# HOOKIPA Pharma

## Next-generation Immunotherapies for the Treatment of Cancer and Other Serious Diseases

January 2025

NASDAQ: HOOK

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# Merger Transaction Overview

## Transaction Structure

- Proposed all stock transaction where HOOKIPA Pharma Inc. (“HOOKIPA” or “HOOK”) acquires Poolbeg Pharma plc (“Poolbeg” or “POLB”)
- HOOKIPA remains TopCo with existing Nasdaq listing
- Concurrent Financing: Private placement of up to approximately $30M to be funded into HOOKIPA immediately following transaction close
- Implied ownership split pre-merger without PIPE on a fully-diluted basis: POLB shareholders 55.0% / HOOKIPA shareholders 45.0%
- In addition, CVR's for HB-200, HB-400 & HB-500 Programs (for pre-PIPE HOOKIPA shareholders)
- POLB expected to apply for cancellation of its shares on AIM Market at transaction close and become a private sub of HOOKIPA

## Capitalization and Use of Proceeds

- Combined company expected to have sufficient capital to realize meaningful value inflection points
  - HB-700: Phase 1 interim data expected in H1 2026
  - POLB 001: Phase 2a topline data expected in H2 2026
  - HB-500: Phase 1b Primary completion expected in H2 2025
- Expected to provide cash runway through year-end 2026*

## Transaction Timeline

- Possible offer announcement in line with Rule 2.4 of the UK City Code on Takeovers and Mergers
- HOOKIPA to either announce a firm intention to make an offer for POLB, or not, under Rule 2.7 of the UK City Code on Takeovers and Mergers
- Concurrent financing contingent on transaction close

## Post-Closing

- Combined company anticipates benefiting from a strong international leadership team comprised of individuals with both significant industry experience and a track record of success

*Statement: assumes the receipt of future expected R&D grant proceeds by the Austrian government, which Hera has received in previous years, for qualifying research and development expenses and capital expenditures

# HOOKIPA-Poolbeg Merger Would Diversify Clinical Pipeline and Bolsters Near-Term Catalysts

| | |
|---|---|
| **Diversifies Pipeline** | Next-generation cancer immunotherapy portfolio led by multi-KRAS-targeting HB-700 and Phase 2-ready small molecule POLB 001 |
| **Bolsters Near-Term Clinical Data Catalysts** | Clinical data expected across multiple programs over next 24 months in large therapeutic areas with unmet medical needs |
| **Combined Leadership Team** | Experienced in successfully developing and commercializing medicines with focus on execution & operational excellence |

# HOOKIPA: Immunotherapy Focused Programs & Pipeline Opportunities

## Oncology

**HB-700**

Next-generation multi-KRAS targeting cancer immunotherapy with blockbuster potential

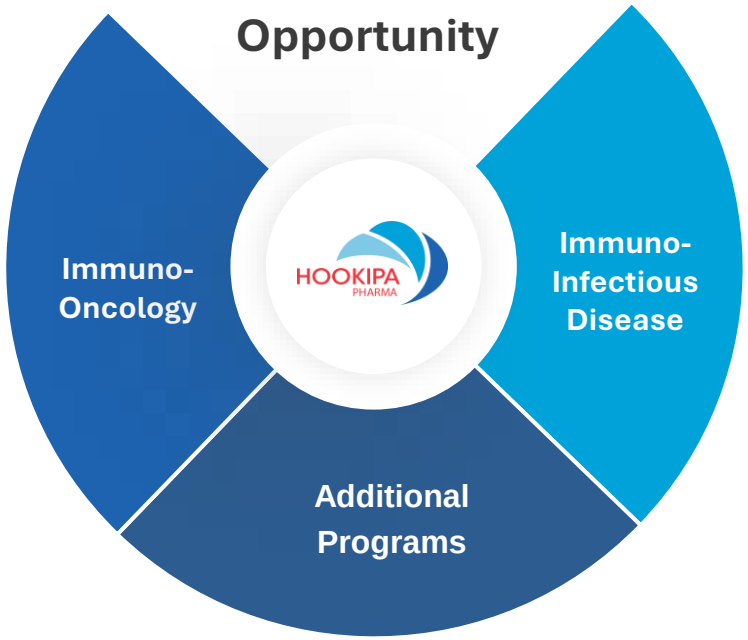
**POLB 001**

Potentially breakthrough orally delivered p38 MAPK inhibitor to prevent cancer immunotherapy-induced CRS

**Eseba-vec (HB-200)**

Immunotherapy for HPV16+ HNSCC

## Portfolio Opportunity




**GLP-1 Program**

Oral GLP-1R agonist for diabetes and obesity

## Infectious Disease

**HB-400**

Immunotherapy for HBV GILEAD

**HB-500**

Immunotherapy for HIV GILEAD

**AI Programs**

For influenza and RSV



AI: Artificial Intelligence. HBV: Hepatitis B Virus. HIV: Human Immunodeficiency Virus. GLP-1: Glucagon-like peptide-1. GLP-1R: GLP-1R receptor

# HOOKIPA is Advancing Differentiated Immunotherapies in Well-Defined Populations with Large Market Potential

## HB-700

Next-generation multi-KRAS targeting cancer immunotherapy with blockbuster potential

Antigen-specific T cell activation for deep, durable, and robust anti-tumor activity

Phase 1-ready; derisked by clinical POC with platform asset eseba-vec (HB-200)

**Interim Phase 1 data expected H1 2026**

## POLB 001

Phase 2-ready asset designed to prevent immunotherapy-induced CRS

Potential >$10B U.S. market opportunity

**Topline Phase 2 data expected H2 2026**

## Strategic Partnerships

Up to $417.5 M potential future opt-in, development and commercial milestones and significant sales royalties

HB-400[1] in Gilead-led Phase 1b trial for HBV with expected **primary completion H1 2025**

HB-500[2] in HOOKIPA-led Phase 1b trial for HIV with expected **primary completion H2 2025**

GILEAD

## Additional Programs

**Eseba-vec**: Pivotal Phase 2/3-ready asset in HPV16+ HNSCC
**Final Phase 2 data expected H2 2025**

**Oral GLP-1R agonist**
**Clinical topline POC data expected H1 2026**



GLP-1R: Glucagon-like peptide-1 receptor. POC: Proof of concept; 1: HB-400 (GS-2829): https://clinicaltrials.gov/study/NCT05770895?term=GS-2829&rank=1; 2: HB-500 (GS-6779) https://clinicaltrials.gov/study/NCT06430905?term=hb-501&rank=1

HOOKIPA PHARMA

# Proposed Team with Proven Execution and Operational Leadership

**Malte Peters, MD, PhD**
**Chief Executive Officer**

HOOKIPA PHARMA · morphosys · NOVARTIS

**Mark Winderlich, PhD**
**Chief Development Officer**

HOOKIPA PHARMA · morphosys · evotec

**Cathal Friel**
**Executive Chairman, Poolbeg Co-Founder**

POOLBEG PHARMA · AMRYT PHARMA · hVIVO formerly Open Orphan plc

**Ian O'Connell**
**Chief Financial Officer, Poolbeg Co-Founder**

POOLBEG PHARMA · AMRYT PHARMA · hVIVO formerly Open Orphan plc

**David Allmond**
**Chief Business Officer**

POOLBEG PHARMA · AMRYT PHARMA · Celgene

**John McEvoy**
**Chief Legal Officer**

POOLBEG PHARMA · AMRYT PHARMA · HERBERT SMITH FREEHILLS

# HOOKIPA Has a Diversified Core Immunotherapy Pipeline

| Product | Modality | Indication | Preclinical | Phase 1 | Phase 2 | Phase 3 | Key Milestone |
|---|---|---|---|---|---|---|---|
| **Oncology Programs** | | | | | | | |
| **HB-700** | Next-generation immunotherapy | KRAS Mutated Tumors | | **Phase 1-ready** | | | FPD in Phase 1 trial expected mid-2025 |
| **POLB 001** | p38 MAPK inhibitor | Immunotherapy-induced CRS | | | **Phase 2-ready** | | FPD in Phase 2 trial expected H2 2025 |
| **Partnered Programs in Infectious Disease** | | | | | | | |
| **HB-400**[1] | Next-generation immunotherapy | HBV | | **Gilead-led Phase 1 ongoing** GILEAD | | | Primary completion expected H1 2025 |
| **HB-500**[2] | Next-generation immunotherapy | HIV | | **HOOKIPA-led Phase 1 ongoing** GILEAD | | | Primary completion expected H2 2025 |



