Third Quarter 2022
Financial Results and Business Update

November 7, 2022

NASDAQ: AVIR

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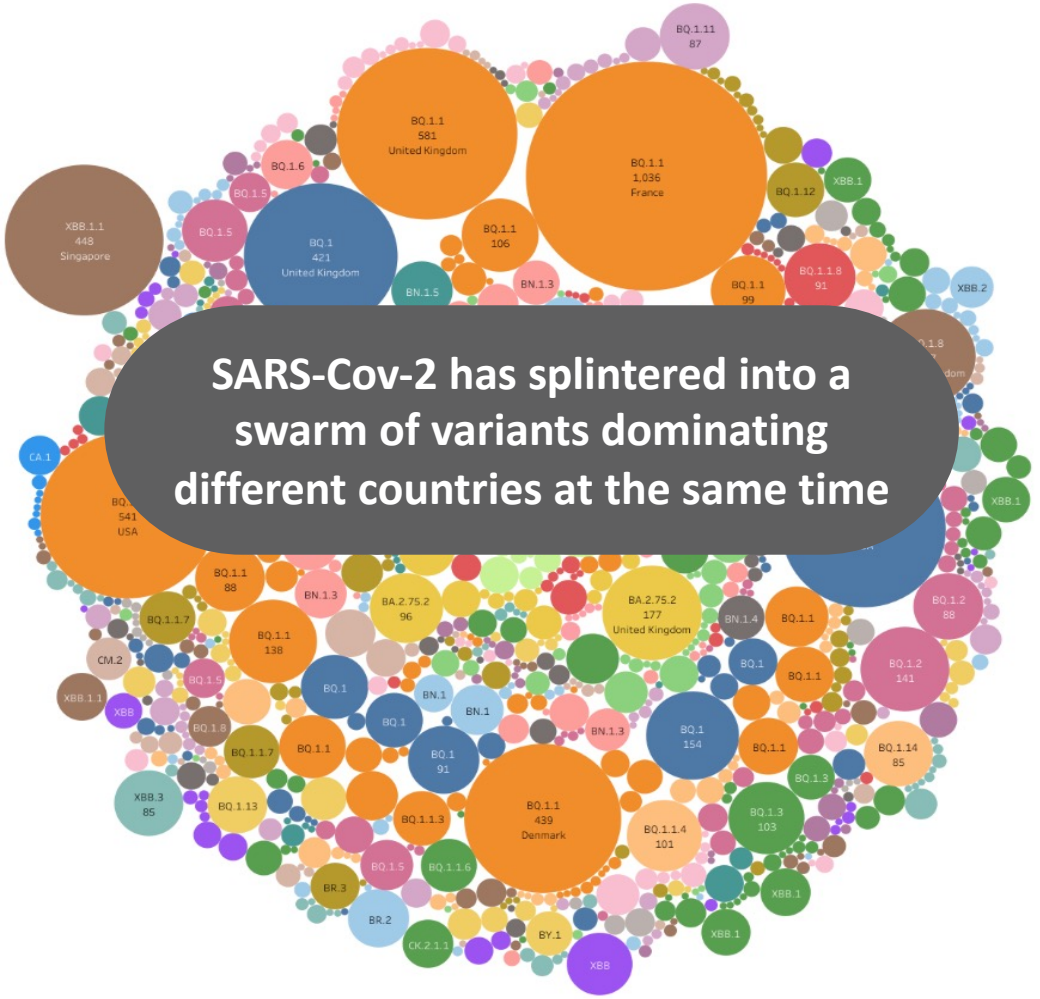
Bemnifosbuvir

Phase 3 Program Update for COVID-19

- COVID-19 Update
- Omicron Subvariant Results
- COVID-19 Oral Antiviral Commercial Opportunity
- Bemnifosbuvir Global Phase 3 Clinical Trial Design

COVID-19: Limitations with Vaccines / Therapies Predicted to Lead to Waves of Infection

