ATEA Pharmaceuticals

Fourth Quarter and Full Year 2021 Financial Results and Business Update

February 28, 2022

NASDAQ: AVIR

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This presentation contains "forward-looking statements" within the meaning of the Private Securities Litigation Reform Act of 1995. Forward-looking statements are neither historical facts nor assurances of future performance. Instead, they are based on our current beliefs, expectations and assumptions regarding the future of our business, future plans and strategies, our clinical results and other future conditions. All statements other than statements of historical facts contained in this presentation are forward-looking statements, including statements by Atea Pharmaceuticals, Inc. (the "Company") regarding future results of operations and financial position, including our anticipated cash runway; business strategy; current and prospective product candidates; anticipated milestone events; potential benefits of our product candidates and market opportunity; planned clinical trials, including, without limitation, anticipated initiation, enrollment, regulatory submission and data readout timelines; preclinical activities; product approvals; manufacturing availability; degree of market acceptance of any products that may be approved; research and development costs; current and prospective collaborations; and prospects and opportunities for investors. In some cases, you can identify forward-looking statements by terms such as "may," "will," "should," "expects," "plans," "anticipates," "could," "intends," "targets," "projects," "contemplates," "believes," "estimates," "predicts," "potential" or "continue" or the negative of these terms or other similar expressions.

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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.

Proprietary Platform Generates Deep Antiviral Pipeline

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				

HIGHLIGHTS

- Bemnifosbuvir (AT-527): preferred backbone for combination with protease inhibitor for COVID-19
- HCV and dengue programs advancing in Phase 2 trials in 2022
- Multiple value-driving milestones over next 18-months across several indications
- $764.4 million in cash and cash equivalents as of 12/31/21
- 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 has been evaluated in 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 been evaluated in Phase 2 studies and are anticipated to be developed as a combination for HCV.

Bemnifosbuvir

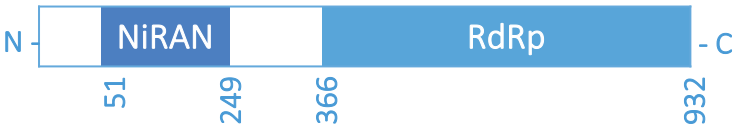
Combination Strategy for COVID-19

Vision for Bemnifosbuvir in COVID-19: Preferred Backbone of Combination Therapy

Bemnifosbuvir (AT-527) Addresses Key Challenges of COVID-19

- Oral nucleotide with antiviral **activity across SARS-CoV-2 variants of concern/interest**
- Targets viral RNA polymerase, **highly conserved** enzyme critical to viral replication
- Unique mechanism with **dual targets creating** high barrier to resistance:
  - **NiRAN inhibition**
  - **Chain termination** (RdRp) w/o introducing mutations in viral genome
- **Non-mutagenic** in mammalian cells in nonclinical studies **and no effect on reproduction and non-teratogenic**
- **Rapid & sustained antiviral activity** demonstrated in Ph 2 in high-risk patients

Nsp12 Functional Domains SARS-Cov-2



RdRp = RNA-dependent RNA polymerase
NiRAN = Nidovirus RdRp-Associated Nucleotidyltransferase

Nucleos(t)ide class: Established therapeutics as the backbone of oral combination treatments for many RNA viral diseases

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Bemnifosbuvir Safety and Antiviral Activity Summary

Highlights of Accomplishments To-Date

- ✓ Bronchoalveolar lavage study confirmed drug levels approximating plasma levels **achieved in airways**
- ✓ **Rapid and sustained antiviral activity** demonstrated in **two Phase 2 studies in high-risk patients**
- ✓ **No dose adjustment necessary** for co-administration with drugs that are CYP3A substrates
- ✓ Generally **safe and well tolerated**
- ✓ Unique dual mechanism of action **published in peer-reviewed journal *Nature Communications*** (February 2022)

