AASLD Data Presentation

NASDAQ: ABUS

www.arbutusbio.com

November 4, 2022

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 potential for Arbutus' product candidates to achieve their desired or anticipated outcomes; Arbutus' expectations regarding the timing and clinical development of Arbutus' product candidates, including its articulated clinical objectives; the timeline to a combination cure for HBV; and other statements relating to Arbutus' 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 effectiveness and timeliness of pre-clinical 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 and patent litigation matters. 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; uncertainties associated with litigation generally and patent litigation specifically; market shifts may require a change in strategic focus; the parties may never realize the expected benefits of the collaborations; and the ongoing COVID-19 pandemic could significantly disrupt Arbutus' 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.

AB-729-001 Phase 1a/1b Clinical Trial

Part 1 & 2:

Single-ascending dose

Robust HBsAg and HBV DNA declines in HBV DNA+ patients with AB-729 monotherapy (90mg single-dose)

Part 3: Multiple Ascending Dose in cHBV Patients (n=7/cohort)

- **E:** 60mg Q4W HBV DNA-
- **F:** 60mg Q8W HBV DNA-
- **G:** 90mg Q8W + TDF HBV DNA+
- **I:** 90mg Q8W HBV DNA-
- **J:** 90mg Q12W HBV DNA-
- **K:** 90mg Q8W HBV DNA-, HBeAg+ only

Baseline Demographics and Clinical Characteristics

Baseline Measure[#]	HBV DNA-					HBV DNA+
	Cohort E[‡] (n=7)	Cohort F (n=7)	Cohort I (n=6)[^]	Cohort J (n=7)	Cohort K[*] (n=7)	Cohort G (n=7)
Age in years, mean (range)	45.1 (33 – 63)	44.0 (31 – 59)	45.7 (38 – 54)	44.3 (35 – 61)	41.4 (21 – 57)	43.9 (34 – 50)
Male gender, n (%)	4 (57)	4 (57)	4 (67)	5 (71)	4 (57)	3 (43)
BMI, mean (SD)	27.7 (5.0)	23.7 (2.2)	25.5 (3.1)	28.7 (4.8)	25.0 (4.7)	23.8 (4.0)
Race, n (%)						
Asian	1 (14)	5 (71)	5 (83)	4 (57)	6 (86)	6 (86)
Black	0	1 (14)	0	0	0	0
White	6 (86)	1 (14)	1 (17)	3 (43)	0	1 (14)
Pacific Islander	0	0	0	0	1 (14)	0
ALT (U/L), mean (SD)	22.4 (10.5)	23.4 (15.2)	26.0 (10.2)	20.1 (7.2)	25.1 (8.9)	32.7 (15.8)
HBV eAg-, n (%)[◊]	7 (100)	6 (71)[◊]	5 (83)	4 (57)	0	7 (100)
HBsAg (IU/mL), mean (range)	5,372 (584 – 11,761)	5,354 (667 – 18,605)	4,691 (338 – 19,017)	6,911 (309 – 25,345)	2,221 (545 – 5,273)	1,818 (277 – 4,723)

[#] Genotype not determined
[‡] Patients switched to AB-729 60 mg Q12W for the extension phase
^ n=6 due to 1 patient meeting exclusion criteria on D1 and a replacement patient receiving an incorrect dose on D1; both entered follow up and were excluded from analysis
[◊] One patient counted as HBeAg- was identified as "HBeAg borderline" (baseline HBeAg = 0.18 IU/mL, LLOQ = 0.11 IU/mL)
*Cohort K Mean (SD) Baseline HBeAg = 22.7 (37.5) IU/mL

HBeAg: HBV E antigen | TDF: tenofovir disoproxil fumarate

Data presented at AASLD 2022

Robust HBsAg Declines Irrespective of Dose, Dosing Schedule, HBeAg or HBV DNA Status

Mean (SE) Baseline and Δ log_{10} HBsAg by Visit

Nominal Visit	HBV DNA-					HBV DNA+
	Cohort E (n=7)	Cohort F (n=7)	Cohort I (n=6)	Cohort J[2] (n=7)	Cohort K (n=7)	Cohort G (n=7)
Baseline (IU/mL)	3.51 (0.20)	3.53 (0.17)	3.36 (0.23)	3.37 (0.28)	3.23 (0.14)	3.14 (0.14)
Week 12	-1.10 (0.15)	-1.02 (0.11)	-1.30 (0.19)	-1.06 (0.31)	-1.63 (0.39)	-1.56 (0.32)
Week 24	-1.84 (0.16)	-1.57 (0.09)	-1.80 (0.23)	-1.56 (0.25)	-1.99 (0.35)	-1.82 (0.29)
Week 36	-1.84 (0.19)	-1.78 (0.10)	-2.06 (0.28)	-1.70 (0.39)	-2.50* (0.39)	-2.08 (0.32)
Week 48	-1.89 (0.18)	-1.90 (0.14)	1.91 (0.32)	-1.80* (0.41)	-2.57# (0.61)	-2.15 (0.34)
Week 12 Post Last Dose	-1.81 (0.17)	-1.74 (0.16)	-1.77 (0.31)	-1.80* (0.41)	-2.45# (0.66)	-1.97 (0.28)
Week 24 Post Last Dose	-1.54 (0.19)	-1.48 (0.24)	-1.67 (0.40)	-1.52 (0.40)	-2.31# (0.78)	-1.59 (0.31)