- Global rapid increase and dominance of multiple new Omicron variants predicted to lead to COVID-19 waves
  - Omicron variants more infectious, spreads to others more easily[1]
  - **COVID-19 waves should enable enrollment of SUNRISE-3**
- Waning durability associated with vaccines [2,3] and natural infection
  - Low booster uptake <10%
- Monoclonal antibodies (mAbs) have minimal or no activity against certain SARS-CoV-2 variants[4-6]
- New oral antivirals, with improved profiles, are urgently needed due to limitations of current antiviral options



https://public.tableau.com/app/profile/raj.rajnarayanan/viz/ConvergentQuintet-World/Quintet (Accessed 3 Nov 2022)

1. https://www.cdc.gov/coronavirus/2019-ncov/variants/index.html. (Accessed 3 Nov 2022)
2. Goldberg Y et al. N Engl J Med. 2022;386:2201-12
3. Menni C et al. Lancet Infect Dis. 2022;22:1002-10
4. https://www.fda.gov/drugs/emergency-preparedness-drugs/coronavirus-covid-19-drugs (Accessed 30 Sep 2022)
5. https://www.idsociety.org/covid-19-real-time-learning-network/therapeutics-and-interventions/monoclonal-antibodies/#PreviouslyEfficacious (Accessed 30Sep2022)
6. Sheward DJ et al. bioRxiv. September 19, 2022. Preprint doi: https://doi.org/10.1101/2022.09.16.508299

In Vitro Bemnifosbuvir Remains Fully Active Against Variants of Concern, Including Omicron Subvariants

SARS-CoV-2 variant		AT-511* EC_{90}, µM (n)		Fold change (variant/USA-WA1)
Variant	Lineage	Mean	SD	
Original (USA-WA1/2020)	A	0.75 (n=2)	0.21	-
Alpha	B.1.1.7	2.15 (n=3)	0.22	2.9
Gamma	P.1	2.50 (n=3)	0.50	3.3
Epsilon	B.1.427	0.76 (n=2)	0.48	1.0
Original (USA-WA1/2020)	A	0.43 (n=2)	0.12	
Beta	B.1.351	0.80 (n=2)	0.23	1.9
Original (USA-WA1/2020)	A	1.20 (n=3)	0.37	-
Delta	B.1.617.2	1.36 (n=3)	0.34	1.1
Original (USA-WA1/2020)	A	0.58 (n=5)	0.26	-
Omicron (BA.1)	B.1.1.529	0.50 (n=3)	0.27	0.86
Original (USA-WA1/2020)	A	0.59 (n=2)	0.18	-
Omicron (BA.2)	B.1.1.529	0.54 (n=2)	0.08	0.92
Original (USA-WA1/2020)	A	0.88 (n=2)	0.15	-
Omicron (BA.4)	B.1.1.529	0.54 (n=2)	0.27	0.61
Omicron (BA.5)	B.1.1.529	0.81 (n=2)	0.20	0.92

Readout: VYR (virus yield assay); Cells: Normal human-derived tracheal/bronchial epithelial cells.
*AT-511 is the free base of bemnifosbuvir

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Global Revenues for COVID-19 Oral Antivirals Expected ~$27B in 2022

Initial Revenues Driven by Advance Government Purchases

	REVENUES (9-months ending Sept'22)	REVENUES (Expected full year 2022)	KEY ISSUES
Paxlovid™ (nirmatrelvir, ritonavir)	**$17.1B**[1]	**$22.0B**[1]	• Drug-drug interactions (DDI) limiting use in most vulnerable patients • Rebound / Relapse
Lagevrio™ (molnupiravir)	**$4.8B**[2]	**$5.0 - 5.5B**[2]	• Low efficacy: 30% • Safety concerns – Embryo-fetal toxicity – Bone and cartilage toxicity

COVID-19 Antivirals Market Likely to Remain Large, Due to:

