



**SERES**<sup>™</sup>  
THERAPEUTICS



**Infection Protection Investor Event**

January 31, 2022

# Forward Looking Statements

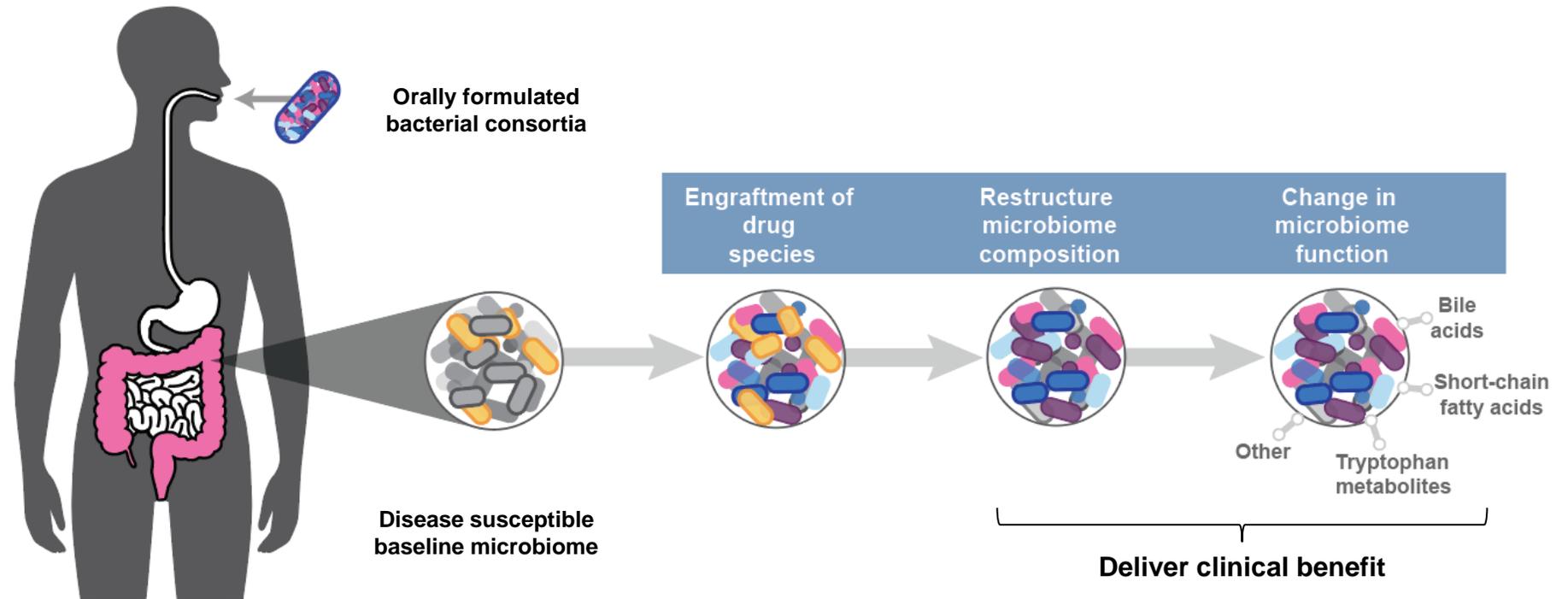
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Some of the statements in this presentation constitute “forward looking statements” under the Private Securities Litigation Reform Act of 1995, including, but not limited to, our development plans; the promise and potential impact of any of our microbiome therapeutics, including the potential to restructure the microbiome and change its function; the ability to design bacteria consortia to target specific pathogens and disease pathways; the ability of SER-155 to improve allo-HSCT recipient outcomes, including the prevention of bloodstream infections and graft-versus-host disease; the potential of our microbiome therapeutics to improve outcomes of cancer patients with neutropenia and patients with cirrhosis; the anticipated indication, market for, and potential impact of, infection protection microbiome therapeutics, including SER-155; the ability of our clinical trials to support regulatory approval; the timing of the SER-109 BLA filing and potential launch; timing, enrollment and results of our clinical studies; the anticipated safety profile of our products; the potential benefits of Seres’ collaborations; and other statements which are not historical fact. Such statements are subject to important factors, risks and uncertainties, such as those discussed under the caption "Risk Factors" in the Company’s Quarterly Report on Form 10-Q filed on Nov. 10, 2021, and its other filings with the SEC, that may cause actual results to differ materially from those expressed or implied by such forward looking statements. Any forward-looking statements included herein represent our views as of today only. We may update these statements, but we disclaim any obligation to do so.

# Pioneering the Development of Microbiome Therapeutics

**Seres' mission:** To transform the lives of patients worldwide with revolutionary microbiome therapeutics

Encapsulated consortia of commensal bacteria designed to target multiple disease-relevant pathways simultaneously



# New England Journal of Medicine Publication Highlights Potentially Practice-Changing Value of SER-109 and Microbiome Therapeutics

The NEW ENGLAND JOURNAL of MEDICINE

ORIGINAL ARTICLE

## SER-109, an Oral Microbiome Therapy for Recurrent *Clostridioides difficile* Infection

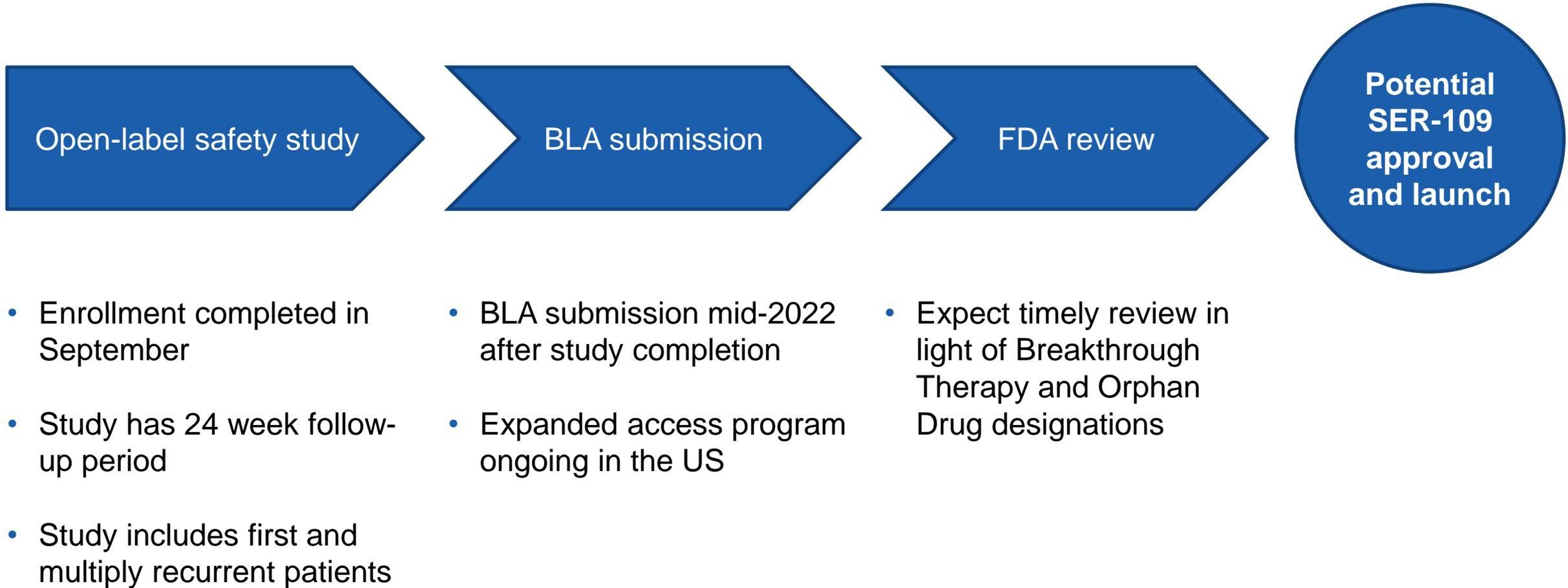
Paul Feuerstadt, M.D., Thomas J. Louie, M.D., Bret Lashner, M.D., Elaine E.L. Wang, M.D., Liyang Diao, Ph.D., Jessica A. Bryant, Ph.D., Matthew Sims, M.D., Ph.D., Colleen S. Kraft, M.D., Stuart H. Cohen, M.D., Charles S. Berenson, M.D., Louis Y. Korman, M.D., Christopher B. Ford, Ph.D., Kevin D. Litcofsky, Ph.D., Mary-Jane Lombardo, Ph.D., Jennifer R. Wortman, M.Sc., Henry Wu, Ph.D., John G. Auniņš, Ph.D., Christopher W. J. McChalicher, B.Ch.E., Jonathan A. Winkler, Ph.D., Barbara H. McGovern, M.D., Michele Trucksis, M.D., Ph.D., Matthew R. Henn, Ph.D., and Lisa von Moltke, M.D.

January 20, 2022 issue

Approximately 88%  
sustained clinical  
response rate

Response rate far  
exceeded FDA  
predefined threshold for  
single pivotal trial

# On Track for SER-109 BLA Submission in Mid 2022



# Expanding Microbiome Leadership Position in 2022 and Beyond

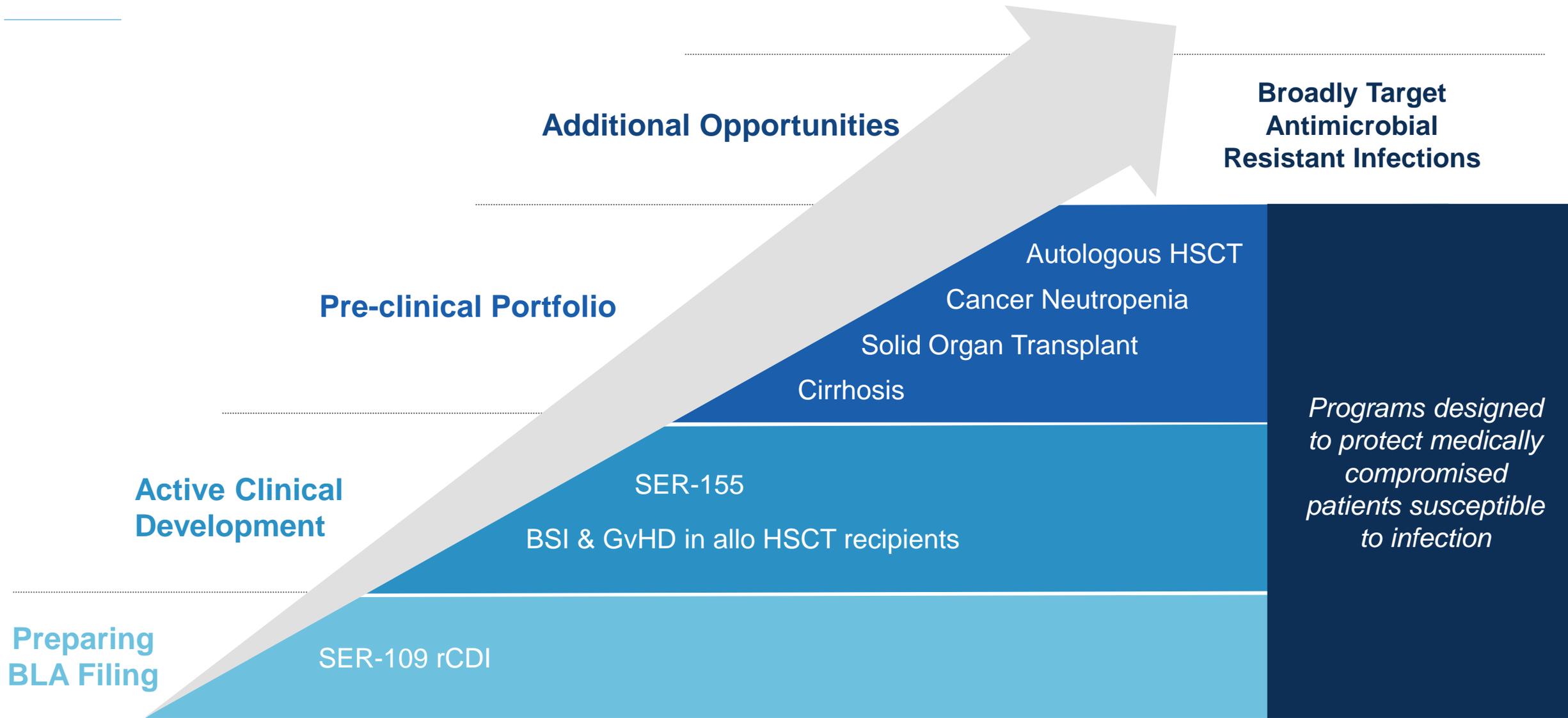
Bring first-in-class microbiome therapeutic to patients with potential **SER-109 BLA approval and successful launch** for recurrent CDI

**Maximize opportunities in infection protection**, building off of SER-109 mechanism, by advancing SER-155 and other assets

Optimize plans for **continued development in UC** based on SER-287 and ongoing SER-301 trial data

Today's focus

# Seres is Maximizing the Opportunity in Infection Protection and AMR



# Novel Approach to Infection Protection Delivers Remarkable Clinical Results with Potentially Broad Applicability

**SER-109 data  
validates approach**

**Broad portfolio  
applicability**

**Industry-leading  
franchise potential**

- **Clinical outcomes** can result from pathogen decolonization with a microbiome therapeutic
- Pathogen overgrowth in the gut microbiome leads to poor health outcomes across **a broad set of medically compromised patient populations**
- Seres has **unique platform capabilities** to design, develop, and manufacture bacterial consortia for the prevention and treatment of infections
- **SER-155 in Phase 1b study** to improve allogeneic HSCT outcomes, including preventing bloodstream infections
- A portfolio of infection protection assets and indications has **multi-billion dollar revenue potential**

# Agenda & Speakers



Introductory remarks

**Eric Shaff**

President and Chief Executive Officer,  
Seres Therapeutics



Role of GI microbiome in  
allogeneic HSCT transplantation

**Marcel van den Brink, M.D., Ph.D.**

Head, Division of Hematologic Malignancies;  
Alan N. Houghton Professor in Immunology;  
Member, Memorial Sloan-Kettering Cancer Center



Microbiome therapeutic  
pharmacology

**Matthew Henn, Ph.D.**

Chief Scientific Officer,  
Seres Therapeutics



SER-155 clinical development

**Lisa von Moltke, M.D.**

Chief Medical Officer,  
Seres Therapeutics



Infection protection commercial  
opportunities

**Terri Young, Ph.D.**

Chief Commercial and Strategy Officer,  
Seres Therapeutics



Q&A

Panel

# Role of GI microbiome in allogeneic HSCT transplantation

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Marcel van den Brink,  
M.D., Ph.D.



