CATALYST BIOSCIENCES

Corporate Overview
3 October 2019

CATALYST BIOSCIENCES

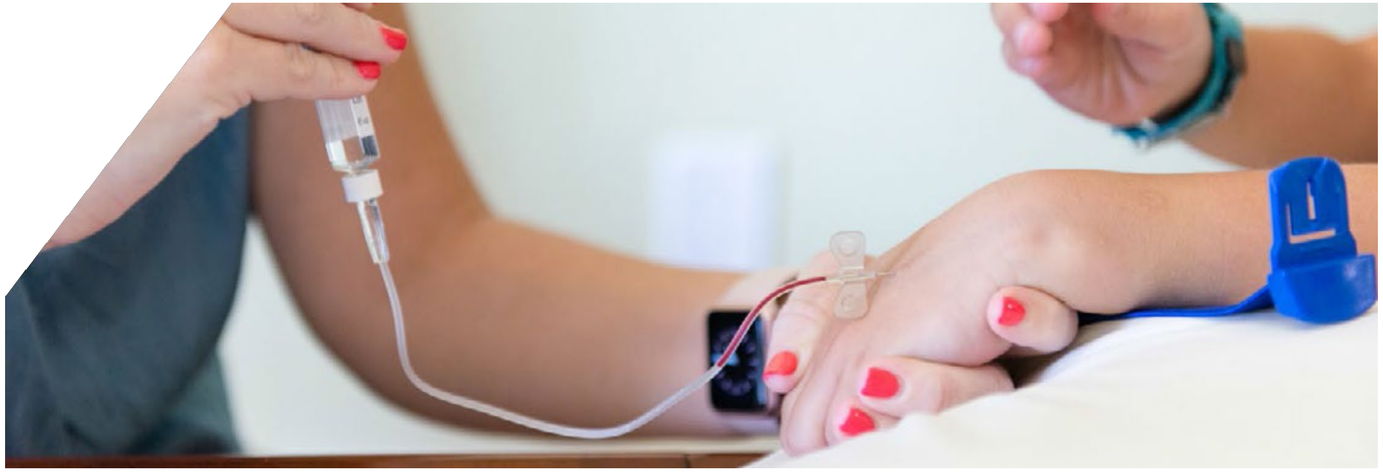
Forward looking statements

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. Examples of such statements include, but are not limited to, potential markets for MarzAA and DalcA, potential use of MarzAA as a subcutaneous prophylactic therapy for patients with hemophilia A or B with inhibitors, clinical trial results, the anticipated pivotal trial guidance and initiation of Phase 3 clinical trial data for MarzAA in 2020 and final Phase 2b clinical trial data for DalcA in the first half of 2020, a planned end of Phase 2 meeting with FDA for MarzAA in Q4 2019, and the absence of adverse events or inhibitor antibodies in patients treated with MarzAA. Actual results or events could differ materially from the plans, expectations and projections disclosed in these forward-looking statements.

Various important factors could cause actual results or events to differ materially, including, but not limited to, the risk that additional human trials will not replicate the results from earlier trials or animal studies, that potential adverse effects may arise from the testing or use of MarzAA or DalcA, including the generation of antibodies, which has been observed in patients treated with DalcA, that clinical trials will take longer than anticipated to be completed, that costs required to develop or manufacture the Company's products will be higher than anticipated, competition and other factors that affect our ability to establish collaborations on commercially reasonable terms and other risks described in the "Risk Factors" section of the Company's annual report on Form 10-K filed with the Securities and Exchange Commission on March 8, 2019, 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: CBIO

Nasdaq: CBIO



We are working to establish a new standard of care in individuals with hemophilia and other bleeding disorders by developing highly potent subcutaneous treatments that promote blood clotting and improve their quality of life

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

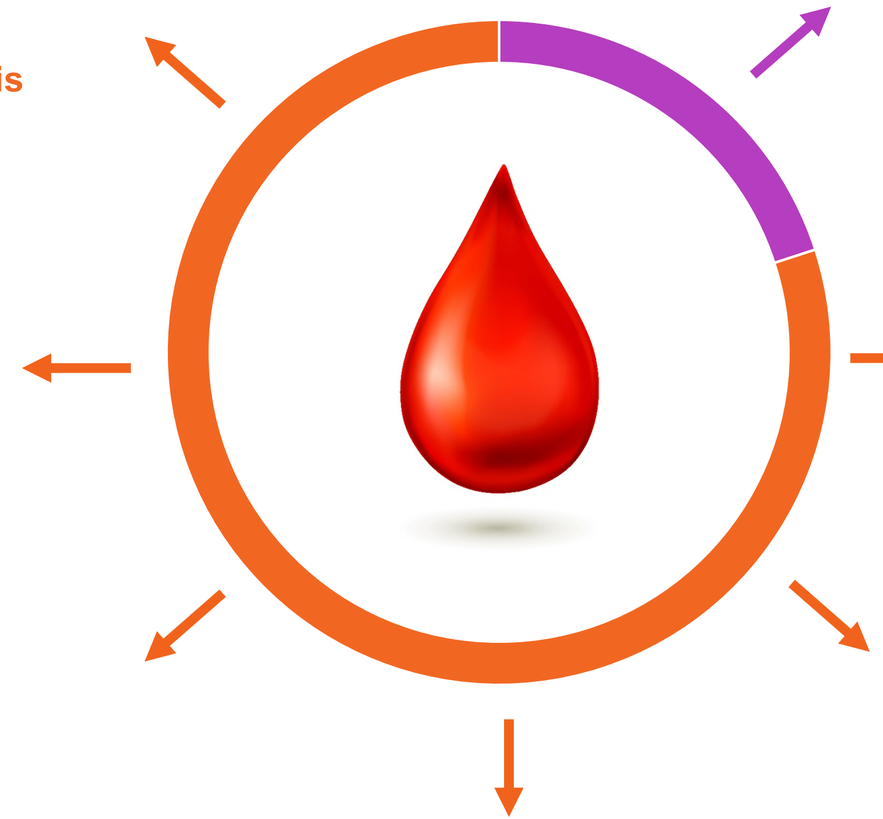
~134 worldwide patents – CBIO retains full ownership of all compounds