- New variants drive COVID-19 waves
- Waning immunity from vaccines, monoclonal antibodies and prior infections
- Low rate of booster vaccination
- NDA approvals for EUA products will remove limitations to promotion
- Availability of new oral antivirals with an improved profile, such as bemnifosbuvir, has potential to simplify prescribing and expand across all patient populations

Sources: 1. Pfizer 3rd Quarter 2022 financial results press release, November 1, 2022. 2. Merck 3rd Quarter 2022 financial results press release, October 27, 2022. EUA – Emergency Use Authorization NDA – New Drug Application

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US Market to Transition From Gov't Advance Purchase to Traditional Channels

Market Expected to Remain a Long-Term Multi-Billion Dollar Opportunity

Projected Annual COVID-19 Oral Antiviral Retail Demand[1]

# Reported Cases		# Retail Rx		Cost of Treatment (estimated)		Annual Revenue
21.6M	→	9.6M	×	$1k-$2k /Rx	=	~$10B - $20B

Expanded Market Opportunities

- Simplify prescribing for patients when Paxlovid drug-drug interactions (DDI) are a concern

Annual retail prescriptions (2021)[2] for commonly used drug classes in US where Paxlovid DDI is a concern

Cancer Therapies	Immunosuppressants & Immunomodulators	Oral Corticosteroids	HIV Antivirals	Anti Coagulants	Anti Arrhythmics	Calcium Blockers	Seizure Medications	Anti Psychotics
11M	12M	114M	10M	75M	10M	112M	164M	70M

- Stockpile

(1) Projections based on September 2022: CDC case rate, IQVIA NPA TRx. (2) IQVIA NPA 2021 TRx.

(2) Annual Prescriptions based on IQVIA NPA TRxs.

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Bemnifosbuvir: Focused Strategy on the Highest Unmet Medical Need

Cornerstone Therapeutic for Oral Mono- and Combination Therapy

COVID-19 Monotherapy

Global Phase 3 registrational trial for potential EUA / NDA submission in U.S and similar regulatory pathways ex-U.S.

Bemnifosbuvir has potential to address key limitations of authorized oral therapies

- Drug-drug interactions
- Rebound / Relapse
- Resistance concerns
- Safety concerns

COVID-19 Combination Therapy

Combination antiviral cohort of Phase 3 trial will inform development strategy

Atea at the forefront of developing oral combination therapy for specific COVID-19 patient populations

