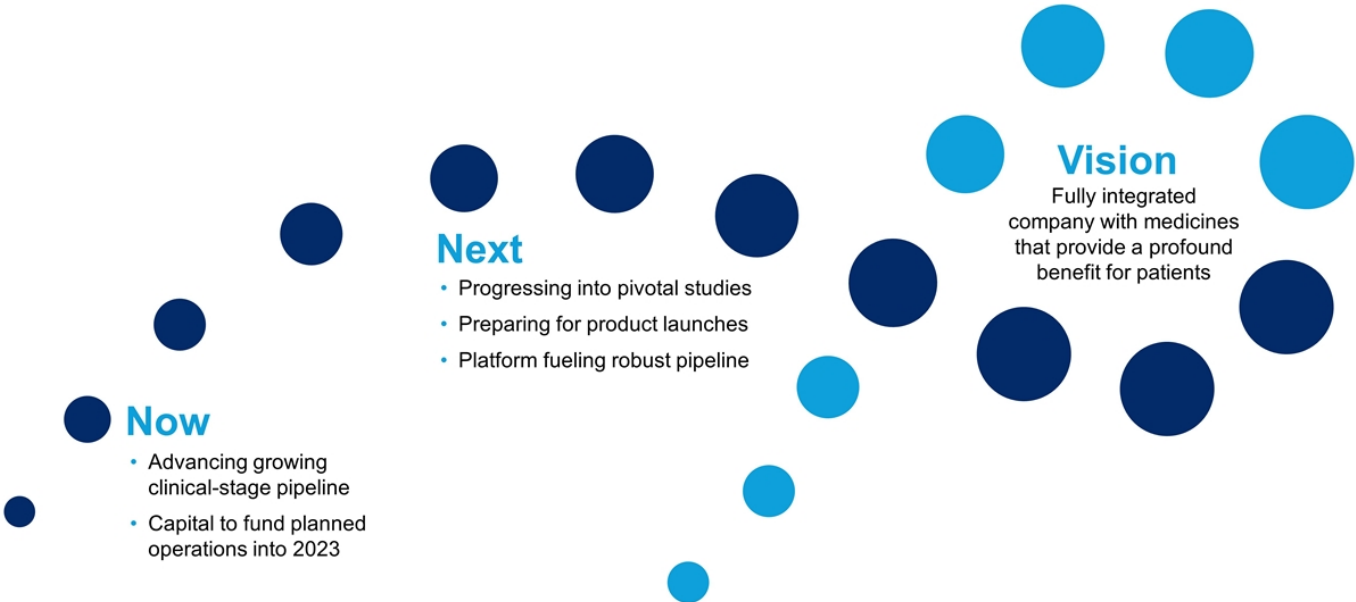
Multiple expected value-driving milestones and strong cash position

SY-1425 w/ aza	Initiate Phase 3 registration trial in ND HR-MDS Potential NDA filing in ND HR-MDS	 2024
SY-1425 w/ ven+aza	Initiate Phase 2 trial w/ safety lead-in in ND unfit AML Initial data from Phase 2 trial in ND unfit AML	2H 2021 2022
SY-2101	Initiate dose confirmation study Confirmatory dose/PK data Initiate Phase 3 registration trial in ND APL Potential NDA filing	2H 2021 1H 2022 2022 2024
SY-5609	Additional dose-escalation data, including clinical activity Initiate expansion phase of Phase 1	Q3 2021 2H 2021
Discovery	Name next development candidate	2022



