



A Leader in Allogeneic, Off-the-Shelf
Virus-Specific T-Cell Immunotherapies
September 2020

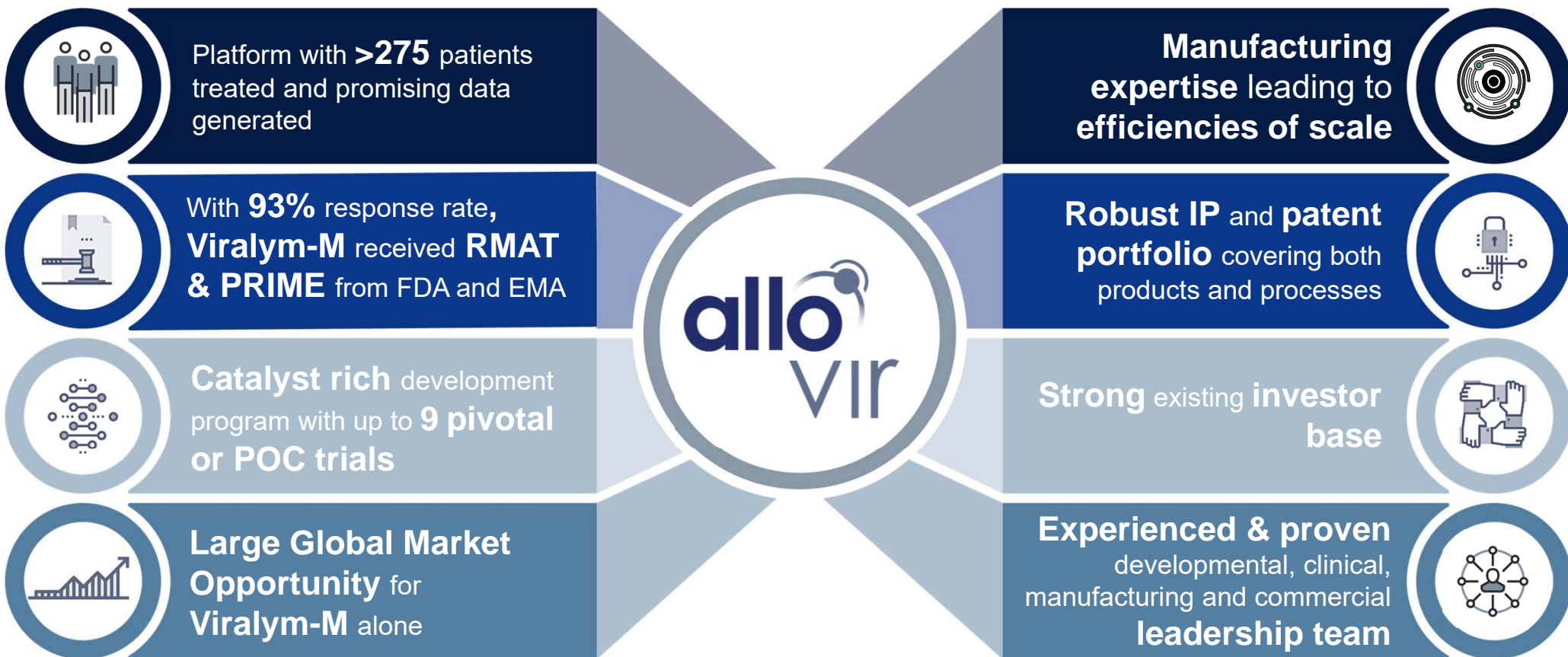
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These statements are also subject to a number of material risks and uncertainties that are discussed in the section entitled "Risk Factors" in our quarterly report on Form 10-Q for the fiscal quarter ended June 30, 2020, as well as discussions of potential risks, uncertainties, and other important factors in our subsequent filings with the Securities and Exchange Commission. Any forward-looking statement speaks only as of the date on which it was made. Neither we, nor our affiliates, advisors or representatives, undertake any obligation to publicly update or revise any forward-looking statement, whether as a result of new information, future events or otherwise, except as required by law.

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AlloVir: A Leading Innovator in Allogeneic, Off-the-Shelf Virus-Specific T Cell Immunotherapies



RMAT: Regenerative medicine advanced therapy; PRIME: PRiority MEDicine; POC: proof-of-concept

Led by an Experienced Management Team with a Strong Operating and Scientific Foundation

Leadership



David Hallal

Chief Executive Officer
CEO of ElevateBio
Former CEO Alexion
Amgen



Vikas Sinha, MBA

President & Chief Financial Officer
CFO of ElevateBio
Former CFO Alexion
Bayer



Ann Leen, Ph.D.

Chief Scientific Officer
Co-Founder AlloVir
Professor, BCM CAGT



Agustin Melian, M.D.

Chief Medical Officer
Former SVP Alexion
Merck



Ercem Atillasoy, M.D.

Chief Regulatory & Safety Officer
Former VP Global Regulatory
Affairs & Clinical Safety, Merck



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Chief Commercial Officer
Former CCO Tricida
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SVP of CMC Operations
Former VP Oncorus,
Director bluebird bio



Edward Miller, J.D.

General Counsel
Former SVP Alexion
Boehringer Ingelheim



Pre-IPO Investors

Fidelity
Management
& Research

Redmile Group



EcoR1
CAPITAL



High Risk Populations with T Cell Deficiencies are Vulnerable to Life-Threatening Viral Diseases Despite Current Treatment Options

Viruses with No / Limited Treatments

- BK virus¹
- Cytomegalovirus²
- Adenovirus³
- Epstein-Bar virus⁴
- Human Herpesvirus-6⁵
- JC Virus⁶
- Respiratory Syncytial Virus⁷
- Parainfluenza Virus⁷
- Human Metapneumovirus⁸
- Influenza Virus⁷
- SARS-CoV-2⁸
- Hepatitis B Virus⁹
- Human Herpesvirus-8¹⁰

Uncontrolled Viral Diseases Cause End-Organ Damage and Mortality^{1-3,10-13}



Bladder
Severe hemorrhagic cystitis
Urinary obstruction
Cystectomy



Brain
Seizure
Severe encephalitis
Memory defect
PML



Kidneys
Nephritis
Acute/chronic renal failure
End stage renal disease



Eyes
Retinitis
Blindness



Lungs
Pneumonia
Bronchitis
Respiratory failure



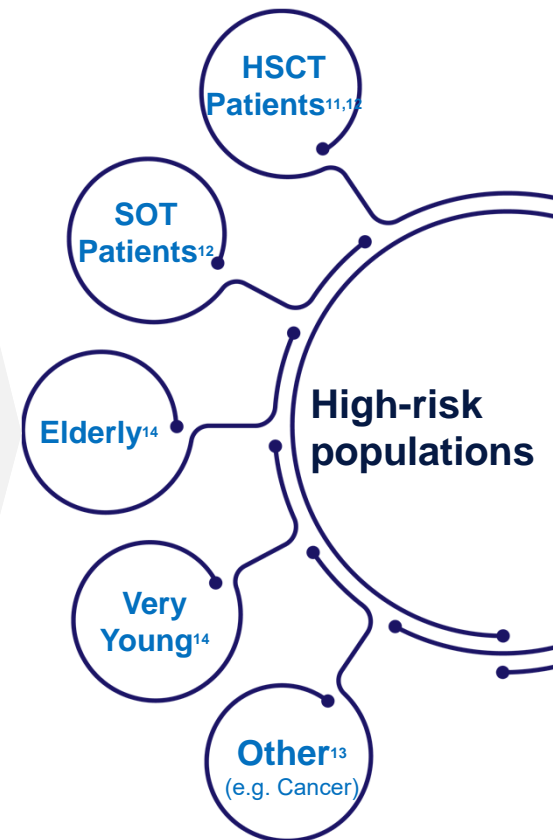
Liver
Chronic hepatitis
Liver cirrhosis
HCC



Small/Large Intestine
Colitis
Ulceration / perforation
Intestinal bleeding



Malignancy
Kaposi sarcoma
Primary Effusion
Lymphoma



PML: Progressive multifocal leukoencephalopathy; HCC: hepatocellular carcinoma

1. Abudayyeh A, et al. *Am J Transplant*. 2016;16:1492-1502. 2. Camargo JF, Komanduri KV. *Hematol Oncol Stem Cell Ther*. 2017;10:233-238. 3. Cesaro S, et al. *Bone Marrow Transplant*. 2018;doi:10.1038/s4109-018-0421-0. 4. Leen AM, et al. *Blood*. 2009;114(19):4283-4292. 5. Perruccio K, et al. *Biol Blood Marrow Transplant*. 2018;24:2649-2557. 6. Saribas AS, et al. *Future Virol*. 2010;5(3):313-323. doi:10.2217/fvl.10.12. 7. Cho SY, et al. *Kor J Intern Med*. 2018;33:256-276. 8. Law N, Kumar D. *Drugs Aging*. 2017;34:743-754. 9. Gentile G, Antonelli G. *Viruses*. 2019;11:doi:10.3390/v11111049. 10. Luppi M, et al. *New Engl J Med*. 2000;343:1378-1385. 11. Kedia S, et al. *J Stem Cell Res Ther*. 2013;doi:10.4172/2157-7633.S3-002. 12. Ison MG, Hirsch HH. *Clin Microbiol Rev*. 2019;32(4):1-33. 13. Jose RJ, et al. *Medicine*. doi:10.1016/j.mpmed.2020.03.006. 14. Simon AK, Hollander GA, McMichael A. *Proc Biol Sci*. 2015;282(1821):20143085.

AlloVir Has Deep Pipeline of 5 Allogeneic, Off-the-Shelf VST Therapies Targeting 12 Viruses

THERAPY CANDIDATE	TARGET INDICATION	TARGET POPULATION	PRECLINICAL	POC TRIAL (Phase 1b/2)	PIVOTAL TRIAL (Phase 3)
Viralymp-M (ALVR105) Multi-VST	Treatment of Virus-Associated Hemorrhagic Cystitis	Allo-HSCT			
	Treatment of CMV				
	Treatment of AdV				
	Prevention of BKV, CMV, AdV, EBV, HHV-6 and JCV				
	Treatment of BKV	Kidney Transplant			
	Treatment of CMV	Solid Organ Transplant			
ALVR106 Multi-VST	Treatment of RSV, Influenza, PIV, and hMPV	Allo- / Auto-HSCT			
		High-risk General Population			
ALVR109 Single-VST	Treatment of COVID-19	High-risk General Population			
ALVR107 Single-VST	Treatment of HBV	Patients with Chronic HBV			
ALVR108 Single-VST	Treatment of HHV-8	Patients with KS, MCD or PEL			

Key Investment Highlights

INNOVATIVE ENGINE for allogeneic, off-the-shelf, virus-specific T-cell immunotherapies

5 VST THERAPY CANDIDATES for **12** devastating, life-threatening viruses

Viralym-M: LARGE MARKET OPPORTUNITY in **RMAT / PRIME** Designations alone

Viralym-M: 3 PIVOTAL TRIALS in 2020/2021

Viralym-M: POC trials for PREVENTION of all 5 viruses and **SOT** with initial data in 2021

