First Quarter 2022
Financial Results and Business Update

May 10, 2022

NASDAQ: AVIR

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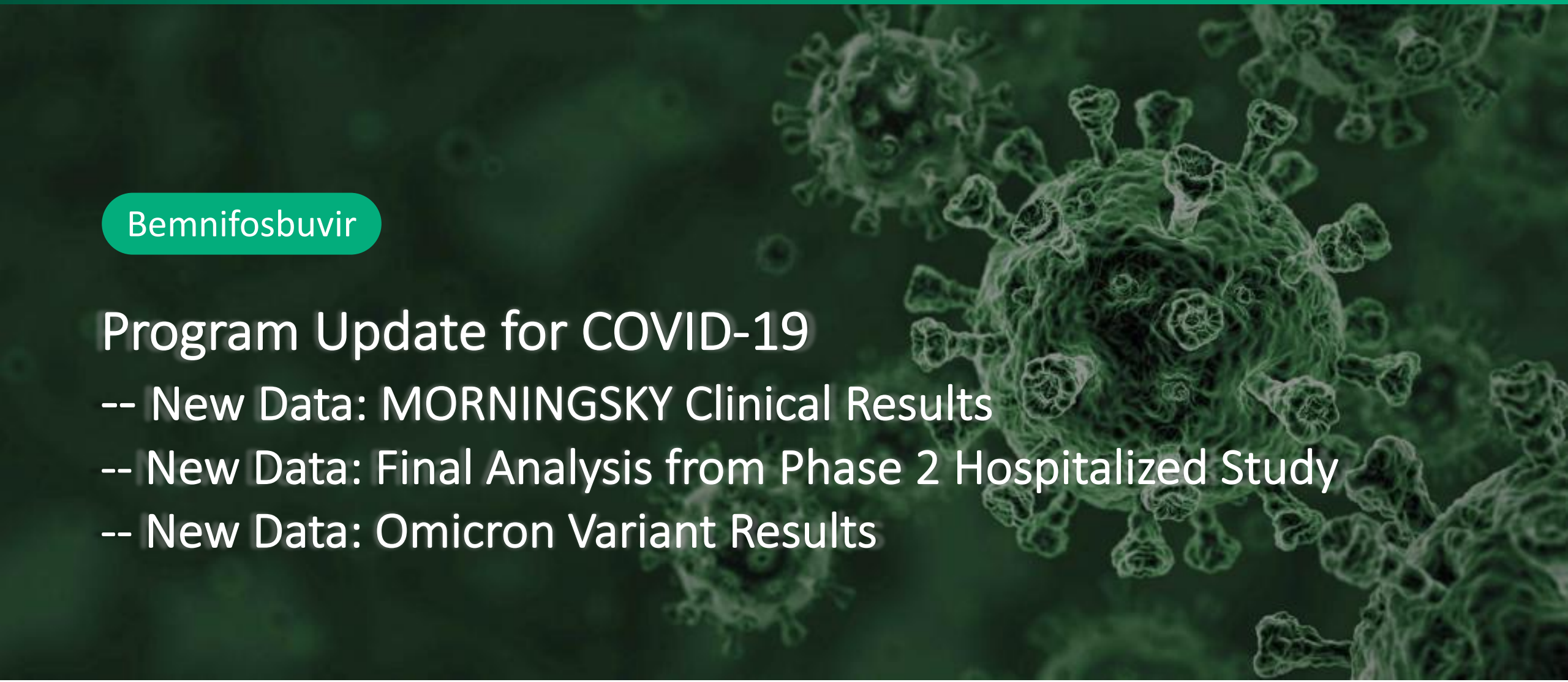
Market data and industry information used throughout this presentation are based on management's knowledge of the industry and the good faith estimates of management. We also relied, to the extent available, upon management's review of independent industry surveys and publications and other publicly available information prepared by a number of third-party sources. All of the market data and industry information used in this presentation involves a number of assumptions and limitations, and you are cautioned not to give undue weight to such estimates. Although we believe that these sources are reliable, we cannot guarantee the accuracy or completeness of this information, and we have not independently verified this information. While we believe the estimated market position, market opportunity and market size information included in this presentation are generally reliable, such information, which is derived in part from management's estimates and beliefs, is inherently uncertain and imprecise. No representations or warranties are made by the Company or any of its affiliates as to the accuracy of any such statements or projections. Projections, assumptions and estimates of our future performance and the future performance of the industry in which we operate are necessarily subject to a high degree of uncertainty and risk due to a variety of factors, including those described above. These and other factors could cause results to differ materially from those expressed in our estimates and beliefs and in the estimates prepared by independent parties.



