# UNITED STATES
# SECURITIES AND EXCHANGE COMMISSION
**WASHINGTON, D.C. 20549**

# FORM 8-K

**CURRENT REPORT**
**Pursuant to Section 13 OR 15(d) of The Securities Exchange Act of 1934**

Date of Report (Date of earliest event reported): November 6, 2019

## Arbutus Biopharma Corporation
(Exact name of registrant as specified in charter)

| **British Columbia, Canada** | **001-34949** | **98-0597776** |
|---|---|---|
| (State or other jurisdiction of incorporation) | (Commission File Number) | (IRS Employer Identification No.) |

| **701 Veterans Circle Warminster, Pennsylvania** | **18974** |
|---|---|
| (Address of principal executive offices) | (Zip Code) |

**(267) 469-0914**
Registrant's telephone number, including area code

(Former name or former address, if changed since last report.)

Check the appropriate box below if the Form 8-K filing is intended to simultaneously satisfy the filing obligation of the registrant under any of the following provisions:

o Written communication pursuant to Rule 425 under the Securities Act (17 CFR 230.425)

o Soliciting material pursuant to Rule 14a-12 under the Exchange Act (17 CFR 240.14a-12)

o Pre-commencement communication pursuant to Rule 14d-2(b) under the Exchange Act (17 CFR 240.14d-2(b))

o Pre-commencement communication pursuant to Rule 13e-4(c) under the Exchange Act (17 CFR 240.13e-4(c))

Securities registered pursuant to Section 12(b) of the Act:

| **Title of each class** | **Trading Symbol(s)** | **Name of each exchange on which registered** |
|---|---|---|
| Common Shares, without par value | ABUS | The Nasdaq Stock Market LLC |

Indicate by check mark whether the registrant is an emerging growth company as defined in Rule 405 of the Securities Act of 1933 (§230.405 of this chapter) or Rule 12b-2 of the Securities Exchange Act of 1934 (§240.12b-2 of this chapter).
Emerging growth company o

If an emerging growth company, indicate by check mark if the registrant has elected not to use the extended transition period for complying with any new or revised financial accounting standards provided pursuant to Section 13(a) of the Exchange Act. o

**Item 2.02. Results of Operations and Financial Condition.**

On November 6, 2019, Arbutus Biopharma Corporation (the "Company") issued a press release announcing its financial results for the three months ended September 30, 2019 and certain other information. A copy of the press release is furnished as Exhibit 99.1 hereto.

**Item 8.01. Other Events.**

On November 6, 2019, the Company posted an updated corporate presentation on its website at www.arbutusbio.com. A copy of the presentation is filed herewith as Exhibit 99.2 and is incorporated by reference herein.

**Item 9.01. Financial Statements and Exhibits.**

**(d) Exhibits.**

| Exhibit Number | Description |
|---|---|
| 99.1 | Press Release, dated November 6, 2019. |
| 99.2 | Corporate Presentation, dated November 6, 2019. |

**SIGNATURE**

Pursuant to the requirements of the Securities Exchange Act of 1934, the registrant has duly caused this report to be signed on its behalf by the undersigned hereunto duly authorized.

**Arbutus Biopharma Corporation**

Date: November 6, 2019

By: /s/ David C. Hastings
Name: David C. Hastings
Title: Chief Financial Officer

**Arbutus Reports Third Quarter 2019 Financial Results and Provides Corporate Update**

***Conference Call and Webcast Scheduled Today at 8:45 AM ET***

**Warminster, PA - Nov. 06, 2019 -** Arbutus Biopharma Corporation (Nasdaq: ABUS), a Hepatitis B Virus (HBV) therapeutic solutions company, today reports its third quarter 2019 financial results and provides a corporate update.

“We remain committed to our mission of developing a portfolio of assets with differing mechanisms of action that we believe will form the basis for a functional cure of chronic Hepatitis B", said William Collier, Arbutus’ President and Chief Executive Officer. "Our current efforts are focused on completing the Phase 1a/b clinical trial of AB-729, rapidly selecting a next-generation capsid inhibitor for IND-enabling studies to replace our recently discontinued AB-506, evaluating our oral RNA destabilizer, AB-452, as well as next-generation compounds in this class, and research on compounds that inhibit PD-L1.”

**Recent Corporate Updates**

**AB-729**

- In July 2019, the Company initiated a single and multiple dose Phase 1a/1b clinical trial for AB-729, a subcutaneously delivered RNAi agent which has been shown in preclinical models to span all HBV transcripts, reduce all viral antigens, including hepatitis B surface antigen (HBsAg) expression, and inhibit HBV replication. In this trial, which is designed to investigate the safety, tolerability, pharmacokinetics, and pharmacodynamics of AB-729 in healthy volunteers and in subjects with chronic hepatitis B (CHB) infection, AB-729 will be dosed monthly.

- Preliminary safety data in single-dose cohorts of healthy subjects and safety and efficacy data in single-dose cohorts of subjects with CHB infection are expected in the first quarter of 2020.