1: HB-400 (GS-2829): https://clinicaltrials.gov/study/NCT05770895?term=GS-2829&rank=1; 2: HB-500 (GS-6779) https://clinicaltrials.gov/study/NCT06430905?term=hb-501&rank=1

# HOOKIPA Pipeline has Additional Partnership Opportunities

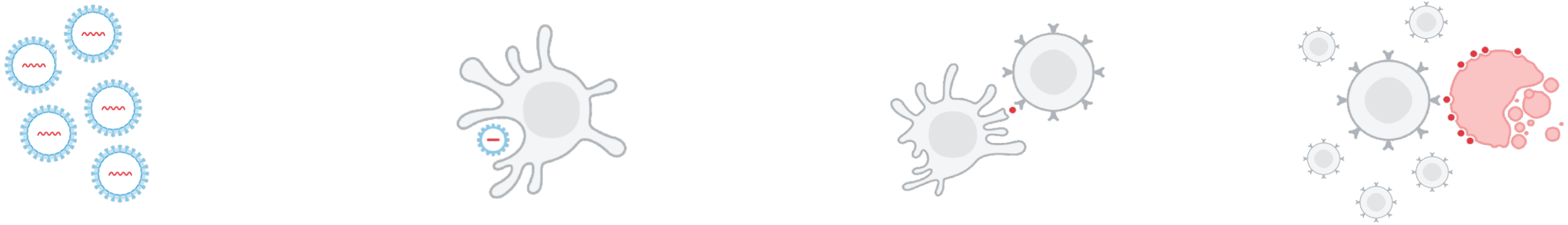
| Product | Modality | Indication | Preclinical | Phase 1 | Phase 2 | Phase 3 | Key Milestone |
|---|---|---|---|---|---|---|---|
| **Additional Programs** | | | | | | | |
| **Eseba-vec (HB-200)** | Next-generation immunotherapy | HPV16+ HNSCC | **Mature Phase 2 data with POC in combo with CPI** | | | | Final Phase 2 data expected H2 2025 |
| **GLP-1 Program** | GLP-1R agonist | Obesity and diabetes | | | | | Topline POC data expected H1 2026 |
| **AI Programs** | Novel target discovery | Influenza | | CytoReason | | | Potential partnership |
| | | RSV | | ONETHREE BIOTECH | | | Potential partnership |



CPI: Checkpoint inhibitors. GLP-1: Glucagon-like peptide -1. GLP-1R: GLPR-1 receptor. POC; Proof-of-Concept

# HOOKIPA's Next-Gen Vaccine Platform Designed to Supercharge Immunity[1-4]

## T cell activation platform based on work of Nobel laureate and HOOKIPA co-founder Rolf Zinkernagel[5]



| Drug Design | Infection of APCs | Activation of T cells | Tumor Cell Killing |
|---|---|---|---|
| Heterologous and alternating 'prime-boost' arenavirus vectors with target antigens | Dendritic cells or macrophages | Tumor-specific T cell expansion and activation | Robust anti-tumor activity |

**Unprecedented levels of cancer-specific T cells with polyfunctionality & durability with continued treatment**



1: Lauterbach H, et al. Front Oncol. 2021;11:732166; 2: Fu S, et al. ASCO 2022. Abstract 2517; 3: Bonilla WV, et al. Cell Rep Med. 2021;2(3):100209; 4: Kallert SM, et al. Nat Commun. 2017;8:15327; 5: www.nobelprize.org/prizes/medicine/1996/zinkernagel/facts/

# HB-700

## Next-generation multi-KRAS targeting cancer immunotherapy with blockbuster potential

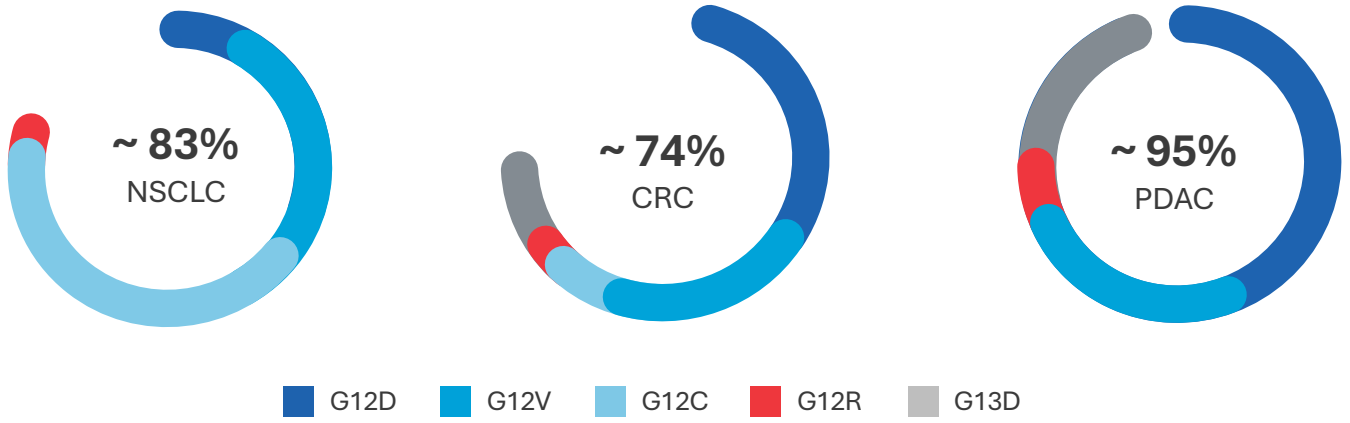
# KRAS is the Most Prevalent Oncogenic Driver

## ~1.5M people worldwide

are diagnosed annually with KRAS-mutated NSCLC, CRC, or PDAC

| ~20% | ~30-40% | ≥88% |
|---|---|---|
| All NSCLC | All CRC | All PDACs |

Prevalence of the top 5 KRAS mutations by tumor type




### KRAS Market Opportunity

Targeting KRAS has been challenging due to lack of activity, poor selectivity or treatment resistance

Approved standards of care are small molecules targeting a single mutation

## ~$5-6B

2038 global KRAS market size estimate

**Unmet needs remain for a therapy that can**

- Address multiple mutation subtypes
- Drive deep and durable responses
- Achieve immunogenic tumor cell death



NSCLC: Non-small cell lung cancer. CRC: colorectal cancer. PDAC: pancreatic ductal adenocarcinoma
Source: Trinity Life Sciences, Kantar, World Cancer Research Fund

# HB-700: A Novel Multi-KRAS Mutant Targeting Cancer Immunotherapy

## Designed for uniquely strong anti-tumor T cell activation

| | |
|---|---|
| Targets 5 of the most prevalent KRAS mutations[1] | G13D · G12V · G12C · G12D · G12R |
| Strong preclinical proof-of-concept package[2] | KRAS mutation specific T cell activation in humanized mice; preclinical profile supports diverse combinations |
| Derisked by clinical POC with platform asset eseba-vec | Dose selection and treatment schedule based on alternating 2-vector therapy in eseba-vec program |
| Phase 1-ready | Nonclinical development and clinical trial material manufacturing completed |
| Blockbuster commercial potential | Large addressable populations in NSCLC, CRC and PDAC |



