DISCLAIMERS

Forward-Looking Statements
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.

The information in this presentation, including without limitation the forward-looking statements contained herein, represent our views as of the date of this presentation. These statements are neither promises nor guarantees, but involve known and unknown risks, uncertainties and other important factors that may cause our actual results, performance or achievements to be materially different from any anticipated results, performance or achievements expressed or implied by the forward-looking statements. Risks and uncertainties that may cause actual results to differ materially include uncertainties inherent in the drug development process and the regulatory approval process, in particular for bemnifosbuvir combination product candidates and AT-752, our reliance on third parties over which we may not always have full control, competition from treatments for COVID-19 and hepatitis C and vaccines for COVID-19 and dengue, risks related to the COVID-19 pandemic on our business, and other important risks and uncertainties that are described in our most recent Annual Report on Form 10-K filed with the Securities and Exchange Commission (“SEC”) and our other filings with the SEC. New risks and uncertainties may emerge from time to time, and it is not possible to predict all risk factors and uncertainties. Accordingly, you are cautioned not to place undue reliance on these forward-looking statements.

Except as required by applicable law, we do not plan to publicly update or revise any forward-looking statements contained herein, whether as a result of any new information, future events, changed circumstances or otherwise. No representations or warranties (expressed or implied) are made about the accuracy of any such forward-looking statements, including statements by Atea Pharmaceuticals, Inc. 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.

Industry Information
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

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<thead>
<tr>
<th>ssRNA VIRUS</th>
<th>THERAPEUTIC INDICATION</th>
<th>PRECLINICAL</th>
<th>PHASE 1</th>
<th>PHASE 2</th>
<th>PHASE 3</th>
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<td>COVID-19</td>
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<td>Hepatitis C Virus (HCV)</td>
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<td>Ruzasvir** (NS5A inhibitor)</td>
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<td>Dengue Virus</td>
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<td></td>
<td>AT-752 Nucleotide</td>
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<tr>
<td>Paramyxoviridae</td>
<td>Respiratory Syncytial Virus (RSV)</td>
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<td></td>
<td>Product Candidates</td>
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</tbody>
</table>

**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

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* 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. *In 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

Nucleos(t)ide class: Established therapeutics as the backbone of oral combination treatments for many RNA viral diseases
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.
Hepatitis C: Potential Best-in-Class Pan-Genotypic Regimen
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

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
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) \textit{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 \textit{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

<table>
<thead>
<tr>
<th>Genotype</th>
<th>Last Dose</th>
<th>Mean HCV RNA Change from Baseline (log_{10} IU/mL)</th>
</tr>
</thead>
<tbody>
<tr>
<td>GT1b vs. GT3 vs. Cirrhotic</td>
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<td></td>
</tr>
<tr>
<td>550 mg GT1b NC</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>550 mg GT3 NC</td>
<td>-3.5</td>
<td></td>
</tr>
<tr>
<td>550 mg Cirrhotic</td>
<td>-4.5</td>
<td></td>
</tr>
</tbody>
</table>

\(4.5 \log_{10} \pm 0.3\) IU/ml in GT3-infected patients

\(4.6 \log_{10} \pm 0.5\) 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 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

### Bemnifosbuvir + Ruzasvir Competitive Profile

- Convenient and Short duration

  Potential for first RBV-free therapy for decompensated disease
AT-752

Phase 2 Clinical Development for Dengue Fever
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 - $1.6B²

Significant Disease Burden

- $8-9B Global economic burden, annually¹
- ~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 (EC₉₀ ~ 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
²Takeda 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 ($6.5 \times 10^3$ 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
**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
### Condensed Consolidated Statement of Operations and Comprehensive Loss
(in thousands except share and per share amounts)

<table>
<thead>
<tr>
<th></th>
<th>Three Months Ended December 31,</th>
<th>Year Ended December 31,</th>
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</thead>
<tbody>
<tr>
<td></td>
<td>2021 (unaudited)</td>
<td>2020 (unaudited)</td>
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<tr>
<td>Collaboration revenue</td>
<td>$192,180</td>
<td>$48,633</td>
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<tr>
<td>Operating expenses</td>
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<tr>
<td>Research and development</td>
<td>57,811</td>
<td>13,846</td>
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<tr>
<td>General and administrative</td>
<td>13,188</td>
<td>14,140</td>
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<tr>
<td>Total operating expenses</td>
<td>70,999</td>
<td>27,986</td>
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<tr>
<td>Income (loss) from operations</td>
<td>121,181</td>
<td>20,647</td>
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<tr>
<td>Interest income and other, net</td>
<td>51</td>
<td>9</td>
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<tr>
<td>Income (loss) before income taxes</td>
<td>121,232</td>
<td>20,656</td>
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<tr>
<td>Income taxes</td>
<td>4,100</td>
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<tr>
<td>Net income (loss) and comprehensive income (loss)</td>
<td>$117,132</td>
<td>$20,656</td>
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<td>Net income (loss) per share attributable to common stockholders</td>
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<tr>
<td>Basic</td>
<td>$1.41</td>
<td>$0.37</td>
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<tr>
<td>Diluted</td>
<td>$1.34</td>
<td>$0.25</td>
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<tr>
<td>Weighted-average common shares outstanding</td>
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<tr>
<td>Basic</td>
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<td>56,198,542</td>
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<tr>
<td>Diluted</td>
<td>87,092,688</td>
<td>81,731,329</td>
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</table>
Selected Condensed Consolidated Balance Sheet Data

(in thousands except share and per share amounts)

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<tr>
<th></th>
<th>December 31, 2021</th>
<th>December 31, 2020</th>
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<tr>
<td>(unaudited)</td>
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<tr>
<td>Cash and cash equivalents</td>
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<td>$ 850,117</td>
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<td>Working capital (1)</td>
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<td>547,682</td>
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<tr>
<td>Total assets</td>
<td>772,892</td>
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<tr>
<td>Total liabilities</td>
<td>62,815</td>
<td>315,831</td>
</tr>
<tr>
<td>Total stockholder's equity</td>
<td>710,077</td>
<td>547,801</td>
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(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.
<table>
<thead>
<tr>
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<tr>
<td>Coronaviridae</td>
<td>COVID-19(^1)</td>
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<td></td>
<td><strong>Bemnifosbuvir</strong> (AT-527) Nucleotide*</td>
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<td>COVID-19</td>
<td><strong>Bemnifosbuvir</strong> Nucleotide + Protease inhibitor</td>
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<td>Hepatitis C Virus (HCV)(^2)</td>
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<td><strong>Ruzasvir</strong>(^{**}) (NS5A inhibitor)</td>
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<td>Respiratory Syncytial Virus (RSV)</td>
<td><strong>Product Candidates</strong></td>
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**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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1. Bemnifosbuvir as monotherapy has generated Phase 2 results. *In 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