Head, Division of Hematologic Malignancies;  
Alan N. Houghton Professor in Immunology;  
Member, Memorial Sloan-Kettering Cancer Center

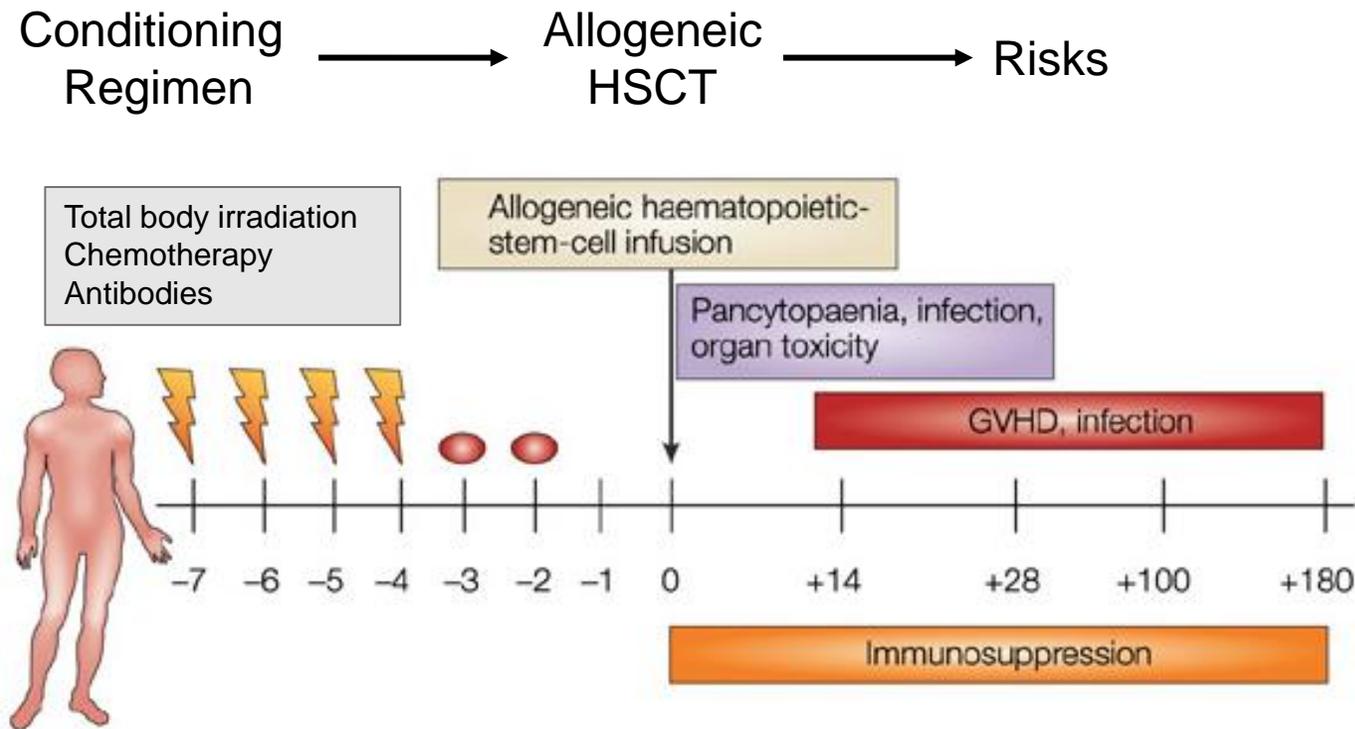


# The gut microbiome has a significant role in human health

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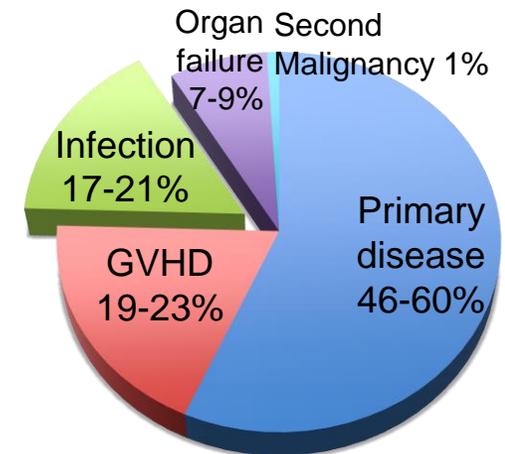


# Current allogeneic hematopoietic stem cell regimen associated with significant risks to positive outcome



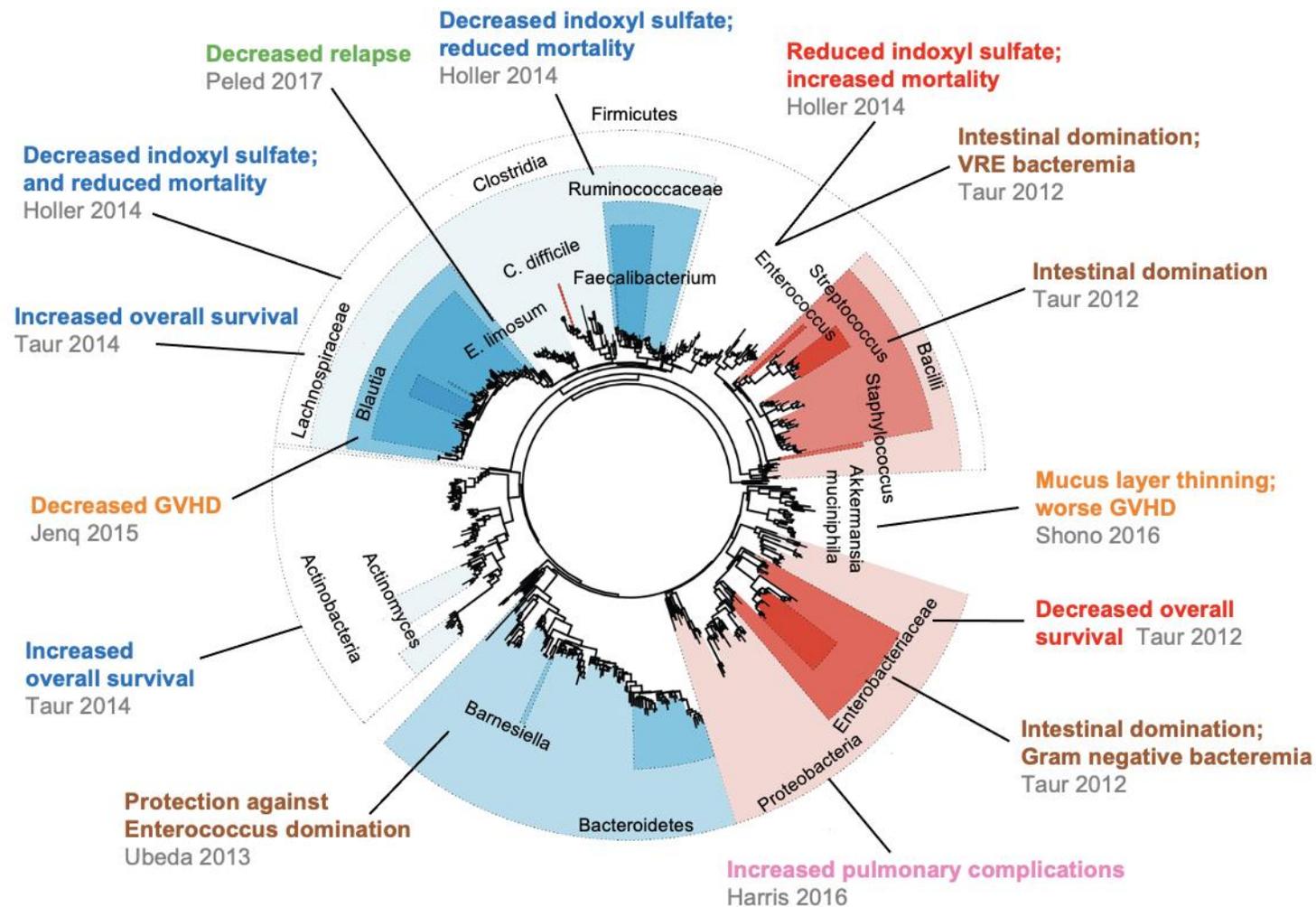
**!** ~50% 3-year survival rates

## Causes of mortality at 1 year

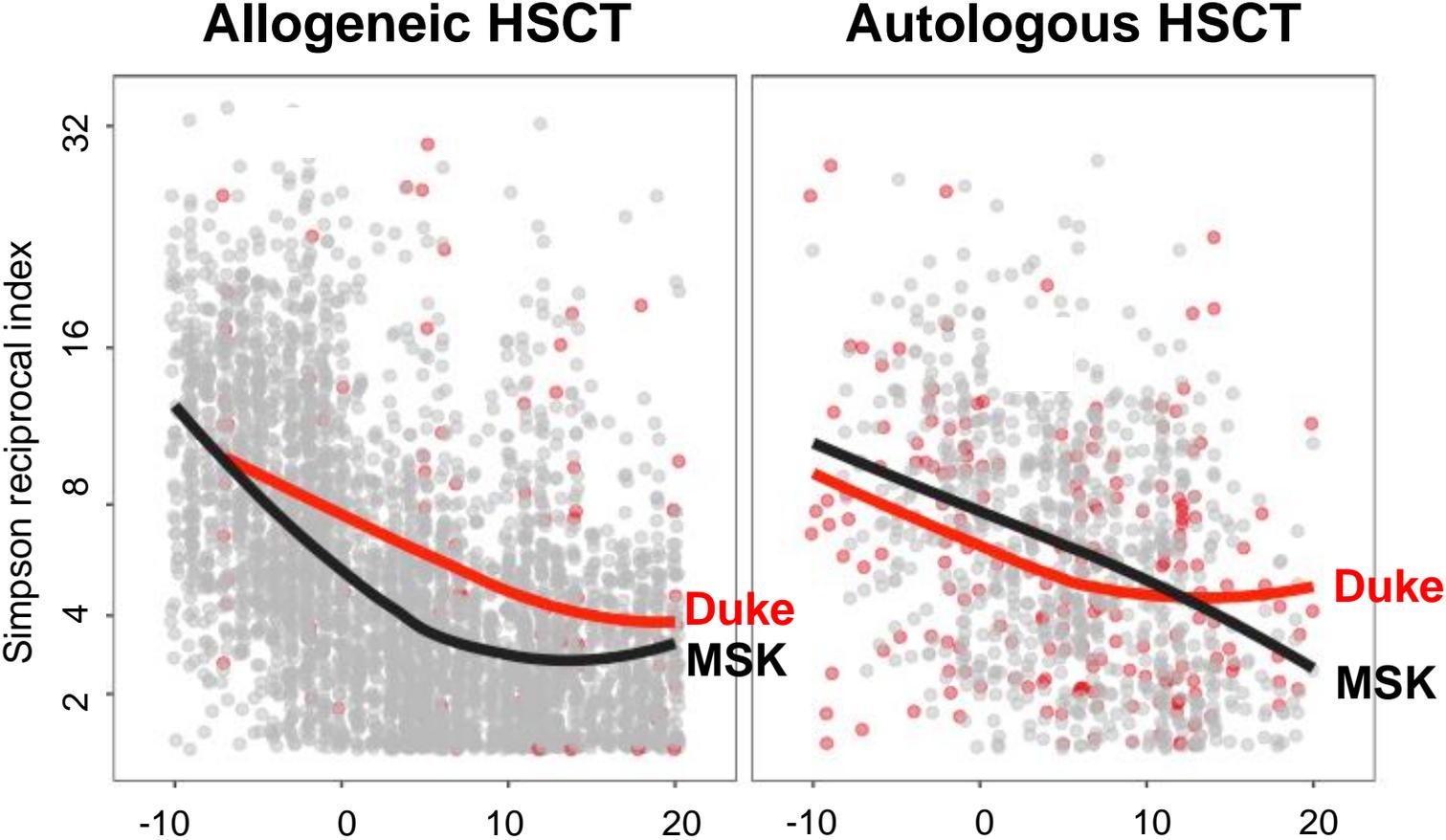


# Substantial body of evidence showing impact of gut microbiome diversity on outcomes of bone marrow transplantation

## Overall Survival, Infection, GVHD, Organ Toxicity, Relapse



# Microbiome diversity declines after both allogeneic and autologous HSCT



Simpson reciprocal index measures biodiversity based on number of species and evenness of abundance  
Allogeneic HCT: Duke: n=53 (106 samples), MSK n=879 (3743 samples)  
Autologous HCT: Duke: n=122 (208 samples), MSK n=384 (841 samples)

# International observational study demonstrates gut microbiome diversity is a predictor of mortality in allogeneic hematopoietic cell transplantation

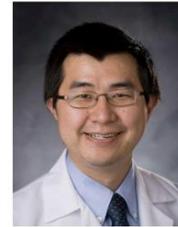
The NEW ENGLAND JOURNAL of MEDICINE

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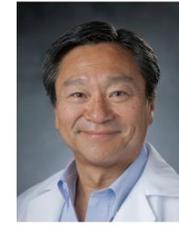
## Microbiota as Predictor of Mortality in Allogeneic Hematopoietic-Cell Transplantation

J.U. Peled, A.L.C. Gomes, S.M. Devlin, E.R. Littmann, Y. Taur, A.D. Sung, D. Weber, D. Hashimoto, A.E. Slingerland, J.B. Slingerland, M. Maloy, A.G. Clurman, C.K. Stein-Thoeringer, K.A. Markey, M.D. Docampo, M. Burgos da Silva, N. Khan, A. Gessner, J.A. Messina, K. Romero, M.V. Lew, A. Bush, L. Bohannon, D.G. Brereton, E. Fontana, L.A. Amoretti, R.J. Wright, G.K. Armijo, Y. Shono, M. Sanchez-Escamilla, N. Castillo Flores, A. Alarcon Tomas, R.J. Lin, L. Yáñez San Segundo, G.L. Shah, C. Cho, M. Scordo, I. Politikos, K. Hayasaka, Y. Hasegawa, B. Gyurkocza, D.M. Ponce, J.N. Barker, M.-A. Perales, S.A. Giralt, R.R. Jenq, T. Teshima, N.J. Chao, E. Holler, J.B. Xavier, E.G. Pamer, and M.R.M. van den Brink

