CATALYST BIOSCIENCES

Corporate Overview

9 April 2019

CATALYST BIOSCIENCES

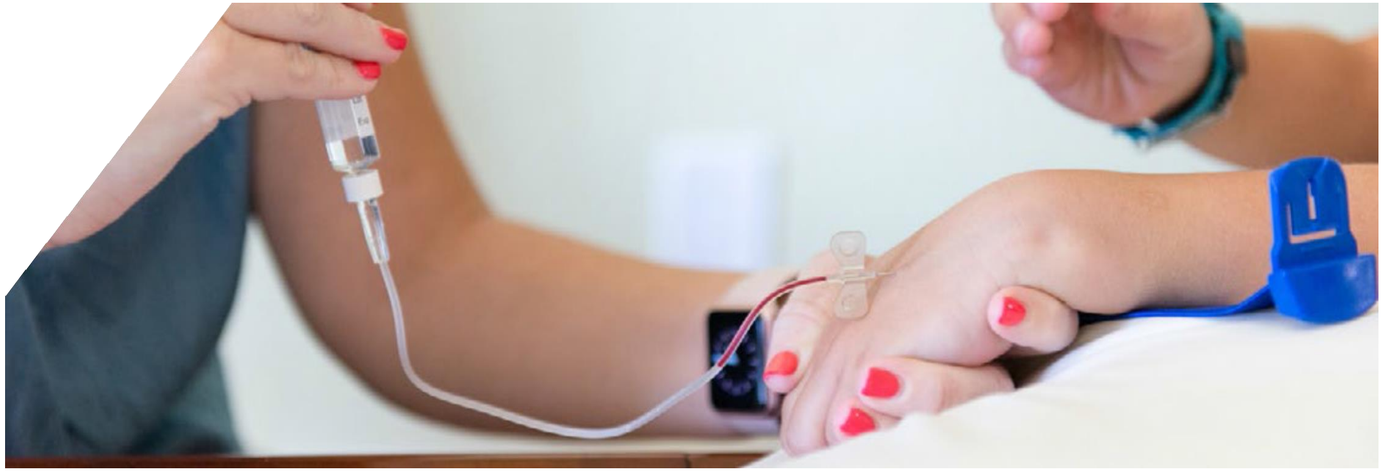
Forward looking statements

This presentation includes forward-looking statements that involve substantial risks and uncertainties. All statements, other than statement of historical facts, included in this presentation are forward-looking statements. Examples of such statements include, but are not limited to potential markets for MarzAA and DalcA, plans for clinical trials of MarzAA, presentation of MarzAA SQ Phase 2 data in Q3 2019 and initiation of a Phase 3 SQ trial of MarzAA in 2020, the potential benefits of SQ administration of MarzAA and DalcA, the potential for long-term dosing of DalcA to maintain FIX activity in the high-mild hemophilia range, plans for clinical trials of DalcA and presentation of Phase 2b clinical trial data in Q3 2019, and the potential uses and benefits of CB 2679d-GT for gene therapy. Actual results or events could differ materially from the plans, expectations and projections disclosed in these forward-looking statements.

Various factors could cause actual results or events to differ materially from the forward-looking statements, including, but not limited to, the risk that clinical trial initiation or enrollment may be delayed and that ongoing or future trials may not achieve their endpoints, that subsequent clinical trials will not replicate the results from earlier clinical studies on small numbers of patients, that potential adverse effects may arise from the testing or use of Catalyst's products, including the generation of antibodies or inhibitors, the risk that costs required to develop or manufacture Catalyst's products will be higher than anticipated, the risk of competition from other hemophilia treatments, including those in development, the risk of Catalyst's ability not to infringe third party intellectual property rights, and other factors described in the "Risk Factors" section of Catalyst's Quarterly Report on Form 10-K for the year ended December 31, 2018, which was filed with the Securities and Exchange Commission on March 8, 2019. Forward looking statements in this presentation speak only as of the date hereof. Catalyst does not assume any obligation to update any forward-looking statements, except as required by law.

Catalyst Biosciences: CBIO

Nasdaq: CBIO



We are working to establish a new standard of care in hemophilia prophylaxis by developing highly potent subcutaneous treatments that improve the quality of life for patients with hemophilia A or B with inhibitors, factor VII deficiency, acquired hemophilia & hemophilia B

Investment Highlights

Nasdaq: CBIO

Novel subcutaneous factors with orphan drug designation, MarzAA & DalcA

$3.7B market opportunity

MarzAA & DalcA SQ clinical efficacy demonstrated

Experienced team

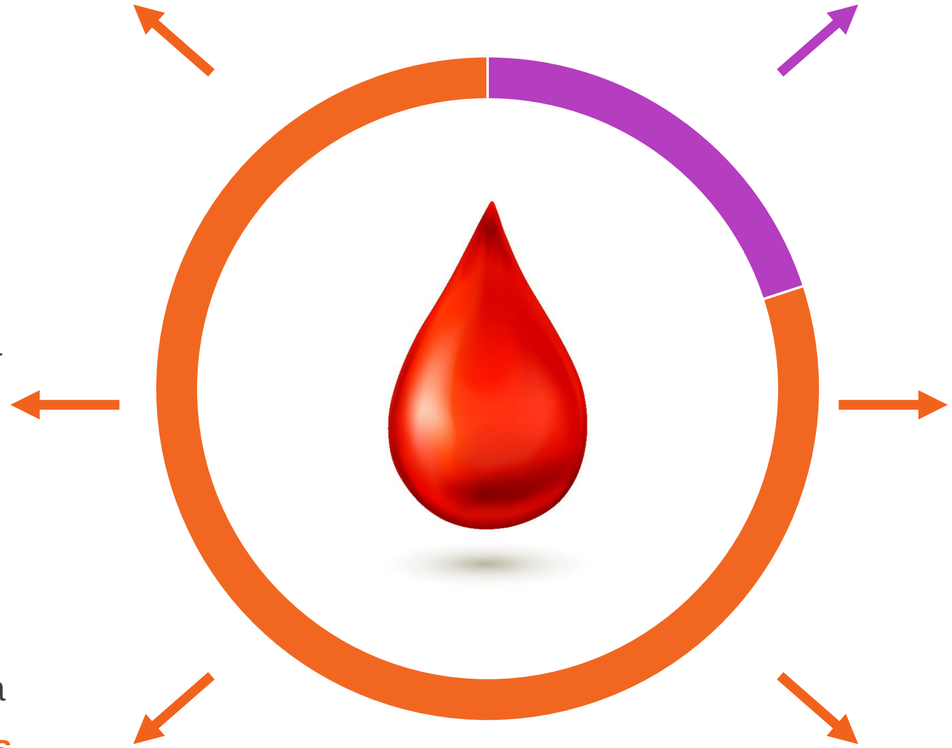
~134 worldwide patents – CBIO retains full ownership of all compounds