2022: Priority is to advance clinical development in combination with a PI

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

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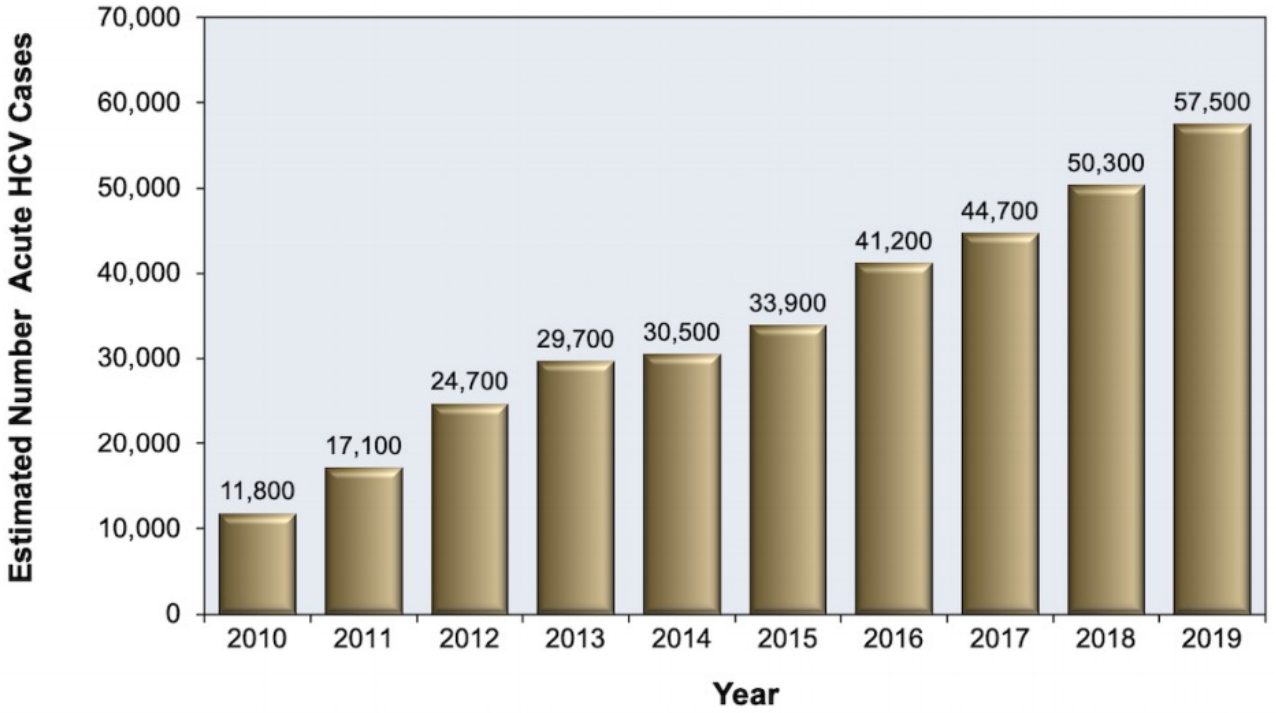
Fueled by the Opioid Crisis, US Hepatitis C Infections Continue to Increase

2021 Global HCV Market Approached $4 Billion; US ~50% of Global DAA Sales in 2021*

- HCV-related mortality incidence has increased even with effective DAA combinations
- Approx. 70% of long-term IV drug users have HCV in US
- Convenient 8 weeks or shorter treatments are needed for new wave of early/acute HCV infection
- Best-in-class combination has potential for > $1B



Source: Centers for Disease Control and Prevention (CDC). 2019 Viral Hepatitis Surveillance Report—Hepatitis C. Published May 2021.

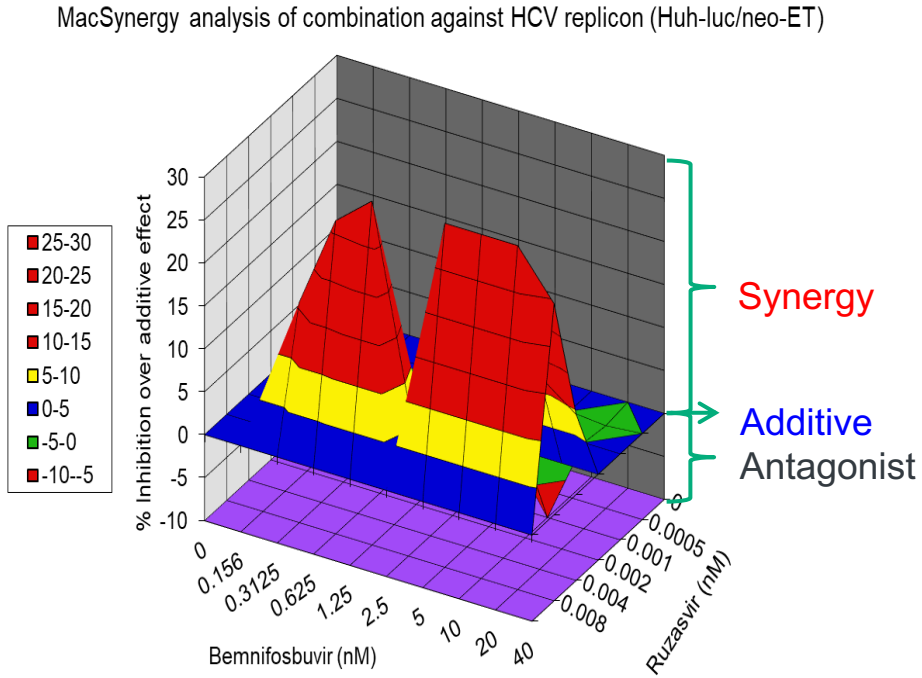
*Source: Gilead 2021 Investor Report, AbbVie 2021 Investor Report

