

Singularly Focused on HBV

Corporate Overview | March 2019

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 for HBV to have a larger market opportunity than HCV; our ability meet a significant unmet medical need; our anticipated cash position as of December 31, 2018; the sufficiency of our cash and cash equivalents to extend into 2020; our ability to develop a curative regimen for HBV and unlock significant market growth opportunities; the potential of our drugs to improve patient outcomes; our expectation for top-line data from the Phase 1a/1b clinical study of AB-506 in Q2 2019; our expectation to initiate a Phase 1a/1b clinical study of AB-729 in Q2 2019; our expectation to make a decision regarding AB-452 clinical development in Q3 2019; our expectation to initiate HBV patient dosing on AB-729 in 2H 2019; our expectation to initiate a Phase 2 clinical study of AB-506 in Q4 2019; the trajectory for inclusion of AB-506 in a multi-drug combination regimen with AB-729 in 1H 2020; and the timeline to a combination cure for HBV.

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 and clinical trials, and the usefulness of the data; 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. 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; Arbutus may not receive the necessary regulatory approvals for the clinical development of Arbutus' products; economic and market conditions may worsen; changes in estimated cash position based on the completion of financial closing procedures; and market shifts may require a change in strategic focus. A more complete discussion of the risks and uncertainties facing Arbutus appears in Arbutus' Annual Report on Form 10-K and Arbutus' periodic disclosure filings which are available at www.sec.gov and at www.sedar.com.

The forward-looking statements made in connection with this presentation represent our views only as of the date of this presentation (or any earlier date indicated in such statement). While we may update certain forward-looking statements from time to time, we specifically disclaim any obligation to do so, even if new information becomes available in the future.

Investment Highlights

Singular therapeutic focus - curing chronic Hepatitis B Virus (HBV)

Significant unmet medical need in **HBV**

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

Team with antiviral **expertise/proven track record**

Applying knowledge gained from HCV success to find **HBV cure through proprietary drug combinations**

Most Robust **HBV Pipeline**

HBV assets generating clinical data, leading to **clinical combination**

Strong **Financial** Position

\$125M cash at 12/31/18 extends into 2020
Onpattro royalty entitlement represents potential **non-dilutive capital**

Genevant provides value from delivery technology

Strategic decision to spin out LNP and conjugate delivery technologies to support **new RNA therapeutics company**

Proven Leadership Team

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



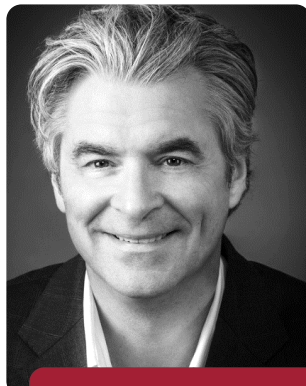
Mark J. Murray, PhD

President & CEO



Gaston Picchio, PhD

Chief Development Officer



David C. Hastings

Chief Financial Officer



Michael J. Sofia, PhD

Chief Scientific Officer



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 off-treatment is rare.

*HBsAg & HBV DNA: endpoints accepted as a cure.

SOC THERAPIES FOR CHRONIC HBV

	Pegasys (PegIFN)	Baraclude (Entecavir)	Viread (TDF)
Dosing Duration	48-weeks	Chronic	Chronic
HBV DNA Undetectable	14-19%	67-90%	76-93%
HBsAg Loss	~3-4%	~1-2%	~1-3%

Achievable **HBV Cure Rates** with Current SOC

New HBV Therapies

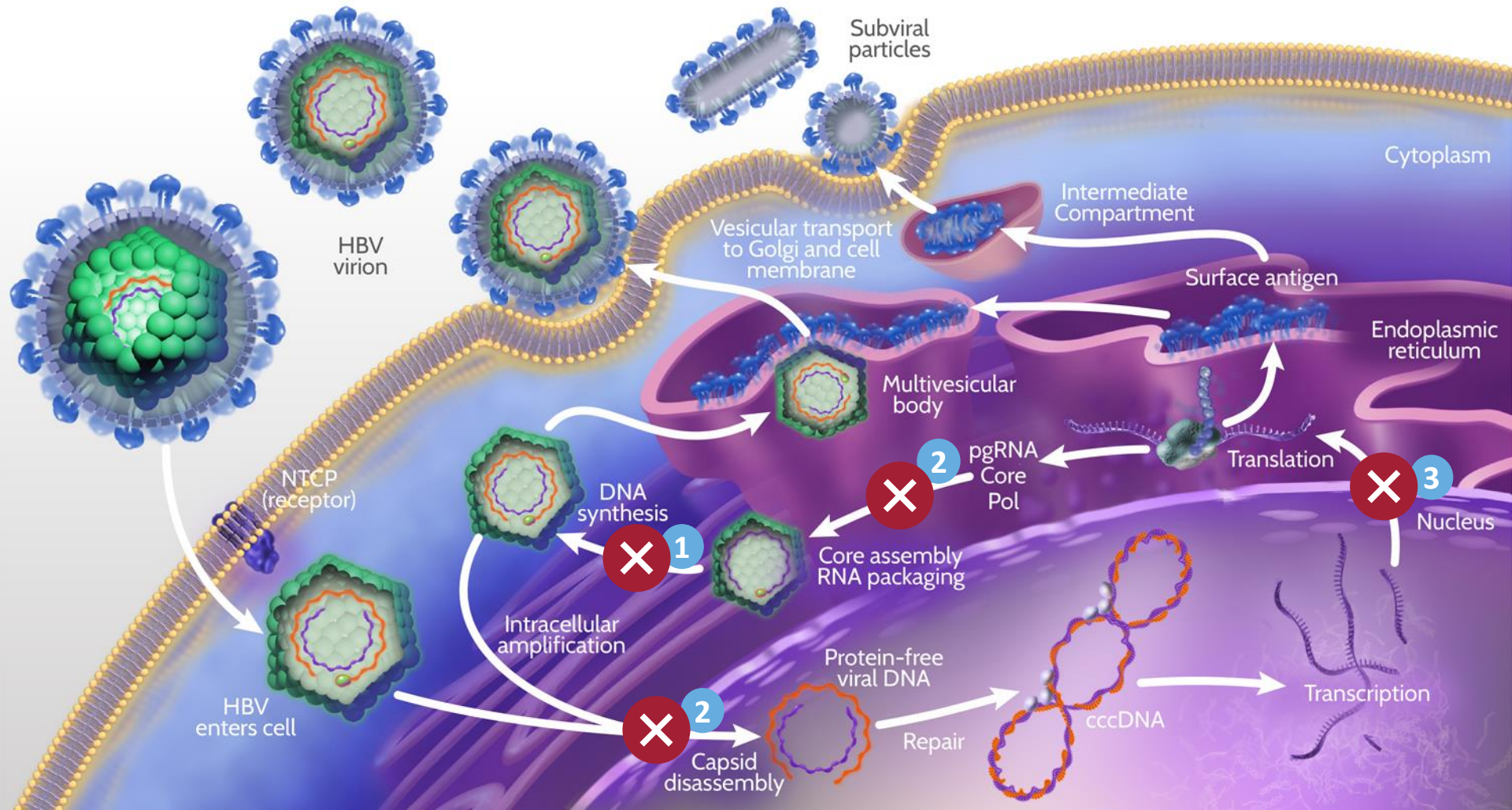
rate of **Undetectable HBV DNA** + rate of **HBsAg Loss** = **HIGHER CURES RATES**