Data shown as mean (SE) log_{10} IU/mL; HBsAg LLOQ = 0.07 IU/mL, <LLOQ defined as 0.035 IU/mL Last AB-729 dose in Cohort K was at Week 40 *N=6; #N=5, 2 subjects did not receive Week 40 dose and were excluded from future timepoints

- Mean declines in HBsAg on treatment and post treatment continue to be comparable across cohorts
- Results to date from a dedicated HBeAg+ cohort (Cohort K) further support preliminary observations suggesting that baseline HBeAg status has no effect on response

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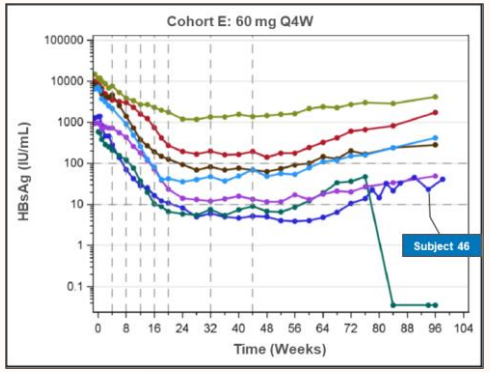
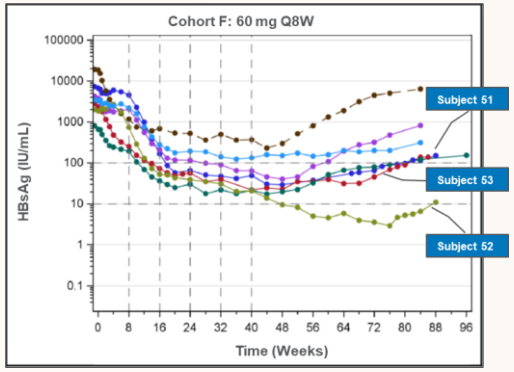
Robust HBsAg Declines Persist After Stopping AB-729

Change in HBsAg vs time

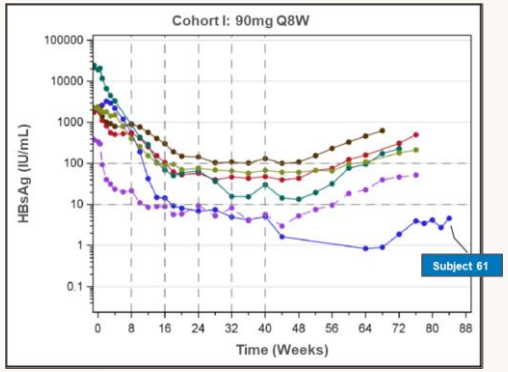
Cohort E



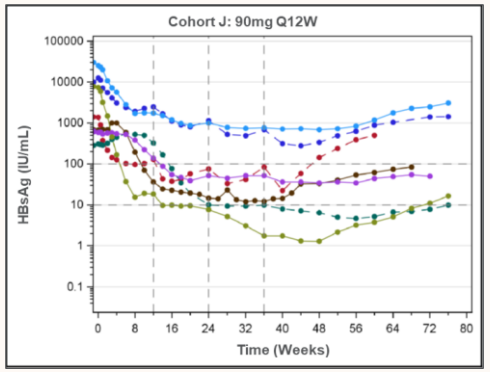
Cohort F



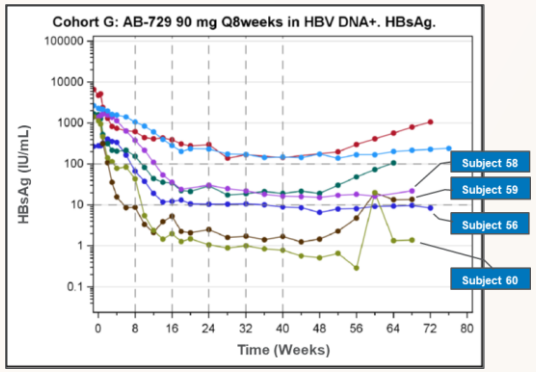
Cohort I



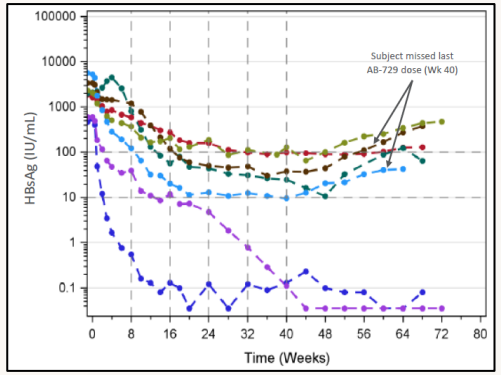
Cohort J



Cohort G



Cohort K



- 33 of 41 patients had HBsAg < 100 IU/mL at some point during the trial
- 1 patient in Cohort E (baseline HBsAg = 583.5 IU/mL) who qualified but declined to participate in NA discontinuation seroconverted at Week 84 (HBsAg < LLOQ and HBsAb = 189 IU/mL at last visit); liver enzymes remained within normal limits.
- 2 patients in Cohort K reached HBsAg<LLOQ on multiple visits with detectable HBsAb levels

