

## Microba to Present at 17th Bioshares Biotech Summit

**Microba Life Sciences Limited** (ASX: MAP) (“Microba” or the “Company”) is pleased to announce that Chief Executive Officer, Dr Luke Reid and SVP, Therapeutics Prof. Trent Munro will present at the 17th Bioshares Biotech Summit in Hobart, Australia at 4.35pm AEST today.

A copy of the Bioshares Biotech Summit presentation is attached below.

*This announcement has been authorised for release by the Chairman and Chief Executive Officer.*

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### **About Microba Life Sciences Limited**

Microba Life Sciences is a precision microbiome company driven to improve human health. With world-leading technology for measuring the human gut microbiome, Microba is driving the discovery and development of novel therapeutics for major chronic diseases and delivering gut microbiome testing services globally to researchers, clinicians, and consumers. Through partnerships with leading organisations, Microba is powering the discovery of new relationships between the microbiome, health and disease for the development of new health solutions.

**For more information visit: [www.microba.com](http://www.microba.com)**

Microba encourages all current investors to go paperless by registering their details with the designated registry service provider, Automic Group.

**MICROBA<sup>TM</sup>**

**PRECISION MICROBIOME  
THERAPEUTICS**

**24 July 2023**

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coverage

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in Microbiology

Other  
Technology

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Technology

**MICROBA™**

1 Calculated by analysing more than 10k samples across Microba's databank

2 Microba achieves 6-34x lower false discovery rate than academic competitors Parks, Donovan H., et al. "Evaluation of the Microba Community Profiler for Taxonomic Profiling of Metagenomic Datasets From the Human Gut Microbiome." *Frontiers in microbiology* 12 (2021).



## Services



### Testing

Microba provides testing and data analysis for a fee to **clinicians, consumers and research customers**

Data



## Databank

### Proprietary databank



Health Data



Biome Data

Driving discovery of novel therapeutic leads

## Therapeutics



Insights



### Novel Therapies

Data-driven product platform developing novel live biotherapeutics

Two core business segments driven by a proprietary databank

# Company Snapshot



**Continuous YoY revenue growth** over 5 years of operations



Partnerships with market leaders incl. **Sonic Healthcare** (ASX: SHL), **Ginkgo Bioworks** (NYSE: DNA), **SYNLAB** (GR:SYAB) + more



**Large, unique, proprietary** microbiome databank



3 key therapeutic programs with lead IBD drug candidate **in Phase I trial**



World-leading technology in the emerging and rapidly growing **US\$4.89 billion** microbiome sector<sup>1</sup>

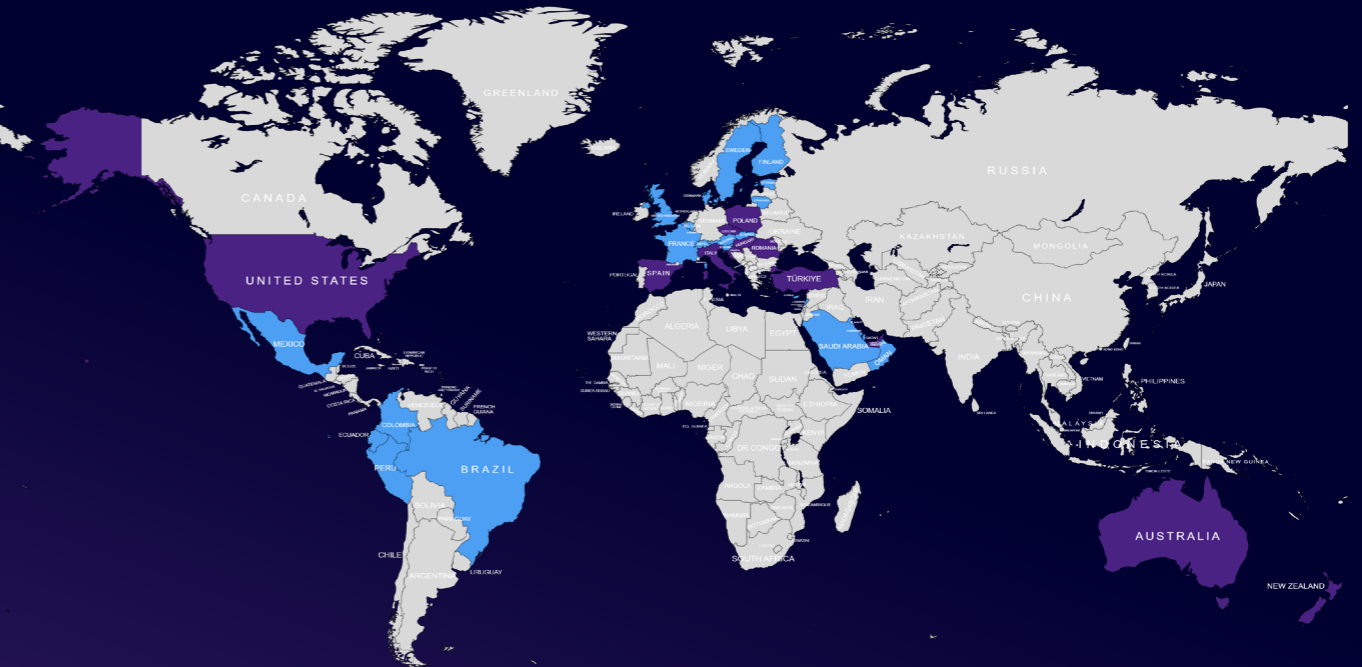


Globally **leading microbiome expertise** complemented by drug discovery experts including Prof. Ian Frazer

# Microbiome testing services business



- Continued YoY revenue growth
- Leading bench of global partners provides access to 35 countries with 13 now operational
- At the forefront of rapidly emerging microbiome testing market
- Opportunity to disrupt diagnostic markets including infectious disease testing



Driving global revenues and databank growth

- Contracted partner/s operational
- Access to this country through existing distribution partner network

# Precision Microbiome Therapeutics

- Precision microbiome analysis platform delivering unparalleled accuracy, coverage & depth.
- Data driven discovery platform utilising one of the worlds most advanced & highly curated microbiome datasets.
- Next generation approach to microbiome drug development identifying and isolating single keystone species to develop Live Biotherapeutics.



# Novel Pipeline of Microbiome Therapies

- ✓ Potent and novel biology mediated by Live Biotherapeutic strategy
- ✓ Scalable GMP manufacturing for high dose oral delivery
- ✓ Excellent safety profile

