

BIOMICA

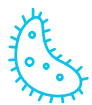
Microbiome-Empowered Therapeutics

Dr. Elran Haber, CEO ◆ March 2025

Forward-looking statement



This presentation contains "forward-looking statements" relating to future events, and we may from time to time make other statements, regarding our outlook or expectations for future financial or operating results and/or other matters regarding or affecting Evogene Ltd. or its subsidiaries, including Biomica Ltd. ("Biomica") (collectively, "Evogene" or "we"), that are considered "forward-looking statements" as defined in the U.S. Private Securities Litigation Reform Act of 1995 (the "PSLRA") and other securities laws. Such forward-looking statements may be identified by the use of such words as "believe," "expect," "anticipate," "should," "planned," "estimated," "intend" and "potential" or words of similar meaning. For these statements, Biomica claims the protection of the safe harbor for forward-looking statements contained in the PSLRA and other securities laws.



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We are Biomica

A clinical-stage biopharmaceutical company with cutting edge computational capabilities to develop the most optimized microbiome-based therapeutics.



Rooted in excellence

Subsidiary of Evogene Ltd.
(NASDAQ, TASE: EVGN), a pioneer
in the field of applied
computational predictive biology,
creating next-generation life
sciences products.



Breakthrough platform

Drug candidates identified and
designed with PRISM – a proprietary
computational platform combining AI
capabilities with big data.



Spearheading the future

Optimized discovery, design &
development, resulting in best-in-
class pharmaceuticals.

Precise & efficient – from concept
to clinical trials in only 3 years.

Our Mission

To discover & develop novel therapies for microbiome-related human disorders.

We utilize computational predictive biology to provide new therapeutic modalities for high-value, unmet medical needs.

Showing promise in
immune-mediated
& infectious diseases

Current programs:



Immuno-oncology



Gastrointestinal (GI)
related disorders



Metabolic Diseases

Harnessing the human microbiome

10¹⁴

microbes
in the
human body



Trillions of microorganisms
live in & on our bodies



Play an essential role in
various daily bodily functions



Microbiome diversity is
associated with health &
wellbeing

The Future is Now!

Industry

Multi \$Bn

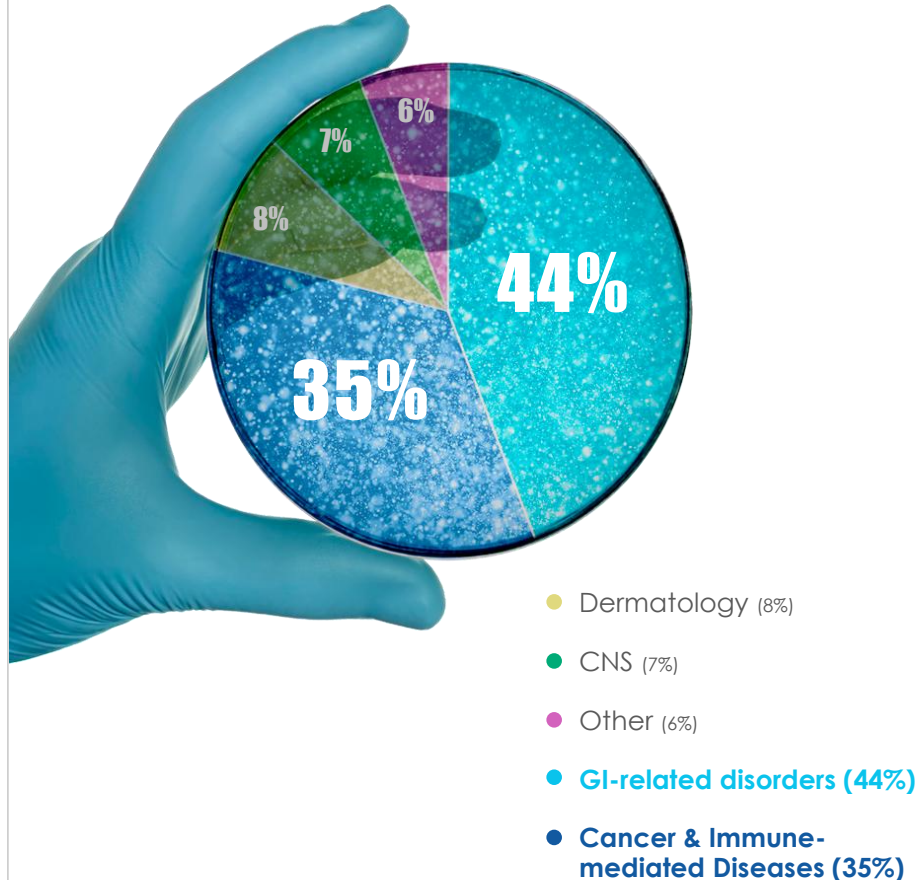
market opportunity

More than \$4Bn

invested in
microbiome
companies since 2014

Microbiome
therapeutics expected
to address a wider
range of medical
conditions

Areas of focus



A clinical promise comes true

MicrobiomeTimes
REPORTING ON THE SEA OF THE MICROBIOME
Nov 9, 2022

BiomeBank announces regulatory approval for donor derived microbiome drug

Pharmaceutical
Technology
Dec 1, 2022

US FDA approves Ferring's Rebyota for Clostridioides difficile infection

Pharmaceutical
Technology
Apr 27, 2023

Seres and Nestlé Health receive FDA approval for Vowst microbiome therapy

First Microbiome drugs approved by FDA & more positive clinical data shows strong validation of microbiome therapeutics

Finding the optimal combination of microbes is complex

To develop **best-in-class drugs**, one must find, select, and combine **only the most suitable microbes** from the thousands of strains in our bodies.