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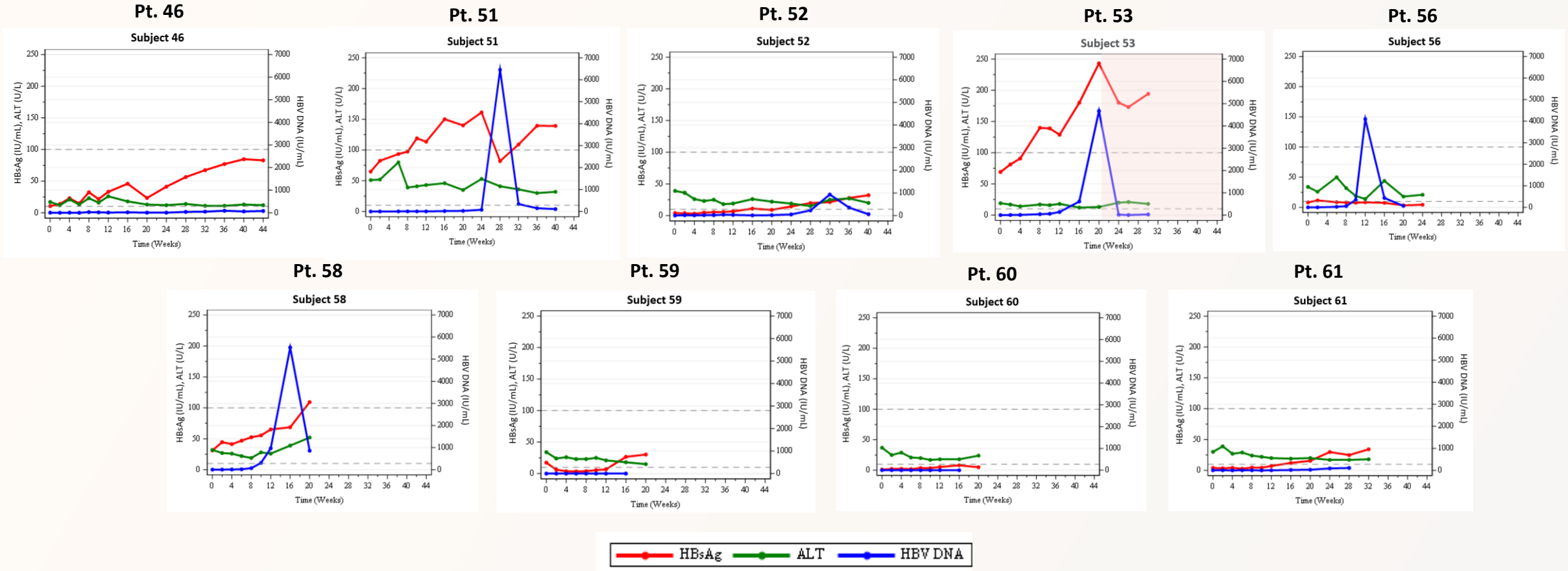
HBV Control Maintained While Off-Treatment



- No patients have met virologic or clinical relapse criteria or restarted NA therapy to date
- HBV DNA has transiently increased in some patients and subsequently decreased with no intervention

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AB-729-001 Safety Summary

- AB-729 generally safe and well-tolerated in clinical trial after single and repeat doses
- No treatment-related SAEs or discontinuations due to AEs
- No treatment-related Grade 3 or 4 AEs*
- No treatment-related Grade 3 or 4 laboratory abnormalities*
  - Grade 1 and Grade 2 ALT elevations have improved or stabilized with continued treatment
- Injection site TEAEs were mostly mild (erythema, pain, bruising, pruritis)
- No clinically meaningful changes in ECGs or vital signs

*1 patient (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)

