Arbutus BIOPHARMA

Curing Chronic Hepatitis B

Corporate Presentation

May 2021

NASDAQ: ABUS www.arbutusbio.com

Forward-Looking Statements

This presentation contains forward-looking statements within the meaning of the U.S. Private Securities Litigation Reform Act of 1995 and Canadian securities laws. All statements that are not historical facts are hereby identified as forward-looking statements for this purpose and include, among others, statements relating to: the potential market opportunity for HBV; Arbutus' ability to meet a significant unmet medical need; the sufficiency of Arbutus' cash and cash equivalents to extend through the third quarter of 2022; the potential for AB-729 to be a well-tolerated low dose treatment for HBV with a minimum of injections; the potential for AB-836 to be low dose with a greater therapeutic window and to address known capsid resistant variants T33N and I105T; the potential for AB-836 to be once daily dosing; Arbutus' expectations regarding the timing and clinical development of Arbutus' product candidates including its 2021 key clinical objectives with respect to AB-729 and AB-836 and its clinical collaboration with Assembly Biosciences; the timeline to a combination cure for HBV; Arbutus' coronavirus strategy; Arbutus' expectations regarding its technology licensed to Genevant; and other statements relating to our future operations, future financial performance, future financial condition, prospects or other future events.

With respect to the forward-looking statements contained in this presentation, Arbutus has made numerous assumptions regarding, among other things: the timely receipt of expected payments; the effectiveness and timeliness of preclinical studies and clinical trials, and the usefulness of the data; the timeliness of regulatory approvals; the continued demand for Arbutus' assets; and the stability of economic and market conditions. While Arbutus considers these assumptions to be reasonable, these assumptions are inherently subject to significant business, economic, competitive, market and social uncertainties and contingencies including uncertainties and contingencies related to the ongoing COVID-19 pandemic. Forward-looking statements herein involve known and unknown risks, uncertainties and other factors that may cause the actual results, events or developments to be materially different from any future results, events or developments expressed or implied by such forward-looking statements. Such factors include, among others: anticipated pre-clinical and clinical trials may be more costly or take longer to complete than anticipated, and may never be initiated or completed, or may not generate results that warrant future development of the tested drug candidate; changes in Arbutus' strategy regarding its product candidates and clinical development activities; Arbutus may not receive the necessary regulatory approvals for the clinical development of Arbutus' products; economic and market conditions may worsen; and market shifts may require a change in strategic focus; and the ongoing COVID-19 pandemic could significantly disrupt our clinical development programs. A more complete discussion of the risks and uncertainties facing Arbutus appears in Arbutus' Annual Report on Form 10-K, Quarterly Report on Form 10-Q and Arbutus' periodic disclosure filings which are available at www.sec.gov and at www.sedar.com. All forward-looking statements herein are qualified in their entirety by this cautionary statement, and Arbutus disclaims any obligation to revise or update any such forward-looking statements or to publicly announce the result of any revisions to any of the forward-looking statements contained herein to reflect future results, events or developments, except as required by law.

Investment Highlights

Therapeutic focus – curing chronic Hepatitis B Virus (HBV) Infection

Significant Unmet Medical Need in HBV

Global HBV prevalence double that of HCV, potential for larger market opportunity

Goal of HBV Functional Cure

Undetectable HBV DNA and HBsAg delivered through finite duration treatment with a combination of drugs with different modes of action

Broad HBV Portfolio

HBV assets include:

- RNAi
- Capsid Inhibitors
- PD-L1
- HBV RNA Destabilizers

Coronavirus Research Initiative

Focused on direct acting antivirals targeting the viral polymerase and protease

Team with Antiviral Expertise & Proven Track Record

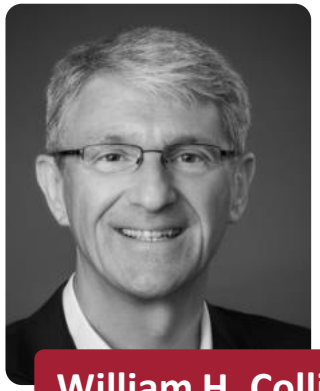
Applying knowledge gained from HIV and HCV success to HBV and Coronaviruses

16 % Ownership in Genevant

Rights to potential future royalties and sublicense revenues for LNP Technology

Proven Leadership Team

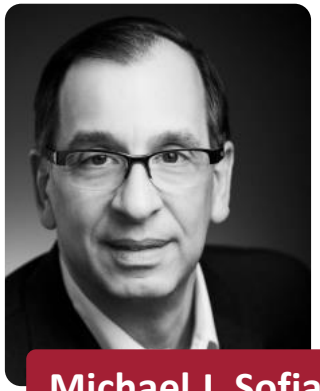
Successful track records in the discovery, development, and commercialization of multiple antivirals including sofosbuvir, etravirine, rilpivirine, telaprevir and simeprevir



William H. Collier

President and CEO

ViiV Healthcare, gsk



Michael J. Sofia, PhD

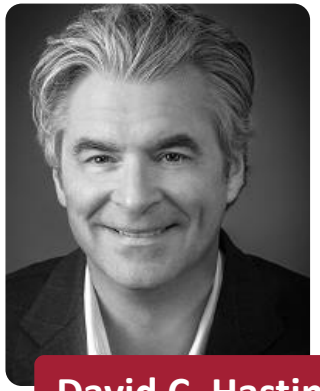
Chief Scientific Officer

Pharmasset, OncoCore Biopharma, Inc., Gilead, Bristol-Myers Squibb

Gaston Picchio, PhD

Chief Development Officer

Janssen



David C. Hastings

Chief Financial Officer

Incyte, ArQule, Unilife

Elizabeth Howard, PhD, JD

EVP, General Counsel and Chief Compliance Officer

orrick

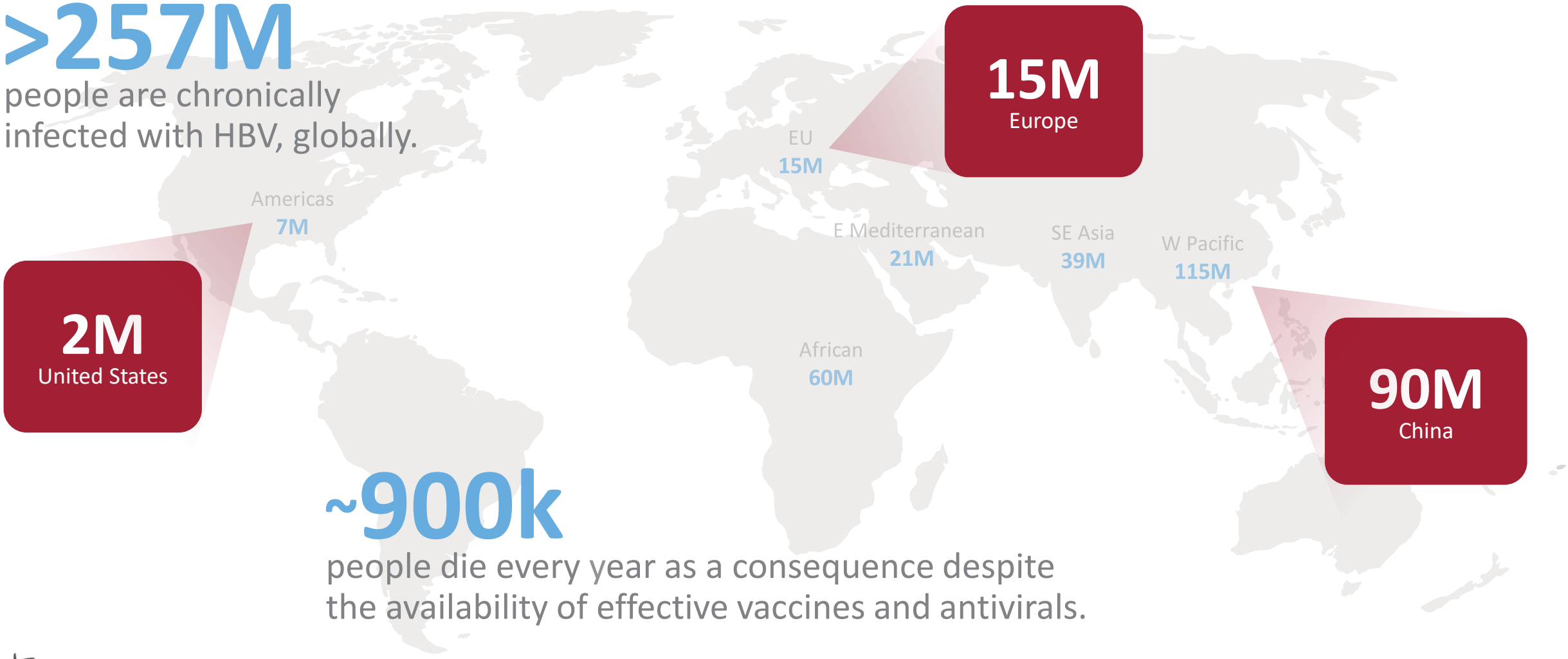
Michael J. McElhaugh

Chief Business Officer

OncoCore Biopharma, Inc., Bristol-Myers Squibb, ViroPharma, Pharmasset

HBV Presents a Significant Unmet Medical Need

>257M
people are chronically infected with HBV, globally.