HBV Lifecycle Illustrates Key Points for Intervention

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

- 1 – NA
- 2 – AB-506
- 3 – AB-729
- 3 – RNA destabilizer

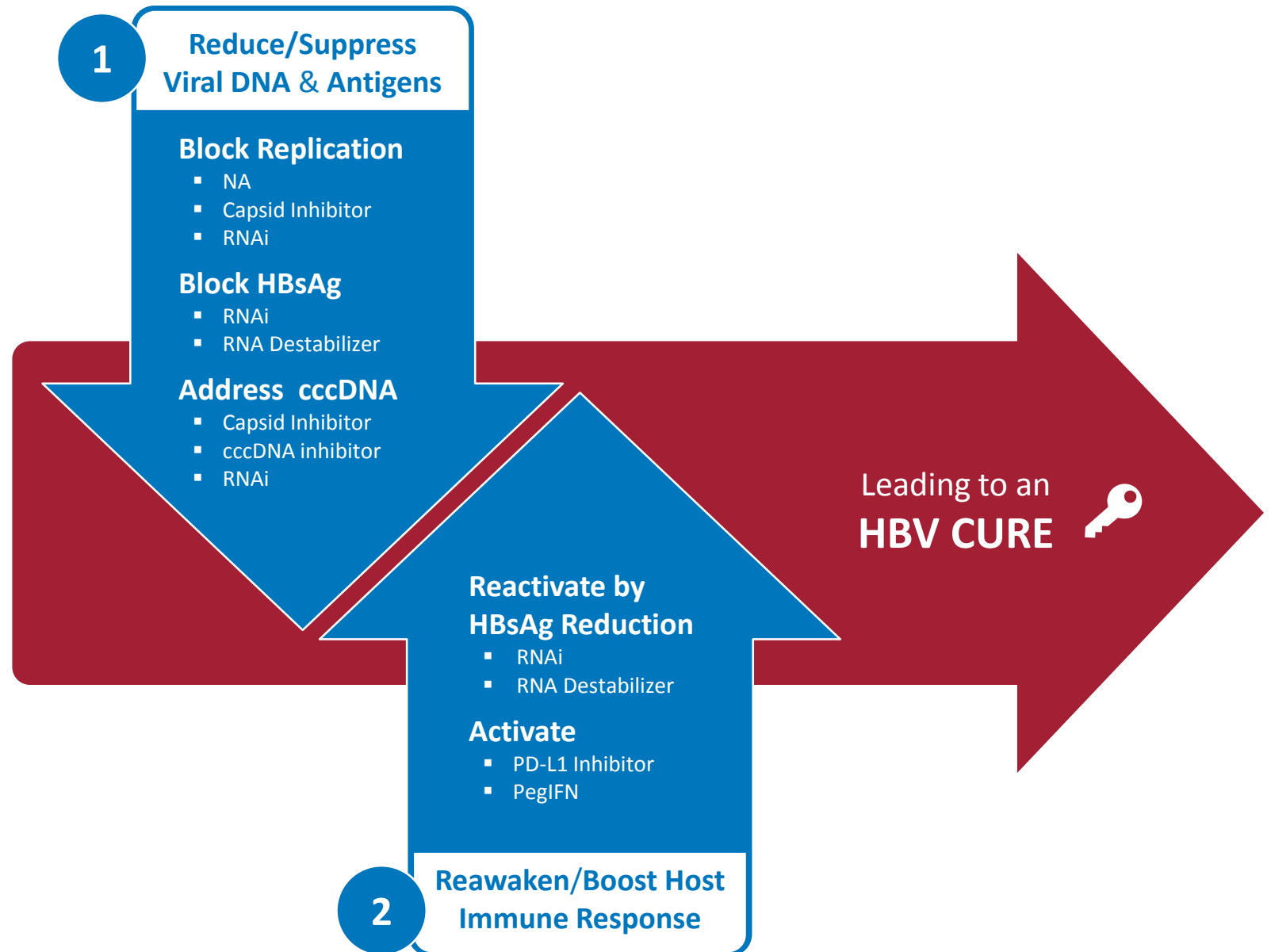


Keys to Therapeutic Success

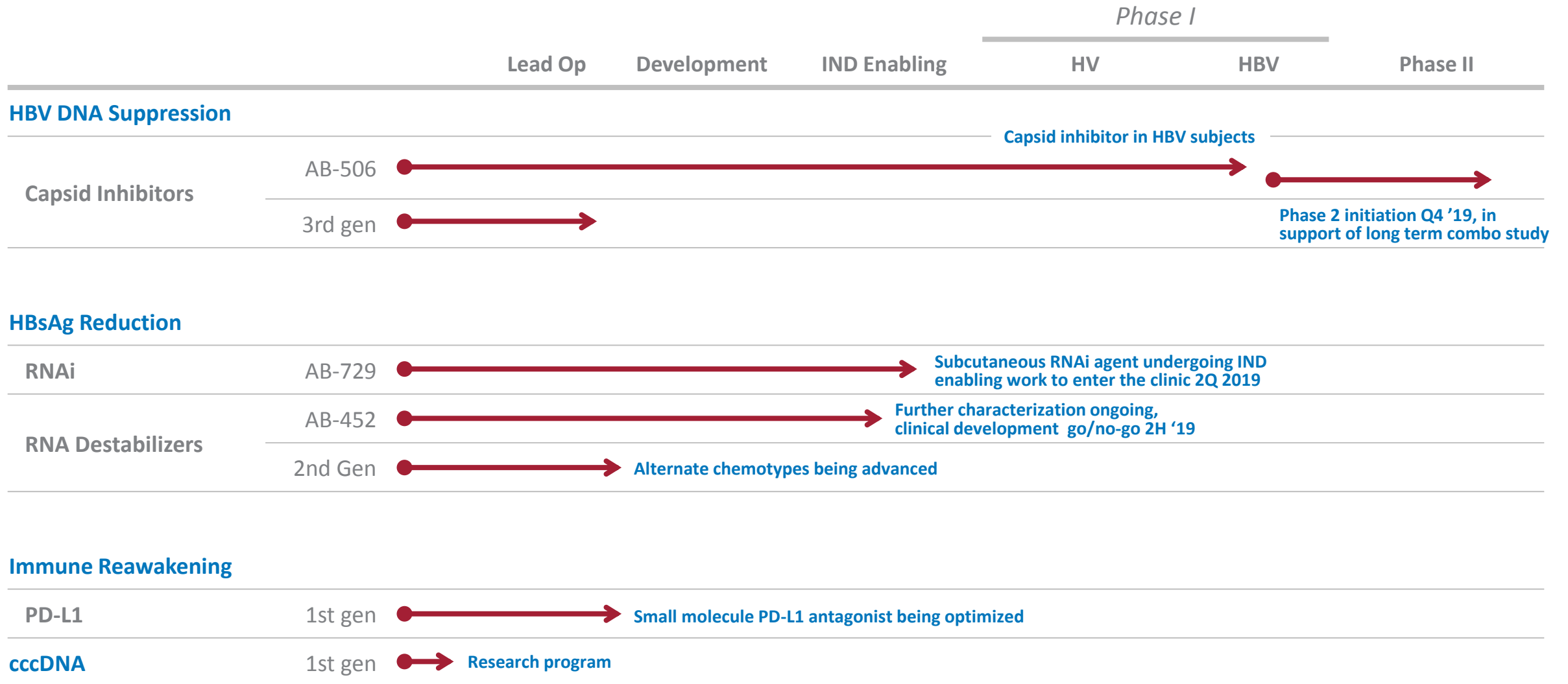
Suppress HBV DNA and viral antigens

Reawaken host immune response

Therapeutic success will require a combination of drugs with complementary MOAs.