Well funded
~$94 M cash (Q2 2019)

Addressing unmet needs in orphan bleeding disorders

Nasdaq: CBIO

MarzAA & DalcA



Hemophilia A with inhibitors

– Treatments: SQ Hemlibra®, IV FVIIa, FEIBA®

SQ treatment of bleeds &
Hemlibra non-responder prophylaxis

Hemophilia B

– Treated with IV FIX products

SQ prophylaxis

SQ treatment of bleeds

Hemophilia B with inhibitors

– Treatments: IV FVIIa, FEIBA

SQ treatment of bleeds &
SQ prophylaxis

Hemophilia A

– Treatments: IV FVIII or SQ Hemlibra

SQ treatment of bleeds

Factor VII deficiency

– Treatments: IV plasma FVII or FVIIa

SQ treatment of bleeds &
SQ prophylaxis in severe patients

Acquired Hemophilia

– Treated with immunosuppressants + IV FVIIa, FEIBA or Obizur®

SQ treatment of bleeds &
SQ prevention of re-bleeds

Glanzmann Thrombasthenia

Treatments: IV FVIIa & platelets

SQ treatment of bleeds &
SQ prophylaxis in severe patients

The Catalyst Biosciences subcutaneous solution

Nasdaq: CBIO

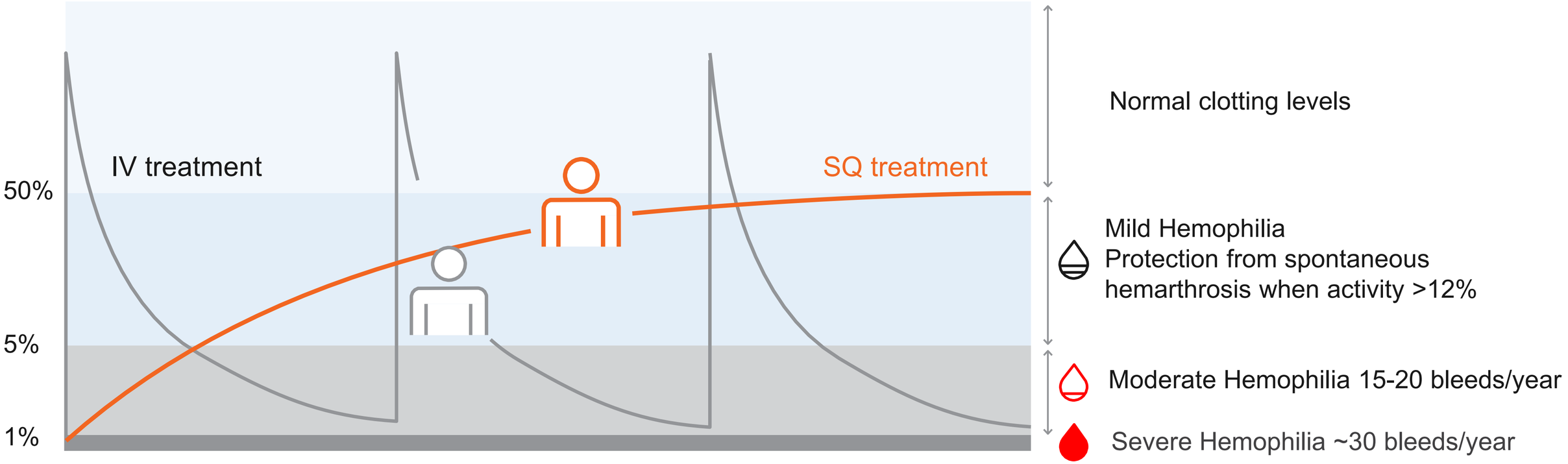
Our highly potent candidates

+ Quick & simple SQ injection
+ Allows for self-administration
+ Ideal for pediatric patients
+ Much higher & more stable factor levels
+ Continuously protective levels