Bemnifosbuvir

Program Update for COVID-19

-- New Data: MORNINGSKY Clinical Results

-- New Data: Final Analysis from Phase 2 Hospitalized Study

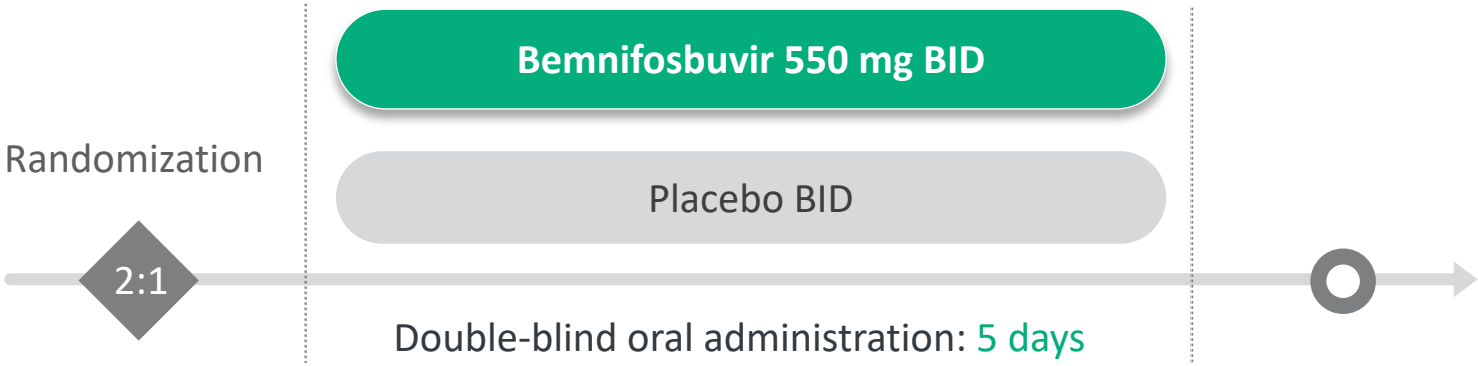
-- New Data: Omicron Variant Results

ATEA Pharmaceuticals

Bemnifosbuvir (AT-527) Global Phase 3 MORNINGSKY Trial:

Outpatient Setting, Mild to Moderate COVID-19 Patients With or Without Risk Factors

Inclusion Criteria: Patients eligible for management in an outpatient setting, ≤ 5 days of symptoms
N=~1400 planned



Objectives:

- Primary
- Time to alleviation or improvement of COVID-19 symptoms
- Secondary
- Hospitalization
- Death
- Virological endpoints

Status:

- ***Study enrolled 216 patients and closed out early with 207 efficacy evaluable patients***

New Data: MORNINGSKY Key Characteristics & Topline Clinical Results

- Study was closed out with 207 evaluable patients for efficacy
- Global and broad patient population studied
  - Approximately 50% high risk / 50% standard risk
  - 28% vaccinated
  - 56% seropositive at baseline
- Primary endpoint of time to alleviation/improvement of symptoms was not achieved
- **71% reduction of hospitalization** (bemnifosbuvir vs. placebo) and no deaths
  - Hospitalization and death was a secondary endpoint and is the highly favored endpoint by regulatory agencies, including FDA
- Bemnifosbuvir was generally safe and well tolerated at 550 mg BID
  - No drug related SAEs
  - AEs leading to treatment discontinuation were 3% for bemnifosbuvir vs. 7% for placebo
  - No GI-related events leading to treatment discontinuation