~900k
people die every year as a consequence despite the availability of effective vaccines and antivirals.

Sources: Global Hepatitis Report and Hepatitis B Fact Sheet, WHO (2017) http://www.who.int/mediacentre/factsheets/fs204/en/
Kowdley et al. Hepatology (2012) Prevalence of Chronic Hepatitis B Among Foreign-Born Persons Living in the US by Country of Origin

Significant Opportunity to Improve HBV Cure Rates

HBV cures are achievable with today's SOC in **<5% of patients**. **Sustained** HBsAg and HBV DNA loss after end-of-treatment* is rare.

***undetectable HBsAg and HBV DNA 6 months after end-of-treatment accepted as a functional cure.**

STANDARD OF CARE THERAPIES FOR CHRONIC HBV

	PegIFN	Entecavir	Tenofovir
Dosing Duration	48-weeks	Chronic	Chronic
HBV DNA Undetectable *(<60-80 IU/ml)*	7-19%	67-90%	76-93%
HBsAg Loss	**~3-7%**	**~1-2%**	**~1-3%**

New HBV Therapies

rate of **Undetectable HBV DNA**

\+

rate of **HBsAg Loss**

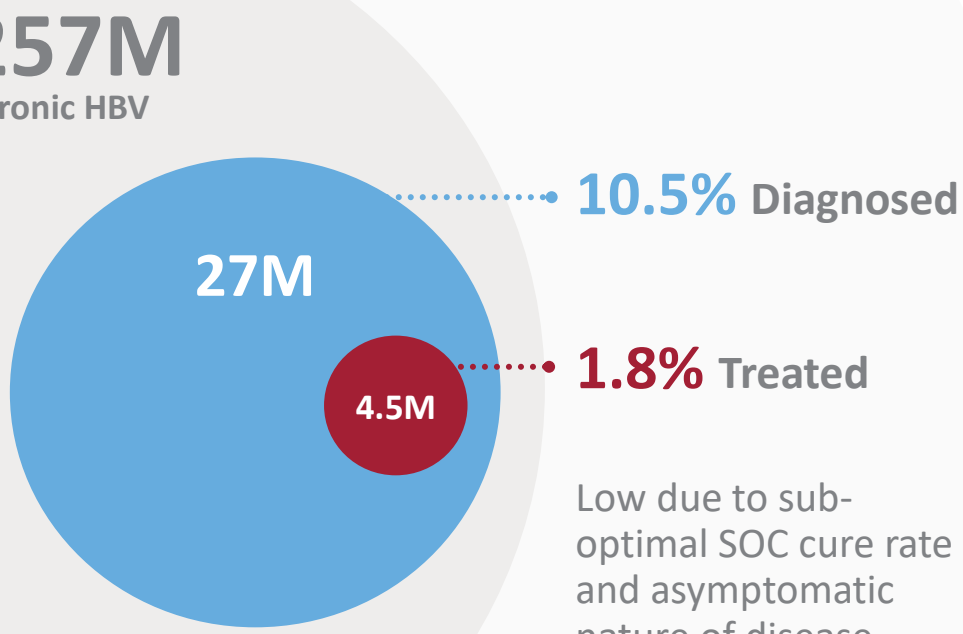
=

HIGHER **CURES RATES**

Achievable **HBV Cure Rates** with Current SOC

SOC: Standard Of Care | **HBsAg**: HBV Surface Antigen | **PegIFN:** Pegylated Interferon
Source: EASL HBV Clinical Practice Guidelines, 2017 - Pegasys, PEG-Intron, Baraclude and Viread Package Inserts

Compelling Growth Opportunity in the **HBV Market**



An HBV curative regimen

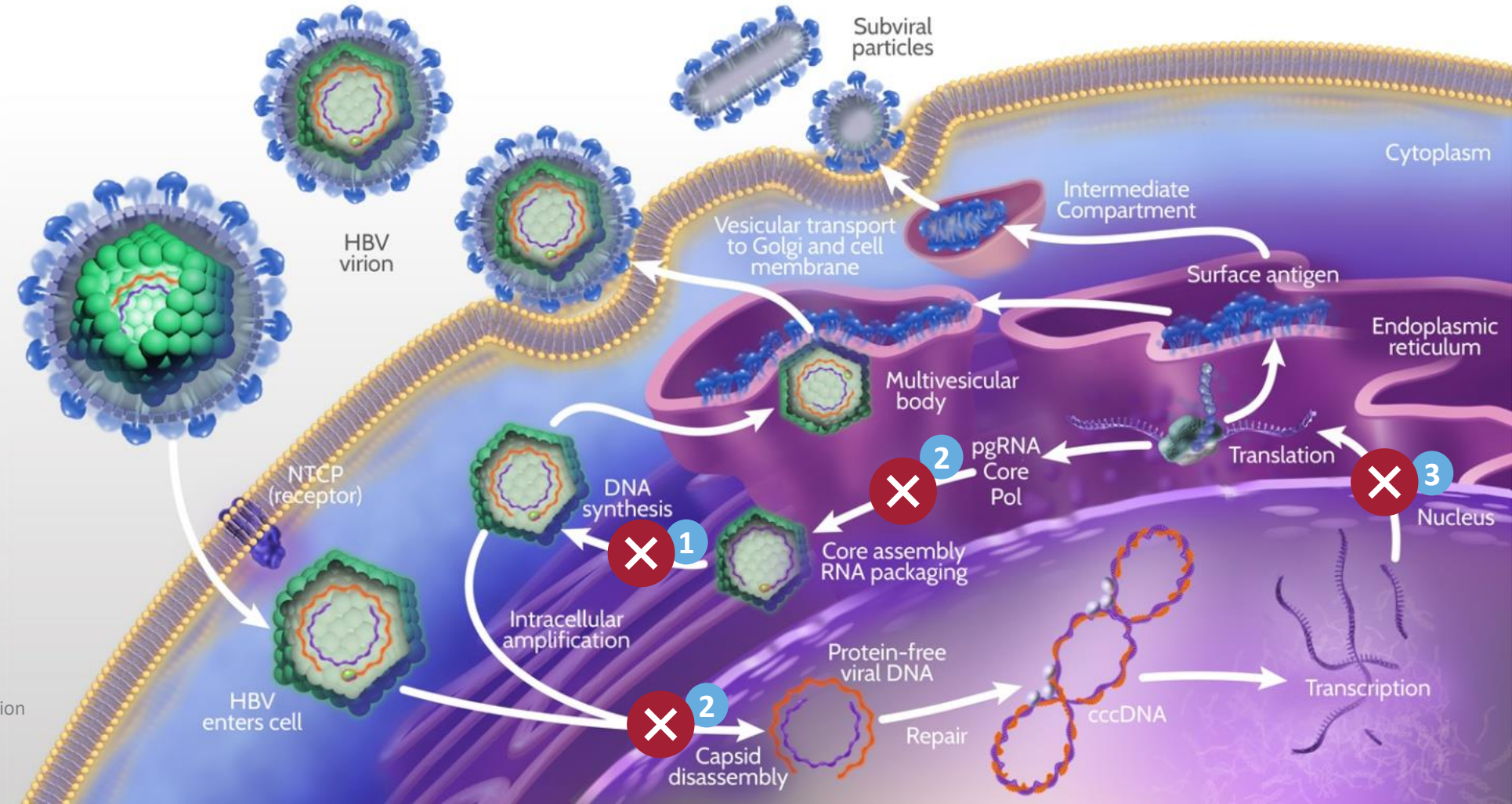
would substantially increase **diagnosis** and **treatment** rates to unlock significant **market growth opportunities.**

SOC: Standard Of Care
Source: Global Hepatitis Report and Hepatitis B Fact Sheet, WHO (2017) http://www.who.int/mediacentre/factsheets/fs204/en/

HBV Lifecycle Illustrates Key Points for Intervention

A combination of agents with complementary MOA **is needed to cure HBV**

1. **Nucleoside Analogue**
2. **Capsid Inhibitor**
3. **RNAi & RNA Destabilizer**