Each method has its own set of challenges

Biological method:

Healing the sick by comparing them to the healthy



Slow & exhausting

0101
0010
1010

Limited by small data



Like finding needle in the hay

Computational method:

Using AI to find the key microbes

Lack of proper tools & datasets



Poor ability to gain valuable insights



The  BIOMICA approach:

Computational, targeted & function-based drug design



Modulating
a patient's
microbiome



Computational
predictive biology
platform



Function-based
drug design
process

1



Modulating
a patient's
microbiome

The Biomica approach: computational, targeted & function-based drug design

Immuno-oncology
or GI disorders



Initial state:
Dysbiosis

- Reduced diversity
- Loss of beneficial microbes
- Opportunist's expansion



Supplementation
Adding beneficial bacteria



Desired state:
Homeostasis
(balance)

Holistically determining the best strains for the patient

2



Computational
predictive
biology
platform

Patients' microbiome:

Identifies the strains present
& the functions they perform



Strain identifier



Function finder



Strain-function
allocator

Patients' genetic & clinical data:

Examining the patient's clinical
data & genomic data



Clinical data



Human
genomics



Consolidator

Big data
Analysis,
integration
&
prioritization



AI
Computational
& researcher-
guided
selection of
candidate
microbes



Drug

3

An emphasis on microbial function

PRISM allows high resolution analysis to rationally design therapeutics **based on microbial functions***.

This differentiates Biomica from current practices.

Current practices

Name: DX13756

Functional profile:
Fully mapped

Contribution to
functions of interest
9/10

Modes of actions
affected: 5/5

Overall score:

Biomica

Name: DX13756

Functional profile:
Fully mapped

Contribution to
functions of interest
9/10

Modes of actions
affected: 5/5

Overall score: 9.75

* Functions:

Genetic elements (e.g. genes, operons, pathway, plasmids) and/or their biosynthetic products (e.g. metabolites, proteins, enzymes)

The optimal combination

Up to 4 bacterial strains are carefully-selected, based on their functions, which may work across several complementary mechanisms.



Minimum
no. of microbial strains



Maximum
relevant & complementary functions



Optimal therapeutic impact

Function
based
drug design
process



Biomica's optimal therapeutic outcome

	Number of microbial entities	QC	Scalability	Druggability	Patentability	COGS	Targeted multiple functions composition	Potency*	Safety**
Fecal Microbiota Transplantation (FMT)	—	—	—	✓	✓	✓	—	✓	✓
Single-strain method	✓✓	✓✓	✓✓	✓✓	✓	✓✓	—	✓	✓✓
Multi-strain rationally-designed LBPs	✓	✓✓	✓	✓✓	✓✓	—	✓	✓✓	✓
Biomica's rationally-designed LBPs	✓✓	✓✓	✓✓	✓✓	✓✓	✓✓	✓✓	✓✓	✓✓



The pipeline

	Program	Indication / Target	Discovery	Preclinical	Phase 1 / POC	Phase 2	Approach
Immunology	BMC128	Combination Therapy with ICI* for Solid Tumors					
	BMC333	IBD					
GI-related disorders	BMC426	IBS					
	BMC721	Obesity					
New Programs	Collaboration	Longevity					

* Immune checkpoint inhibitors
 Biomica collaborates with Nobel Prize Laureate Prof. Ada Yonath at Weizmann Institute of Science to develop a selective treatment for MRSA infection in a discovery stage.

Revolutionizing Immunotherapy for Solid Tumor Non-Responders via the Human Microbiome

Science

NEWS | HEALTH

Fecal transplants could help patients on cancer immunotherapy drugs

Early results hint that benefits seen in mice could extend to people

5 APR 2019 • BY JOCELYN KAISER

www.sciencemag.org/news/2019/04/fecal-transplants-could-help-patients-cancer-immunotherapy-drugs

“...Now, another potential therapy is being tested in clinical studies: fecal transplants. Early results from two groups described at the annual meeting of the American Association for Cancer Research (AACR) here this week suggest some patients who initially did not benefit from immunotherapy drugs saw their tumors stop growing or even shrink after receiving a stool sample from patients for whom the drugs worked...

...One unresolved question is exactly which microbes help ramp up the desired immune activity...

”

POC first-in-human

First Patient dosed July 2022

A phase 1, open-label study to evaluate the safety and tolerability of **BMC128** in combination with anti-PD-1 (Opdivo™) in patients with **non-small cell lung cancer** (NSCLC), **melanoma** or **renal cell carcinoma** (RCC), who progress on immunotherapy



H1 2024

Successfully Completed Phase I Trial Enrollment. preliminary results and first data points readout presented at ASCO 2024



11 Patients

Enrolled in this phase I trial.



Safety & tolerability

of the BMC128 and anti PD-1 combination will be investigated as primary objective.