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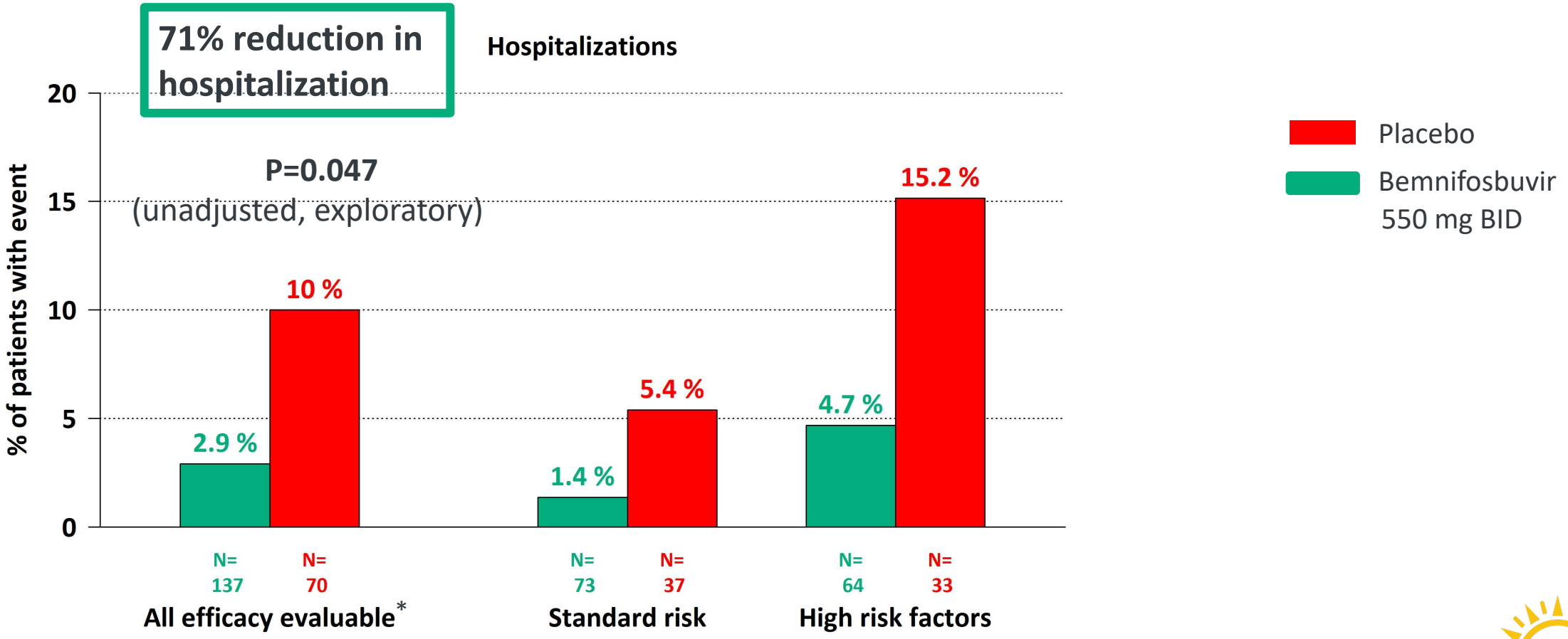
New Data: MORNINGSKY Clinical Results: Hospitalization and Death (Secondary Endpoint)

- Risk of hospitalization was **71% lower** for bemnifosbuvir vs. placebo
- No deaths were observed in study



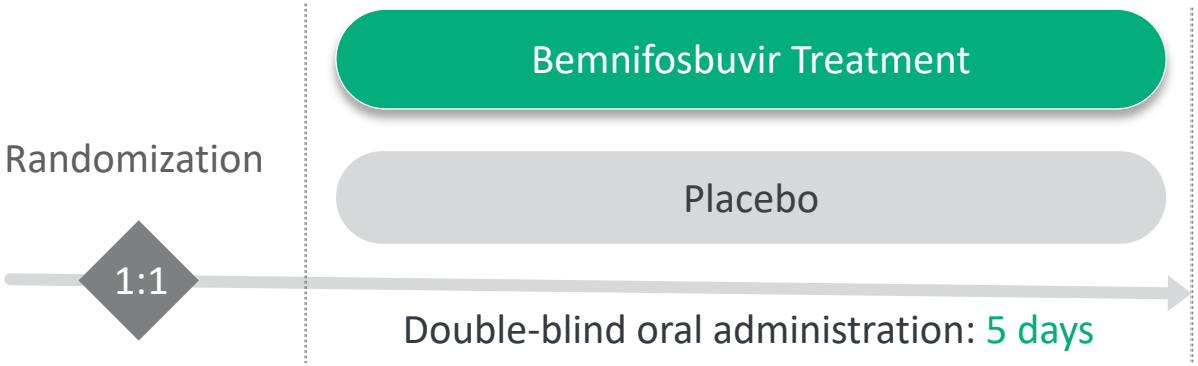
*Included patients who were randomized, received study drug and tested positive for SARS-CoV-2