MOA: Mechanism of Action

Arbutus BIOPHARMA

NASDAQ: **ABUS**

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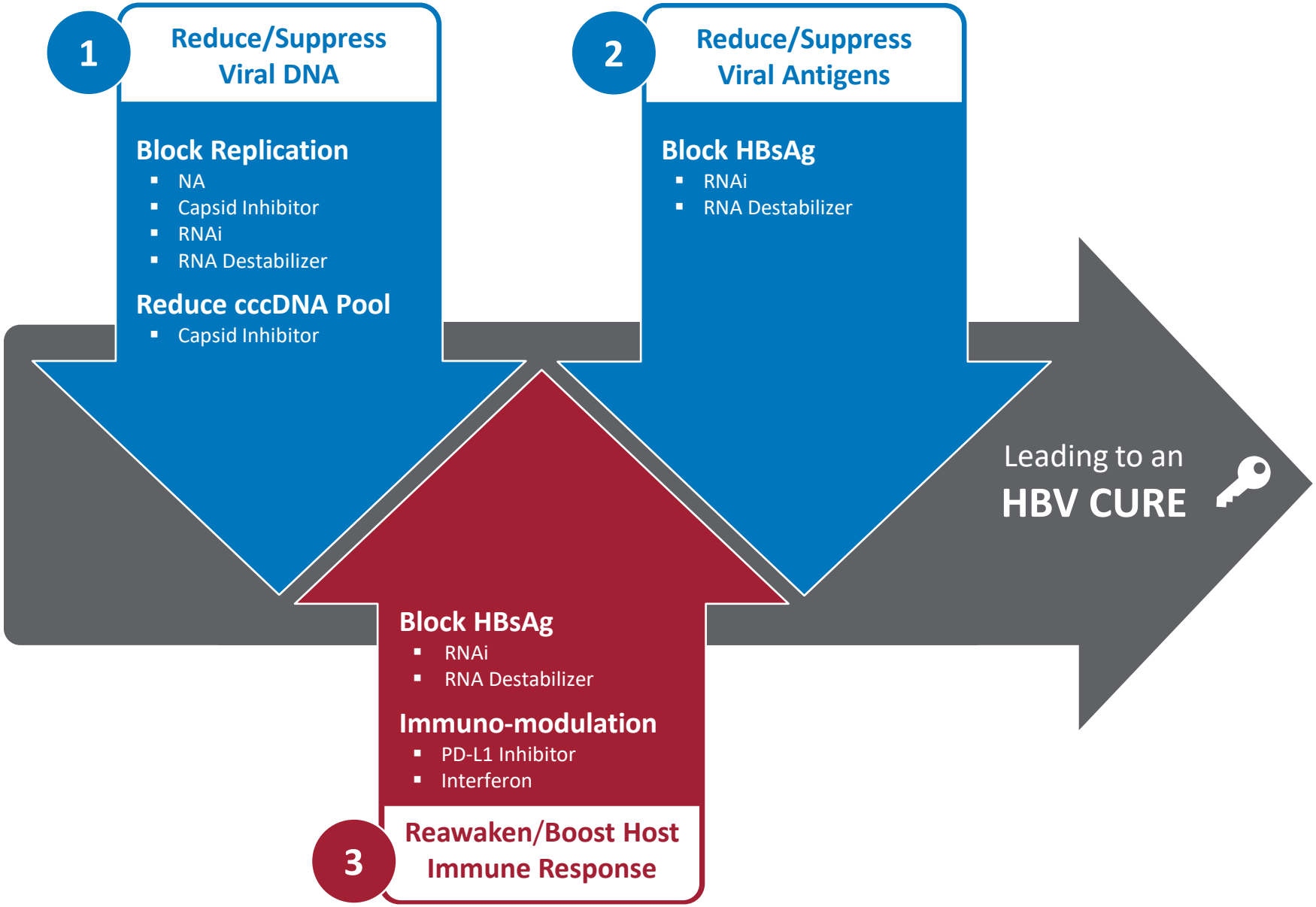
Keys to Therapeutic Success

Suppress HBV DNA and viral antigens

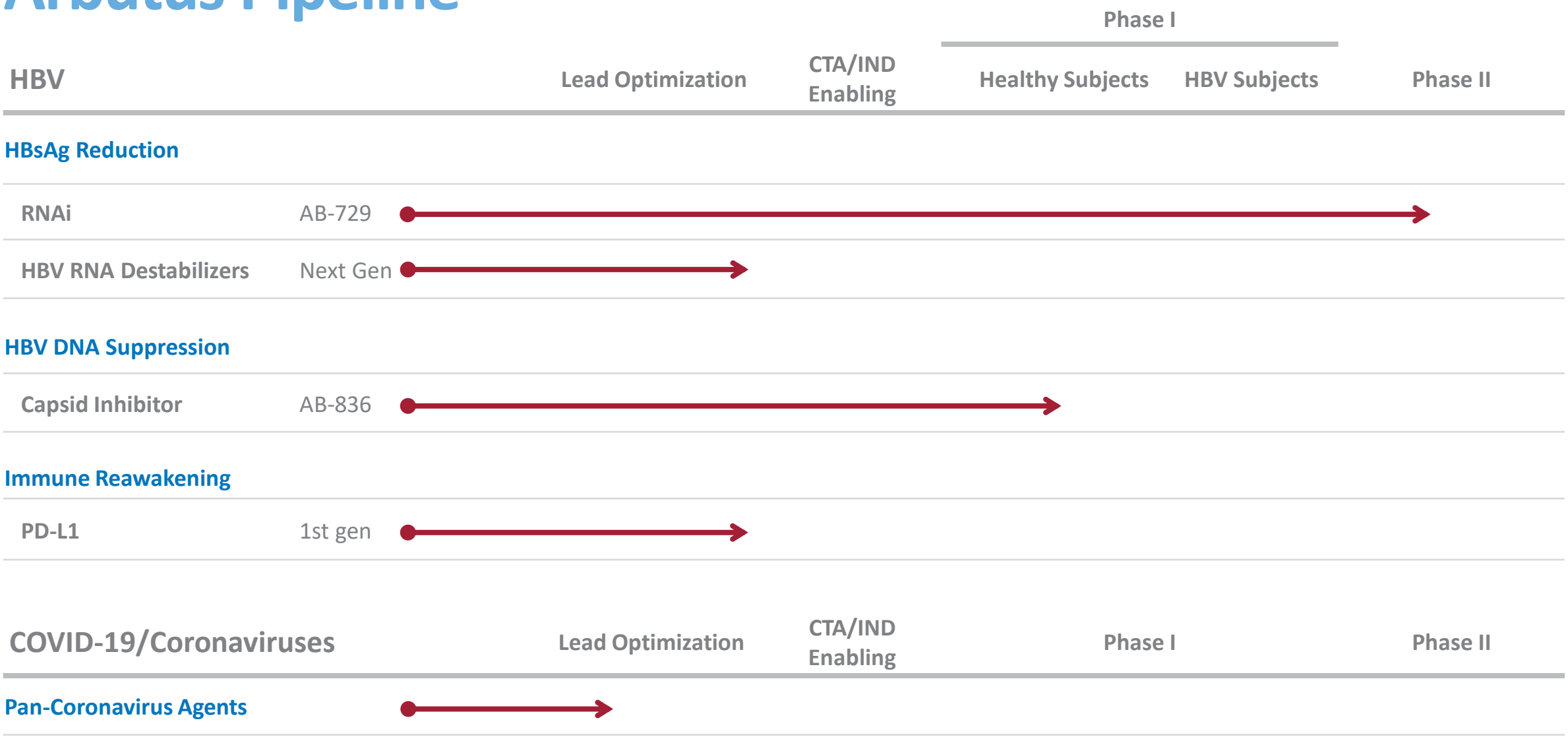
Reawaken host immune response

Therapeutic success will **require a combination of agents** with complementary MOAs



MOA: Mechanism of Action | **NA:** Nucleoside Analogue | **HBsAg**: HBV Surface Antigen