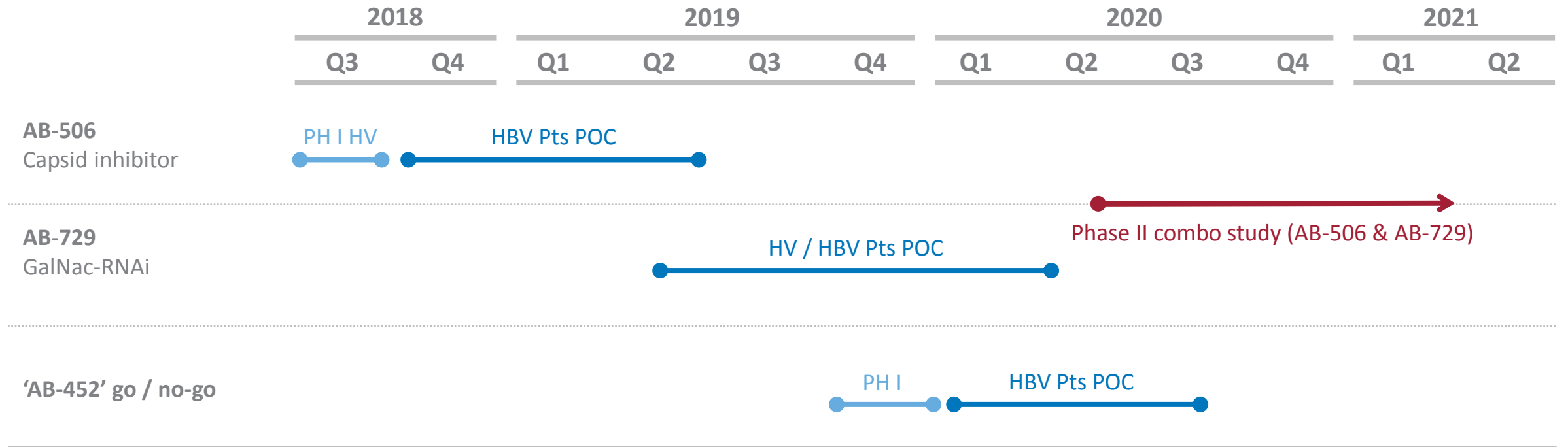


Arbutus HBV Pipeline



Path to a **Combination Cure**

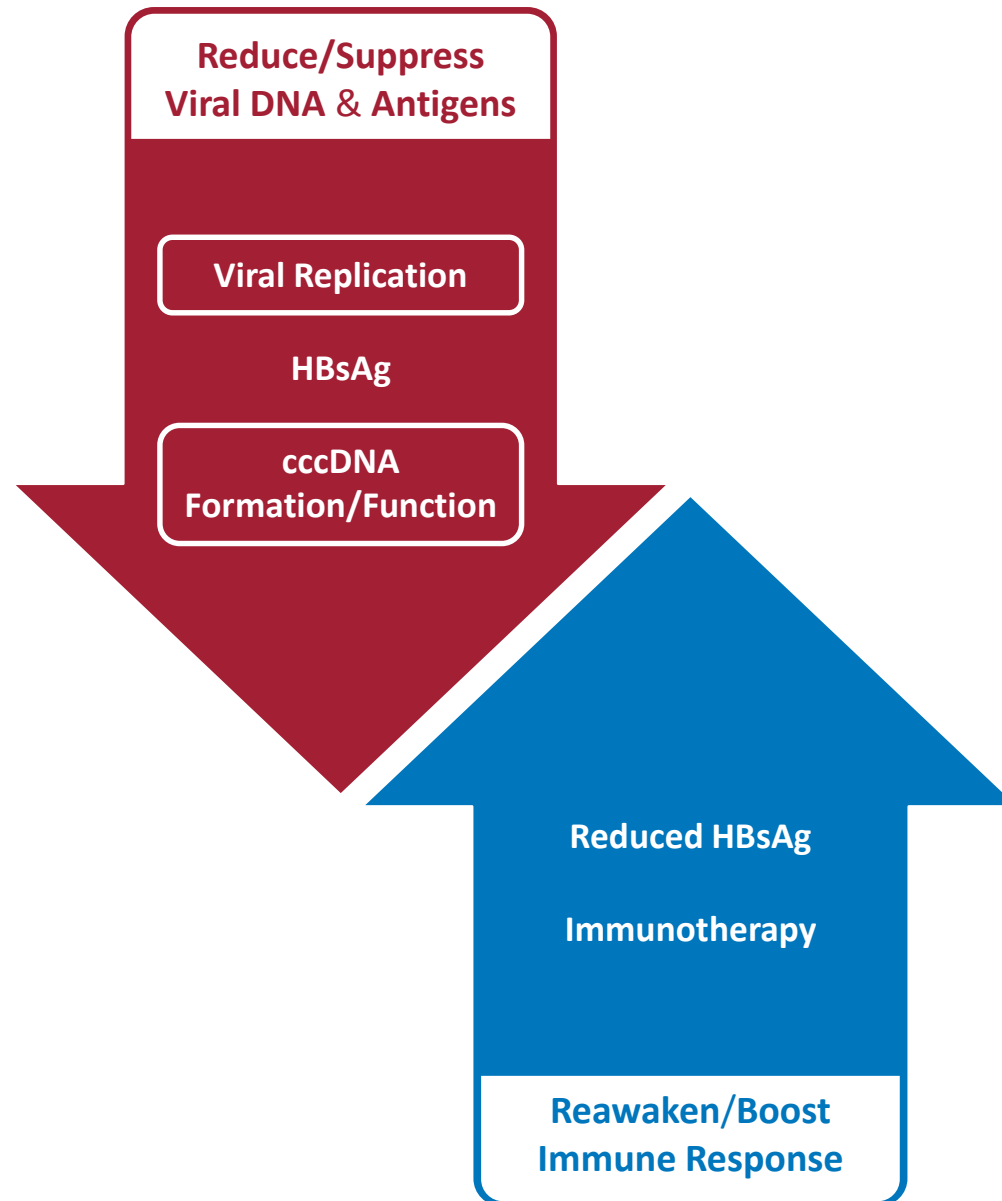
Drive to undetectable HBV DNA and HBsAg



Capsid Inhibitor:

Blocking Viral Replication

Driving HBV DNA to undetectable in the serum **and in the liver** is a key to therapeutic success in HBV