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

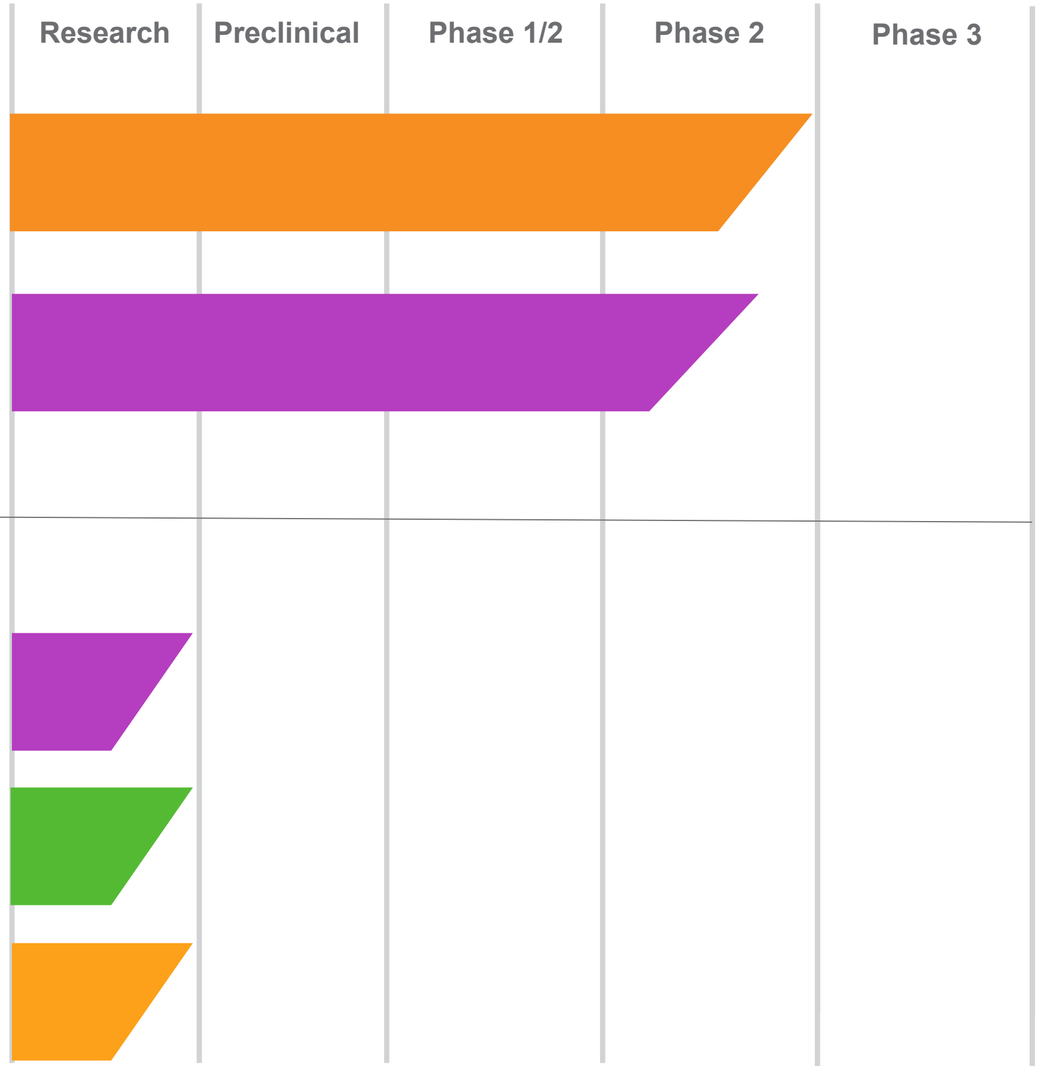
Pipeline

Nasdaq: CBIO

Clinical assets

SQ Marzeptacog alfa (activated) "MarzAA"
Hemophilia & bleeding disorders (rFVIIa)

SQ Dalcinonacog alfa "DalcA"
Hemophilia B (rFIX)



Additional assets

Hemophilia B
FIX Gene Therapy CB 2679d-GT

Dry AMD
anti-C3 protease CB 2782-PEG

Mosaic Biosciences

Universal pro-coagulant FXa
CB 1965a

MarzAA – The only bypass agent for **both** SQ prophylaxis and SQ treatment of bleeds

Attractive Commercial Profile

MarzAA targets a large existing $2.2B Bypass Agent (BPA) market

IV NovoSeven ($1.2B 2018 sales) is the most broadly used BPA & validates FVIIa mechanism in many rare bleeding disorders:

+ Hemophilia A or B with inhibitors
+ Severe Factor VII Deficiency
+ Glanzmann Thrombasthenia
+ Acquired Hemophilia A

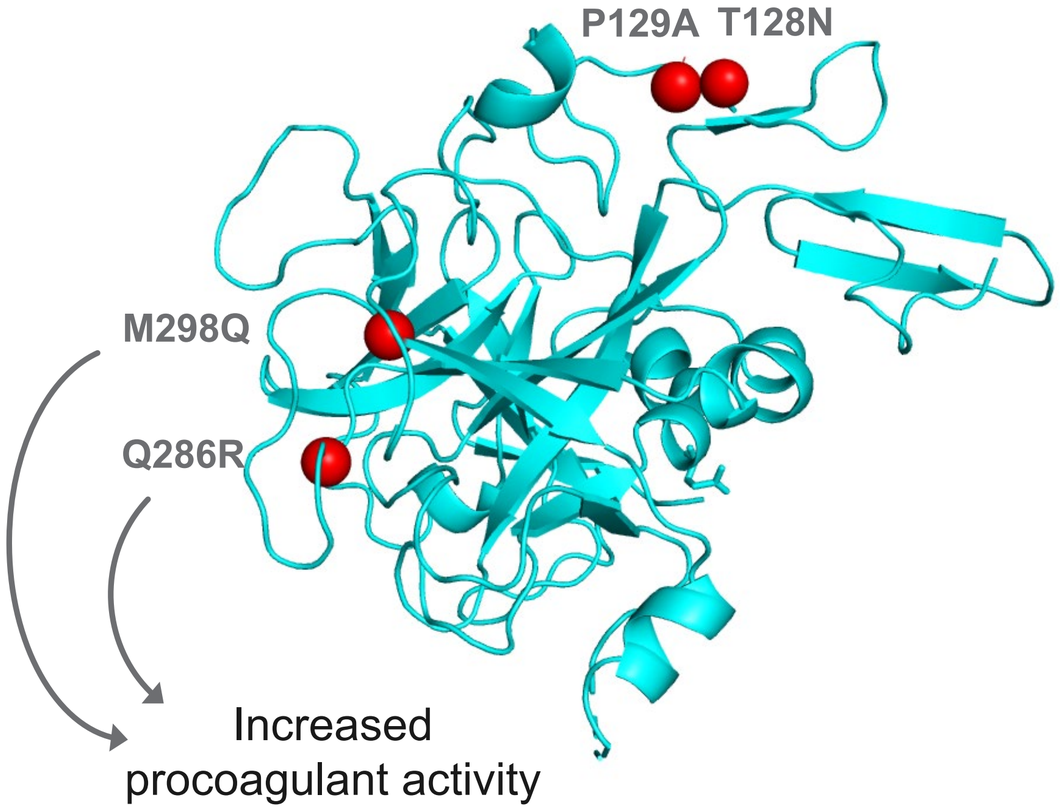
SQ MarzAA has a superior profile to IV NovoSeven – over 100 clinicians surveyed:

+ SQ MarzAA preferred over IV NovoSeven for the treatment of bleeds
+ SQ MarzAA can create & expand multiple prophylaxis markets

Marzeptacog alfa (activated): MarzAA rFVIIa

Nasdaq: CBIO

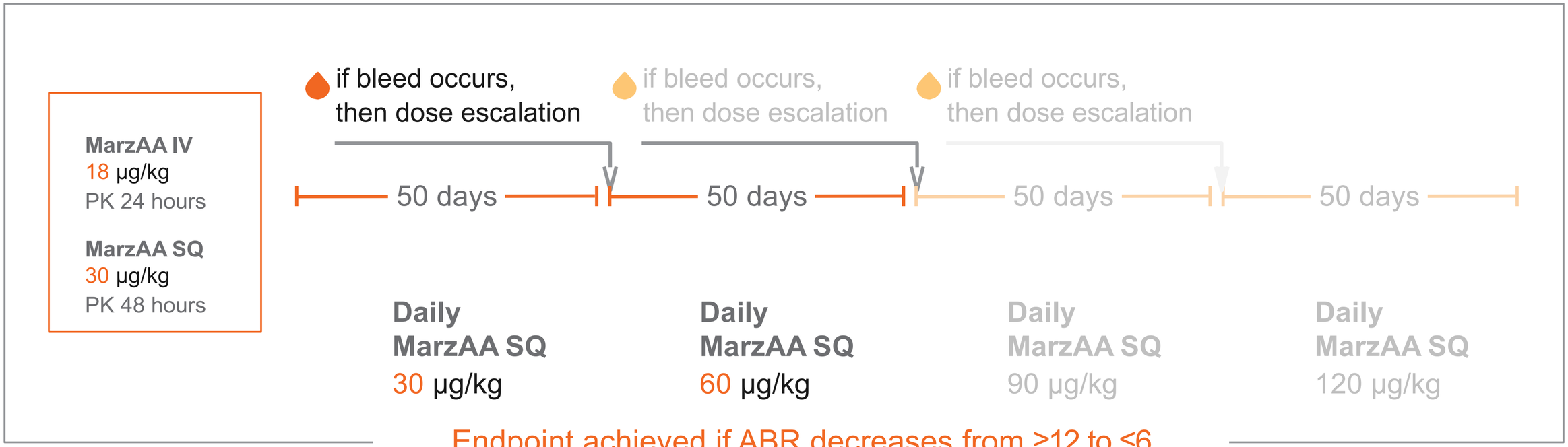
SQ prophylaxis and SQ treatment of a bleed are clear unmet needs in hemophilia and other bleeding disorders



- Four engineered amino acid substitutions within the FVIIa protein
- 9-fold more potent catalytic activity than NovoSeven RT
- **Allows subcutaneous dosing**
- Half-life prolonged when using subcutaneous dosing

Granted Orphan Drug Designation in the US and EU

MarzAA phase 2/3 SQ clinical trial MAA-201 design



- Patients with documented annual bleeding rate (ABR) >12
- Open label SQ study with individual dose escalation if needed in Hemophilia A or B with inhibitors
- Primary endpoint: reduction in annualized bleed rate **at final dose level**
- Secondary endpoints: safety and tolerability, inhibitor formation

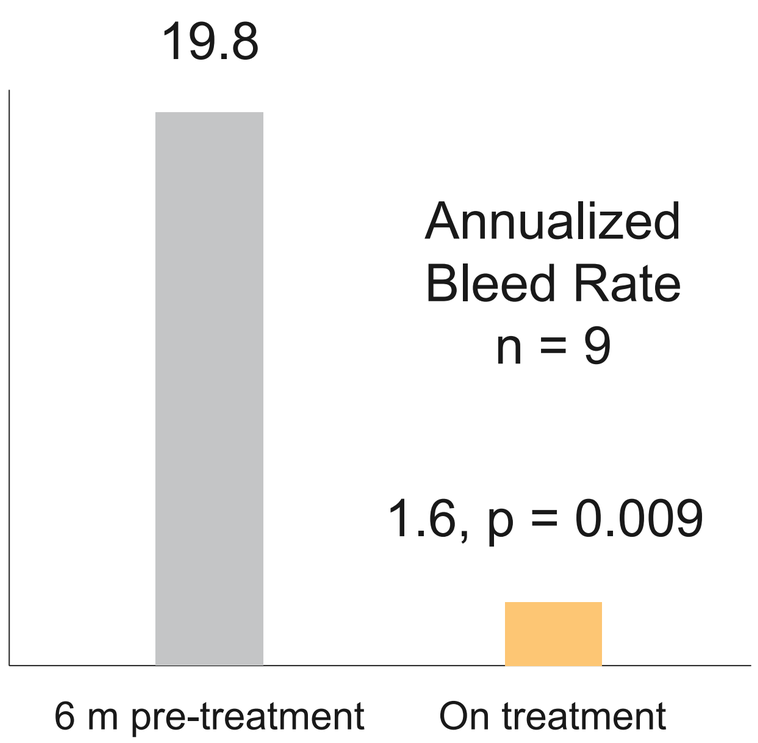
MarzAA Phase 2 demonstrates clinical efficacy