**Capsid Inhibitors**

- In October 2019, Arbutus announced its decision to discontinue the clinical development of AB-506, an oral capsid inhibitor, in Phase 1a/1b clinical development for the treatment of CHB due to safety observations in a Phase 1a 28-day clinical trial in healthy volunteers. Arbutus intends to present results from the AB-506 Phase 1a/1b clinical trial program at the American Association for the Study of Liver Diseases meeting later this month.

- Arbutus is evaluating a number of oral next-generation capsid inhibitor compounds with chemical scaffolding different from AB-506 that the Company believes have the potential to contribute to the inhibition of HBV replication as part of a combination regimen. The Company’s objective is to select one of several lead compounds for IND-enabling studies in December of this year.

**AB 452**

- Arbutus remains committed to the development of oral RNA-destabilizers that have shown compelling anti-viral effects in multiple HBV preclinical models. AB-452, Arbutus' lead oral RNA-destabilizer is being evaluated in a repeat 90-day preclinical safety study in two species before making a go/no-go decision. We expect that the results of this study will allow us to make that decision early in 2020. The Company is also continuing to advance back-up compounds with chemical scaffolding different from that of AB-452.

**Early R&D Programs**

- Arbutus continues a focused discovery effort on follow-on compounds for its current HBV pipeline, including efforts to identify compounds potentially capable of reawakening patients' HBV-specific immune response by inhibiting PD-L1.

**New Appointment to Arbutus' Board of Directors**

- Andrew Cheng, M.D., Ph.D., was appointed to the Arbutus Board of Directors. Previously, Dr. Cheng spent nearly two decades at Gilead Sciences, Inc., where he most recently served as Chief Medical Officer and Executive Vice President. Dr. Cheng is currently President and Chief Executive Officer of Akero Therapeutics (Nasdaq: AKRO).

**Cash Position and Cash Guidance**

- The Company had approximately $90.1 million in cash and cash equivalents as of September 30, 2019. The discontinuation of the AB-506 development program is anticipated to reduce cash burn in the short term and the Company believes its existing cash and cash equivalents balance is sufficient to fund operations into early 2021.

**Financial Results**

**Cash, Cash Equivalents and Investments**

Arbutus had cash, cash equivalents and short-term investments totaling $90.1 million as of September 30, 2019, as compared to $124.6 million as of December 31, 2018. The decreased cash balance was due primarily to the $57.7 million used in operating activities during the first nine months of 2019, partially offset by $18.5 million in net proceeds from the sale of a portion of its royalty entitlement on net sales of ONPATTRO in the third quarter of 2019 and $4.7 million of net proceeds from the issuance of shares under its ATM program. Included in the $57.7 million used in operating activities is a $5.9 million payment for the award rendered in the arbitration proceeding with the University of British Columbia in the third quarter of 2019.

**Net Loss**

Net loss attributable to common shares for the third quarter of 2019, including non-cash charges of $43.8 million related to the impairment of an in-process research and development ("IPR&D") intangible asset and $22.5 million for the impairment of goodwill described further below, was $85.3 million ($1.50 basic and diluted loss per common share) as compared to $27.1 million ($0.49 basic and diluted loss per common share) for the third quarter of 2018. Net loss attributable to common shares also included non-cash expense for the accrual of coupon on the Company's convertible preferred shares of $2.8 million in the third quarter of 2019 and $2.6 million in the third quarter of 2018, as well as non-cash expense for a proportionate share of Genevant's net losses of $3.5 million in the third quarter of 2019 and $2.8 million in the third quarter of 2018.

**ONPATTRO Royalty Entitlement**

Arbutus has a royalty entitlement on global net sales of ONPATTRO™ (Patisiran) for the lipid nanoparticle delivery (LNP) technology licensed by Arbutus to Alnylam Pharmaceuticals, Inc. (Alnylam) for this product. ONPATTRO is an RNAi therapeutic for the treatment of hereditary ATTR (hATTR) amyloidosis that has been approved by the U.S. Food and Drug Administration and the European Medical Agency. In July 2019, Arbutus sold this royalty entitlement to OCM IP Healthcare Portfolio LP, an affiliate of the Ontario Municipal Employees Retirement System (collectively, OMERS), effective as of January 1, 2019, for $20 million in gross proceeds before advisory fees. OMERS will retain this royalty entitlement until it has received $30 million in royalties, at which point 100% of this royalty entitlement will revert to Arbutus. OMERS has assumed the risk of collecting up to $30 million of future royalty payments from Alnylam and Arbutus is not obligated to reimburse OMERS if they fail to collect any such future royalties. Arbutus recognized the $20 million of gross proceeds from this transaction as a liability, net of transaction costs. The Company is amortizing the liability to non-cash interest expense and will continue to recognize the royalty revenue that Alnylam pays to OMERS as non-cash royalty revenue.

In addition to the royalty entitlement from the Alnylam LNP license agreement, Arbutus is also receiving a second, lower royalty entitlement on global net sales of ONPATTRO originating from a settlement agreement and subsequent license agreement with Acuitas Therapeutics. The royalty entitlement from Acuitas has been retained by Arbutus and is not part of the royalty entitlement sale to OMERS.