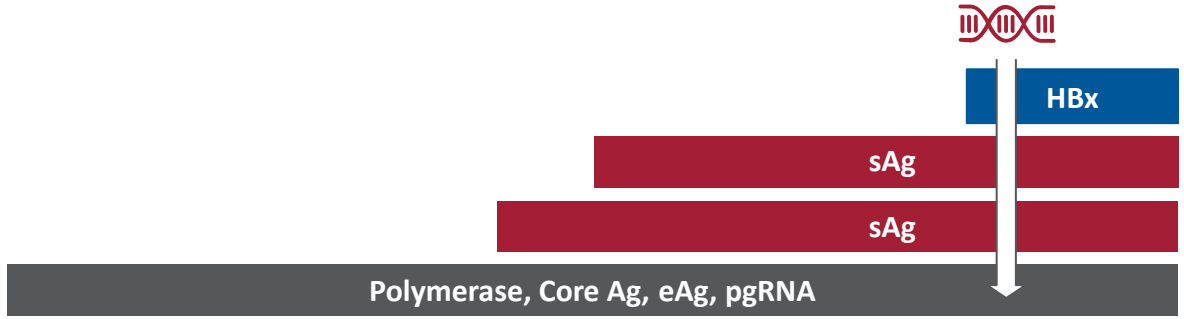
Arbutus Pipeline



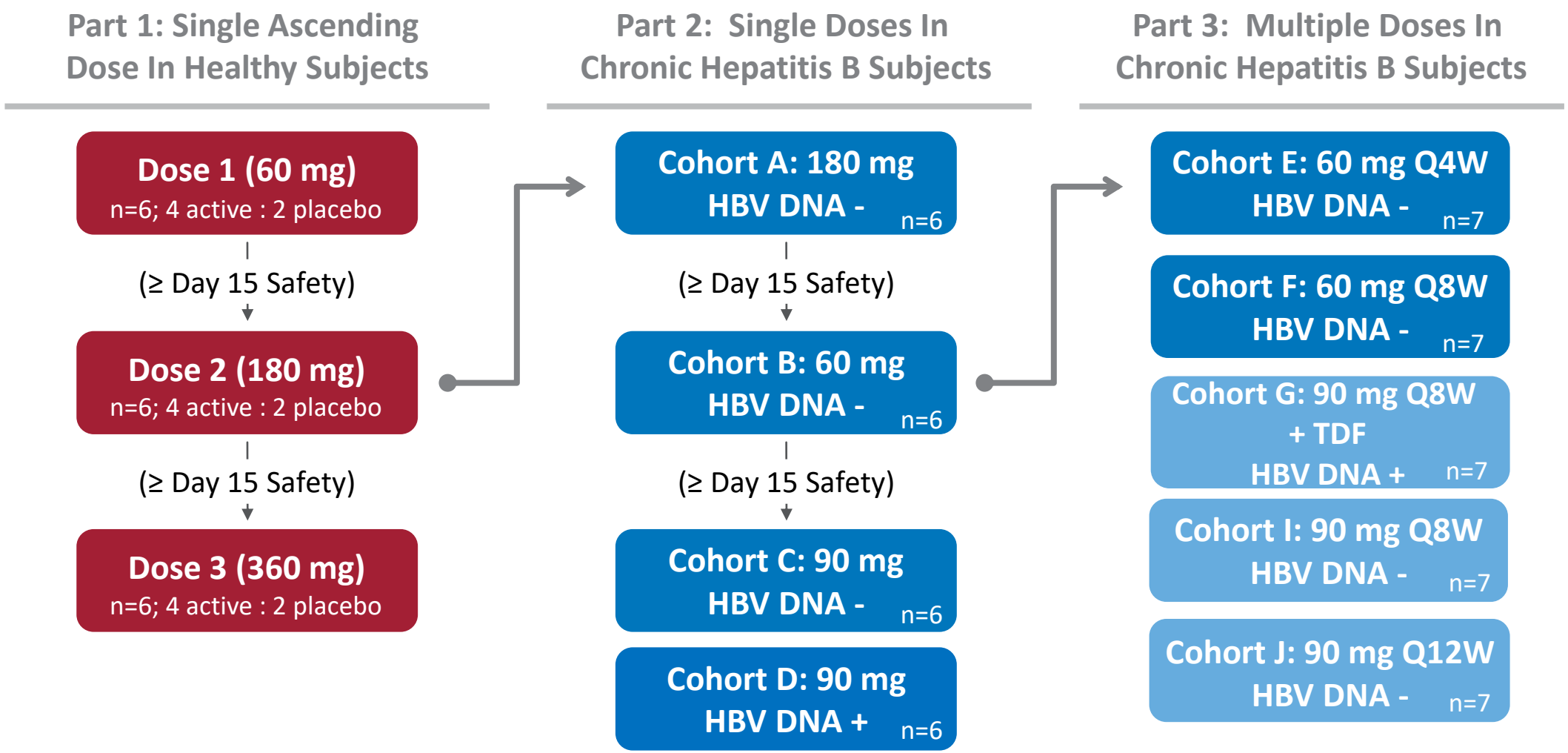
AB-729
RNAi Therapeutic

Proprietary GalNAc-conjugate delivery technology provides liver targeting and enables **subcutaneous dosing**

- Single trigger RNAi agent targeting all HBV transcripts
- Inhibits HBV replication and lowers all HBV antigens
- Pan-genotypic activity across HBV genotypes
- Demonstrated complementarity with capsid inhibitors
- Actively targets the liver
- Active against cccDNA derived and integrated HBsAg transcripts
- Clean profile in long term preclinical safety studies



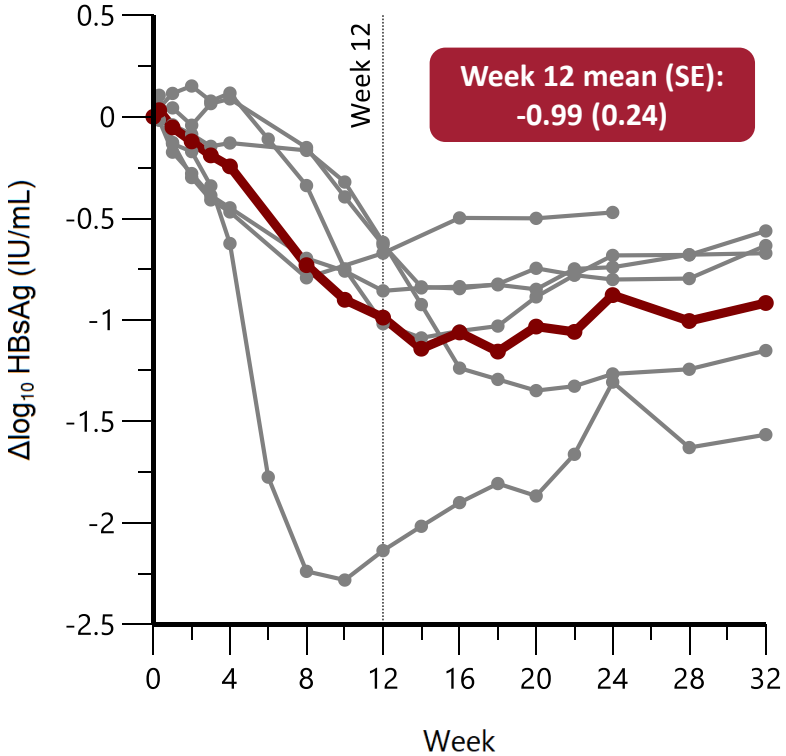
AB-729-001 Study



HBV: Hepatitis B Virus | TDF: tenofovir disoproxil fumarate | TBD: to be determined

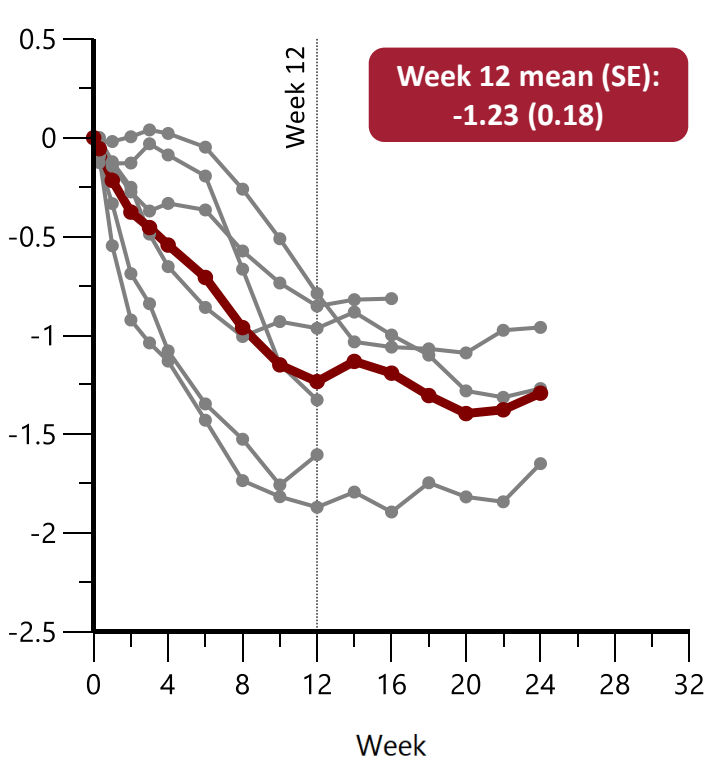
Single Doses of AB-729 Result in Comparable Mean HBsAg Declines at Week 12 Followed by a Sustained Plateau Phase

AB-729 60 mg single dose (N=6)*



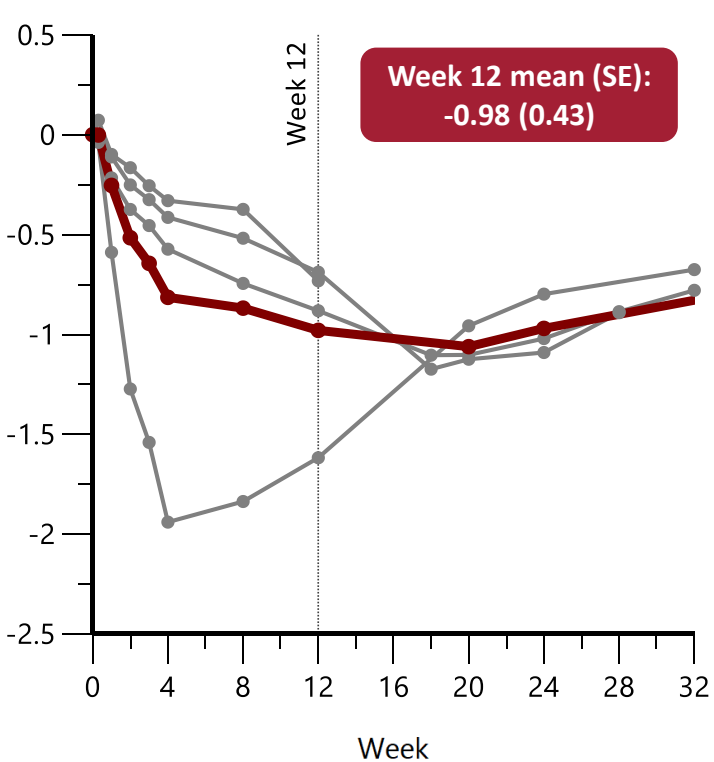
3/6 HBsAg <100 IU/mL
1/6 HBsAg <10 IU/mL