Capsid Inhibitors – Dual Action HBV Antiviral Agent

MOA distinct from but complementary to approved SOC NAs.

Capsid + NA combination
drives deeper HBV DNA reductions

Competitive landscape

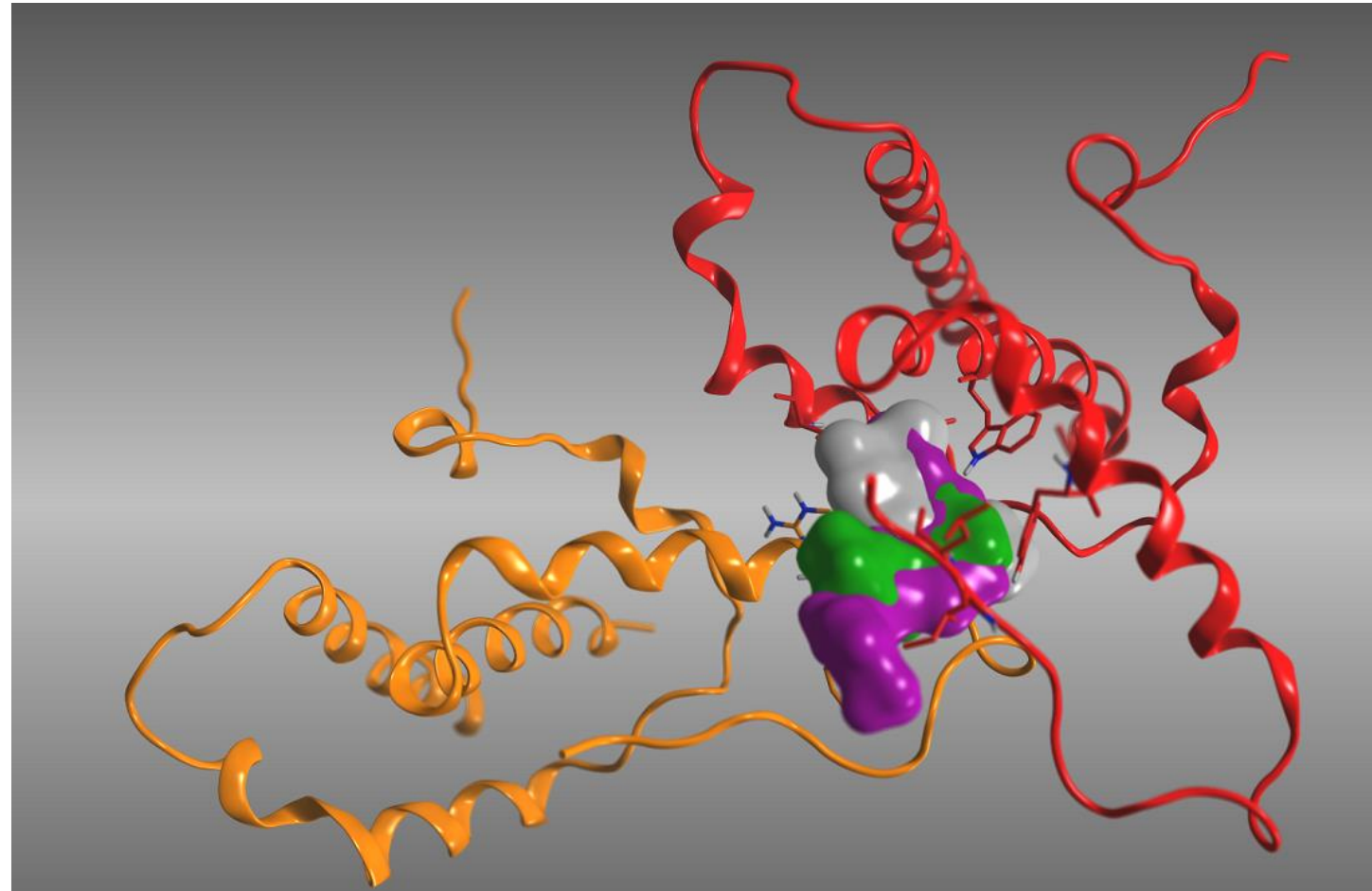
All capsid inhibitors bind to the same site on HBV Core protein

