Nasdaq: CBIO

CATALYST BIOSCIENCES

Piper Sandler Virtual Healthcare Conference

23 November 2020

CatalystBiosciences.com

Forward looking statements

This presentation includes forward-looking statements that involve substantial risks and uncertainties All statements included in this presentation, other than statement of historical facts, are forward-looking statements. Forward-looking statements include statements about the potential benefits of products based on Catalyst's engineered protease platform; potential markets for and advantages of MarzAA and DalcA; plans in Q4 2020 to enroll a pivotal Phase 3 registration study of MarzAA , initiate a Phase 1/2 trial in FVII Deficiency, Glanzmann Thrombasthenia, and patients treated with Hemlibra; the potential for MarzAA and DalcA to effectively and therapeutically treat hemophilia subcutaneously; potential markets for our anticomplement and gene therapy programs; potential payments from Biogen; plans to declare a development candidates in our systemic complement program in Q4 2020; the superiority of CB 2679d-GT over other gene therapy candidates; and the Company's collaboration with Biogen for the development and commercialization of pegylated CB 2782 for the potential treatment of geographic atrophy-associated dry age-related macular degeneration (AMD). Actual results or events could differ materially from the plans, intentions, expectations and projections disclosed in the forward-looking statements.

Various important factors could cause actual results or events to differ materially, including, but not limited to, the risk that trials and studies may be delayed as a result of the novel coronavirus (COVID-19) outbreak and other factors, that trials may not have satisfactory outcomes, that additional human trials will not replicate the results from earlier trials, that potential adverse effects may arise from the testing or use of DalcA or MarzAA, including the generation of neutralizing antibodies, which has been observed in patients treated with DalcA, the risk that costs required to develop or manufacture the Company's products will be higher than anticipated, including as a result of delays in development and manufacturing resulting from COVID-19 and other factors, the risk that Biogen will terminate Catalyst's agreement, competition and other risks described in the "Risk Factors" section of the Company's quarterly report filed with the Securities and Exchange Commission on November 5, 2020, and in other filings with the Securities and Exchange Commission. The Company does not assume any obligation to update any forward-looking statements, except as required by law.

Catalyst Biosciences – Protease medicines

Protease engineering platform

Late-stage asset

SQ Marzeptacog alfa (activated)
MarzAA (FVIIa)

Phase 3 in 2020

Hemophilia

SQ MarzAA (FVIIa)

SQ Dalcinonacog alfa – DalcA (FIX)

Factor IX Gene Therapy

Factor Xa

Complement

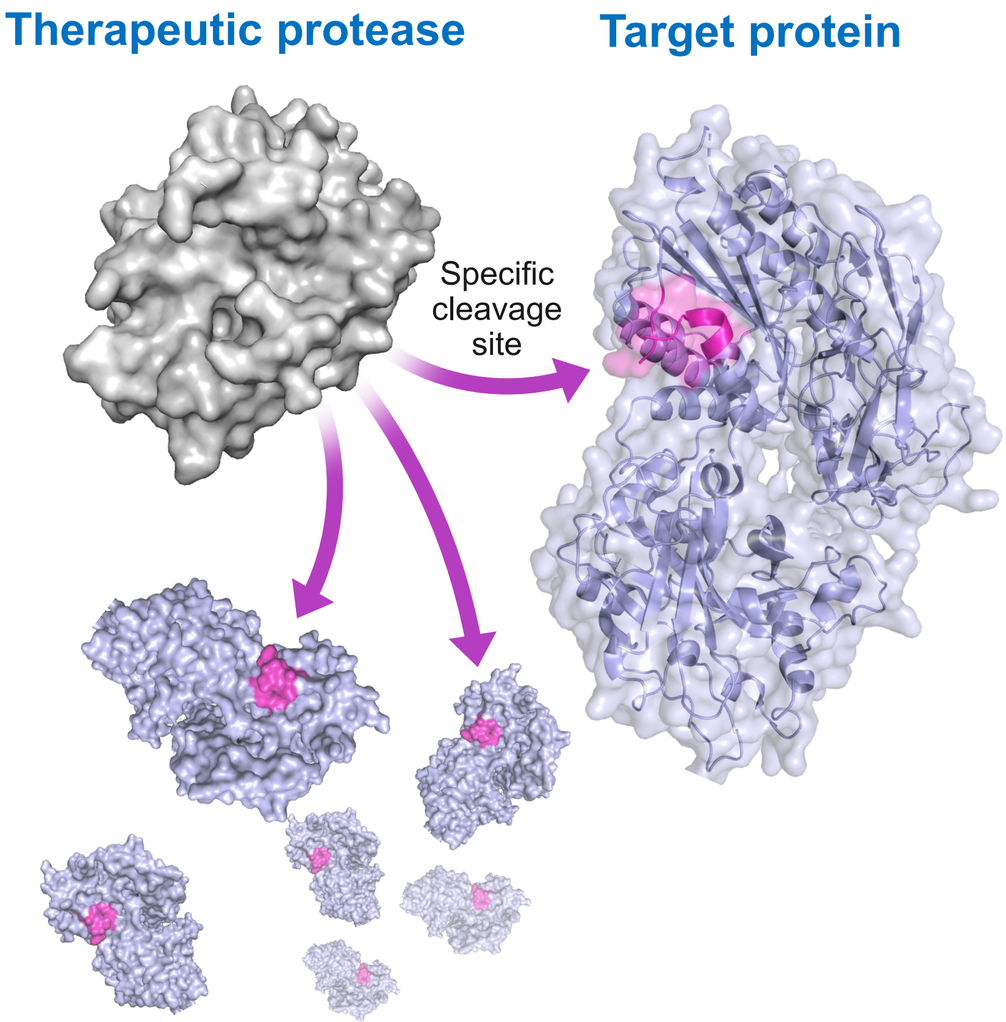
IVT Anti-C3 Dry AMD
CB 2782-PEG

Biogen

SQ Systemic Complement Inhibitors

Harnessing the catalytic power of proteases

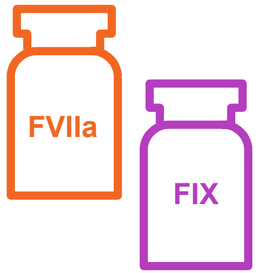
One protease molecule regulates 1000s of target molecules