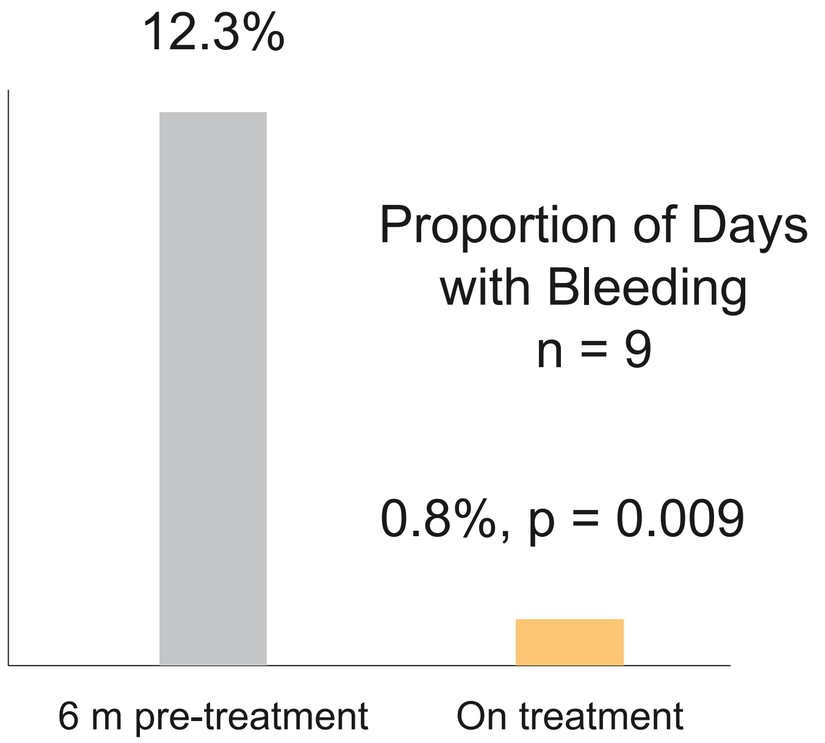
Greater than 90% reduction in all bleeding; Median ABR zero; Median bleeding days zero

Mean Annualized Bleeding Rates (ABR) significantly reduced from 19.8 to 1.6

Mean Proportion of Days with Bleeding (PDB) significantly reduced from 12.3% to 0.8%

Safe & well tolerated, ~1% ISRs (6/517 SQ doses) and no ADAs

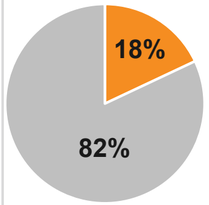
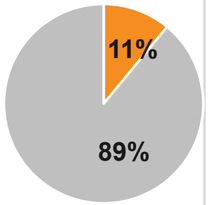
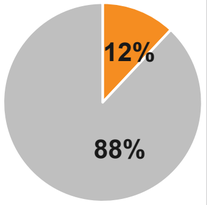
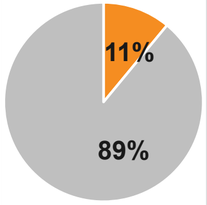
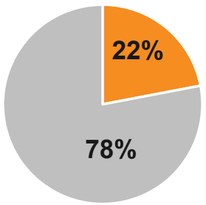
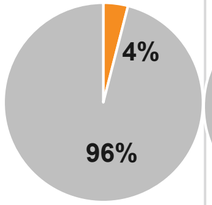
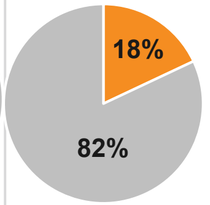
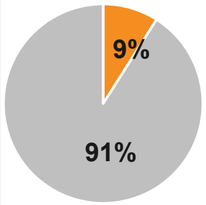
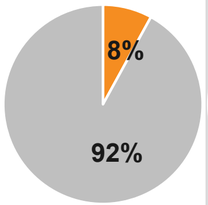
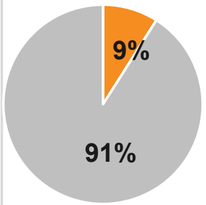
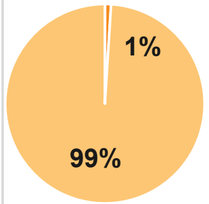
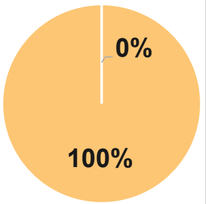
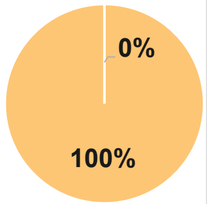
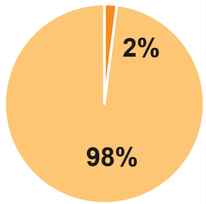
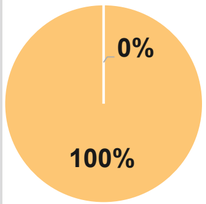
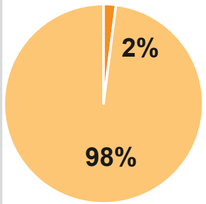
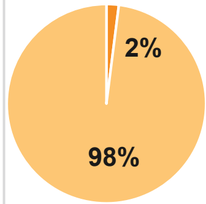
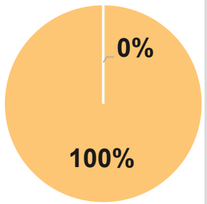
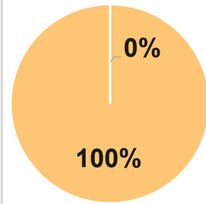




Significant reduction in Proportion of Days with Bleeding (PDB)

Nasdaq: CBIO

Median Proportion of Days (PDB) with Bleeding reduced to zero

Subject	2680301	2680302	6430201	6430202	0510101	6430203	0510104	6430204	0510106	6160101
Pre-treatment										
On-treatment		Unrelated SAE								