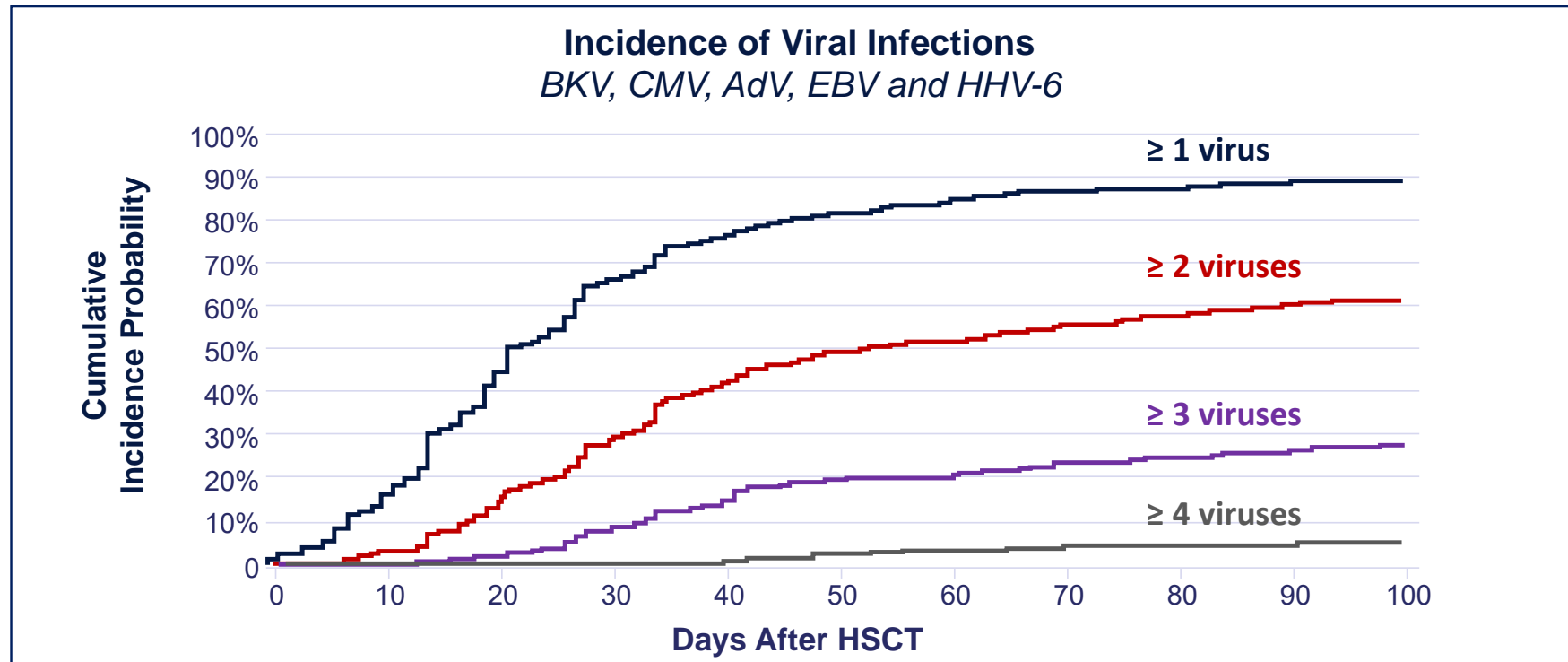
ALVR106 (MULTI-RESPIRATORY VSTs): POC trial in 2020 with initial data in 2021

ALVR109 (SARS-CoV-2 VSTs): ACCELERATED DEVELOPMENT for treatment of COVID-19 with POC trial in 2020 and initial data in 2021



Transplant Patients and Viral Diseases






Nearly Two-Thirds of Allogeneic HSCT Recipients Have More Than One dsDNA Viral Infection



A 37% Increase of Non-Relapse Mortality for Every Log Increase in Viral Load from Day 1-100 in Allogeneic HSCT Patients

Virus-Associated Hemorrhagic Cystitis in HSCT: A Devastating Disease with No Approved or Effective Treatment Options

HC, a common manifestation in HSCT, caused by BKV, AdV and/or CMV

HC Results in Severe Morbidity & Mortality ¹⁻⁷		No Approved or Effective Therapies ¹⁻⁷
Severe bleeding due to hematuria		RBC or platelet transfusions Bladder arteriole embolization and/or cystectomy
Severe, prolonged and intractable pain		Narcotics
Life-disturbing urinary symptoms		Continuous bladder irrigation
Kidney dysfunction / failure		Dialysis
Increased mortality*		

Cytomegalovirus and Adenovirus in HSCT: Cause Severe and Life-Threatening Consequences

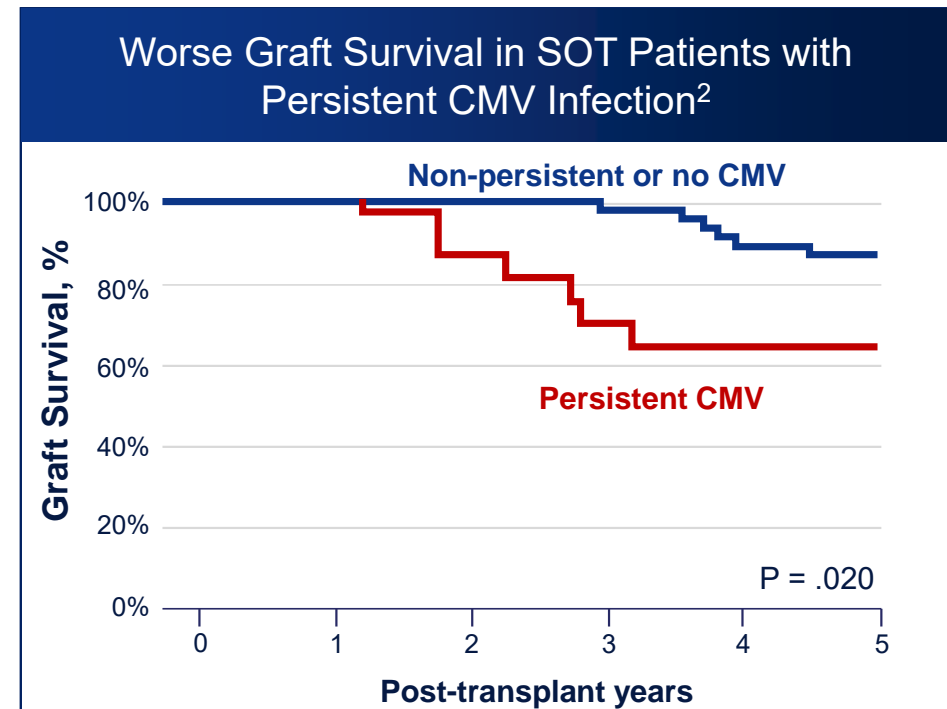
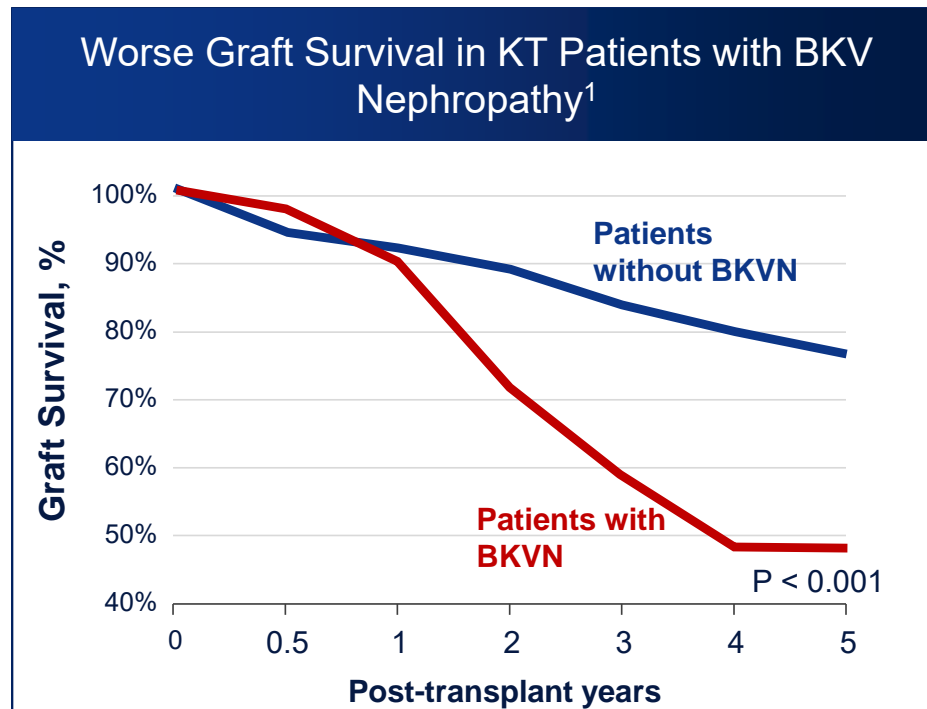
CMV

- Affects 65% of allogeneic HSCT patients¹
- Potentially life-threatening consequences²
 - Pneumonia
 - Colitis
 - Retinitis
 - Encephalitis
 - Multi-organ failure/Death
- No FDA- or EMA-approved anti-viral agents⁶
- Off-label antiviral use associated with severe toxicities, including myelosuppression and nephrotoxicity
- Discontinuation of letermovir increased CMV infection (~18%) >100 days post HSCT³

AdV

- Occurs in 32% of pediatric and 6% of adult allogeneic HSCT patients⁴
- Potentially life-threatening consequences⁵
 - Pneumonia
 - Hemorrhagic enteritis or cystitis
 - Hepatitis
 - Multi-organ failure/Death
- No FDA-or EMA approved treatments
- Off-label antiviral use agent has demonstrated limited efficacy and severe toxicities including nephrotoxicity

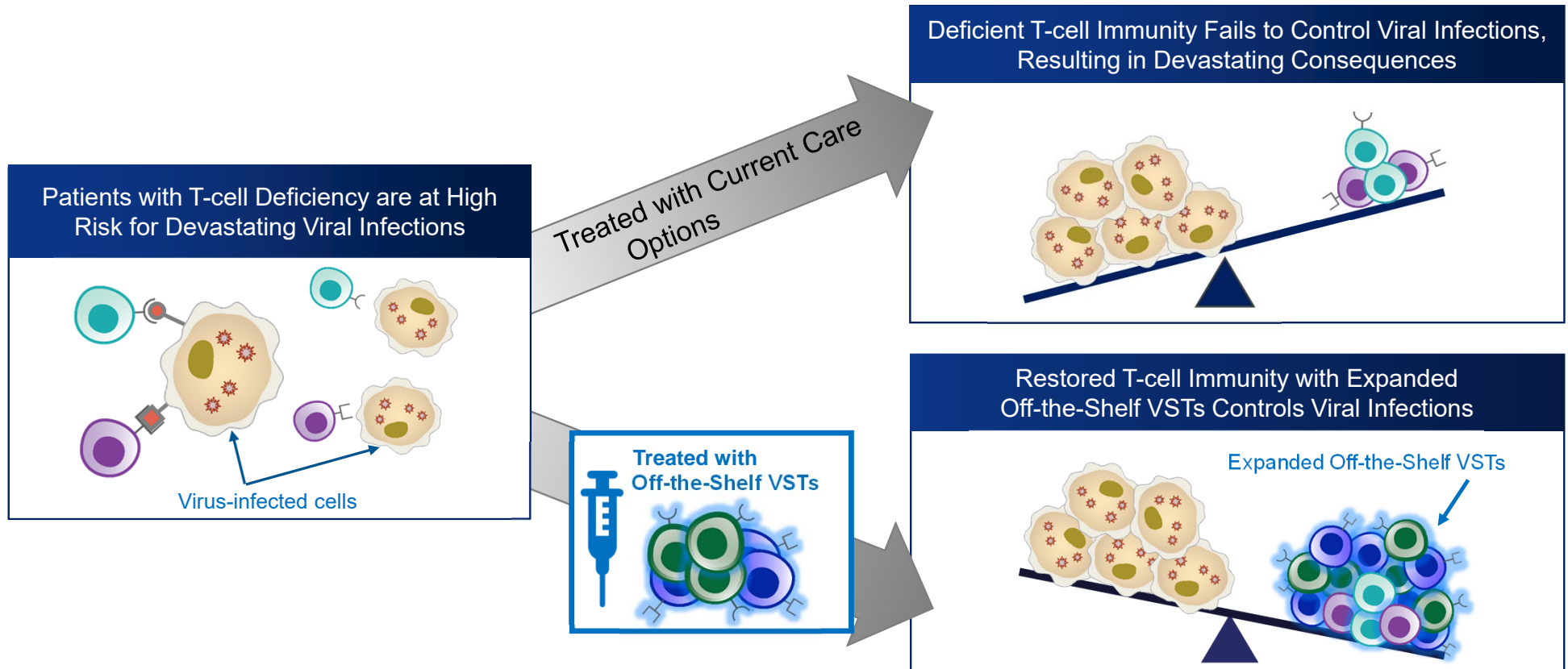
BKV in Kidney Transplant & CMV in SOT Patients: Lead to Decreased Graft Survival Despite Standard of Care^{1,2}