RUZASVIR (RZR) – Oral, Highly Potent Pan-genotypic NS5A Inhibitor for HCV Patients

Favorable Safety and Drug-Drug Interaction Profile, Ideal for Combination with Bemnifosbuvir

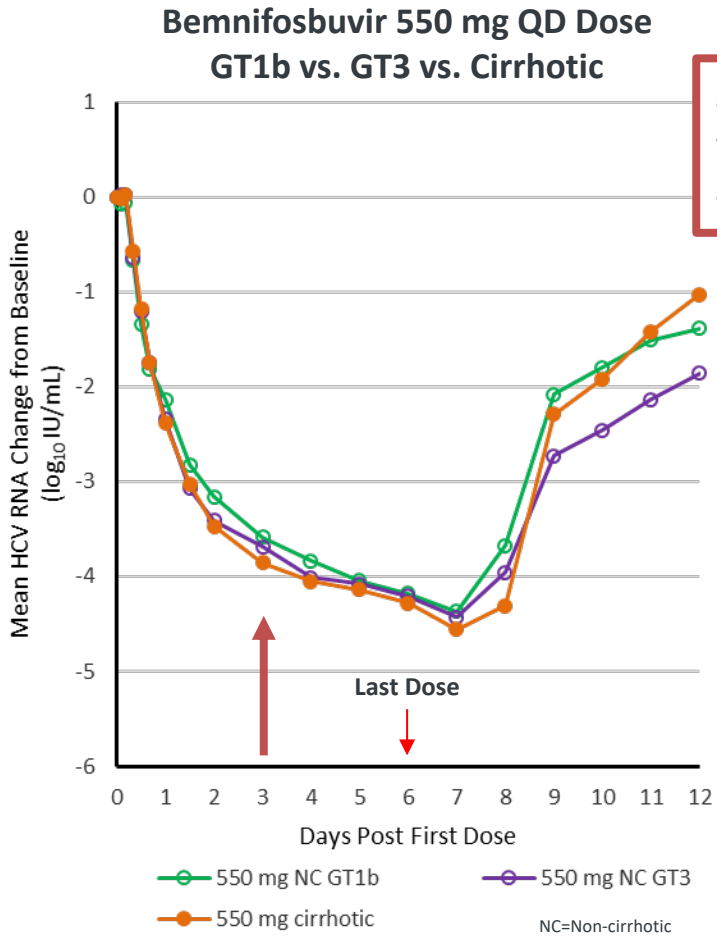
- Exclusive worldwide license from Merck
  - License includes all human indications
- Next generation pan-genotypic potent antiviral activity in picomolar range in *in vitro* studies confirmed with > 3 $\log_{10}$ viral load decline in HCV-infected patients as monotherapy
- **Demonstrated substantial synergy with bemnifosbuvir *in vitro***
- **>1,200** HCV-infected patients administered RZR in combination at daily doses up to 180 mg for up to 24 wks
  - RZR demonstrated favorable safety profile
- Low potential for drug-drug interactions
- PK profile supports once-daily dosing

In Vitro Synergy Assay Performed in HCV GT1b Replicon (Huh-luc/neo-ET)



Bemnifosbuvir Demonstrated Unprecedented HCV Antiviral Activity with Favorable Safety Profile in Phase 1b and Phase 2 Clinical Trials

