January 2021 Corporate Presentation



Forward-Looking Statements

BioCryst's presentation may contain forward-looking statements, including statements regarding future results, unaudited and forward-looking financial information and company performance or achievements. These statements are subject to known and unknown risks and uncertainties which may cause our actual results, performance or achievements to be materially different from any future results or performances expressed or implied in this presentation. You should not place undue reliance on the forward-looking statements. For additional information, including important risk factors, please refer to BioCryst's documents filed with the SEC and located at ir.biocryst.com/financial-information/sec-filings



Delivering extraordinary Empowering ordinary

BioCryst develops novel oral medicines designed to treat rare disease to help patients experience a normal quality of life.

BioCryst's Robust Pipeline

	Lead Optimization	Pre-clinical	Phase 1	Phase 2	Phase 3	Filed	Approved
STRATEGY: Develop oral therap	oies for life-th	reatening, rar	e diseases				
ORLADEYO™(berotralstat) Oral Capsule, (prophylactic HAE)							
U.S.							
Japan							,
EU							
BCX9930 – Oral Factor D Inhibitor (PNH)							
BCX9930 – Oral Factor D Inhibitor (renal diseases)							
BCX9250 – Oral ALK-2 Inhibitor (FOP)							
Additional Rare Diseases							
SUPPORTING ASSETS: Potentia	al for governm	nent support/	capital infusion	ons			
RAPIVAB [®] (peramivir injection)							
Galidesivir (broad spectrum antiviral)							



• • • •

Significant Upcoming Milestones in 2021



Q22021

Approval decision on ORLADEYO in Japan (January 2021)

Data from completed BCX9930 dose ranging study in PNH Approval decision on ORLADEYO in EU

Revenues reported from Q1/first full quarter of ORLADEYO sales in US

Launch of ORLADEYO in Japan

Launch of ORLADEYO in Germany





BCX9930 Advanced Development Trials

BCX9250 Next Steps

ORLADEYO REVENUES



2021 Pipeline Advancement Plans

- Progress BCX9930 into advanced development
 - Begin pivotal trial in PNH patients
 - Begin proof-of-concept trial(s) in patients with renal complement-mediated diseases
- Advance BCX9250 for FOP
- Move additional oral rare disease molecules from lead optimization into preclinical development



Now Available: Orladeyo™

orladeyo[™] (berotralstat) 150 mg capsule





For hereditary angioedema (HAE), **This is big.**

Capsule not actual size

INDICATION

ORLADEYO[™] (berotralstat) is a plasma kallikrein inhibitor indicated for prophylaxis to prevent attacks of hereditary angioedema (HAE) in adults and pediatric patients 12 years and older.

Limitations of use

The safety and effectiveness of ORLADEYO for the treatment of acute HAE attacks have not been established. ORLADEYO should not be used for the treatment of acute HAE attacks. Additional doses or dosages of ORLADEYO higher than 150 mg once daily are not recommended due to the potential for QT prolongation.





Robust Market Research

Market Sizing

 US prevalence study using administrative claims data

US HAE Patients

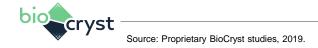
- 100 quantitative, 25-minute online surveys
- 26 individual,
 60- to 75-minute qualitative interviews

US Physicians

- 175 quantitative,
 20-minute online
 surveys
- 43 individual,
 60- to 75-minute qualitative interviews

US Payors

 16 interviews with medical and pharmacy directors from insurance plans and PBMs covering >100 million lives



Administrative Claims Analysis Estimates US HAE Population at ~10,000 Patients with ~7,500 Diagnosed & Treated

Data Source: Administrative claims from Symphony Integrated Dataverse (IDV) from 2017-2019 for >270 million US patients 1.Diagnosed and treated with HAE-specific medication
 2.Diagnosed but not treated with HAE-specific medication
 3.Treated with HAE-specific medication but not diagnosed

- Recurring claims with HAE ICD-9/10 diagnosis codes
- Complement function and/or level tests
- Recurring claims for HAE-specific medications

1. ~7,500 patients diagnosed and treated

- 2. ~1,700 patients diagnosed but not treated
- 3. ~600 patients treated but not diagnosed

National projections*

Claims

Variables

Source: Proprietary BioCryst study, 2019. *Projections based on total US population and demographics

Large, Quantitative Market Research Studies with US Patients and HAE-treating Physicians in July 2019 with 24-week APeX-2 Profile

100 HAE Patients

- 25-minute online survey
- Age 18+, diagnosed with Type I or II HAE
- Currently treating HAE or not currently treating and has 1+ attack every 3 months
- 50% recruited from HAEA patient organization
- 50% recruited via social media and online panels

175 HAE-Treating Physicians

- 20-minute online survey
- Allergist/Immunologist (n=100)
- Other specialty (n=75)
- Actively treats 2+ Type I or II HAE patients per year
- Study average = 7.6 patients/year
- Recruited via email and online panels

Physicians in this study treat <u>1,300</u> HAE patients representing over 10% of US HAE patients



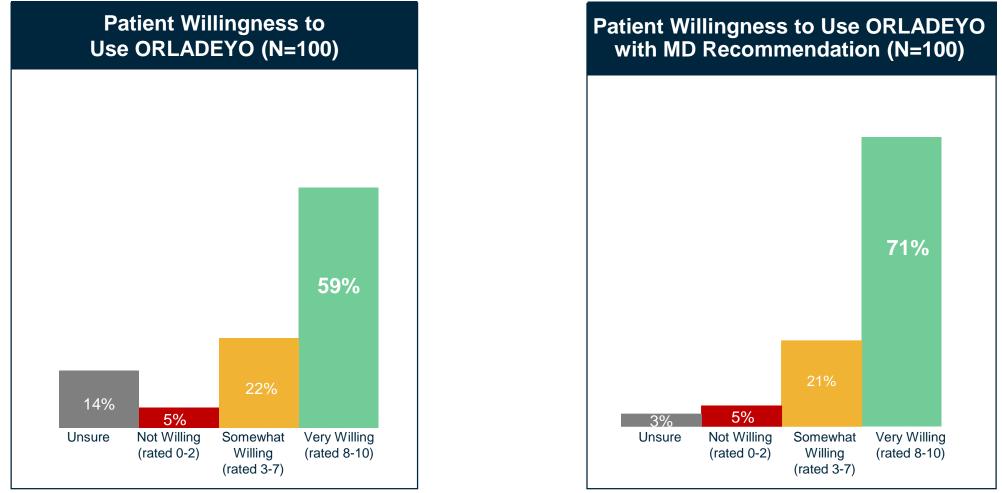
Respondents Viewed a Blinded Profile of ORLADEYO Based on 24-week Results from APeX-2