Our Solution

Allogeneic, Off-the-Shelf Virus-Specific T-Cells

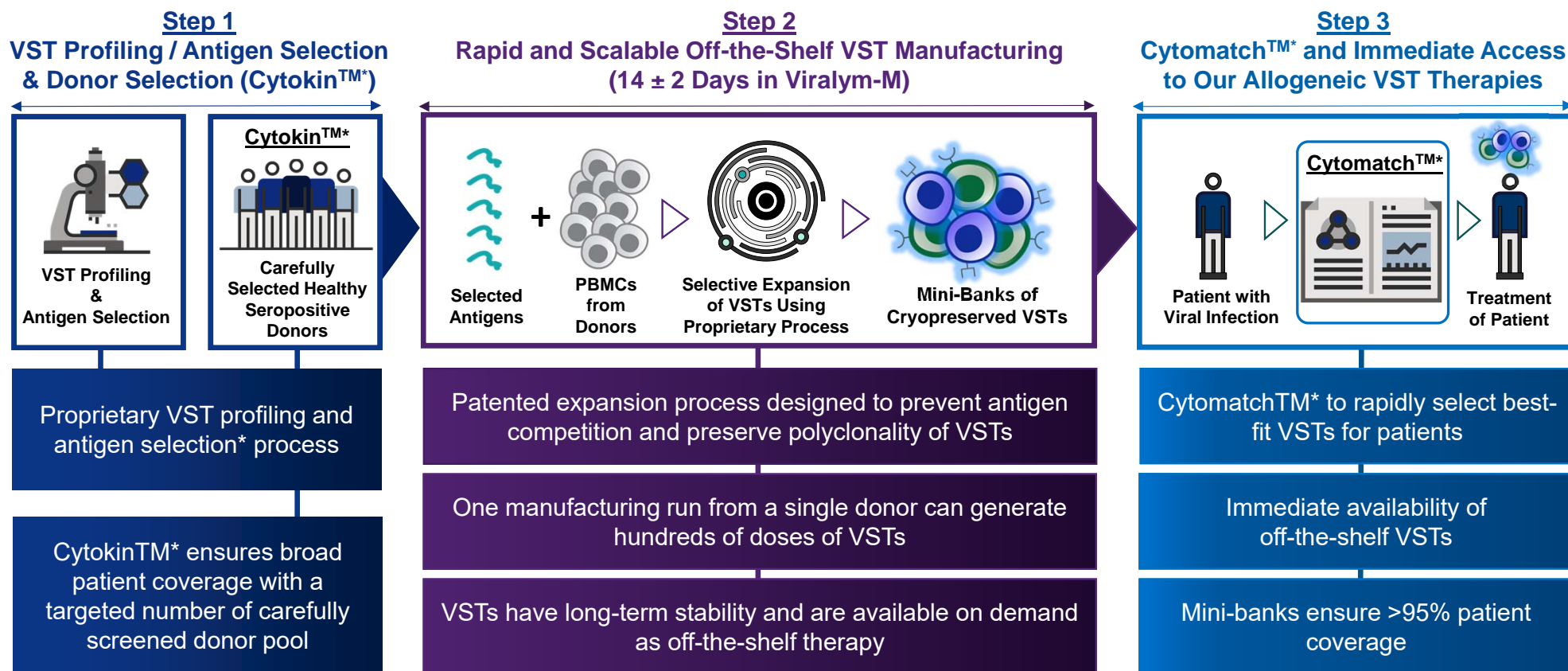
Our Approach Utilizes the Adoptive Transfer of Off-the-Shelf VSTs to Restore Virus-specific Immunity¹⁻⁶



CD4+ T cells in patients
 CD8+ T cells in patients
 CD4+ Off-the-Shelf VSTs
 CD8+ Off-the-Shelf VSTs

1. Swain, S., et al. *Nat Rev Immunol* 2012.; 2. Muraro E, et al. *Front. Immunol.* 2017; 3. Rosendahl HS et al. *Front Immunol.* 2014. 4. Tzannou, *JCO* 2017; 5. Vasileiou S et al. *Haematol* 2019. 6. Type B Meeting Briefing Package.

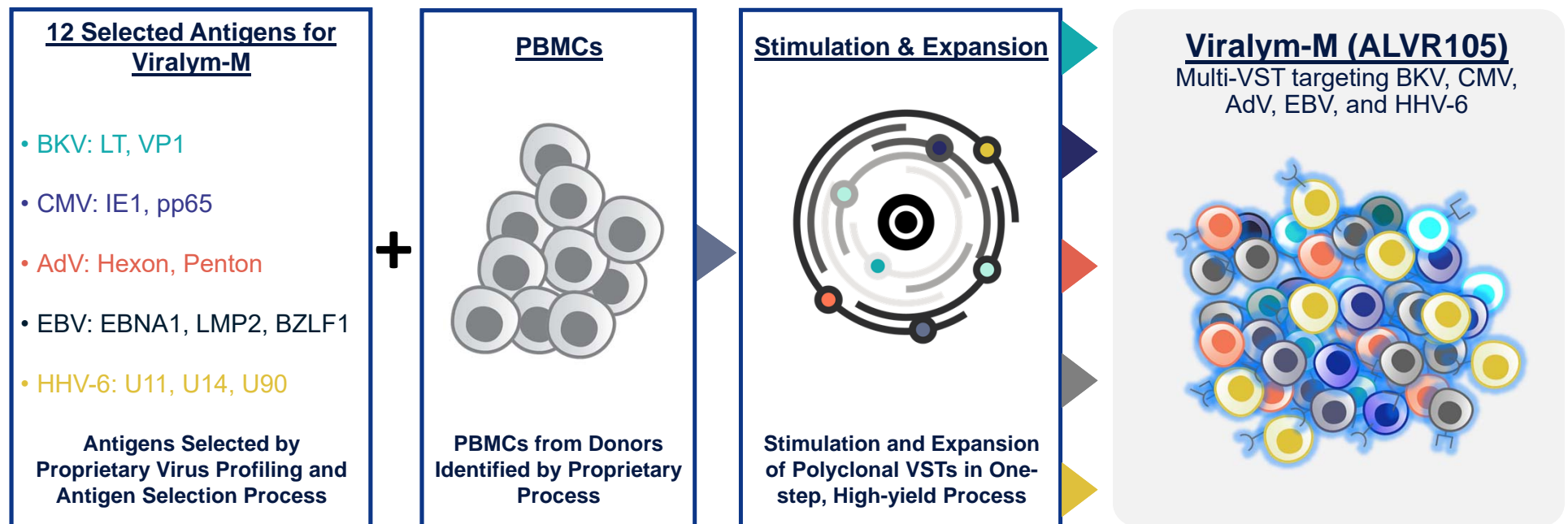
Our Patented, Highly Efficient and Industrialized Platform Provides Key Advantages¹⁻⁵



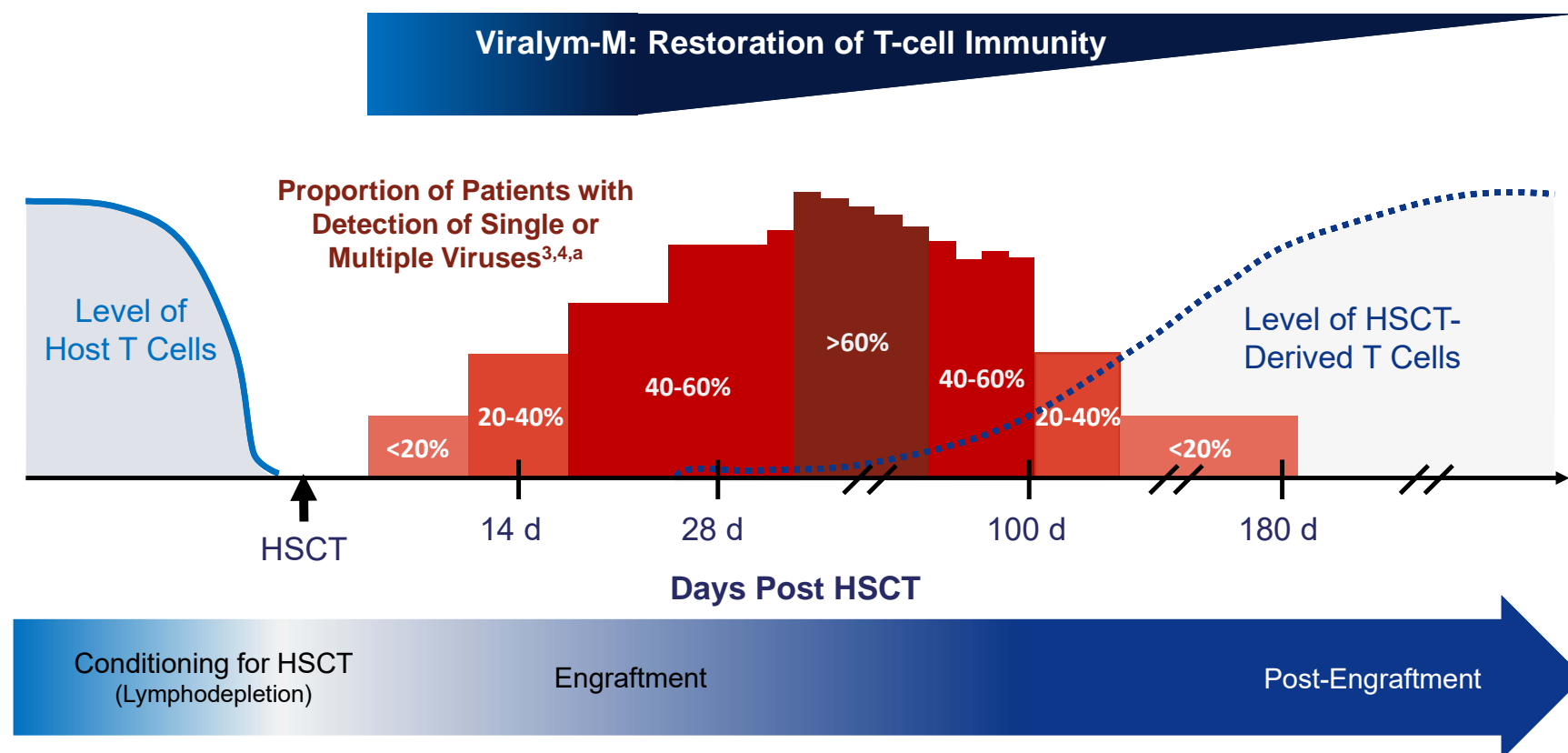
Viralym-M (ALVR105)