Cash into 2023 through multiple expected value drivers

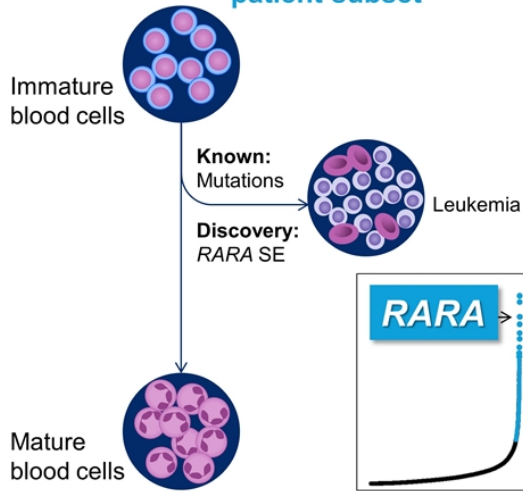
Rapidly advancing toward our vision



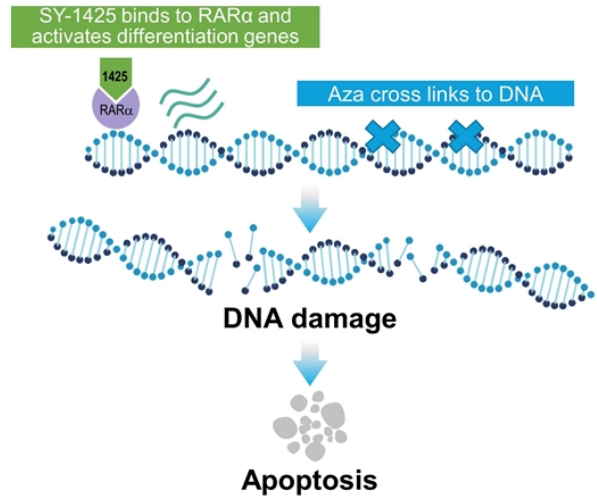
Appendix

SY-1425: Novel, first-in-class RAR α agonist with broad combination potential

Gene control platform identifies novel patient subset



SY-1425 enhances apoptosis preclinically

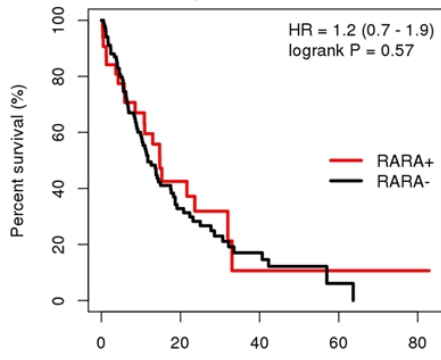


Distinct MOA, tolerability and preclinical synergy with multiple AML agents



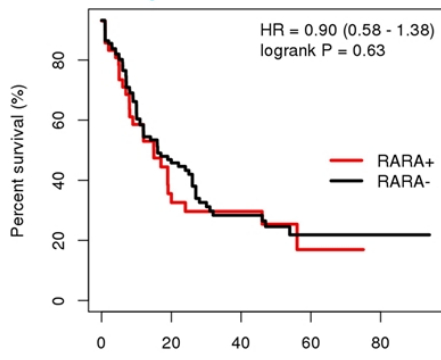
RARA is not a prognostic biomarker in AML patients

**Analysis of BeatAML Registry
RARA expression and survival¹**



	Number at risk					
Months	0	20	40	60	80	
RARA+	32	9	2	1	1	
RARA-	101	30	10	2	0	0

**Analysis of TCGA RARA
expression and survival²**



	Number at risk					
Months	0	20	40	60	80	
RARA+	43	16	10	4	1	0
RARA-	118	45	20	13	4	1

- Independent analyses of BeatAML¹, TCGA², and AML patient sample analyses³ show that prognosis is similar regardless of levels of RAR α expression

¹ Tyner et al., Functional Genomic Landscape of Acute Myeloid Leukaemia, Nature 2018

² TCGA Research Network, Genomic and Epigenomic Landscapes of Adult De Novo Acute Myeloid Leukemia, NEJM 2013; Expression and survival data from PanCancerAtlas portal on GDC: <https://gdc.cancer.gov/about-data/publications/pancanatlas>

³ McKeown et al., Superenhancer Analysis Defines Novel Epigenomic Subtypes of Non-APL AML, Including an RAR α Dependency Targetable by SY-1425, a Potent and Selective RAR α Agonist, Cancer Discovery 2017