Indication	Prophylactic treatment of HAE for patients 12 years and above
Dosage	Take 1 capsule by mouth once per day
Clinical trial design	Patients who were experiencing an average of 3 HAE attacks per month took Treatment X or a placebo (an inactive drug often used in clinical trials) for 6 months
	Patients taking Treatment X had 44% fewer HAE attacks overall than patients taking a placebo during the 6-month clinical trial
Efficacy	Half (50%) of patients taking Treatment X reduced their number of HAE attacks by 70% or more between the beginning and end of the trial
	About 1 in 4 patients (23%) taking Treatment X reduced their number of HAE attacks by 90% or more beginning and end of the trial
Cofety and	Adverse events from Treatment X were generally mild and similar to placebo
Safety and tolerability	The most common side effects experienced more often with Treatment X were short episodes of mild diarrhea or vomiting experienced by about 10% of patients

Source: Proprietary BioCryst study, 2019.

Strong HAE Patient Demand for ORLADEYO:

59% of Patients Expressed High Willingness to use ORLADEYO Rises to 71% with Physician Recommendation

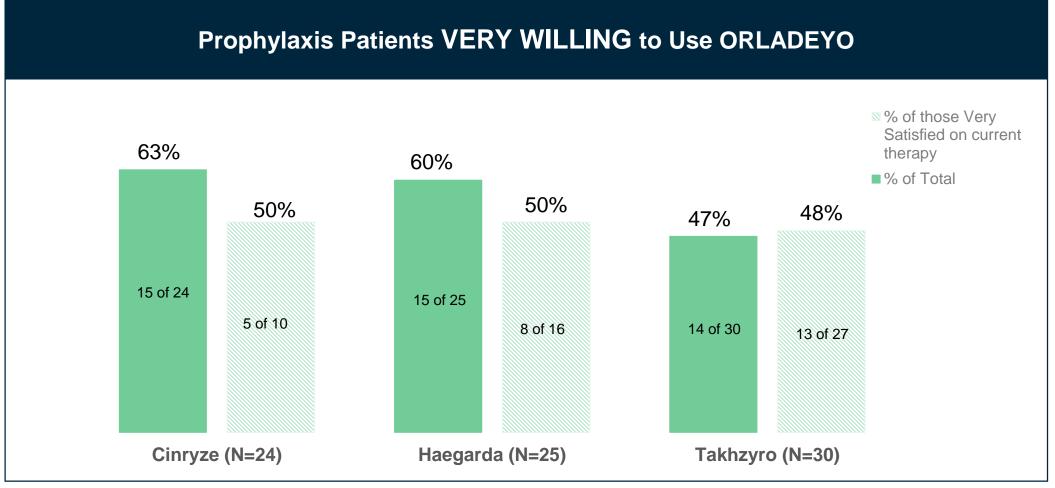


All Qualified HAE Patients (n=100)

Rated on a scale where a "0" indicates "Not at all willing", and a "10" indicates "Extremely willing"



Prophylaxis Patients are Very Willing to Use ORLADEYO—Even Those Very Satisfied with their Current Injectable Prophylactic Treatment



All Current Prophylaxis Users- "Very Willing" & "Very Satisfied" = Top 3 Box (rated 8,9,10 on 10 point scale)

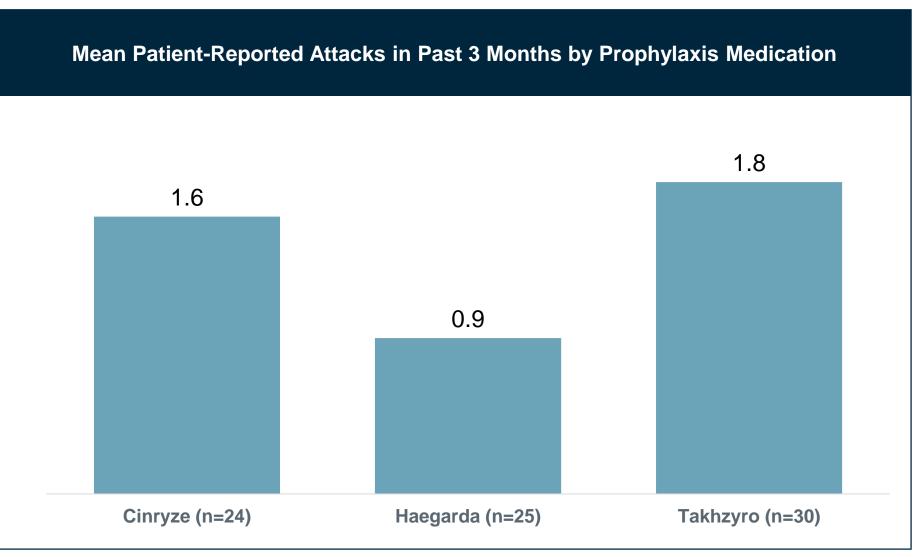
Willingness rated on a scale where a "0" indicates "Not at all willing", and a "10" indicates "Extremely willing"

Satisfaction with current treatment rated on a scale where a "0" indicates "Not at all satisfied ", and a "10" indicates "Extremely satisfied"

biocryst

Source: BioCryst Proprietary Market Research Study, 2019. Respondents were shown a blinded profile (Treatment X) of ORLADEYO, 24-week results of APeX-2