**The Potential to Transform the Lives of Transplant Patients
by Dramatically Improving or Preventing Morbidity and
Mortality**

Viralym-M: Our VST Therapy Designed to Target Viral Diseases That Result in Significant Morbidity and Mortality Post Allogeneic HSCT

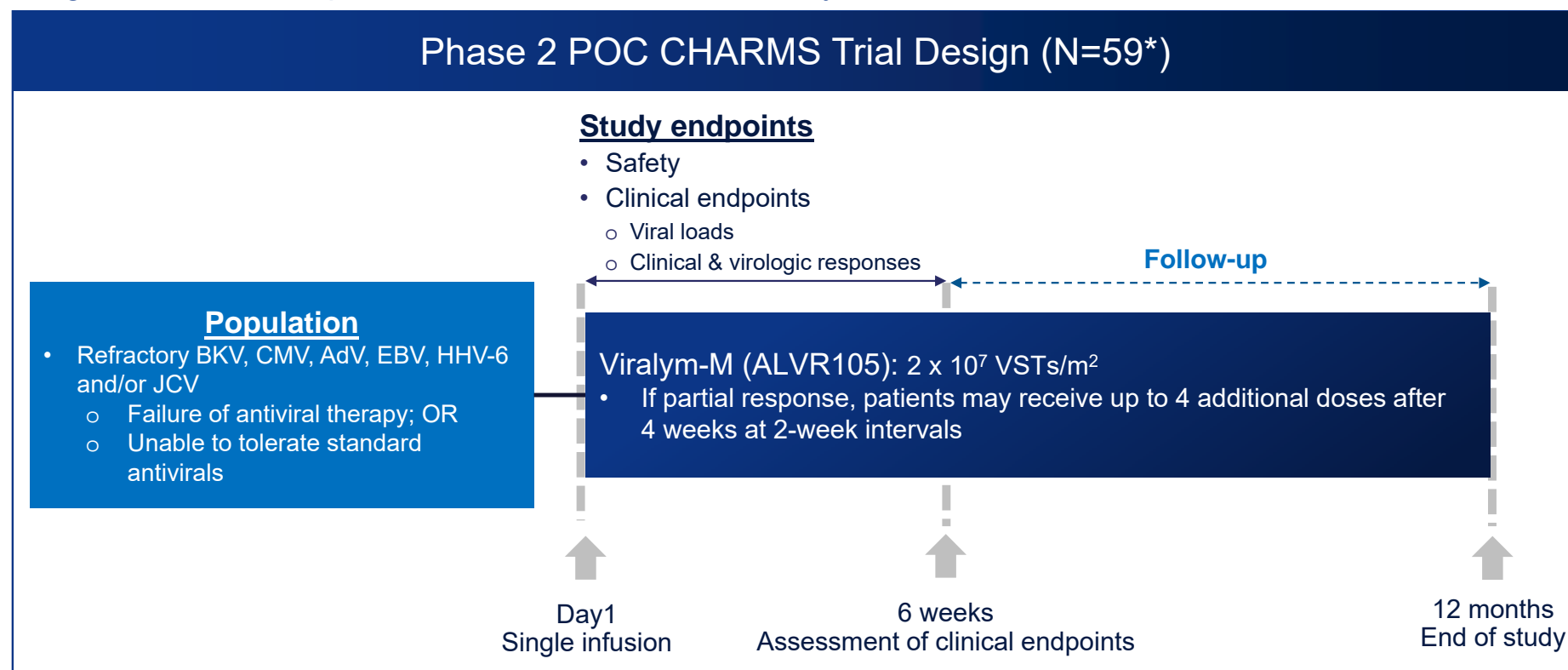


Viralym-M is Designed to Treat and Prevent Viral Infections and Diseases Until the Patient's Own Immune System Recovers¹⁻⁶



Viralym-M Phase 2 Proof-of-Concept Study, CHARMS, Generated Promising Preliminary Disease Outcome and Safety Data

Phase 2, proof-of-concept, open label study to assess the safety and clinical effects of Viralym-M in allogeneic HSCT recipients with ≥ 1 treatment-refractory Infections



Viralym-M was Generally Well Tolerated in CHARMS Trial (N=59*)¹⁻²



Infusions were well tolerated

- Three patients developed an isolated fever within 24 hours of infusion, no immediate toxicities were observed



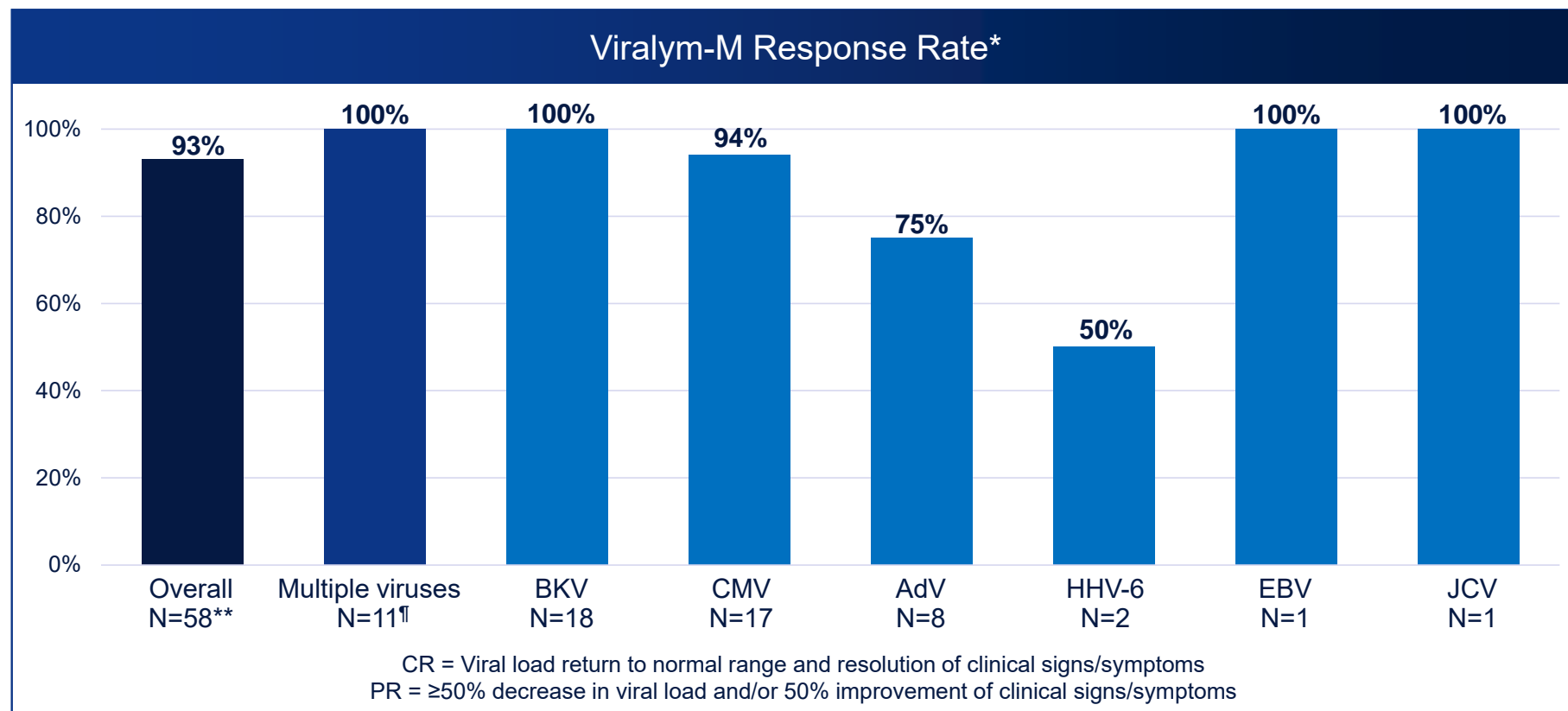
There were 14 cases of acute GVHD

- 8 patients with pre-existing GVHD
- 6 patients with *de novo* GVHD; All had transient Grade I skin GVHD resolved with treatment

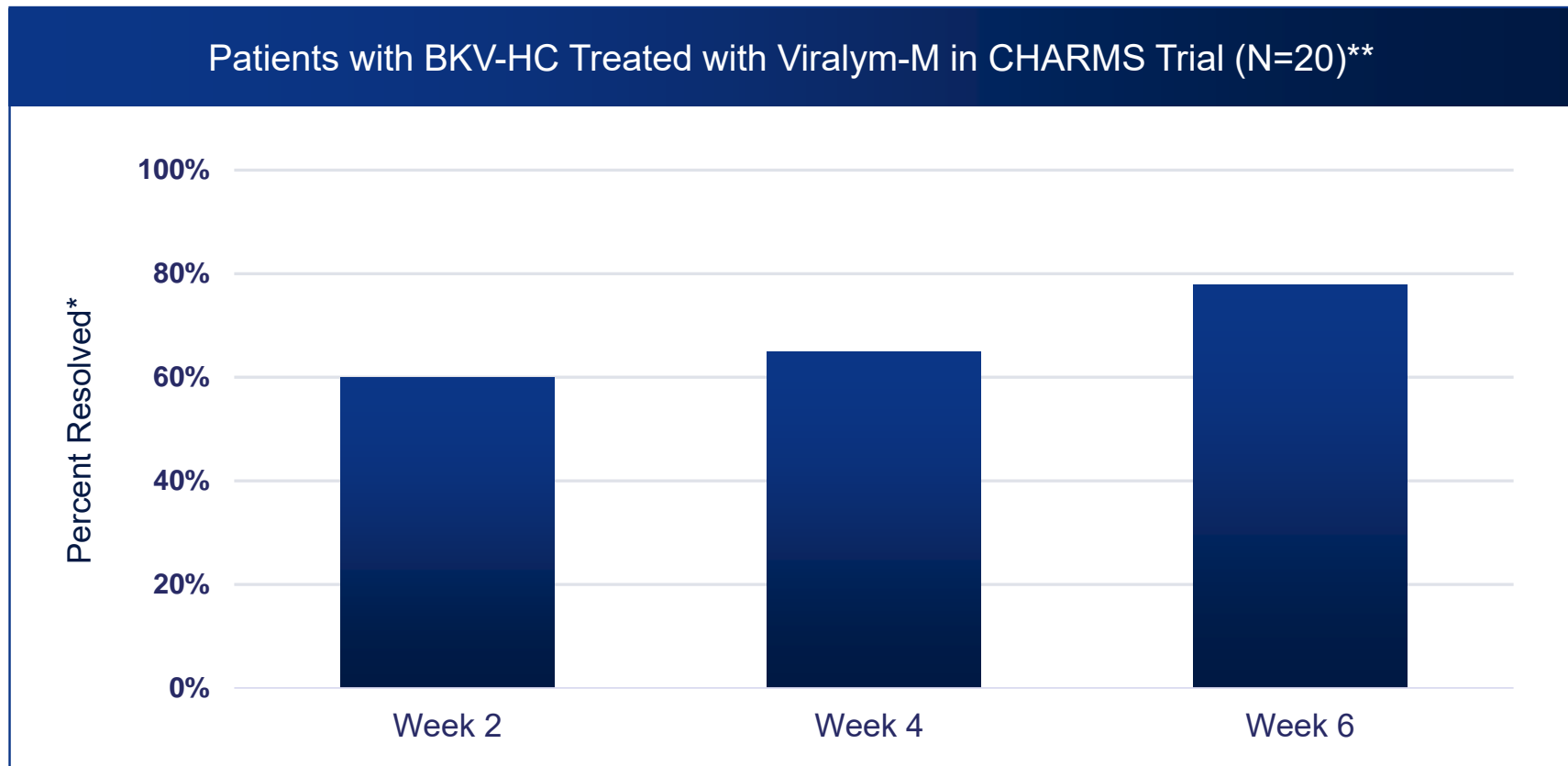


- No patients developed cytokine release syndrome

93% of Patients Achieved a Clinical Response by 6 Weeks Post Viralym-M Treatment^{1,2}