Orange denotes the Proportion of Days with Bleeding during period of observation

+ Average **pre-treatment** percentage of days of bleeding was **12.3%** (SD 5.8%) [median = 11.0%]
+ Average **on-treatment** percentage were reduced to **0.8%** (SD 0.9%) [median 0%]
+ Analysis of these pairwise differences by Wilcoxon signed-rank test has p=0.009 for 93.8% reduction

Mahlangu *et al.* ISTH 2019

In a world of SQ prophylaxis

Patients need a SQ treatment of a bleed option

Individuals on Hemlibra® need additional treatments

NovoSeven® is safe but is administered IV

FEIBA lacks a safety margin and is administered IV

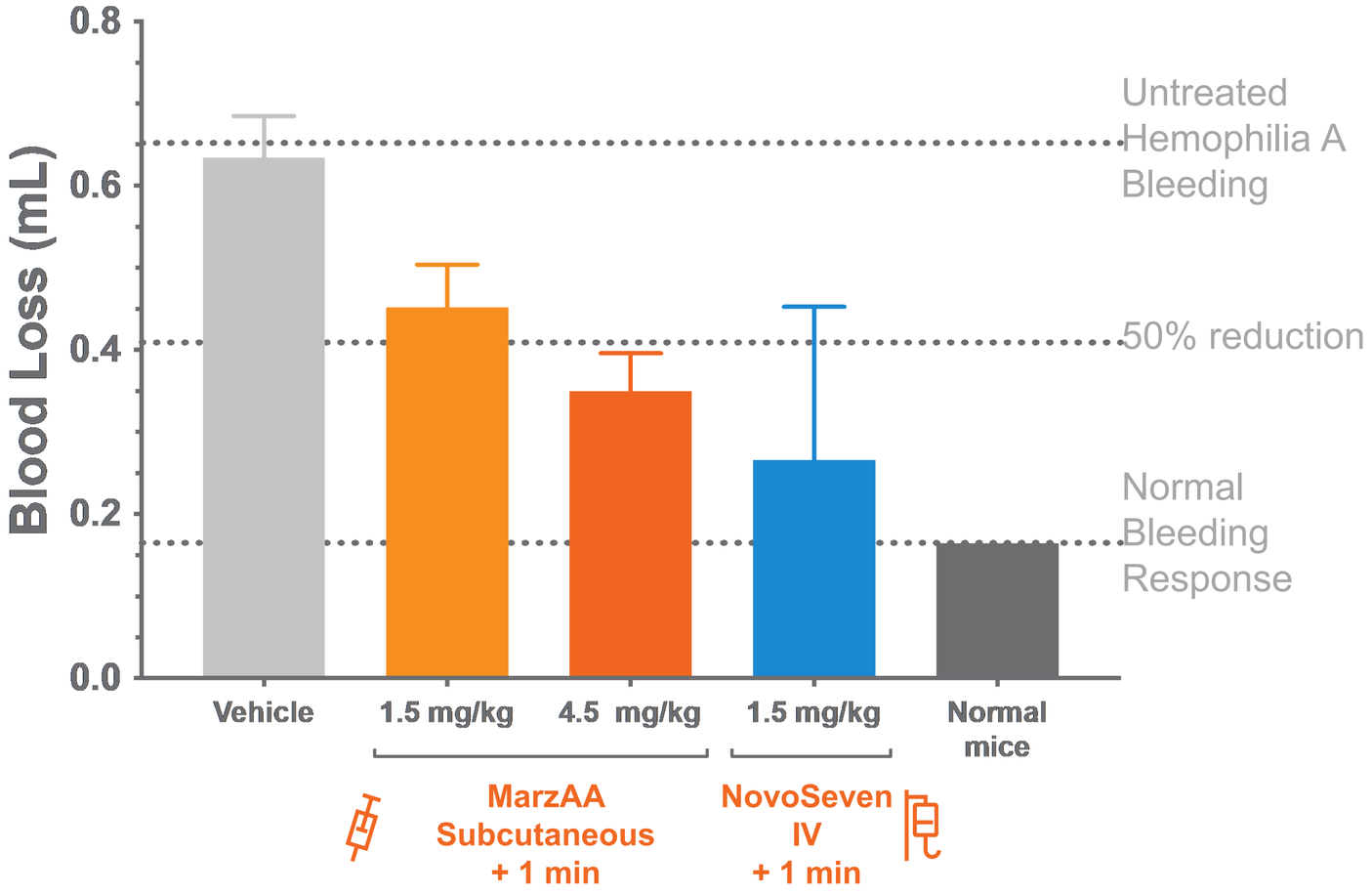
SQ MarzAA meets the profile for an **Ideal Solution**

- ✓ Fast & easy to administer
- ✓ Ability to stop bleeding
- ✓ Potential to combine with all other treatment regimens