**Operating Expenses**

Research and development expenses were $17.7 million in the third quarter of 2019 compared to $16.6 million in the third quarter of 2018. Research and development expenses in the third quarter of 2019 included costs associated with the Company’s Phase 1a/1b clinical trial for its RNAi agent (AB-729), costs associated with the Company’s Phase 1a/1b clinical trial for its oral capsid inhibitor (AB-506) that was discontinued in October 2019, and toxicology studies for its HBV RNA Destabilizer (AB-452). The increase in research and development expenses was due primarily to increased spending in 2019 for the two Phase 1a/1b clinical trials for AB-729 and AB-506. General and administrative expenses were $3.3 million in the third quarter of 2019 compared to $2.6 million in the third quarter of 2018. The increase in general and administrative expenses was due primarily to increased stock compensation expense and an increase in insurance premiums.

In the third quarter of 2019, the Company also recorded a charge of $6.5 million related to an arbitration award from the Company's arbitration with the University of British Columbia.

**Impairment of IPR&D Intangible Assets and Goodwill**

The Company has historically carried IPR&D and goodwill from its acquisition of technologies and business combination as assets. All acquired IPR&D intangible assets relate to the Company's covalently closed circular DNA ("cccDNA") program. During the three months ended September 30, 2019, the Company recorded a $43.8 million non-cash impairment expense to reduce the carrying value of its IPR&D intangible assets to zero as of September 30, 2019. The Company also recognized a corresponding income tax benefit of $12.7 million related to the decrease in its deferred tax liability associated with the IPR&D intangible assets. The impairment was due to an indefinite delay in further development of the Company's cccDNA program while the Company focuses on its other development programs.

Goodwill represents the excess of purchase price over the value assigned to the net tangible and identifiable intangible assets in connection with the business combination that formed Arbutus. For the third quarter of 2019, the Company assessed the changes in circumstances that occurred during the quarter to determine if it was more likely than not that the fair value of the Company was below its carrying amount. Due to a sustained decrease in the Company's share price in recent months, the Company's market capitalization was reduced below the book value of its net assets and the Company concluded that its fair value was below its carrying amount by an amount in excess of the carrying value

of the goodwill. As a result, the Company recorded a $22.5 million non-cash impairment expense to reduce the carrying value of its goodwill asset to zero as of September 30, 2019.

**Equity Investment Loss in Genevant**

As of September 30, 2019, the Company owned approximately 40% of the common equity of Genevant Sciences Ltd. (Genevant), a company launched with Roivant Sciences Ltd. in April 2018. Arbutus recorded a loss of $3.5 million in the third quarter of 2019 for its proportionate share of Genevant's net loss. Financial results of Genevant are recorded on a one-quarter lag basis.

**Outstanding Shares**

The Company had 56,850,172 common shares issued and outstanding as of September 30, 2019. In addition, the Company had approximately 9.1 million stock options outstanding and 1.164 million convertible preferred shares outstanding, which (including the annual 8.75% coupon) will be mandatorily convertible into approximately 23 million common shares on October 18, 2021.

**UNAUDITED CONDENSED CONSOLIDATED STATEMENTS OF LOSS**
**(in millions, except share and per share data)**

| | Three Months Ended September 30, | | Nine Months Ended September 30, | |
|---|---|---|---|---|
| | 2019 | 2018 | 2019 | 2018 |
| Total revenue | $ 3.1 | $ 1.6 | $ 4.4 | $ 4.3 |
| Operating expenses | | | | |
| Research and development | 17.7 | 16.6 | 45.2 | 46.9 |
| General and administrative | 3.3 | 2.6 | 15.9 | 10.1 |
| Depreciation | 0.5 | 0.5 | 1.5 | 1.7 |
| Site consolidation | 0.2 | (0.5) | — | 3.7 |
| Impairment of intangible assets | 43.8 | 14.8 | 43.8 | 14.8 |
| Impairment of goodwill | 22.5 | — | 22.5 | — |
| Arbitration settlement | 6.5 | — | 6.5 | — |
| Loss from operations | $ (91.4) | $ (32.4) | $ (131.0) | $ (72.9) |
| Other income (loss) | | | | |
| Interest income (expense), net | (0.6) | 0.7 | 0.6 | 2.2 |
| Foreign exchange gain (loss) | — | 0.1 | 0.1 | (0.8) |
| Gain on investment | — | — | — | 24.9 |
| Equity investment loss | (3.5) | (2.8) | (11.5) | (2.8) |
| Change in fair value of contingent consideration | 0.3 | 5.6 | 0.1 | 6.3 |
| Total other income (loss) | $ (3.8) | $ 3.6 | $ (10.7) | $ 29.8 |
| Income tax benefit | 12.7 | 4.3 | 12.7 | 4.3 |
| Net loss [(1)] | $ (82.5) | $ (24.5) | $ (129.0) | $ (38.8) |
| Accrual of coupon on convertible preferred shares | (2.8) | (2.6) | (8.3) | (7.5) |
| Net loss attributable to common shareholders | $ (85.3) | $ (27.1) | $ (137.3) | $ (46.3) |
| Loss per share | | | | |
| Basic and diluted | $ (1.50) | $ (0.49) | $ (2.43) | $ (0.84) |
| Weighted average number of common shares | | | | |
| Basic and diluted | 56,850,172 | 55,421,504 | 56,469,358 | 55,241,284 |