Well funded
~$120 M cash (Q4 2018)

Addressing unmet needs in orphan bleeding disorders

Nasdaq: CBIO

MarzAA & DalcA



Hemophilia A

Congenital lack of functional FVIII

– Treatments: IV FVIII or SQ Hemlibra®

SQ treatment of bleeds

Hemophilia A with inhibitors

Antidrug antibodies that neutralize replacement clotting factor

– 30% of Hem A patients

– Treatments: SQ Hemlibra, IV FVIIa

SQ treatment of bleeds on Hemlibra

Factor VII deficiency

Congenital lack of FVII

– Treatments: IV plasma FVII or FVIIa

SQ prophylaxis in severe patients

Hemophilia B

Congenital lack of functional FIX

– Treated with IV FIX products

SQ prophylaxis

Hemophilia B with inhibitors

Antidrug antibodies that neutralize replacement clotting factor

– 5% of Hem B patients

– Treated with IV bypass agents (FVIIa, FEIBA®)

SQ prophylaxis

Acquired Hemophilia

Rare disorder, caused by anti-FVIII nAbs

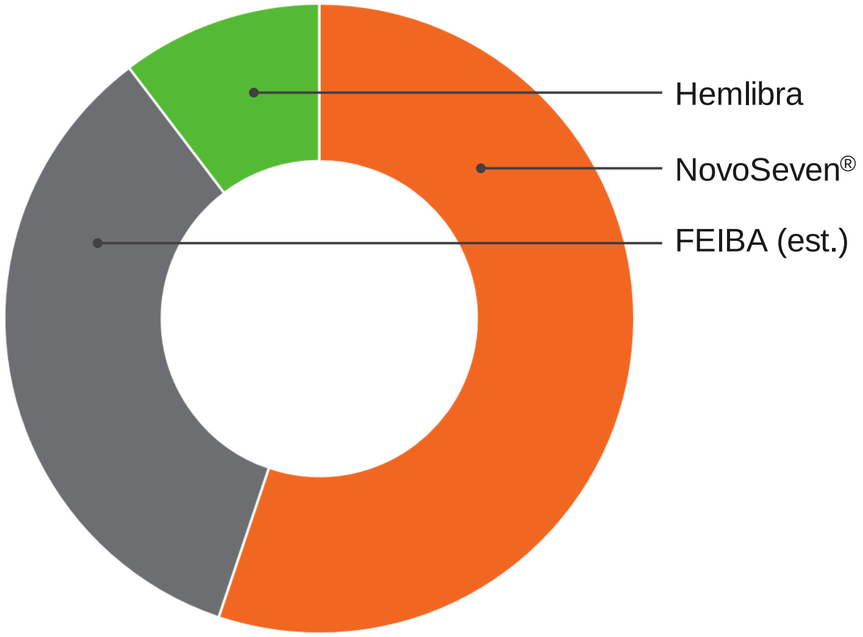
– Treated with immunosuppressants + IV bypass agents (FVIIa, FEIBA or Obizur®)

SQ prevention of re-bleeds

Addressing multi-billion dollar markets – 2018 sales

MarzAA

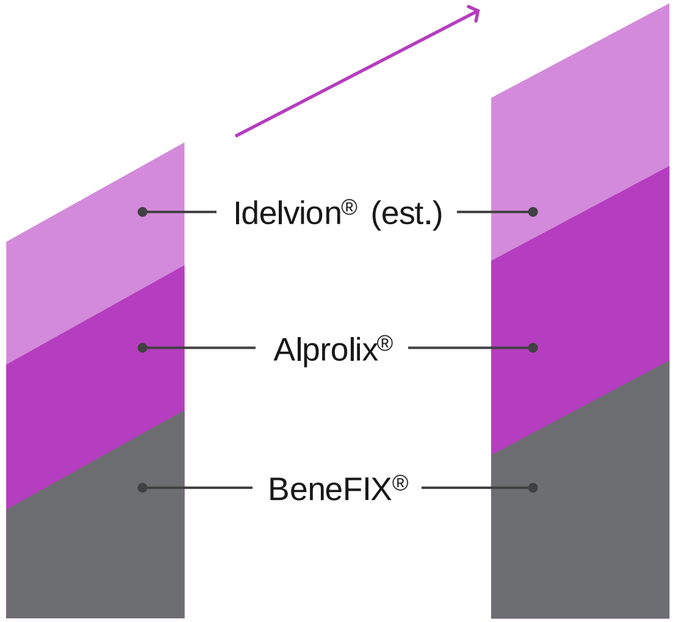
FVIIa & Bypassing Agents: $2.2B market



DalcA

Hemophilia B, FIX: $1.5B market

25% YoY growth



Sources: WFH Annual Global Survey, GlobalData, Roche, Novo Nordisk, SOBI, Bioverativ, Sanofi, Pfizer

The Catalyst Biosciences subcutaneous solution

Nasdaq: CBIO

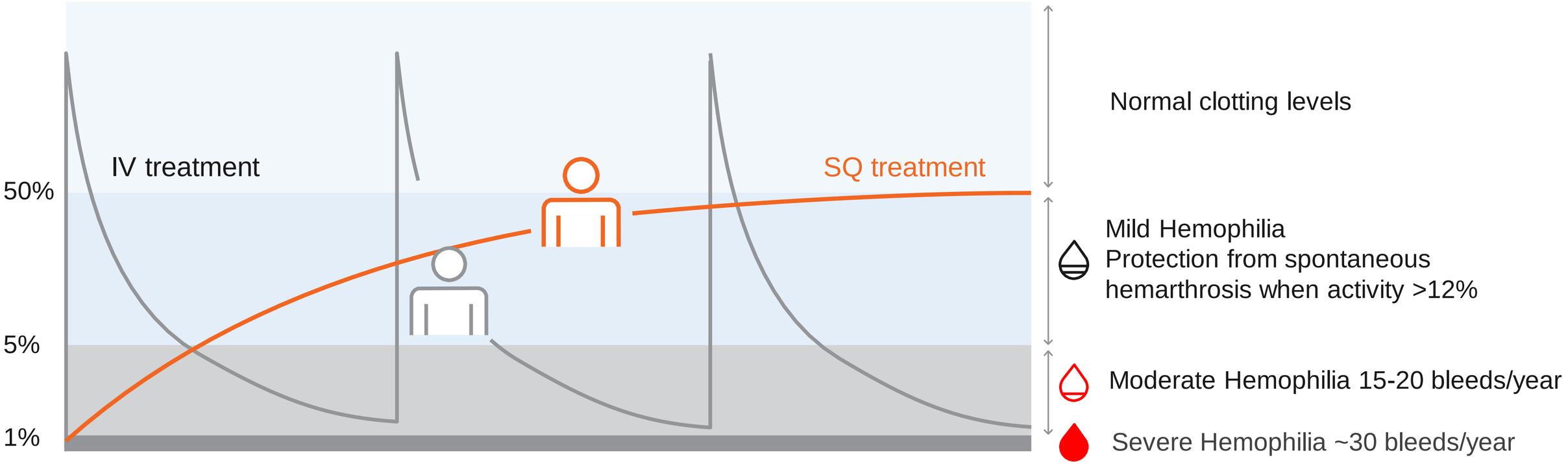
Our highly potent candidates

+ Quick & simple SQ Injection
+ Allows for self-administration
+ Ideal for pediatric patients
+ Much higher & more stable factor levels
+ Keeps patients at protective levels continuously