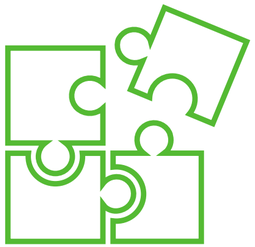
An adaptable protease platform

- **Demonstrated efficacy of clinical stage assets**
- Functionally enhanced natural proteases (FVIIa, FIX)
- Engineered novel protein degraders (Anti-C3)
- Ideal for high concentration drug targets or controlling amplification cascades
- Potential to address novel targets
- Increased potency and extended half-life variants

Investment highlights



Novel subcutaneous factors with orphan drug designation; MarzAA & DalcA – P2 efficacy in prophylaxis studies complete



Anti-C3 Dry AMD with Biogen

SQ systemic complement regulator research program

Multibillion-dollar market opportunities

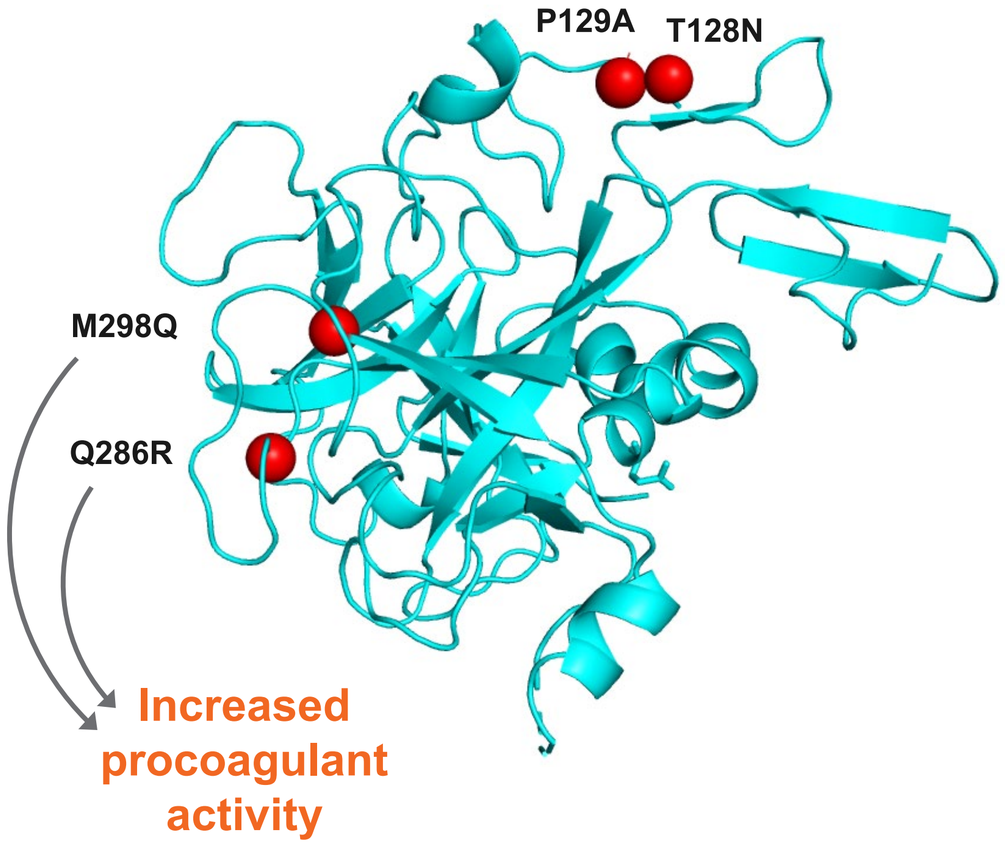
Experienced team

Strong balance sheet, $104M cash – Q3

178 worldwide patents
CBIO retains full ownership of all compounds

Marzeptacog alfa (activated): MarzAA rFVIIa

Addresses a clear unmet need in hemophilia & other bleeding disorders



9-fold higher activity *vs* NovoSeven RT

+ Potency allows for SQ dosing that prolongs half-life
+ Simple, small volume SQ administration