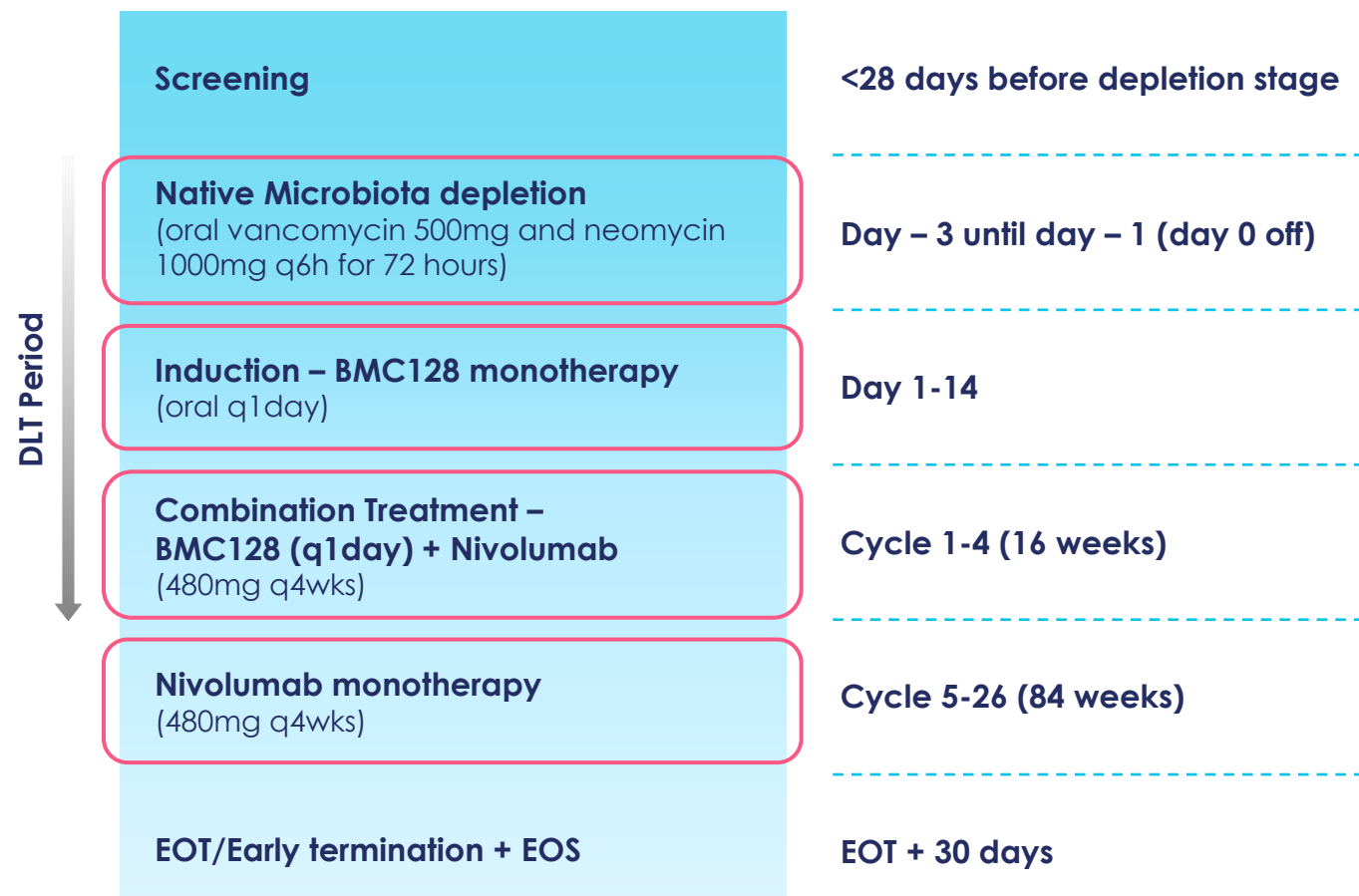


Exploratory objectives

are to explore efficacy variables in response to combined treatment with BMC128 and anti PD-1.



BMC128 FIH Study design



Presented at



Preliminary Phase 1 results show promising trends for BMC128 in combination with nivolumab in refractory cancer patients

All 11 patients, had experienced disease progression in prior immunotherapy treatment before joining the trial

- **Safety Profile:** Exceptional, no major safety events potentially associated with BMC128 reported during BMC128 monotherapy or combination treatment
- **Clinical Responses:** 72% of refractory cases exhibited positive clinical signals
- **Response Rates:** One patient demonstrated partial response (PR) upon imaging and RECIST v1.1 assessment and remains actively responding to treatment. 64% of patients' disease stopped progressing following the combination treatment, and they displayed stable disease (SD) and sustained benefits beyond the first imaging assessment
- **Durability of Response:** 55% of patients showed sustained clinical benefit, with notable durations of response of over 40 weeks and with one patient exceeding 100 weeks.
- **Cross-Cancer Effectiveness:** 100% of RCC patients and 60% of NSCLC patients in the study demonstrated positive clinical outcomes