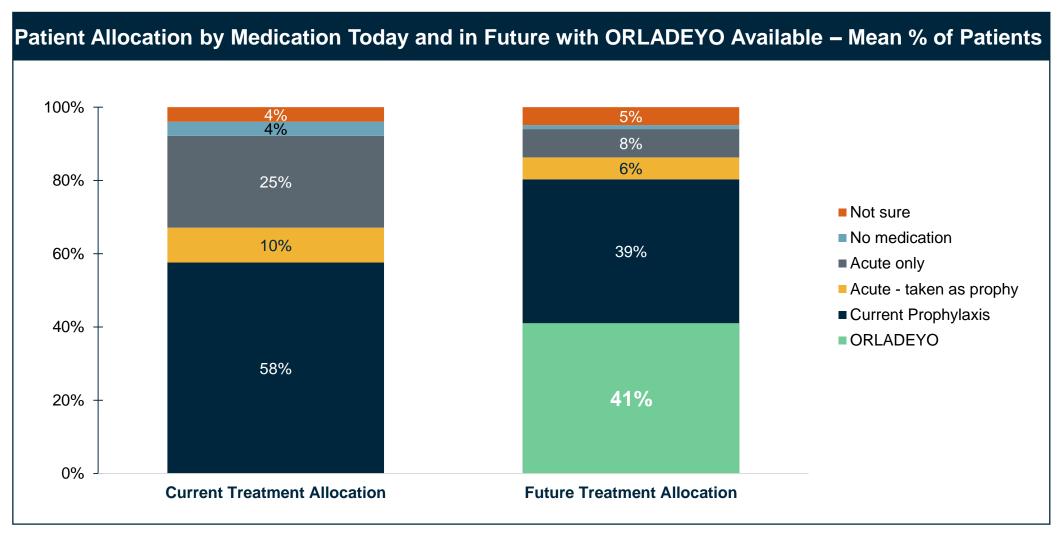
Patients Report Breakthrough Attacks with Injectable/Infused Treatments







Physicians Expect to Prescribe ORLADEYO for Over 40% of HAE Patients 80% of HAE Patients Expected to be on Some Form of Prophylaxis



All Qualified Respondents (n=175)

bio

Source: BioCryst Proprietary Market Research Study, 2019. Respondents were shown a blinded profile (Treatment X) of ORLADEYO, 24-week results of APeX-2, Physicians were asked to perform a patient allocation.

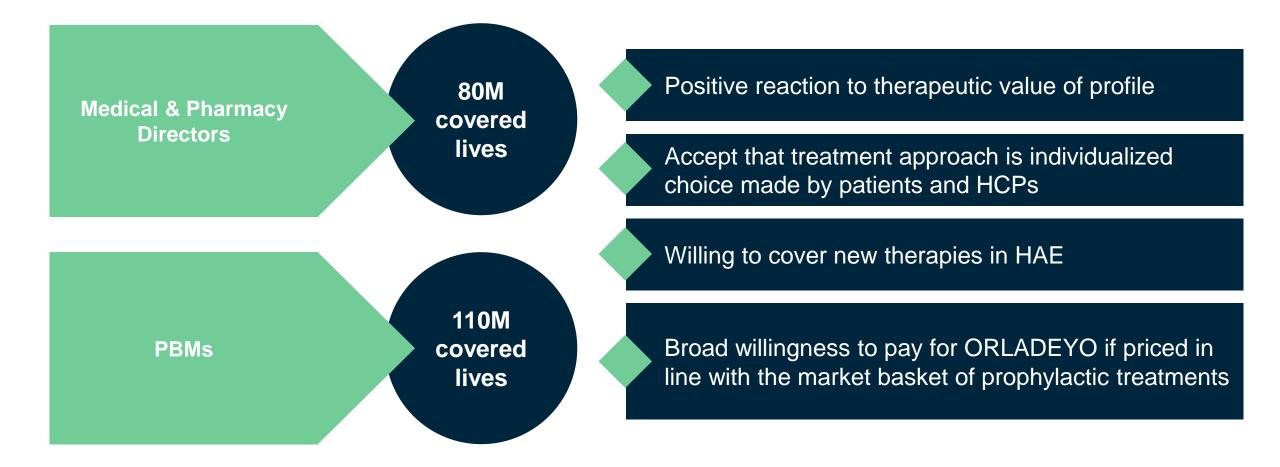
Clinical Trial Experience Consistent with Market Research— Patients on Injectable Prophylaxis Switch to Oral, Once-daily ORLADEYO

Physicians' expectations in market research	~50% of future use of ORLADEYO will come from patients switching from other prophylaxis treatments
APeX-2 enrollment	44% of patients treated previously with injected or infused C1 inhibitor prophylaxis
APeX-S enrollment in the United States	~50% of patients enrolled since mid-2019 previously treated with Takhzyro, Haegarda or Cinryze prophylaxis

Insights from Long-term Patients in APeX-2: Why they Stay on Oral, Once-Daily ORLADEYO

Efficacy	<i>"In the past 3 months I may have had to fall back on rescue maybe 3 times, which is fantastic. I'll take that all day long. Three times in 3 months compared to twice a week [on Haegarda], this is so much better."</i>
	<i>"If I felt like a swelling going on in my stomach. Being on [ORLADEYO] never allowed that swelling to really run its course. I was able to eat and sleep and exercise normally… [without ORLADEYO] I would have had to hit pause for about 3 days."</i>
	"I started to feel like I was having less HAE attacks, but more importantly, they were less severe and would be very easily controlled with the acute medications that I took."
Tolerability	<i>"I haven't really experienced any side effects. Early on it sort of wanted to bother my stomach, but not anymore because now I know [to take it with a meal]."</i>
Less burden and improved quality of	"So much freer not to have all [that medicine] in your refrigerator, in your purse, when you travel So much easier as far as not having to schedule time to mix drug and infuse it."
life	<i>"I travel a lot for work…[ORLADEYO] gave me an opportunity to never miss a treatment. It was critical in doing that. If I'd had to carry around a needle or a shot it would have been a very different process to have managed."</i>
	"After several years of being a pincushion it was nice to be able to take a pill"
	<i>"It was just exciting to see the difference the medication was making… All my hopes and dreams for what I was praying for started to come true, everything started to happen the way I was hoping."</i>
	"You don't even realize how hard [treating HAE] is on you right now, 'cause this is all you've ever known. So I can't wait. As soon as this gets FDA approved I'm on a bunch of patient education groups for HAE, and I've had to stay quiet about how good this works."

US Payors Anticipate Providing Coverage for ORLADEYO



biocryst

Source: BioCryst Proprietary Research, 2019. Sample included 5 national insurance plans, 7 regional plans, 2 IDNs, and 2 national PBMs. Respondents were shown a blinded profile (Treatment X) of ORLADEYO, 24-week results of APeX-2.