Virus-Associated Hemorrhagic Cystitis: Rapid Resolution was Achieved in Patients Treated with Viralym-M



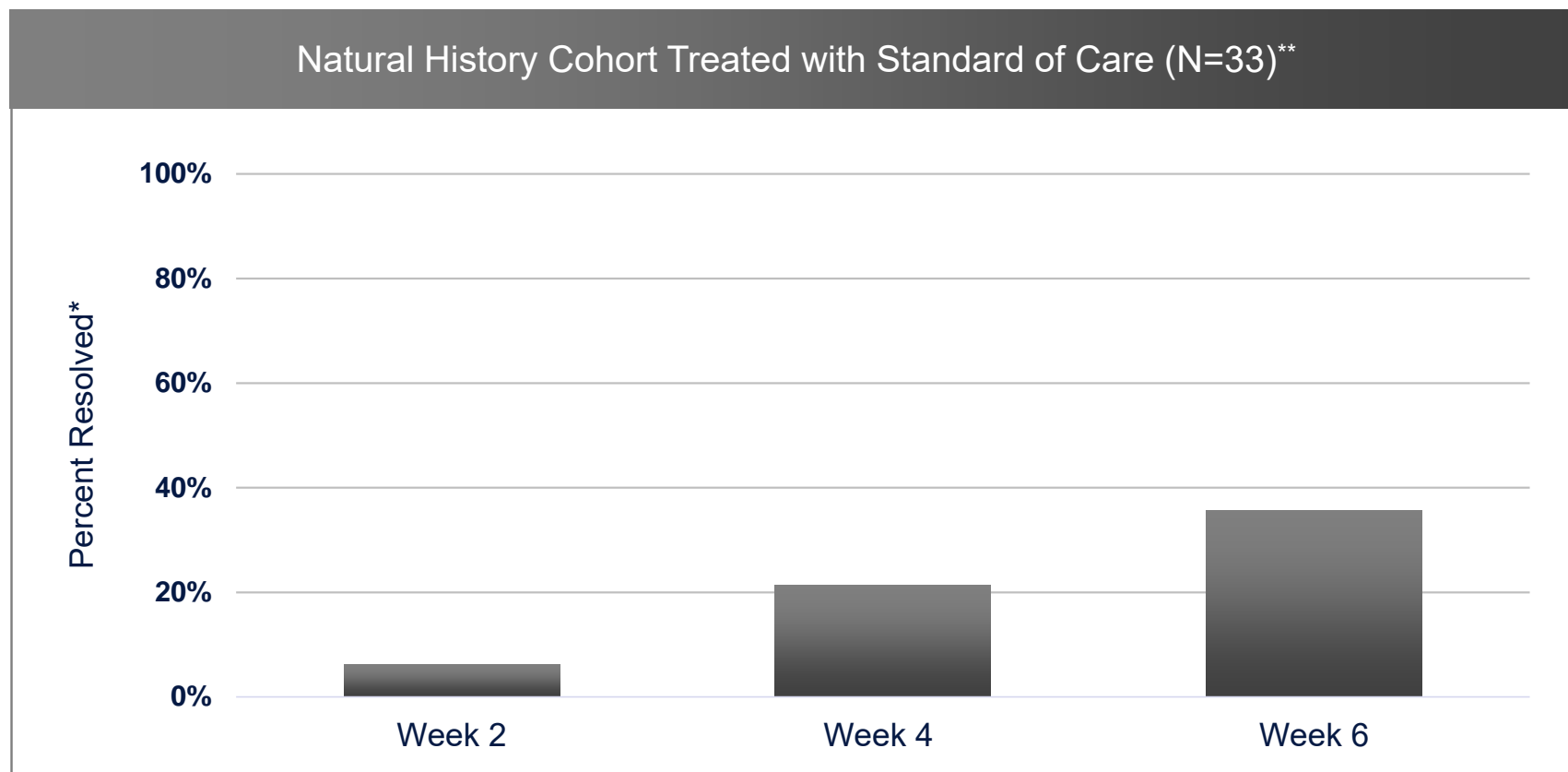
BKV-HC: BKV-associated hemorrhagic cystitis

*Resolution of BKV-HC: Grade 1 (microscopic hematuria; minimal increase in frequency, urgency, dysuria, or nocturia; new onset of incontinence) or 0 (no symptoms)

**Based on 20 patients, including pediatric and adult patients, with data available for HC grading retrospectively assessed by 3 independent physicians using NCI CTCAE v4

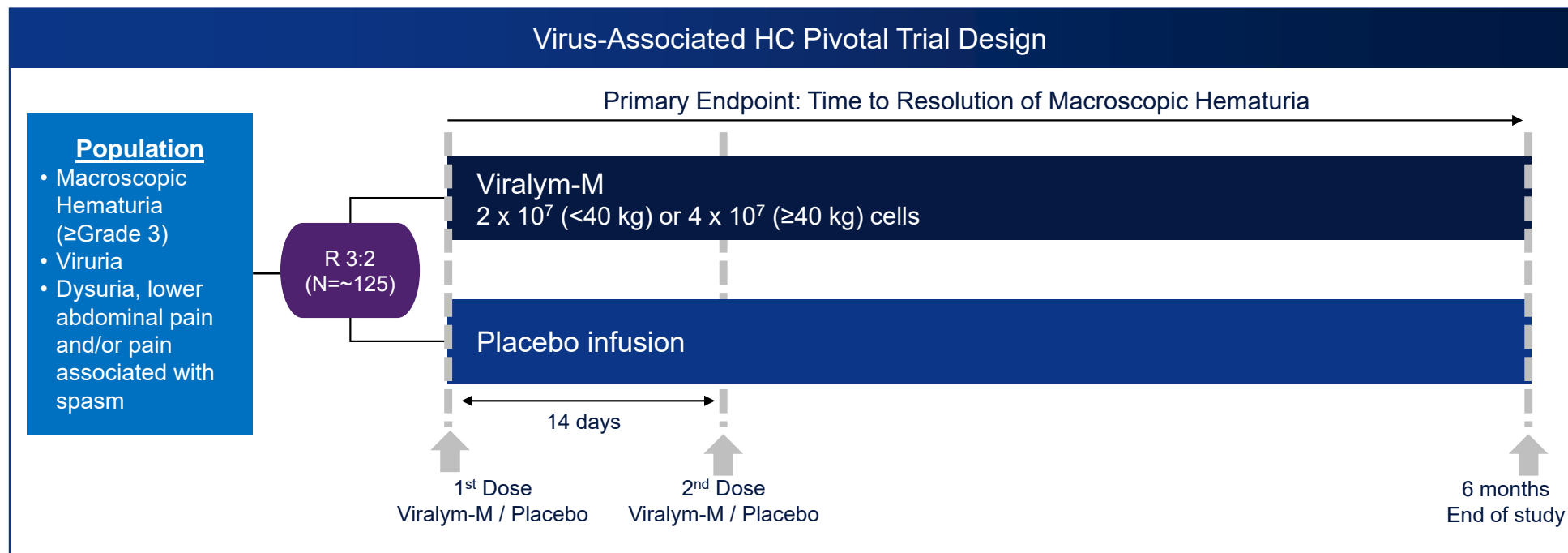
Source: Type B Briefing Package

Virus-Associated Hemorrhagic Cystitis: Prolonged Symptomatic Disease Observed in Patients Treated with SOC



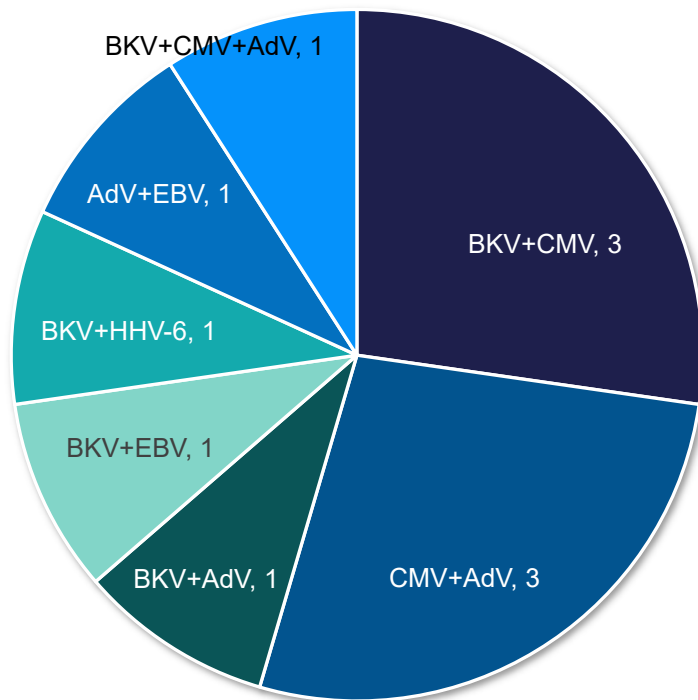
Virus-Associated Hemorrhagic Cystitis: Viralym-M Registration Study Will Be Initiated in Q4 2020

Phase 3, multicenter, double-blind, placebo-controlled study to assess the safety and efficacy of Viralym-M compared to placebo for the treatment of patients with virus-associated hemorrhagic cystitis (HC) following allogeneic HSCT



Multiple-viruses: Viralym-M Achieved 100% Response in Patients with ≥ 2 Viruses

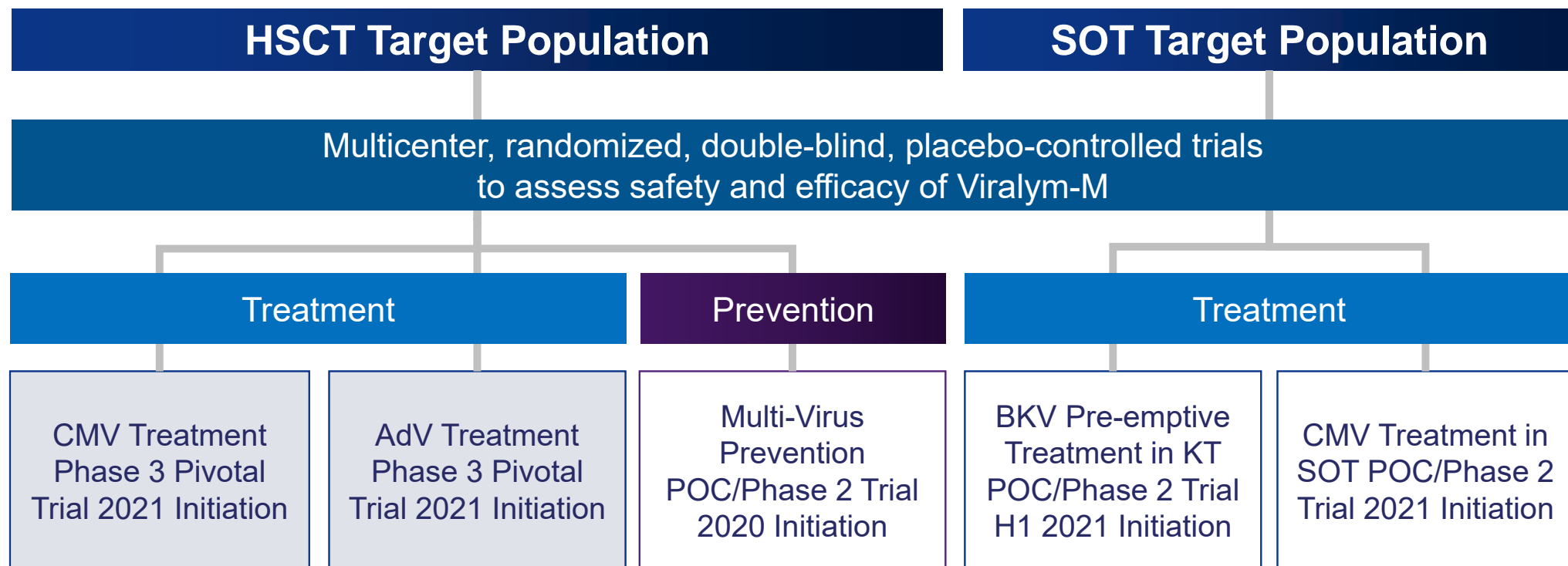
11 Patients with 23 Viral Infections



11/11 (100%) patients in CHARMS trial had a response to ≥ 1 virus(es)