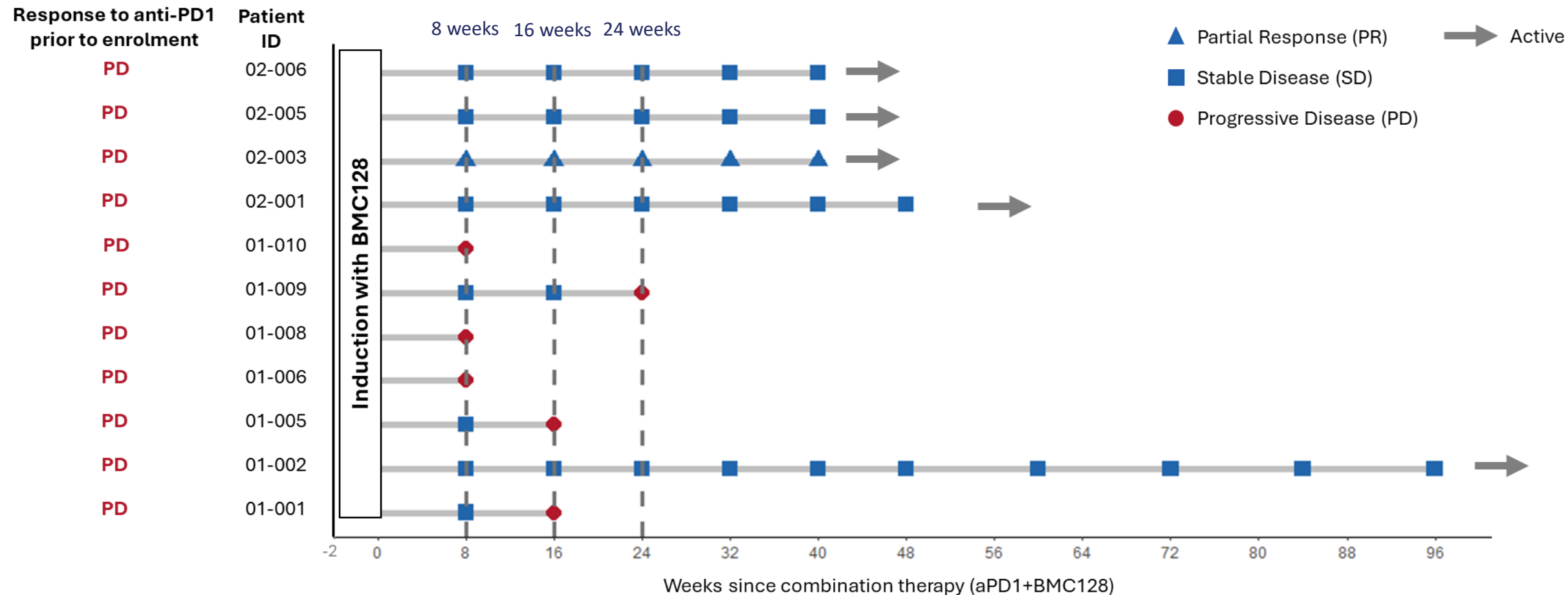
CISION
PR Newswire

23 May, 2024

Biomica Presents Positive Clinical Data Update from Ongoing Phase 1 Trial of Microbiome-Based Therapeutic, BMC128, for Refractory RCC, NSCLC & Melanoma

Preliminary Phase 1 results show promising trends for BMC128 in combination with nivolumab in refractory cancer patients. Data will be showcased at the 2024 American Society of Clinical Oncology (ASCO) annual meeting.

Positive Ph1 preliminary Clinical Results for BMC128 & Nivolumab Combo.



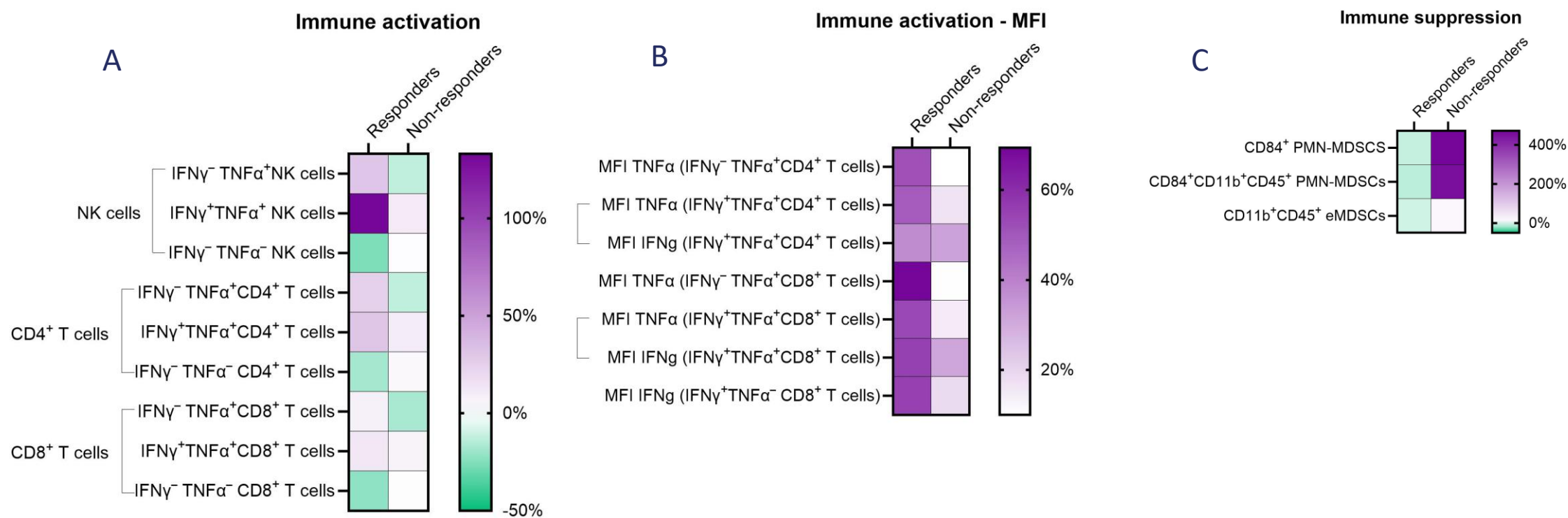
Treatment exposure and response duration by RECIST v1.1.

Response to prior line of anti-PD-(L)1 therapy singly or in combination are shown on the left for each patient. The length of each bar corresponds to the duration of time that patients received treatment (in weeks). Response status is

Color-coded (PR and SD, blue; PD, red). Response symbols represent status following each imaging point. Patients with ongoing response in the study are depicted with horizontal grey arrows.

BMC128 FIH Study- Preliminary MoA results

BMC128 induces anti-tumor immune responses and attenuates immune-suppression mechanisms in multiple sub-populations of immune cells and through the treatment period



Results obtained by blood flow cytometry analysis.

Significant differences were observed comparing Responders and non-Responders over time (through combined therapy period).

MFI= Mean Fluorescence Intensity (expression levels).

2

GI-related disorders

IBS & IBD



Irritable bowel syndrome (IBS)*

A common intestinal functional disorder, group of symptoms: Abdominal pain, constipation or diarrhea, bloating, gas & diarrhea.



Inflammatory bowel disease (IBD)

A group of inflammatory conditions of the colon and small intestine (Crohn's disease, ulcerative colitis & pouchitis).