Bemnifosbuvir Global Phase 2 Trial:

Hospitalized Patients with Risk Factors and Moderate COVID-19

Inclusion Criteria: adult patients (≥ 18 years old) with risk factors (obesity, diabetes, hypertension, asthma), **symptoms for ≤ 5 days** (hospitalized or confined)

Countries: Global Study



Objectives:

Primary:

- Reduction in progressive respiratory insufficiency

Secondary:

- Mortality
- Virological endpoints
- Safety and tolerability

Status:

- ***Study closed out early due to evolving COVID-19 management of patients***
- ***Final analysis on 83 patients***
  - ***Part A: 41 patients in 550 mg BID arm; 40 patients in placebo arm***
  - ***Part B: 0 patients in 1100 mg BID arm; 2 patients in placebo arm***

New Data: Final Analysis from Phase 2 Hospitalized Study in High-Risk Patients

*Potential Clinical Benefits with Bemnifosbuvir Treatment (*550 mg BID)

- Low rates of progression to respiratory insufficiency (primary endpoint)
  - 7.5% with bemnifosbuvir treatment vs. 10% on placebo
    - Respiratory events associated with progression were less severe in the bemnifosbuvir treated patients as compared to those receiving placebo
- 0 deaths with bemnifosbuvir treatment vs 3 on placebo (secondary endpoint)
- Final virology results remained consistent with previously reported interim virology data (secondary endpoint)
- Bemnifosbuvir was generally safe and well tolerated with no drug related serious adverse events and no adverse events leading to treatment discontinuation

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New Data: AT-511 (free base of Bemnisfobuvir) Remains Fully Active Against Omicron Variant (BA.1)

Bemnifosbuvir's Unique Mechanism Provides Activity Across All Variants of Concern

	AT-511 EC_{90} (µM)				
	#1	#2	#3	Av	SD
Original (USA-WA1)	0.23	0.41	0.76	0.47	0.27
Omicron (V3405)	0.25	0.46	0.78	0.50	0.27
Ratio (Omicron/USA-WA1)	1.1	1.1	1.0	1.1	0.06

Readout: VYR (virus yield assay)
Cells: EpiAirway (3D mucociliary tissue model consisting of normal, human-derived tracheal/bronchial epithelial cells)

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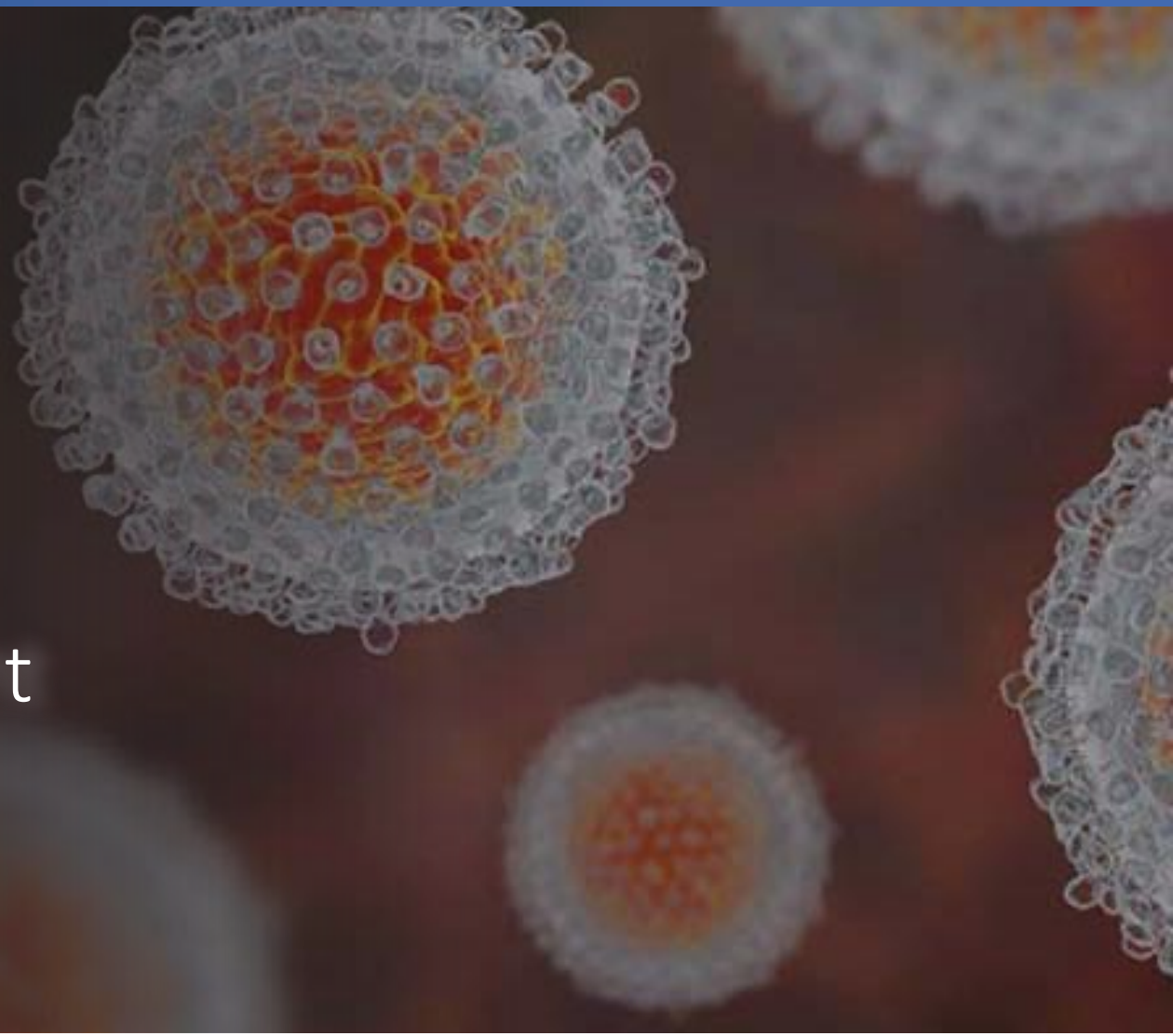
Next Steps for Bemnifosbuvir COVID-19 Clinical Development Program