The new standard in hemophilia prophylaxis

Nasdaq: CBIO

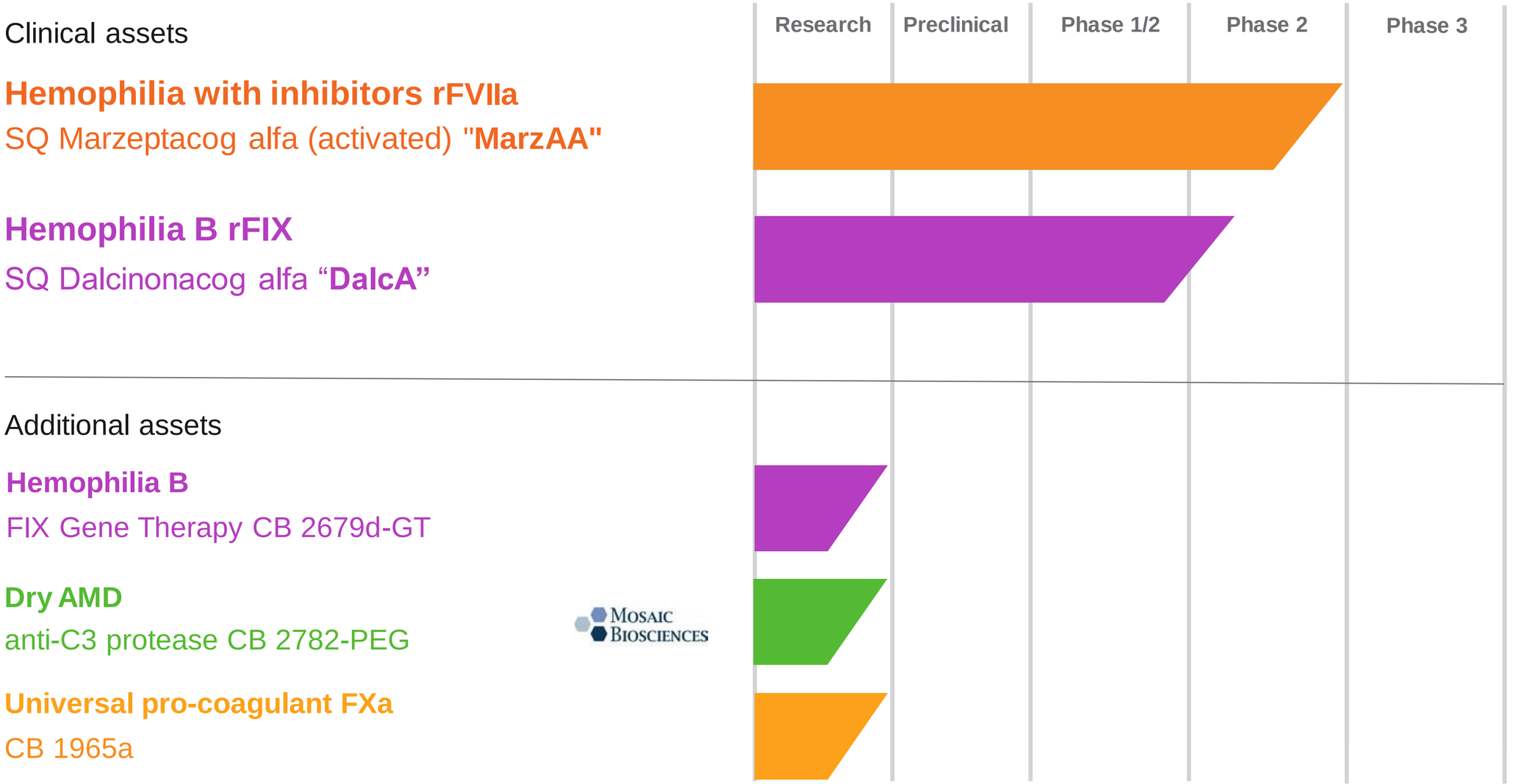
Patients in high mild range are protected from spontaneous bleeds



- Our concept of prophylactic treatment is to keep severe & moderate hemophilia patients in the high mild range
- Subcutaneous factor treatments build up over time, offering long-term stability in clotting levels

Pipeline

Nasdaq: CBIO



Marzeptacog alfa (activated) – MarzAA

Marzeptacog alfa (activated), a novel best in class SQ FVIIa product candidate

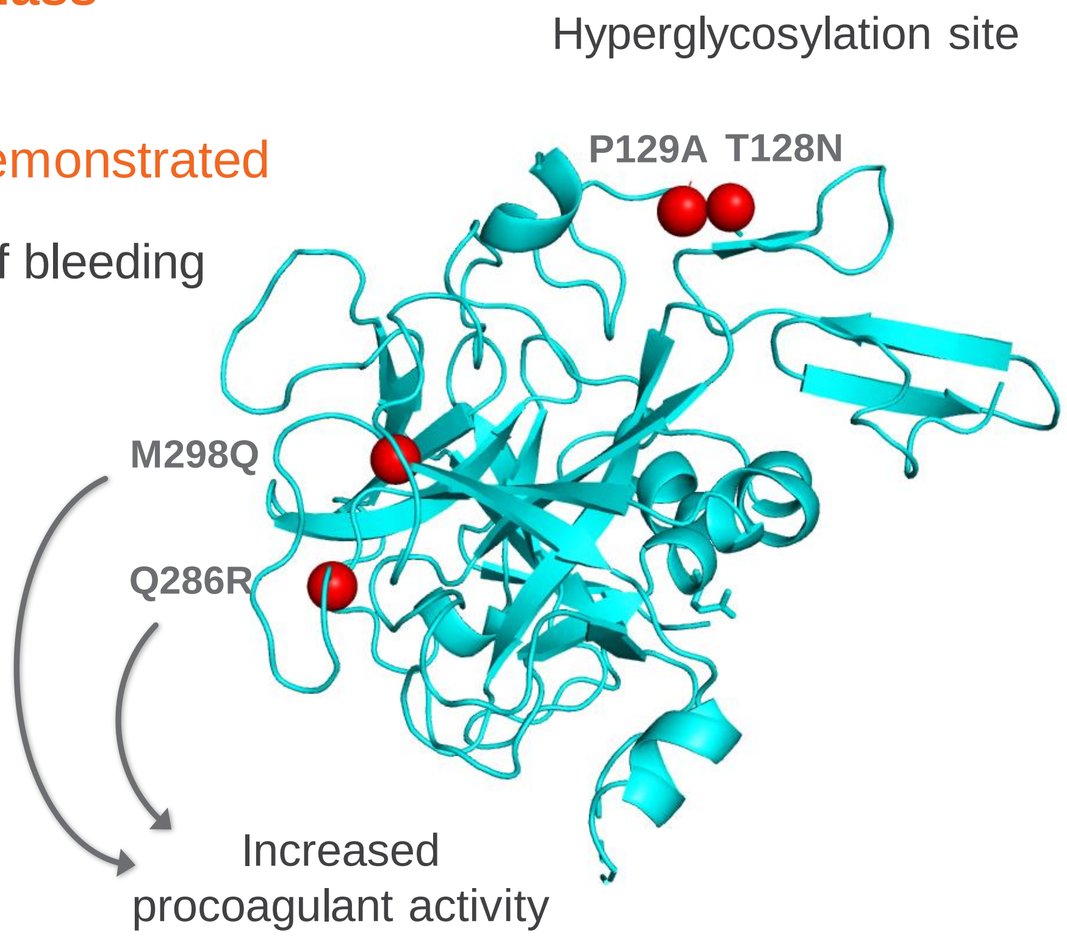
P2 completed – efficacy, safety and tolerability demonstrated