AB-729 90 mg single dose (N=6)**



5/6 HBsAg <100 IU/mL
1/6 HBsAg <10 IU/mL

AB-729 180 mg single dose (N=4)#



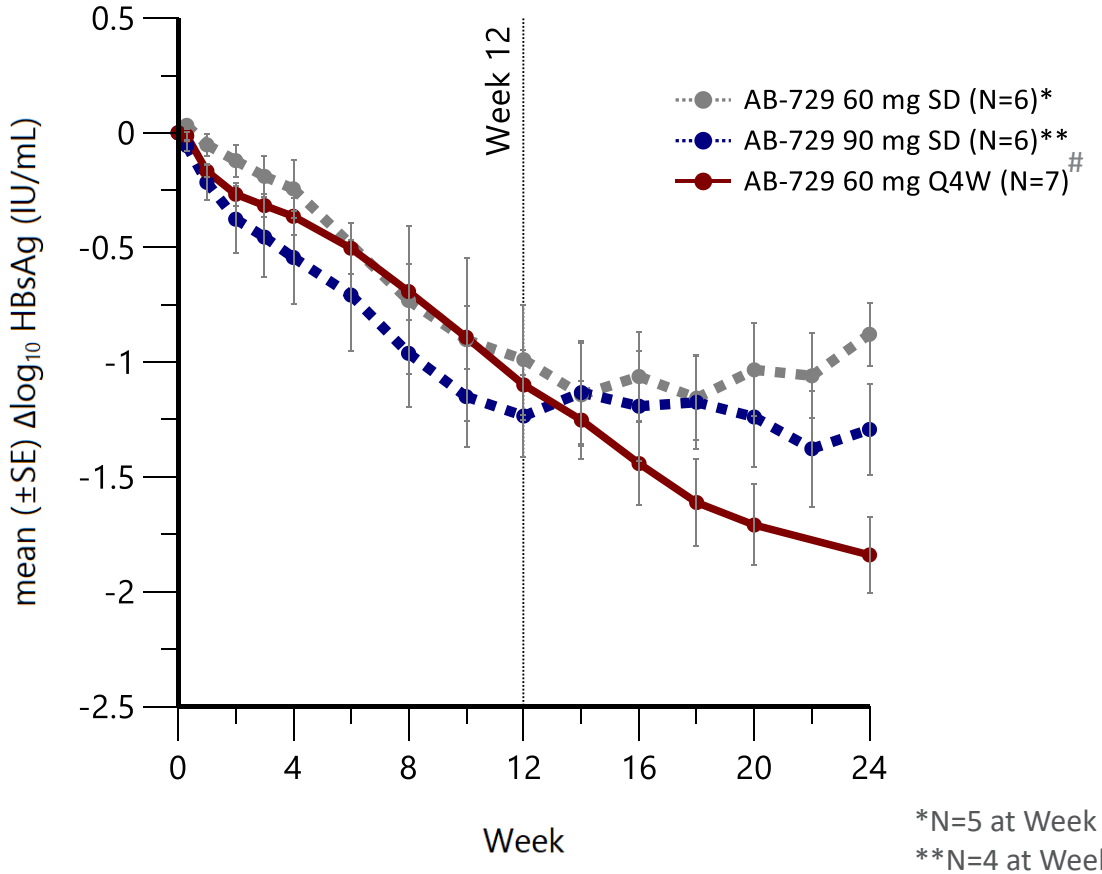
0/4 HBsAg <100 IU/mL

mean
individual

*N=5 at Week 10, 14, 18, 22, 28, and 32
**N=4 at Week 14 and 16; N=3 at Weeks 18 – 24
#N=3 after Week 12; nominal visits ± 7 days

Repeat Dosing of AB-729 60 mg Every 4 Weeks Results in Continuous Mean HBsAg Declines Beyond Week 12

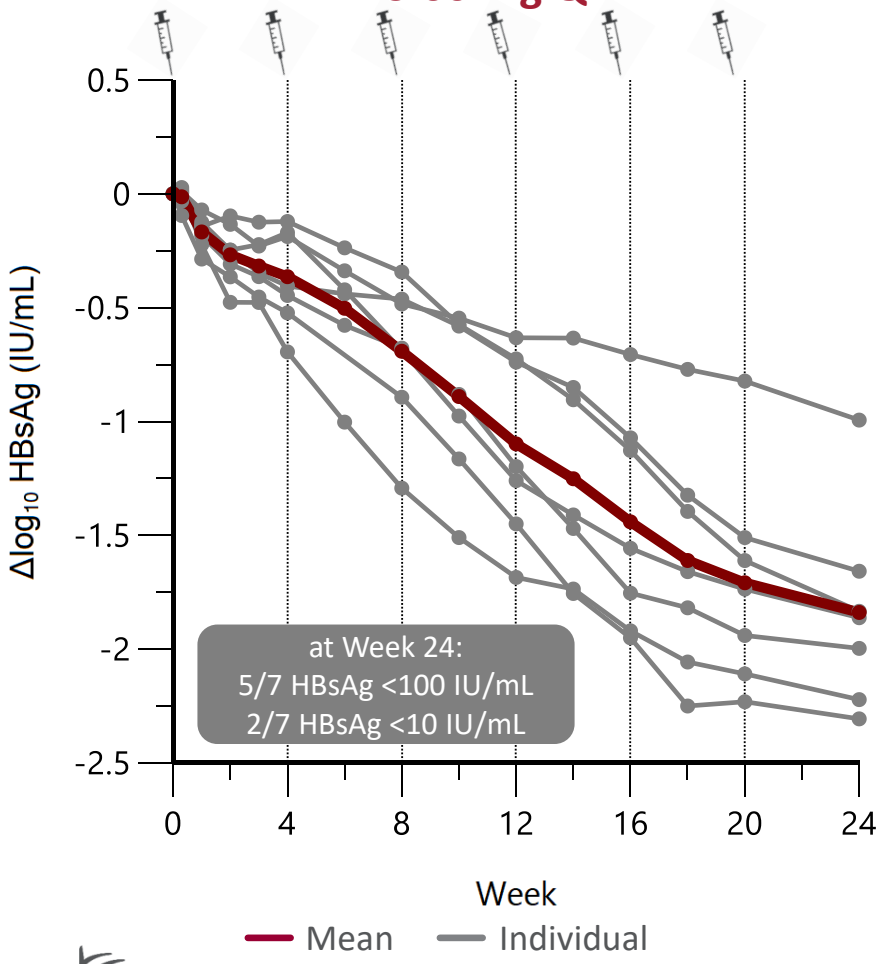
Mean (±SE) HBsAg declines across single and repeat dose Cohorts



*N=5 at Week 10, 14, 18 and 22
**N=4 at Week 14 - 20; N=3 at Weeks 22 – 24
#N=6 at Week 6
SD: single dose; Q4W: every 4 weeks

Repeat Dosing of AB-729 60 mg Every 8 Weeks Results in Comparable Mean HBsAg Declines to 60 mg Every 4 Weeks at Week 16

AB-729 60 mg Q4W



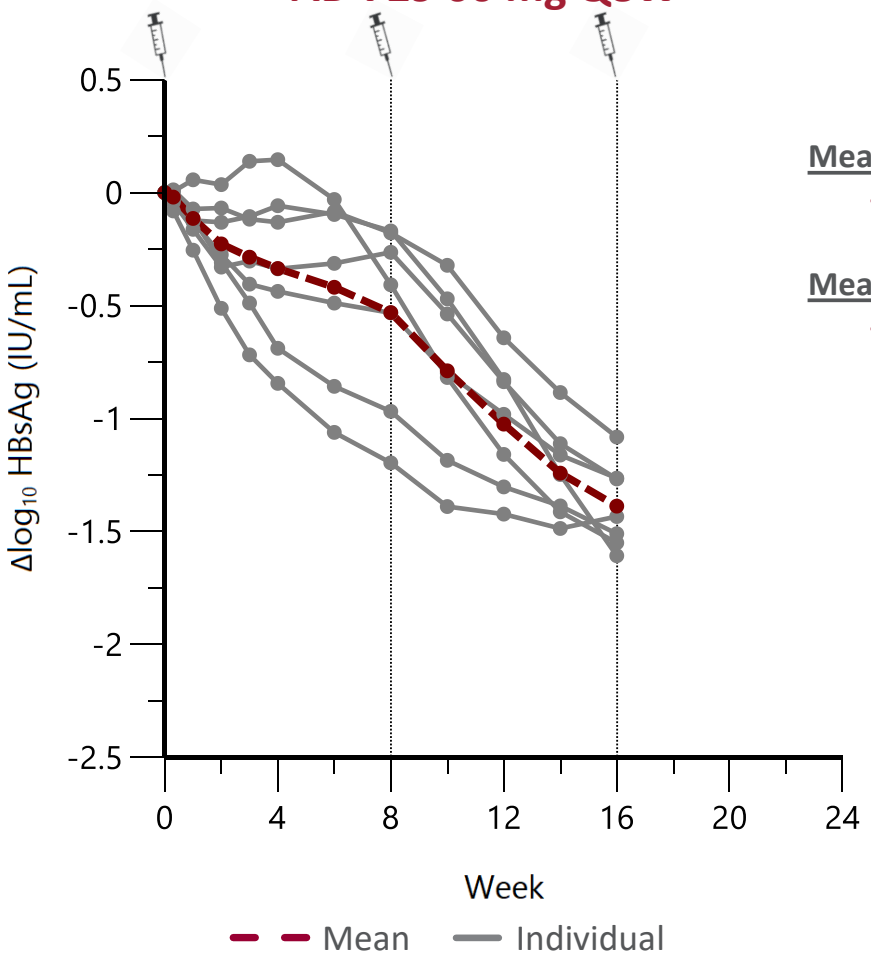
Mean (SE) Week 12:
-1.10 (0.15)