[(1)] Net loss for the three and nine months ended September 30, 2019 included $66.3 million of non-cash expenses related to the impairments of an IPR&D intangible asset and goodwill, partially offset by a corresponding income tax benefit of $12.7 million related to the decrease in a deferred tax liability associated with the IPR&D intangible asset. Net loss for the three and nine months ended September 30, 2018 included $14.8 million of non-cash expense related to the impairment of an IPR&D intangible asset, partially offset by a corresponding income tax benefit of $4.3 million related to the decrease in a deferred tax liability associated with the IPR&D intangible asset.

**UNAUDITED CONDENSED CONSOLIDATED BALANCE SHEETS**
**(in millions)**

| | September 30, 2019 | December 31, 2018 |
|---|---|---|
| Cash and cash equivalents | $ 90.1 | $ 36.9 |
| Short-term investments | — | 87.7 |
| Accounts receivable and other current assets | 4.2 | 4.6 |
| **Current assets** | 94.3 | 129.2 |
| Investment in Genevant | 11.0 | 22.2 |
| Property and equipment, net | 9.2 | 10.2 |
| Right of use asset | 2.8 | — |
| Intangible assets | — | 43.8 |
| Goodwill | — | 22.5 |
| **Total assets** | $ 117.3 | $ 227.9 |
| Accounts payable and accrued liabilities | $ 8.2 | $ 9.5 |
| Site consolidation accrual | 0.2 | 1.3 |
| Liability-classified options | 0.1 | 0.5 |
| Lease liability, current | 0.3 | — |
| **Current liabilities** | 8.8 | 11.3 |
| Liability related to sale of future royalties | 18.7 | — |
| Deferred rent and inducements, non-current | — | 0.6 |
| Contingent consideration | 3.0 | 3.1 |
| Lease liability, non-current | 3.1 | — |
| Deferred tax liability | — | 12.7 |
| Total stockholders' equity | 83.7 | 200.2 |
| **Total liabilities and stockholders' equity** | $ 117.3 | $ 227.9 |

**UNAUDITED CONDENSED CONSOLIDATED STATEMENTS OF CASH FLOW**
**(in millions)**

| | Three Months Ended September 30, | | Nine Months Ended September 30, | |
|---|---|---|---|---|
| | **2019** | **2018** | **2019** | **2018** |
| Net loss for the period | $ (82.5) | $ (24.5) | $ (129.0) | $ (38.8) |
| Impairment of intangible assets and goodwill | 66.3 | 14.8 | 66.3 | 14.8 |
| Deferred income tax benefit | (12.7) | (4.3) | (12.7) | (4.3) |
| Gain on investment | — | — | — | (24.9) |
| Equity investment loss | 3.5 | 2.8 | 11.5 | 2.8 |
| Other non-cash items | 1.8 | (3.4) | 8.3 | 2.0 |
| Changes in working capital | 0.1 | 1.4 | (2.1) | (2.4) |
| Net cash used in operating activities | (23.5) | (13.2) | (57.7) | (50.8) |
| Net cash provided by (used) in investing activities | 16.2 | 24.4 | 87.2 | (48.9) |
| Net cash provided by financing activities | 18.5 | 0.4 | 23.6 | 55.5 |
| Effect of foreign exchange rate changes on cash and cash equivalents | — | 0.1 | 0.1 | (0.8) |
| **Net increase (decrease) in cash and cash equivalents** | $ 11.2 | $ 11.7 | $ 53.2 | $ (45.0) |
| Cash and cash equivalents, beginning of period | 78.9 | 10.2 | 36.9 | 66.9 |
| **Cash and cash equivalents, end of period** | $ 90.1 | $ 21.9 | $ 90.1 | $ 21.9 |
| **Short-term investments** | — | 120.1 | — | 120.1 |
| **Total cash, cash equivalents and short-term investments, end of period** | $ 90.1 | $ 142.0 | $ 90.1 | $ 142.0 |

**Conference Call Today**

Arbutus will hold a conference call and webcast today, Wednesday, November 6, 2019 at 8:45 AM Eastern Time to provide a corporate update. You can access a live webcast of the call through the Investors section of Arbutus' website at www.arbutusbio.com. Alternatively, you can dial (866) 393-1607 or (914) 495-8556 and reference conference ID 7279188.

An archived webcast will be available on the Arbutus website after the event. Alternatively, you may access a replay of the conference call by calling (855) 859-2056 or (404) 537-3406, and reference conference ID 7279188.

**About Arbutus**

Arbutus Biopharma Corporation is a publicly traded (Nasdaq: ABUS) biopharmaceutical company dedicated to discovering, developing and commercializing a cure for patients suffering from chronic Hepatitis B infection. Arbutus is developing multiple drug candidates, each of which have the potential to improve upon the standard of care and contribute to a curative combination regimen. For more information, visit www.arbutusbio.com.