+ One drug solution for prophylaxis and treatment of bleeding
+ Maintains continuous protective levels
+ Disruptive to current intravenous bypass products
+ Especially well suited for children

Four engineered substitutions

+ Catalytic activity & half-life increased
+ 9-fold more potent than NovoSeven RT

Orphan Drug Designation in US & EU

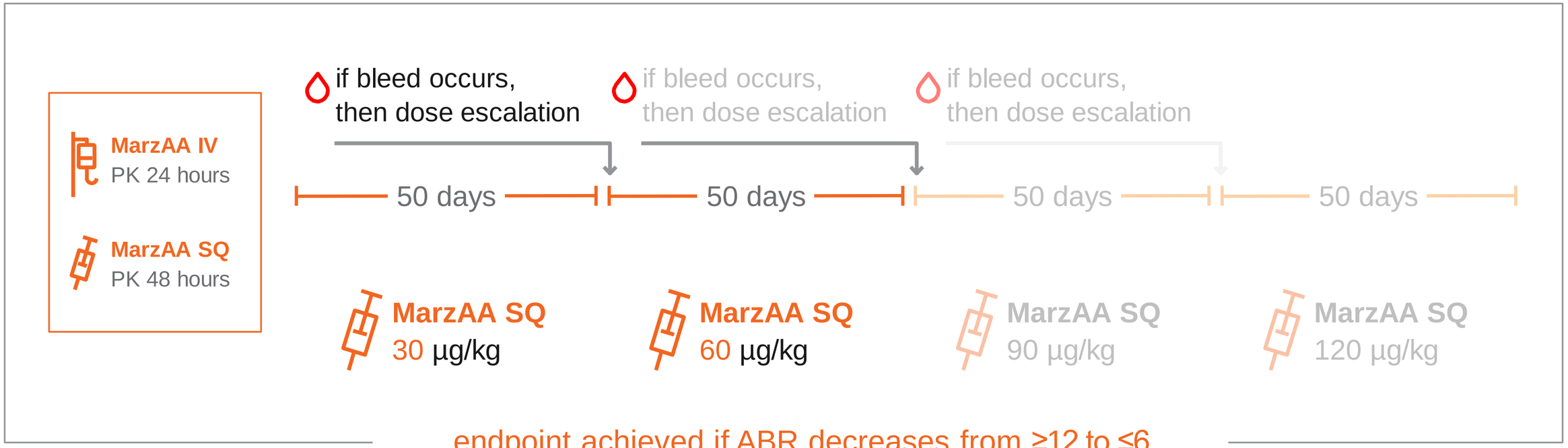


MarzAA phase 2/3 SQ clinical trial design

Nasdaq: CBIO

+ Individualized dose escalation if needed

+ Enrollment & dosing completed



endpoint achieved if ABR decreases from ≥12 to ≤6

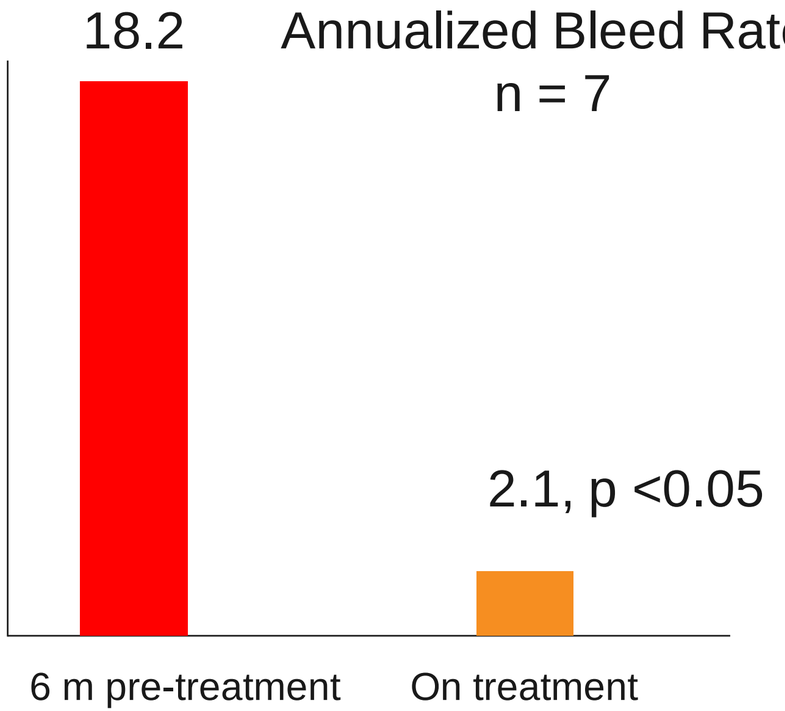
+ Open label SQ study with individual dose escalation if needed
+ Hemophilia A or B with inhibitors
+ Patients with documented annual bleeding rate (ABR) >12