ORLADEYO for HAE Prophylaxis: Data Supports Global Peak Market Opportunity >\$500M

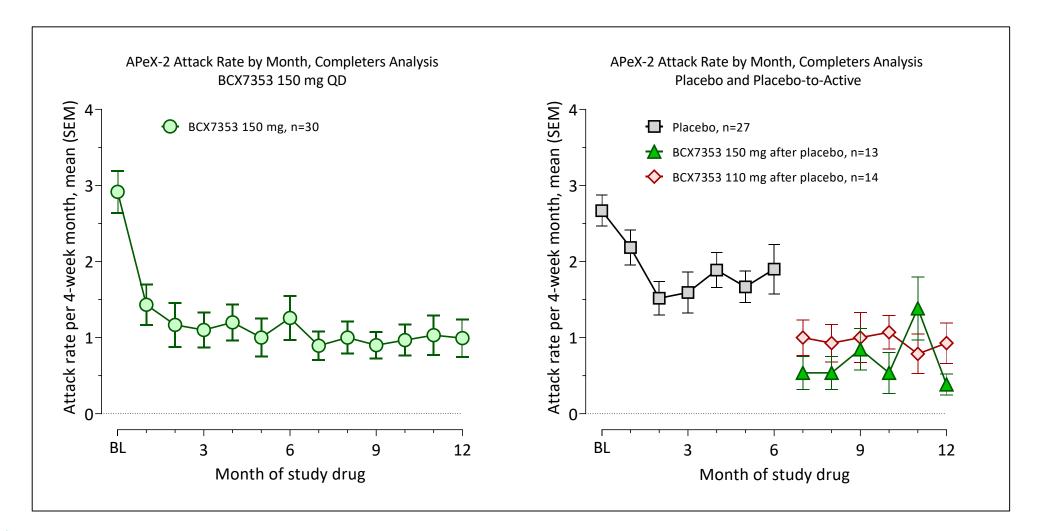
Clinical Data	Prevalence	Treatment Paradigm
Consistent, clinically meaningful benefit demonstrated through 48 weeks	~10,000 (US) HAE Patients	Physicians expect shift to ~80%
Safe and generally well-tolerated	~7,500 diagnosed and treated	prophylaxis

Strong Demand for ORLADEYO Product Profile and Benefit

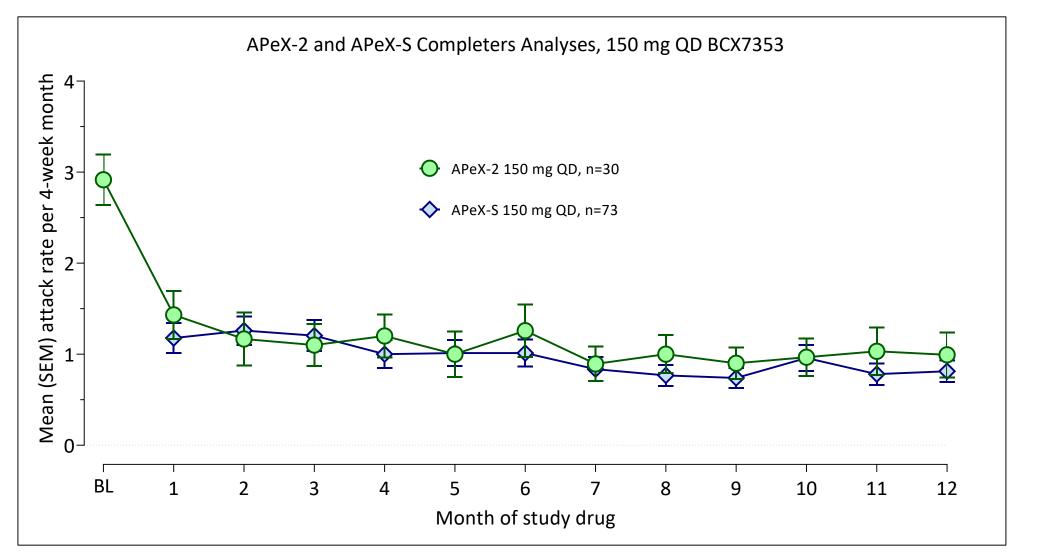
Overall, 60-70% of patients very willing to use Physicians intending to prescribe to >40% of patients Payors acknowledge therapeutic value and broad willingness to pay



Rapid and Sustained HAE Attack Rate Reduction: Analyses for APeX-2: 150 mg and Placebo 48-week Completers

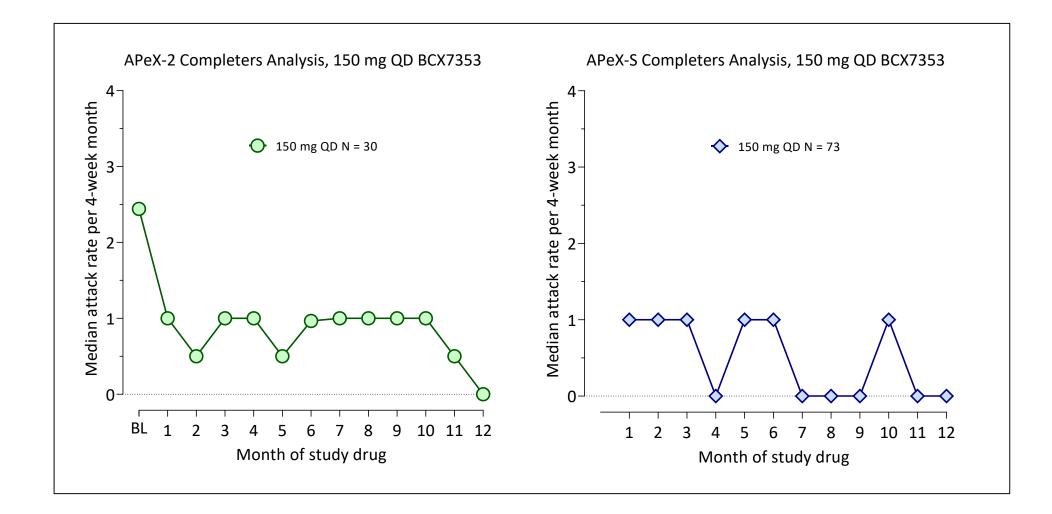


Consistent Mean Attack Rates in APeX-2 and APeX-S





Median Attack Rates in 48-week Completers: Zero Attacks per Month in 6 of 12 Months in APeX-S





Approved Label: ORLADEYO™ (berotralstat) Safety

In APeX-2 (part 1), the most common^a treatment-emergent adverse reactions were abdominal pain, vomiting, diarrhea, back pain, and gastroesophageal reflux disease (GERD)

Adverse reactions	Placebo (n=39)	ORLADEYO 110 mg (n=41)	ORLADEYO 150 mg (n=40)
Adverse reactions	n (%)	n (%)	n (%)
Abdominal pain ^b	4 (10)	4 (10)	9 (23)
Vomiting	1 (3)	4 (10)	6 (15)
Diarrhea ^c	0	4 (10)	6 (15)
Back pain	1 (3)	1 (2)	4 (10)
GERD	0	4 (10)	2 (5)

^a≥10% and higher than placebo. ^bIncludes abdominal pain, abdominal discomfort, abdominal tenderness, and upper abdominal pain. ^cIncludes diarrhea and frequent bowel movements.