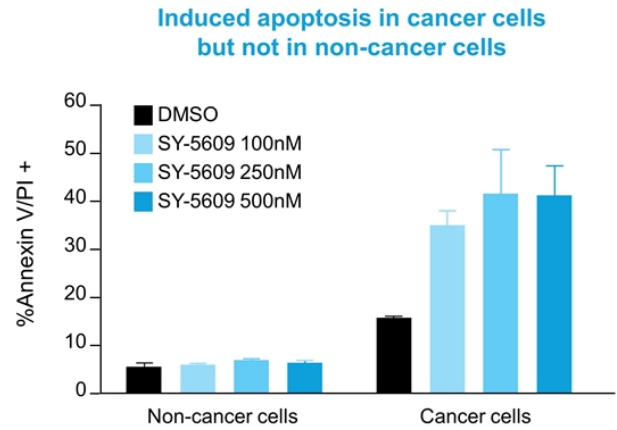
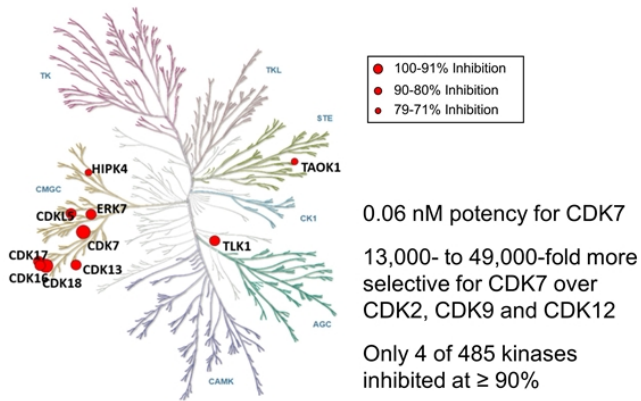
SY-1425/azacitidine combination: Clinical activity observed in heavily pretreated RARA-positive R/R AML

- ORR of 19% (4/21) with 2 responding patients continuing on treatment at months 8 and 9, respectively
 - 1 CRc
 - 2 CRi
 - 1 MLFS
- Higher ORR of 43% (3/7) in HMA and ven naïve patients
- Transfusion independence in 30% (6/20)
- Median OS of 5.9 months (95% CI: 3.1, 9.9)

Data presented at ASH 2020 meeting

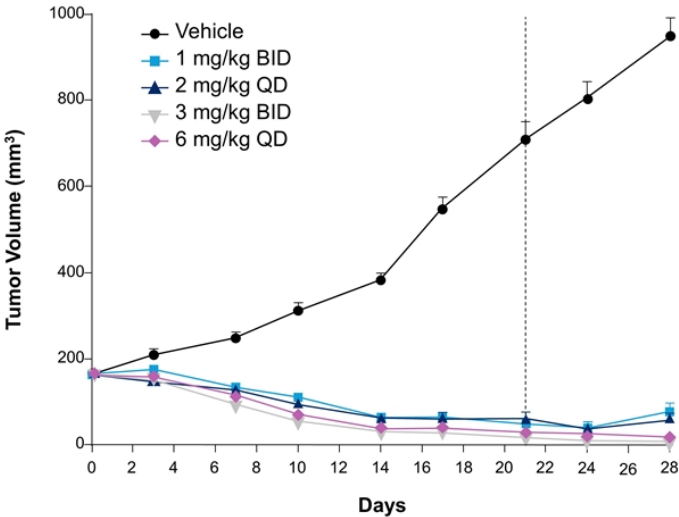


SY-5609: Highly selective and potent oral CDK7 inhibitor



SY-5609: Tumor growth inhibition observed below MTD in preclinical models

Triple negative breast cancer model



- Regressions observed at 5-fold below MTD of ≥ 10 mg/kg QD

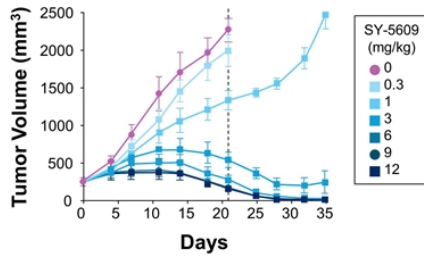
----- Dashed lines represent end of treatment