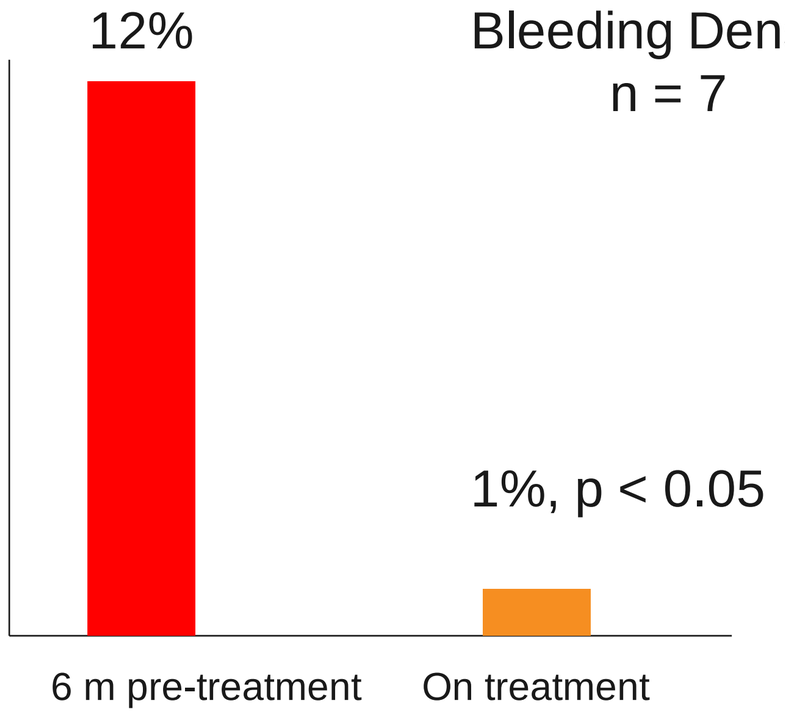
+ Primary endpoint: reduction in annualized bleed rate **at final dose level**
+ Secondary endpoints: safety and tolerability, no inhibitor formation

MarzAA P2 clinical efficacy: >90% reduction in bleeding

Nasdaq: CBIO

- Annualized bleeding rates (ABR) **reduced from 18.2 to 2.1 (5 of 7, no bleeds for 50 days)**
- Bleed density significantly **reduced from 12% to 1%**
- Safe & well tolerated, **~1% ISRs (>450 doses) and no ADAs or nAbs**
- Top dose = 60 μg/kg (2/7 subjects)





Levy *et al.* EAHAD 2019

MarzAA Revenue Forecast >$400M Worldwide

Target Product Profile Resonates Strongly Across Multiple Indications with US & EU KOLs

Hemophilia B with Inhibitors	“I would use SQ MarzAA in all of my Hemophilia B Inhibitor patients”
Hemophilia A with Inhibitors	“IV or SQ MarzAA would be ideal for Hemlibra bleeds and non-responders”
Factor VII Deficiency	“I would use SQ MarzAA in my severe FVIID patients today”
Acquired Hemophilia	“SQ MarzAA may be ideal to treat the bleed and then provide prophylaxis”

Marzeptacog alfa (activated)

Phase 3 registration study to initiate in 2020

- Clinical efficacy & tolerability demonstrated
- Final clinical data at ISTH, July 2019
- Subcutaneous PK study initiated, final data in Q4
- Pivotal trial guidance obtained from EMA & MHRA – FDA end-of-phase 2 meeting in late 2019

Dalcinonacog alfa – DalcA

Novel clinical stage SQ FIX product candidate differentiated from IV market leaders

Phase 1/2 completed

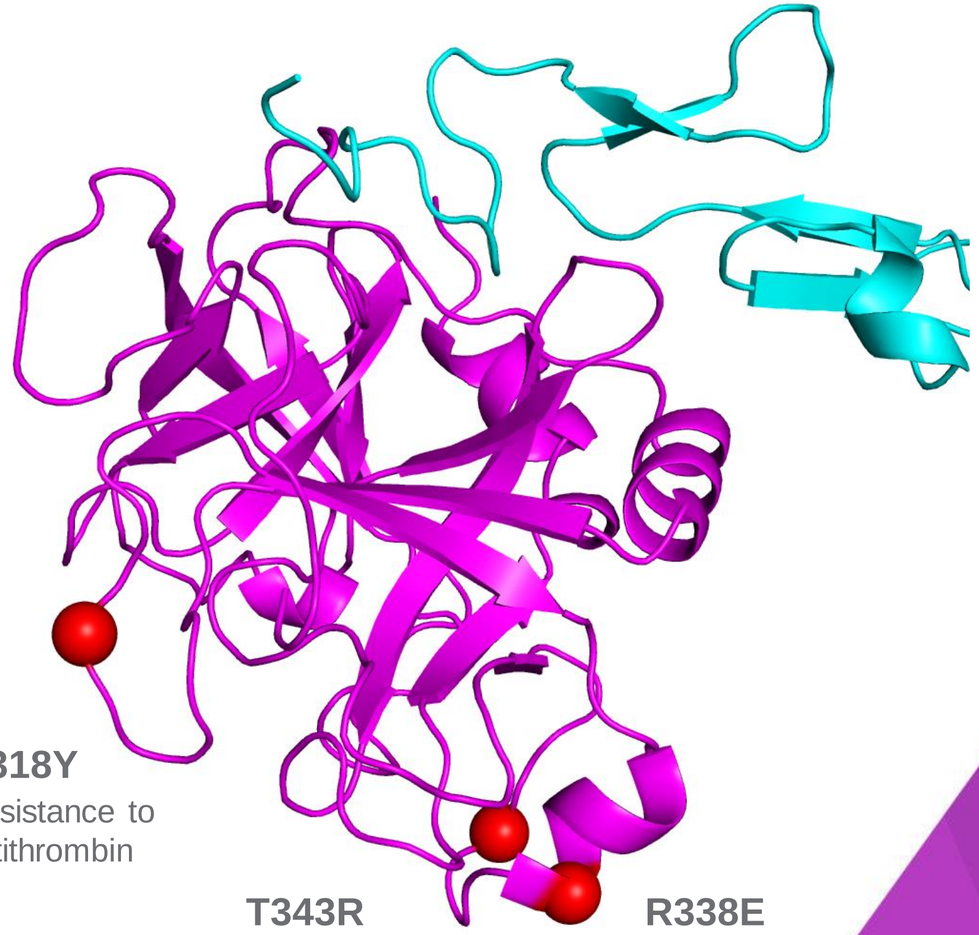
+ 22-fold more potent than BeneFIX in man
+ Maintains continuous protective FIX activity levels of 12 – 30%
+ 2 nAbs observed that are non-cross-reactive to FIX, both returned to previous FIX therapy, no safety issue
+ Disruptive to all intravenous products

Immunogenicity assessment completed

+ Similar low potential risk as for BeneFIX
+ Drug product quality is comparable to commercial FIX products
+ KoL & regulatory agreement on proceeding to Phase 2b

Phase 2b study initiated

Orphan Drug Designation in US & EU



Dalcinonacog alfa phase 2b SQ clinical trial design

Nasdaq: CBIO

DLZ-201 enrolling

- Enrollment: 6 patients
- Single IV dose followed by 28 day SQ dosing

- Primary endpoint: Steady state FIX activity level above 12% with daily dosing
- Secondary endpoints: safety, lack of neutralizing antibody formation, pharmacokinetics, pharmacodynamics