Findings from the open-label, long-term safety study, APeX-S (interim safety population, n=227), support the data observed in APeX-2 (part 1)



ORLADEYO for HAE Prophylaxis: Japanese Partnership with Torii

Non-dilutive Capital + Access to Unique Market with Large Unmet Need

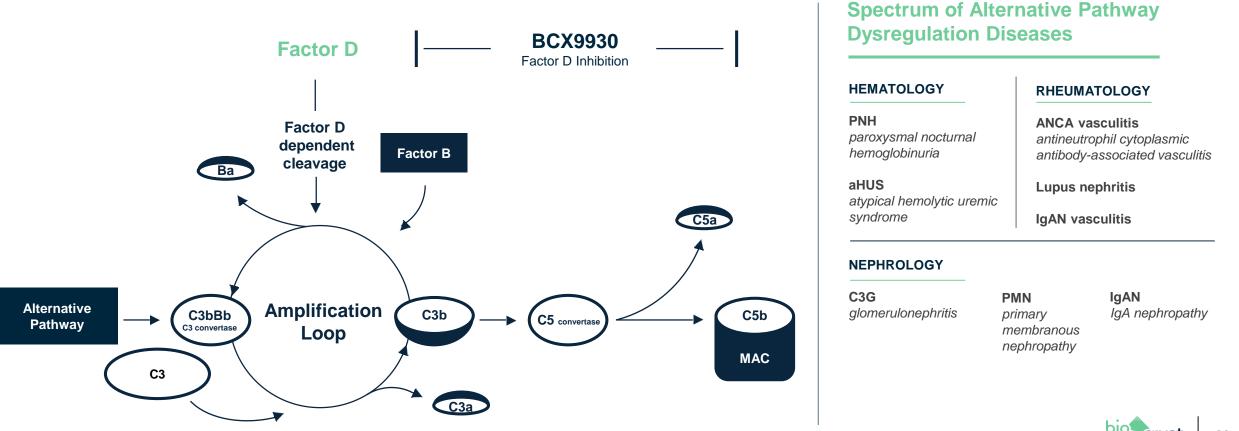


- \$37 million in upfront and milestones
 - \$22 million upfront
 - \$15 million with 2021 approval + threshold pricing
 - Royalties from mid-teens up to potentially 40%
- Proven, committed partner
- Sakigake designation with approval decision expected January 2021

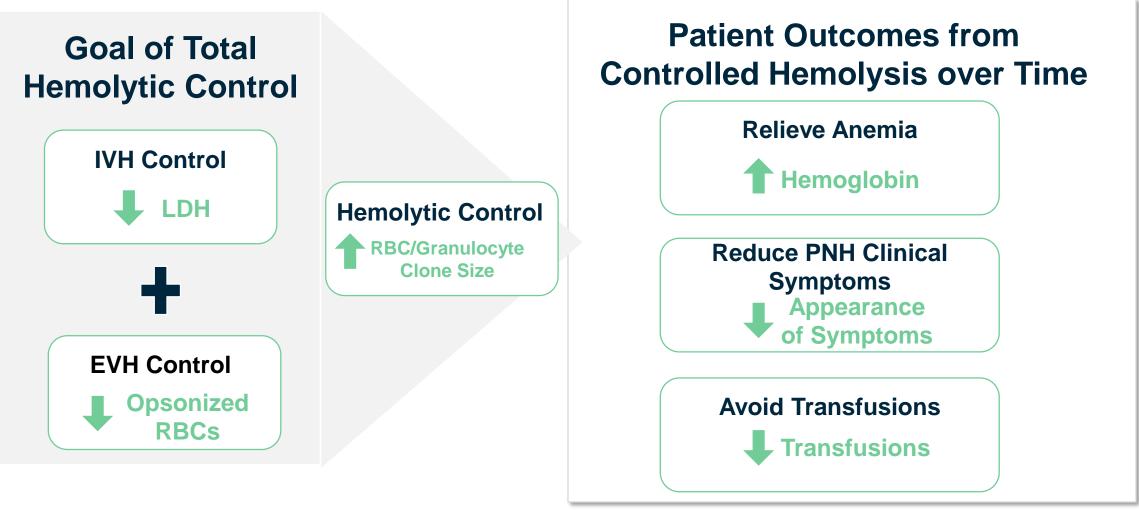


Factor D: An Outstanding Drug Target for Complement-mediated Diseases

- · Factor D is essential to initiate the Alternative Pathway
- Blocking Factor D blocks the Alternative Pathway and all downstream products



Oral Monotherapy with BCX9930 Offers Advantage of Controlling Both Intravascular (IVH) and Extravascular (EVH) Hemolysis





PNH Proof of Concept Study Design: BCX9930 as Monotherapy

BCX9930 Study Design: Patients with PNH who are Naïve to C5-INH Treatments

	Days 1 - 14	Days 15 - 28	Extension after 28 days
Cohort 1 (N = 4 enrolled)	50 mg BID	100 mg BID	Patients benefitting on treatment may
			continue on BCX9930 and dose-
Cohort 2 (N = 3 dosed to date)	200 mg BID	400 mg BID	escalate at physicians' discretion

Key Eligibility Criteria at Screening: Patients with PNH who are Naïve to C5-INH Treatments

- Hb < 10 g/dL or blood transfusion within the last 12 months
- $LDH \ge 2 \times ULN$
- PNH clone size > 10%
- Platelet count > 30,000/μL
- Reticulocyte count > 100,000/µL

Treatment-naïve PNH Patients Had Severe Disease Prior to Treatment

Pre-treatment Characteristics		Coh	ort 1			Cohort 2	
Sequential Patient # in Cohort	1	2	3	4	1	2	3
Patient Code	A	В	С	D	Е	F	G
PNH duration, years	8	4	4	5	2	5	1
Compromised bone marrow function	no	no	yes	no	yes	yes	yes
History of thrombosis, pulmonary HT or PNH renal injury	yes	yes	no	no	no	no	no
Lactate dehydrogenase (LDH), × ULN	9.8	11.0	3.7	6.9	4.2	4.6	3.8
Hemoglobin, g/dL	8.2	7.0	6.0	10.7	6.7	7.6	11.0
Units of RBC transfused in 52 weeks prior to screening	0	13	0	2	12	1	2
Reticulocytes, 10 ³ cells/µL	220	285	130	203	128	115	181
PNH erythrocyte (RBC) clone size, %	89	41	49	49	33	76	48
PNH RBC relative to PNH WBC, %	89	42	53	60	36	78	61

Laboratory values for LDH, reticulocyte count, total bilirubin and PNH erythrocyte clone size are average of available screening and baseline results. HT: hypertension.