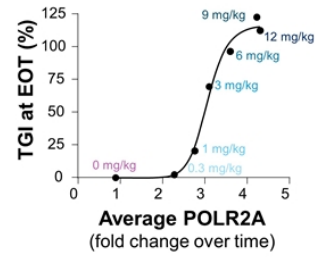
Data presented in October 2019 at EORTC-NCI-AACR Conference

SY-5609: Dose-dependent tumor growth inhibition and PD effects in tumor tissue in preclinical colorectal cancer models

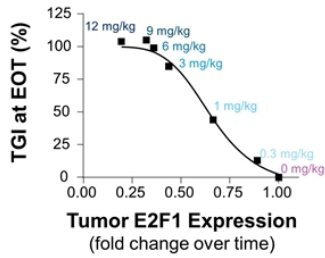
Tumor growth inhibition



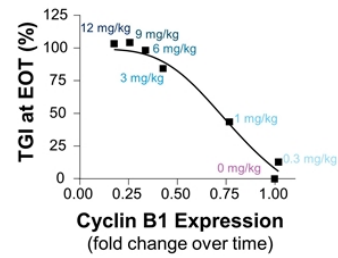
Dose-dependent increase in POLR2A



Dose-dependent decrease in E2F1



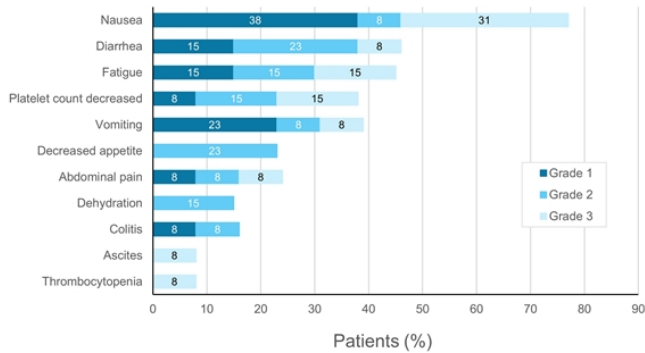
Dose-dependent decrease in cyclin B1



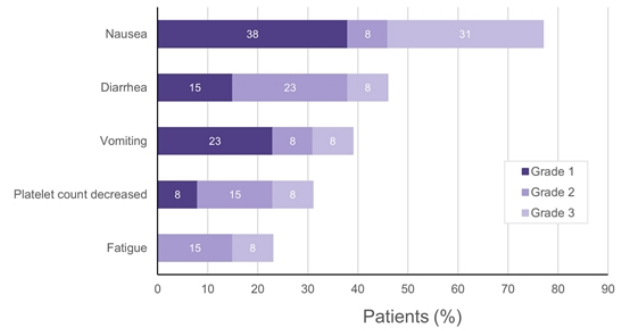
Data presented in May 2020 at ASCO Virtual Symposium

SY-5609: Safety overview from early dose-escalation data (n=17)