# Experienced Leadership



Luke Reid  
CEO



Trent Munro  
SVP Therapeutics



Prof Ian Frazer  
Director & MAB Chair



Prof Gene Tyson  
Co-Founder



Prof Phil Hugenholtz  
Co-Founder

# Microba Partners





# Evolution of Microbiome based Therapeutics

## 1 First Generation



Fecal Doner Derived



**FDA approval Nov 30 2022**  
Faeecal doner derived enema drug product



**FDA approval April 27 2023**  
Faeecal doner derived oral capsule drug product

## 2 Second Generation



Bacterial Consortia



**Vedanta Biosciences**  
Vedanta Biosciences Raises \$106.5M in Funding



**SER-155**  
Phase Ib showing engraftment reduction in pathogens

## 3 Next Generation



Single Strain & Small Molecule

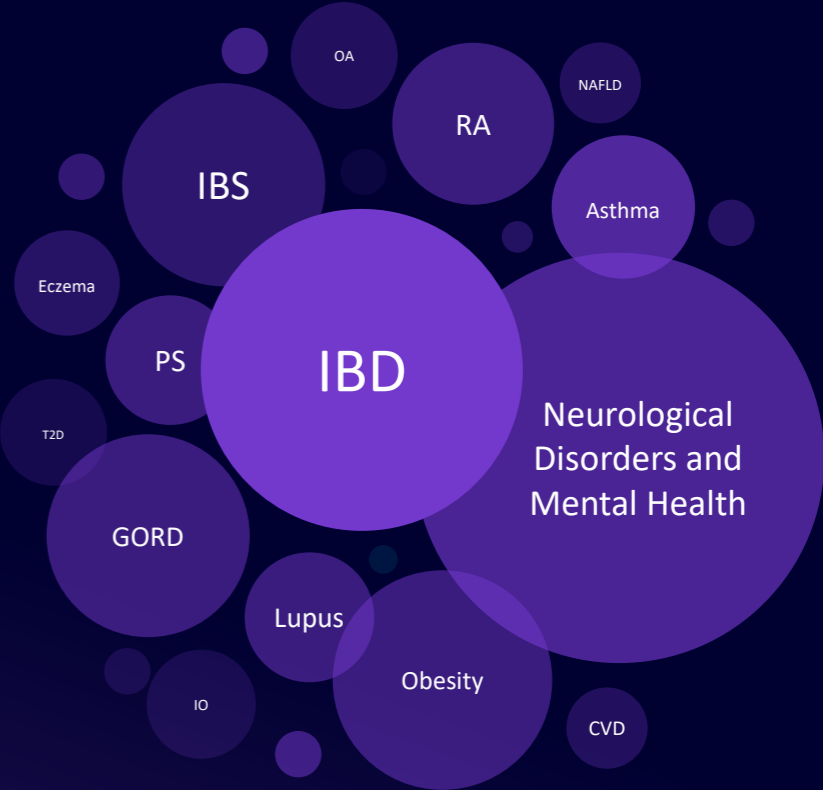


**MAP 315**  
Phase I H1 FY2024

# Human data driven insights

## Microbiome Databank

- Health Data
- Biome Data



## Precision Microbiome Therapeutics

# Therapeutic Pipeline

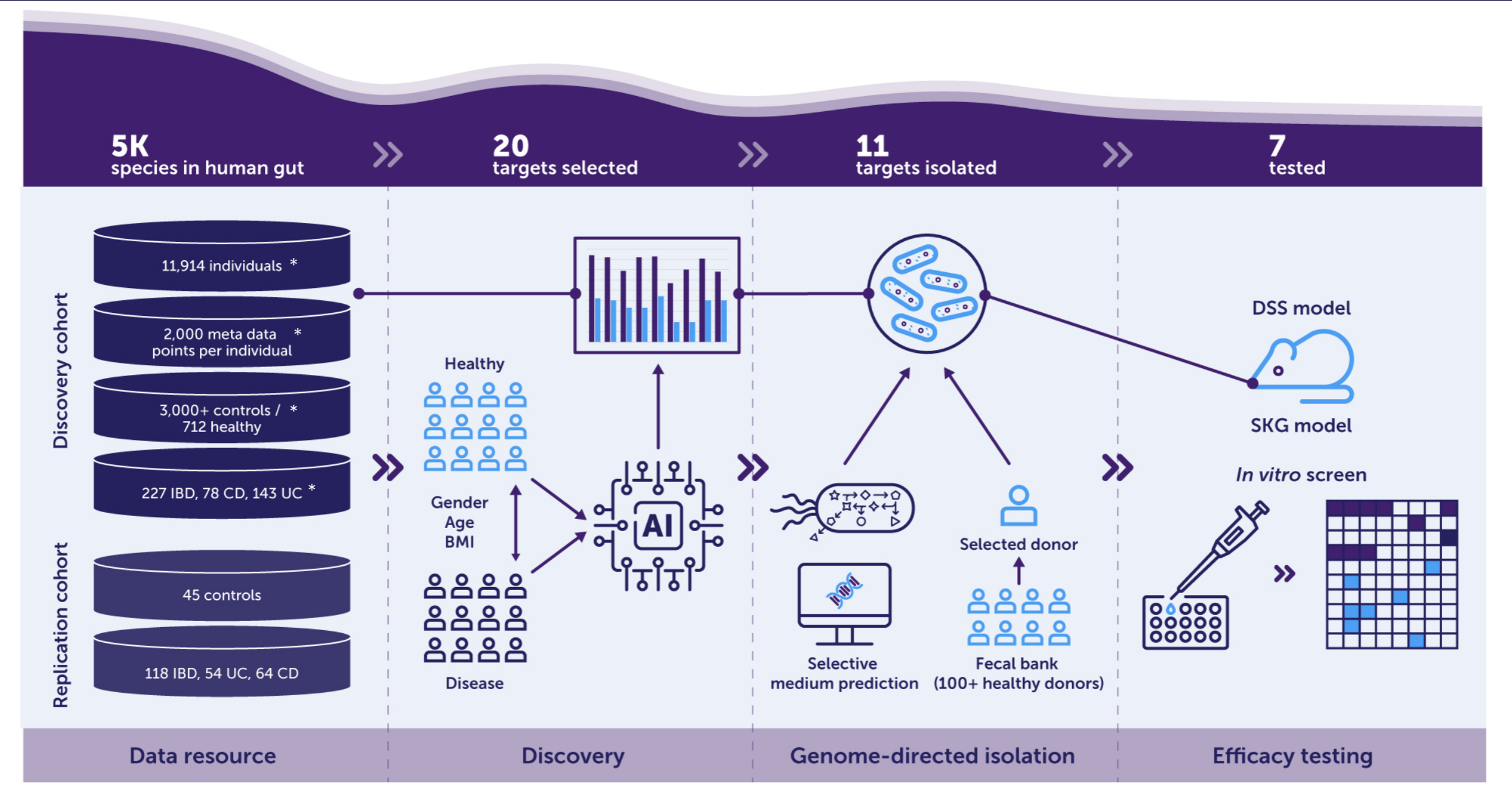


\* Phase I clinical trial commenced first dosing in June 2023, result expected to be available in December 2023