Mean (SE) Week 16:
-1.44 (0.18)

Mean (SE) Week 20:
-1.71 (0.18)

Mean (SE) Week 24:
-1.84 (0.16)

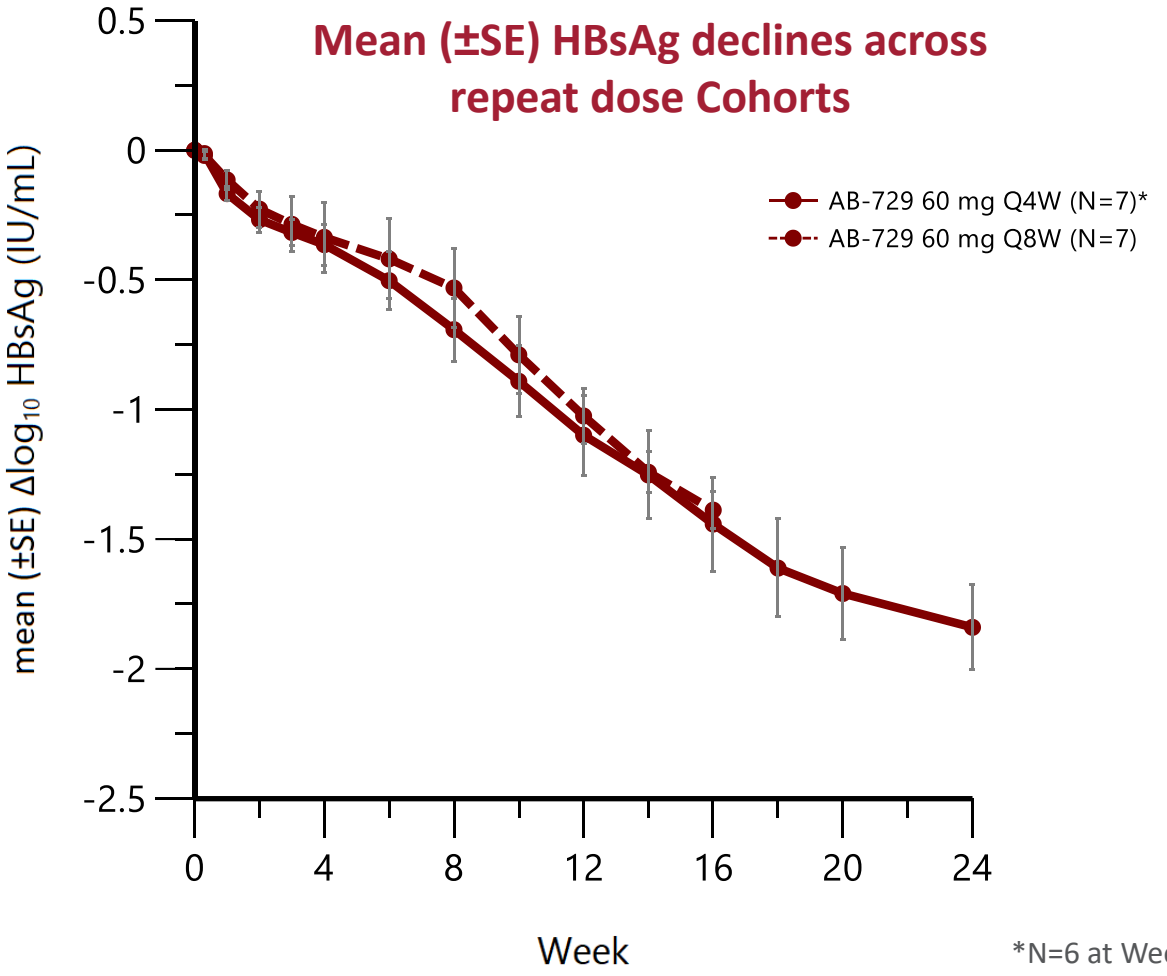
AB-729 60 mg Q8W



Mean (SE) Week 12:
-1.02 (0.11)

Mean (SE) Week 16:
-1.39 (0.07)

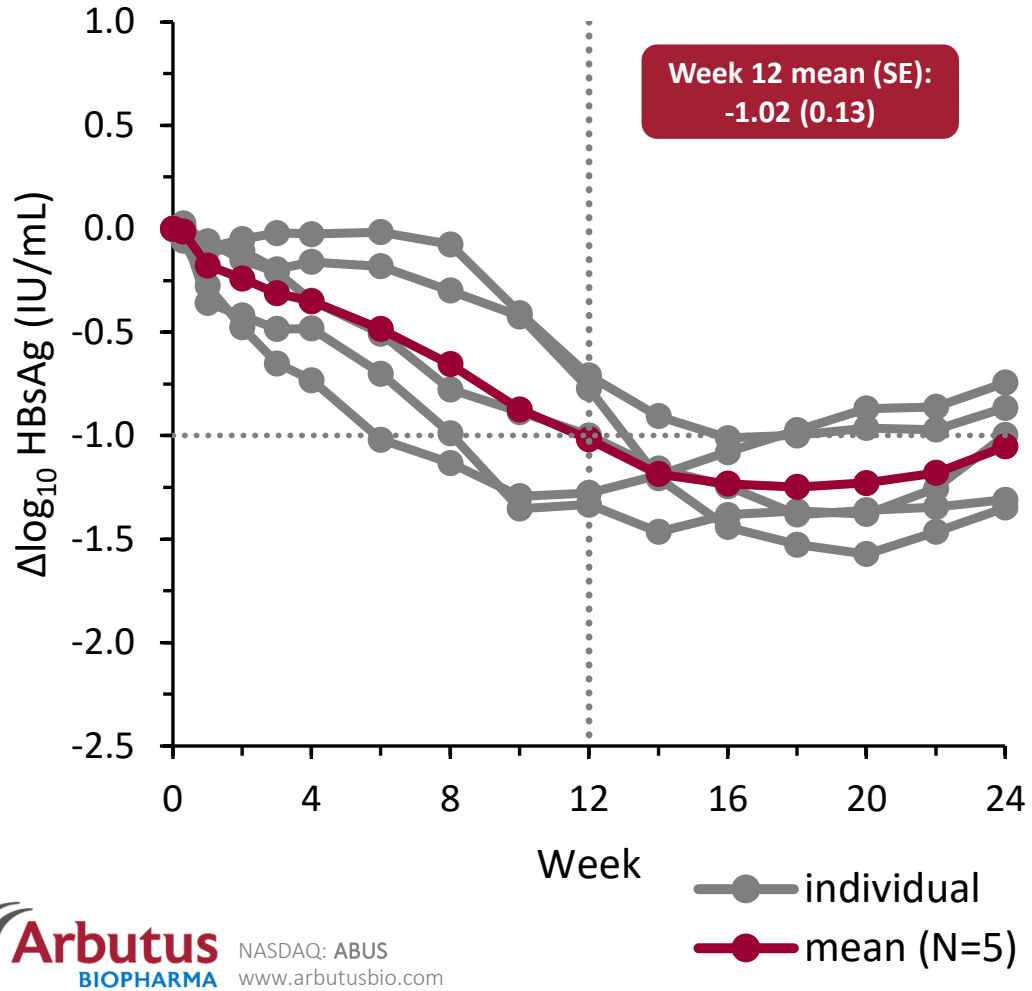
Repeat Dosing of AB-729 60 mg Every 8 Weeks Results in Comparable Mean HBsAg Declines to 60 mg Every 4 Weeks at Week 16