1. artLCMV-KRAS = HB-703, artPICV-KRAS = HB-704, HB-703 and HB-704 encode 5×18 amino acid stretches of KRAS containing single amino acid mutations at position 12 or 13
2. Lauterbach et al 2024, 6th RAS Summit Boston

# HB-700: Open-Label Phase 1/2 in Metastatic KRAS-Mutated NSCLC

## Clinical POC in NSCLC followed by expansion in related indications

**Eligibility**

Metastatic/advanced NSCLC & CRC
KRAS mutated and HLA selected
≥1 prior line SoC

**Phase 1** Dose De-Escalation

**2L+ NSCLC & CRC**

**HB-700**
**Intended dose; N = 3 + 3**

**HB-700**
**De-escalation**

**Phase 1** Dose Expansion

**2L+ NSCLC**

**NSCLC**
**N = 6**

**Primary Endpoint:**
RP2D
**Secondary Endpoint:**
Safety, T cell response, initial antitumor activity

**Eligibility**

Metastatic/ advanced NSCLC
PD-L1 scores of TPS ≥50%
KRAS-mutated and HLA selected
No prior line of therapy

**Phase 2** Combination

**1L NSCLC**

**HB-700 + Pembrolizumab**
**N = 30**

**Primary Endpoint:**
ORR by RECIST v1.1
**Secondary Endpoint:**
Safety, DCR, DoR, PFS, OS, T cell response and tumor infiltration

**Expect FPD in Phase 1 trial mid-2025 with interim Phase 1 data in KRAS mutant tumors in H1 2026**



HLA: human leukocyte antigens. RP2D: Recommended Phase 2 dose. ORR: Overall response rate. DCR: Disease control rate. DoR: Duration of Response. PFS: Progression free survival. OS: Overall survival

# HB-700 KRAS Immunotherapy has Potential for $1.5B Peak Worldwide Net Sales* Across 1L NSCLC, CRC and PDAC, if approved

## Additional expansion opportunities in 2L and neoadjuvant/adjuvant for locally advanced disease

| | NSCLC | CRC | PDAC |
|---|---|---|---|
| **1L Addressable Patient Population (US+EU5)** | 18.5K patients† | 27.8K patients † | 39K patients† |
| **Unmet Need** | | | |
| **Tumor immune microenvironment** | | | |

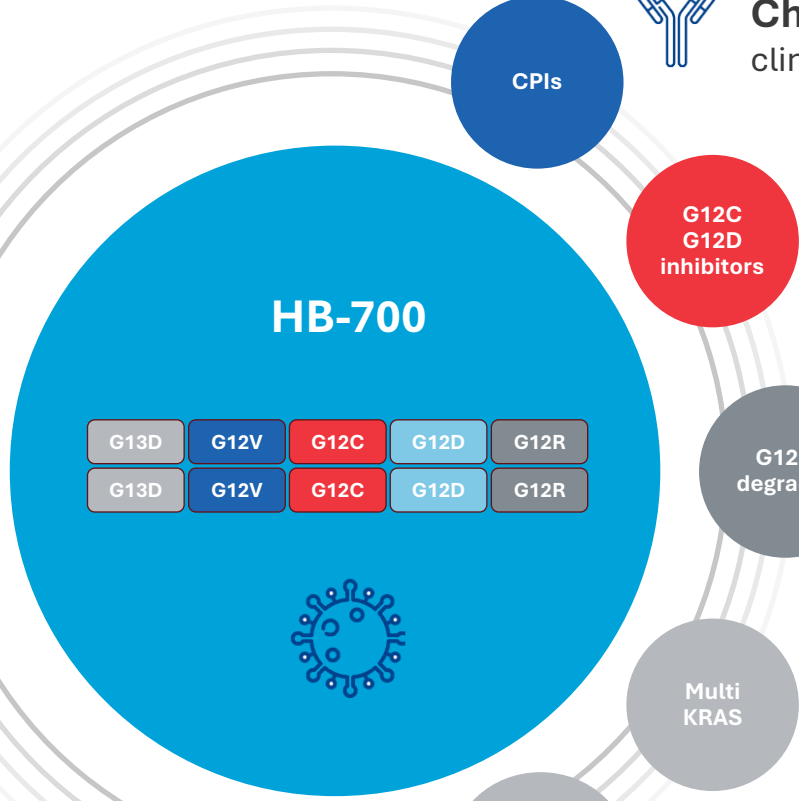
***Relative Opportunity for HB-700***

*Highest Opportunity*

*Assumptions:
HLA restriction is included (54% NSCLC, 61% PDAC, 48% CRC)
US launch: 2032, 3YTP; EU5 launch: 2033, 5YTP
Settings 1L NSCLC, CRC and PDAC with 10-18% market share

†: Source: Trinity Life Sciences

# HB-700 Potential to Combine with Diverse Approved and Emerging Therapies




## Checkpoint Inhibitor Combination

clinical POC on combination with anti-PD1 and eseba-vec[1]

## KRAS Inhibitor Combination

potential to work synergistically with immunotherapy likely by remodelling the TME making it more susceptible to immune attack (e.g. AMG510+aPD1)[2]

## KRAS Degrader Combination

enhanced antigen presentation may lead to augmented CD8+ T cell activation

## multi KRAS Combination

Potential to potentiate/boost the immune response and reach a vast majority of patients with KRAS mutated solid tumors

## Adoptive T Cell Transfer Combination

artARENA Technology potential to effectively activate and augment adoptively transferred T cells[3]



TME: Tumor microenvironment. 1 Presented at ASCO 2024; 2 Oya et al., Lung Cancer, 2024; 3 Purde MT et al 2024

# POLB 001

**Potentially breakthrough orally delivered p38 MAPK inhibitor to prevent cancer immunotherapy-induced CRS**

# CRS Associated with Immunotherapies is a High Unmet Need

## Effective prophylaxis represents a >$10B market opportunity

**Cytokine Release Syndrome (CRS)**
A severe, potentially life-threatening side effect of cancer immunotherapies

**No approved therapies for prevention**
Approved options for CRS management (tocilizumab) **have not adequately* prevented** Grade 2+ CRS in clinical trials

**>70%[1] of patients experience CRS**
on certain CAR T / bispecific antibody therapies and are restricted to specialist cancer centers

**Estimated $5B annually[2-3]**
in direct costs to US health systems by 2030
CRS of all grades can require hospitalisation



**1.** Average rate from Summary of Product Characteristics (SmPCs) for Yescarta, Tecartus, Abecma, Kymriah, Carvykti, Breyanzi, Elrexfio, Columvi, Epkinly, Tecvayli and Talvey.

**2.** Datamonitor Healthcare. Forecast: Diffuse Large B-Cell Lymphoma and Multiple Myeloma, 2023. **3.** Abramson JS et al. Blood Adv. 2021 Mar 23;5(6):1695-1705.