# Inflammatory Bowel Disease

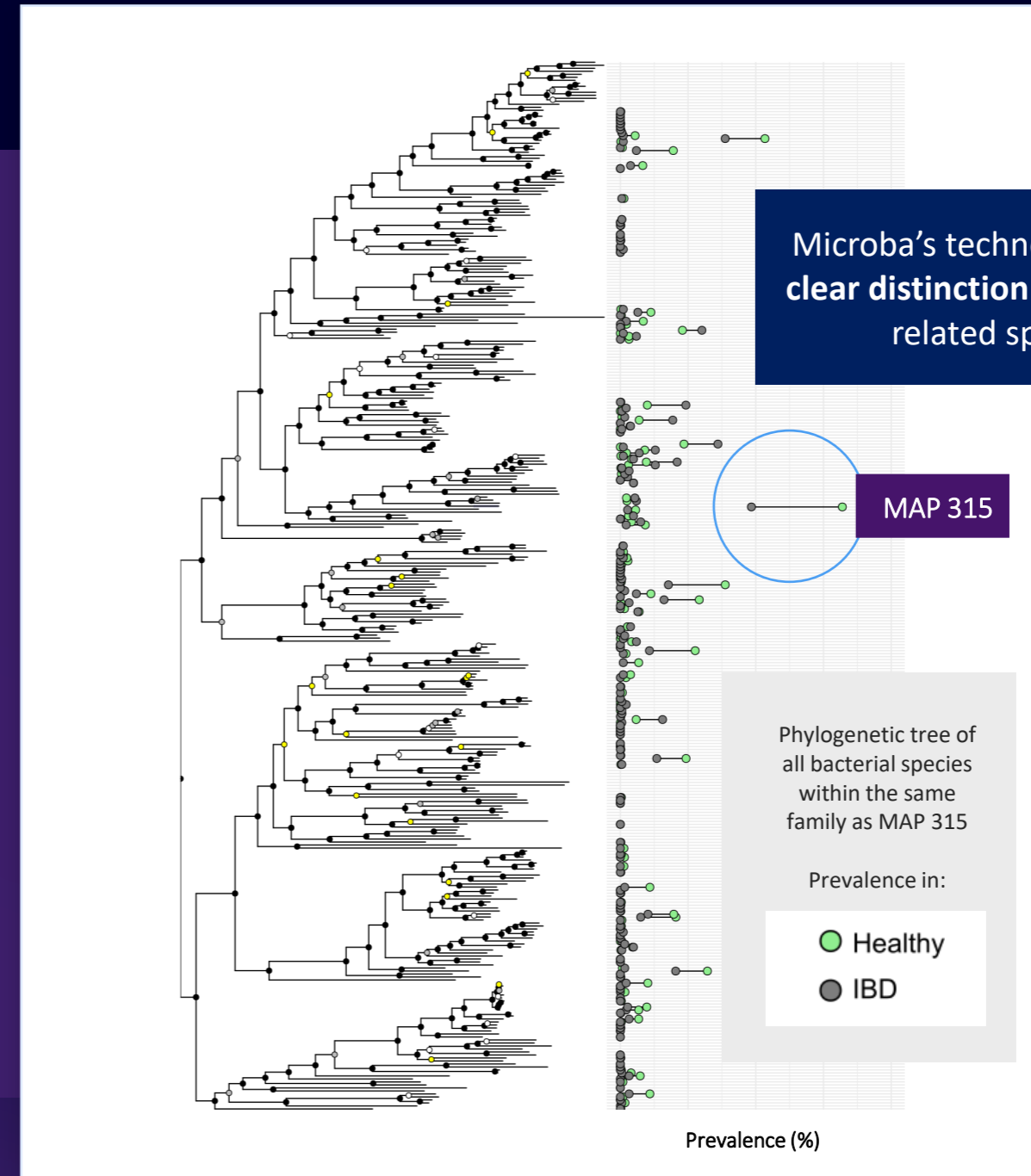
# Data-driven platform driving discovery of novel biotherapeutics



# IBD Program: Clinical data-driven discovery

## Lead candidate MAP 315:

- Identification enabled by Microba's **precision microbiome measurements**
- A previously uncultivated, uncharacterized species
- Rationally discovered and replicated in human datasets
- Clearly stands out from other species