### Duke



Anthony Sung



Nelson Chao

### Hokkaido University



Daigo Hashimoto



Takanori Teshima

### University Hospital Regensburg



Ernst Holler

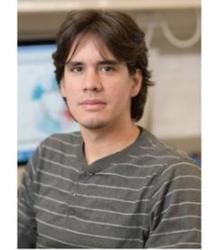


Daniela Weber

### Memorial Sloan Kettering Cancer Center



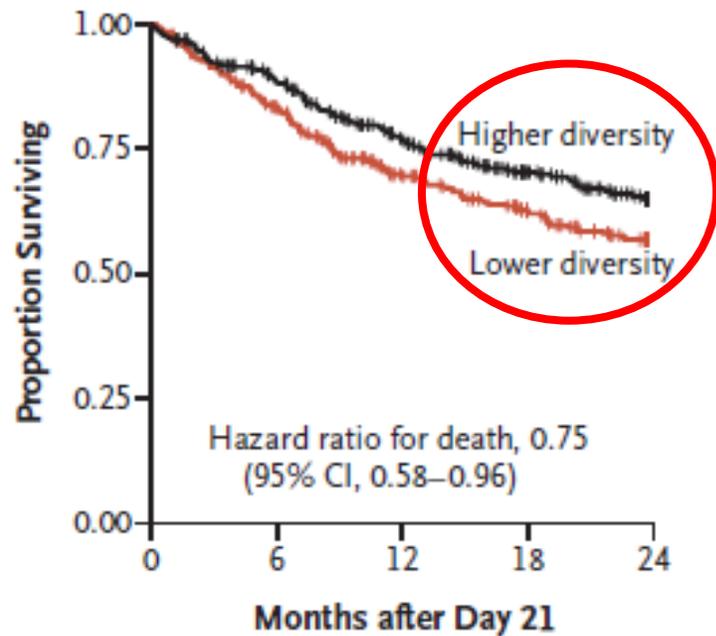
Jonathan Peled



Antonio Gomes

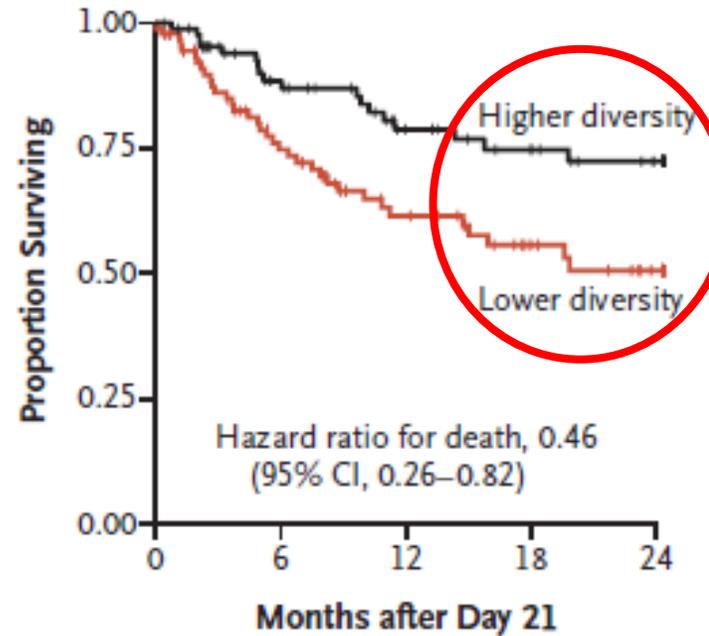
# Lower microbiome diversity post allogeneic HSCT is associated with decreased overall survival

## Initial cohort (MSK)



No. at Risk		0	6	12	18	24
Higher	354	289	220	159	116	
Lower	350	281	204	164	129	

## Validation cohort



No. at Risk		0	6	12	18	24
Higher	87	60	44	34	26	
Lower	92	57	37	24	15	

Association seen across 4 international transplant centers

Similar kinetics of reduced diversity across centers

*Peled et al, NEJM 2020*

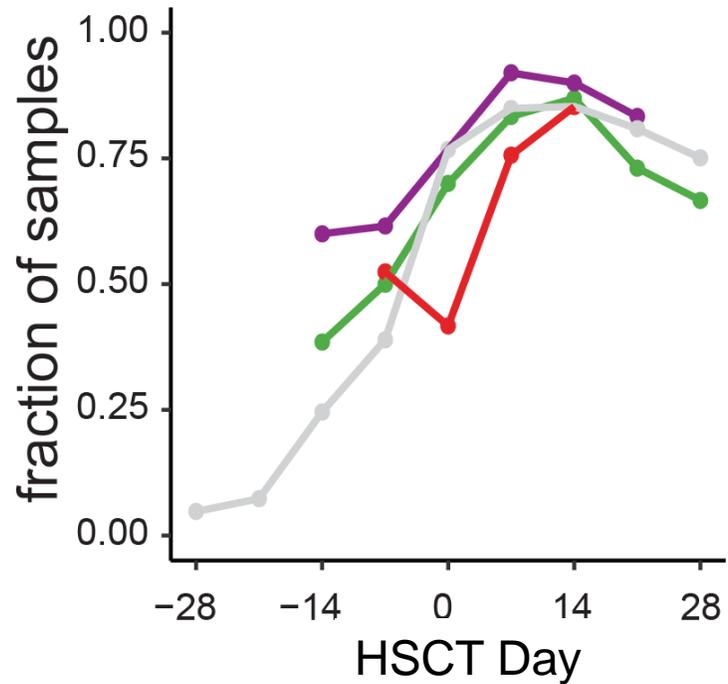
Effect also observed post *autologous* HSCT

*Khan et al., Blood 2021*

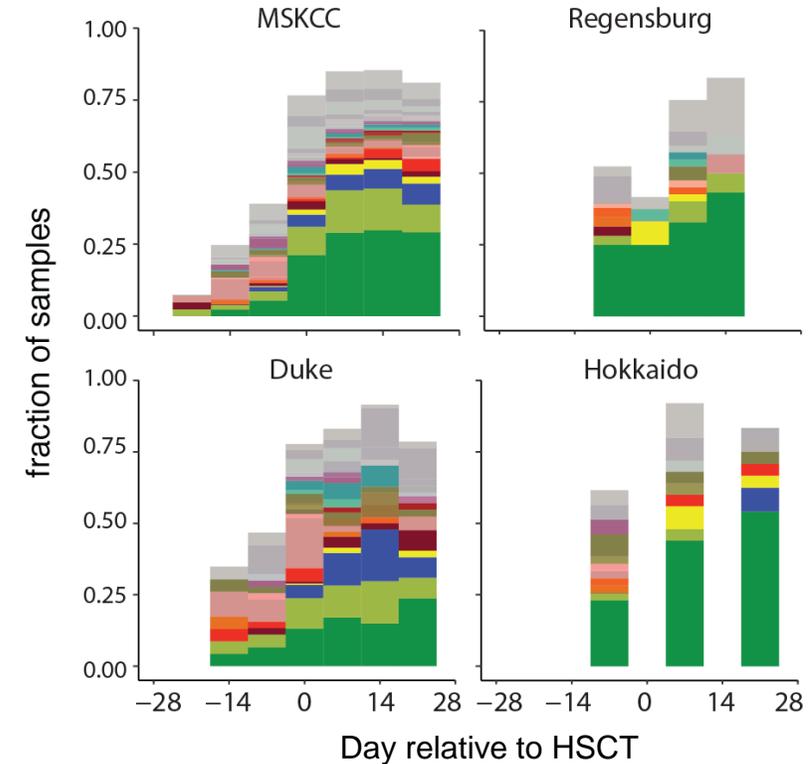
\* Total n=1361: MSKCC (1121), Duke (98), Regensburg (76), Hokkaido (66) cohorts stratified by above- and below-median Simpson Reciprocal Index in each cohort single sample per patient, collected day 14 +/- 7

# Frequent enterococcal microbiome domination after allogeneic HSCT

## Domination events are prevalent

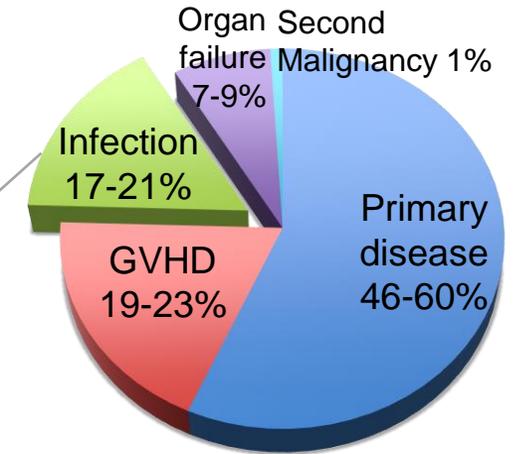


## Enterococcus frequently dominant



# Microbiome domination precedes bacteremia after allogeneic HSCT

Domination by <sup>1</sup>	VRE bacteremia		Gram-negative bacteremia	
	Haz Ratio (95% CI)	P-value	Haz Ratio (95% CI)	P-value
<i>Enterococcus</i>	9.35 (2.43 - 45.44)	0.001	1.35 (0.25 - 5.08)	0.690
<i>Streptococcus</i>	0.21 (0.00 - 1.75)	0.184	0.82 (0.09 - 3.65)	0.823
Proteobacteria	0.75 (0.01 - 6.14)	0.837	5.46 (1.03 - 19.91)	0.047



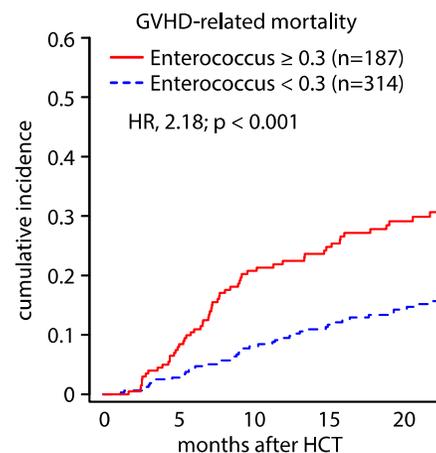
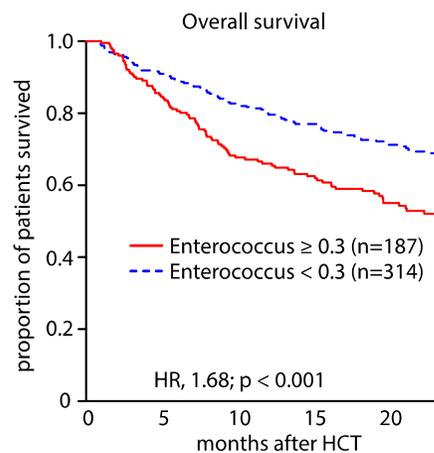
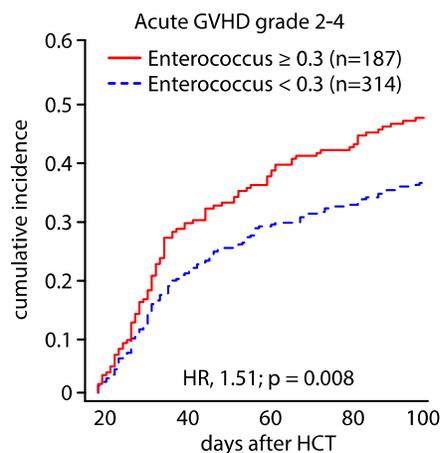
Enterococcal domination associated with



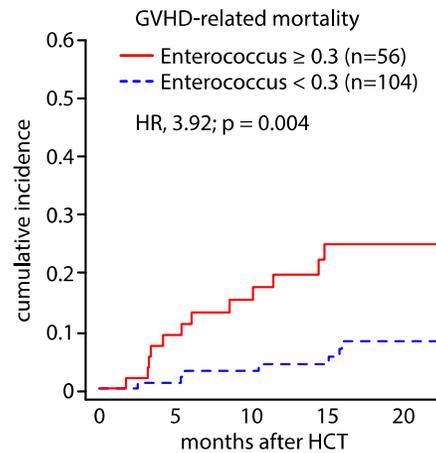
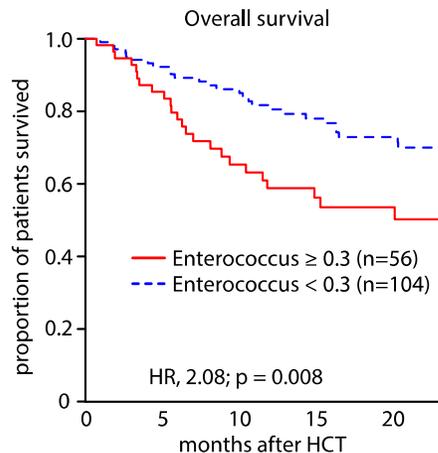
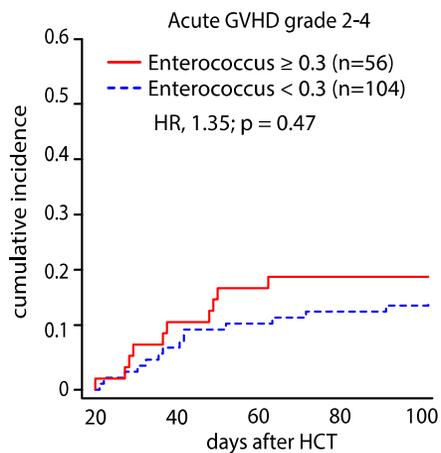
VRE bacteremia

# Enterococcal domination increases acute GvHD risk and decreases survival

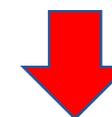
**MSK (n=520)**



**Validation (n=160)**



Enterococcal domination associated with



Overall survival



Acute GvHD (grade 2-4)