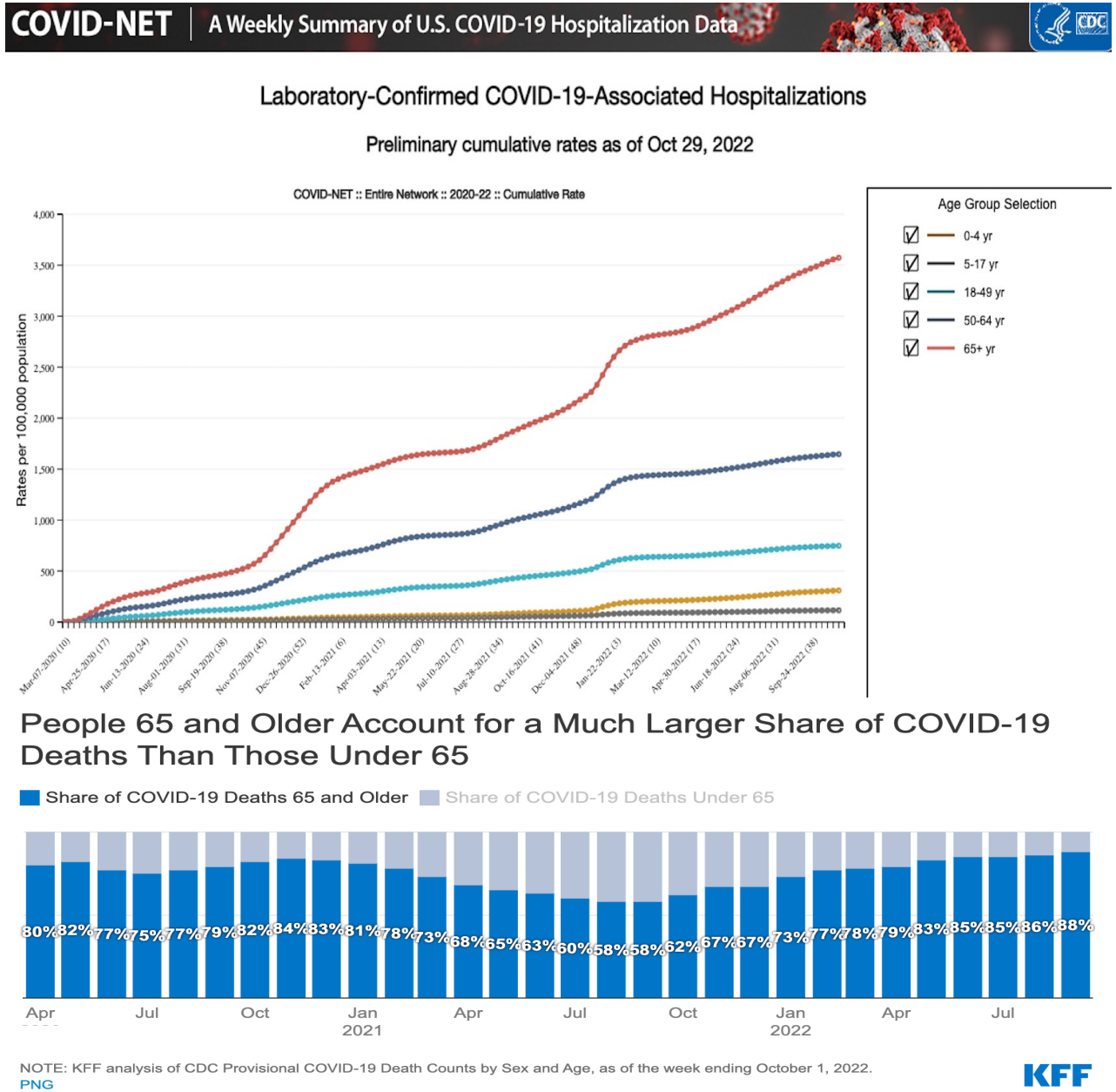
- Additive benefit indicated *in vitro* with bemnifosbuvir + direct acting antivirals including protease inhibitors (PIs)
- Advancing internal PI program for combination therapy with bemnifosbuvir

Bemnifosbuvir is well suited for mono- and combination therapy

EUA – Emergency Use Authorization NDA – New Drug Application

Primary Endpoint of SUNRISE-3: COVID-19 Hospitalization or Death

- COVID-19 is 3rd leading cause of death after heart disease and cancer[1]; ~75% of COVID-19 deaths are 65 years+[2]
- Currently, ~350-400 people dying daily in the US
- CDC: 50% hospitalized 65 years+ had at least three vaccine shots, rates 3X higher in unvaccinated adults[3]
- In immunocompromised patients, ~20% hospitalized with Omicron[4]