Both clearly related to the microbiome

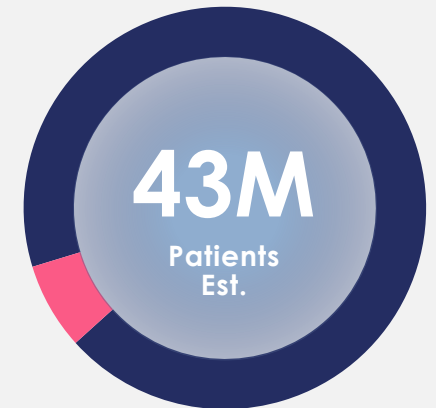
Biomica pushes the barriers posed by existing therapies by addressing the **underlying cause of the disorder, rather than the symptoms.**

<https://www.grandviewresearch.com/industry-analysis/irritable-bowel-syndrome-ibs-treatment-market>

<https://www.grandviewresearch.com/industry-analysis/inflammatory-bowel-disease-ibd-treatment-market>

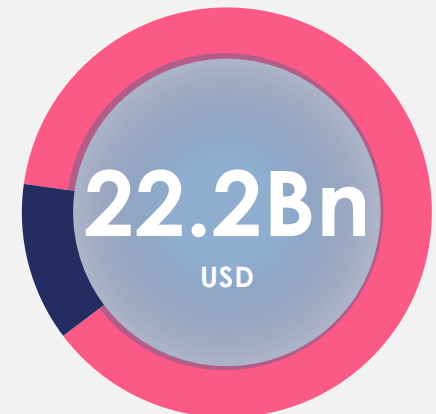
IBS (40M)

IBS-D (16M)
IBS-C (14M)
IBS-M (9M)



IBD (3M)

Crohn's disease (2M)
Ulcerative colitis (1M)
Pouchitis (150K)

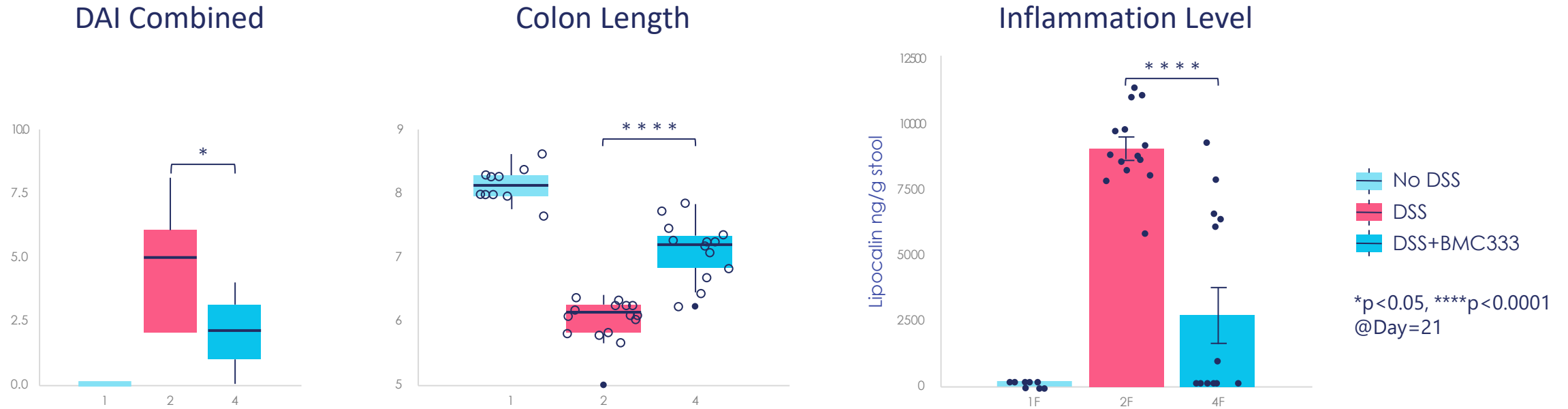


IBS (\$1.5Bn)

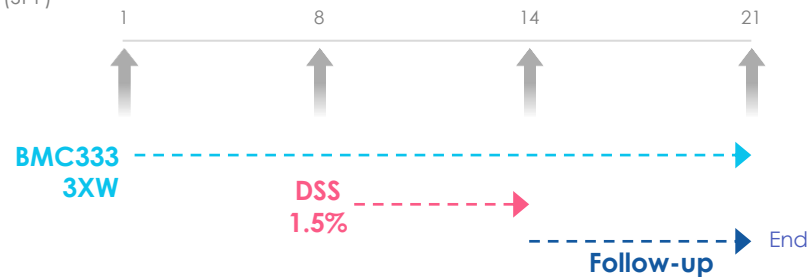
IBD (\$20.7Bn)



BMC333 reduces inflammation and tissue damage



WT mice (SPF)