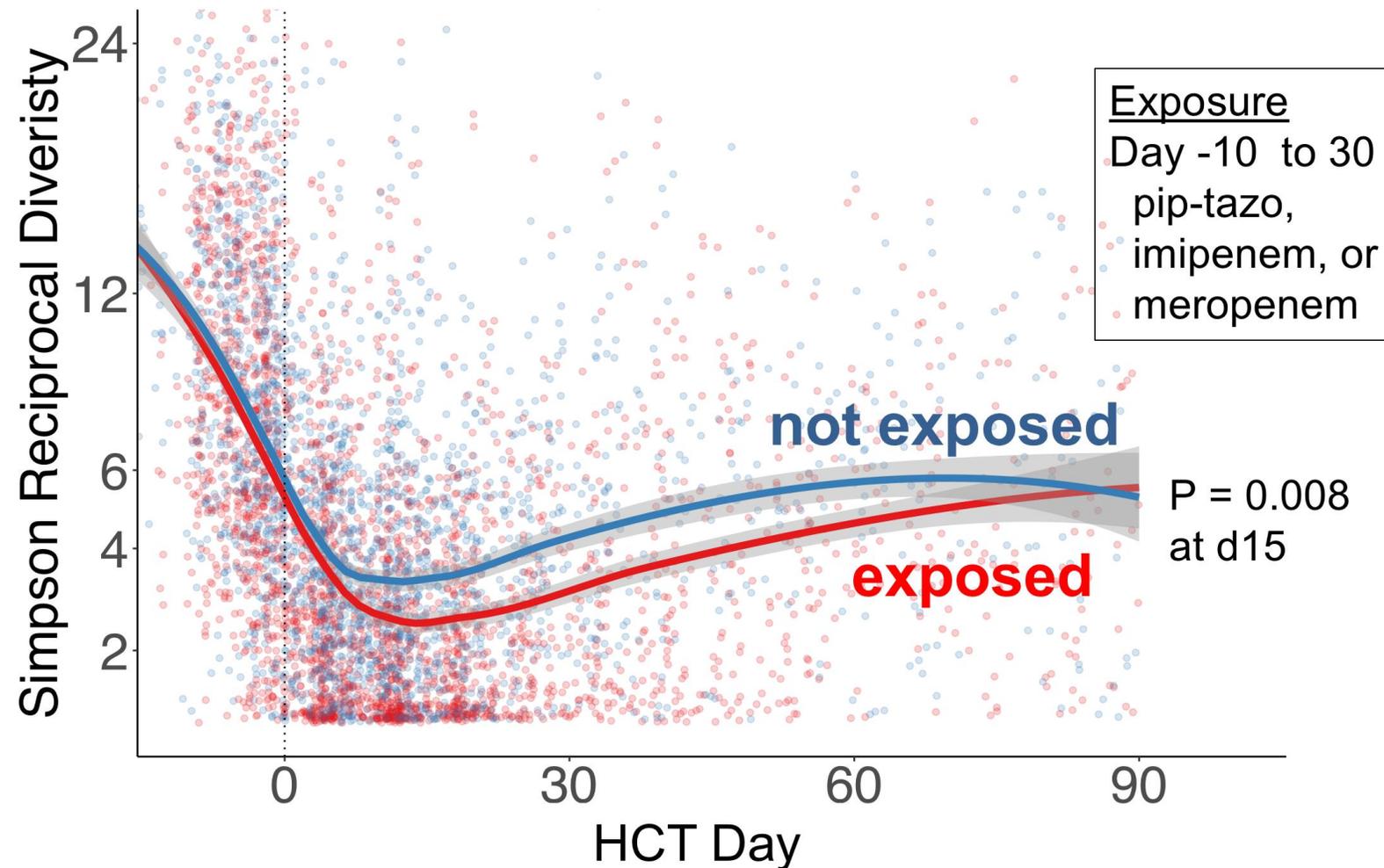
GvHD-related mortality

*Stein-Thoeringer et al, Science 2019*

Increased fecal Enterococcal abundance associated with increased mortality in separate study

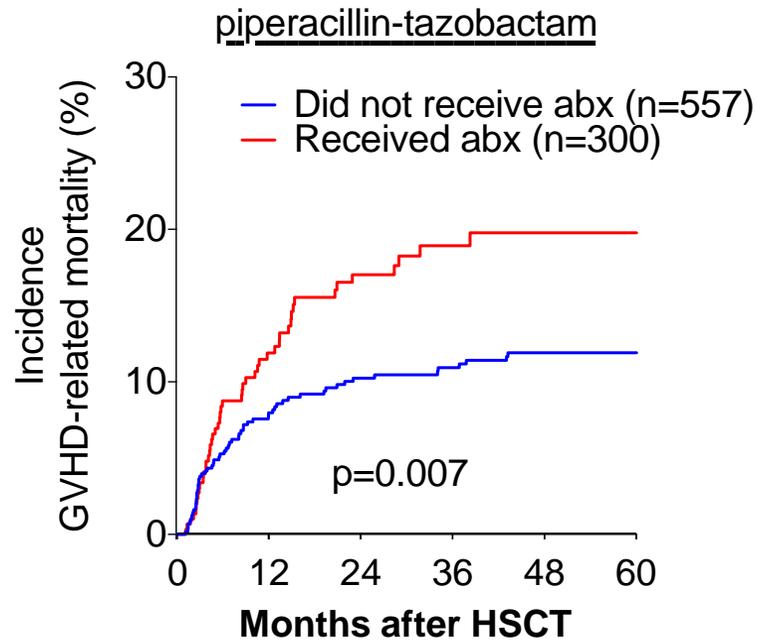
*Kusakabe et al, BBMT 2020*

# Broad-spectrum antibiotic exposure associated with lower GI microbiome diversity

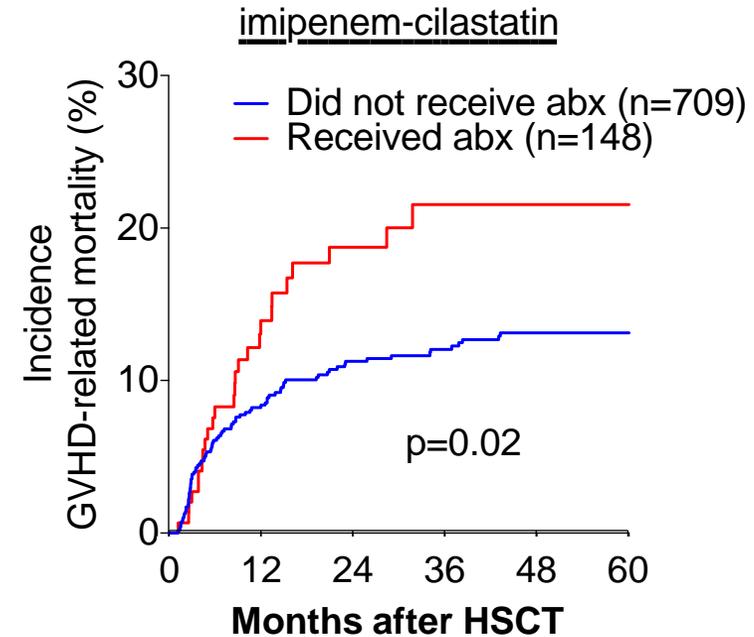


# Anaerobe-targeting antibiotic exposure associated with increased GvHD mortality

## Piperacillin-tazobactam



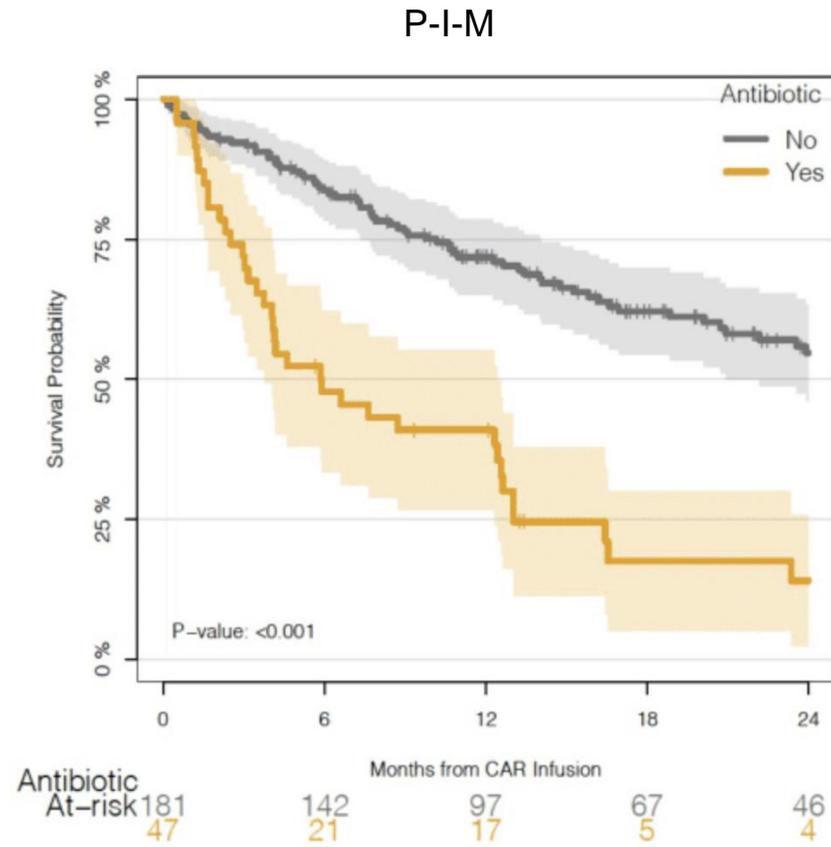
## Imipenem-cilastatin



**Exposure to non-antibiotic drugs that increase Enterococcus abundance also linked to reduced survival**

# Treatments reducing microbiome diversity after autologous HSCCT associated with decreased overall survival

## MSK + Penn ALL/NHL: Overall Survival



- Data collected from patients with B cell malignancies treated with CAR T cell therapies
- Treatment with anaerobe-targeting antibiotics (piperacillin-tazobactam, imipenem-cilastatin, or meropenem) associated with decreased overall survival
- CAR T recipients had reduced microbiome diversity as measured by fecal samples
- Specific species associated with complete response and CAR-mediated toxicity

\*P-I-M: piperacillin-tazobactam, imipenem-cilastatin, and meropenem

# Conclusions

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- Loss of gut microbiome diversity is associated with decreased survival and increased GVHD/bacteremia in allogeneic and autologous HSCT patients
- Antibiotics and other medicines that modulate microbiome diversity and enterococcal abundance significantly change overall survival
- Therapeutics that restore the gut microbiome have significant potential to improve HSCT outcomes, with many interventions in clinical study
  - We are studying SER-155, an investigational microbiome therapeutic, to improve survival and reduce bloodstream infections and GvHD in allogeneic HSCT recipients
  - We see potential to improve outcomes in autologous HSCT / CAR T cell therapy recipients by modulating their gut microbiome
- Gut microbiome modulation may protect broader populations of medically compromised patients from life-threatening infections
- Gut microbiome modulation may provide benefits to patients with hematologic malignancies beyond infection protection

# Microbiome therapeutic pharmacology

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Matthew Henn, Ph.D.



Chief Scientific Officer,  
Seres Therapeutics



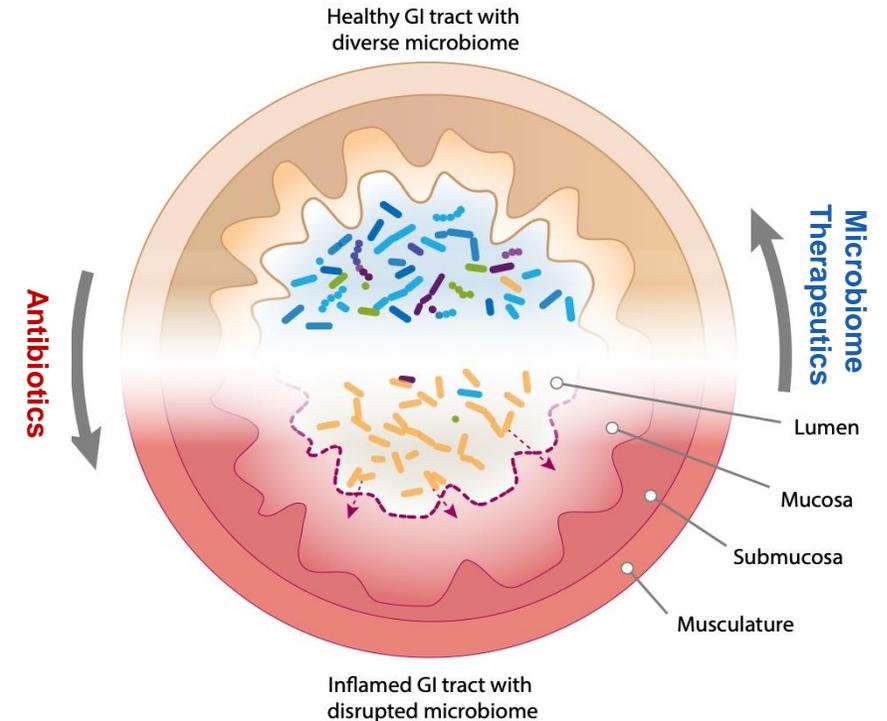
# GI Tract is a Reservoir of Potential Bacterial Invaders

A healthy, diverse microbiome is **essential to preventing colonization and infection with pathogens**

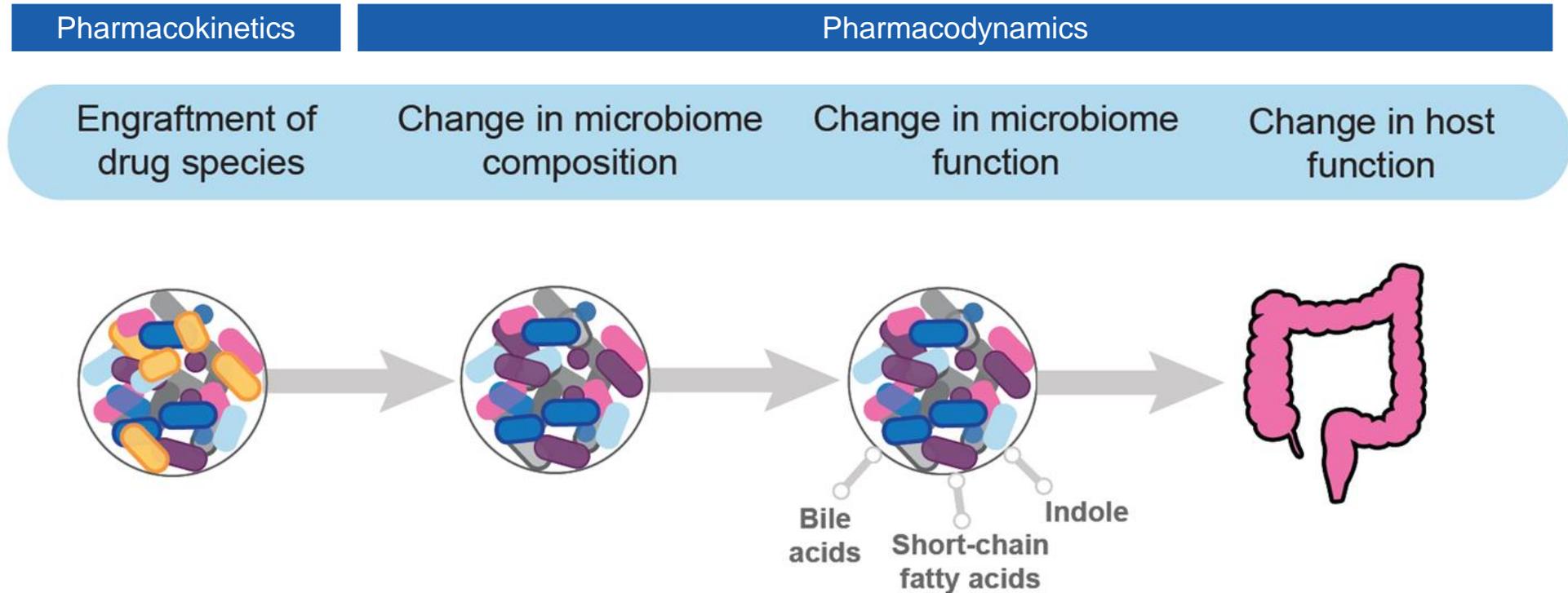
Beneficial microbes **outcompete pathogens** and can **enhance epithelial barrier integrity** and **modulate immune responses**