**Forward-Looking Statements and Information**

This press release contains forward-looking statements within the meaning of the Section 27A of the Securities Act of 1933 and Section 21E of the Securities Exchange Act of 1934, and forward-looking information within the meaning of Canadian securities laws (collectively, "forward-looking statements"). Forward-looking statements in this press release include statements about our expectation that certain preliminary safety and efficacy data from the Phase 1a/1b clinical trial for AB-729 will be available in the first quarter of 2020; our intention to present results from the AB-506 Phase 1a/1b clinical trial at the AASLD meeting later this month; our objective to select one of several lead capsid inhibitor compounds for IND-enabling studies in December of this year; our expectation that the results from our AB-452 study will allow us to make a go/no-go decision early in 2020; our expectations regarding the initiation, timing and completion of preclinical studies and clinical trials; the sufficiency of our cash and cash equivalents to extend into early 2021; and the potential for our drug candidates to improve upon the standard of care and contribute to a curative combination regimen for chronic HBV.

With respect to the forward-looking statements contained in this press release, 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 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.

Additionally, there are known and unknown risk factors which could cause Arbutus' actual results, performance or achievements to be materially different from any future results, performance or achievements expressed or implied by the forward-looking statements contained herein. Known risk factors include, among others: anticipated pre-clinical studies 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.

A more complete discussion of the risks and uncertainties facing Arbutus appears in Arbutus' Annual Report on Form 10-K, Arbutus' Quarterly Reports on Form 10-Q and Arbutus' continuous and periodic disclosure filings, which are available at www.sedar.com and at www.sec.gov. 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.

**Contact Information**

**Investors and Media**
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Arbutus BIOPHARMA

*Curing Chronic Hepatitis B*

# Singularly Focused on HBV

November 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 la statements that are not historical facts are hereby identified as forward-looking statements for this purpose and include, among others, statements relating potential for HBV to have a larger market opportunity than HCV; our ability to meet a significant unmet medical need; the sufficiency of our cash and cash equi to extend into early 2021; our intention to present results from the AB-506 Phase 1a/1b clinical trial along with further details regarding the two cases of hepatitis at an appropriate scientific meeting later in 2019; our belief that our oral follow-on capsid inhibitor compounds with distinct chemical scaffolds ha potential to contribute to the inhibition of HBV replication as part of a combination regimen; our objective to select a next generation compound for IND-en studies by December of 2019; the potential for the next generation compound to be low dose with a greater therapeutic window and to address known capsid re variants T33N and I105T; our expectations regarding the timing and clinical development of our product candidates; our expectation for AB-729 for preliminary from our Phase I trial to be available in the first quarter of 2020; the timeline to a combination cure for HBV; and other statements relating to our future oper 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 receipt of expected payments; the effectiveness and timeliness of preclinical studies and clinical trials, and the usefulness of the data; the timeliness of regu approvals; the continued demand for Arbutus' assets; and the stability of economic and market conditions. While Arbutus considers these assumptions reasonable, these assumptions are inherently subject to significant business, economic, competitive, market and social uncertainties and contingencies. Fo looking statements herein involve known and unknown risks, uncertainties and other factors that may cause the actual results, events or developments to be ma different from any future results, events or developments expressed or implied by such forward-looking statements. Such factors include, among others: antic 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 resul warrant future development of the tested drug candidate; changes in Arbutus' strategy regarding its product candidates and clinical development activities; A may not receive the necessary regulatory approvals for the clinical development of Arbutus' products; economic and market conditions may worsen; and marke 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 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 indic 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 infor becomes available in the future.

# Investment Highlights

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

| Significant unmet medical need in **HBV** | Team with antiviral **expertise & proven track record** | Broad HBV **Portfolio** | **Financial** Position | Goal **Functiona Cure** |
|---|---|---|---|---|
| Global HBV prevalence double that of HCV, potential for larger market opportunity | Applying knowledge gained from HIV and HCV success to find HBV cure through proprietary drug combinations | HBV assets generating pre clinical and clinical data | $90.1M cash at 9/30/19 Cash runway into early 2021 | Goal of function through finite du treatment wi combination of with different m of action |