Preclinical efficacy of SQ on-demand treatment

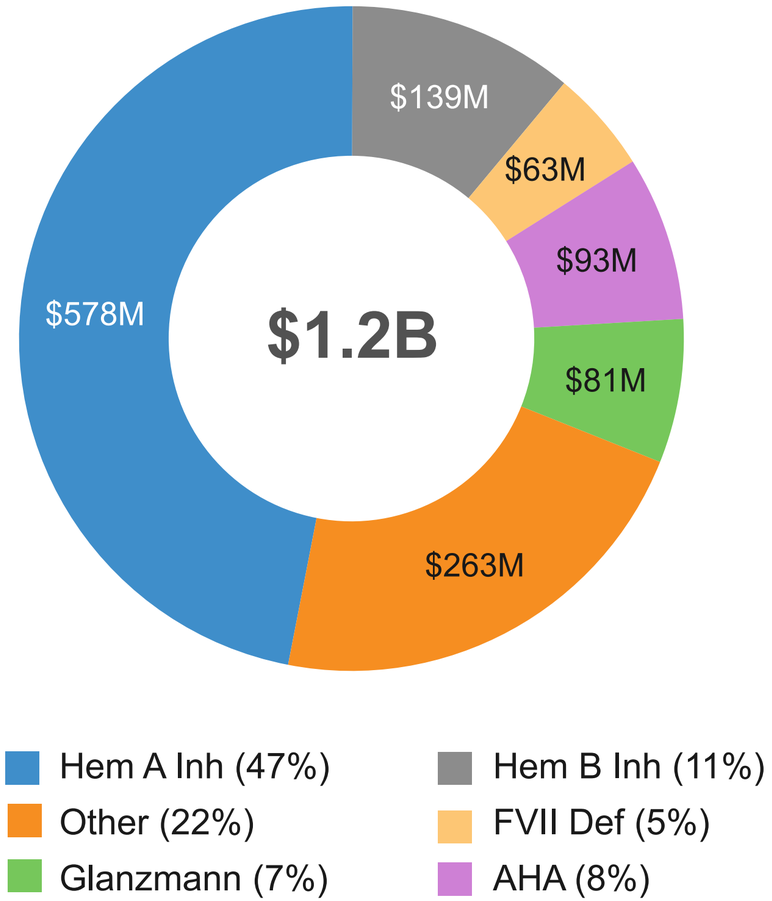
+ HA mouse after tail cut; HA dog; HA rat

P2/3 prophylaxis efficacy & safety in HA or HB with inhibitors

+ 46 patients treated including: single dose IV, up to 3 SQ doses/day, & daily SQ up to 97 days

SQ MarzAA is a large commercial opportunity

Global NovoSeven sales breakdown by indication (2019)

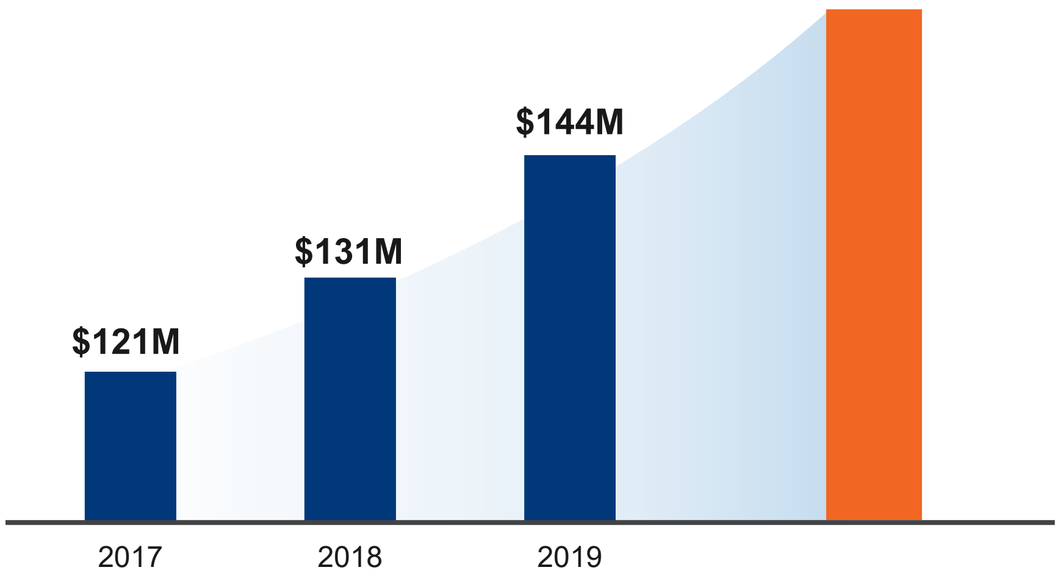


SQ MarzAA has a superior profile

- Faster & easier to administer *vs* N7 dosed every 2 hours IV until hemostasis
- MarzAA SQ half-life ~8x longer than N7
- 9-fold higher activity *vs* N7
- Potential to reduce rebleeding
- Stops bleeding in multiple preclinical models
- Can be combined with Hemlibra *in vitro* without increased thrombogenicity
- Ideal for pediatrics and patients with venous access issues
- Prophylaxis efficacy demonstrated in P2

Source: Adivo Associates market research; Catalyst Biosciences market research. Data on file

MarzAA could be the first prophylaxis for Glanzmann & FVIID



Global NovoSeven on demand sales Glanzmann, FVIID

Unmet need in prophylaxis

Growing number of Glanzmann and FVIID patients treated with NovoSeven

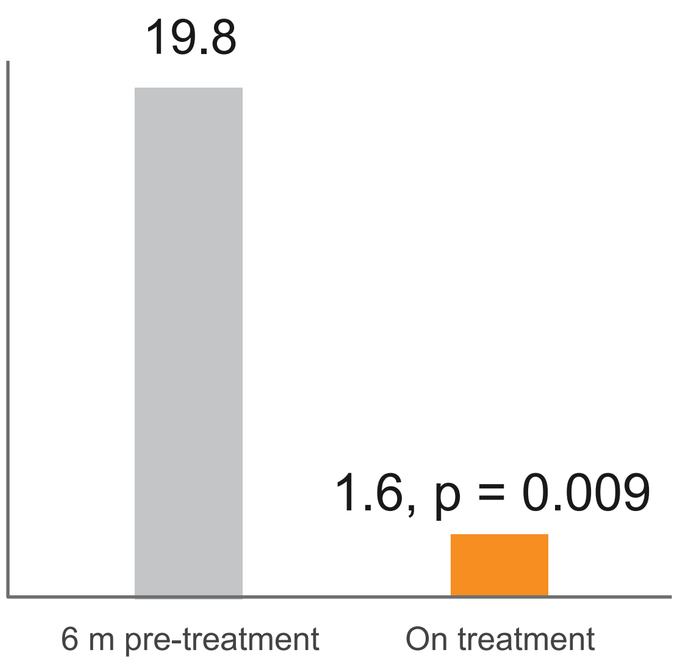
9% total increase in patients over 3 years