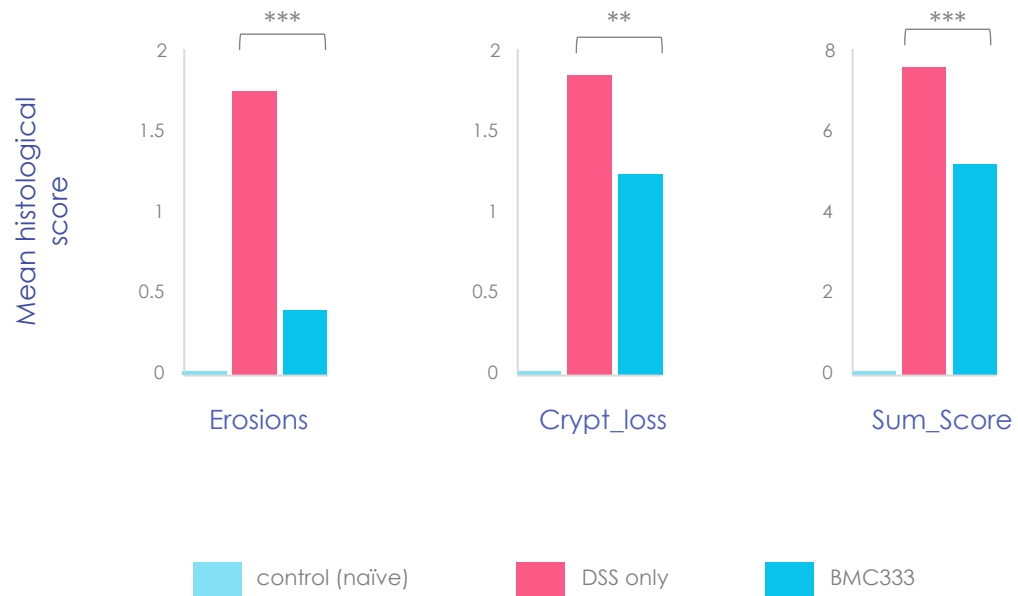


Study design for testing the anti-inflammatory effect of BMC333 in DSS-induced colitis murine model.

Presented at
DDW2022
 Digestive Disease Week®
 MAY 21-24 | SAN DIEGO, CA
 IN PERSON & VIRTUAL

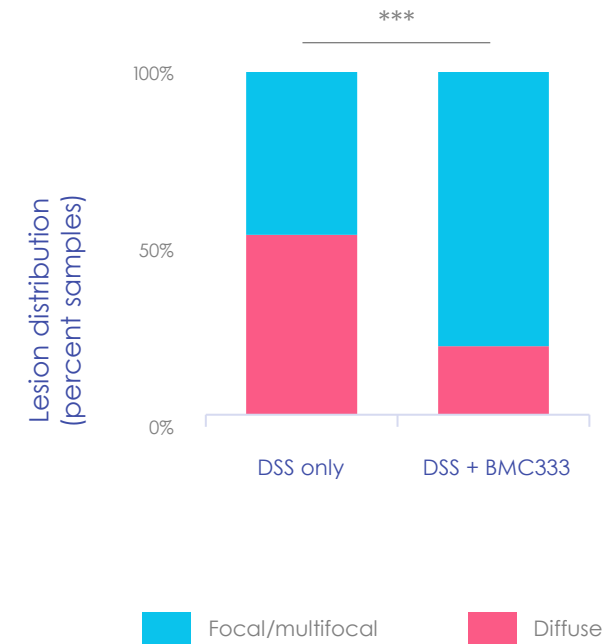
BMC333 reduces inflammation and tissue damage

Histological analysis*



*DSS-treated mouse model **p<0.01, ***p<0.001

Colon lesions distribution



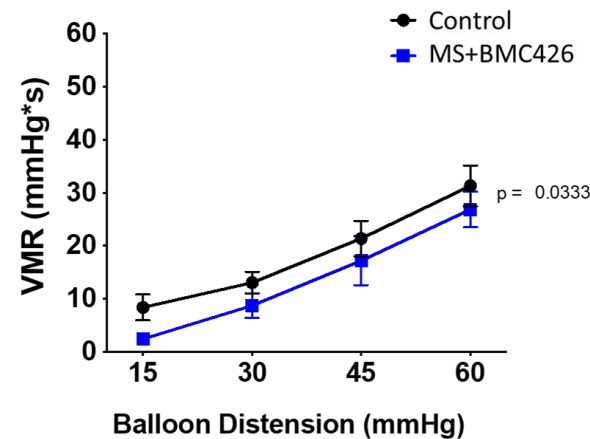
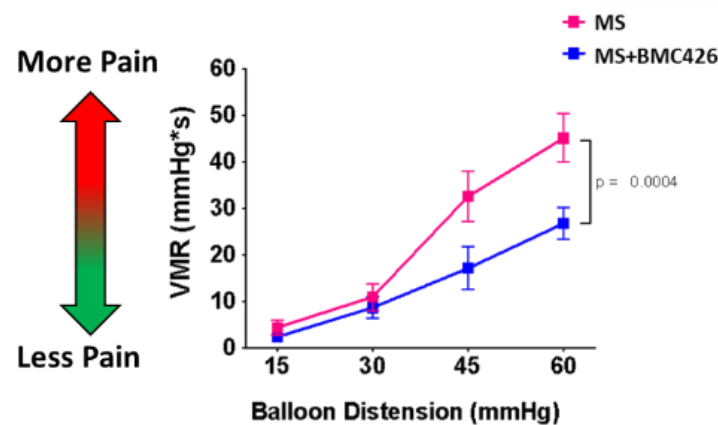
*** p=0.001



BMC426 reduces visceral pain in preclinical studies



BMC426 treatment significantly reduces hypersensitivity and reverses the effects of maternal separation (MS)



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Home • News and Trends

Biomica announces interim positive results from irritable bowel syndrome program



By Jim Cornall

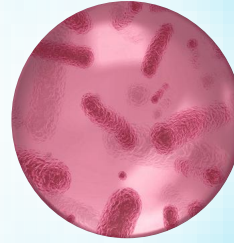
July 20, 2023

3 minutes • Share





New Indications: Discovery Stage-



OBESITY - Focuses on developing drugs to assist individuals in losing weight and managing obesity

- **Obesity as a Global Health Challenge:** Linked to serious conditions like cardiovascular disease, type 2 diabetes, certain cancers, and metabolic syndrome.
- **Limitations of Current Treatments:** Lifestyle changes and pharmacological therapies, including GLP-1 receptor agonists, face challenges such as poor long-term adherence, high costs, and side effects.
- **Microbiome's Role in Weight Regulation:** Evidence shows it influences key metabolic processes critical to obesity and overall metabolic health.
- **Microbiome-Based Therapeutics:** Emerging interventions leverage microbial functions (e.g., energy metabolism, inflammation, gut barrier, appetite regulation) require advanced tools like Biomica's computational platform to develop effective therapies for sustained weight loss and metabolic health.