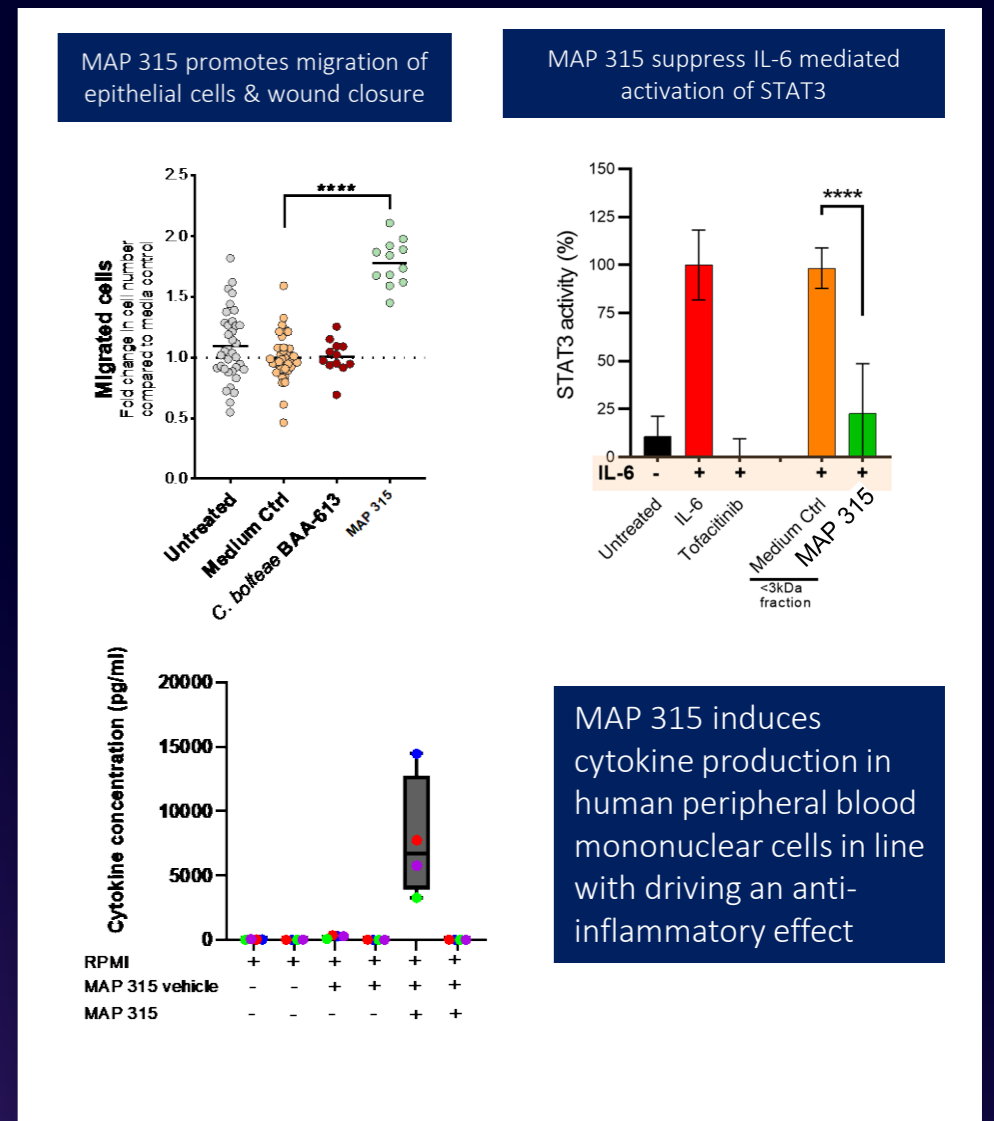
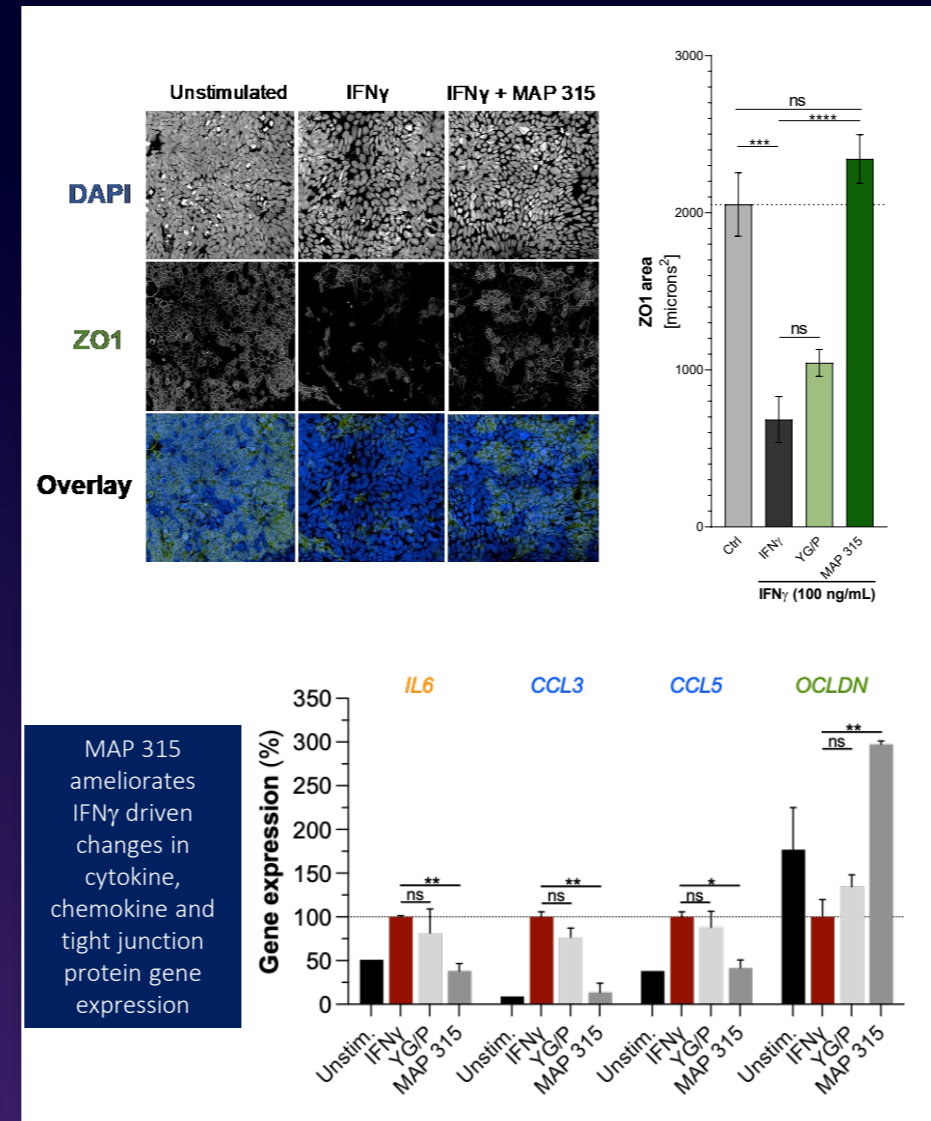
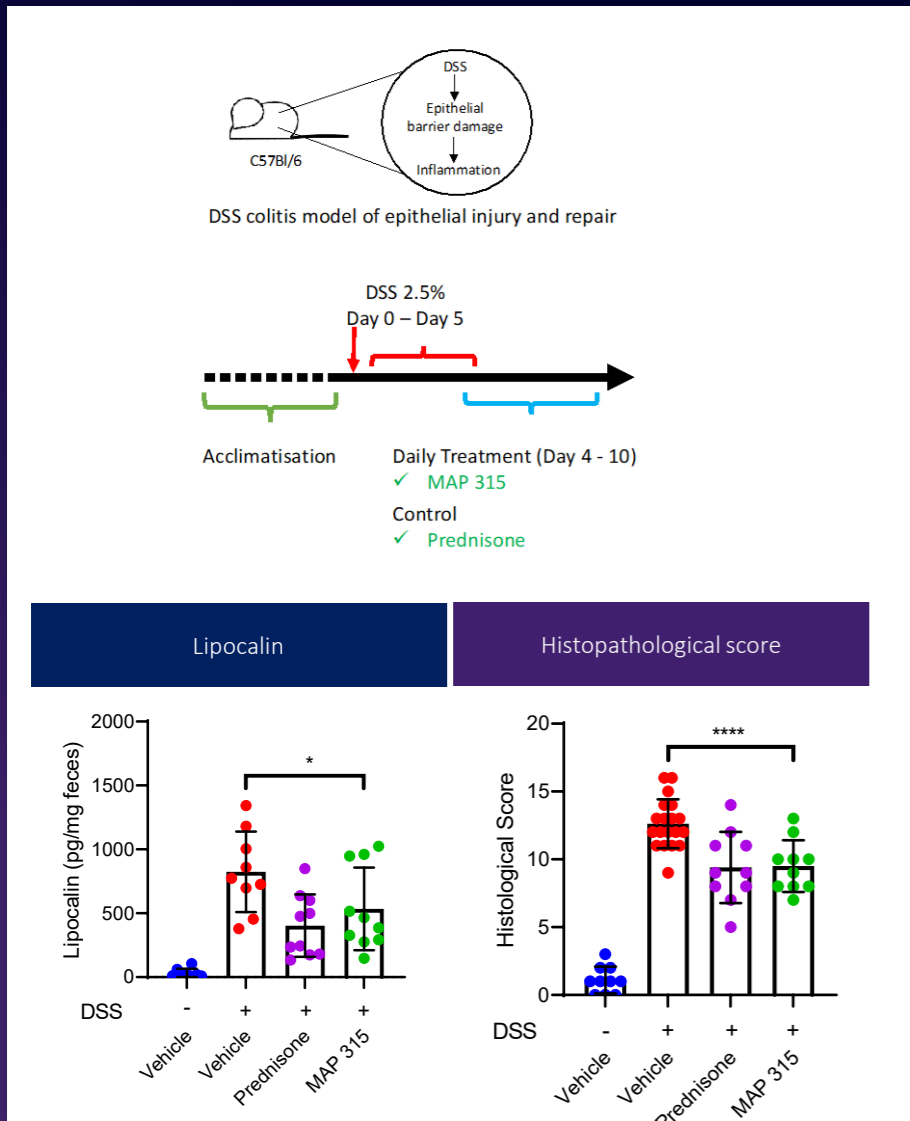


# IBD Program: MAP 315 Biology

## 1 Improved pathology in induced colitis mouse models

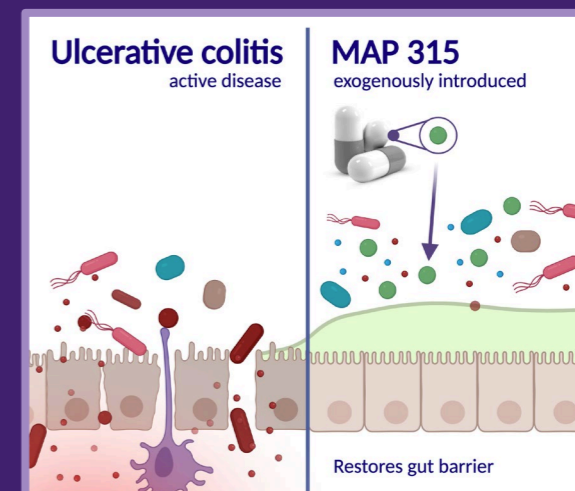
## 2 Supports barrier integrity by modulating gut epithelial cell tight junctions

## 3 Promotes epithelial cell migration & suppresses cytokine driven inflammatory response



# MAP 315 at the forefront of live biotherapeutics a new potential major class of therapeutics

- **MAP 315** has the potential to provide **novel, potent therapeutic benefit** to UC patients through addressing a **key gap** in existing care – **epithelial and mucosal healing**
- **MAP 315** is a **clinical stage, orally delivered, single strain live biotherapeutic** differentiated from donor derived or microbiome cocktail approaches **simplifying CMC and regulatory pathway**