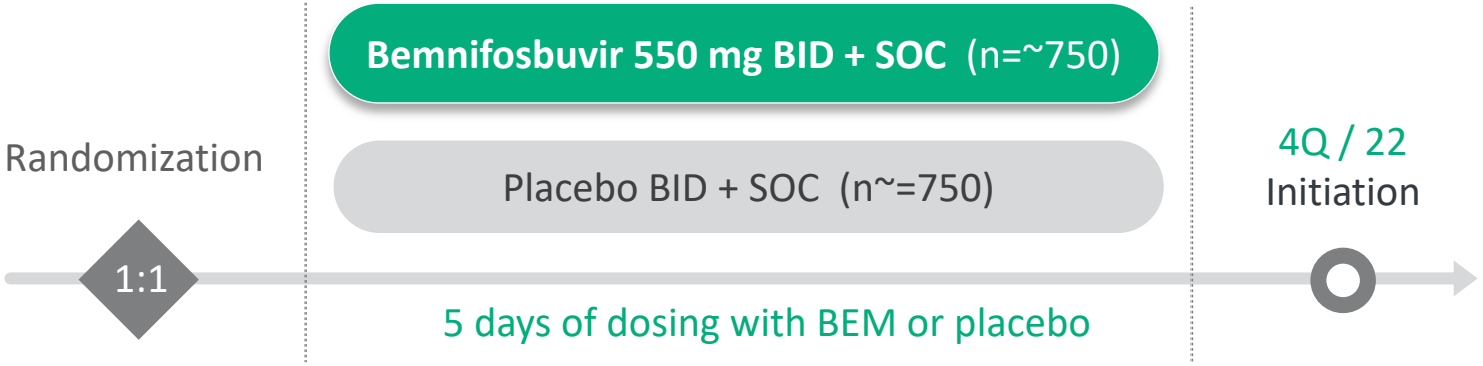
1. https://www.cdc.gov/media/releases/2022/s0422-third-leading-cause.html (Accessed 30 Sep 2022)
2. Provisional COVID-19 Deaths by Sex and Age – CDC Data Sets. https://data.cdc.gov/widgets/9bhg-hcku?mobile_redirect=true (Accessed 30 Sep 2022)
3. https://www.cdc.gov/mmwr/volumes/71/wr/mm7134a3.htm
4. Mahale SRK et al. Clin Infect Dis. 2022; Jul 23;ciac571. doi: 10.1093/cid/ciac571d

SUNRISE-3: Global Phase 3 Registrational Trial in High-Risk COVID-19 Outpatients

Innovative Phase 3 Trial Design Assessing Mono- and Combination Therapy

Inclusion Criteria: High-risk outpatients with mild or moderate COVID-19, regardless of vaccination status; symptom onset ≤ 5 days before randomization

Geography: US, Europe, Japan and ROW



Phase 3 Study Design:

- Randomized, double-blind, placebo-controlled
- Study drug (bemnifosbuvir or placebo) to be initiated at the same time as locally available standard of care (SOC)
- Two study populations derived from the type of SOC received:
  - "Supportive care population" – *monotherapy* (primary analysis)
  - "Combination antiviral population" – *combination therapy* (secondary analysis, local SOC includes treatment with other compatible antiviral drugs against COVID-19)
- Interim analysis to be conducted

Primary Endpoint:

- All-cause hospitalization or death through Day 29 in supportive care population (n ≥1,300 patients)

Secondary Endpoints (assessed in each population):

- COVID-19 complications
- Medically attended visits
- Symptom rebound / relapse
- Viral load rebound

SUNRISE-3: Global Phase 3 Registrational Trial in High-Risk COVID-19 Outpatients

Enrollment Anticipated in Q4 2022

- **Patient population enriched for those at the highest risk for COVID-19 disease progression**

  Older patients (≥80 yrs), older patients (≥ 65 yrs) with ≥ one major COVID-19 risk factor, and immunocompromised (≥ 18 yrs), all regardless of vaccination status

  – Enriched population represents patients currently being hospitalized

- **Extensive global footprint**

  Targeting up to approximately 300 sites in 25 countries, including US, Europe, Japan and rest of the world

- **Phase 3 protocol submitted under U.S. Investigational New Drug (IND) application**

  Clinical trial application submissions (CTAs) in other countries being submitted

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AT-752

Program Update:
Phase 2 Clinical Development for Dengue

AT-752: U.S. FDA Fast Track Designation for Treatment of Dengue

Two Ongoing Trials – Completion of Patient Enrollment Expected Around Year-End 2022