**HCV:** Hepatitis C Virus | **NA:** Nucleoside Analogue

# Proven Leadership Team

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

**William H. Collier**

President and CEO

ViiV Healthcare · gsk

**Michael J. Sofia, PhD**

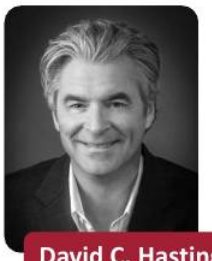
Chief Scientific Officer

PHARMASSET · OnCore Biopharma, Inc. · GILEAD · Bristol-Myers Squibb

**Gaston Picchio, PhD**

Chief Development Off

janssen



**David C. Hastings**

Chief Financial Officer

Incyte · ARQULE · UNILIFE

**Elizabeth Howard, PhD, JD**

EVP, General Counsel and Chief Compliance Officer

orrick

**Michael J. McElhaug**

Chief Business Officer

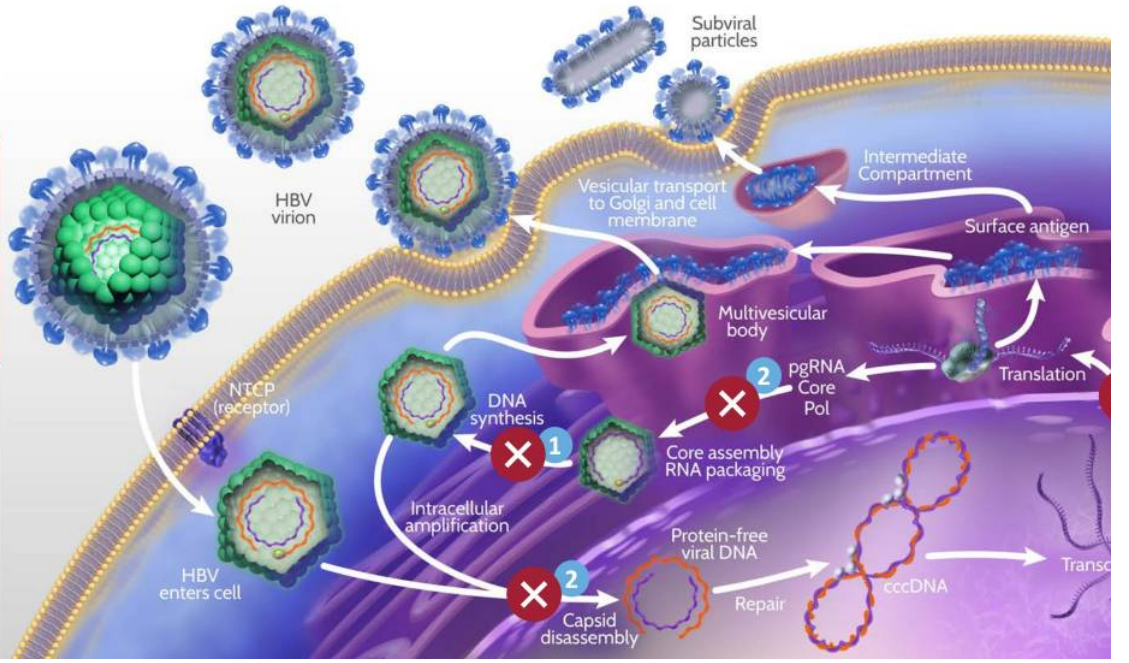
PHARMASSET · OnCore Biopharma, Inc. · Bristol- · ViroPharma

Arbutus BIOPHARMA NASDAQ: ABUS www.arbutusbio.com

# 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 – AB-729**
**3 – RNA Destabilizer**

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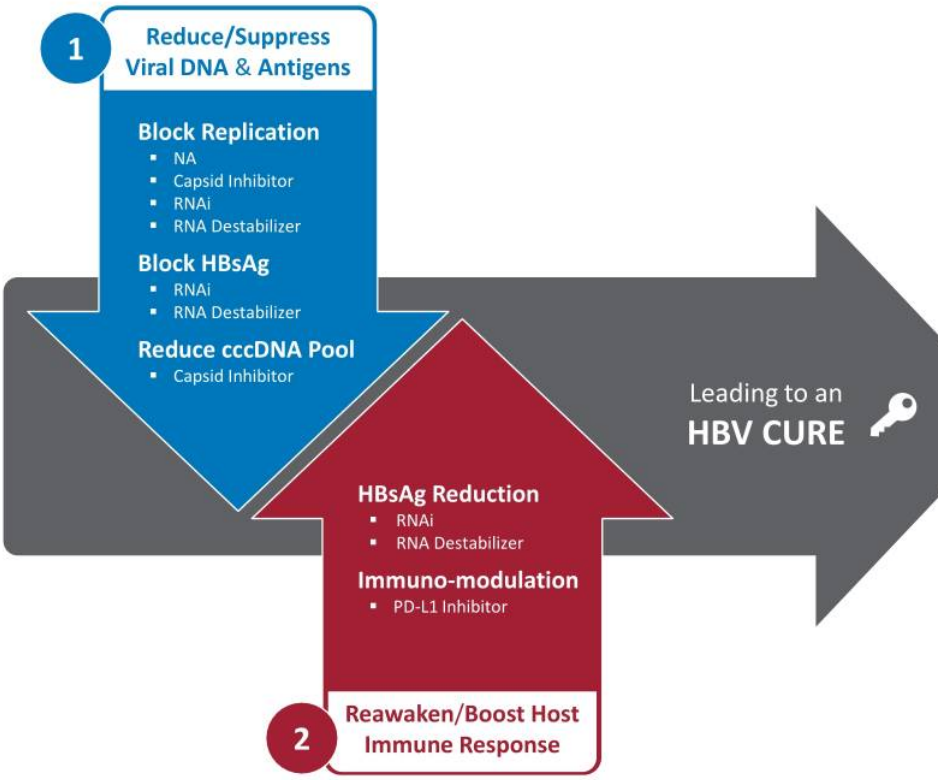
# Keys to Therapeutic Success