SQ MarzAA reduces bleeding when dosed after injury

Nasdaq: CBIO

Acute mouse injury model with dosing *after* injury

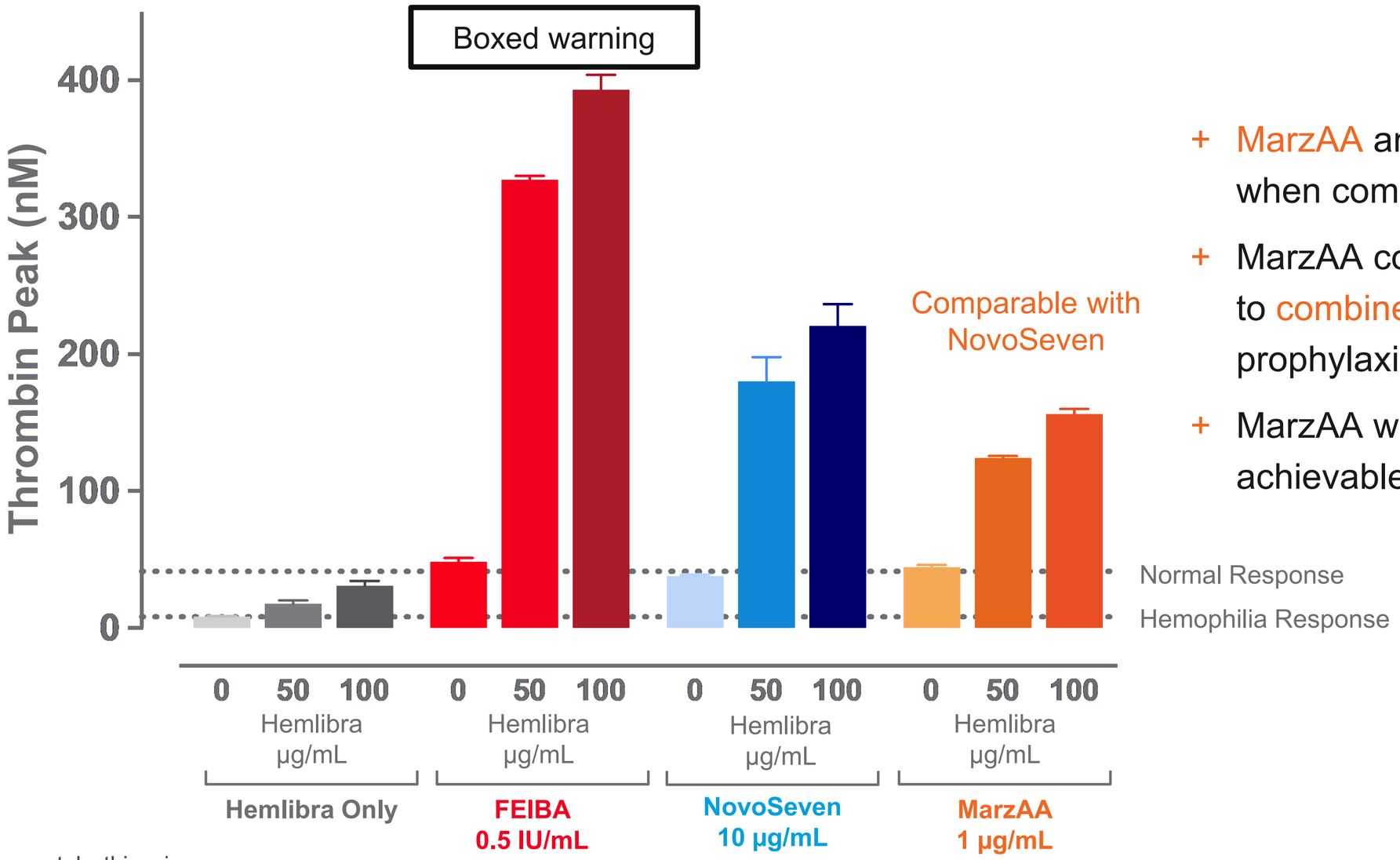


- Tail-cut model used to assess efficacy in hemophilia
- Hemophilic mice bleed considerably more than normal mice
- SQ MarzAA one minute after tail-cut significantly reduces blood loss
- The effect is dose dependent
- Reduction in blood loss with SQ MarzAA is similar to IV NovoSeven

Potential to treat breakthrough bleeds in patients on Hemlibra

Nasdaq: CBIO

MarzAA has a preferred coagulation profile that is similar to NovoSeven



+ MarzAA and NovoSeven behave similarly when combined with Hemlibra
+ MarzAA could allow hemophilia A patients to combine two SQ therapies - "sports prophylaxis" or treat breakthrough bleeds
+ MarzAA works well at plasma levels achievable with SQ dosing

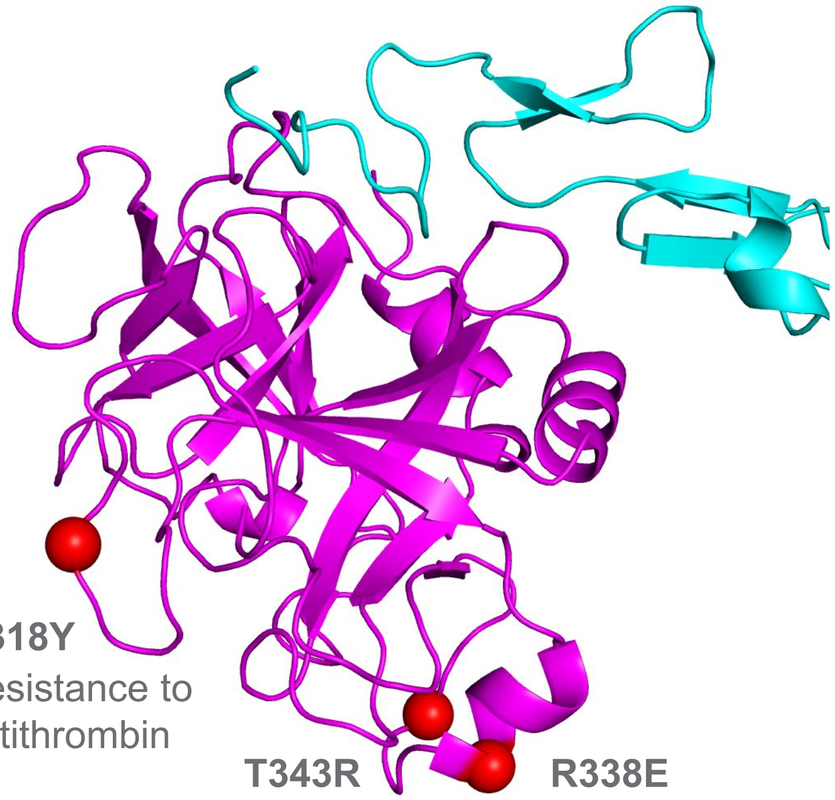
Marzeptacog alfa (activated)