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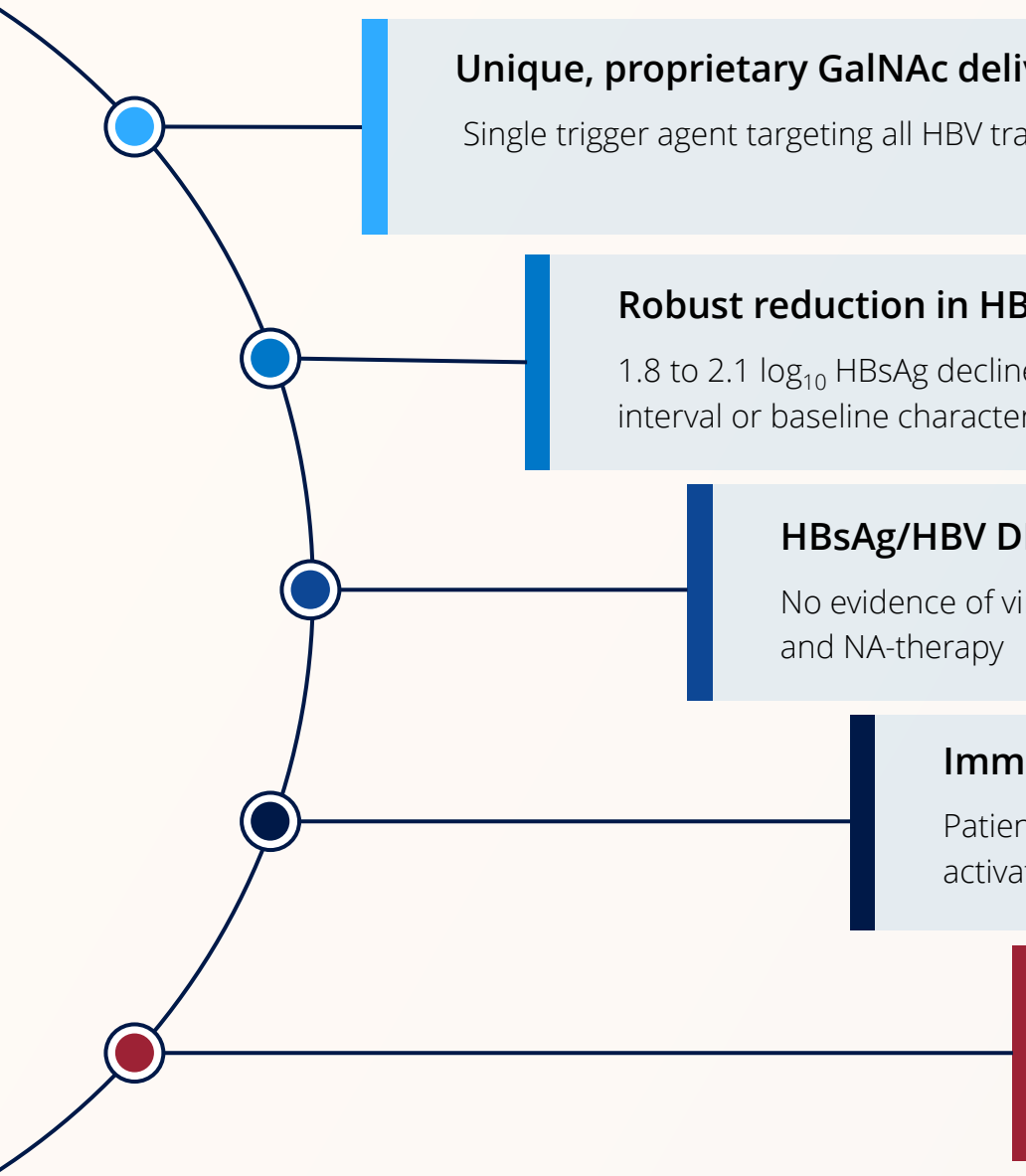
AE: Adverse Event | TEAE: Treatment Emergent Adverse Event

AB-729 Key Attributes



Unique, proprietary GalNAc delivery technology

Single trigger agent targeting all HBV transcripts

Robust reduction in HBsAg with 48 weeks of treatment

1.8 to 2.1 $\log_{10}$ HBsAg decline in cHBV patients irrespective of dose, dosing interval or baseline characteristics

HBsAg/HBV DNA sustained when off all treatment at least 12-44 wks

No evidence of virologic or clinical relapse in 9/9 patients that discontinued AB-729 and NA-therapy

Immune activity

Patients treated with AB-729 experienced an increase in HBV-specific T-cell activation and decrease in exhausted T-cells.