**Antibiotics and other insults can drive the loss of beneficial microbes**, enabling pathogens and drug-resistant bacteria to rapidly expand and dominate in GI tract

Domination with pathogens and drug-resistant bacteria in patients with **increased intestinal permeability** is associated with **increased risk of bacteremia and other medical complications**



# Seres' Investigational Microbiome Therapeutics are Encapsulated Microbial Consortia Designed to Target Multiple Disease-Relevant Pathways

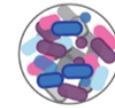


Building upon SER-109, Seres is developing novel microbiome therapeutics, such as SER-155, to specifically target infections and antimicrobial-resistance

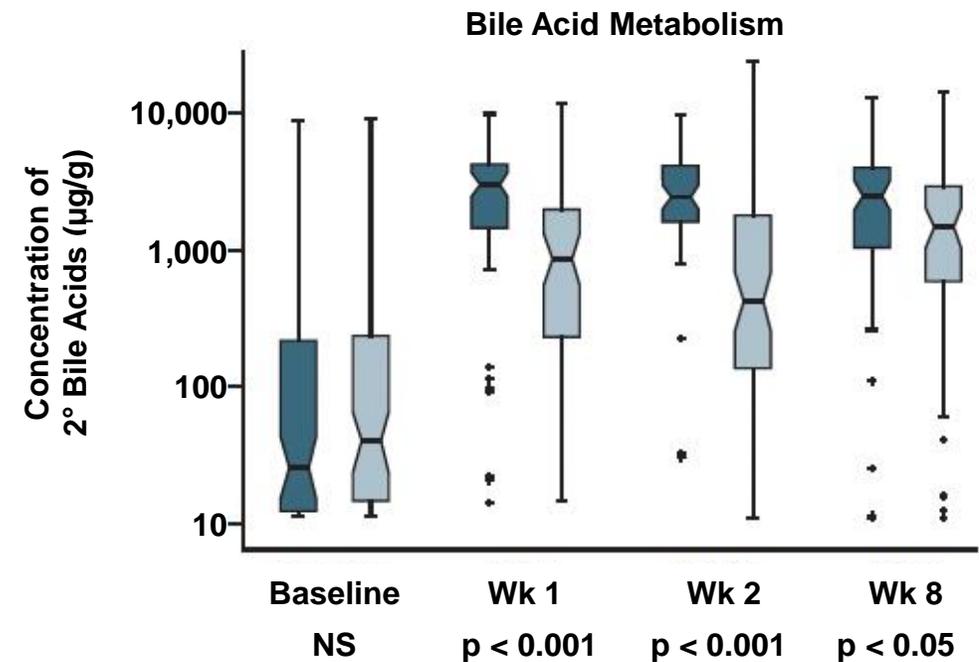
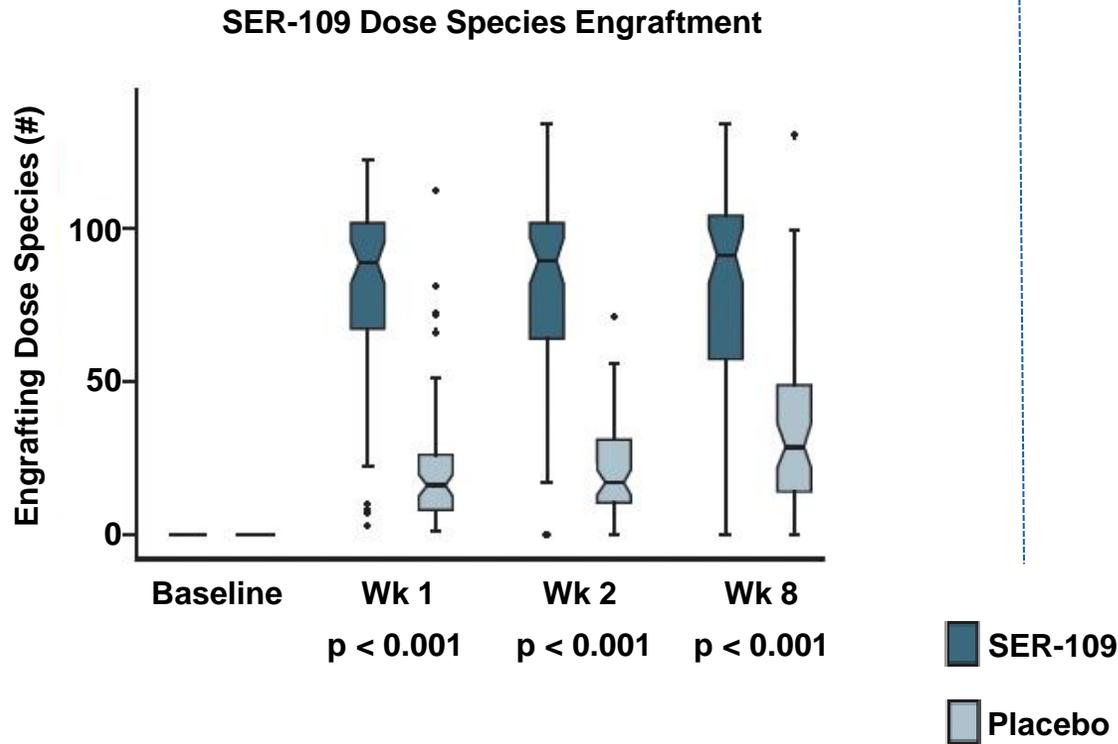
# SER-109 Restructures the Microbiome and Changes its Function



**SER-109 bacteria engraft durably & rapidly to restructure microbiome**



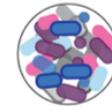
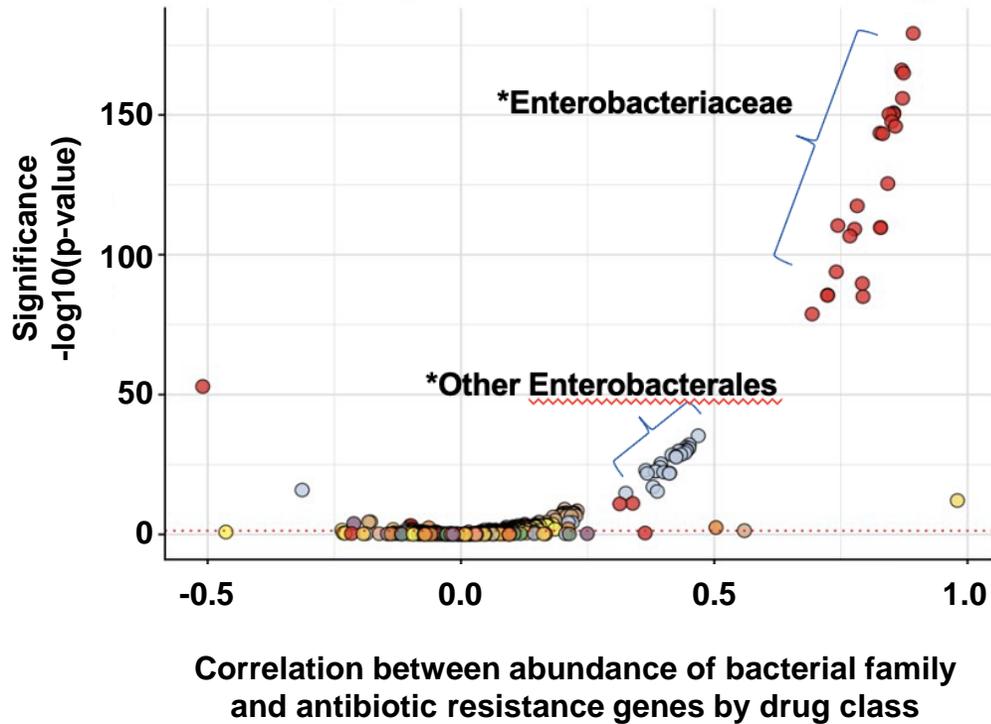
**SER-109 bacteria shift gut metabolic landscape following engraftment**



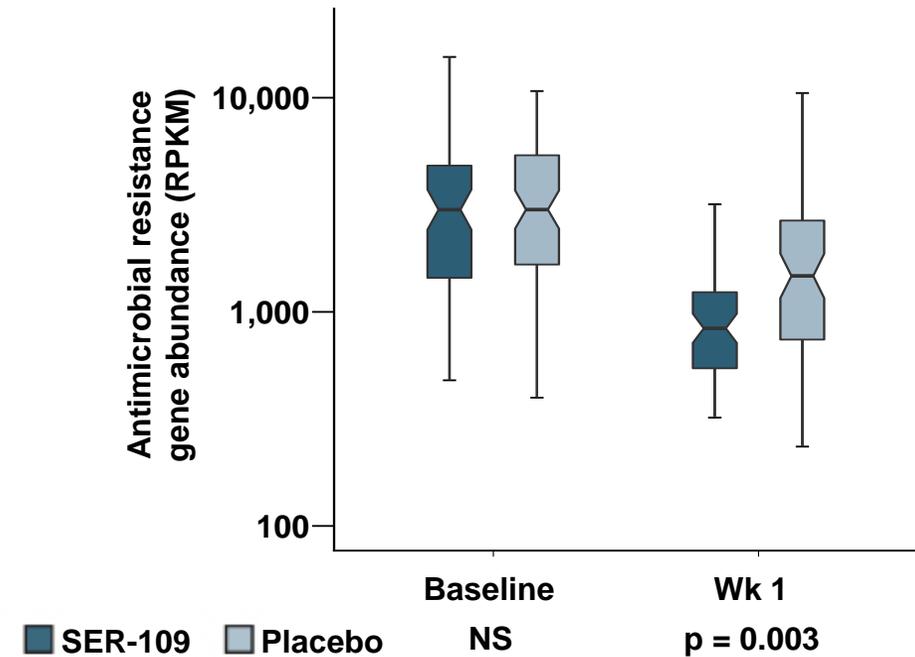
# SER-109 Data Support that Microbiome Therapeutics can Reduce Pathogens that can Harbor Antimicrobial Resistance



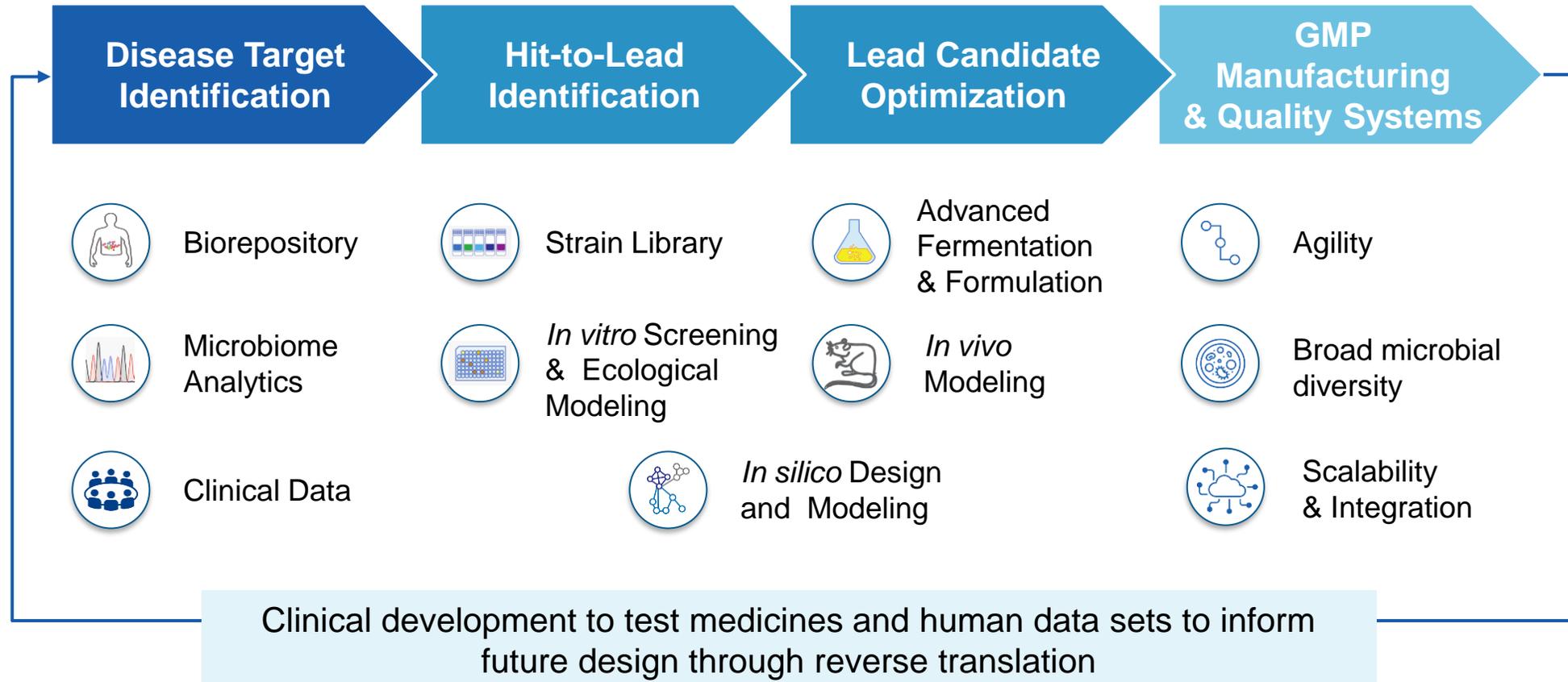
Reduce Proteobacteria\* associated with antimicrobial resistance genes