Source: Catalyst Biosciences, Adivo Associates Market Research, Data on file. *Note: Treated patients may be counted multiple times as patients may have multiple bleeding events per year needing factor treatment

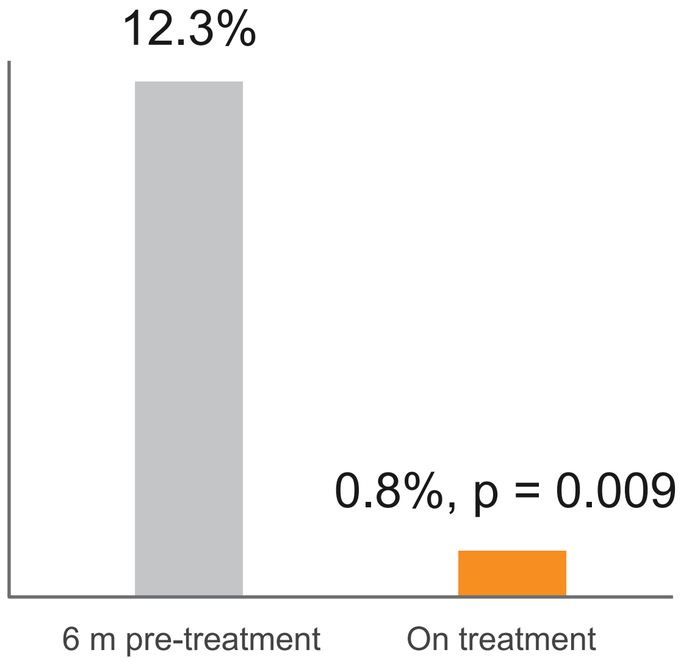
MarzAA is efficacious with daily prophylaxis

Phase 2: Daily SQ dosing for 44 – 97 days

Annualized bleed rate
n = 9



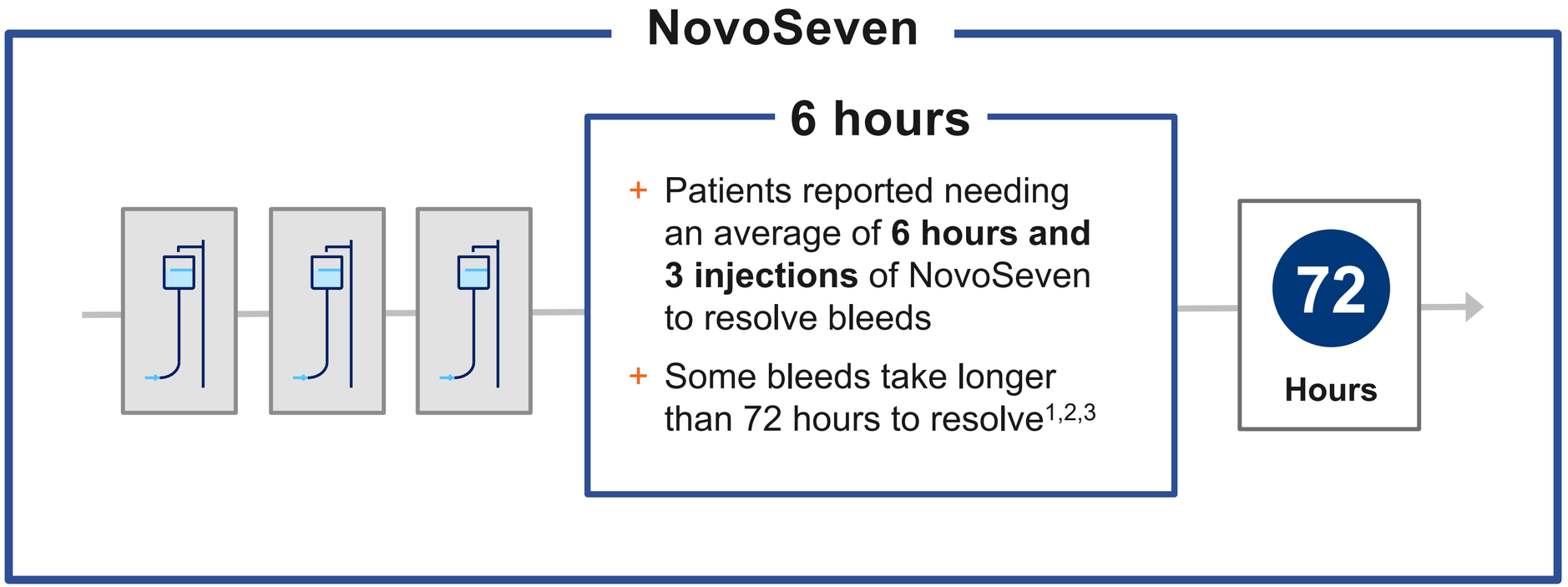
Proportion of days with bleeding
n = 9



- Greater than 90% reduction in all bleeding – Median ABR = 0
- 2 subjects had dose escalation from 30 to 60 µg/kg
- Safe & well tolerated, ~1% ISR (6/517 doses) & no ADA