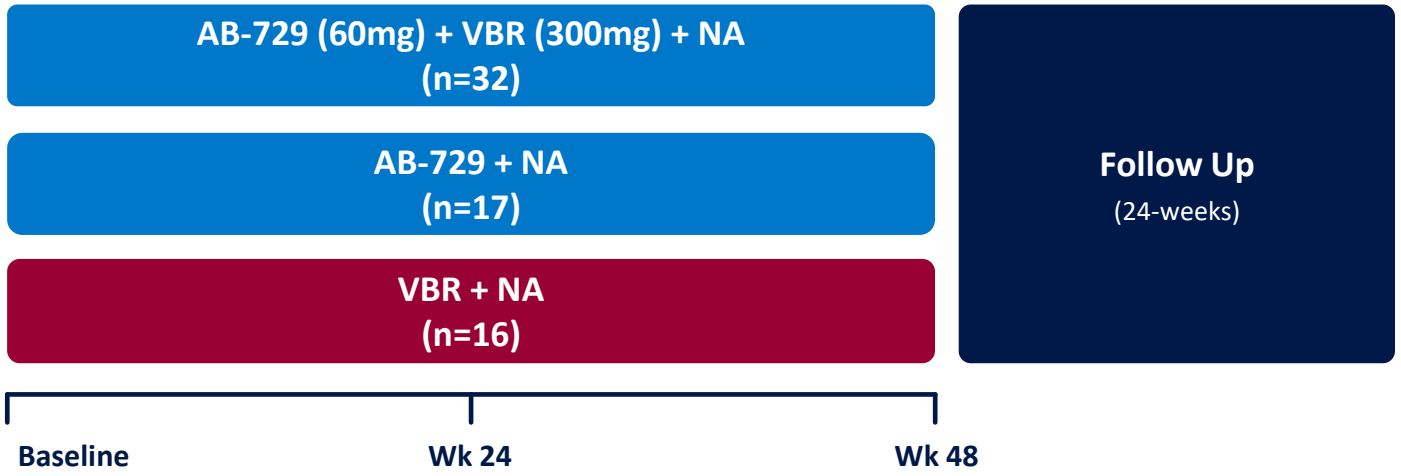
Generally safe and well-tolerated in clinical trials to date

AB-729

Clinical Collaboration

assembly bio

Provides accelerated AB-729 combination POC with Assembly's capsid inhibitor and a NA



Primary objective: evaluate safety and tolerability of vebicorvir (VBR) in combination with AB-729 in patients with cHBV receiving NA therapy

n= 65 virologically-suppressed patients with cHBV infection

Preliminary results:

Adding VBR to AB-729+NA:

- Does not result in greater on-treatment improvements in HBV biomarkers as compared to AB-729+NA alone.
- Does not have a negative impact on reducing sAg.

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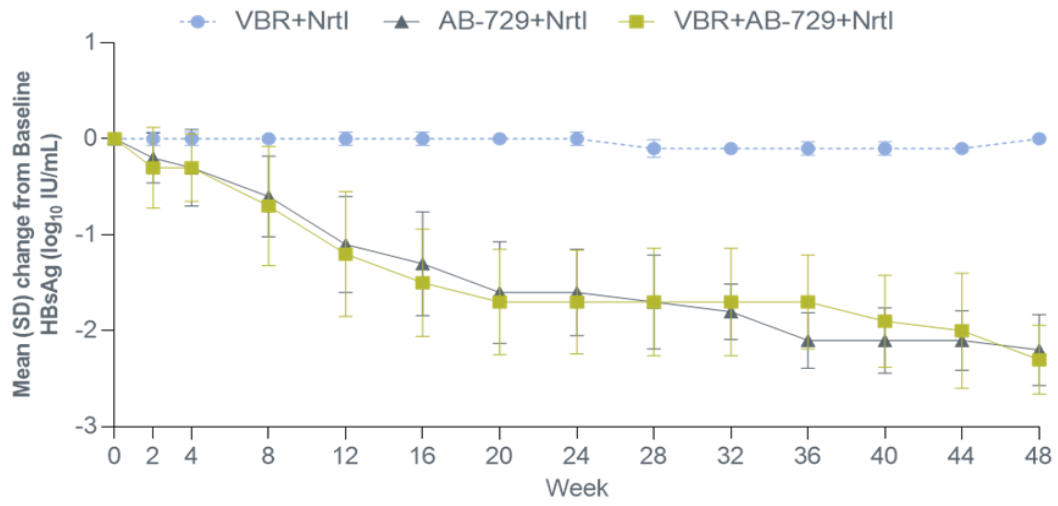
Preliminary Phase 2a Triple Combination Data

Mean Changes in Virologic Parameters On-Treatment



HBsAg, hepatitis B surface antigen; NrtI, nucleos(t)ide reverse transcriptase inhibitor; SD, standard deviation; VBR, vebicorvir.

- The proportion of patients who achieved HBsAg levels <100 IU/mL and <10 IU/mL was similar in patients who received VBR+AB-729+NrtI and AB-729+NrtI
- No patients experienced HBsAg loss or seroconversion
- At the time of this analysis 0/1, 2/2 (100%), and 3/4 (75.0%) patients who received VBR+NrtI, AB-729+NrtI, and VBR+AB-729+NrtI respectively, with Week 48 data met the criteria to stop all treatment