- Bemnifosbuvir ~10-fold more active than sofosbuvir (SOF) *in vitro* vs panel of laboratory strains and clinical isolates of HCV genotypes 1–5
- Remained fully active against SOF resistance-associated strains (S282T)
- Favorable *in vivo* preclinical safety profile
- PK profile allows once-daily dosing
- >480 subjects (including healthy volunteers & HCV or COVID-19 patients) administered bemnifosbuvir in 10 clinical trials with favorable safety and tolerability
  - HCV patients exposed to 550 mg dose of bemnifosbuvir for durations of 8-12 weeks with no-drug related SAEs



Steep decline consistent with a highly potent drug, -4 logs within 72 hours

4.5 $\log_{10}$ ± 0.3 IU/ml in GT3-infected patients

4.6 $\log_{10}$ ± 0.5 IU/ml in patients with compensated cirrhosis (GT1,2,3)

HCV Development Plan for Bemnifosbuvir + Ruzasvir

Potential Best-in-Class Pan-genotypic Regimen

- **Bemnifosbuvir + Ruzasvir:** Phase 2 combination-ready assets
- **Phase 2 combination program expected to initiate 2H 2022 to evaluate:**
  - Convenient and short 8-week duration (potentially shorter for early/acute infections)
  - Acute and chronic HCV infection
  - Patients with compensated and decompensated liver disease

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

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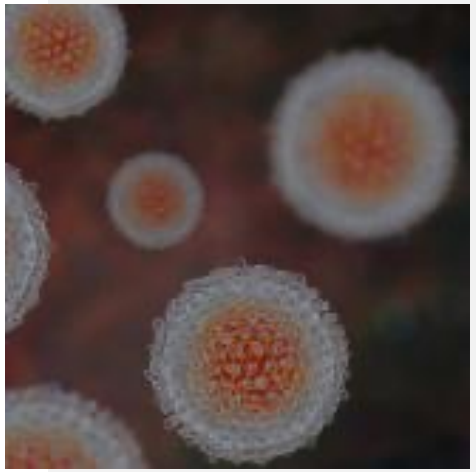
AT-752

Phase 2 Clinical Development for Dengue Fever

Dengue Fever: Significant Disease Burden and High Unmet Medical Need



Most Prevalent Mosquito-borne Viral Disease

- >Half of the world's population at risk
- Endemic in over 100 countries
- Caused by 4 serotypes
- Symptoms 3-14 days post-infection, high fever 2-7 days; painful, debilitating

No Antiviral Treatments Available

- Only supportive care (analgesics, judicious fluid therapy)
- Dengvaxia® (for prevention) was approved in 2017 with a restricted label; uptake has been low based on safety concerns
- Takeda dengue vaccine in late-stage development
  - Expected peak revenues $700M - $1.6B[2]

Significant Disease Burden

$8-9B	Global economic burden, annually[1]
~4B	People live in high-risk areas*
~400M	Estimated infected annually
12-44%	Severe dengue mortality rate if left untreated
20,000	Deaths annually
500,000	Cases develop into dengue hemorrhagic fever annually, requiring hospitalization (approx. 2.5% mortality rate)

AT-752: Promising Oral Product Profile

- Purine nucleotide prodrug with potent *in vitro* activity (EC_{90}~ 0.6 µM) against all serotypes tested
- MOA: inhibition of dengue viral polymerase
- Potent *in vivo* activity in a dengue animal model and no toxicity
- Worldwide intellectual property protection
- Successful development and FDA approval of AT-752 may result in US priority review voucher

*More than 100 countries in Southeast Asia, Western Pacific, Eastern Mediterranean, Latin America and Puerto Rico; 2.3M in the Americas alone, causing ≥ 1, 200 deaths

[1]The global economic burden of dengue: a systematic analysis: *Donald S Shepard, Eduardo A Undurraga, Yara A Halasa, Jeffrey D Stanaway: Lancet Infect Dis* 2016; 16: 935–41 2. Takeda earnings presentation April 2021.