CB 2679d-GT for gene therapy in hemophilia B

Strategic asset for long-term portfolio development

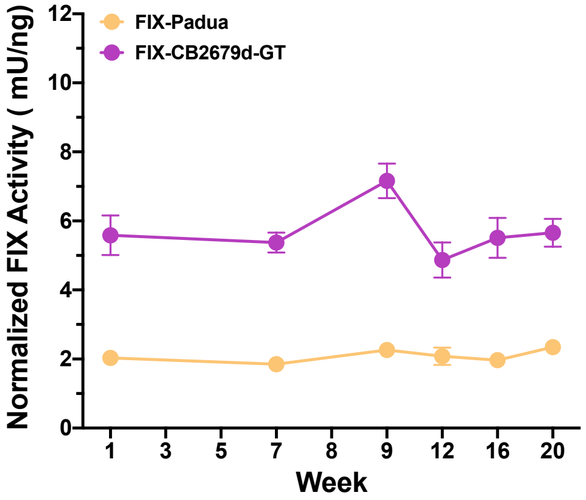
Superior preclinical efficacy of CB 2679d-GT *vs* Padua

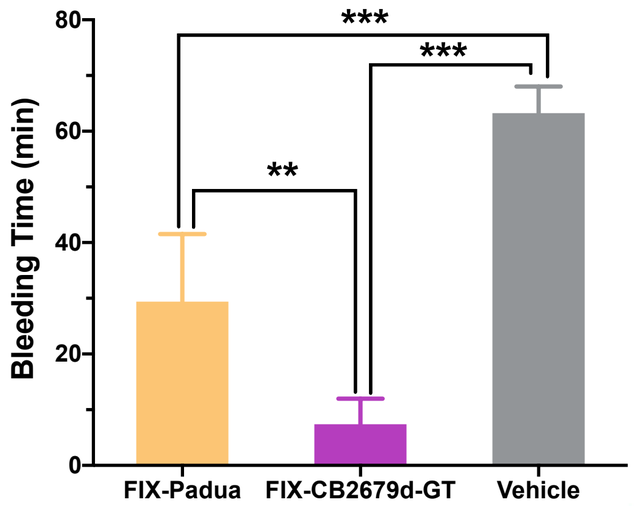
Compared AAV gene therapy efficacy of CB 2679d-GT *vs* FIX-Padua in hemophilia B mice

+ Antigen and activity levels elevated throughout the study, no nAbs
+ 3-fold superior FIX activity
+ 4-5 fold reduction in bleeding time, more rapid and robust hemostatic correction of bleeding with reduction in bleeding time
+ Potential for higher activity levels & lower vector dose could improve efficacy, safety & manufacturing cost

Wholly-owned & issued patents

Optimizing construct in 2019





Bleeding time +/- SD (*** P<0.001, ** P<0.01)
High vector dose group: $1x10^{10}$ vg/mouse

Blouse *et al.* EAHAD 2019

Dalcinonacog alfa – DalcA

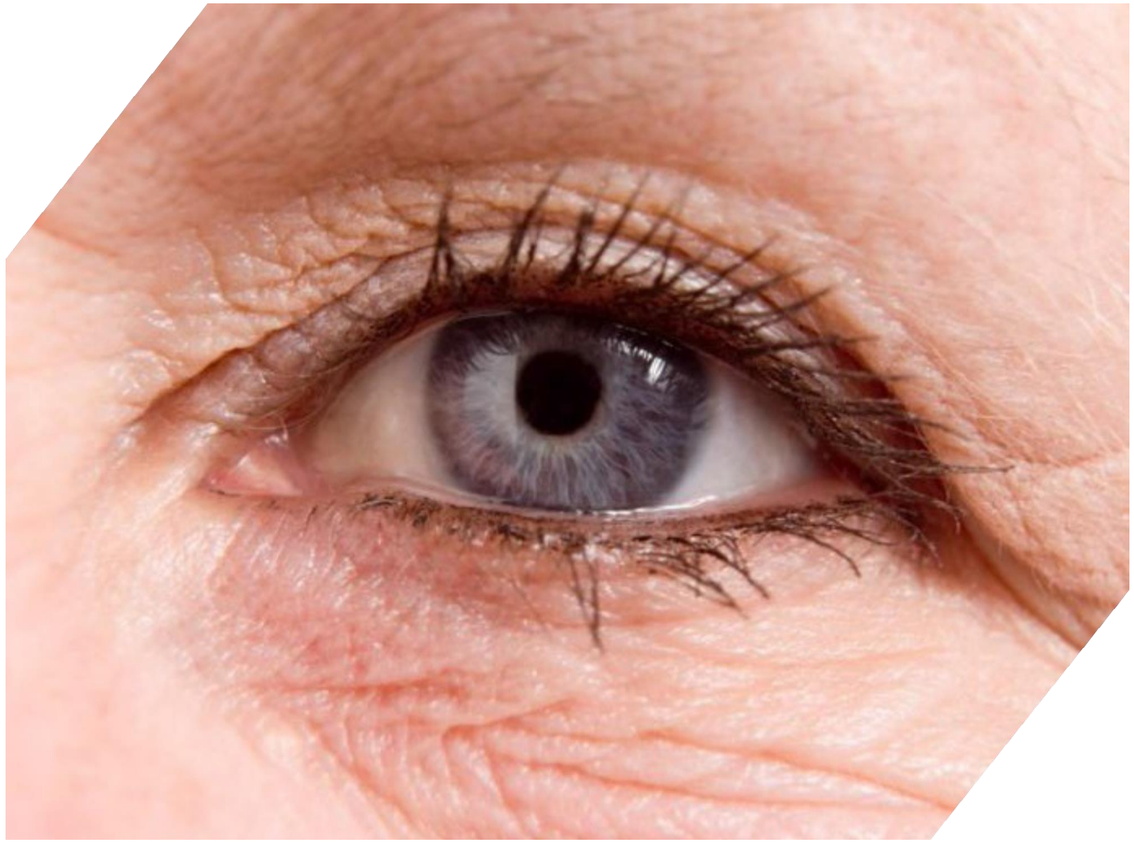
Phase 2b clinical development initiated

- P1/2 clinical efficacy & tolerability demonstrated
- Interim Phase 2b data in Q3 2019
- KOLs & subject experts agree with low immunogenicity risk assessment
- No nAbs in gene therapy expression of the DalcA sequence

CB 2782-PEG anti-complement factor 3 (C3) protease

Nasdaq: CBIO

Geographic Atrophy associated Dry AMD



- Dry AMD is an advanced form of age-related macular degeneration that results in the irreversible loss of retina and leads to blindness;
- Geographic atrophy, an advanced form of dry AMD, affects over five million people worldwide and a million people in the United States
- Global market is >$5B with no approved drugs;
- C3 is the only clinically validated target for the treatment of Dry AMD