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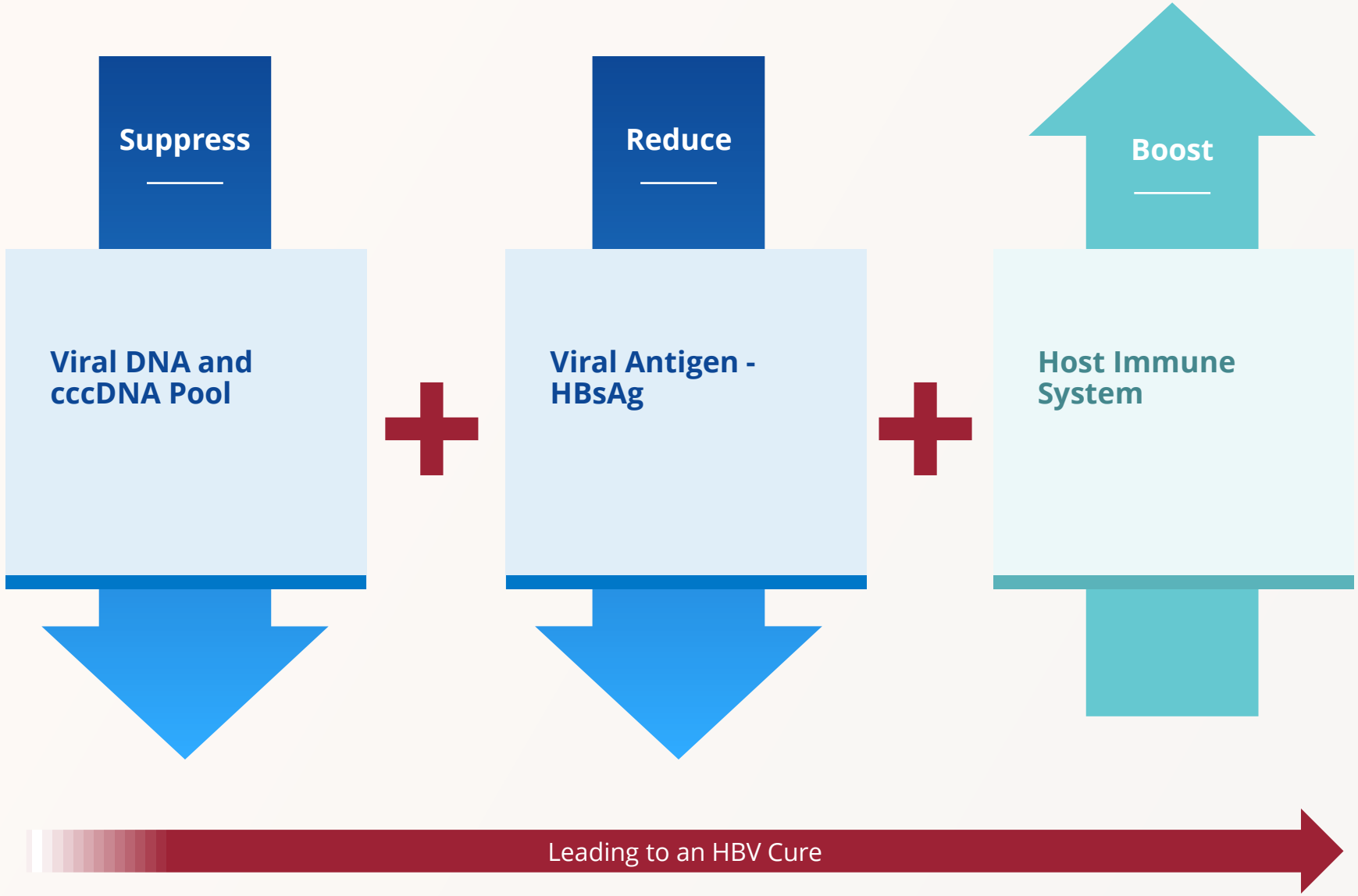
3-Pronged Approach to Therapeutic Success