**\$10B+**

## Inflammatory Bowel Disease

Ulcerative Colitis & Crohn's Disease <sup>1</sup>

*Favourable safety profile*

*All patients regardless of line of therapy*

*Bringing the promise of precision microbiome therapy to IBD*

→  
*Expanded Inflammatory Disease Opportunity*

**\$50B+**

Large market for additional Inflammation-Driven Indications <sup>2</sup>

*Fibrosis*

*Atopic Dermatitis/Psoriasis*

*Rheumatoid Arthritis*

# Oncology



# Advancing response to immune checkpoint inhibitors through the gut microbiome

Between **42% - 70%** of patients do not respond to ICI therapy<sup>1,2</sup>

Modulation of gut microbiome using **fecal microbiome transplant** improved ICI response in Phase I and II studies<sup>4,5</sup>

**Over 30 published studies** support the influence of the gut microbiome on ICI response

<sup>1</sup>Leonardi et al. (2020). *International Journal of Oncology*. DOI: 10.3892/ijo.2020.5088

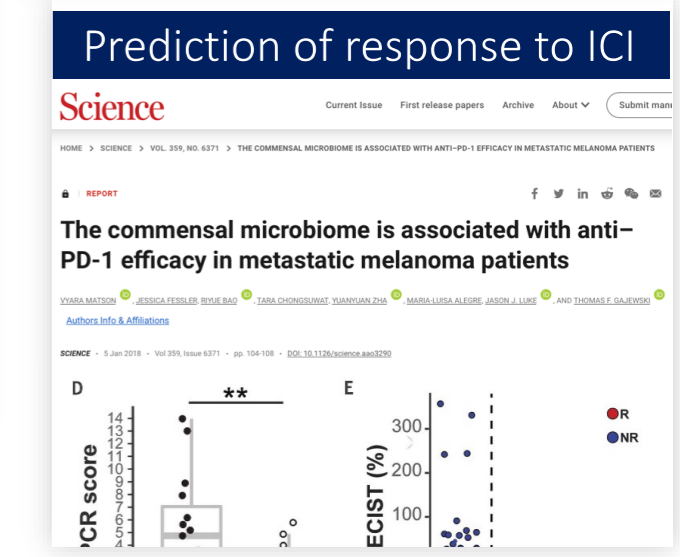
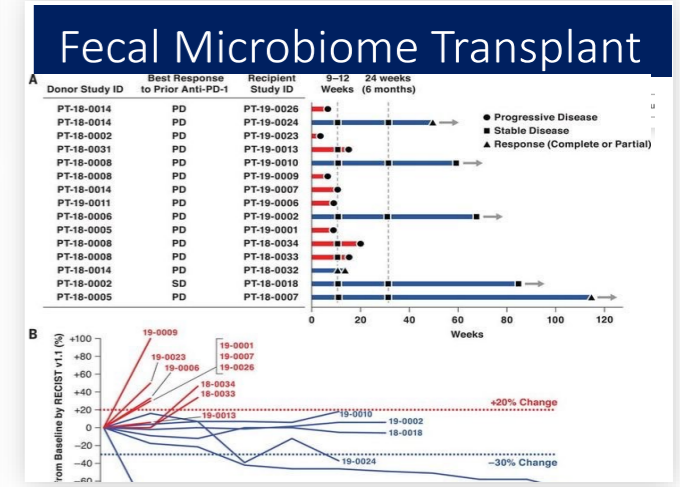
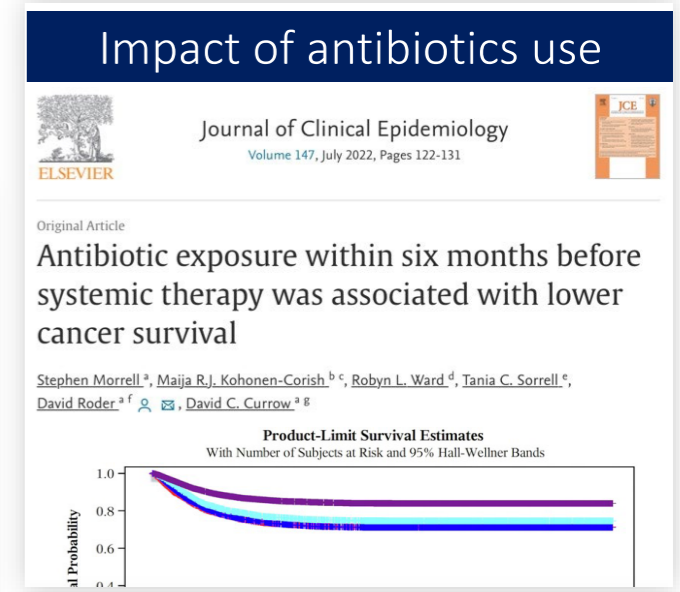
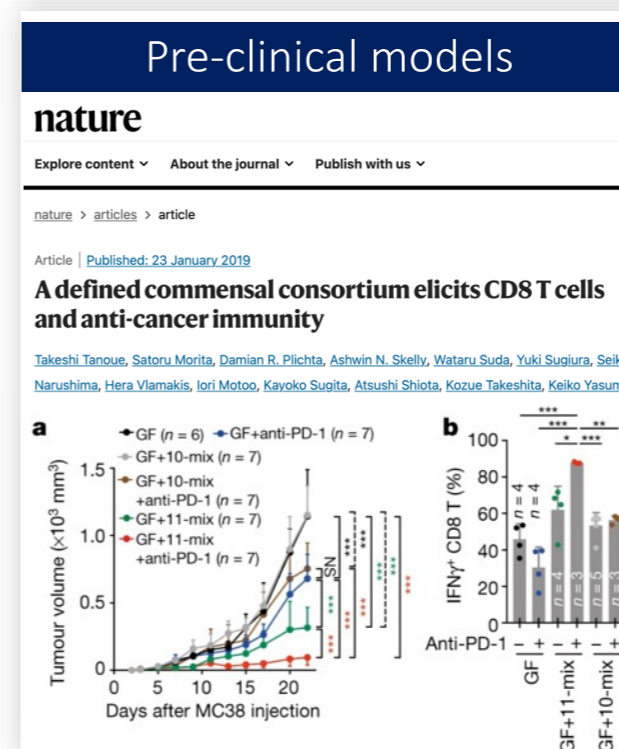
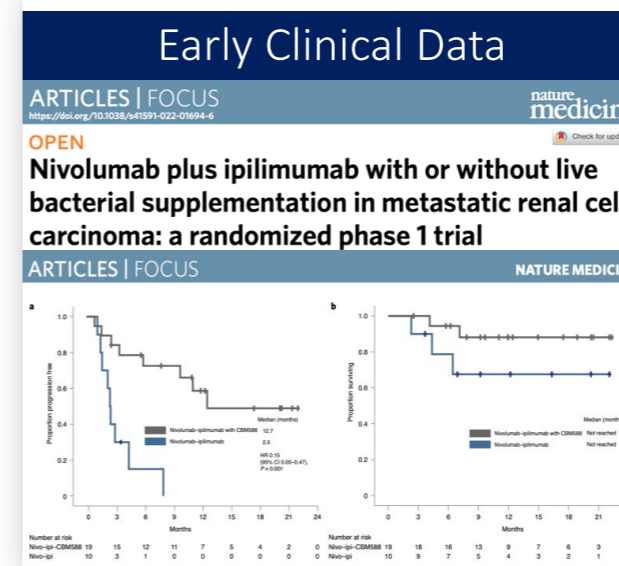
<sup>2</sup>Wolchok et al. (2017). *New England Journal of Medicine*. DOI: 10.1056/NEJMoa1709684