Reduced antimicrobial resistance gene carriage

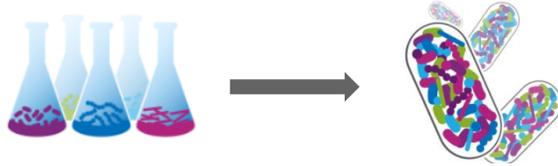


# Seres Integrated Rational Design Platform Provides End-to-End Capabilities and Increases Value Over Time as Data are Compounded



# Scalable GMP Manufacturing Provides Access to Broad Spectrum of Microbial Diversity and Biological Function

- Established capabilities to produce **both donor-derived and cultivated bacterial** LBP consortia
- Drug product formulation capabilities for **both spore-forming and vegetative bacterial** strains
- Well-integrated platform across R&D and CMC positions Seres to access a **broad spectrum of microbial diversity and biological function**



Proprietary drug discovery platform



In-house GMP manufacturing and quality control platform



Cell banking & inoculum



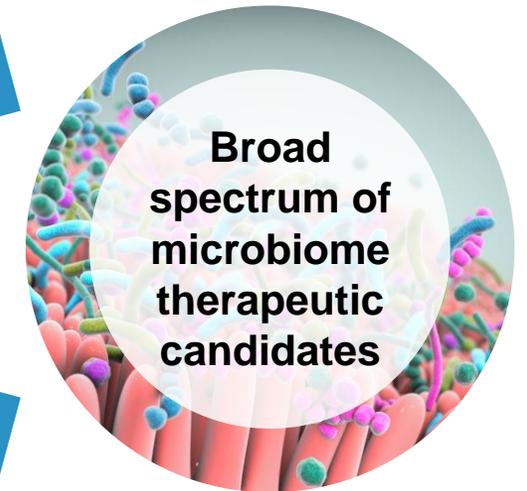
Drug substance



Drug product



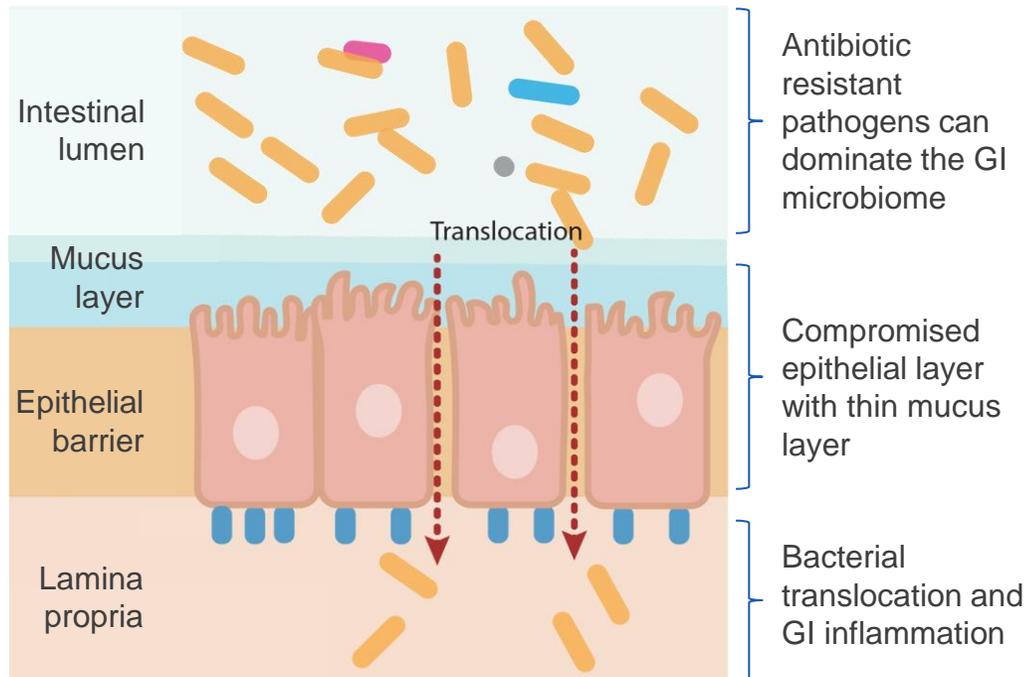
Quality control



Broad spectrum of microbiome therapeutic candidates

# Rationally-Designed Microbiome Therapeutics to Combat Infections, Antimicrobial Resistance, Bacteremia, and Associated Complications

## Disrupted Gastrointestinal Microbiome



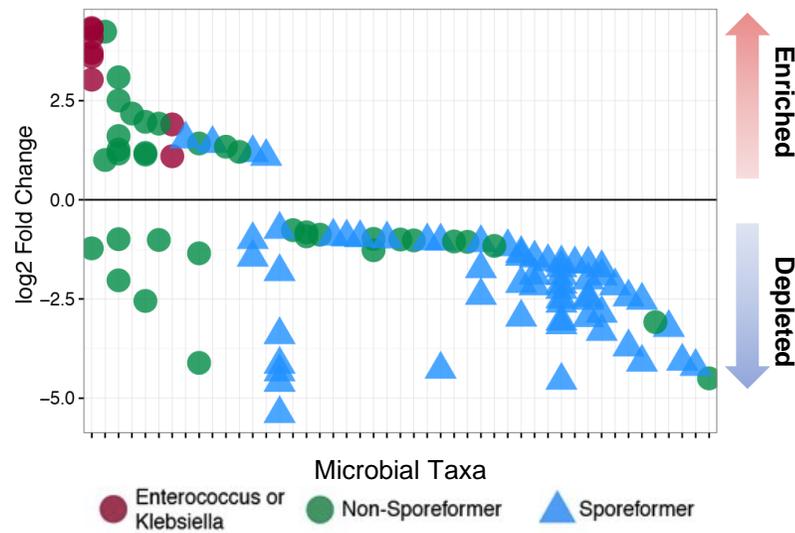
## Microbiome Therapeutics

- 1 **Restore colonization resistance and decrease patient-to-patient transmission potential** by preventing pathogen growth via nutrient competition and other functional mechanisms
- 2 **Enhance epithelial barrier integrity and reduce likelihood of translocation to bloodstream** by preventing/repairing epithelium and mucosa damage
- 3 **Modulate immune response** by improving immune homeostasis and reducing inflammatory responses

# Seres Has Differentiated Consortium Design with Proprietary Data Access and Advanced Experimental & Data Sciences

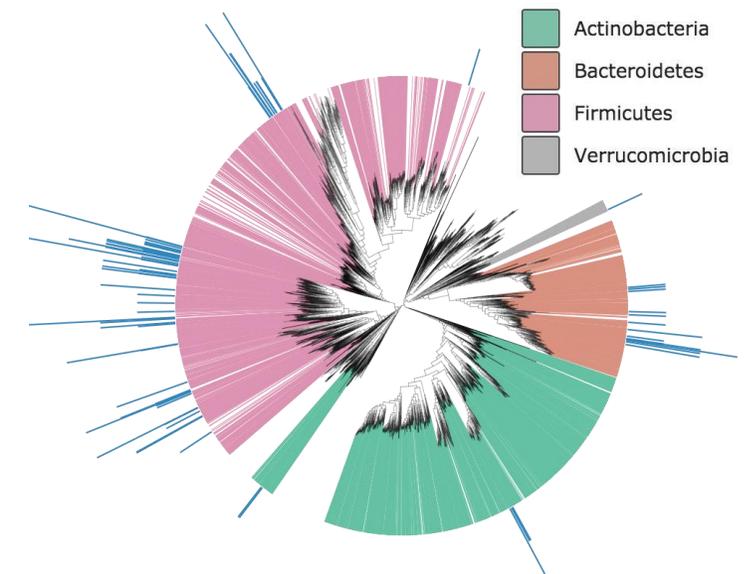
**Seres proprietary clinical data sets combined with advanced data sciences & microbiome analytics** enable identification of microbial species and functional targets linked to disease outcomes and successful engraftment in human subjects

**Example:**  
MSKCC and U. Cologne allogeneic HSCT patient microbiome data combined with Seres clinical trial data guided target ID for SER-155



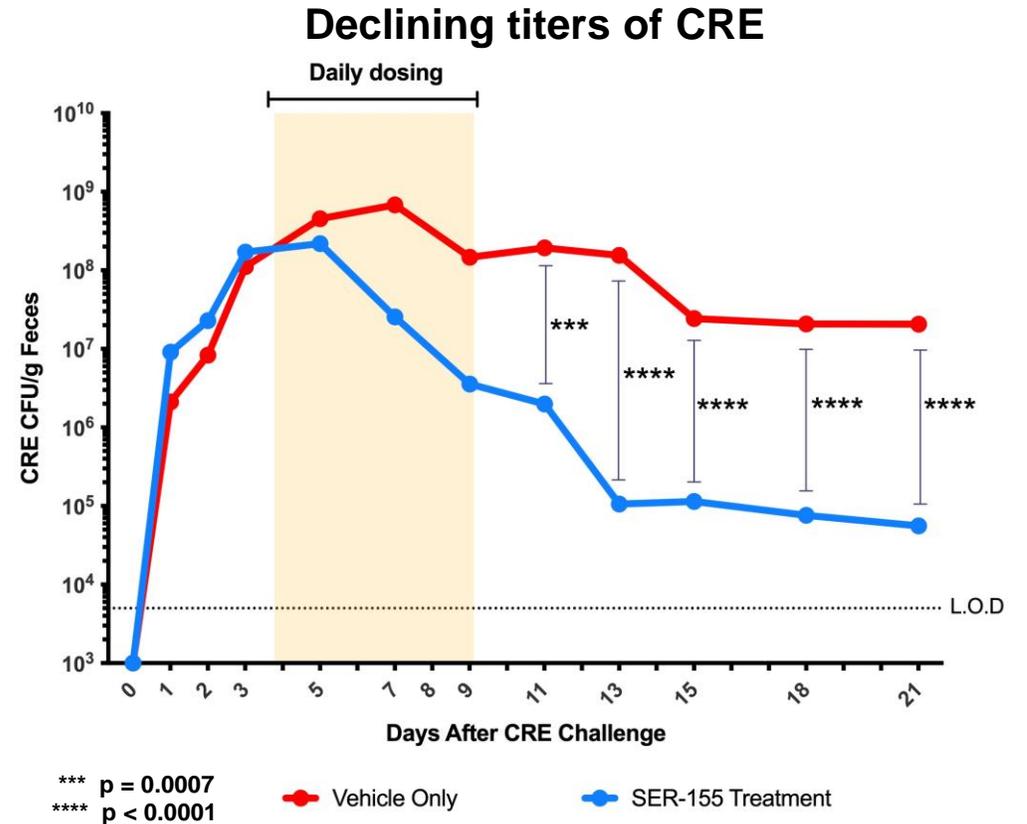
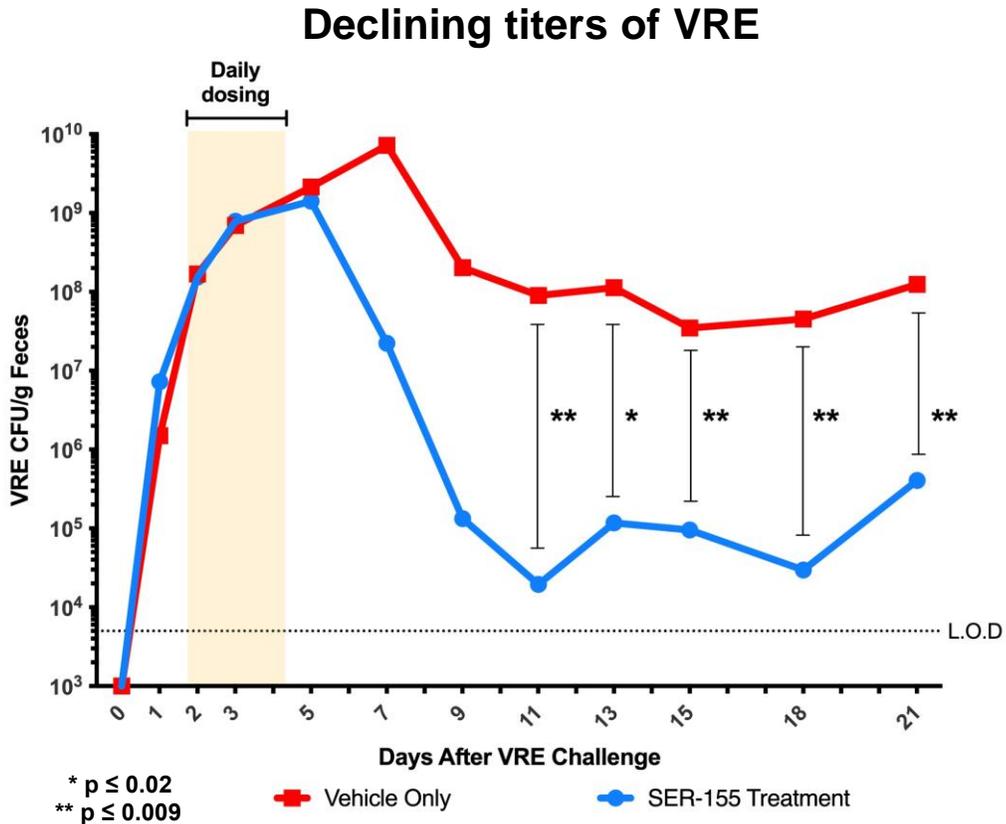
**Seres strain library and microbiome-optimized preclinical experimental systems** provide access to a broad range of biology for lead design and screening to maximize impact of consortia

**Example:**  
combinations of ~100 species evaluated to optimize SER-155 lead design



# SER-155 Leads to a Reduction in VRE and CRE Colonization *In Vivo*

- SER-155 reduces CRE (carbapenem-resistant Enterobacteriaceae) and VRE (vancomycin-resistant Enterococci) in *in vivo* specific pathogen-free mouse models
- Enterococcus species and Enterobacteriaceae specifically linked to GvHD as well as infection