Mahlangu *et al.* EAHAD 2020

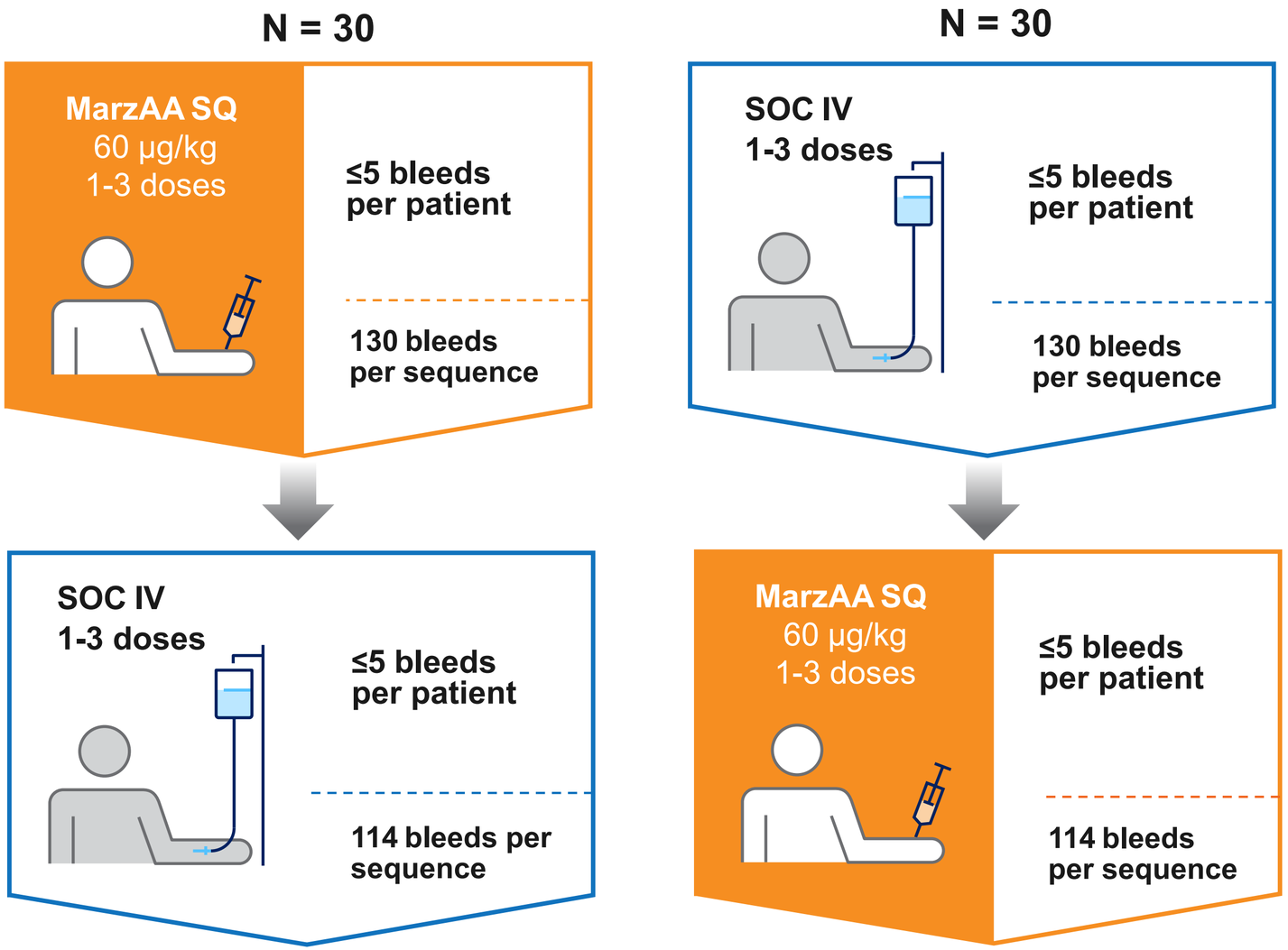
Current bypass agents require multiple IVs over the course of hours



Source: [1]NovoSeven PI Rev 7/2020; [2]Adivo Associates market research; [3]Catalyst Biosciences market research. Data on file

Crimson 1 Phase 3 study: Treatment of episodic bleeding

Hemophilia A or B with inhibitors, ABR ≥ 8



- **Primary endpoint**

  Non-inferior hemostatic efficacy: standard 4-point scale at 24 h

- **Secondary endpoints**

  Time to bleed resolution; number of doses; rescue meds

- **Safety**

  Adverse events, anti-drug antibodies (ADA); thrombosis

Statistics

+ **SOC estimate 85%**
  Excellent/good treatment of bleeds
+ Non-inferiority margin of **12%**
+ **2.5%** significance, one-sided
+ **90%** power