- 19 of 23 viruses across the 11 patients responded to Viralym-M

Viralym-M: 2 Additional Pivotal and 3 POC Trials Planned in 2020/2021



Viralym-M: Large Addressable Patient Population for the Treatment and Prevention of Devastating Viral Diseases

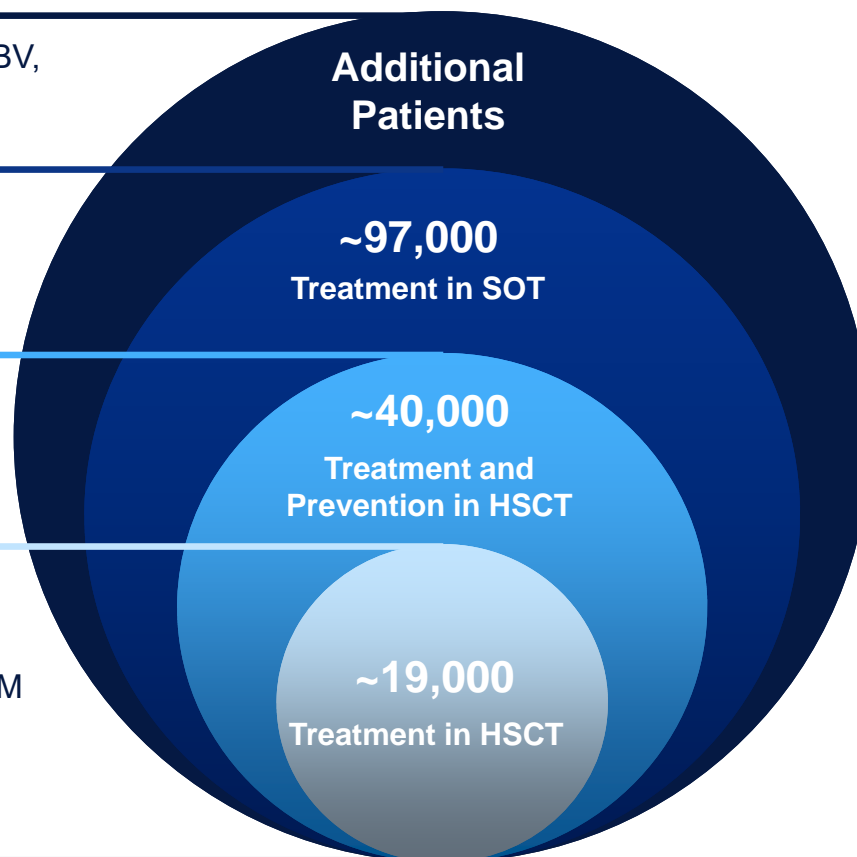
Estimated Annual Addressable Patients in 2025

Additional opportunities with EBV, HHV-6 & JCV in transplant and immunocompromised patients

Expansion beyond HSCT patients to SOT patients

Prevention of multi-virus infections with Viralym-M will transform HSCT landscape

Projected addressable patient population in 2025 for Viralym-M indications in target markets in NA, EU, LATAM and A/P

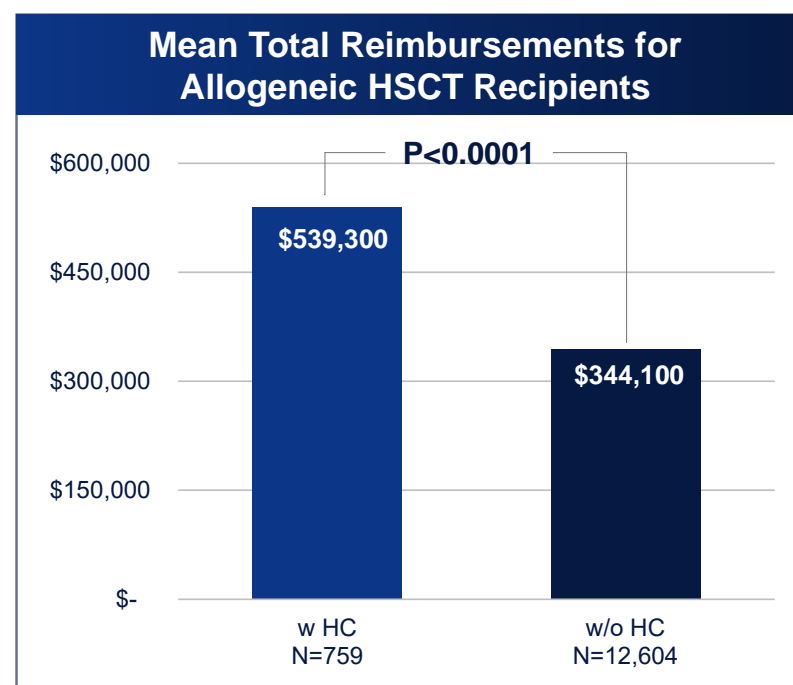
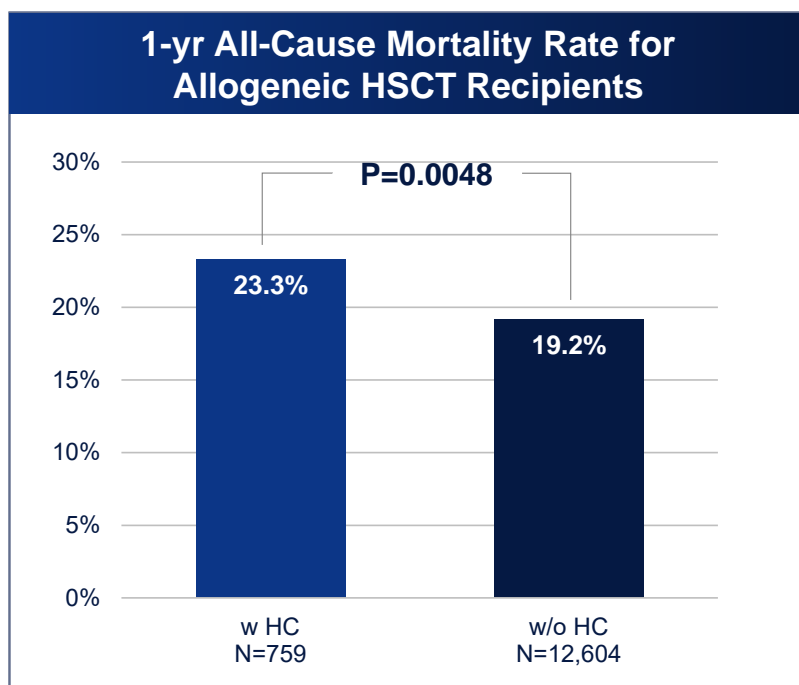


- **Focused commercial infrastructure targeting high-volume transplant centers globally**
- In US and EU5, 80% of allogeneic HSCT performed in top 70 / 185 and 129 / 411 stem cell transplant centers, respectively
- Top 100 / 240 transplant centers in US perform 80% of kidney transplants
- **We believe that many of these transplant centers will also have participated in our pivotal and POC trials**

*Projected addressable patient population in 2025 for Viralym-M indications in target markets in NA, EU, LATAM and A/P
Source: AlloVir analysis and estimates based on annual growth rate assumption

HSCT Recipients with Virus-Associated HC Have Significantly Higher Mortality and Incur Greater Healthcare Reimbursements

Real-world claims analysis confirms high clinical and economic burden of virus-associated hemorrhagic cystitis (HC)



Viralym-M: Ph3 Ready, Multi-Virus Specific T-Cell Therapy with 93% RR in Ph2 and Demonstrated Safety Profile



Multi-virus T cell therapy specific for 12 viral antigens from BK virus, Cytomegalovirus, Adenovirus, Epstein-Barr virus, and Human Herpesvirus 6



93% RR in Ph2 Study in drug refractory patients; POC achieved for 5 viral infections



Partially HLA-matched, to mediate extensive antiviral coverage, with mini-banks that each accommodate >95% of allogeneic HSCT patients



Type B meeting with FDA and Scientific Advice Meeting with EMA completed and planned move into Phase 3 registrational study



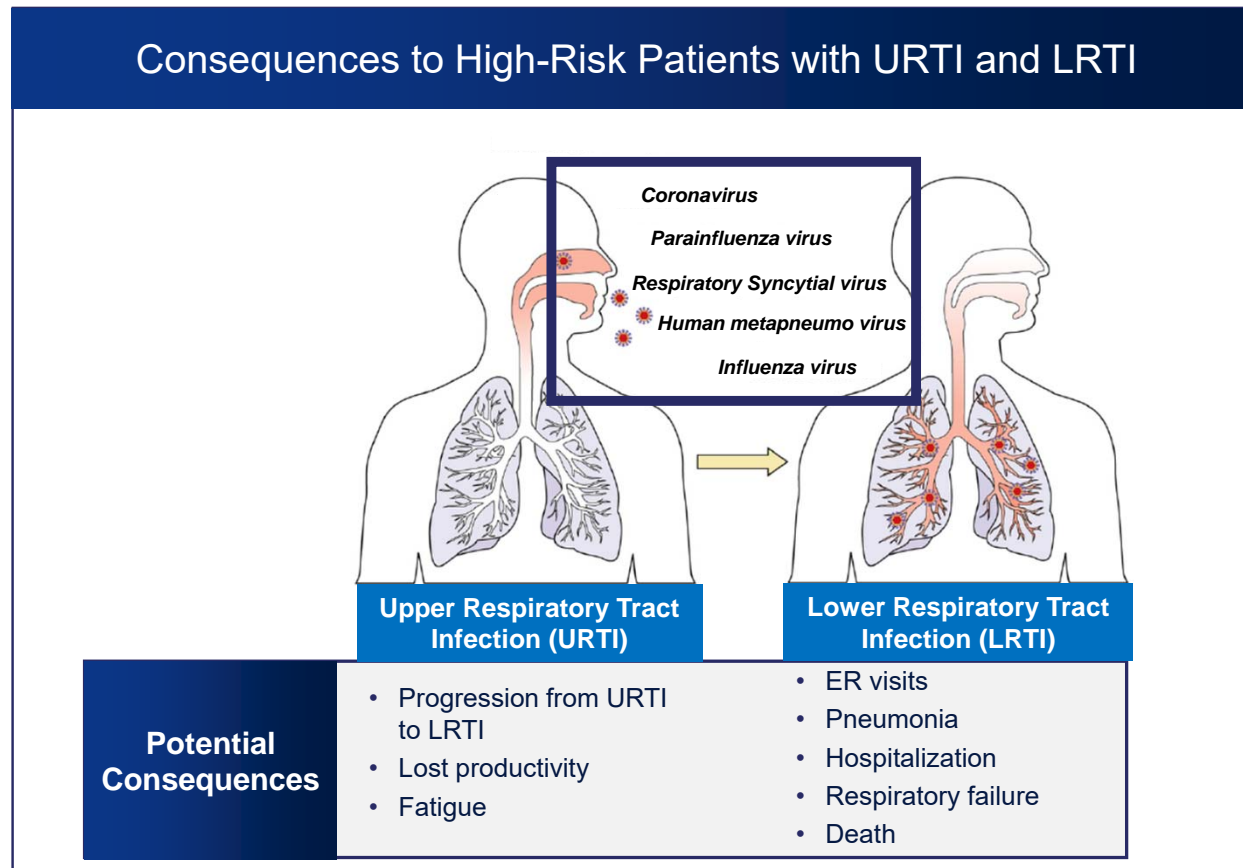
Designated Regenerative Medicine Advanced Therapy (RMAT) by the FDA and PRiority Medicine (PRIME) by the EMA; ODD in EU for treatment of all 5 viruses in HSCT