All have a dual MOA:

- Block DNA replication by inhibiting capsid assembly
- Block new cccDNA formation by inhibiting viral uncoating

Differentiation

- Clinical success will require potency, PK and combination with HBsAg targeting agent



AB-506 – Capsid Inhibitor

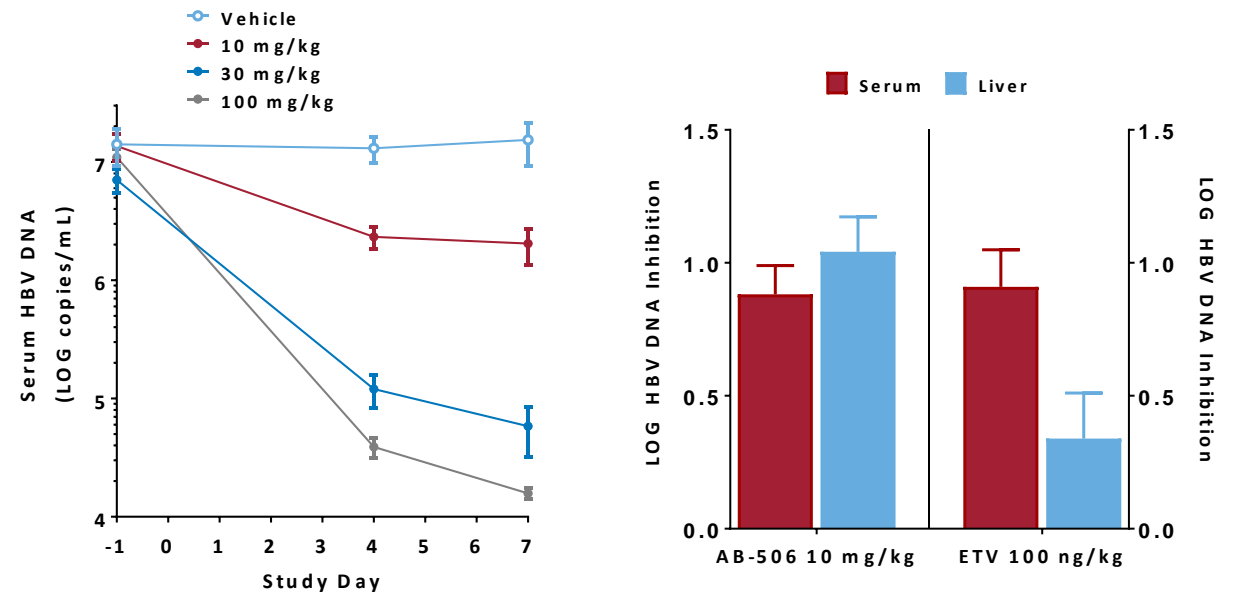
AB-506 shows preclinical **potency and PK** profile consistent with best in class agents

- Active across multiple genotypes and against NA resistant variants
- Once daily dosing
- Complementary with HBsAg targeting agents

Clinical Development

- Top-line data from Phase 1 a / 1 b Q2 '19
- Inclusion with AB-729 in a combination regimen 1H '20
- Phase 2 initiation Q4'19, inform combination regimen
 - Dose finding (w/ NA)
 - Establish long term safety (w/ NA)
 - Determine long term impact on uncoating and cccDNA formation / HBsAg

AB-506 Potently Reduces HBV DNA in Serum and Inhibits Liver HBV DNA more than ETV