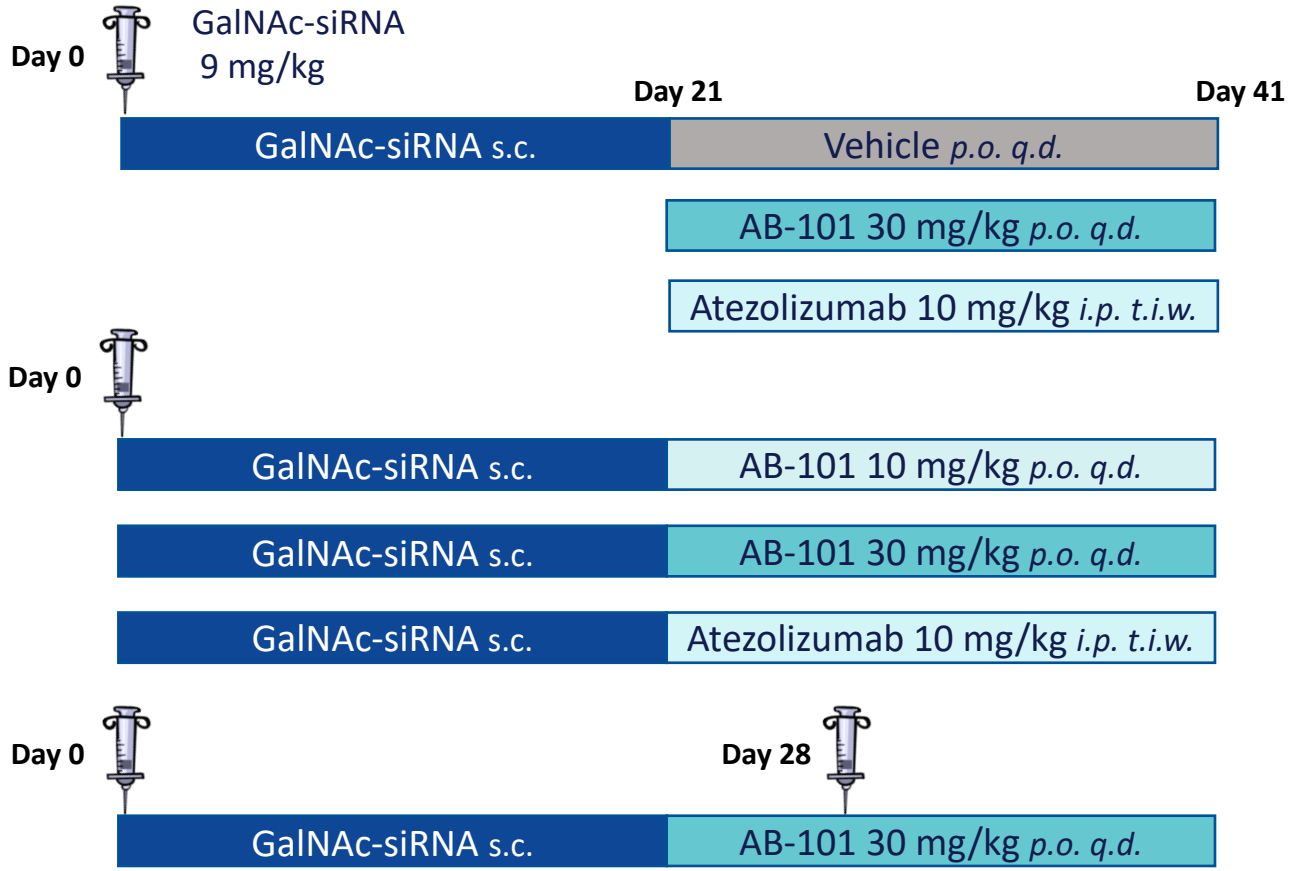
- **Suppress** HBV DNA
- **Reduce** viral antigens
- **Boost** host immune response

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



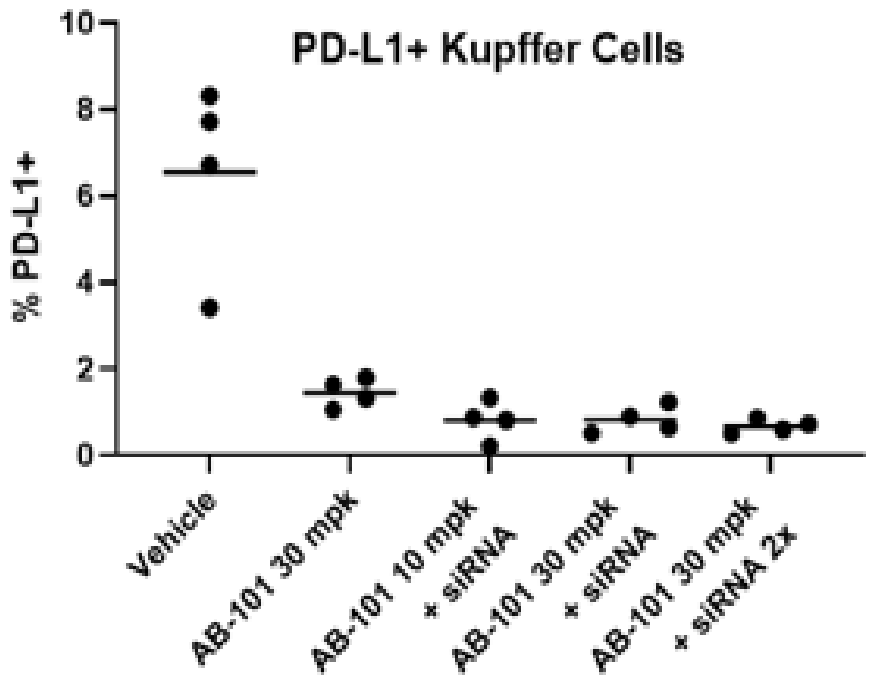
AB-101: Demonstrates Target Engagement in CD8+ Kupffer Cells in a cHBV Mouse Model