Obesity: Data and Discovery

621 samples subjected to high-resolution microbiome analysis

BMI categories:

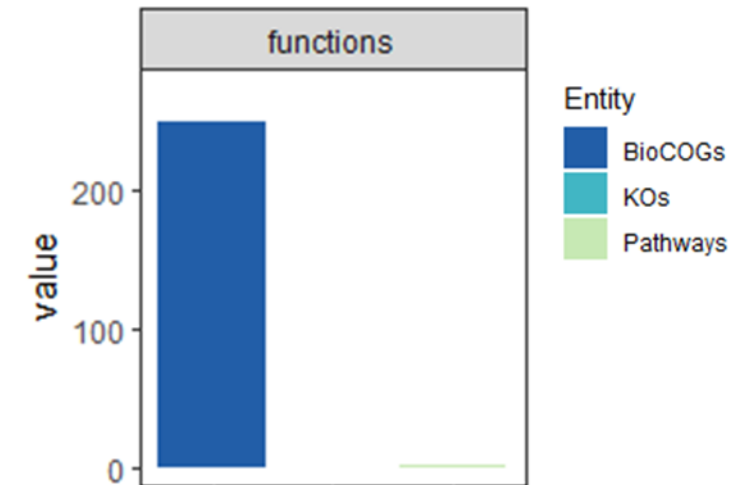
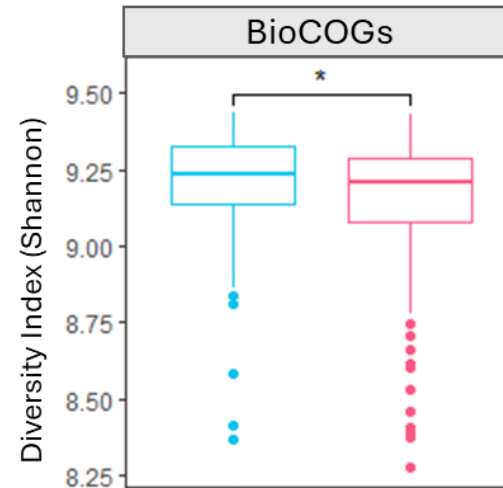
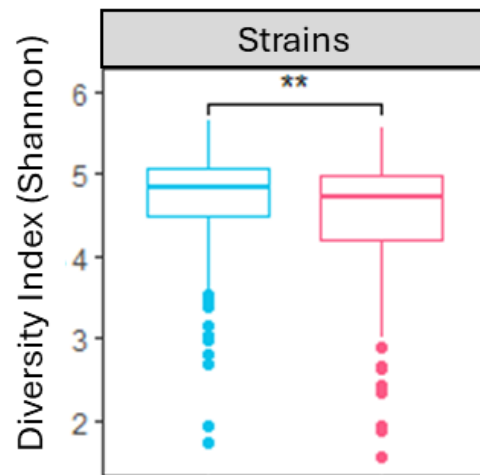
Lean- 19-24.9

Overweight- 25-29.9

Obese- >30

The microbiome of Lean individuals is characterized with increased diversity of taxa and functions compared with that of obese individuals

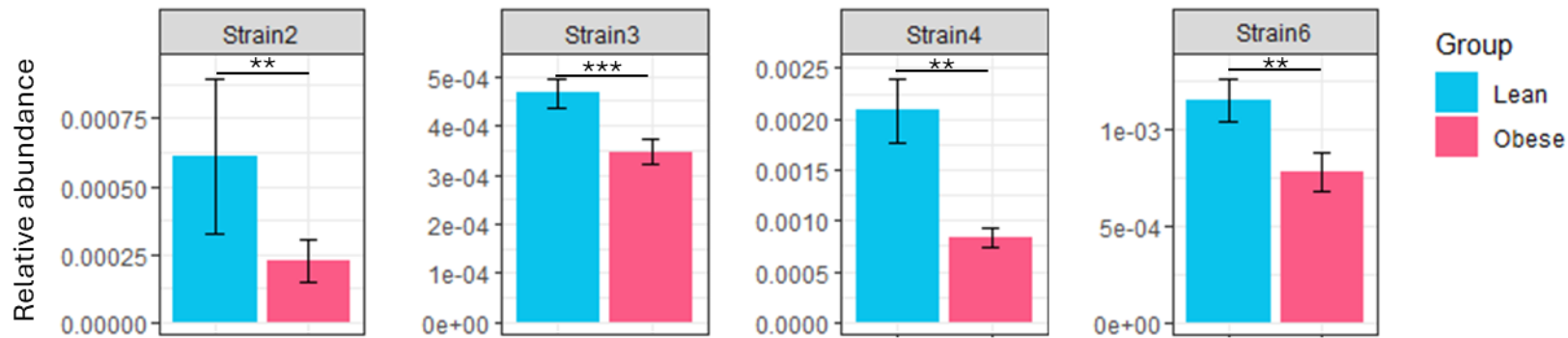
Comparative functional analysis between lean and obese, revealed 251 BioCOGs enriched in lean individuals but no KOs and only 1 pathway