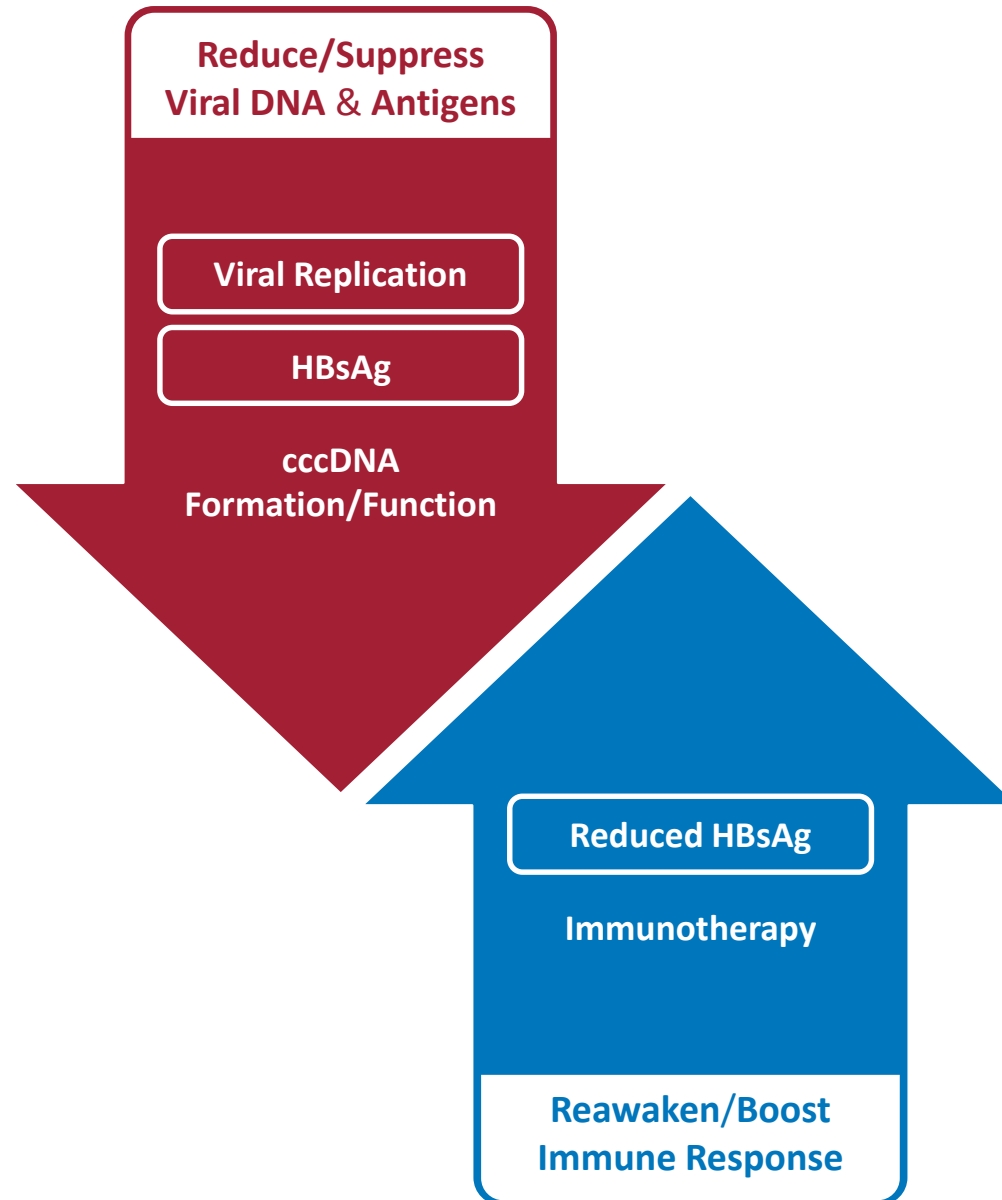


In vivo antiviral activity of AB-506. A) Reduction in serum HBV DNA is dose responsive following AB-506 administration. B) AB-506 surpassed ETV at inhibiting liver HBV DNA, at dosages where the serum HBV DNA inhibition was equivalent (data relative to vehicle at Day 7)

Driving Down HBsAg Is A Key to Therapeutic Success in HBV

Replication inhibitors do
not block HBsAg production

HBsAg is responsible
for immune exhaustion



AB-452 and RNA Destabilizer Program

Multiple evaluations underway to clarify AB-452 and RNA destabilizer program next steps

Completed

- ✓ IND enabling studies and 28 day toxicology, in two species, supporting initial clinical studies
- ✓ AB-452 mechanism of action studies demonstrate AB-452 causes HBV mRNA poly A tail shortening
- ✓ Host protein pull-down experiments to identify host target protein
- ✓ Host gene expression studies indicating that AB-452 has no detectable effect on host cell mRNAs

Ongoing

- *In vitro* target engagement and target-based cell viability evaluations
- Specialized, additional *in vitro* and *in vivo* non-clinical safety assessments
- In depth DMPK evaluations

Multiple small molecule chemotypes under investigation to **maximize program opportunity**

Anticipated go/no go decision for AB-452 clinical development in **2H 2019**

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

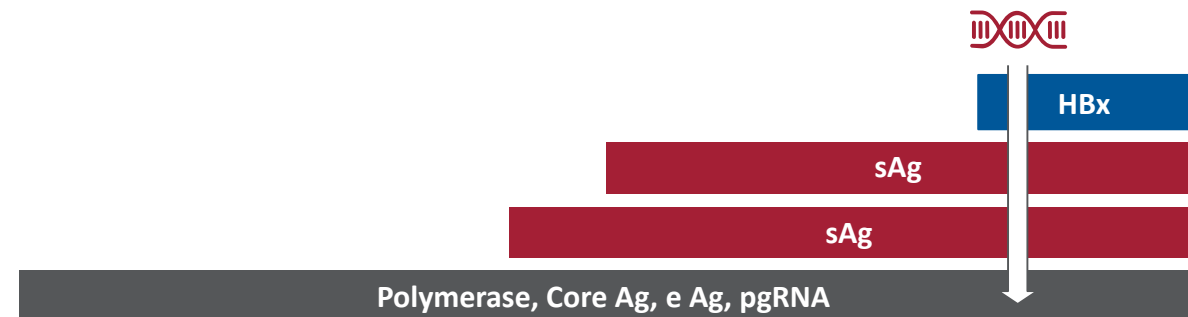
- Potent HBsAg reduction in preclinical models