*In this context, *adequately* is defined as both not completely preventing grade 2+ CRS and potentially sufficient to support active clinical development towards a regulatory approval of a medicine. Grade 2 CRS is defined as described by Lee et al, Biol Blood Marrow Transplant . 2019 Apr;25(4):625-638. janssenscience.com & doi.org/10.1182/blood-2022-159381

# POLB 001: Potential to Make Immunotherapies Safer & More Accessible

## Selective p38 MAPK Inhibitor

- Selectively prevent excessive inflammation without immunosuppression
- Oral agent
- Strong patent portfolio

## Strong Preclinical & Clinical Data

- Phase 2-ready
- Favorable safety and tolerability profile
- Potent TNF-α inhibition shown in two Phase 1 trials
- Potent inhibition of IL-6 and other key inflammatory markers in clinical & preclinical models

## Significant Market Opportunity

- >$10B market opportunity
- Potential for Orphan Drug Designation
- No approved therapy for CRS prevention

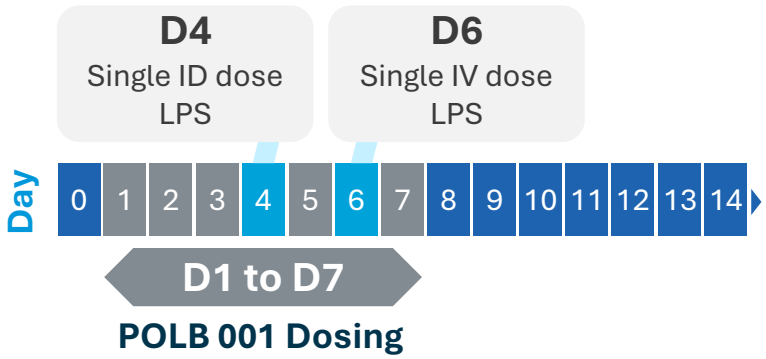


*CRS score is a 0-4 system of physical observations where 0 is normal and 4 is moribund. MAPK: Mitogen Activated Protein Kinase. TNF: Tumour necrosis factor, IL-6: Interleukin-6

# LPS Human Challenge: Potent Inhibition of Excessive Inflammation

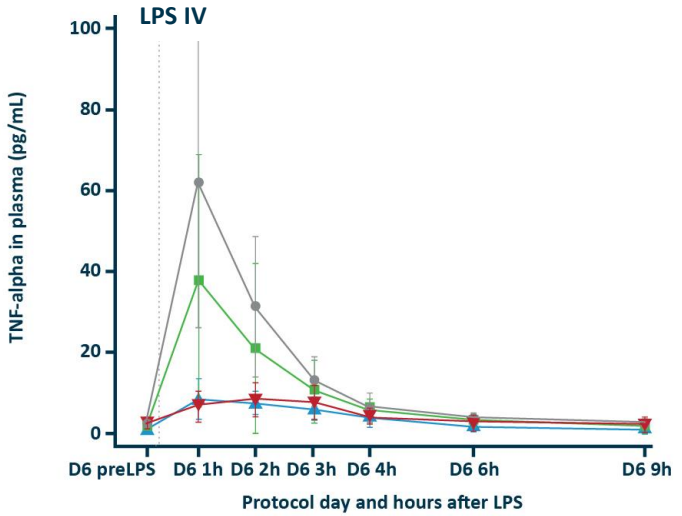
## Supportive of potential of POLB 001 as a prophylactic for cancer immunotherapy-induced CRS

### Trial design



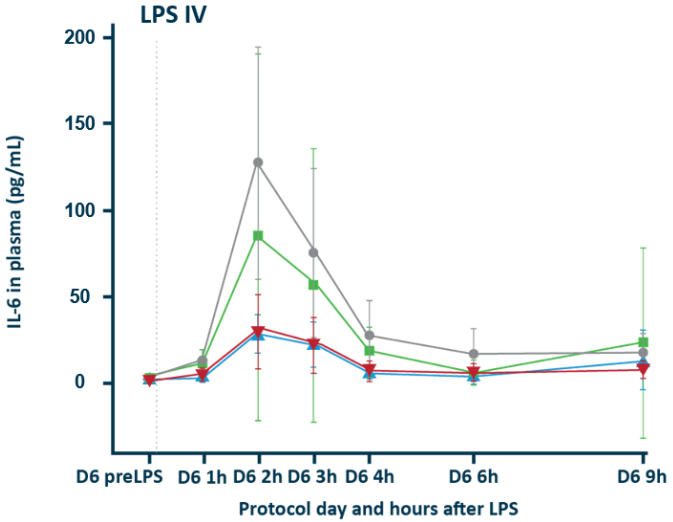

**Potential to effectively prevent CRS while preserving key immune system functionality**

### TNF-α




**73.5% and 56.2% maximal reduction compared to placebo for 70 mg and 150 mg doses respectively ($p$ = 0.0003)**

### IL-6




**57.4% and 63.5% maximal reduction for 70 mg and 150 mg doses respectively ($p$ = 0.0002)**

Placebo | 30 mg POLB 001 | 70 mg POLB 001 | 150 mg POLB 001

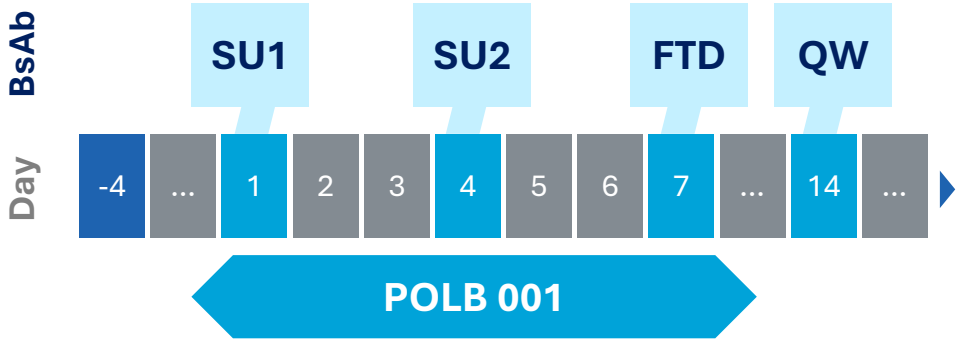


**Trial design**: Single site, randomized placebo controlled LPS challenge trial. Healthy males administered BID oral POLB 001 or vehicle only control & challenged with local dermal LPS on day 4 and systemic IV LPS on day 6 to evaluate effect of POLB 001 on local and systemic inflammatory responses respectively. n=9 per group, all endpoints were exploratory. Clinically meaningful parameters such as temperature, heart rate, C-reactive protein and blood pressure were monitored, along with target inhibition and a range of exploratory biomarkers. TNF-α: Tumour necrosis factor α, IL-6: Interleukin 6

# Planned POLB 001 Phase 2a Investigator Initiated Trial for Prevention of CRS in R/R Multiple Myeloma Patients Receiving Bispecific Ab

## Expect FPD in Phase 2 trial H2 2025 with topline data expected in H2 2026

### Trial design




| | | |
|---|---|---|
| Phase 2a IIT | Single Arm | N = 30 - 40 |
| BID Oral POLB 001 | Single dose level | SoC BsAb* |

### Key Objectives/Endpoints

- Incidence of Grade 2+ CRS
- Incidence of CRS all grades
- Confirm safety and pharmacokinetics
- Exploratory biomarker analysis

*Clinical trial collaboration and supply agreements with a large pharma company expected for approved BsAb



BID = Twice Daily; BsAb = Bispecific antibody; CRS = Cytokine Release Syndrome; FTD = First treatment Dose; QW = Weekly Dosing; R/R = Relapsed/ Refractory; SoC = Standard of Care; SU = Step up dose,