DEFEND-2: Global Phase 2 Proof-of-Concept Treatment for Dengue Study

- Enrolling adult patients with dengue fever (n=up to 60, n=20 per cohort)
- Randomized, double-blind, placebo-controlled trial being conducted in dengue endemic countries
- Oral administration of AT-752 for 5 days
- **Objectives:** antiviral activity, safety, and PK
  - Primary endpoint:
    Change in dengue virus viral load from baseline
  - Exploratory:
    viremia, NS1 levels, fever

Human Challenge Infection Model

- Enrolling healthy subjects between 18-55 years old
- Being conducted exclusively in the United States
- The study is designed to evaluate the effect of AT-752 in healthy volunteers who are challenged with an attenuated DENV-1 virus strain after receiving AT-752 or placebo
- 12 subjects being randomized 2:1, treatment vs placebo

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

- **Clinical trial applications expected to be submitted late 2022, initiation of Phase 2 trial to follow**
- **Phase 2 combination program expected to evaluate convenient and short treatment duration in non-cirrhotic and compensated cirrhosis patients**

Bemnifosbuvir + Ruzasvir Competitive Profile

Convenient and short duration protease inhibitor-free treatment

Potential for first RBV-free therapy for decompensated disease

- ✓ Bemnifosbuvir is the most potent nucleotide inhibitor to-date being developed for HCV[1]
- ✓ Ruzasvir is a highly potent Phase 2/3-ready drug candidate
- ✓ Potential for best-in-class pan-genotypic fixed-dose combination

1, 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

ATEA Pharmaceuticals

Financial Summary

Financial Update Third Quarter 2022

Condensed Consolidated Statement of Operations

(in thousands, except share and per share amounts)
(unaudited)

	Three Months Ended September 30,		Nine Months Ended September 30,	
	2022	2021	2022	2021
Collaboration revenue	$ —	$ 32,811	$ —	$ 159,187
Operating expenses				
Research and development	4,905	43,019	54,396	109,394
General and administrative	11,376	11,939	36,355	32,597
Total operating expenses	16,281	54,958	90,751	141,991
Income (loss) from operations	(16,281)	(22,147)	(90,751)	17,196
Interest income and other, net	4,382	53	5,560	162
Income (loss) before income taxes	(11,899)	(22,094)	(85,191)	17,358
Income tax benefit (expense)	3,833	(6,100)	3,713	(13,300)
Net income (loss)	$ (8,066)	$ (28,194)	$ (81,478)	4,058
Net income (loss) per share attributable to common stockholders				
Basic	$(0.10)	$(0.34)	$(0.98)	$0.05
Diluted	$(0.10)	$(0.34)	$(0.98)	$0.05
Weighted-average common shares outstanding				
Basic	83,258,537	82,815,636	83,231,146	82,727,268
Diluted	83,258,537	82,815,636	83,231,146	88,462,074

Financial Update Third Quarter 2022

Selected Condensed Consolidated Balance Sheet Data
(in thousands)

	September 30, 2022	December 31, 2021
	(unaudited)	
Cash, cash equivalents, and marketable securities....	$ 664,975	$ 764,375
Working capital (1).....	666,301	715,520
Total assets	686,576	772,892
Total liabilities	23,389	62,815
Total stockholders' equity	663,187	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 September 30, 2022 for further detail regarding its current assets and liabilities.

Closing Remarks

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

- Enrollment of SUNRISE-3 global Phase 3 trial **in Q4 2022**
- Advance internal protease inhibitor platform

HCV

- Submit CTAs for bemnifosbuvir + ruzasvir Ph 2 combo trial: **late Q4 2022**

Dengue

- Ph 2 PoC program: **Enrollment completion** ~year-end 2022

- **$665.0 million in cash and cash equivalents as of 9/30/22**
- **Cash runway through 2025**

*Bemnifosbuvir is a double prodrug nucleotide analog. ** Worldwide exclusive license for all uses from Merck.

1. Bemnifosbuvir as monotherapy has generated Phase 2 results. 2. Bemnifosbuvir and Ruzasvir have generated Phase 2 results and are anticipated to be developed as a combination for HCV. Bemnifosbuvir is the generic name for AT-527.

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