Pan-genotypic activity across HBV genotypes A to D

Duration of HBsAg reduction supports once per month dosing

“IND” enabling studies underway

Initiation of clinical studies – Q2 2019



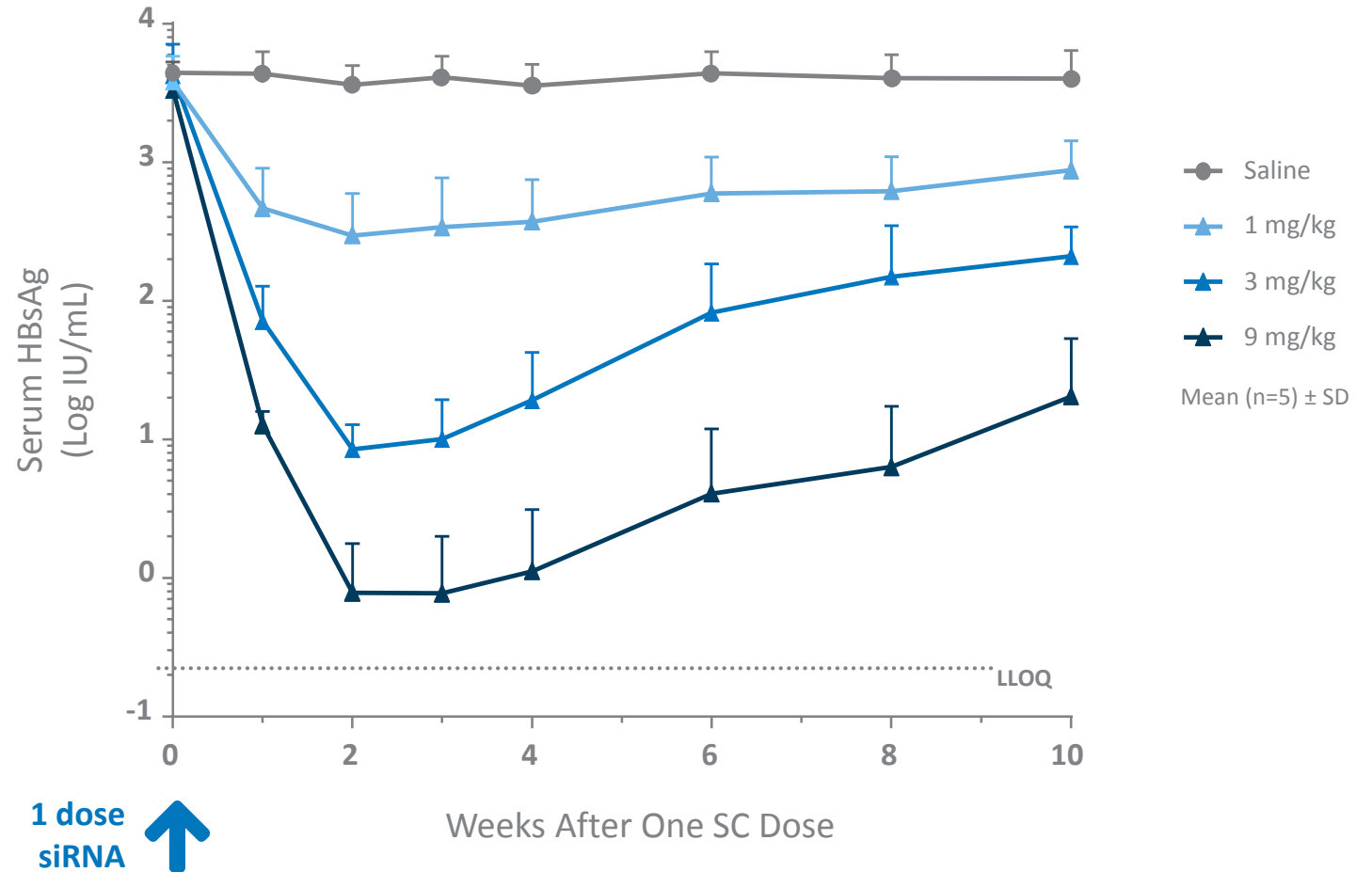
AB-729

In Vivo Single Dose Response & Duration

Clear dose response in AAV mouse model

Achieves maximal **HBsAg reduction** possible in this model

Duration supports a clinical dosing frequency of **once per month**

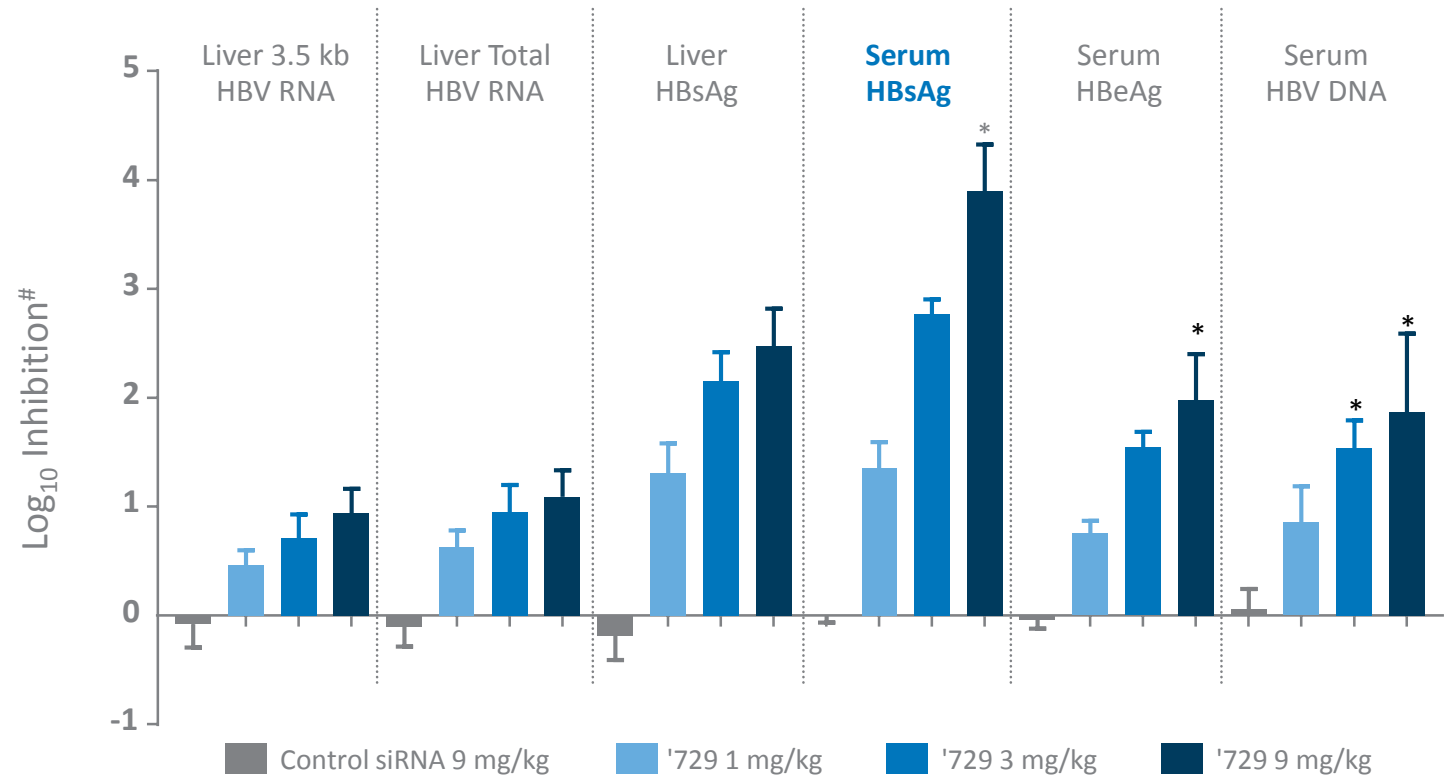


Inhibition of Multiple HBV Markers by AB-729 In Vivo

Results validate RNAi mechanism of action

Dose response reductions of all measured HBV markers in liver and serum

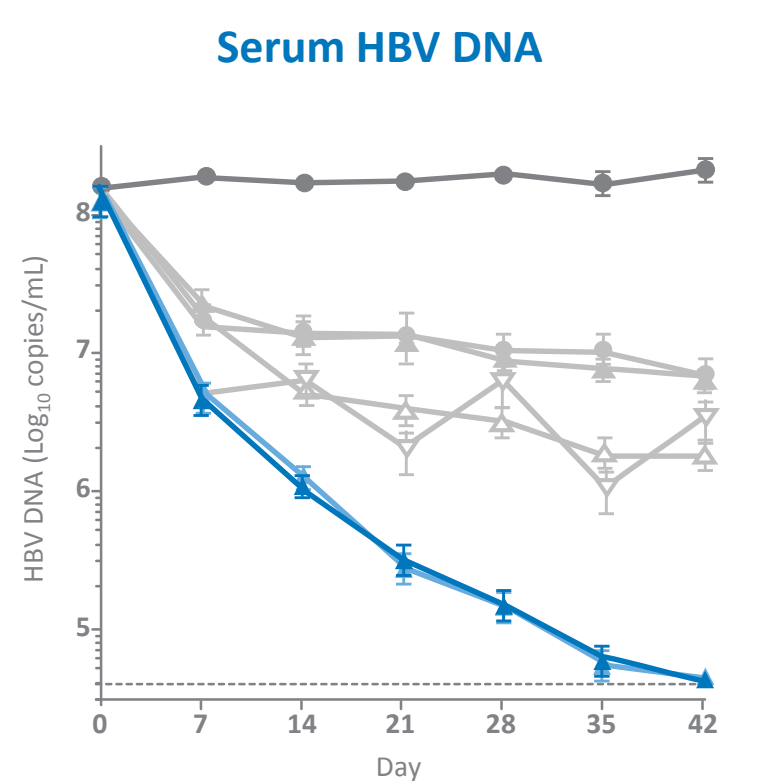
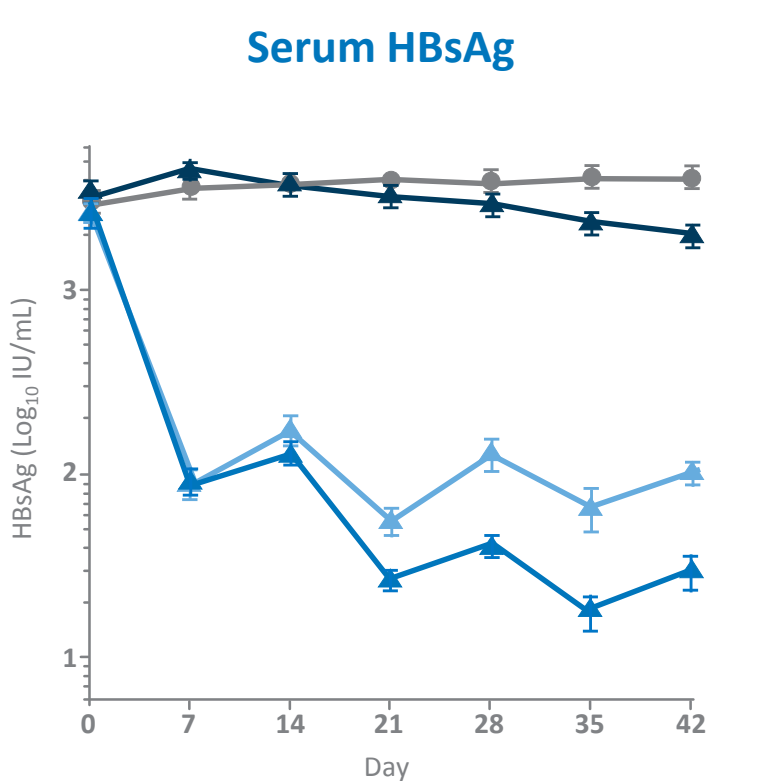
- HBsAg
- HBV RNA
- HBV eAg
- HBV DNA



14 days after single dose treatment in AAV mice (mean of n=5 ± SD)