# CRS Preventative Therapy: >$10B US Market Opportunity[3]

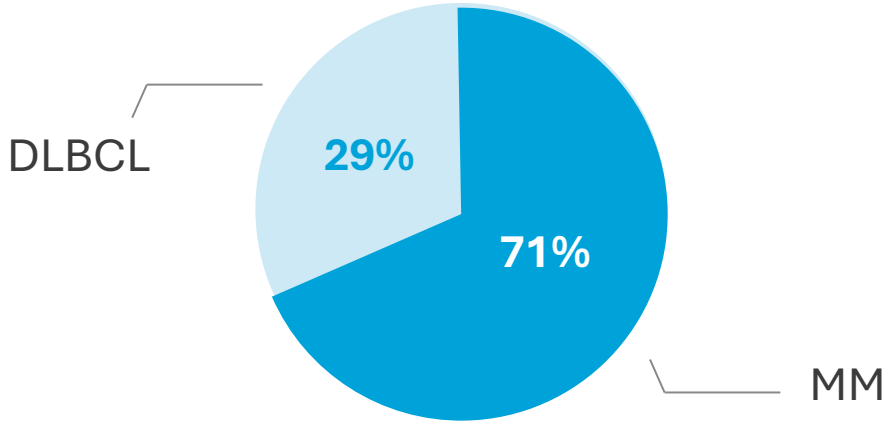
## A significant opportunity exists for POLB 001 as an adjunct therapy to bispecific and CAR T treatment

**1st, 2nd and 3rd line+ MM and DLBCL patients in the US and EU5,** receive CAR T cell and bispecific antibody therapy[1]

An effective primary prophylactic for CRS could **enable outpatient administration and broader uptake** of immunotherapies[2]

Potential across additional hematological malignancies, solid tumors and new areas like severe influenza

**Addressable MM and DLBCL population by 2030 in the US and EU5**




**n = ~500,000 patients[1]**

Estimate encompasses solely MM & DLBCL due to rapid advancements in bispecific & CAR T treatment for these indications. Conservative price estimate versus market peers

CAR T: Chimeric Antigen Receptor T cell therapy. MM: Multiple Myeloma. DLBCL: Diffuse Large B-Cell Lymphoma.

1. Datamonitor Healthcare. Forecast: Diffuse Large B-Cell Lymphoma and Multiple Myeloma, 2023. 2. Hansen DK et al., Cancers (Basel). 2023. 7;15(24):5746. 3. Independent research by Decisive Consulting Limited. https://teamdecisive.com/meet-the-team

# Gilead Strategic Partnerships

## HB-400 and HB-500

# Gilead–HOOKIPA: Aim to Develop Functional Cures for HBV and HIV

**HB-400**
For the treatment of Hepatitis B

Alternating, two-vector non-replicating arenaviral HBV immunotherapy

High Potential candidate in Gilead's efforts to develop a curative regimen of treatments

Phase 1 enrollment completed

**Primary completion expected H1 2025**


**HB-500**
For the treatment of HIV

Alternating, two-vector replicating arenaviral HIV immunotherapy

Ongoing Phase 1b study

FPD July 1, 2024, with enrollment expected to complete by Jan 2025

**Primary completion expected H2 2025**



Entered into a strategic collaboration in June 2018

# HOOKIPA's Immunotherapies are a Key Partner in Gilead's HBV & HIV Cure Development Programs

## Using combination strategies and novel mechanisms with the goal to drive viral suppression and durable immunity[1-4]

**HBV Cure Regimen**

siRNA / ASO for Antigen Reduction + Immune Modulator + Vaccine-Based Therapy

**HIV Cure Regimen**

bNAbs + Immune Modulator + Vaccine-Based Therapy

**HOOKIPA's immunotherapies have potential to build long-term immune responses**



bNAbs: broadly neutralizing antibodies. siRNA: small interfering ribonucleic acid. ASO: Antisense oligonucleotides. 1: Therapeutic Potential of TLR8 Agonist GS-9688 (Selgantolimod) in Chronic Hepatitis B: Remodeling of Antiviral and Regulatory Mediators – PubMed; 2: GILD-Virology-Deep-Dive-17-February-2022.pdf; 3: Progress in vaccine development for infectious diseases-a Keystone Symposia report – PubMed; 4: GILD-Q324-Earnings-Presentation-6-November-2024

# HOOKIPA-Gilead Partnership Offers Significant Revenue Potential

## HB-400 for HBV

Gilead responsible for clinical development

**Next milestone payment: start of Phase 2**

**HOOKIPA Responsibilities**

- Vector design
- Manufacturing and supply of clinical material

**Terms**

- $185M potential future development + commercialization milestones
- High-single digit to mid-teen % royalties
- All costs borne by Gilead, including HOOKIPA spend

## HB-500 for HIV

Gilead retains exclusive option post Phase 1

**HOOKIPA Responsibilities**

- Vector design
- Conducting Phase 1b clinical trial

**Terms**

- $232.5M potential future opt-in, development + commercial milestones
- Mid-single digit to low double-digit % royalties

# Additional Programs

**Eseba-vec (HB-200), Oral GLP-1, AI Programs**

# Eseba-vec (HB-200) in Recurrent/Metastatic HPV16+ HNSCC

## Strong scientific thesis with mature Phase 2 data and POC in combination with checkpoint inhibitors

**Leading Phase 2 Data in HPV16+ R/M OPC CPS ≥ 20**

- 52% response rate in CPS ≥ 20, best among vaccine approaches[2]
- 16% complete response in CPS ≥ 20 HNSCC patients[2]
- Durable responses leading to progression free survival of 16.3 months[2]
- Favorable safety profile and well tolerated

**Clearly Defined Registrational Path**

- FDA-endorsed strategy for potential **accelerated approval**
- **EMA PRIME designation received**
- Robust clinical and preclinical data package

**Large Addressable Market with Expansion Opportunities**

- Initial opportunity: ~1,500-3,000 patients with 1L HPV16+ R/M OPC (CPS ≥ 20)[1]
- Potential expansion across HPV16+ OPC continuum
- Other HPV16+ cancers (non-OPC HNSCC, anal, cervical, penile, vulvar, vaginal)
- Additional ~17,500-20,000 patient opportunity[1]



ORR: Objective response rate. SOC: Standard of care (pembrolizumab monotherapy). HNSCC: Head and Neck Squamous Cell Carcinoma. POC: Proof of concept
1 Trinity Life Sciences analyses; 2 Phase 1/2 data as of 30-Sep-2024 cut-off, presented at 2024 SITC conference

# Additional Pipeline Programs in Large Market Opportunities

## GLP-1 Program – *Oral GLP-1R agonist*

**Obesity and Diabetes Treatment**
*Phase 1 asset*

**Proprietary Delivery Technology**

Potential to overcome oral delivery challenges of peptide-based biologicals[1]

Phase 1 initiation expected H1 2025

## AI Programs – *Novel Targets*

**RSV and Influenza**
*Preclinical assets*

**Computational Platform Opportunity[2]**

Integrates proprietary multi-parametric clinical data to identify novel host response targets

Discussions ongoing in respect to collaborations



GLP-1: Glucagon-like peptide -1. GLP-1R: GLPR-1 receptor. [1]poolbegpharma.com/pipeline/glp-1r-agonist-2/. [2]poolbegpharma.com/pipeline/artificial-intelligence/

# Combined Company and Financial Overview

# HOOKIPA: Global Company with Strong Patents and Cash Runway

## HOOK (NASDAQ)

Combined company expected to have operations in EU, UK & US

Robust patent portfolio covering:

- Platform patents
- Product-specific patents
- Oncology platform patents

## Expected to be Debt Free with Cash Runway Through YE 2026*

### Offering Size

**Up to approximately US$30M**

### Expected to fund key inflection points

**HB-700**
Phase 1 interim data expected H1 2026

**POLB 001**
Phase 2a topline data expected H2 2026

**HB-500**
Phase 1b primary completion expected H2 2025

*Statement: assumes the receipt of future expected R&D grant proceeds by the Austrian government, which Hera has received in previous years, for qualifying research and development expenses and capital expenditures