MAA-202 Phase 1/2 study design

FVII deficiency, Glanzmann thrombasthenia and HA on Hemlibra: N = 8 each

Phase 1 PK

MarzAA IV each cohort

Single dose

MarzAA SQ

Single dose escalation

Multiple dose Q3H

Phase 2 ToB

MarzAA SQ 1-3 doses

FVIID ≥30 bleeds

GT ≥30 bleeds

HA ≥15 bleeds

- **Phase 1**

  Primary endpoint:
  Pharmacokinetics

  Secondary endpoint:
  Pharmacodynamics

- **Phase 2 ToB**

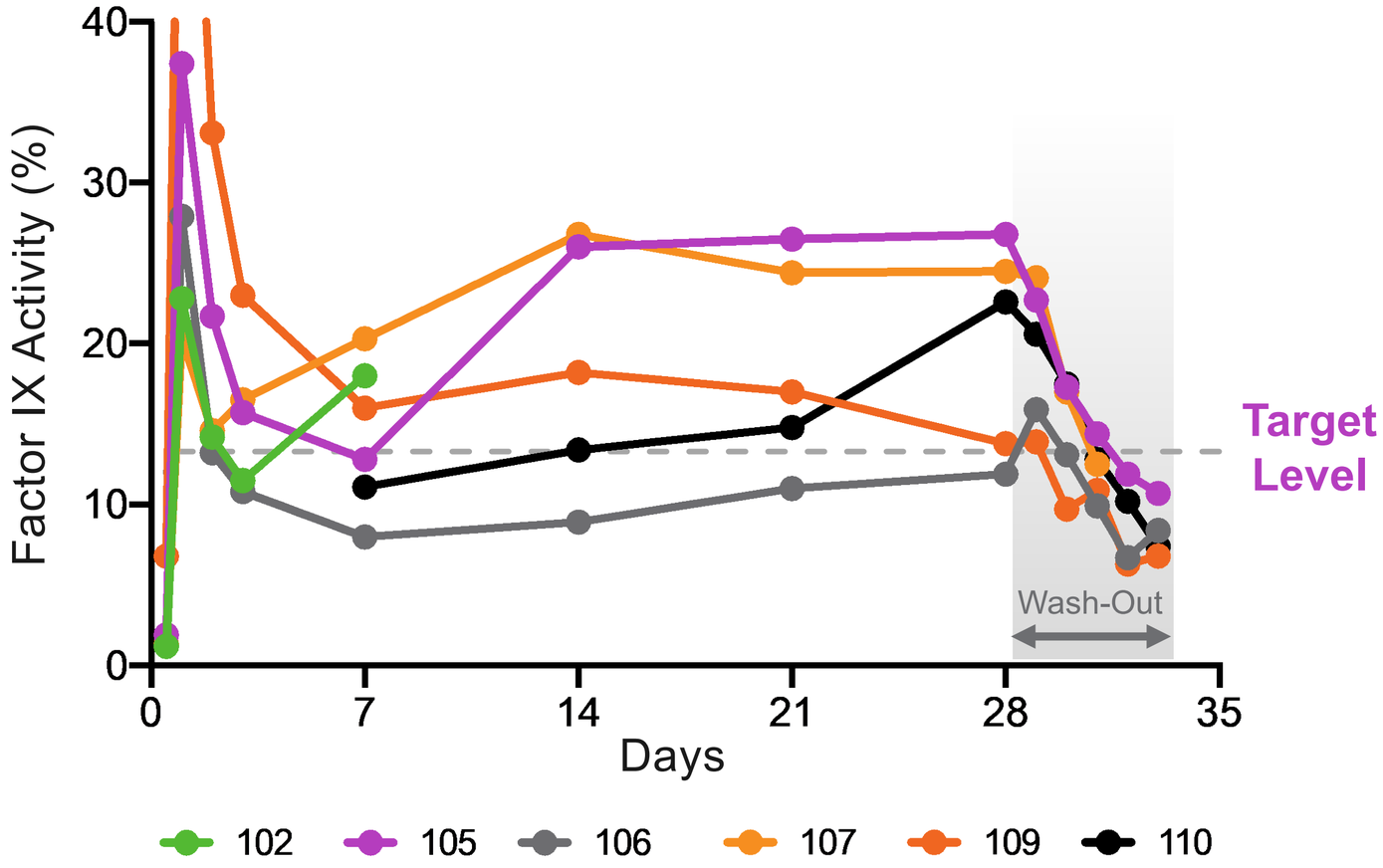
  Primary endpoint:
  Hemostatic efficacy at 24 hours

  Secondary endpoints:
  Effective hemostasis at successive timepoints; doses needed; rescue meds

  Safety:
  Adverse events and ADA

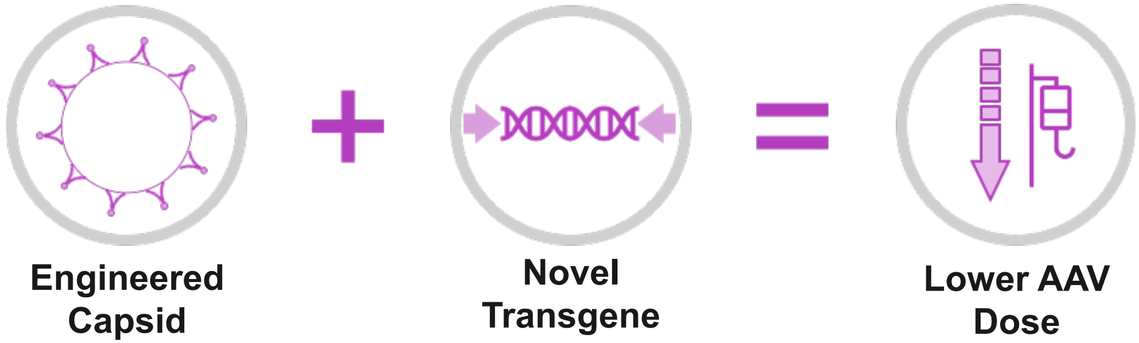
DalcA P2b demonstrated efficacy & safety