Phase 3 studies to initiate in 2020

- Demonstrated P2 Clinical efficacy & tolerability for prophylaxis indications
- Demonstrated preclinical PoC for SQ treatment of a bleed
- MarzAA combined with Hemlibra is not prothrombotic *in vitro*
- Initiated SQ dose escalation PK study to support treatment of a bleed – final data in 2020
- Obtained Pivotal trial guidance from EMA & MHRA – FDA EoP2 meeting in late 2019
- Large commercial opportunity across multiple rare bleeding disorders

Dalcinonacog alfa: DalcA rFIX

SQ prophylaxis is an unmet need in hemophilia B



Phase 1/2 completed

+ 22-fold more potent than BeneFIX in man
+ **FIX activity levels up to 30%**
+ Observed 2 nAbs (cousins with same rare genotype) that were non-cross-reactive to FIX
  - Returned to previous FIX therapy - no safety issues
+ Extensive studies showed similar low immunogenicity risk as BeneFIX

Phase 2b study enrolling and dosing

Gene therapy construct (preclinical)

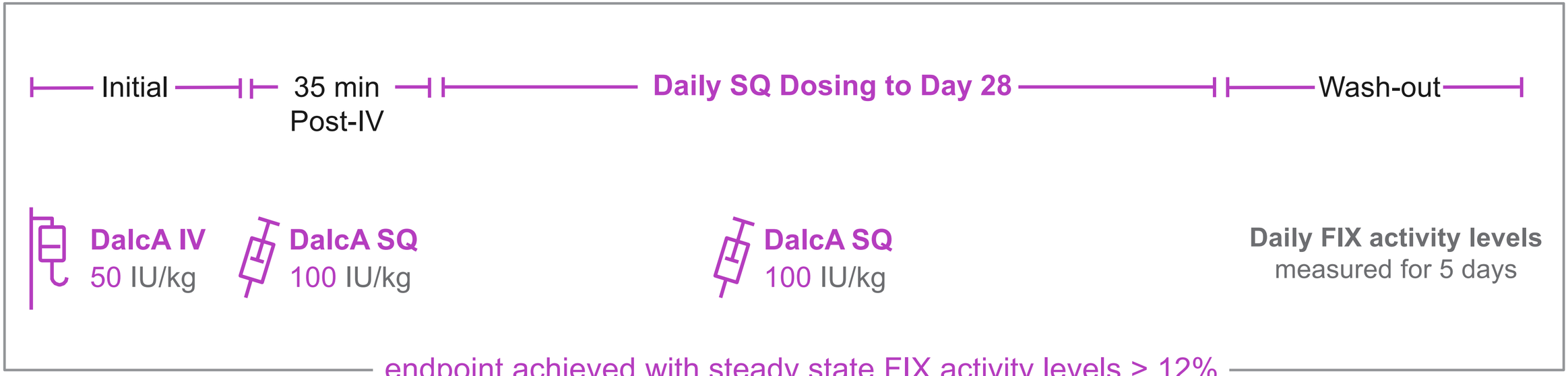
+ CB 2679d-GT demonstrated superiority *vs* Padua
+ Proprietary AAV construct under development

Orphan Drug Designation in US & EU

Dalcinonacog alfa phase 2b SQ clinical trial design

Nasdaq: CBIO

DLZ – 201 enrolling



+ Target enrollment: 6 patients
+ Rare genotype and HLA signature from P1/2 excluded

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

Dalcinonacog alfa – DalcA

Phase 2b update

- All study participants identified – actively enrolling
- 2 subjects have successfully completed 28 days of dosing & washout
- FIX activity levels exceeded the trial efficacy endpoint & no ADAs observed
- Final data in 1H 2020

2019 Milestones

Nasdaq: CBIO

	Q1	Q2	Q3	Q4	2020
MarzAA (FVIIa)	**P2 efficacy** ✓	**Initiate P1 PK/PD** ✓	**Final P2 Data** ✓	**FDA EoP2**	**P1 PK/PD data** **Phase 3**
DalcA (FIX)	**Initiate P2b** ✓		**P2b enrollment update** ✓		**Final P2b data**
CB 2679d-GT (FIX)	**Preclinical efficacy** ✓				
CB 2782-PEG (dAMD)		**Ocular EHL PK/PD** ✓			

Financial information

Nasdaq: CBIO

Selected data

Financial results	Q2 2019
Cash & Cash Equivalents	$94.0 M
Operating Expense	$30.1 M
Net Loss YTD	($28.9M)
Net Loss per share	($2.41)

Share data

Common Stock Outstanding	12,008,528
Officer & Director ownership	8.4%
Fully Diluted Shares*	14,621,038

* Includes ~1M options available for issuance

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 & PBD in P2

No ADAs or nAbs observed to date

SQ treatment of a bleed potential in multiple indications

+ Pivotal trial guidance obtained from EMA

+ FDA EoP2 in 2019, P3 expected in 2020

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

Preclinical long acting anti-C3 protease with best-in-class profile; anticipated intravitreal dosing 3 to 4 times per year

FIX: DalcA >$1.5 billion market

High mild, >30% activity levels achieved

Most advanced SQ FIX in the clinic

+ Phase 2b enrolling & dosing – no ADAs to date

+ Phase 2b final data in 1H 2020

FIX: CB 2679d-GT

Preclinical gene therapy asset with superior activity *vs* current clinical constructs

Strong financial position – ~2 years cash runway

THANK YOU

Nasdaq: CBIO

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