# Clinical Milestones in High Interest Areas Over the Next 24 Months

## Cash runway expected to be extended through YE2026* including HB-700, POLB 001 & HB-500 milestones

| | | 2025 | | 2026 | | 2027 | |
|---|---|---|---|---|---|---|---|
| **Program** | **Indication** | **H1** | **H2** | **H1** | **H2** | **H1** | **H2** |
| **HB-700[1]** | **KRAS Mutated Tumors** | Phase 1/2 FPI | | Phase 1 interim data | | Phase 1/2 full readout | |
| **POLB 001[1]** | **Immunotherapy-induced CRS** | | Phase 2 FPI | | Phase 2 topline data | | |
| **HB-400[2]** | **HBV** | Phase 1b primary completion | | | | | |
| **HB-500[2]** | **HIV** | | Phase 1b primary completion | | | | |
| **Eseba-vec[3]** | **HPV16+ HNSCC** | | Final Phase 2 readout | | | | |
| **GLP-1 Program[1]** | **Oral GLP-1** | POC trial FPI | | POC trial topline data | | | |



IIT: Investigator Initiated Trial. FPI: First Patient In. GLP-1: Glucagon-like peptide -1. POC: Proof of Concept
1: Management estimate based on currently available data; 2: HB 400; 3: HB 500;
*Statement: assumes the receipt of future expected R&D grant proceeds by the Austrian government, which Hera has received in previous years, for qualifying research and development expenses and capital expenditures

# Well-Positioned to Advance Next-Generation Immunotherapies for Cancer and Serious Diseases

### Unprecedented T Cell Activation

Antigen-specific T cell activation designed to produce durable, robust anti-tumor activity

### Diverse Pipeline

Merger would add Phase 2-ready POLB 001 to expand immunotherapy portfolio in oncology

### Differentiated Multi-KRAS Immunotherapy

HB-700 is an IND-cleared/Ph 1-ready asset targeting the 5 most prevalent KRAS mutations with blockbuster potential

### Multiple Near-Term Data Catalysts

Clinical data expected in multiple programs over next 24 months in large therapeutic areas with unmet medical needs

### Strategic Partnerships in Infectious Diseases

Gilead-partnered HBV and HIV programs in Phase 1 with potential to drive meaningful milestone & royalty revenues

### Merger Would Strengthen Balance Sheet

Cash runway expected to be extended through year-end 2026 including HB-700, POLB 001 and HB-500 milestones*



*Statement: assumes the receipt of future expected R&D grant proceeds by the Austrian government, which Hera has received in previous years, for qualifying research and development expenses and capital expenditures

# Appendix

# HOOKIPA-Poolbeg Merger Brings a New Management Team with a Track Record of Delivering Shareholder Returns

AMRYT PHARMA

- World class rare and orphan focused biopharma co-founded and comprising of Poolbeg senior management team
- Listed 2016 c.$50M and acquired in 2023 for $1.48B
- Restructured and fixed underperforming assets, driving development & commercial success across multiple markets
- Made strategic choices to rapidly generate substantial value for shareholders, including:
  1. Approval of Filsuvez for EB and market launch
  2. In-licensing of Lomitapide
  3. Acquisition of Aegerion Pharmaceuticals
  4. Acquisition of Chiasma Inc

hVIVO

- Poolbeg's co-founders Cathal Friel and Ian O'Connell took control of distressed hVIVO via a vehicle they co-founded called Open Orphan (later renamed hVIVO).
- Grew sales revenue from c.$30M in 2019 to an expected c.$77M for 2024, and market cap from c.$15M to c.$175M
- Restructured to refocus operations on core strengths and implement efficiencies to drive revenue growth
- Poolbeg Pharma spun-out of Open Orphan, bringing virology expertise

POOLBEG PHARMA

morphosys

- Mark Winderlich and Malte Peters co-led development and approval strategy of tafasitamab in combination with lenalidomide in 2L+ DLBCL in US, EU, and other countries using real-world data
- Assembled an experienced development team, that successfully led 3 large Phase 3 studies in 1st L DLBCL, 2nd L FL, 1st L MF, leading to the acquisition of Morphosys by Incyte and Novartis
- Led felzartamab clinical development in oncology & AI, which was acquired by hBIO, later Biogen.

NOVARTIS

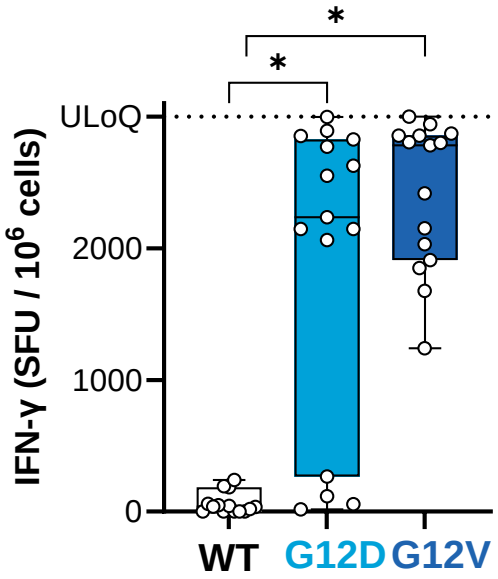
- Malte Peters was responsible for the development and approvals of a PI3K inhibitor, BRAF/MEK inhibitor, CDK4 inhibitor, c-MET inhibitor, and other molecules
- Introduced the concept of patient selection based on molecular profiles, leading to proof of concept and accelerated approvals from Phase 1 and 2 trials
- Led the clinical team at Sandoz, Novartis' generic division, to achieve approval of rituximab and Enbrel biosimilars



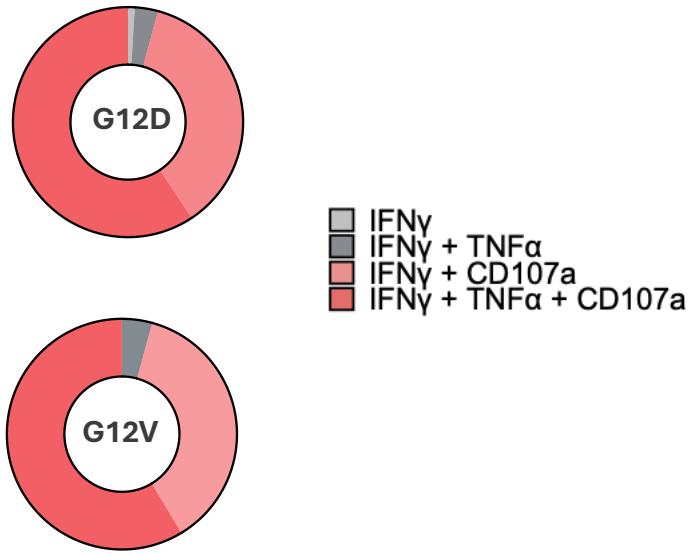
DLBCL: diffuse large B cell lymphoma. EB: epidermolysis bullosa. FL: Follicular lymphoma. MF: myelofibrosis. PI3K: Phosphoinositide 3-kinases. 1st L: first line. 2nd L: second line.