AT-752 Preclinical and Clinical Summary

Highlights of Accomplishments To-Date

- ✓ Successful completion of Phase 1 study (n=65)
  - Part 1: single ascending dose and Part 2: three multiple ascending dose QD/BID/TID cohorts
- ✓ AT-752 was well tolerated after either single or multiple doses in healthy subjects
- ✓ Favorable safety profile with no changes in relevant laboratory parameters
  - No premature discontinuations due to adverse events or serious adverse events
  - Most adverse events were mild
- ✓ Publication of *in vitro* and *in vivo* data of AT-752 in peer-reviewed journals
  - *Antimicrobial Agents and Chemotherapy* (August 2021)
  - *PLOS Neglected Tropical Diseases* (January 2022)

2022: Advance Phase 2 Program

AT-752 Human Challenge Infection Model

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

- Initiation 1H 2022
- Results expected late 2022

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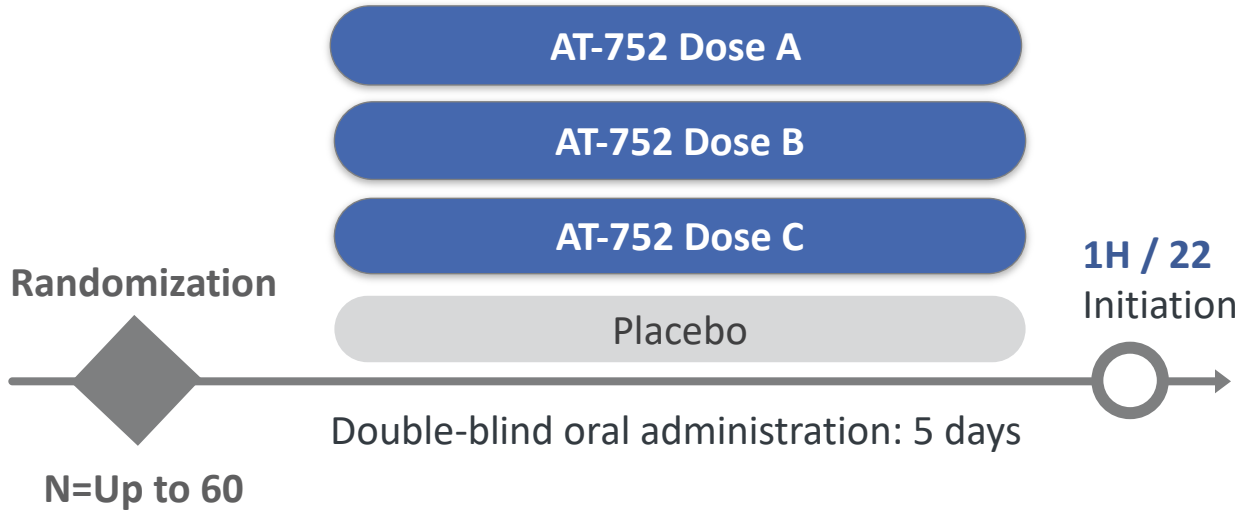
AT-752 Phase 2 Global Proof-of-Concept Treatment Study Design

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
- Initiation 1H 22 with initial results expected late 2022

Financial Summary and Closing Remarks

Financial Update

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

	Three Months Ended December 31,		Year Ended December 31,	
	2021 (unaudited)	2020 (unaudited)	2021 (unaudited)	2020
Collaboration revenue	$ 192,180	$ 48,633	$ 351,367	$ 48,633
Operating expenses				
Research and development	57,811	13,846	167,205	38,023
General and administrative	13,188	14,140	45,785	21,640
Total operating expenses	70,999	27,986	212,990	59,663
Income (loss) from operations	121,181	20,647	138,377	(11,030)
Interest income and other, net	51	9	213	83
Income (loss) before income taxes	121,232	20,656	138,590	(10,947)
Income taxes	4,100	—	17,400	—
Net income (loss) and comprehensive income (loss)	$ 117,132	$ 20,656	$ 121,190	$ (10,947)
Net income (loss) per share attributable to common stockholders				
Basic	$ 1.41	$ 0.37	$1.46	$ (0.51)
Diluted	$ 1.34	$ 0.25	$1.37	$ (0.51)
Weighted-average common shares outstanding				
Basic	83,095,320	56,198,542	82,820,037	21,592,441
Diluted	87,092,688	81,731,329	88,249,243	21,592,441

Financial Update

Selected Condensed Consolidated Balance Sheet Data

(in thousands except share and per share amounts)

	December 31, 2021 (unaudited)	December 31, 2020
Cash and cash equivalents	$ 764,375	$ 850,117
Working capital (1)	715,520	547,682
Total assets	772,892	863,632
Total liabilities	62,815	315,831
Total stockholder's equity	710,077	547,801

(1) The Company defines working capital as current assets less current liabilities. See the Company's consolidated financial statements in its Annual Report on Form 10-K for the year ended December 31, 2021, to be filed February 28, 2022, for further detail regarding its current assets and liabilities.