<sup>3</sup>Larkin et al. (2019). *New England Journal of Medicine*. DOI: 10.1056/NEJMoa1910836

<sup>4</sup>Baruch et al. (2020). *Science*. DOI: 10.1126/science.abb5920

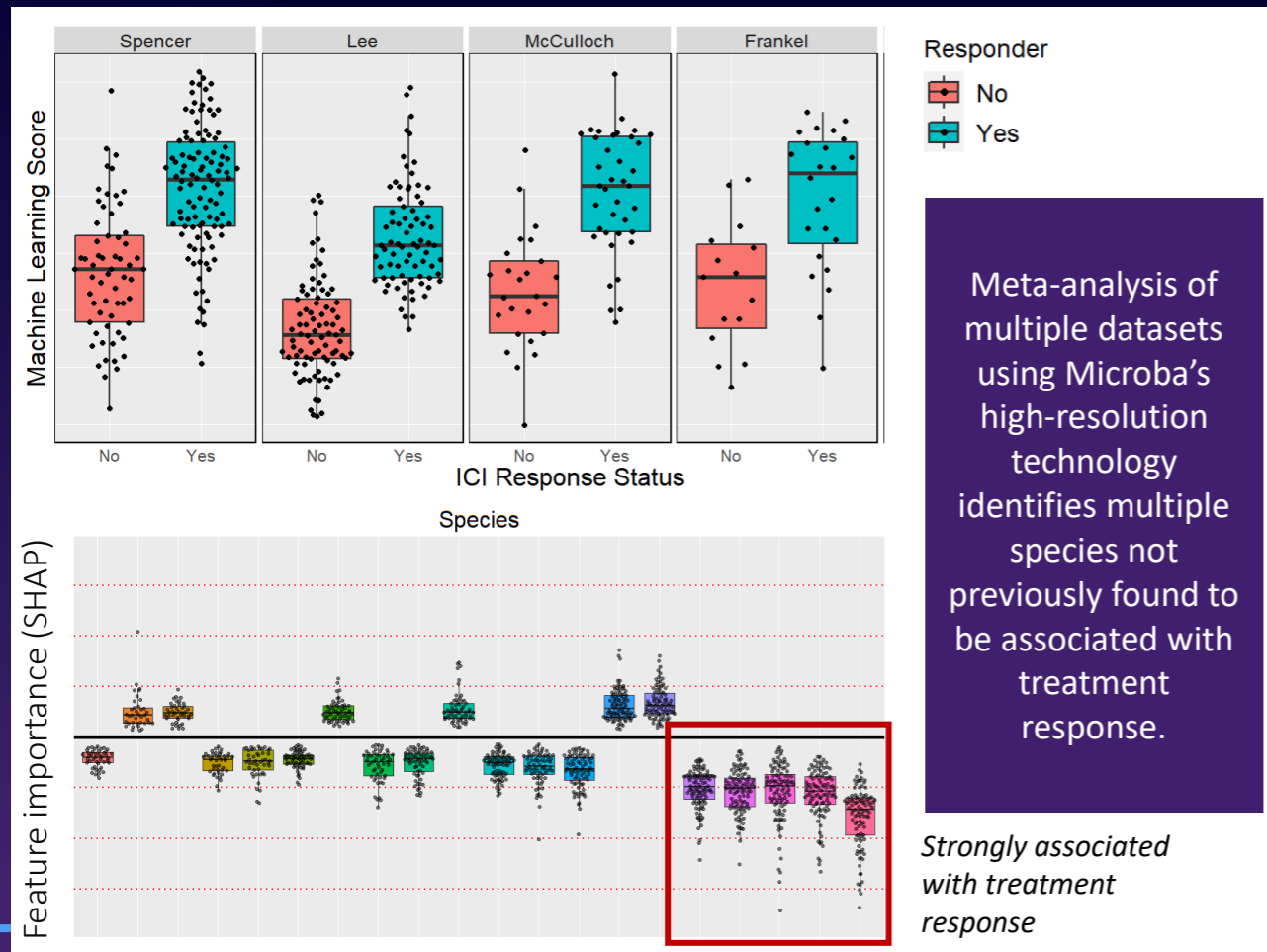
<sup>5</sup>Davar et al. (2021). *Science*. DOI: 10.1126/science.abf3363

\* Immune-related adverse events



# Oncology Program: Discovery & POC

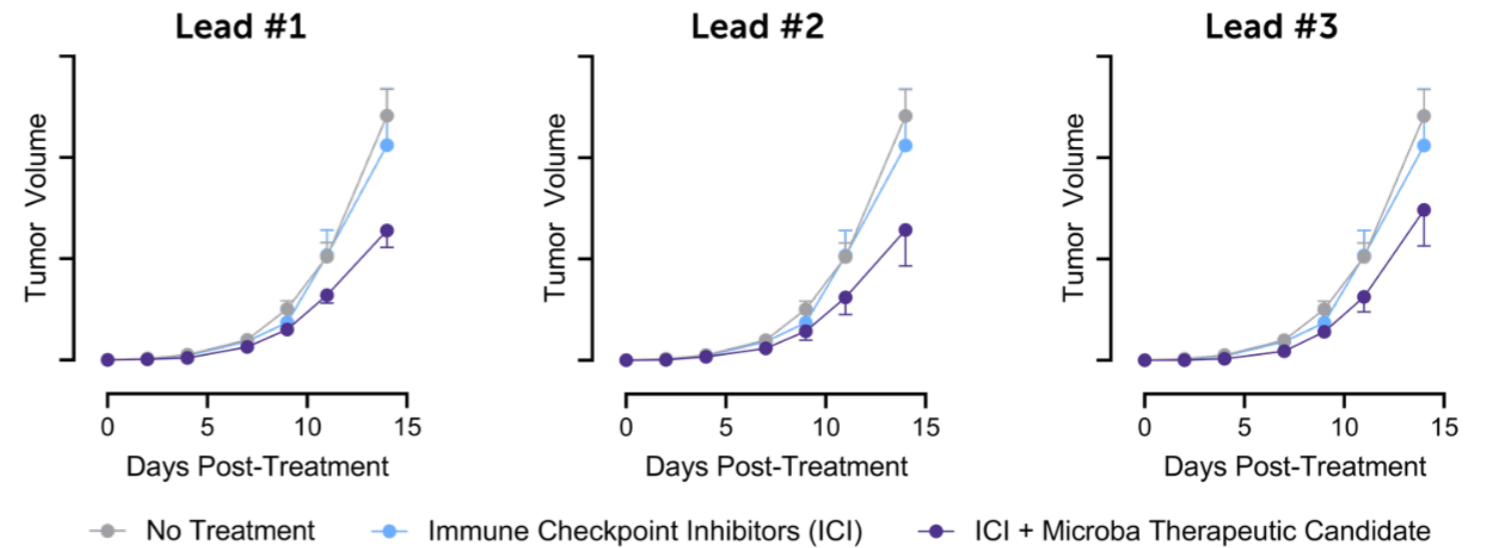
## 1 Human clinical data driven lead candidate discovery



## 2 Proof of concept achieved in immune checkpoint inhibitor (ICI) refractive mouse model

### Positive animal efficacy data has been generated for Microba's immuno-oncology therapeutic leads.

A significant reduction in tumour size was observed in combination with immune checkpoint inhibitor (ICI) treatment in a mouse model of melanoma.