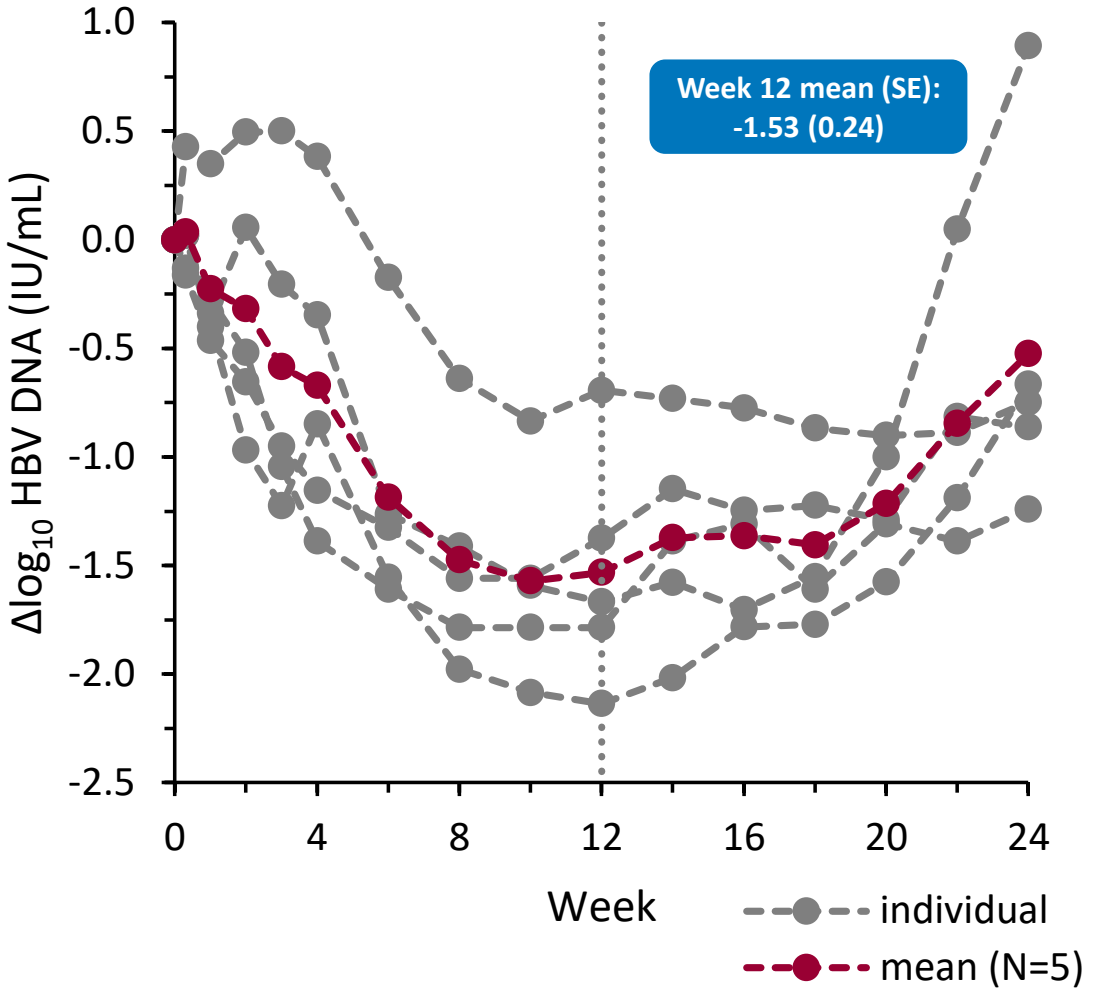


*N=6 at Week 6
Q4W: every 4 weeks; Q8W: every 8 weeks

AB-729 90 mg Single Dose Reduces HBsAg and HBV DNA in HBV DNA Positive CHB subjects

These data continue to support dosing intervals of up to 12 weeks





AB-729 Was Safe and Well Tolerated After Single and Repeat Doses

- **No SAEs or discontinuations due to AEs**
- **No treatment-related Grade 3 or 4 AEs***
- **No Grade 3 or 4 laboratory abnormalities***
  - Grade 1 and Grade 2 ALT elevations have decreased with continued treatment
- **Injection site TEAEs were mild (erythema, pain, pruritis, bruising) or moderate (pain) and transient**
- **No clinically meaningful changes in ECGs or vital signs**
- **All subjects in cohort E consented to an additional 6 months of dosing**

* 1 subject (Cohort A) with rapid decline in HBsAg of ~2.0 log10 IU/mL had an unrelated Gr 2 AE of food poisoning resulting in unrelated transient Grade 3 AEs of ALT/AST elevation (without bilirubin changes)

AB-729 Clinical Summary

Repeat 60 mg Q4W dosing with AB-729 resulted in a continuous and robust mean HBsAg decline at week 24 (-1.84 log10 IU/mL, N=7)

Repeat dosing of AB-729 60 mg every 8 weeks results in comparable mean HBsAg declines relative to 60 mg every 4 weeks at week 16 (-1.44 log10 IU/mL vs -1.37 log10 IU/mL, $p<0.7$)

In HBV DNA positive CHB subjects, a single 90 mg AB-729 dose resulted in robust mean HBsAg (-1.02 log10 IU/mL) and HBV DNA (-1.53 log10 IU/mL) declines at week 12, as well as decreases in HBV RNA and core-related antigen

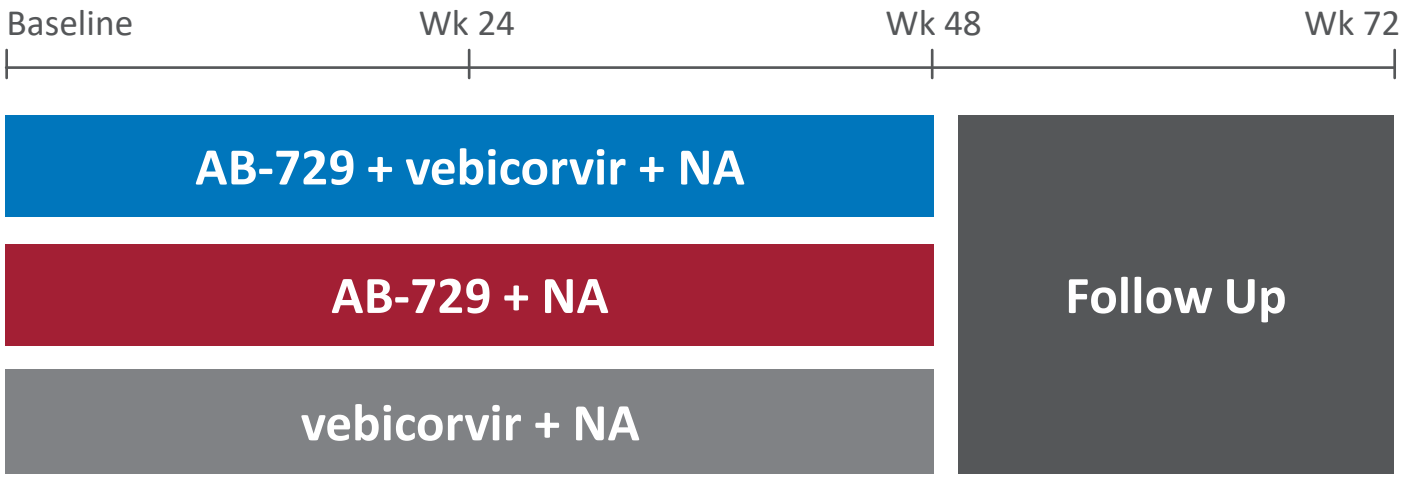
- Similar mean HBsAg reductions were observed in HBV DNA positive and negative CHB subjects
- These findings support complete target engagement by AB-729

AB-729 remains generally safe and well tolerated

These results support advancing AB-729 to Phase 2 combination studies with AB-729 dosing as infrequently as every 8 or 12 weeks

AB-729 Clinical Collaboration with Assembly Biosciences

Provides accelerated AB-729 combination proof of concept (POC) with a capsid inhibitor and NA with the potential for functional cure



Initiated Phase 2 Clinical Trial Feb 2021

~60 virologically-suppressed subjects with chronic HBV infection

Equal sharing of expertise and costs for this POC open-label trial

No financial requirements or restrictions and no business requirements or restrictions

NA: Nucleoside Analogue | **HBeAg**: HBV e Antigen

AB-836
Capsid Inhibitor

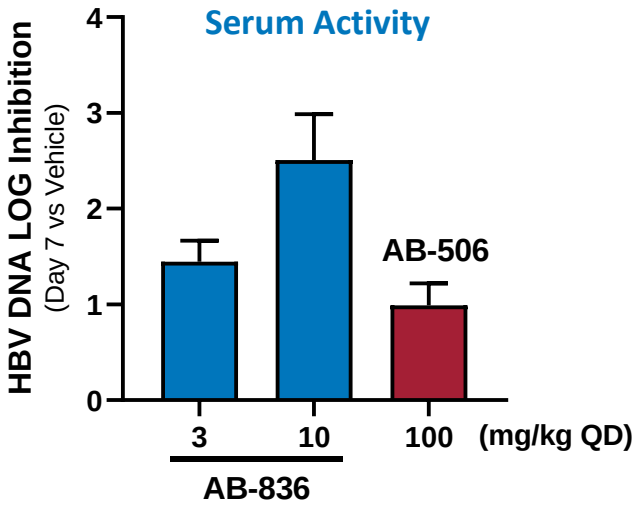
In March 2021, received regulatory approval to initiate Phase 1a/1b clinical trial