# HB-700 Preclinical Proof of Concept: Highly Immunogenic with Potent Target Cell Killing in Humanized Mice

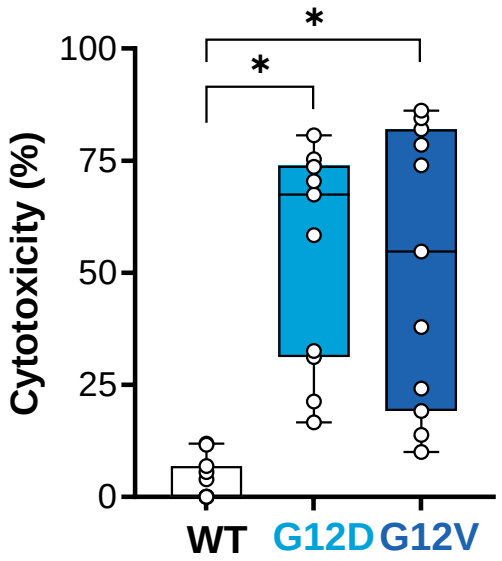
**High frequencies of circulating KRAS mutation specific CD8+ T cells**




**KRASmut specific T cells exhibit a polyfunctional profile**




**KRASmut specific T cells are functional and specifically kill target cells**




[1]HLA-A*11:01 transgenic mice
Source: Lauterbach et al 2024, 6th RAS Summit Boston; Immunization of HLA-B*07:02 mice shows induction of cytotoxic KRAS G12R/C restricted CD8+ T cell responses (data not shown)
SFU spot-forming units measured by IFN-γ ELISpot, WT-wild type, * = p<0.05
Polyfunctionality was determined by intracellular cytokine staining; Cytotoxicity was measured in an *in vivo* CTL assay

# POLB 001: An Oral p38 MAPK Inhibitor That Selectively Targets Key Inflammatory Pathways Without Broad Immunosuppression

## Phase 2 ready asset with a comprehensive pre-clinical and clinical data package

### Favorable Safety and Tolerability Profile

- 97 subjects dosed during Phase I FIH and LPS Challenge studies
- No SAEs or discontinuations due to AEs, all were of mild intensity
- No clinically meaningful findings in clinical laboratory test results, vital signs or ECG
- Favorable safety & tolerability profile

### Designed to Prevent Immunotherapy-Induced CRS

- Suitable for at-home dosing (used in LPS Challenge Study)
- Hepatic metabolism and biliary excretion profile favorable for multiple myeloma and renally impaired populations
- BID oral regimen designed to provide targeted protection during CRS risk period
- Half-life of 7-14 hours provides adequate exposure and avoids excessive exposure beyond periods of CRS risk

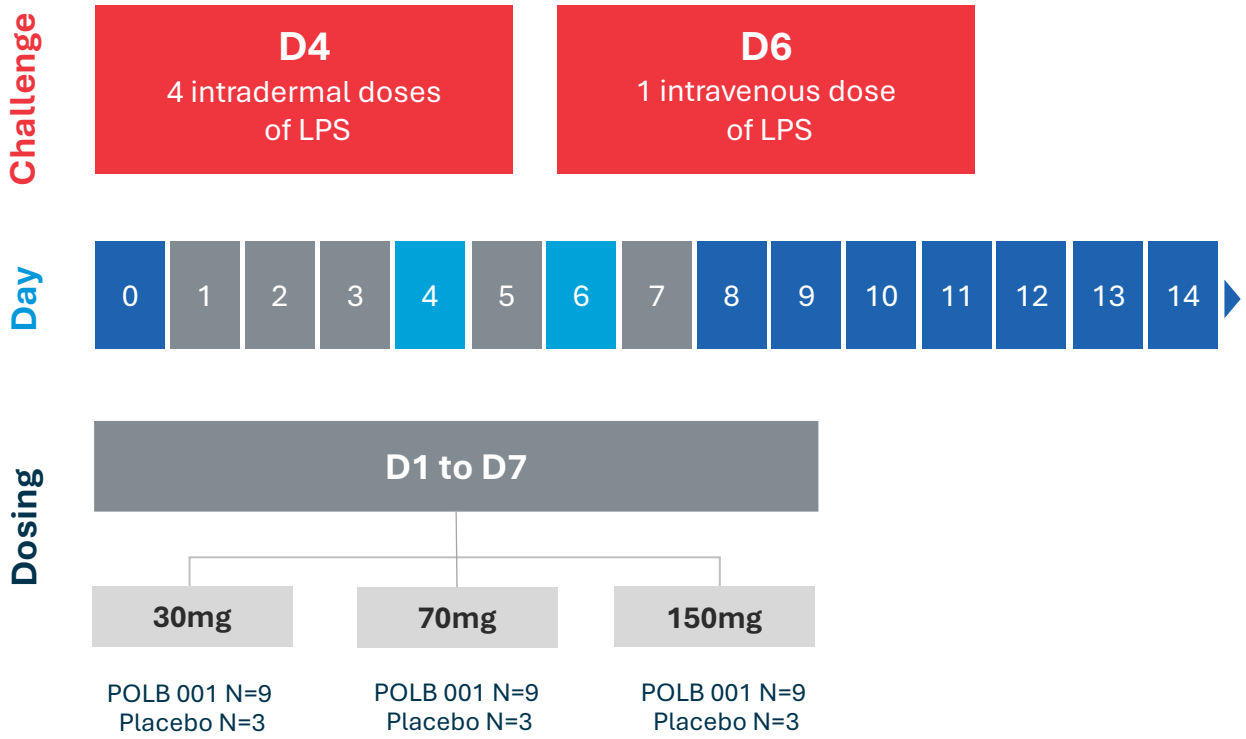


AE = adverse event. FIH = First in human; SAE = Serious adverse events; ECG = Electrocardiogram

# POLB 001: Benefit in Treatment of LPS-Induced Inflammation

## Randomized, double-blind, placebo-controlled, inflammatory challenge trial in healthy volunteers

### Trial design




### Endpoints

**Intravenous LPS challenge**

- Bloods (cytokines, vascular markers, CRP)
- *Ex-vivo* LPS response
- Safety & tolerability (inc. vital signs, AE's, ECG, Hematology)

**Local inflammatory responses** were also measured via intradermal LPS challenge on day 4



CRP: C-reactive Protein

# POLB 001 is Designed to Address a High Unmet Medical Need

## Effective prevention of CRS by POLB 001 may enable broader access to cancer immunotherapies

**~500,000 Patients**

Eligible CAR T / bispecific patients in US & EU for DLBCL and MM alone far exceeds treatment capacity[1]

**"Bottleneck"**

cancer immunotherapy delivery in **specialist centers** limits access

CAR T

BsAb

**An effective CRS prevention could remove the bottleneck**

**Estimated US$5B by 2030**

In direct costs of managing CRS[2]

> **Bispecific antibodies will only be delivered in specialist cancer centers until there is a way to make them safer. POLB 001 could make treatment safe enough to extend them to a much wider patient population.**
>
> *Professor Gareth Morgan, US*

> **The development of an oral CRS preventive therapy will mean no or shorter hospital stays.**
>
> *French KOL*



DLBCL: Diffuse Large B-Cell Lymphoma. KOL: Key opinion leader. MM: Multiple Myeloma.

1. Datamonitor Healthcare. Forecast: Diffuse Large B-Cell Lymphoma and Multiple Myeloma, 2023. 2. Abramson JS et al. Blood Adv. 2021 Mar 23;5(6):1695-1705.