- Phase 3 MORNINGSKY study (closed out early) results have potential to accelerate COVID-19 program
  - A study with 207 evaluable patients is in the range of a Phase 2 study
    - An additional Phase 2 monotherapy outpatient study is no longer planned
- Phase 2 hospitalized study final analysis are consistent with the results in MORNINGSKY trial
- Bemnifosbuvir 550 mg BID is efficacious, generally safe, well tolerated with a favorable GI tolerability profile
- Pursuing regulatory interactions to review data package and the next steps in the clinical development program

AT-752

Program Update: Phase 2 Clinical Development for Dengue



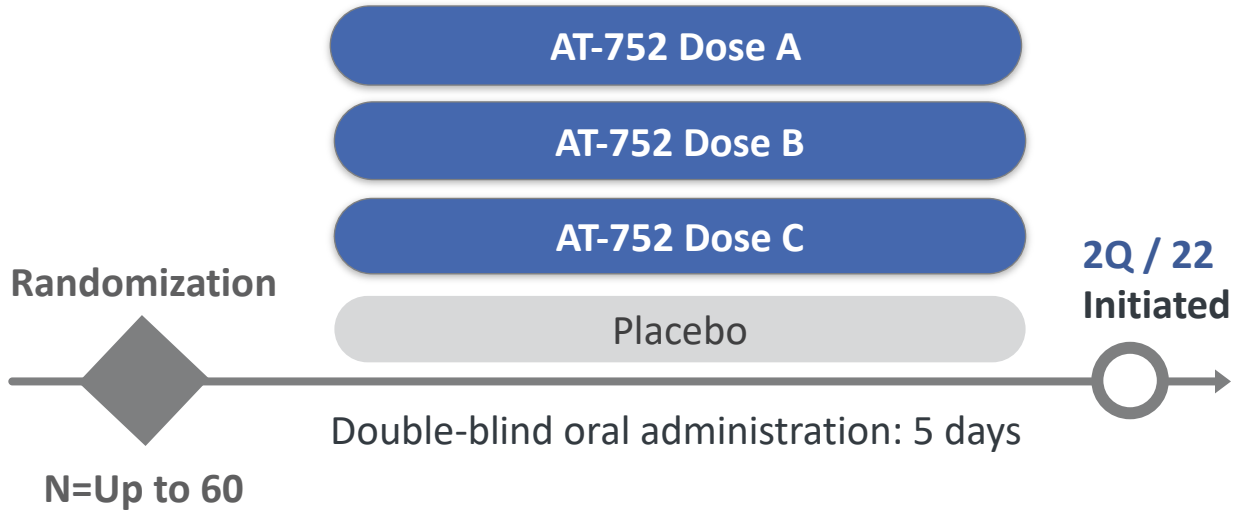
Initiated: AT-752 Phase 2 Global Proof-of-Concept Treatment for Dengue Study