Fully Funded, Multiple Upcoming Value-Driving Milestones

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Paramyxoviridae	Respiratory Syncytial Virus (RSV)	Product Candidates				

2022 EXPECTED MILESTONES

COVID-19

- Initiate bemnifosbuvir + protease inhibitor combination clinical program: **late 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

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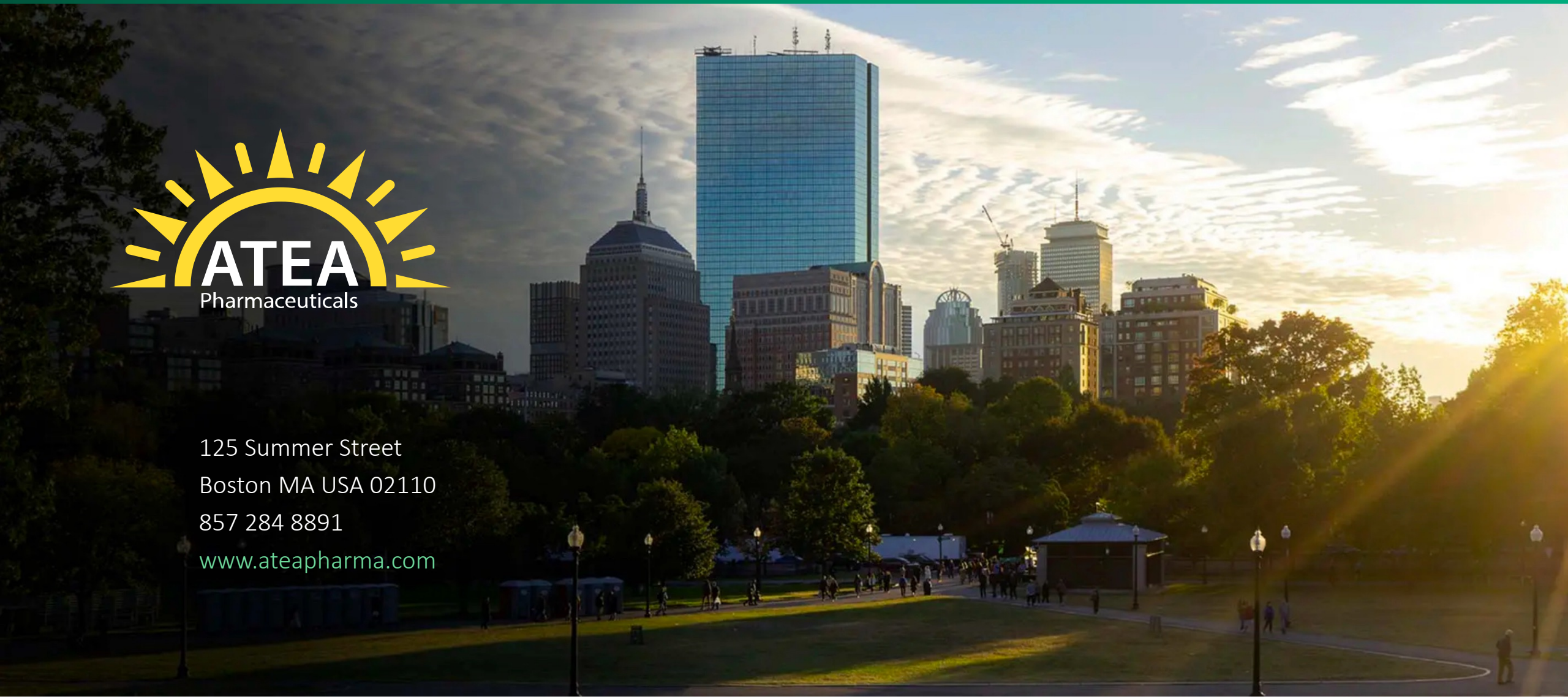
Q & A Session



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