**Suppress HBV DNA and viral antigens**

**Reawaken host immune response**

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



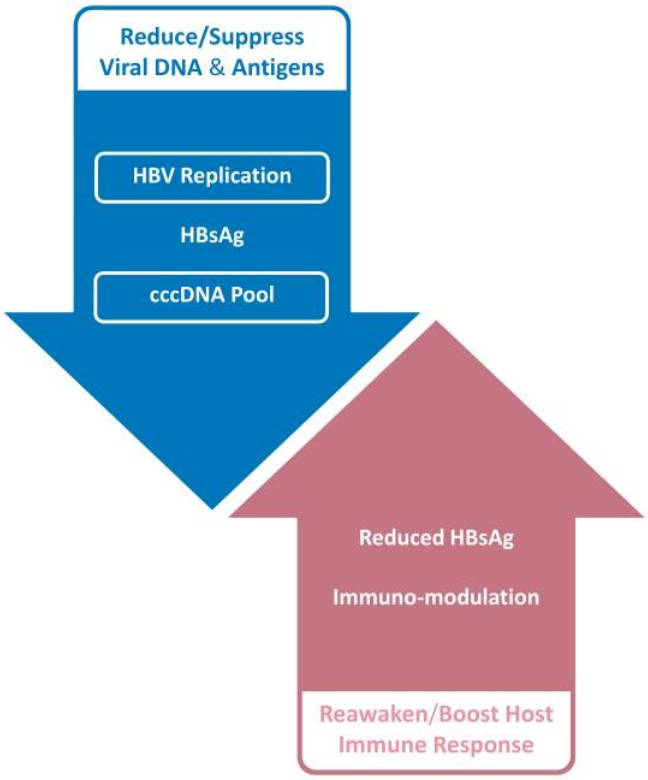

**MOA:** Mechanism Of Action | **NA:** Nucleoside Analogue | **PegIFN:** Pegylated Interferon | **HBsAg**: HBV Surface Antigen

# Arbutus HBV Pipeline


Arbutus BIOPHARMA NASDAQ: ABUS www.arbutusbio.com

# Capsid Inhibitor: Blocking HBV Replication

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

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# Next Generation Capsid Inhibitor

Potential for **increased** potency and **enhanced** resistance profile

- Next generation compound to be selected for IND-enabling studies by December 2019
- 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
- Intrinsic potency significantly better than AB-506 with EC50 $\leq$ 10 nM
- Provides the potential for low dose and greater therapeutic window
- Potential to address known capsid resistant variants T33N and I105T
- Projected to be once daily dosing

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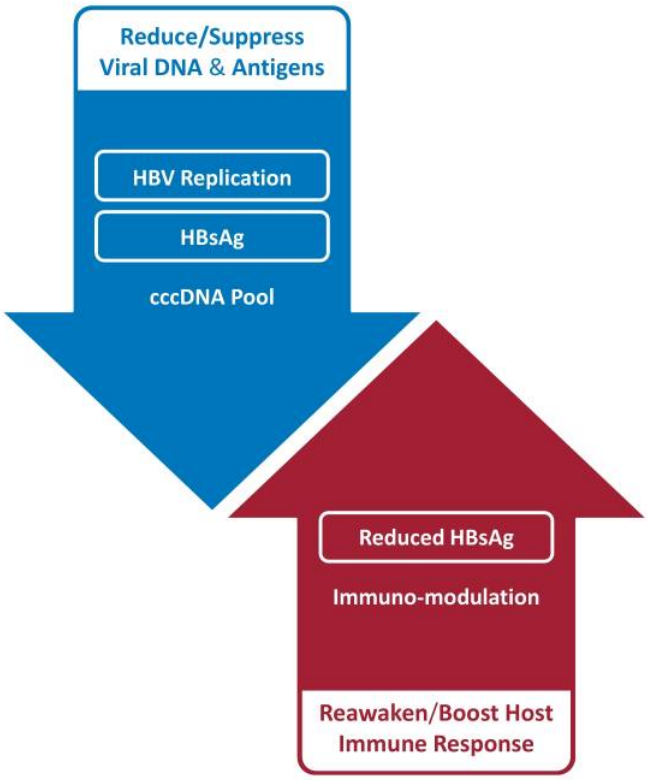
# Driving Down HBsAg

## Is A Key to Therapeutic Success in HBV

HBsAg is responsible for immune exhaustion

Replication inhibitors do not block HBsAg production

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# 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

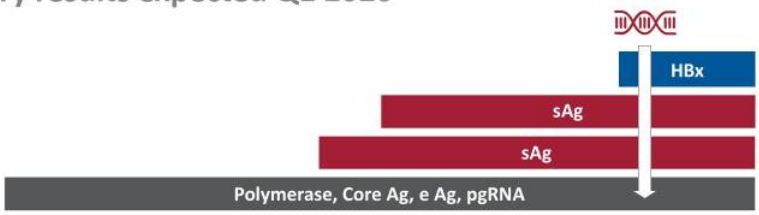
- Potent HBsAg reduction in preclinical models