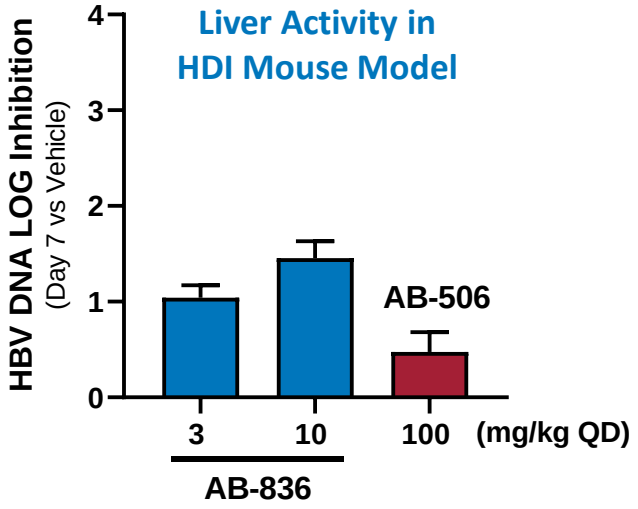
Potential for increased efficacy and enhanced resistance profile relative to earlier generation capsid inhibitors

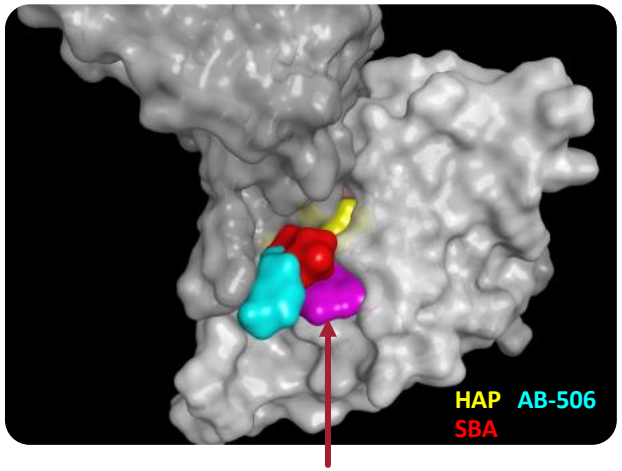
- Novel chemical series differentiated from AB-506 and other competitor compounds in the Class II capsid inhibitor space
- Leverages a novel binding site within the core protein dimer-dimer interface
- Improved intrinsic potency with EC50 $\leq$ 10 nM
- Active against NA resistant variants
- Potential to address known capsid resistant variants T33N and I105T
- Provides the potential for low dose and wide therapeutic window
- Projected to be once daily dosing
- Pangenotypic
- Combinable with other MOA agents

AB-836: A Next Generation Capsid Inhibitor

	HBV DNA / 1° Mechanism				cccDNA Formation / 2° Mechanism	Human Serum Shift
Compound	HepDE19 (EC_{50} µM)	HBV infected PHH (EC_{50} µM)	HBV infected HepG2-NTCP-C4 (EC_{50} µM)	Core I105T Mutation (EC_{50} µM)	HBV infected HepG2-NTCP-C4 (HBsAg EC_{50} µM)	(FC in EC_{50} in 40% Human Serum)
AB-506	0.077	0.032	0.101	1.26	1.430	6x
AB-836	0.010	0.002	0.012	0.118	0.196	2x







Unique Binding Site

HAP: Heteroaryldihydropyrimidine | **SBA:** Sulfamoylbenzamide **I PHH:** Primary Human Hepatocytes

AB-836-001 Study

Part 1: Single Ascending Dose In Healthy Subjects

Alternating Cohorts A and B
n=8/cohort; 6 active: 2 placebo

Cohort A

- Dose 1 10mg
- Dose 3 ≤100mg
- Dose 5 ≤400mg
- Dose 5 FE ≤400mg

Cohort B

- Dose 2 ≤35mg
- Dose 4 ≤200mg
- Dose 6 ≤600mg
- Dose 7 ≤800mg

Part 2: Multiple Ascending Dose in Healthy Subjects

- Cohort C (≤ 75mg QD) x 10 days
  N = 10; 8 active: 2 placebo
- Cohort D (≤200mg QD) x 10 days
  N = 10; 8 active: 2 placebo
- Cohort E (≤ 400mg QD) x 10 days
  N = 10; 8 active: 2 placebo

Part 3: Multiple Doses In Chronic Hepatitis B Subjects

- Cohort F (≤ Cohort C) x 28 days DNA +
  N = 12; 10 active: 2 placebo
- Cohort G (≤ Cohort D) x 28 days DNA+
  N = 12; 10 active: 2 placebo
- Cohort H (Dose TBD) x 28 days DNA+
  N = 12; 10 active: 2 placebo
- Cohort I (Dose TBD) + NA x 28 days DNA-
  N = 12; 10 active: 2 placebo
- Cohort J (Dose TBD) + TDF x 28 days DNA+
  N = 12; 10 active: 2 placebo

Next Gen RNA Destabilizer Program

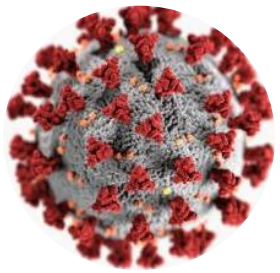
Offers a novel mechanism of action to reduce HBsAg and other viral proteins and viral RNA

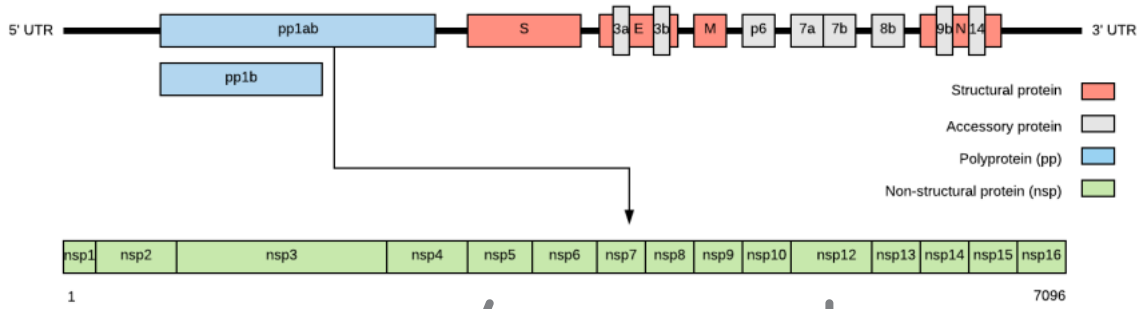
Continuing active research and development of a next generation small molecule

We believe this approach offers potential for an oral HBsAg reducing agent and all oral combination therapy

Coronavirus Strategy

Leveraging our proven expertise and capabilities in antiviral drug discovery and development

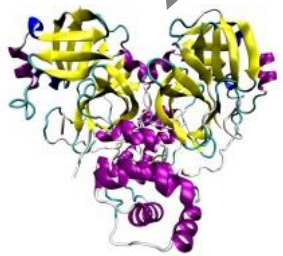




+RNA Virus

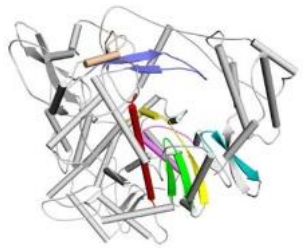
31 kb Genome

nsp5 protease & nsp12 polymerase
essential enzymes for replication



COVID-19 Virus nsp5 / 3CLpro

Viral Protease



COVID-19 Virus nsp12

Viral Polymerase

Long term commitment

Pan-coronavirus focused

Small Molecule Direct-Acting Antivirals

Directed Effort

- nsp12 Viral Polymerase - nucleos(t)ides
- nsp5 Main Viral Protease - de novo design

Screening Effort

- Proprietary library screening through COVID R&D consortium

2021 Key Objectives

Cash balance of ~ $132M as of March 31, 2021, cash runway through 3Q 2022

Objective	Anticipated Timing 2021
Additional data from AB-729 90 mg single-dose in HBV DNA positive subjects	1H ✓
Initiate a Phase 2 combination clinical trial to evaluate AB-729 in combination with Assembly Biosciences' lead core/capsid inhibitor candidate vebicorvir (VBR) and an NrtI	1H ✓
Initiate a Phase 1a/1b clinical trial of AB-836, our next-generation oral capsid inhibitor	1H ✓
Additional data from AB-729 60 mg multi-dose (4 wk / 8 wk dosing intervals)	1H / 1H
Initial data from AB-729 90 mg multi-dose (8 wk / 12 wk dosing intervals)	1H / 2H
Initial data from AB-729 90 mg multi-dose (8 wk dosing interval) in HBV DNA positive subjects	2H
Initiate two Phase 2 combination clinical trials in HBV subjects; both including AB-729, with one or more approved or investigational agents	2H