 # relative to baseline (serum readouts) or saline control (liver readouts)
 * indicates signal for ≥1 animal below LLOQ

Preclinical Combination In **Humanized Mouse Model**

RNAi + Capsid inhibitor containing regimens result in HBV DNA and HBsAg reductions



Treatment for 6 weeks

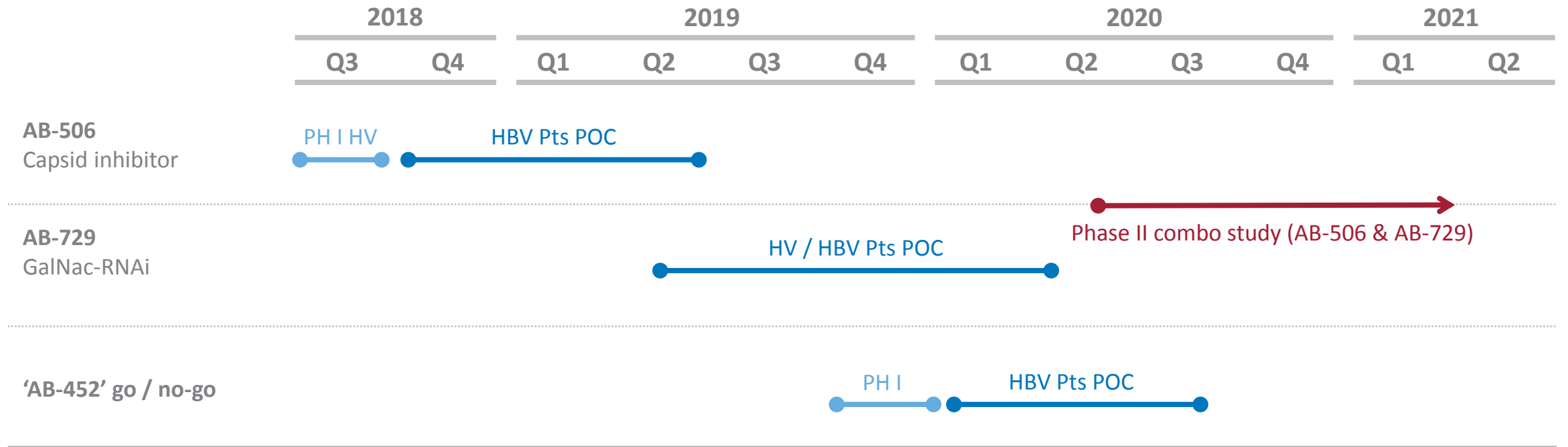
	Dosage	Route	Frequency
Capsid Inhibitor	100 mg/kg	PO	BID
ETV	1.2 µg/kg	PO	QD
PegIFN	30 µg/kg	SQ	2×/wk
RNAi	3 mg/kg	IV	biweekly

Key

- ▲ RNAi + Capsid Inhibitor + ETV
- ▲ RNAi + Capsid Inhibitor + PegIFN
- Vehicle
- ▲ Capsid Inhibitor + PegIFN

Path to a **Combination Cure**

Drive to undetectable HBV DNA and HBsAg



Key Catalysts for 2019

2Q 2019

AB-729
Initiation
of Phase
1a/1b study

AB-506
Top line
Phase
1a/1b data

2H 2019

AB-452
RNA
Destabilizer
program
update

AB-729
Initiation
of HBV
subject
dosing

AB-506
Initiation
of Phase 2
study