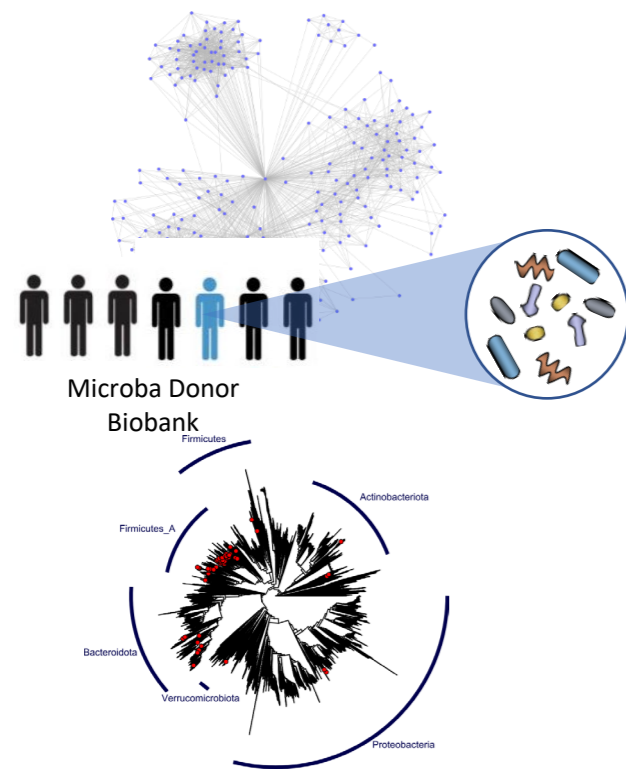
Developing breakthrough microbiome-derived cancer immunotherapy

# Autoimmune Disease

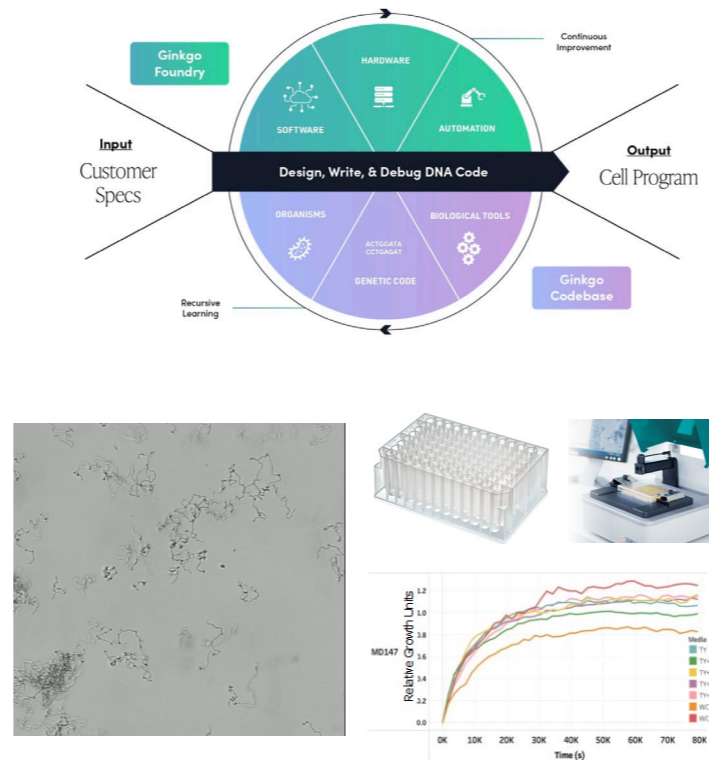


# Autoimmune: Drug Discovery Program

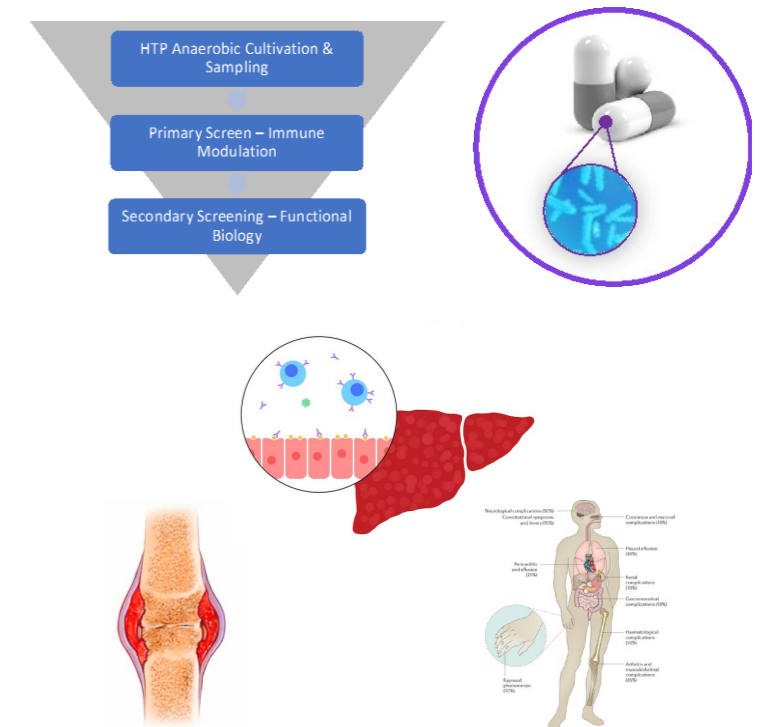
## Human Data Guided Discovery Engine



## Ginkgo Anaerobic Foundry



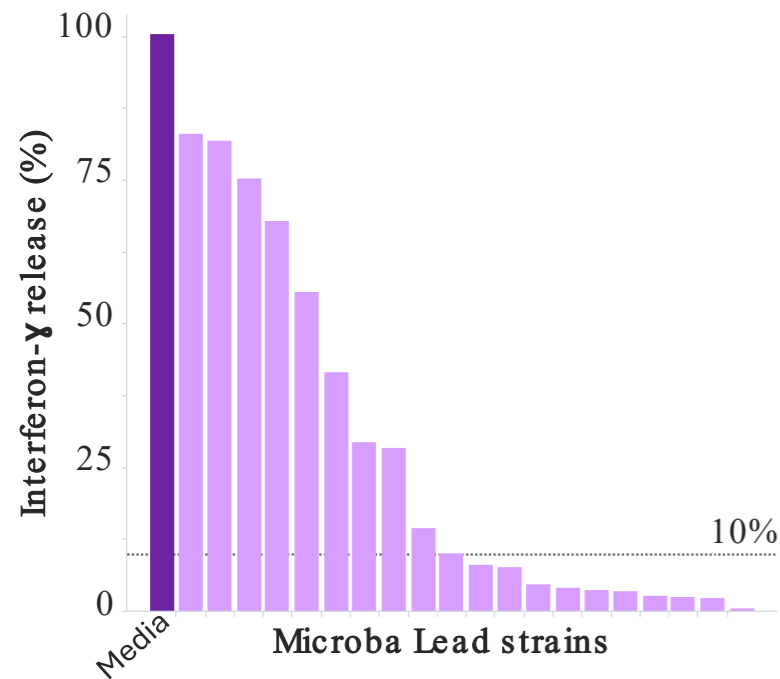
## Drug Discovery Program for Autoimmune Disease



Microba and Ginkgo Bioworks have established a Microbiome Drug Discovery Program targeting Autoimmune Diseases including Psoriatic Arthritis, Autoimmune Liver Disease and Lupus.