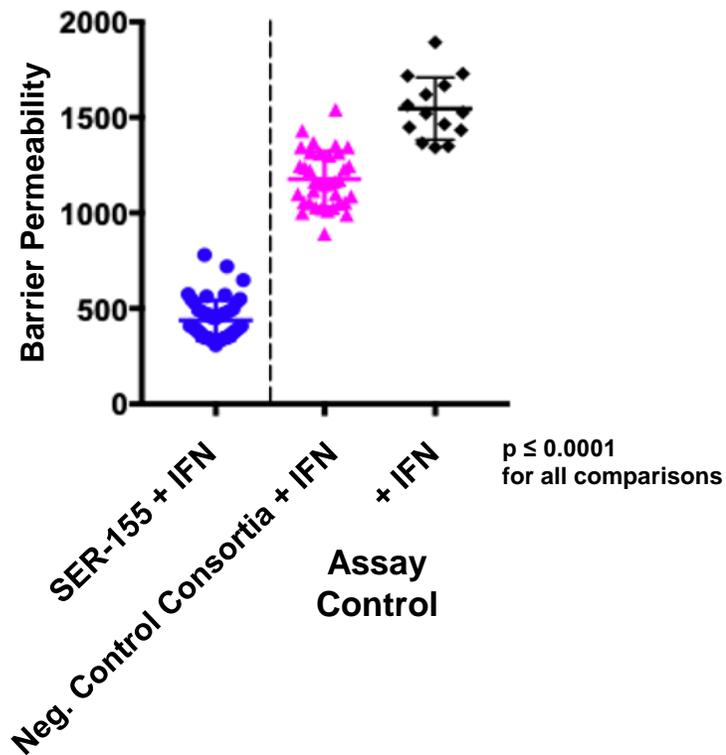
# SER-155 Designed to Prevent Translocation of Bacteria to Bloodstream and Reduce GvHD

Consortia strains optimized for production of metabolites that:

- *Prevent Translocation*: Enhance epithelial barrier integrity, mucosal homeostasis & tight junction gene expression
- *Reduce GvHD*: Increase Treg differentiation and decrease proinflammatory T Cells

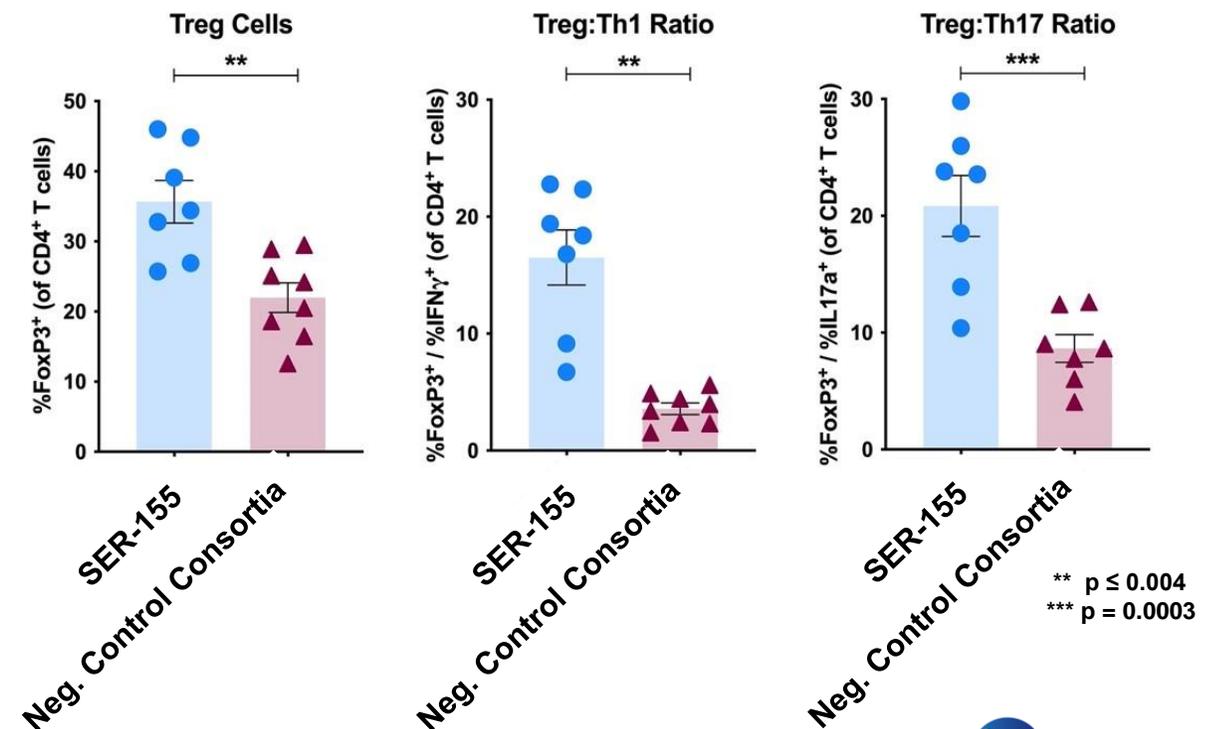
## Epithelial Barrier Integrity

(*in vitro* primary colonic epithelial membrane assay)



## Immune Modulation

(*in vivo* germ-free mouse model)

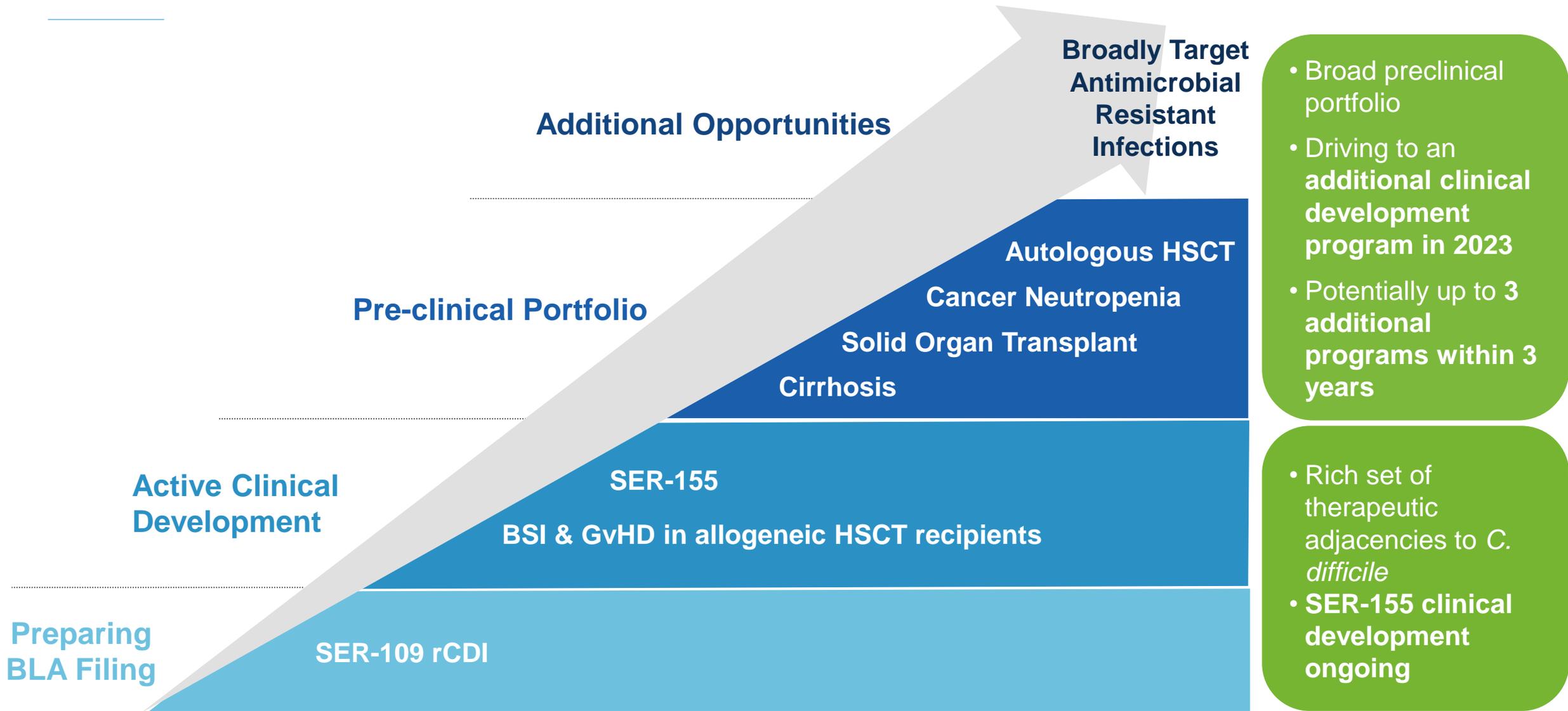


# SER-155 Data Supports Potential to Impact Multiple Disease-Relevant Pathways

- 1 **Restore colonization resistance to decrease patient-to-patient transmission potential** by preventing pathogen growth via nutrient competition and other functional mechanisms
- 2 **Enhance epithelial barrier integrity and reduce likelihood of translocation to bloodstream** by preventing/repairing epithelium and mucosa damage
- 3 **Modulate immune response** by improving immune homeostasis and reducing inflammatory responses



# Seres is Maximizing the Opportunity in Infection Protection and AMR



# SER-155 clinical development

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Lisa von Moltke, M.D.

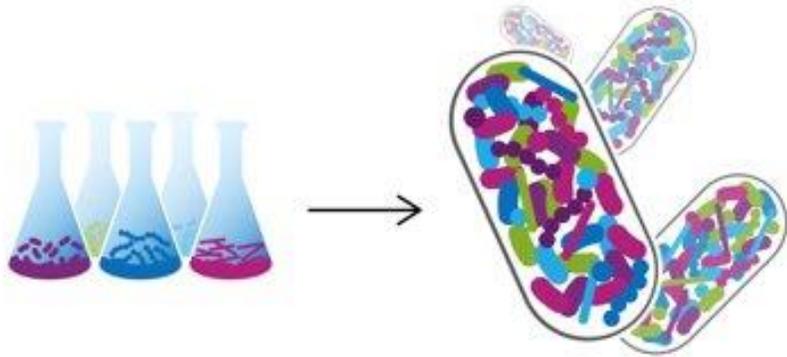


Chief Medical Officer,  
Seres Therapeutics



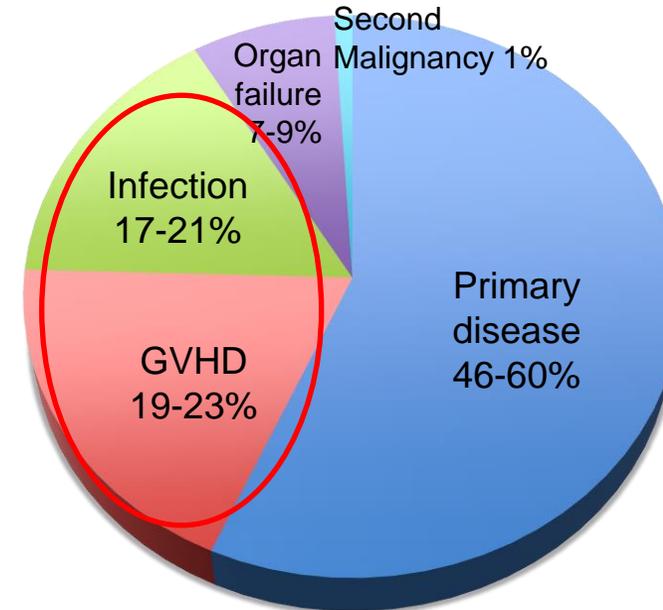
# SER-155 is Designed for Maximum Clinical Impact

**SER-155 is a cultivated consortium designed using proprietary data**



- Consortium of **unique, human commensal bacterial strains**
- Cultivated and encapsulated for **oral delivery**

**SER-155 designed to address multiple of the leading causes of mortality following allogeneic HSCT**



- Phase 1b trial designed to assess SER-155 ability to **reduce two leading causes of mortality at 1 year post-transplant**

# SER-155 Phase 1b Trial Designed to Assess Its Safety and Efficacy in Treating Allo HSCT Patients; First Patient Enrolled in November 2021

## Cohort 1

- Open-label study with 10 subjects
- Evaluate SER-155 safety for 52 weeks post-transplant
- Conducted at leading research and transplant centers



## Cohort 2

- Randomized, placebo-controlled study with 60 subjects
- Evaluate SER-155 safety, engraftment, and efficacy (bloodstream infections, aGvHD, survival)

# SER-155 Phase 1b: Defining Successful Outcomes

## Safety profile (primary endpoint)

Favorable safety profile

## Engraftment (primary endpoint)

Confirm SER-155 strains engraft

## Infections

Reduce incidence of infections

## GvHD

Reduce incidence of acute GvHD

## Overall survival

Signal of clinical efficacy by preventing death from infections and/or GvHD

Safe profile would **validate path forward with other compromised populations**

Engraftment results would **confirm species selection and inform future consortia**

Efficacy signals would **further validate path forward in infection protection** and provide **evidence for immune modulation**

# Infection protection commercial opportunities

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Terri Young, Ph.D.