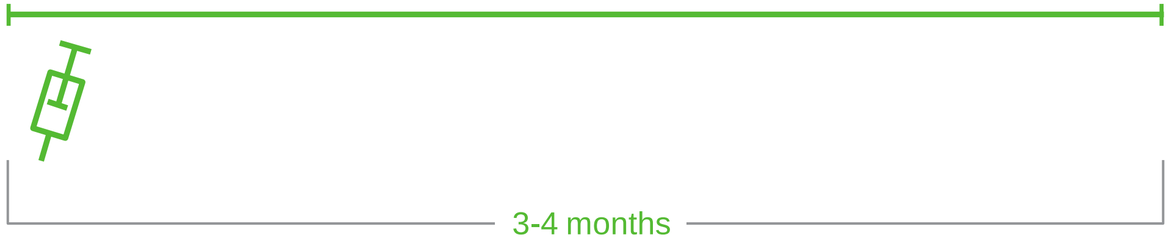
Sources: National Eye Institute. Facts About Age-Related Macular Degeneration, Tufail 2015, The Eye Diseases Prevalence Research Group 2004, GlobalData

CB 2782-PEG long acting anti-C3 protease

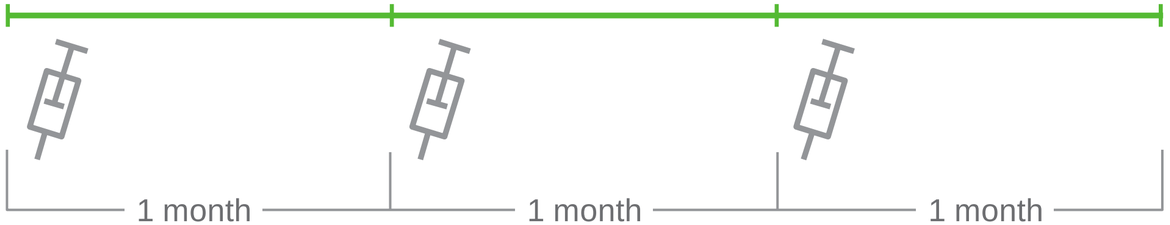
Nasdaq: CBIO

Best-in-class anti-C3 profile for the treatment of geographic atrophy in dry AMD

CB 2782-PEG intravitreal injection



APL-2 intravitreal injections



- Potent and selective long acting anti-C3 protease that degrades C3 into inactive fragments
- Single 125 µg intravitreal injection of CB 2782-PEG achieved complete, rapid and sustained pharmacodynamic inhibition (>99%) of vitreous humor C3 for at least 28 days in non-human primates
- Preclinical PK and PD data predict best-in-class human intravitreal dosing three or four times a year

Financial information

Nasdaq: CBIO

Selected data

Financial results	Q4 2018	2018 Full Year	2019 Estimate
Cash & Cash Equivalents	$120.1 M	$120.1 M	~$70M
Operating Expense	$11.7 M	$33.8 M	~$56M
Net Loss	($10.9M)	($30.1 M)	
Net Loss per share	($0.93)	($2.68)	

Share data

Common Stock Outstanding	11,970,042
Officer & Director ownership	8.1%
Fully Diluted Shares*	14,628,625
Average Volume	231,300
Market Capitalization as of 5 April 2019	$126.8M

***** Includes ~1M options available for issuance

2019 Milestones

Nasdaq: CBIO

	Q1	Q2	Q3	Q4
MarzAA (FVIIa)	**P2 efficacy Enrollment complete**	**Initiate P1 PK/PD**	**Final P2 Data**	**P1 PK/PD data** **FDA EoP2 A/B Inhibitors**
DalcA (FIX)	**Initiate P2b**		**P2b data**	**Final P2b data**
CB 2679d-GT (FIX)	**Preclinical efficacy**			
CB 2782-PEG (dAMD)		**Ocular EHL PK/PD**		

Summary

Disruptive approach to a $3.7 billion market

Subcutaneous prophylactic dosing of novel factors is less painful, more convenient and potentially more efficacious, especially for children – **Clinical efficacy demonstrated for both MarzAA & DalcA**

FVIIa: MarzAA ~$2.2 Billion market

>90% reduction in ABR & bleed density in P2

No ADAs or nAbs observed to date

+ Final P2 data available at ISTH, July 2019
+ Pivotal trial guidance obtained from EMA
+ FDA EoP2 in 2019, P3 in 2020

FIX: DalcA >$1.5 billion market

High mild, >30% activity levels achieved

Most advance SQ FIX in the clinic

+ Phase 2b initiated
+ Phase 2b safety & efficacy data in Q3/Q4 2019

Strong financial position,
~2.5 years cash runway

FIX: CB 2679d-GT

Preclinical gene therapy asset with superior activity compared with current clinical constructs

THANK YOU

Nasdaq: CBIO

catalystbiosciences.com

CATALYST BIOSCIENCES

Team

President & CEO

Nassim Usman, Ph.D.

Massachusetts Institute of Technology · RPI · Sirna Therapeutics

26 years in biotech

SVP, Technical Operations

Andrew Hetherington, M.B.A.

gsk · Bayer · Novartis

20 years in biotech

Chief Medical Officer

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

Sangart · novo nordisk · CSL · Lilly · Inspiration Biopharmaceuticals

18 years in hematology

VP, Translational Research

Grant Blouse, Ph.D.

novo nordisk · Catalyst Biosciences · Wayne State University School of Medicine · Aarhus University Department of Molecular Biology and Genetics · Henry Ford Health System

12 years in biotech

Chief Financial Officer

Fletcher Payne

RiNAT · Cell Genesys · Dynavax Innovating Immunology · IBM · CytomX Therapeutics · Plexxikon · Abgenix