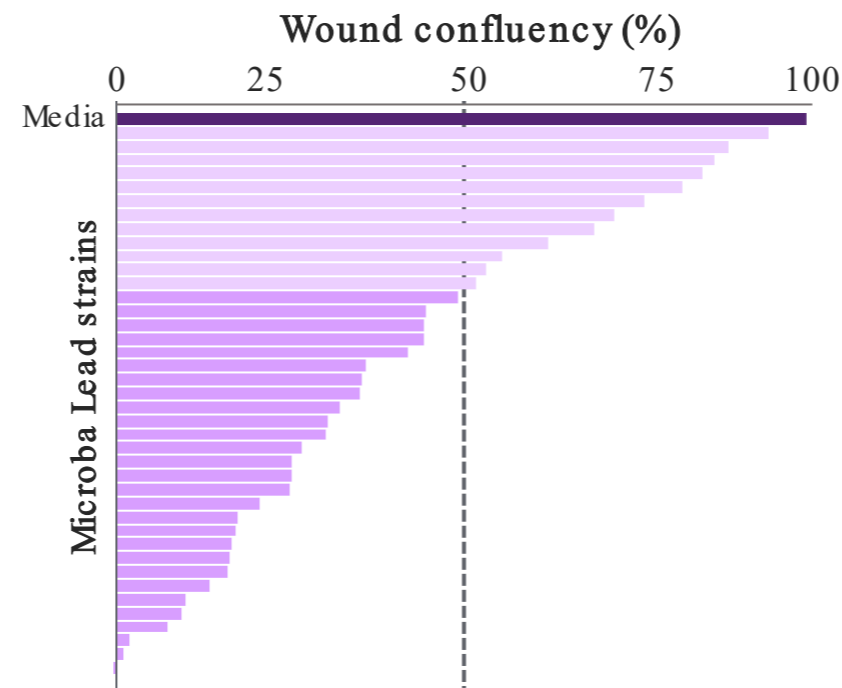
# Autoimmune Program: Significant hit rate and potency observed in primary screens

## Immune Suppression Activity



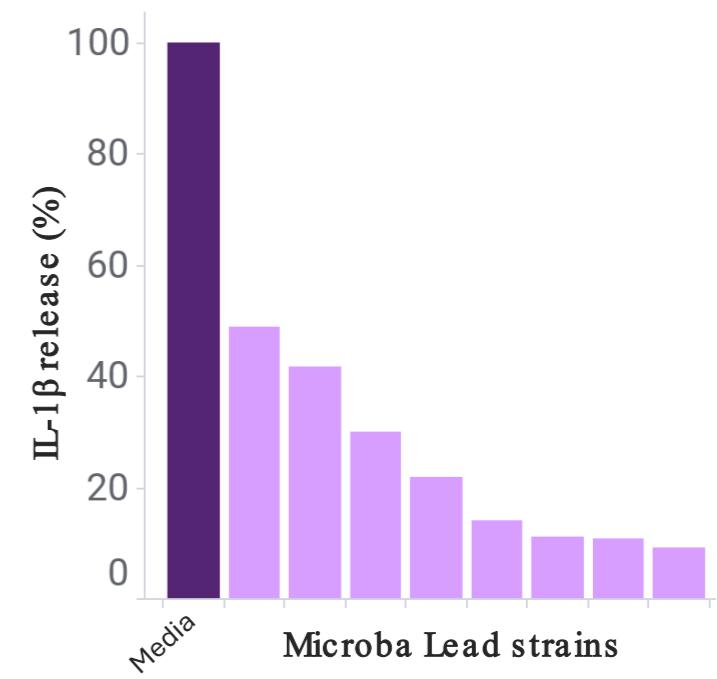
Immune suppression assay data in PBMCs showing suppression of IFN $\gamma$  production

## Reduced Cell Migration Activity



Fibroblast Migration Assay data showing activity relevant for fibrotic remodeling

## Reduced Inflammasome Activity





Inflammasome activation assay in THP1 cells showing reduction in IL-1 $\beta$







# Some recent IBD and microbiome deals

Licensee / Acquiror	Licensor / Target	Date	Type	Deal size	Indication / clinical stage
 <b>MERCK</b>	 <b>Prometheus</b> Biosciences	Apr 2023 (pending)	Acquisition	Total deal size: US\$10.8b	Ulcerative Colitis (phase 2) Crohn's disease (phase 2A) Autoimmune diseases (phase I or pre clinical)
 <b>Nestlé</b> HealthScience®	 <b>Enterome</b>	July 2022	R&D collaboration and license agreement	Total deal size: Undisclosed Upfront: €40m Sales / regulatory milestones: Undisclosed	Food allergies and IBD (pre clinical)
 <b>Pfizer</b>	 <b>ARENA</b> PHARMACEUTICALS	Mar 2022	Acquisition	Total deal size: US\$6.7b	Ulcerative Colitis (phase 3), Crohn's disease (phase 2/3), Atopic dermatitis (phase 2 complete)
 <b>Roche</b> Genentech <small>A Member of the Roche Group</small>	 <b>NOVOME</b> BIOTECHNOLOGIES	Nov 2021	R&D collaboration and license agreement	Total deal size: US\$605m Upfront: US\$15m Additional payments: US\$590m	IBD (Discovery)
 <b>Nestlé</b> HealthScience®	 <b>SERES</b> THERAPEUTICS	Jul 2021	Licensing agreement in US/Canada	Total deal size: US\$525m Upfront: US\$175m Sales / regulatory milestones: Up to US\$225m	Recurrent Clostridioides difficile infection (Phase 3)

<https://www.merck.com/news/merck-strengthens-immunology-pipeline-with-acquisition-of-prometheus-biosciences-inc/>

<https://www.enterome.com/news-events/enterome-signs-major-strategic-rd-collaboration-with-nestle-health-science-to-develop-and-commercialize-new-allermimics-and-endomimics-immunotherapies-for-food-allergies-and-inflamm/>

<https://www.pfizer.com/news/press-release/press-release-detail/pfizer-completes-acquisition-arena-pharmaceuticals>

<http://novomebio.com/wp-content/uploads/2021/11/Novome-and-Genentech-Enter-into-Strategic-Collaboration.pdf>

<https://ir.serestherapeutics.com/news-releases/news-release-details/seres-therapeutics-nestle-health-science-announce-ser-109-co>

# Upcoming Milestones for 2023

2023 JAN – MAR	2023 APR - JUN	2023 JUL - DEC
<p><b>Services</b> New healthcare product full launch </p>	<p><b>Services</b> New international distribution deals </p>	<p><b>Services</b> New country expansion</p>
<p><b>Services</b> New international distribution deals </p>	<p><b>Therapeutics - IBD MAP 315 program</b> HREC Approval for Phase I trial </p>	<p><b>Services</b> First Sonic partners operational</p>
<p><b>Therapeutics - IBD MAP 315 program</b> Phase I HREC Submission </p>	<p><b>Therapeutics - IBD MAP 315 program</b> GMP manufacture complete Phase I </p>	<p><b>Therapeutics - IBD MAP 315 program</b> Phase I participant dosing complete</p>
<p><b>Therapeutics - IBD MAP 315 program</b> FDA Pre-IND meeting outcome </p>	<p><b>Therapeutics - IBD MAP 315 program</b> Phase I trial commencement </p>	<p><b>Therapeutics - IBD MAP 315 program</b> Phase I complete</p>
<p><b>Therapeutics - IO Program</b> Pre-clinical results </p>		<p><b>Therapeutics – IO Program</b> Immunological pre-clinical results</p>
<p><b>Therapeutics – Autoimmune Program</b> First <i>in vitro</i> screening results </p>		<p><b>Therapeutics - Autoimmune Program</b> Stage 1 activity screening complete</p>

# MICROBA™

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