Initial Results Expected Late 2022

Inclusion Criteria: adults with fever (≥38°C) within 48 hour of probable dengue infection and positive result on NS1 antigen test or RT-PCR assay
Location: Endemic Countries

Objectives: Antiviral activity, safety, PK

Primary endpoint: Change in dengue virus viral load from baseline



- Randomized, double-blind, placebo-controlled trial in adult patients with dengue fever
- **Objectives:** antiviral activity, safety, and PK
  - Primary endpoint: Change in dengue virus viral load from baseline
  - Exploratory: viremia, NS1 levels, fever
- **Population:** adults with fever (≥38°C) within 48 h with probable dengue infection and positive result on NS1 antigen test or RT-PCR assay

Initiated: AT-752 Human Challenge Infection Model

Results Expected Q4 2022

Population:
Healthy subjects, 18-55 years

Location: US

Design:

- Day 1: 12 subjects randomized 3:1 administered oral AT-752 or matching placebo
- Day 2: Challenged with 0.5 mL DENV-1-LVHC (6.5×10^3 PFU/mL)

Endpoints:

- Mean quantitative viral load (peak, duration and AUC) by qRT-PCR until 28 days post virus inoculation
- Time to positive viral load by qRT-PCR

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Hepatitis C Program Update: Potential Best-in-Class Pan-Genotypic Regimen

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HCV Development for Bemnifosbuvir + Ruzasvir Update

Potential Best-in-Class Pan-genotypic Regimen

- **Currently manufacturing ruzasvir clinical trial supplies for Phase 2**
- **Evaluating clinical trial designs for the Phase 2 combination trial, which is expected to be initiated late 2022**
- **Phase 2 combination program expected to evaluate convenient and short treatment duration**

Bemnifosbuvir + Ruzasvir Competitive Profile

Convenient and Short duration

Potential for first RBV-free therapy for decompensated disease

- ✓ Bemnifosbuvir is the most potent nucleotide inhibitor to-date being developed for HCV
- ✓ Ruzasvir is a highly potent Phase 2-ready drug candidate
- ✓ Potential for best-in-class pan-genotypic fixed-dose combination

Good SS et al (2020) Preclinical evaluation of AT-527, a novel guanosine nucleotide prodrug with potent, pan-genotypic activity against hepatitis C virus. PLoS ONE 15(1): e0227104. https://doi.org/10.1371/journal.pone.0227104

Financial Summary

Financial Update First Quarter 2022

Condensed Consolidated Statement of Operations and Comprehensive Income (Loss)
(in thousands, except share and per share amounts)
(unaudited)

	Three Months Ended March 31,	
	2022	**2021**
Collaboration revenue	$ —	$ 65,985
Operating expenses		
Research and development	29,633	26,571
General and administrative	12,542	8,759
Total operating expenses	42,175	35,330
Income (loss) from operations	(42,175)	30,655
Interest income and other, net	98	58
Income (loss) before income taxes	(42,077)	30,713
Income tax expense	—	—
Net income (loss) and comprehensive income (loss)	$ (42,077)	$ 30,713
Net income (loss) per share attributable to common stockholders		
Basic	$ (0.51)	$ 0.37
Diluted	$ (0.51)	$ 0.34
Weighted-average common shares outstanding		
Basic	83,176,408	82,577,836
Diluted	83,176,408	89,099,075

Financial Update First Quarter 2022

Selected Condensed Consolidated Balance Sheet Data
(in thousands, except share and per share amounts)

	March 31, 2022	December 31, 2021
	(unaudited)	
Cash and cash equivalents	$ 705,545	$ 764,375
Working capital(1)	684,622	715,520
Total assets	717,189	772,892
Total liabilities	37,305	62,815
Total stockholders' equity	679,884	710,077