Completed technology transfer and scale-up to CDMO

Extending Our Platform to Tackle Major Public Health Needs

Devastating Consequences of Respiratory Virus Infections and Disease



Respiratory Virus Infections & Diseases in High-Risk Populations: Substantial Unmet Need for Treatment and Prevention

Devastating Consequences of Respiratory Infections/ Disease

- **High-risk populations**
 - **SARS-CoV2:** >14,000,000 confirmed cases of COVID-19 & >600,000 deaths worldwide as of July 20, 2020¹
 - **RSV:** ~ 66,000 – 199,000 deaths each year²
 - **PIV:** 7% of pediatric and up to 11.5% of adult hospitalization for RTIs³
 - **hMPV:** 50% of infected elderly patients developed LRTI, which led to 50% mortality⁴
 - **Influenza:** High mortality rates in patients ≥ 75 yrs and < 5 yrs⁵
- **Transplant population**⁶⁻⁸
 - RTIs due to RSV, influenza, PIV and hMPV, detected in **up to 40%** of allogeneic HSCT patients
 - ~50% progress to LRTI with 20-45% mortality rate
 - Respiratory viruses can infect all types of SOT patients

No or Limited Care Options Available⁶

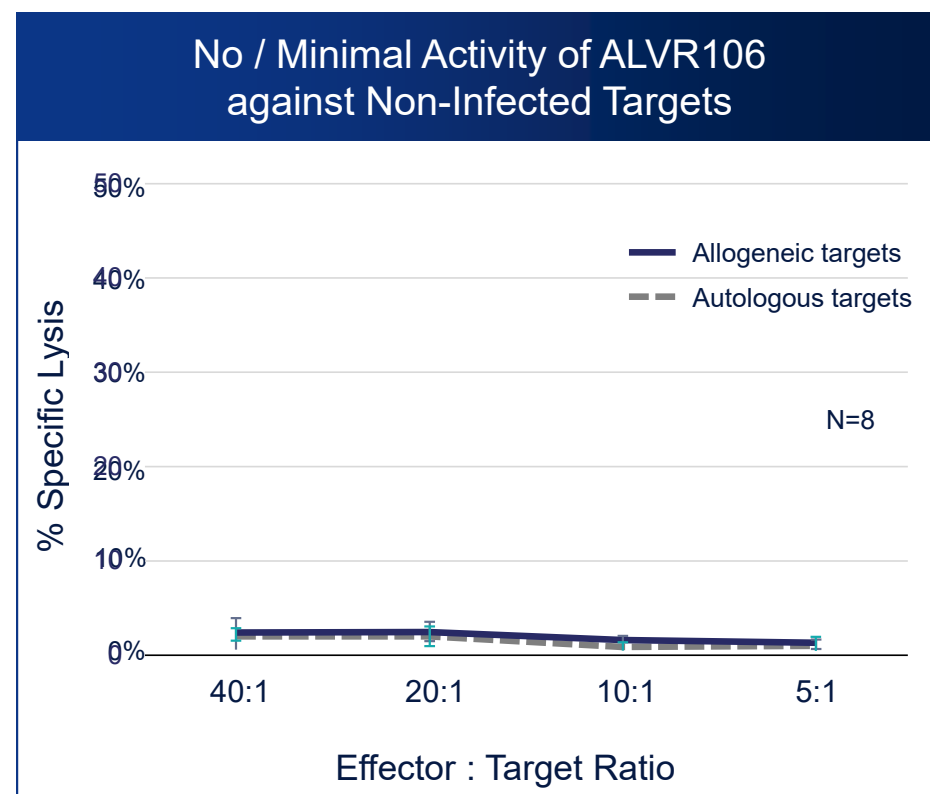
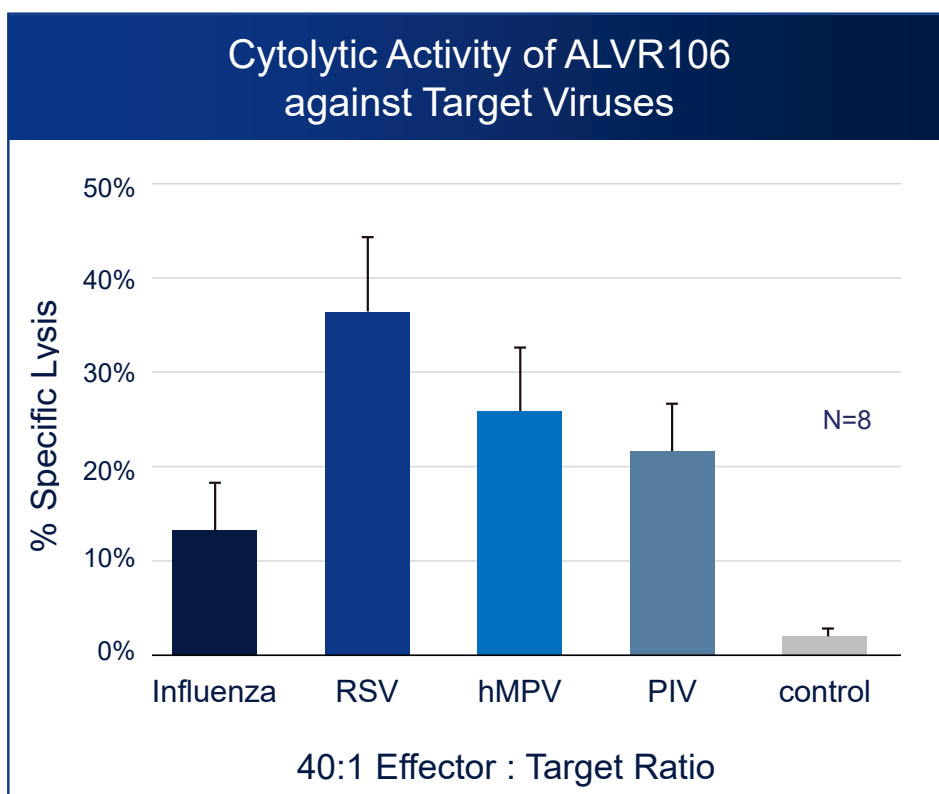
- **SARS-CoV-2:** Investigational approaches in development / no vaccines currently available
- **PIV and hMPV:** No FDA-/EMA-approved treatment or vaccines
- **RSV:** Ribavirin / pavalizumab for children / no vaccines available
 - Logistical challenge to administer, toxicity, and development of resistance
- **Influenza:** neuraminidase inhibitors & vaccines
 - Drug resistance common in immunocompromised patients
 - Partially effective vaccine in high-risk populations

ALVR106 & ALVR109

**VST Therapies for Respiratory Viruses such as RSV, Influenza, PIV, hMPV
and SARS-CoV-2**

ALVR106, Multi-Respiratory Virus T-Cell Therapy Candidate Specific for RSV, Influenza, PIV, and hMPV, in High-Risk Patients with T Cell Deficiencies

ALVR106 has selective antiviral activity against target viruses while leaving non-virus infected targets intact



ALVR106 POC Basket Study Targeting RSV, Influenza, PIV, and hMPV to be Initiated Q4 2020

Multicenter, randomized, double-blind, placebo-controlled trial

PART A (URTI)

Dose escalation cohort to assess safety and select optimal dose

- High risk auto- / allo- HSCT patients

PART B (URTI)

Efficacy expansion cohort to assess safety and efficacy of the optimized dose

- High risk auto- / allo- HSCT patients

PART C (LRTI)

Dose escalation cohort to assess safety and select optimal dose

- High risk auto- / allo- HSCT patients

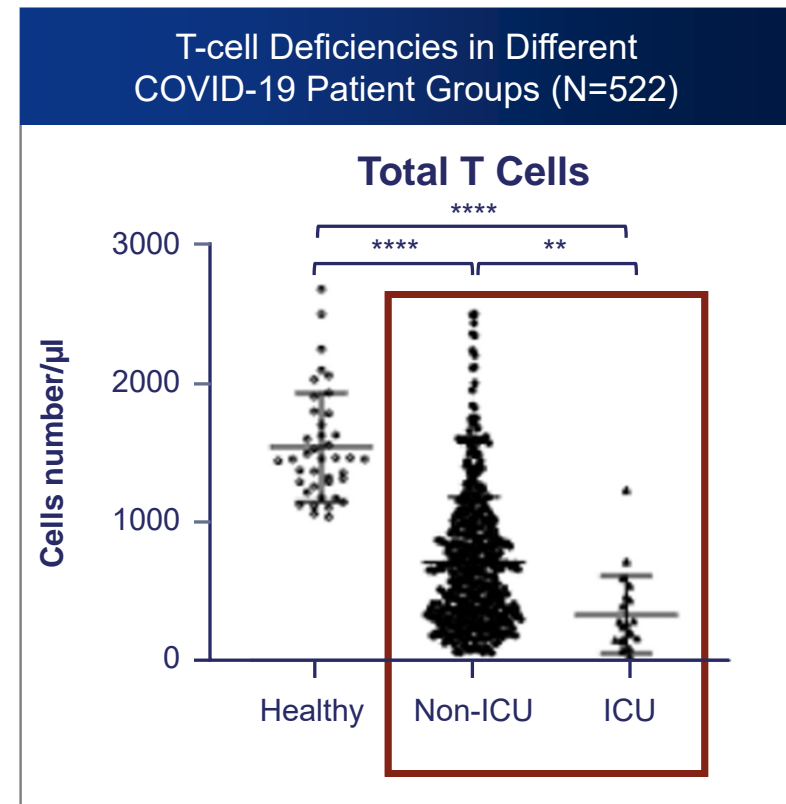
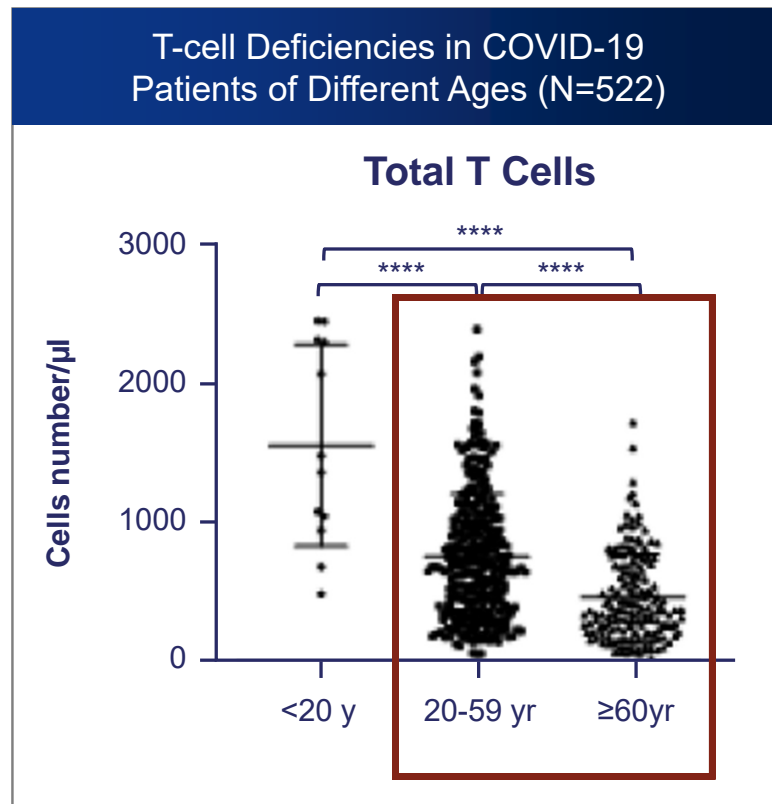
PART D (EXPANSION)