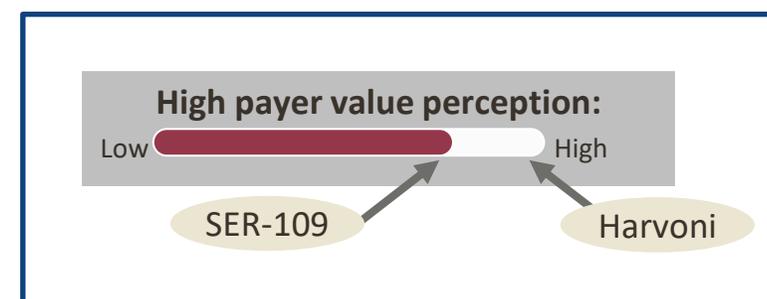
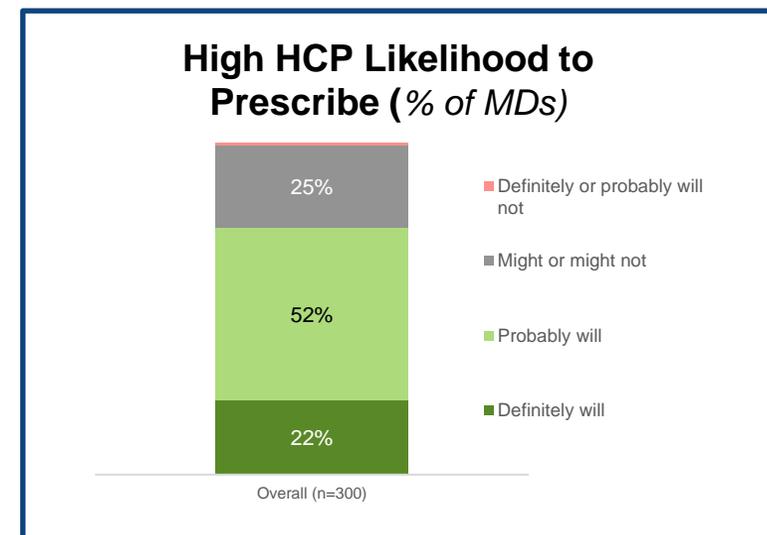
Chief Commercial and Strategy Officer,  
Seres Therapeutics



# SER-109 Provides a Robust Example of the Potential Value of Infection Protection with a Microbiome Therapeutic Approach

## A potentially novel solution for patients with rCDI

- SER-109 works differently from traditional antibiotic monotherapy approaches
- Profound Phase 3 clinical outcomes result from pathogen decolonization
  - Approximately 88% sustained clinical response rate
  - Adverse event profile comparable to placebo
  - Reduction in pathogens that harbor antimicrobial resistance genes
- Feedback on SER-109 profile is resoundingly positive
  - Highly appealing potential addition to the current armamentarium for rCDI and may become the cornerstone of treatment



# Protecting Patients from Antimicrobial Resistant Infections Meets a Substantial and Growing Unmet Need



## Antimicrobial resistant infections are a major threat

- WHO has declared a “top ten” global public health threat
- ARI results in ~35,000 deaths in US/year\*, with \$4.6 billion in direct treatment costs
- Potential for continued growth – estimated rise to cause more deaths than cancer by 2050

## Standard of care is not working well

- Antibiotics are standard of care for treatment or prevention
- Use selects for resistance, causing doctors to reserve new treatments

## Providers and payers will support innovative protection

- Growth of Prevyms, approved in 2017 for prevention of CMV in allogeneic HSCT, highlights unmet need



**Stop relying only on new antibiotics that are slow getting to market and that, sadly, these germs will one day render ineffective. We need to adopt aggressive strategies that keep the germs away and infections from occurring in the first place.**

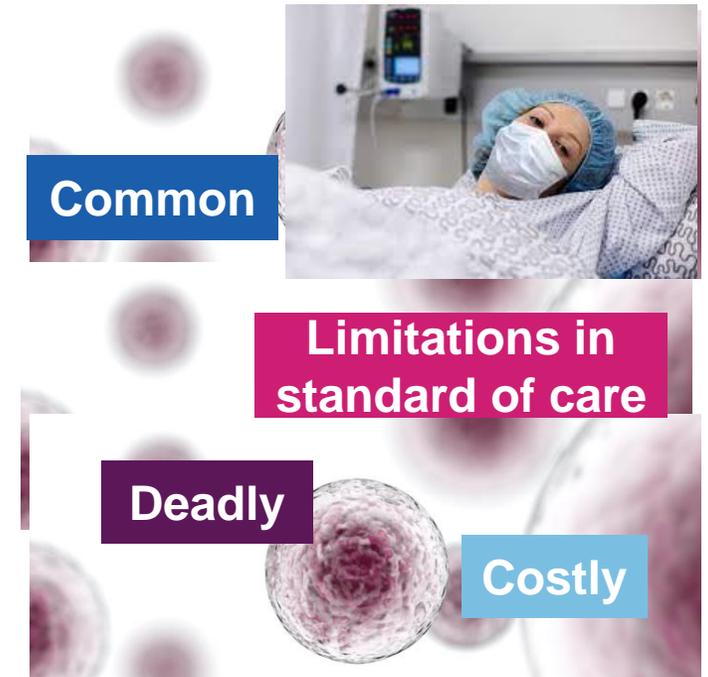
\*Data exclude *C. difficile* infections (12,700 deaths and ~225K cases in US in 2017).

Sources: The Economist; World Health Organization Antimicrobial resistance fact sheet; CDC antimicrobial resistance website and 2019 “Antibiotic Resistance Threats in the United States” report; 2014 UK – Wellcome Trust “Review on Antimicrobial Resistance”; Antimicrobial Resistance Group, “ Global burden of bacterial antimicrobial resistance in 2019: a systematic analysis,” The Lancet; published online January 20, 2022 [https://doi.org/10.1016/S0140-736\(21\)02724-0](https://doi.org/10.1016/S0140-736(21)02724-0)

# GvHD and Bloodstream Infections are Common Life-Threatening Complications for Allogeneic HSCT Patients Despite Preventative Options

- GvHD and severe infections are two of the **most frequently occurring complications and drive significant mortality**
- Both result in significantly higher rates of hospital readmission and longer length of stay
  - On average patients with complications incur **\$181K higher costs** in year 1 post-transplant
- **Limited options are available** to effectively prevent these life-threatening complications
  - Significant prophylaxis used in GvHD with high rates of non-responders
  - Limited prophylaxis for infections with antibiotics that drive development of resistance

## GvHD and Infections in HSCT



Sources: Perales, et al. "Real-World Economic Burden Associated with Transplantation-Related Complications" *Biol Blood Marrow Transplant* 23 (2017) 1788–1794; Esquirol, et al. "Severe infections and infection-related mortality in a large series of haploidentical hematopoietic stem cell transplantation with post-transplant cyclophosphamide," *Bone Marrow Transplant* 56 (2021) 2432–2444; Styczynski et al. "Death after hematopoietic stem cell transplantation: changes over calendar year time, infections and associated factors" *Bone Marrow Transplantation* 55 (2020) 126-136; Yu, et al. "Mortality, length of stay and costs associated with acute graft-versus-host disease during hospitalization for allogeneic hematopoietic stem cell transplantation" *Current Medical Research and Opinion* 35 (2019) 983-988

# SER-155 Could Become Core Part of the Allogeneic HSCT Armamentarium, Increasing Successful Outcomes for Vulnerable Cancer Patients

Potential to provide substantial clinical value for the ~9,800 allogeneic HCST patients/year (US)

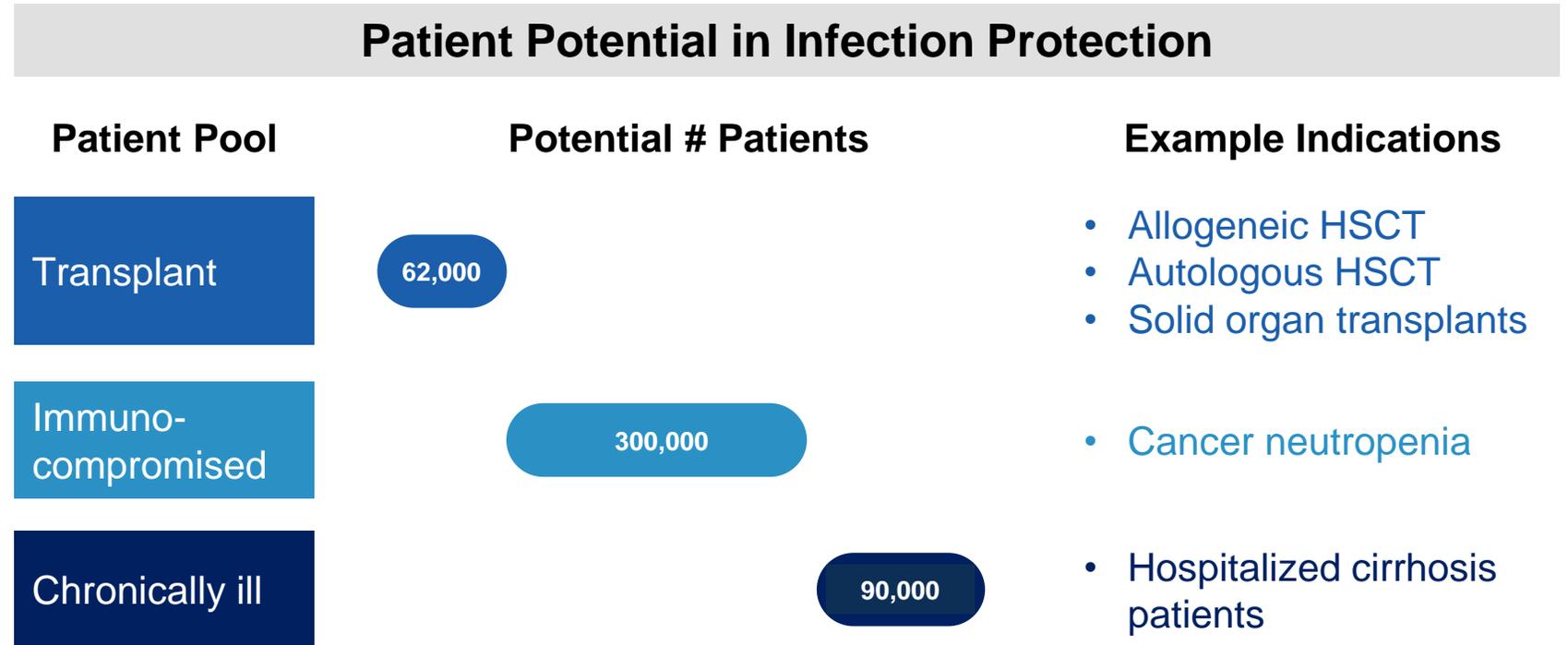
- ✓ **Meaningful Risk Reduction** – compared to SOC alone for GvHD as well as bacteremia
- ✓ **Safe** – favorable safety profile would provide comfort in adding on to SOC
- ✓ **Double Benefit** – significant overlap between patients who develop GvHD and infections magnifies product appeal
- ✓ **Logical MoA** – evidence linking microbiome to these complications

Translating to economic value

Number of Treatments  
Hospital Readmissions  
Hospital Length of Stay

# Sizable Pool of Patients May Benefit From Infection Protection

- Focus on medically compromised populations with high infection rates
- Potentially attractive pricing corridor with high patient management costs
  - HSCT costs up to \$400K at year 1
  - Allo HSCT and solid organ transplants are in the top 10 paying DRGs to hospitals
- Potential to expand to other populations at high risk for bloodstream infections



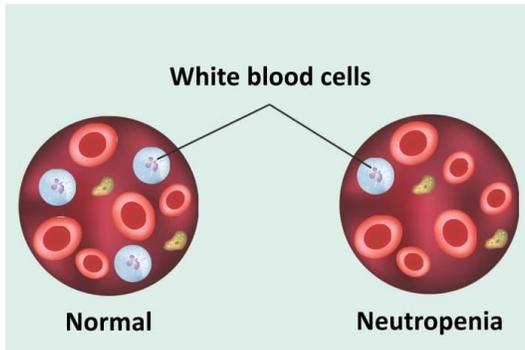
\*Assumes ~15% of cirrhosis patients hospitalized per year

Sources: CIBMTR; KOL interviews; Decision Resources Group; Leukemia & Lymphoma Society overview; literature searches Broder, et al. "The Cost of Hematopoietic Stem-Cell Transplantation in the United States" Am Health and Drug Benefits 10 (2017) 366–374.

<https://data.cms.gov/provider-summary-by-type-of-service/medicare-inpatient-hospitals/medicare-inpatient-hospitals-by-geography-and-service/data/2019>



# Microbiome Therapeutics may be Uniquely Well Suited to Improve Outcomes of Cancer Patients with Neutropenia

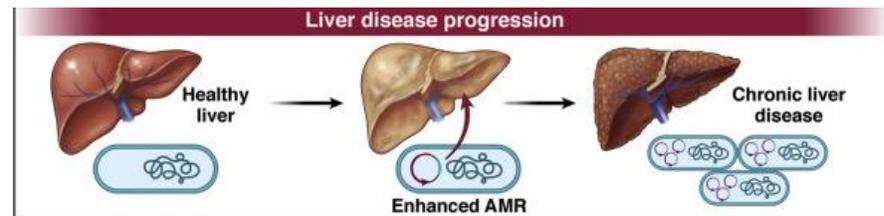


- **Neutropenia followed by subsequent infections is common among cancer patients**
  - **2.8 million** annual cancer-related hospitalizations in the US
  - Half of patients undergoing chemotherapy experience neutropenia
  - Septicemia was **#1 cause of hospitalizations** other than underlying cancer; **250,000** hospitalizations per year in US
- Febrile neutropenia in cancer patients is **deadly and costly**
  - **25-30%** of patients with febrile neutropenia experience **major complications** (e.g., renal difficulty, respiratory, heart failure)
  - **9% in-hospital mortality**
  - **\$2.7 billion** US cost of neutropenia hospitalization in 2012
  - May result in delay or discontinuation of chemotherapy
- **Current standard of care to prevent bacterial infections is to give antibiotic prophylaxis to at-risk patients which breeds more drug resistance**
  - New approaches needed to decolonize pathogens in the gut microbiome through restoration of colonization resistance



# Microbiome Therapeutics have Potential to Address Antibiotic Resistance Driving Mortality in Patients with Cirrhosis

- **Cirrhosis is a chronic, progressive and final common pathway for a multitude of hepatic diseases (e.g., NASH, viral hepatitis)**
  - 630,000 patients in US
  - 10-15% hospitalized per year
- **Patients with cirrhosis are susceptible to infections**
  - Immune dysfunction and "leaky gut" can lead to infections of blood and fluid in abdomen (ascites)
  - Mortality quadruples among cirrhotics with infection versus without infection
  - Increased ARG carriage in gut microbiome due to frequent antibiotic exposure and resulting microbiome disruption is predictive of early hospitalization and death
- **Current standard of care to prevent spontaneous bacterial peritonitis is to give antibiotic prophylaxis which breeds more drug resistance**
  - New approaches needed to decolonize the gut microbiome through restoration of colonization resistance.



The NEW ENGLAND JOURNAL of MEDICINE

REVIEW ARTICLE

Dan L. Longo, M.D., Editor

## The Evolving Challenge of Infections in Cirrhosis

Jasmohan S. Bajaj, M.D., Patrick S. Kamath, M.D., and K. Rajender Reddy, M.D.

Sources: Decision Resources Group; KOL interviews; Shamsaddini et al *Gastroenterology* 2021 161:508-521; Edwards et al *Gastroenterology* 2021 161:413-415; Bajaj et al *NEJM* 384(24):2317-2326; Singal et al *AP&T* 2014: 105-112;

**Seres' mission: To transform the lives of patients worldwide with revolutionary microbiome therapeutics**

**Maximizing opportunities in infection protection**

**SER-109 data validates approach**

- *NEJM* publication highlights innovation
- On track for mid '22 BLA filing
- Preparing for launch partnered w/ Nestle Health Science

**Broad portfolio applicability**

- Modality can target multiple pathways
- Rational design platform strengthens and speeds discovery
- Safety profile expected to reduce development risk

**Industry-leading franchise potential**

- Full commercial rights
- SER-155 Ph1b ongoing
- New clinical program in '23
- Up to 3 more programs in next 3 years
- Many paths to multi-billion revenue potential

# Q&A

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