Pan-genotypic activity across HBV genotypes

**Duration of HBsAg reduction supports once per month dosing**

Demonstrated complementarity with capsid inhibitors

**Phase I initiated in July 2019; preliminary results expected Q1 2020**

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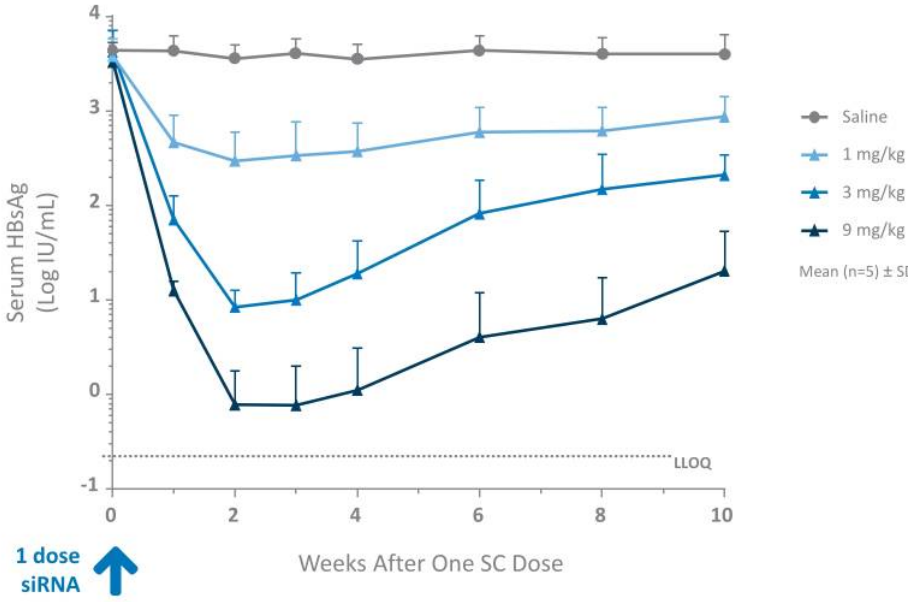
# AB-729

## In Vivo Single Dose Response & Duration

**Clear dose response**
in AAV mouse model

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

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




AB-729 also reduces HBV RNA, HBV DNA and e-antigen

Lee, A., Et al, EASL 2019, Abstract FRI-184

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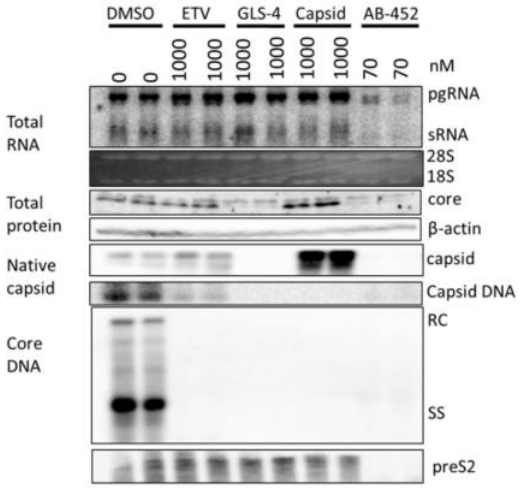
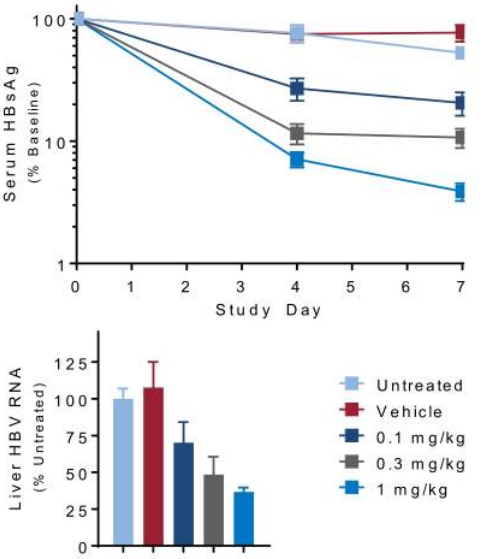
# Small Molecule HBV RNA Destabilizers

## HBV RNA reduction leads to interference in viral gene expression, DNA replication, and virion assembly




## AAV mouse model PO dosing




Dose-depende
reduction in H

HBsAg reducti
correlates wit
reductions in
HBV RNAs

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Gotchev, D., et al., AASLD, 2017, Abstract 923
Liu, F., et al., Int HBV Meeting 2018, Sicily

# AB-452 and RNA Destabilizer Program

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

### Completed

- ✓ IND enabling studies and 28 day toxicology
- ✓ AB-452 mechanism of action studies demonstrating AB-452 causes HBV mRNA poly A tail shortening
- ✓ Host protein knock out causes no cellular tox
- ✓ 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
- Additional, specialized *in vitro* and *in vivo* non-clinical safety assessments
- In depth DMPK evaluations
- 90 day toxicology studies, two species

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

# Arbutus HBV Pipeline


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