Single Agent Adverse Events; All Causality

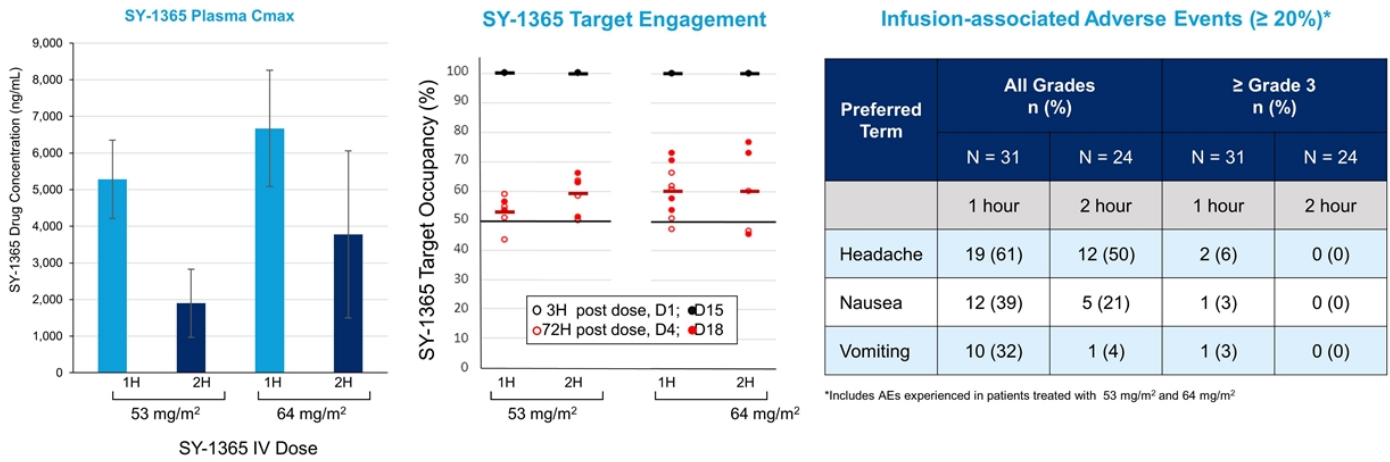


Single Agent Related Adverse Events



- Predominantly low grade; most frequent related AEs include nausea, diarrhea, fatigue, platelet count decrease and vomiting
- DLTs: nausea and thrombocytopenia (5 mg); fatigue and abdominal pain (4 mg)
- MTD for continuous daily dosing defined as 3 mg
- In patients treated in combination with fulvestrant, safety profile was consistent with single-agent treatment with SY-5609

SY-1365: Peri-infusional AEs in Phase 1 trial were associated with peak blood concentrations and not CDK7 target engagement



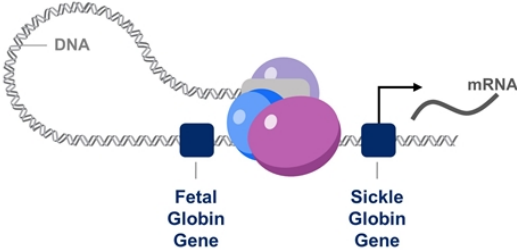
Longer infusions maintained CDK7 target engagement while lowering peak drug concentrations and decreasing frequency and severity of peri-infusional AEs



Applying our platform to monogenic diseases: sickle cell disease and beta thalassemia

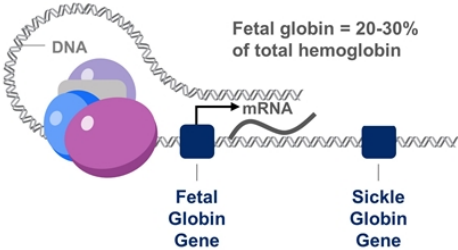
Clinical and genetic data point to therapeutic benefit of elevated fetal globin

- SCD and beta thalassemia caused by mutated adult globin gene
- Fetal globin gene typically turned off at birth
- In some SCD and beta thalassemia patients, fetal globin stays on and is associated with milder disease



Using gene control platform to elevate fetal globin expression

- Characterized transcriptional programs that determine globin expression in fetal and adult states
- Identified and targeting LRF and components of the NuRD complex with small molecules



SY-2101 transaction overview and \$90.5 million strategic financing

Asset acquisition

- Upfront cash payment of \$12 million
- Additional regulatory milestone of \$6 million in APL indication
- Aggregate sales milestones of up to \$10 million

Strategic financing

- Completed strategic financing yielding \$90.5 million in gross proceeds
- Led by Bain Capital Life Sciences with participation from additional new and existing investors

SYR·S