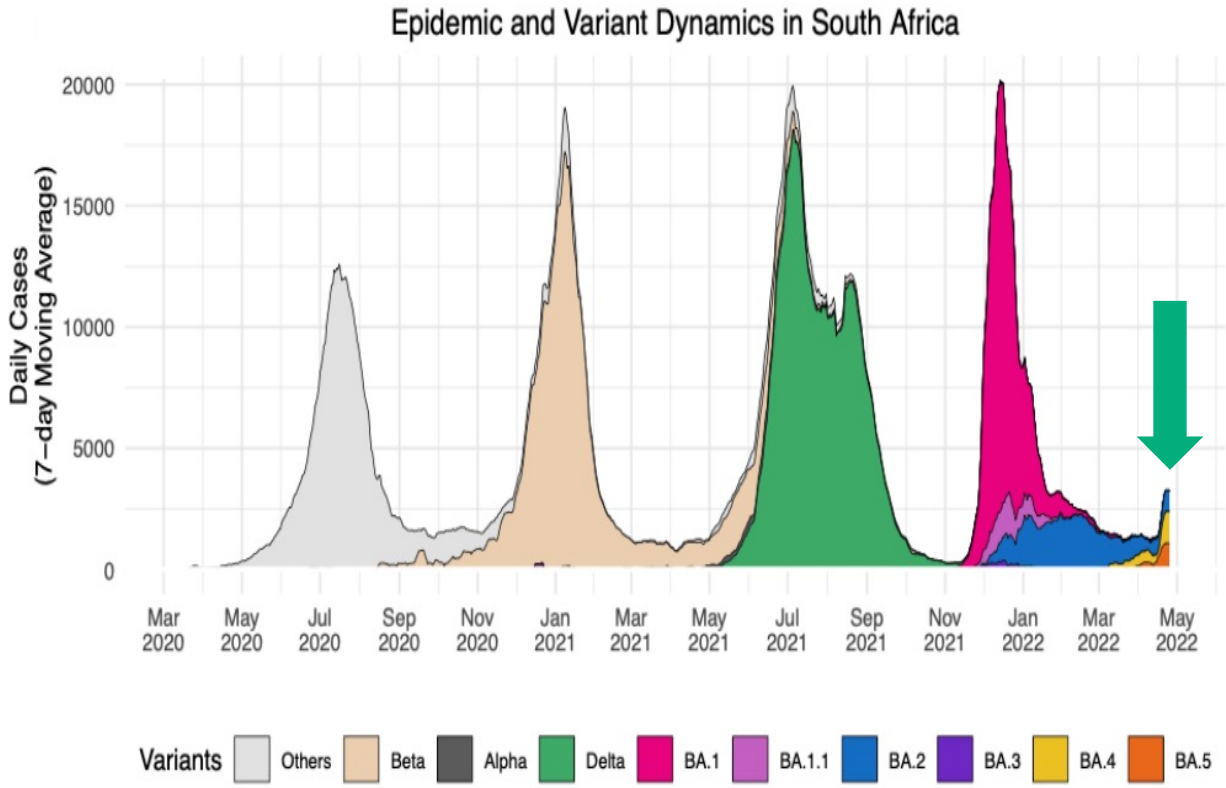
(1) The Company defines working capital as current assets less current liabilities. See the Company's condensed consolidated financial statements in its Quarterly Report on Form 10-Q for the three months ended March 31, 2022 for further detail regarding its current assets and liabilities.

Closing Remarks

COVID-19: Continued Emergence and Evolution of Variants

- ***There remains a need for new oral antiviral treatments***
  - Relapse, drug-drug interactions, potential safety, efficacy and resistance concerns
- New variants continue to fuel surges of cases and can be life threatening to those at high risk
- BA.4 and BA.5 are expected to cause a major surge in the US during the fall / winter 2022-2023

Continued Emergence and Evolution of Omicron in South Africa, New BA.4 and BA.5 Lineage



Data in preprint in MedRxIV, *Continued Emergence and Evolution of Omicron in South Africa: New BA.4 and BA.5 Lineage, Tulio de Oliver*ia et all

Fully Funded, Multiple Upcoming Value-Driving Milestones

ssRNA VIRUS	THERAPEUTIC INDICATION		PRECLINICAL	PHASE 1	PHASE 2	PHASE 3
Coronaviridae	COVID-19[1]	Bemnifosbuvir (AT-527) Nucleotide*				
	COVID-19	Bemnifosbuvir Nucleotide + Protease inhibitor				
Flaviviridae	Hepatitis C Virus (HCV)[2]	Bemnifosbuvir Nucleotide				
	Hepatitis C Virus (HCV)	Ruzasvir** (NS5A inhibitor)				
	Dengue Virus	AT-752 Nucleotide				
Paramyxoviridae	Respiratory Syncytial Virus (RSV)	Product Candidates				