Target levels >12% achieved with daily SQ 100 IU/kg dosing for 28 days



- Dosed 6 severe HB subjects
  - Subject 102 withdrew on Day 7
- **Steady state FIX levels up to 27%** achieved after 14 days
- **No breakthrough bleeds**
- **No neutralizing ADA**
- Mild to moderate ISR – transient & self-limiting
- Terminal half-life is 2.5 - 5.1 days

Catalyst's CB 2679d gene therapy for hemophilia B



FIX Transgene	AAV Capsid	Study Dose (vg/kg)	FIX Activity (U/mL)
CB 2679d-GT	**Novel Chimeric**	**$8.0x10^{10}$**	**20**
Padua	TAK-748*	$7.4x10^{11}$	20
Padua	TAK-748*	$7.4x10^{10}$	1

*Weiller *et al.* (2019) *Blood* Vol. 134, Supplement S1 P4633

Stanford University License & sponsored research agreement

CB 2679d-GT has a superior profile *vs* Padua in preclinical studies

+ Stable high activity levels with 1/10th vector dose in mouse model
+ 4 to 5-fold reduction in bleeding time when compared to the Padua
+ Potential for improved efficacy & safety at 1-2 log reduced dose

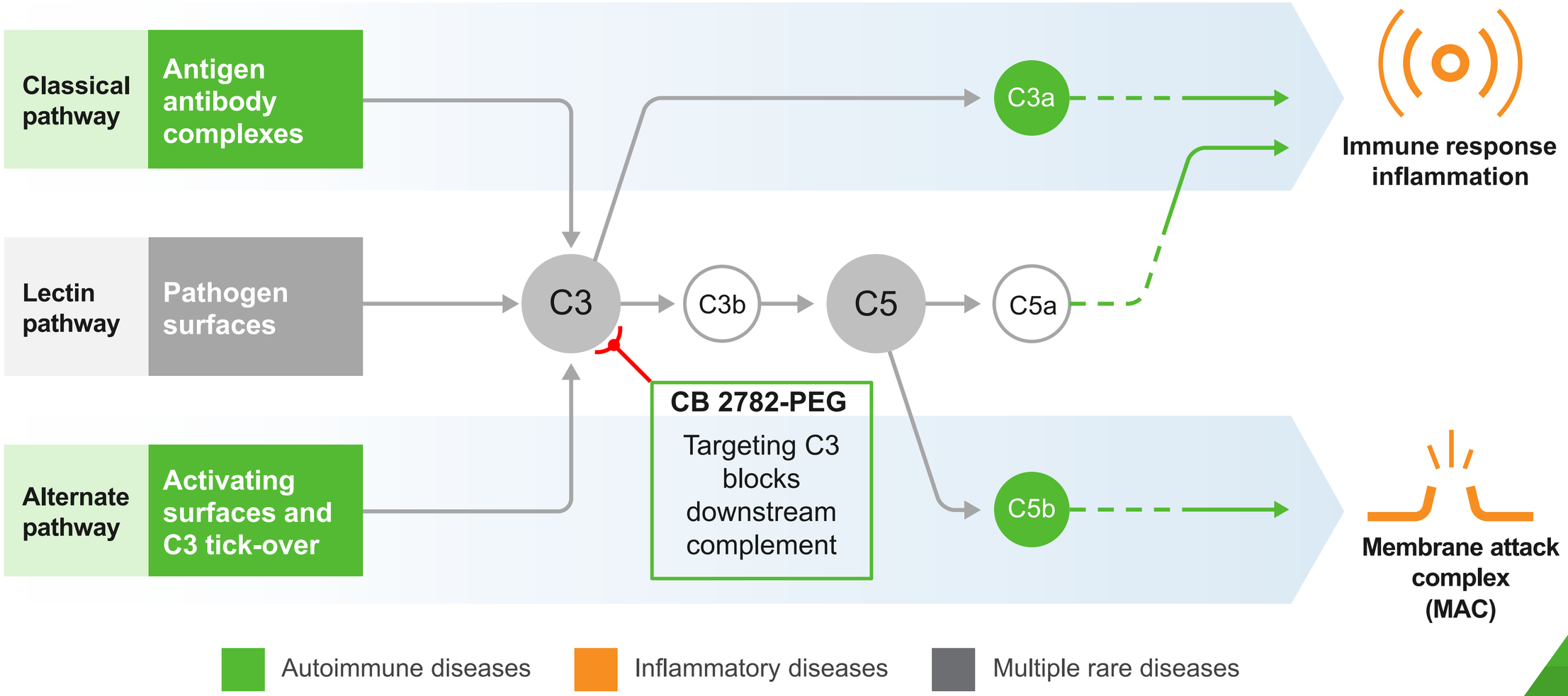
Achieved high initial FIX levels in NHP

+ Presented at World Federation of Hemophilia Virtual Summit 2020
+ Additional vector optimization & dose ranging studies ongoing

Wholly-owned & issued patents covering gene therapy

Targeting complement – a pathway regulated by proteases

Dysregulated complement activity is associated with a broad range of disorders and a logical fit for our protease platform



CB 2782-PEG long acting anti-C3 protease

Best-in-class anti-C3 profile for dry AMD

+ Generated from Catalyst's proprietary **protease engineering platform**
+ Potent, selective and long acting anti-C3 protease that degrades C3 into inactive fragments
+ Preclinical NHP PK & PD data* predict **best-in-class** human intravitreal dosing three or four times a year