AAV-HBV hPD-L1/hPD-1 Mouse, 28 days post-AAV



Vehicle, Naïve and positive immune response control (pHBV1.3 HDI C57BL/6) groups

AB-101 Treatment Reduces PD-L1 in Liver



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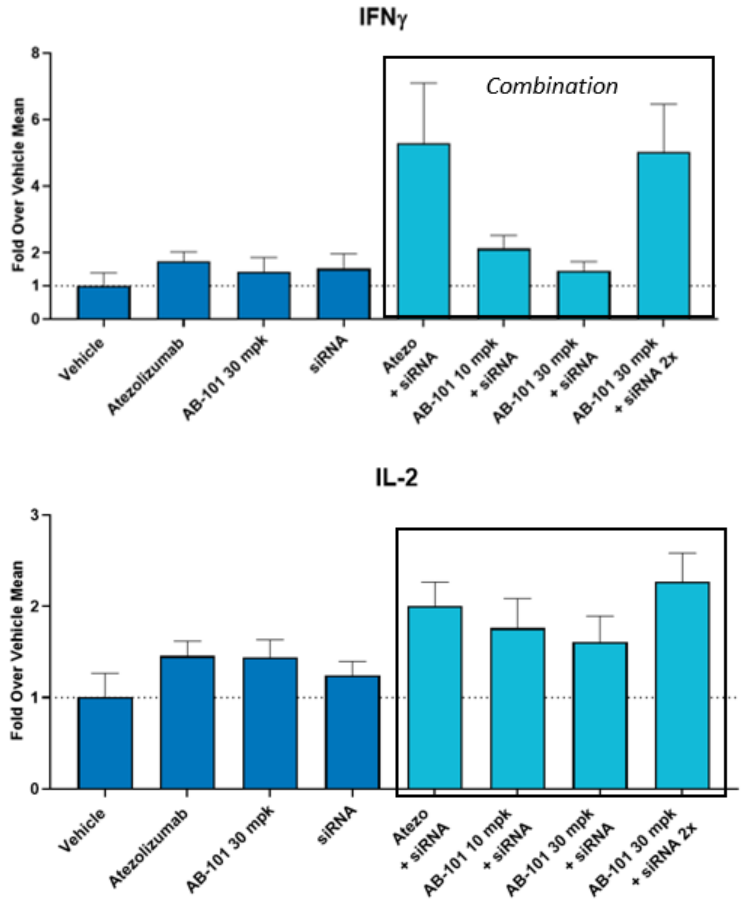
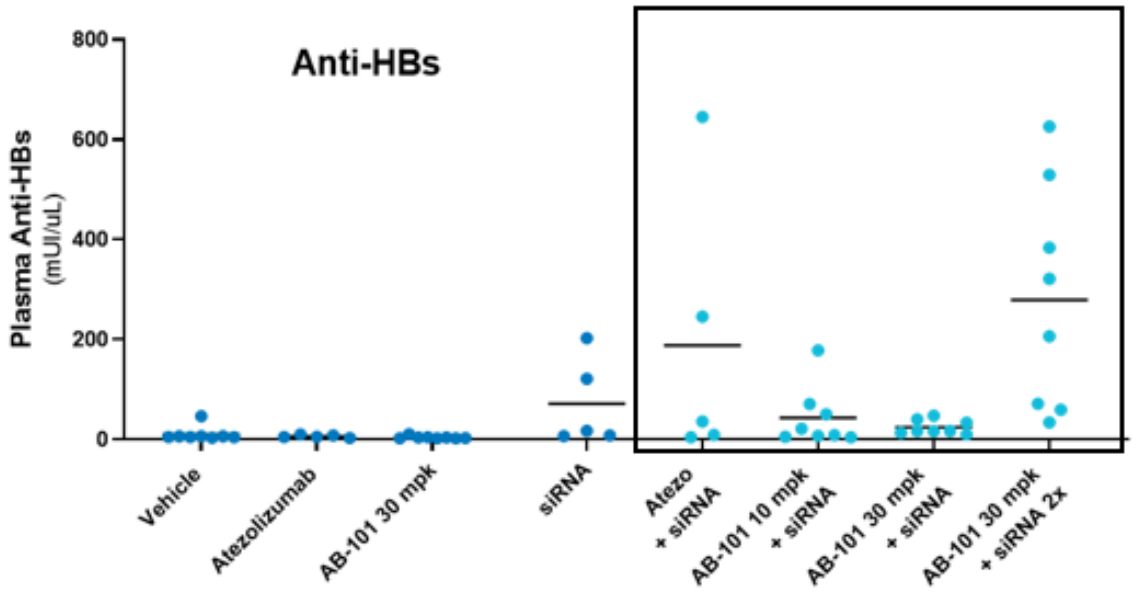
AB-101+ siRNA Combination: Increases HBV-Specific T Cell Activity and HBsAb in Liver

Liver HBV-Specific T Cells





Ex vivo Fluorospot **Day 42**

Data presented at AASLD 2022

AB-101: Summary

- Oral small-molecule PD-L1 inhibitors have been identified which function through a novel internalization mechanism distinct from antibody approaches
- Combination treatment with AB-101 and HBV-targeting siRNA resulted in the activation of HBV-specific T cell and humoral responses in an AAV-HBV mouse model
- This favorable preclinical profile suggests this combination treatment strategy may provide additional benefit in increasing HBV immune responses, a key driver of CHB functional cure

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Thank You

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