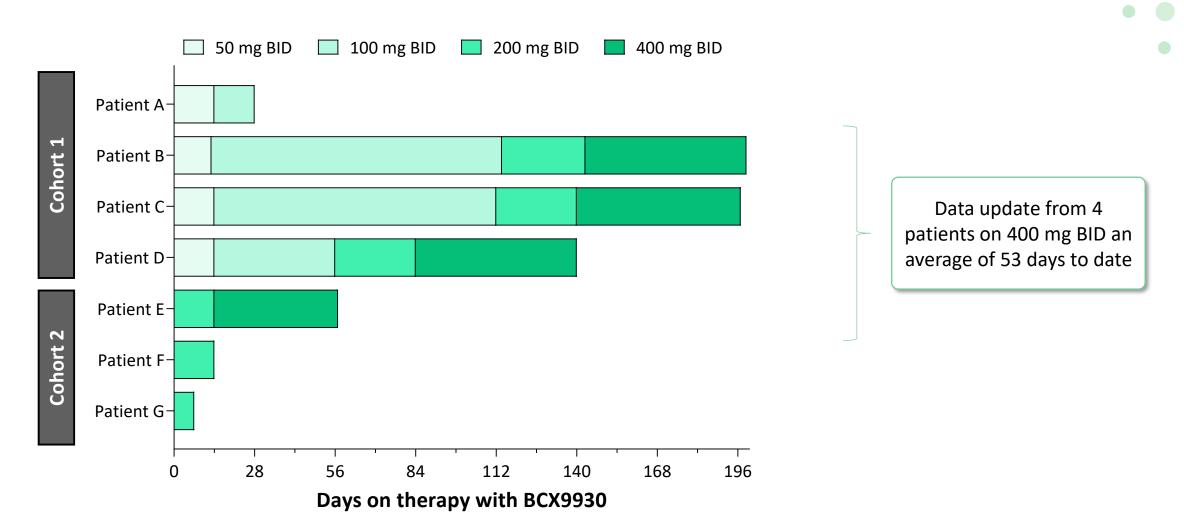
Hemoglobin is last available value prior to Day 1 of BCX9930 administration. Study is ongoing – preliminary data.

Patients highlighted in green shading have progressed through at least 6 weeks of treatment on study at 400 mg BID

Patients with compromised bone marrow function have history of aplastic anemia or intermediate PNH



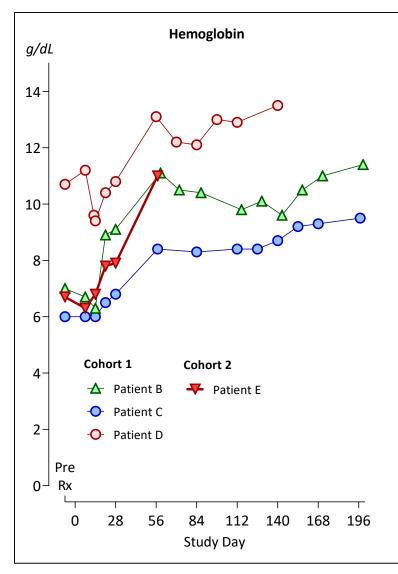
Duration of BCX9930 Treatment in PNH Patients



bio

Study is ongoing –preliminary data as reported 9/30/20. Patients B – G remain on treatment in study As disclosed in May 2020, Patient A discontinued due to an unrelated SAE

Meaningful Changes in Key Biomarkers Indicating Control of Hemolysis



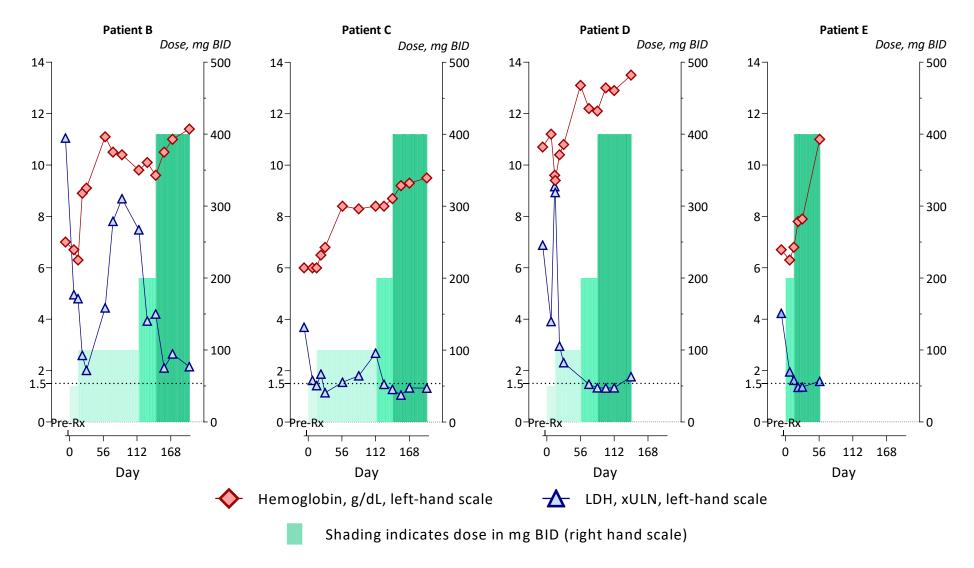
Patient	Duration at 400 mg BID		globin dL	of Gran	ne Size % iulocyte e Size	# of Transfusions @ 200/400
		Pre-Rx	Most Recent	Pre-Rx	Most Recent	mg
-∆ - B	56 days	7.0	11.4	42%	100%	0
- O - C	57 days	6.0	9.5	53%	97%	0
• O - D	56 days	10.7	13.5	60%	87%	0
₩ E	43 days	6.7	11.0	36%	92%	0
Mean	53 days	7.6	11.4	48%	94%	0

- Mean increase in Hb from baseline of 3.8 g/dL
- Hb maintained at 400 mg BID without RBC transfusions
- Mean RBC PNH clone size relative to granulocyte clone size increased to 94% from 48% pre-Rx



Study is ongoing – preliminary data as reported 9/30/20. One 2-unit RBC transfusion in Patient B on study day 15 after 50 mg BID x 14 d (previously reported).