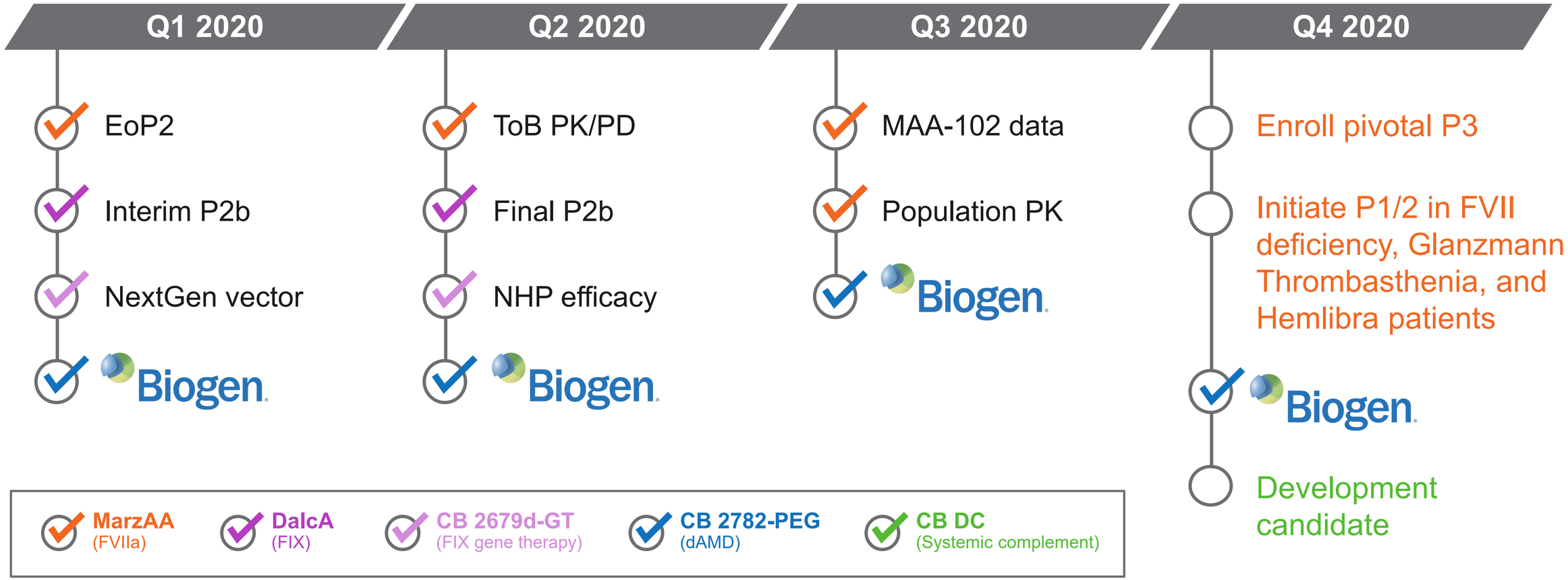
Biogen collaboration

Biogen

+ Announced December 2019
+ $15M upfront, up to $340M in milestones and tiered royalties up to low double digits
+ Catalyst to perform fully funded pre-clinical and manufacturing activities
+ Biogen responsible for IND-enabling activities, worldwide clinical development & commercialization

*Furfine *et al.* ARVO 2019

Milestones – 2020



Team

Nassim Usman, Ph.D.

President & CEO

RPI · Sirna Therapeutics · PRINCIPIA · Massachusetts Institute of Technology

***28** years in biotech*

Grant Blouse, Ph.D.

SVP Translational Research

novo nordisk · Henry Ford Health System · CATALYST BIOSCIENCES · AARHUS UNIVERSITY · WAYNE STATE UNIVERSITY SCHOOL OF MEDICINE

***13** years in biotech*

Clinton Musil, M.B.A

Chief Financial Officer

Personalis · ARMO BIOSCIENCES · FW Healthcare Partners

***16** years in biotech & investing/banking*

Jeffrey Landau, M.B.A.

SVP Business Development

Jazz Pharmaceuticals · ONYX PHARMACEUTICALS · Lilly · THRESHOLD PHARMACEUTICALS

***18** years in biotech*

Howard Levy, M.B.B.Ch., Ph.D.

Chief Medical Officer

Sangart · novo nordisk · CSL · Lilly · Inspiration BIOPHARMACEUTICALS

***20** years in hematology*

Anju Chatterji, Ph.D.

SVP Biologics Development & Manufacturing

GRIFOLS · NOVARTIS · BAYER

***19** years in biotech*

Summary

Disruptive approach to billion-dollar markets – protease engineering platform

FVIIa: SQ MarzAA ~$2.2B market

+ P1 PK/PD & preclinical data supports ToB
+ P2 efficacy & safety demonstrated
+ P3 patient enrollment in Q4 2020

FIX: SQ DalcA >$1.8B market

+ Phase 2b efficacy & safety demonstrated
+ Potential for less frequent dosing

FIX Gene Therapy: CB 2679d-GT

+ Proprietary preclinical gene therapy asset with superior activity and lower dose *vs* current clinical constructs

Anti-C3 dAMD: IVT CB 2782-PEG >$5B market

+ Biogen collaboration
+ $15M upfront, up to $340M in milestones, up to low double digits tiered royalties

SQ systemic complement inhibitor program

+ Large $B+ rare-disease opportunity
+ Multiple indications & applications
+ 1st development candidate in Q4 2020

Well capitalized

+ Cash runway into 2022

THANK YOU

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