Efficacy expansion cohort(s) to assess safety and efficacy in additional populations

- Immunocompromised cancer patients;
- The elderly; and/or
- The very young

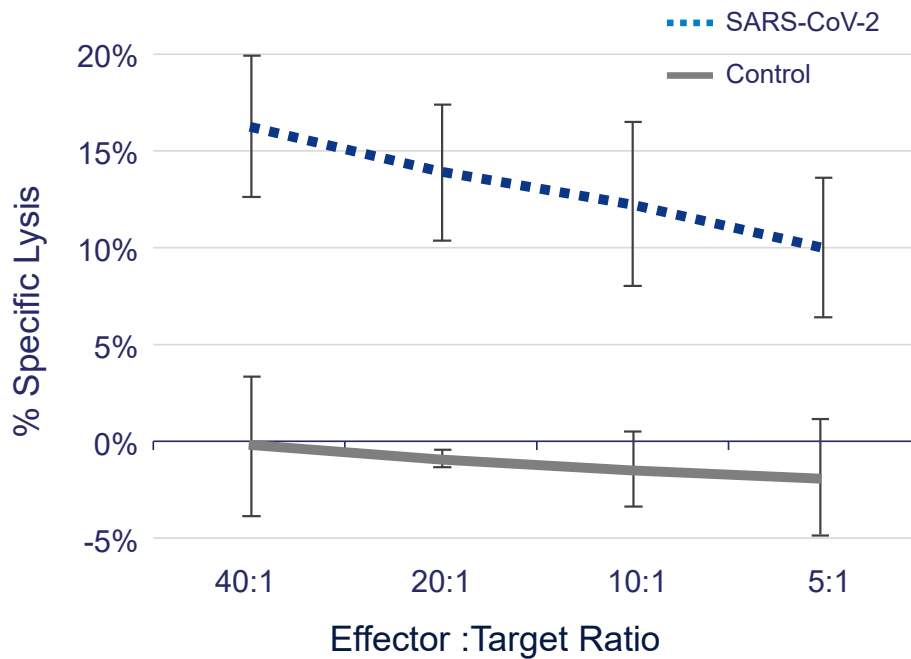
Pre-IND meeting with FDA completed

High-Risk COVID-19 Patients Have Significant T-Cell Deficiencies

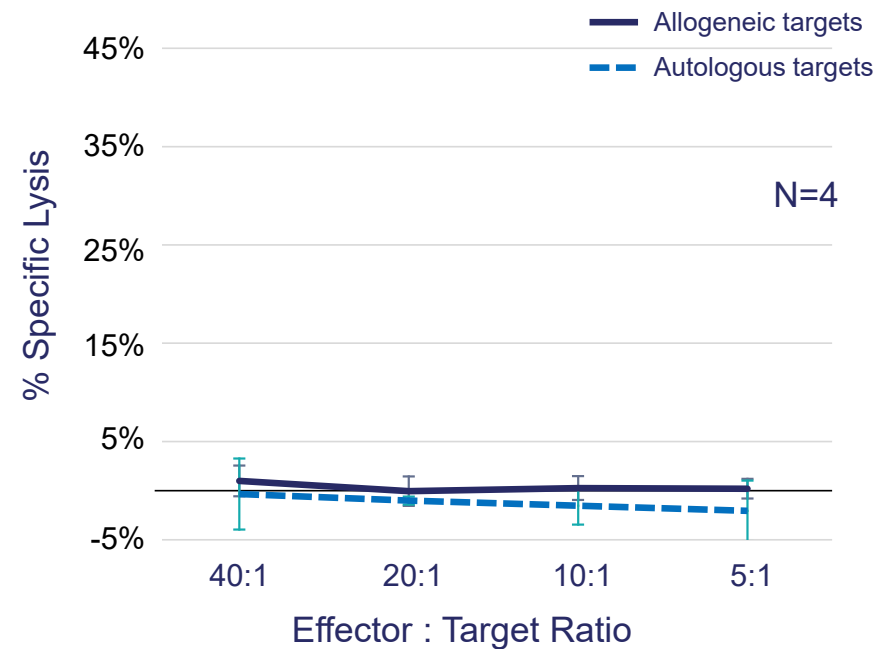


ALVR109 Has Demonstrated Selective Cytolytic Activity against SARS-CoV-2 While Leaving Non-Virus Infected Targets Intact

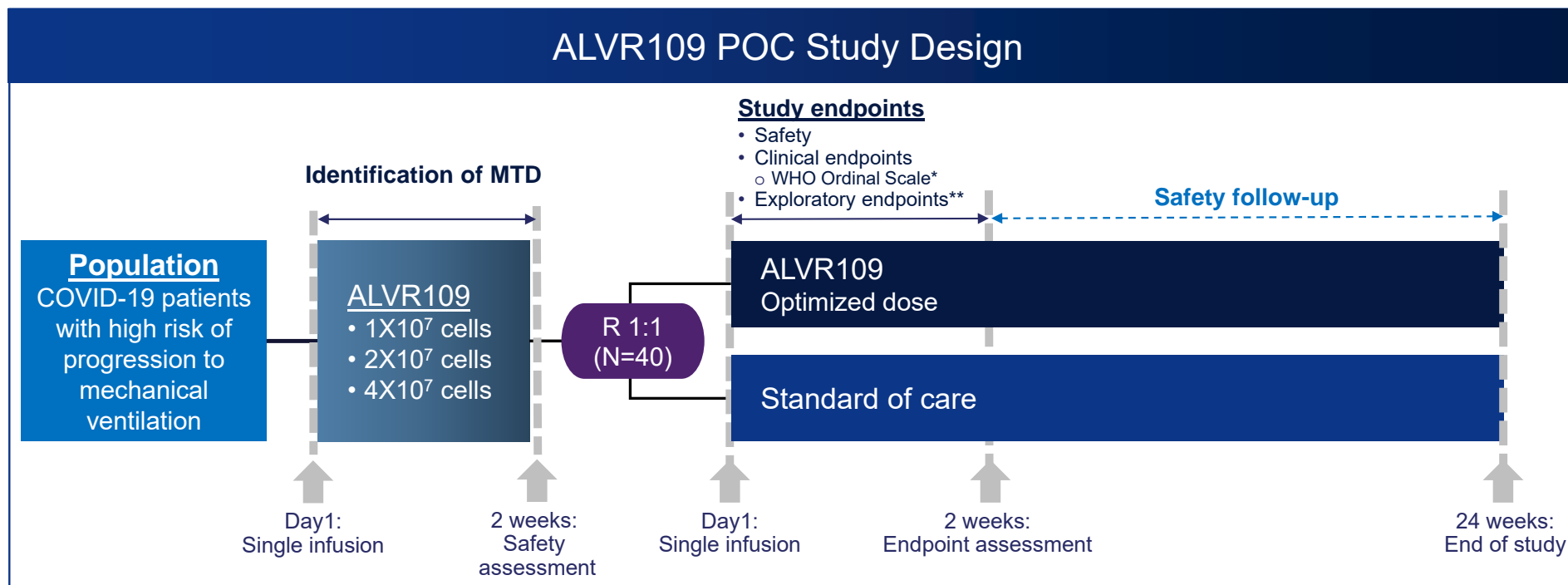
Cytolytic Activity of ALVR109
against SARS-CoV-2



No / Minimal Activity of ALVR109
against Non-Infected Targets



ALVR109 IND Approved & POC Trial Expected to Commence in Q4 2020



Advancing Towards Commercialization

BaseCamp is a Premium Global Cell and Gene Therapy R&D and Manufacturing Company Dedicated to Its Affiliated Companies



- R&D for immunotherapy, regenerative medicine and gene therapy
- Process development
- GMP manufacturing of viral vectors
- GMP manufacturing of immune cells
- Regulatory and quality support
- Innovation and process consulting

AlloVir Has Achieved Meaningful Milestones in Off-the-Shelf VST Manufacturing Leveraging BaseCamp

Successful Completion of Technology Transfer and Scale-Up from Baylor to CDMO

- Completed technology transfer of manufacturing process to our CDMO
 - Successful engineering runs and potency assay to support multiple clinical trials
- Robust manufacturing process industrialized with CDMO GMP facility
- Quality control and computer system validation per FDA requirement have been completed

Redundancy of Manufacturing Sites to Facilitate VST Supply for Clinical Trials

- An external cGMP CDMO is currently manufacturing Viralym-M and ALVR106
- An academic cGMP facility is manufacturing ALVR109
- Plan to add ElevateBio BaseCamp to our manufacturing network by 2021

Conclusion

Robust Set of Potential Value Enhancing Catalysts Ahead

2020

- **Viralym-M:**
 - Pivotal Trial Initiation in Virus-Associated HC
 - POC Trial Initiation in Multi-Virus Prevention
- **ALVR109:**
 - POC Trial Initiation for SARS-CoV-2
- **ALVR106:**
 - POC Trial Initiation for Multiple Respiratory Viruses

2021

- **Viralym-M:**
 - POC Trial Initiation in BKV in Kidney Transplant
 - Pivotal Trial Initiation for CMV
 - Pivotal Trial Initiation for AdV
 - POC Trial Initiation in CMV for Solid Organ Transplants
 - **POC Initial Data in Multi-Virus Prevention**
 - **POC Interim Data in BKV in Kidney Transplant**
- **ALVR109:**
 - **POC Top Line Data for SARS-CoV-2**
- **ALVR106:**
 - **POC Initial Data (Cohort A) for Multiple Respiratory Viruses**

Key Investment Highlights

INNOVATIVE ENGINE for allogeneic, off-the-shelf, virus-specific T-cell immunotherapies

5 VST THERAPY CANDIDATES for **12** devastating, life-threatening viruses

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Viralym-M: 3 PIVOTAL TRIALS in 2020/2021

Viralym-M: POC trials for PREVENTION of all 5 viruses and **SOT** with initial data in 2021

ALVR106 (MULTI-RESPIRATORY VSTs): POC trial in 2020 with initial data in 2021

ALVR109 (SARS-CoV-2 VSTs): ACCELERATED DEVELOPMENT for treatment of COVID-19 with POC trial in 2020 and initial data in 2021