# Eseba-vec: Synergistic Activity in Combination with Pembrolizumab

## Eseba-vec (HB-200) is a next-generation immunotherapy targeting HPV+ cancers

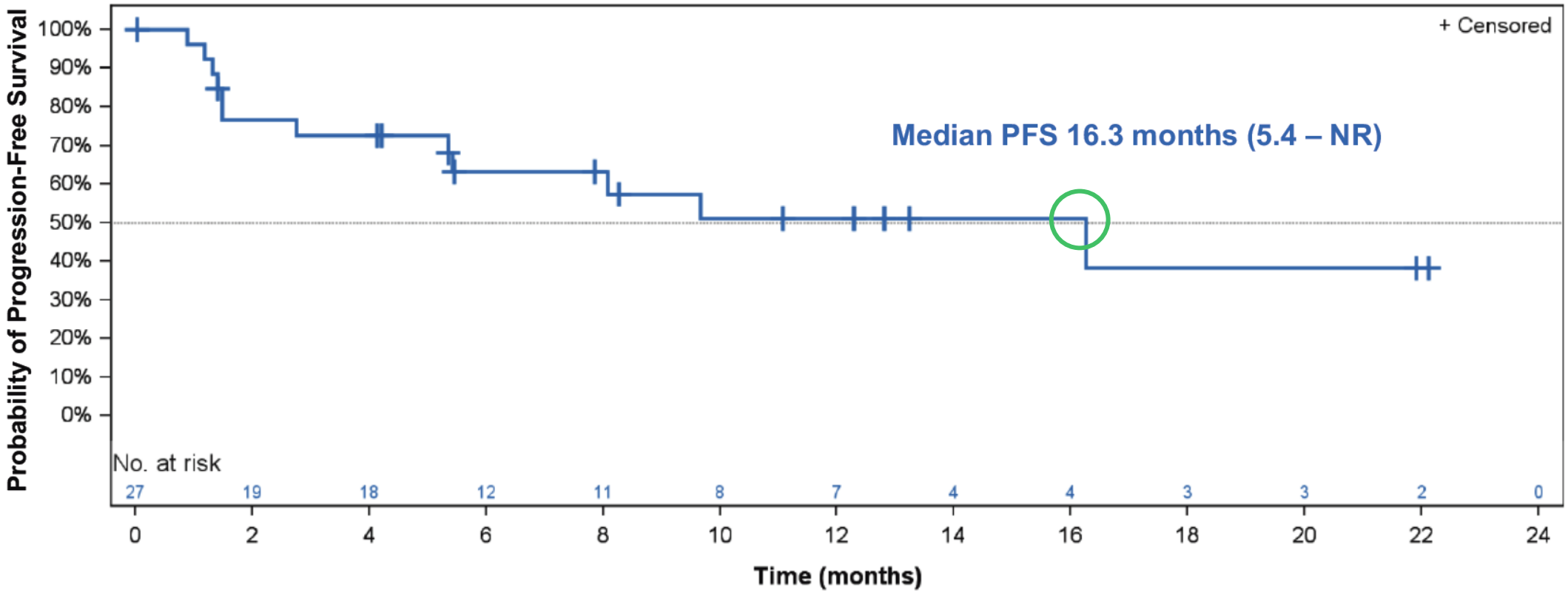
| | Eseba-vec monotherapy in 2L+ CPS ≥ 1 N = 27 | Pembro monotherapy in 1L CPS ≥ 20 N = 133) | Eseba-vec+ Pembro in 1L CPS ≥ 20 N = 25[1] |
|---|---|---|---|
| Overall Response Rate | 4% | 23% | 52% |
| Complete Response Rate | No CR | 8% | 16% |
| % Tumor Shrinkage | 33% | Not reported | 84% |
| Disease Control Rate | 44% | 53% | 80% |
| Median Progression Free Survival | ~3.0 mos | 3.4 mos | 16.3 mos |



Source: Harrington updated data KEYNOTE-048 JCO 2023 (median follow-up was 45.0 months, n = 882); Phase 1/2 data as of 30-Sep-2024 cut-off, presented at 2024 SITC conference for the 1L treatment of HPV16+, R/M HNSCC patients

# Eseba-vec Exhibits Promising Preliminary PFS

## In 1L CPS ≥ 20 HPV+ R/M H&NSCC






PFS: Progression Free Survival; Source: Phase 1/2 data as of 30-Sep-2024 cut-off, presented at 2024 SITC conference; Efficacy dataset includes 27 patients with minimum 4.5 months of follow-up time after first dose as of data cutoff or discontinued early during this period.

# Eseba-vec Has Broad Potential Across Multiple HPV16+ Cancers

## Up to ~20,000 US patients and ~39,000 patients globally

### OPC Opportunities

**A** **Immediate OPC Opportunity**
*1L HPV16+, CPS ≥20 R/M OPC*

**B** **Expand to CPS 1-19**
*1L HPV16+, CPS >1 R/M OPC*

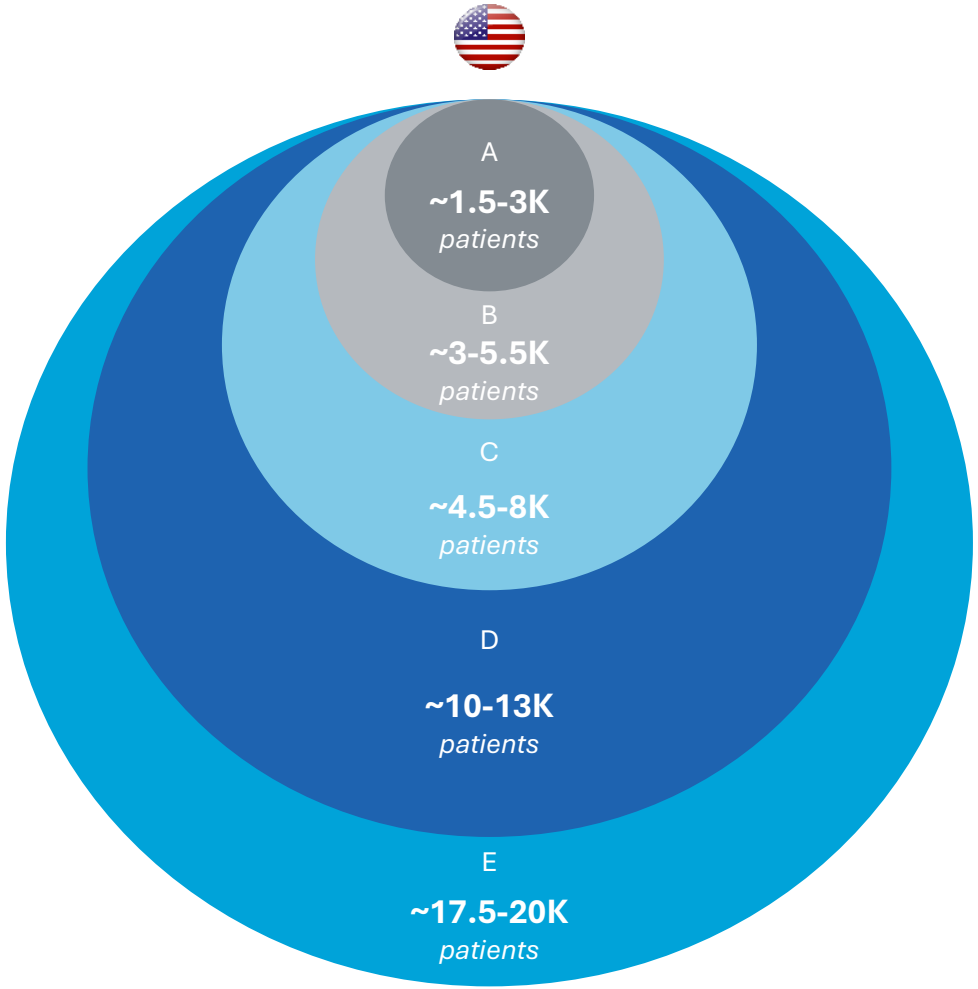
**C** **Expand to Neoadjuvant/Adjuvant & 2L+**
*HPV16+ OPC*

### Beyond OPC

**D** **Expand to Recurrent/Metastatic Non-OPC**
*HPV16+ HNSCC*

**E** **Additional 2L+ Anogenital Opportunity**
*HPV16+ Solid Tumors*

*Assuming full expansion beyond initial label (HPV16+ HNSCC and anogenital tumors)




Cumulative Patient Numbers



Source: Trinity Life Sciences