26 years in biotech

VP, Business Development

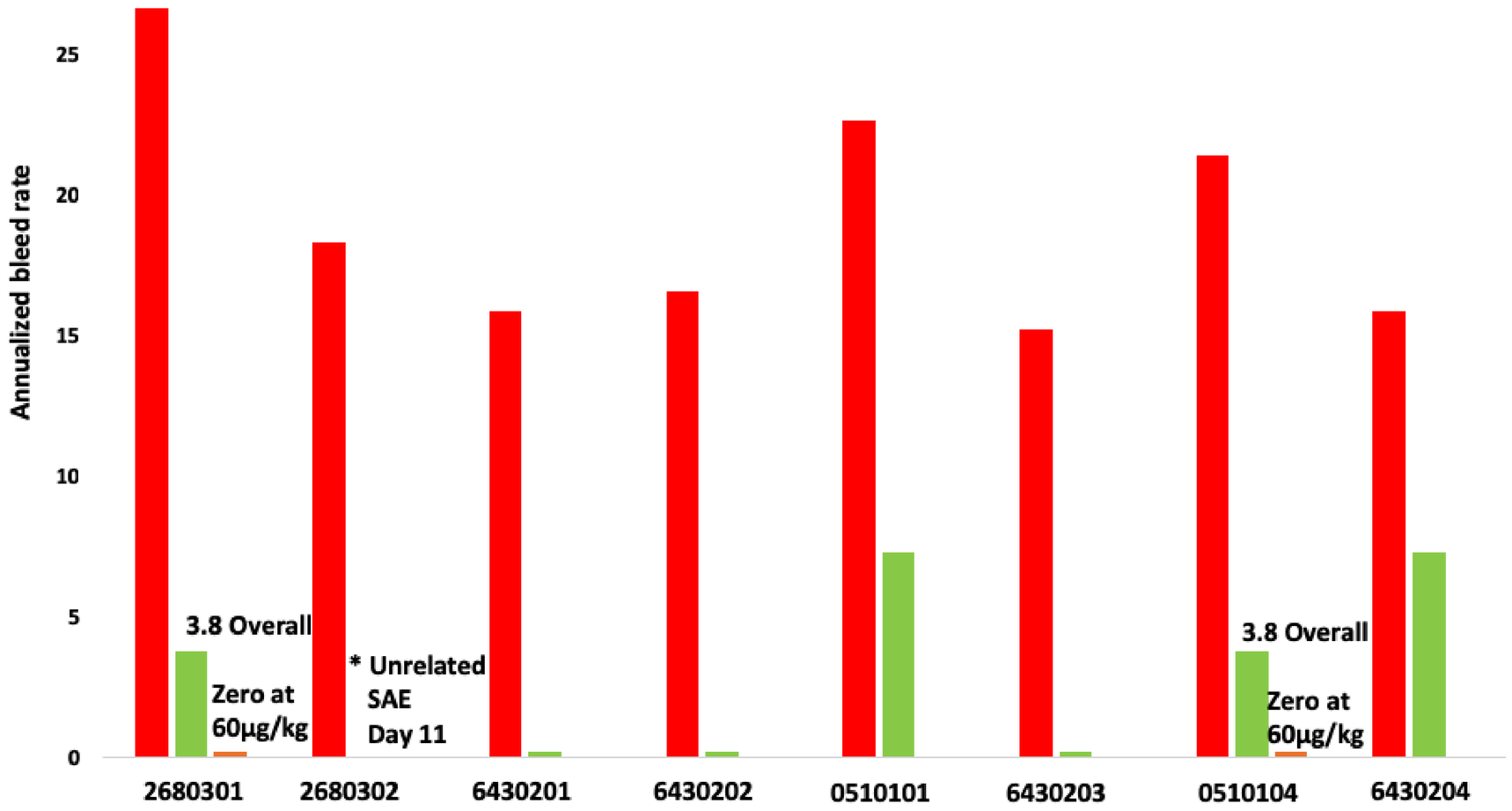
Jeffrey Landau, M.B.A.

Jazz Pharmac · Onyx Pharmaceuticals · Lilly · Threshold Pharmaceuticals

16 years in biotech

MarzAA – Significant reduction in ABR on-treatment

Nasdaq: CBIO

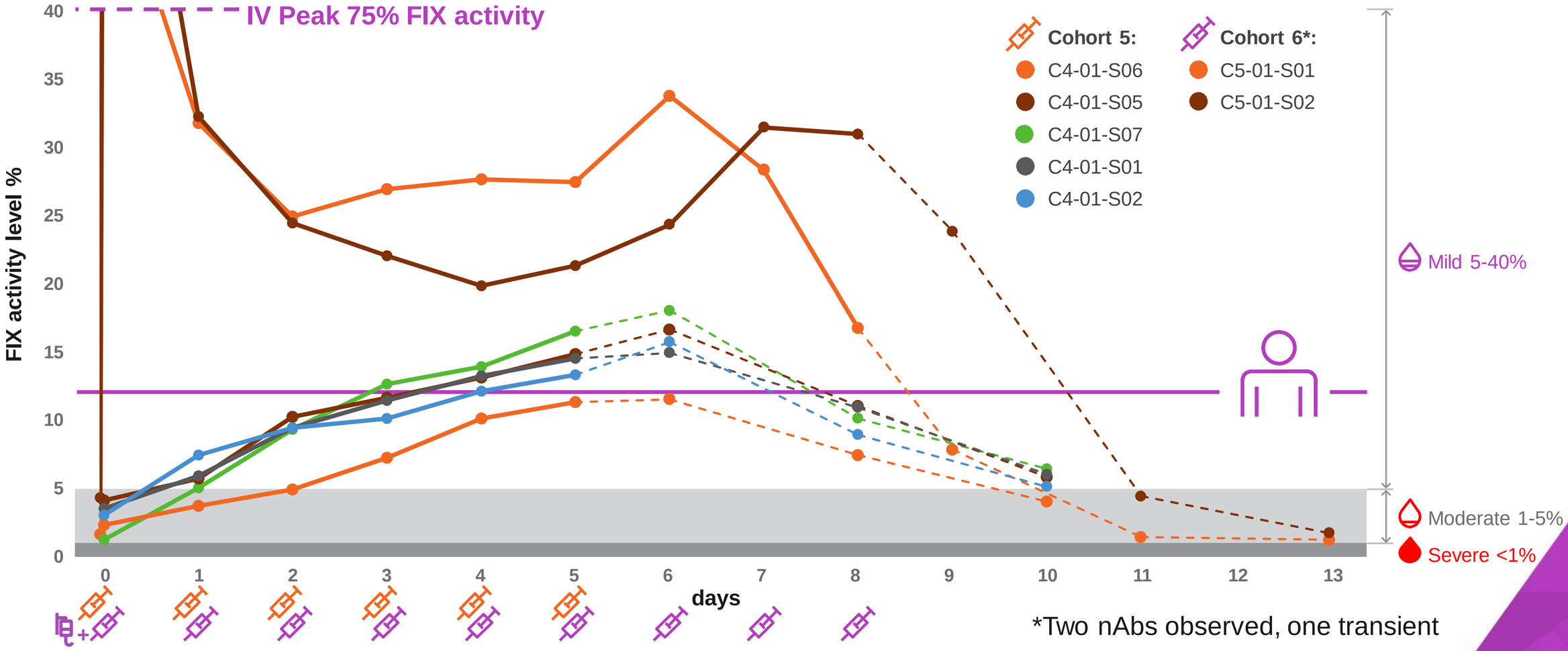


Levy *et al.* EAHAD 2019

DalcA Phase 1/2 clinical trial FIX activity results

Nasdaq: CBIO

Trough levels >12% are sufficient to protect against spontaneous joint bleeds



*Two nAbs observed, one transient