BCX9930 Dose-response in Hemoglobin and LDH in PNH Patients





Study is ongoing – preliminary data as reported 9/30/20

Hemolysis Biomarkers and Clinical Assessment Support Clinical Benefit of BCX9930 as Monotherapy in PNH

Clinical Data at 400 mg BID

Dose-dependent and clinically meaningful changes in key disease biomarkers were observed

- Mean hemoglobin increase from baseline was 3.8 g/dL
- Hb maintained at 400 mg BID without RBC transfusions (4/4)
- Mean RBC PNH clone size relative to granulocyte clone size increased from 48% pre-treatment to 94%, representing nearcomplete control of hemolysis
- Average LDH < 1.5 x ULN (3 of 4 patients)

Investigator-assessed clinical benefits

• All subjects treated assessed as benefiting from BCX9930 and continued on therapy

BCX9930 has been Safe and Well Tolerated in PNH Patients

Overall Safety

- No discontinuations due to related AEs
- No BCX9930-related serious AEs or safety signals
- No safety signals in routine monitoring of vital signs, ECGs, or laboratory evaluations of hematology, coagulation, urinalysis, or clinical chemistry

Adverse Events

- The most common drug-related TEAE was mild-moderate headache lasting 1-3 days
- Two patients had mild rash that resolved during continued uninterrupted BCX9930 dosing
- One unrelated serious AE*

Study is ongoing – preliminary data as reported 9/30/20.

*Unrelated SAE previously reported, primary disseminated VZV infection in a non-immune subject taking corticosteroids, fatal.



Q1 Data Readout and Next Steps for BCX9930

Phase 1 dose-ranging trial in PNH has fully enrolled; on-track to report data in Q1

- Data from up to 16 pts
- Both treatment-naïve patients and C5 inadequate responders
- Patients will be on drug for >28 days, with at least two weeks at 500 mg bid dose
- Some patients expected to have >40 total weeks on therapy at time of data readout
- Plan to report range of clinical and laboratory outcomes, biomarkers and safety data

Next Steps

- Begin (2H 2021) pivotal trial in PNH patients at selected dose level
- Begin (2H 2021) proof of concept trial(s) in patients with renal complement-mediated diseases

Goal in PNH: BCX9930 as oral monotherapy for all PNH patients



Fibrodysplasia Ossificans Progressiva (FOP) Devastating Disease; No Tre



Rare disease that affects approximately 1 in 2 million people worldwide



Irregular formation of bone or ossification in muscles, tendons or soft tissue

Currently no approved treatments for FOP



Results in loss of function, deformities and a severely disabling condition

BCX9250 Phase 1 Healthy Subject Trial Design

Randomized, double-blind, placebo-controlled, dose-ranging trial in healthy volunteers

Objective: to evaluate safety, tolerability, and pharmacokinetics of single ascending doses (SAD) and multiple ascending doses (MAD) of orally administered BCX9250

Part 1 Single ascending dose

- 8 subjects per cohort
 - 6 active, 2 placebo

Dose levels evaluated:

- 5mg
- 10mg
- 15mg (fed and fasted)
- 25mg

Part 2

Multiple ascending dose, once daily (QD) for 7 days

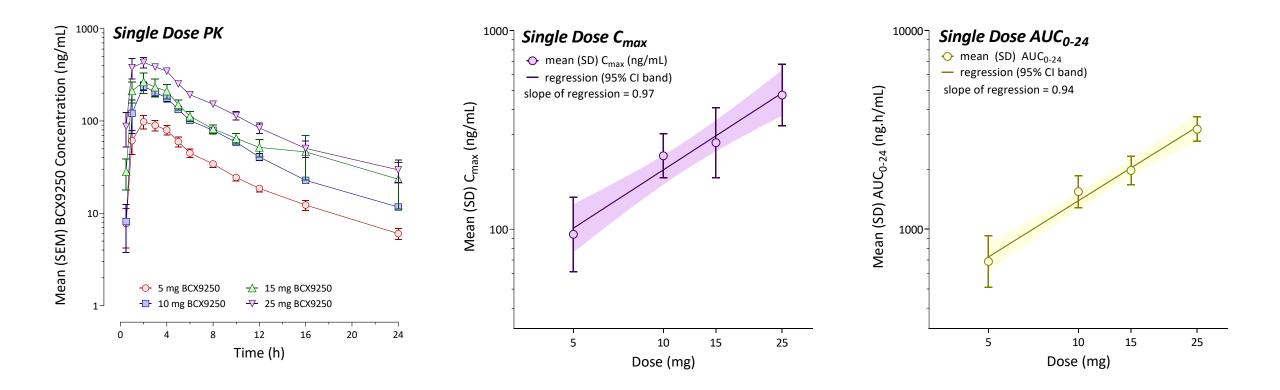
- 12 subjects per cohort
 - 10 active, 2 placebo

Dose levels evaluated:

- 5mg
- 10mg
- 15mg
- 20mg

BCX9250 SAD PK Profile and Dose-exposure Analysis

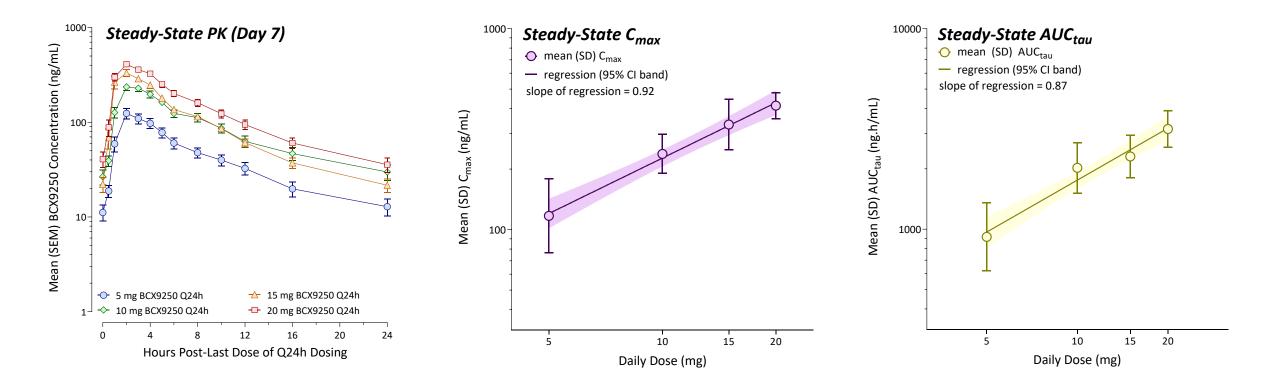
BCX9250 exposure was approximately linear and dose proportional over the doses evaluated