2022 EXPECTED MILESTONES

COVID-19

- Advance bemnifosbuvir clinical program in 2022

HCV

- Initiate bemnifosbuvir + Ruzasvir Phase 2 combo trial: **late 2022**

Dengue

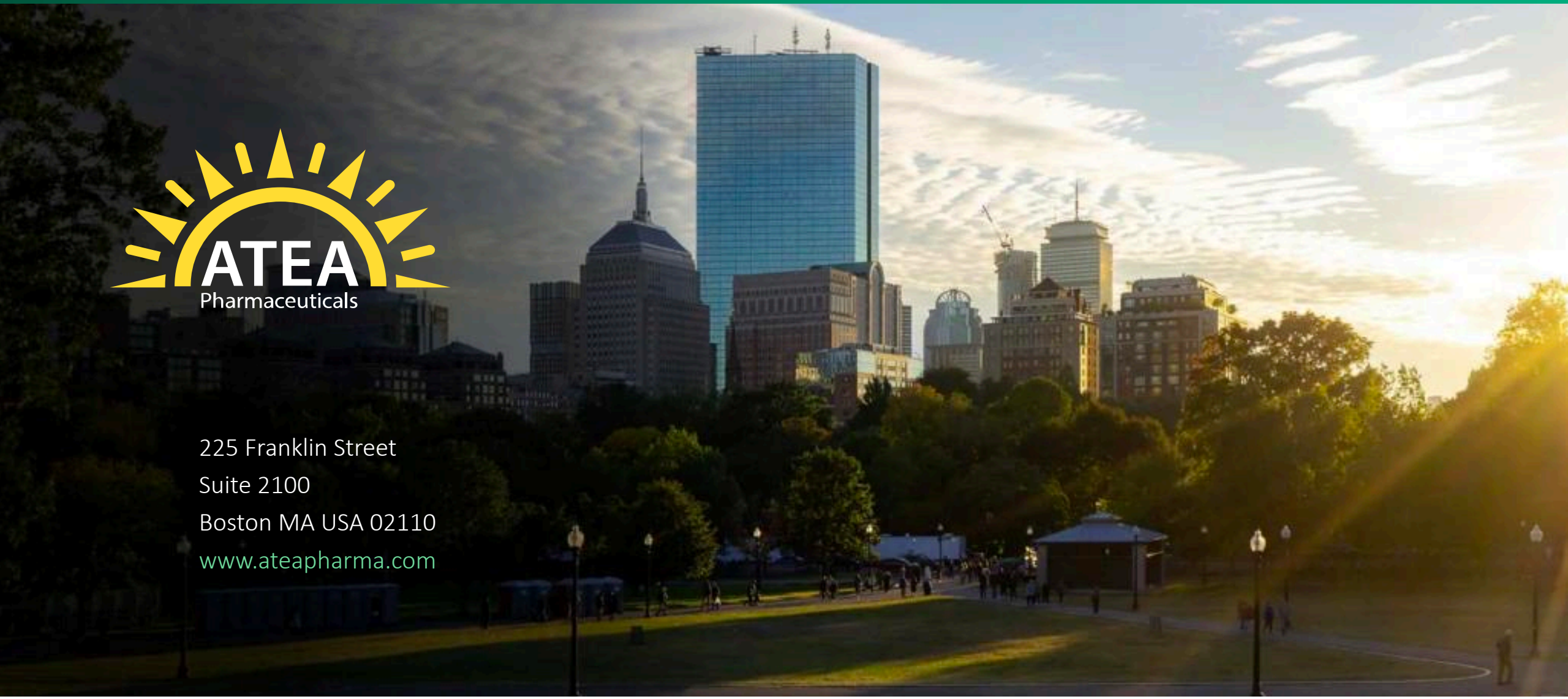
- Phase 2 proof-of-concept program: **initial data late 2022**

Cash runway through 2025

*Bemnifosbuvir is a double prodrug nucleotide analog. ** Worldwide exclusive license for all uses from Merck. Bemnifosbuvir is the generic name for AT-527.

1. Bemnifosbuvir as monotherapy has generated Phase 2 results. I*n vitro* combination studies are being conducted to generate data in support of clinical combination studies for COVID-19. 2. Bemnifosbuvir and Ruzasvir have generated Phase 2 results and are anticipated to be developed as a combination for HCV.

Q & A Session



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