BCX9250 MAD PK Profile and Dose-exposure Analysis

BCX9250 steady-state exposure was approximately linear and dose proportional over the doses evaluated, with minimal accumulation relative to the first dose





BCX9250 Phase 1 Trial: Summary of Adverse Events

Category of Treatment-Emergent Adverse Event (TEAE)		Single	Ascendi	ng Doses	(SAD)		Μι	Itiple As	cending D	oses (M/	AD)
	Placebo			BCX9250			Placebo		BCX	9250	
All data is reported as subject incidence, n (%)	(n=8)	5 mg (n=6)	10 mg (n=6)	15 mg Fasted (n=6)ª	15 mg Fed (n=6)	25 mg (n=6)	(n=7) ^b	5 mg (n=10)	10 mg (n=10)	15 mg (n=10)	20 mg (n=10)
At least one TEAE	4 (50.0)	0	0	4 (66.7)	3 (50.0)	0	5 (71.4)	6 (60.0)	3 (30.0)	6 (60.0)	6 (60.0)
Drug-related TEAEs	3 (37.5)	0	0	2 (33.3)	0	0	4 (57.1)	0	3 (30.0)	1 (10.0)	0
Grade 3 or 4 TEAEs	0	0	0	0	0	0	0	0	0	0	0
Serious TEAE	0	0	0	0	0	0	0	0	0	0	0
Drug-related serious TEAE	0	0	0	0	0	0	0	0	0	0	0
TEAE leading to study discontinuation	0	0	0	0	0	0	0	0	0	0	0
Drug-related TEAE leading to study discontinuation	0	0	0	0	0	0	0	0	0	0	0
TEAEs reported by 2 or more subjects ^c											
Medical device site reaction ^d	0	0	0	2 (33.3)	1 (16.7)	0	0	2 (20.0)	0	1 (10.0)	3 (30.0)
Headache	2 (25.0)	0	0	1 (16.7)	0	0	1 (14.3)	0	2 (20.0)	2 (20.0)	0
Vessel puncture site pain	1 (12.5)	0	0	0	0	0	1 (14.3)	1 (10.0)	0	0	2 (20.0)
Abdominal discomfort	2 (25.0)	0	0	0	0	0	0	0	1 (10.0)	0	0
Abdominal pain	1 (12.5)	0	0	0	0	0	0	0	1 (10.0)	0	1 (10.0)
Diarrhea	1 (12.5)	0	0	0	0	0	0	0	2 (20.0)	0	0
Constipation	0	0	0	0	0	0	1 (14.3)	0	0	1 (10.0)	0
Flatulence	0	0	0	0	0	0	1 (14.3)	0	1 (10.0)	0	0
Nausea	1 (12.5)	0	0	1 (16.7)	0	0	0	0	0	0	0
Cough	1 (12.5)	0	0	0	0	0	0	0	1 (10.0)	0	0

^a One subject discontinued from study after completing first dose (fasted) and was replaced for the second dose (fed).

^b Only one placebo subject was enrolled in MAD 20 mg cohort. The last subject was not enrolled due to impact of COVID-19 on screening.

^c All TEAEs were mild except for one event of moderate myalgia in the MAD 10 mg dose group, not related to study drug.



^d Reported event: electrode site (skin) irritation due to ECG lead placement

Significant Upcoming Milestones in 2021

Q12021

in Japan

Data from

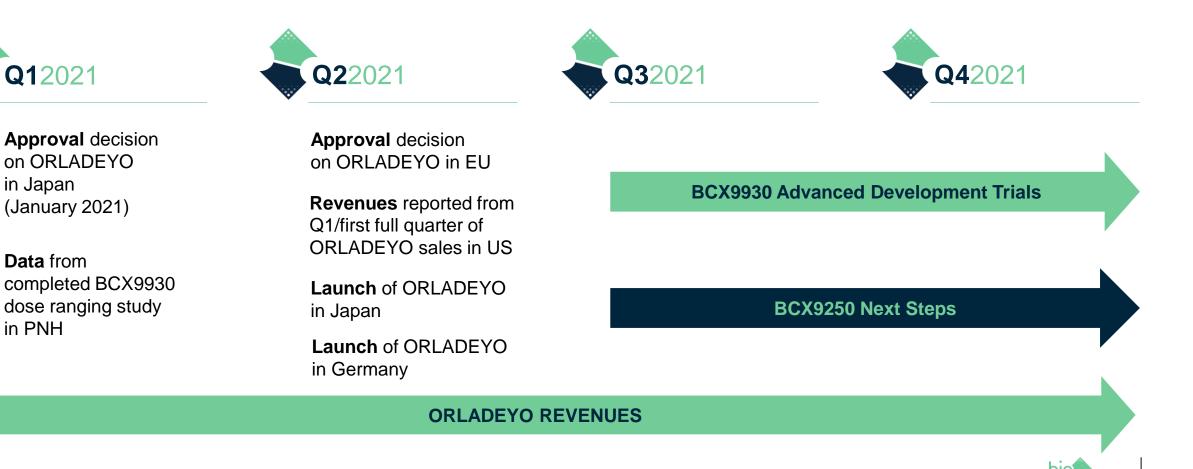
in PNH

Approval decision

dose ranging study

on ORLADEYO

(January 2021)



Cash position & 2020 guidance (in millions)

Cash, cash equivalents, restricted cash & investments at September 30, 2020	\$149
Proforma - Cash & investments at September 30, 2020 A	\$347
Senior credit facility ^B	\$125
REVISED FY 2020 GUIDANCE	
REVISED FY 2020 GUIDANCE Net operating cash utilization	\$150-165

A – Reflects approximate net cash received in December 2020 from Royalty Pharma and Athyrium Capital Management following transaction-related fees and payoff of prior MidCap debt

- B From Athyrium Capital Management, \$125M interest-only for 5-year term
- C Excludes equity-based compensation



January 2021 Corporate Presentation