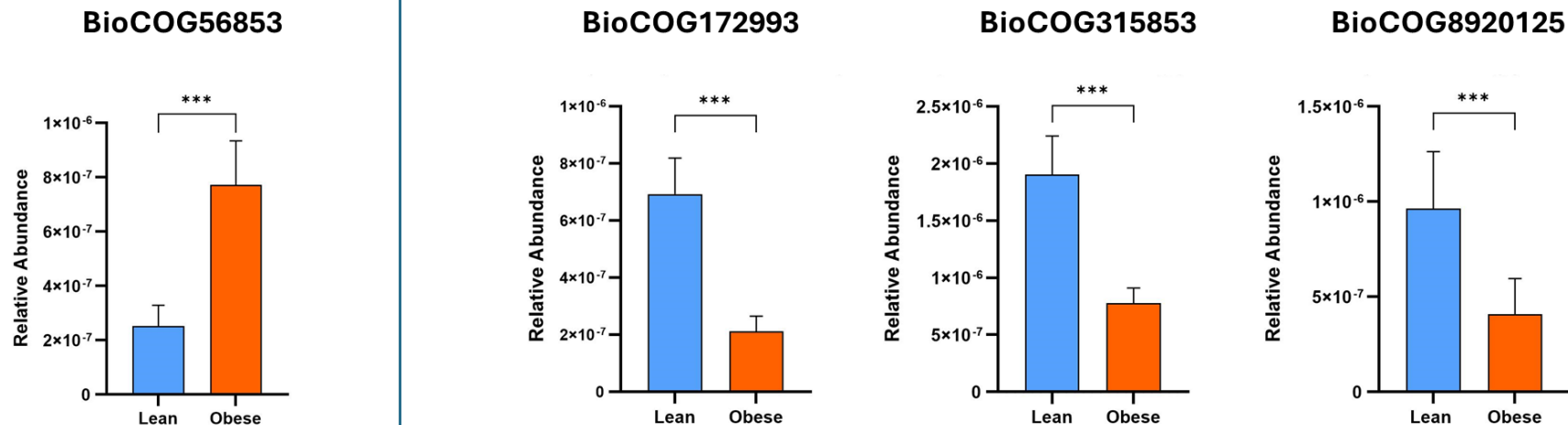


Obesity: Mining and Candidates' Identification

- Preliminary strain candidates associated with low BMI.
- Functional analysis using Biomica's proprietary functional database, led to preliminary findings of changes in carbohydrate metabolism between lean and obese individuals.
- Functions enriched in the lean group were present in genomes of strains enriched in Lean individuals using the taxonomy analysis.

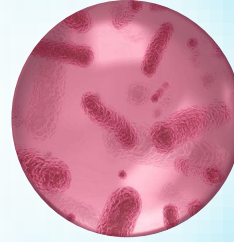


p<0.01; *p<0.0001 dsFDR-corrected Mann-Whitney





New Indications: Discovery Stage-



LONGEVITY - Focuses on extending healthy years of life by addressing age-related processes across the lifespan

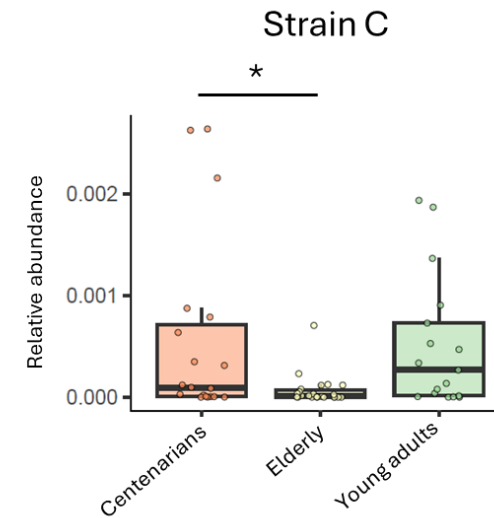
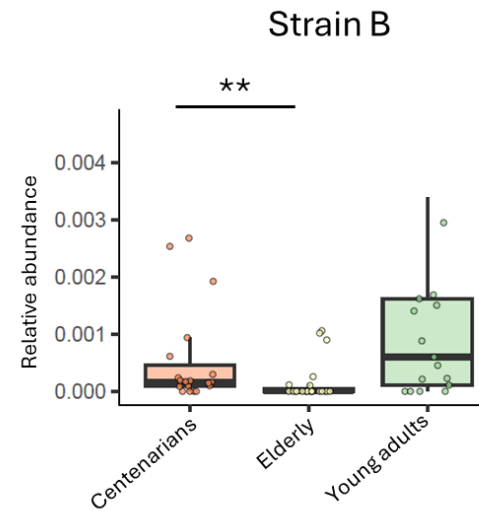
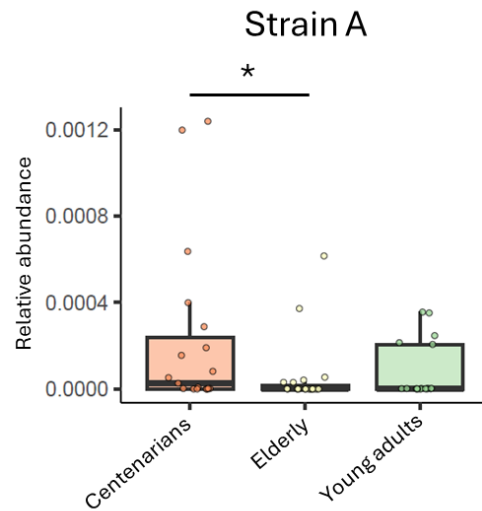
- **Advancements in Aging Research:** Cellular senescence, driven by stressors like oxidative damage and inflammation, plays a key role in aging and age-related diseases, informing strategies for health-span extension.
- **Gut Microbiome and Healthy Aging:** The microbiome significantly influences metabolic, immune, and cognitive functions, with a diverse and balanced composition mitigating age-related inflammation and supporting longevity.
- **Key Microbial Links:** Specific microbial taxa are associated with healthier aging and increased lifespan. However, research is required to uncover how microbial functions, metabolic activities, and signaling pathways affect host aging processes.
- **Biomica's Advantage:** Leveraging a unique computational platform to identify bacterial strains and develop innovative interventions for a healthier lifespan and longevity.



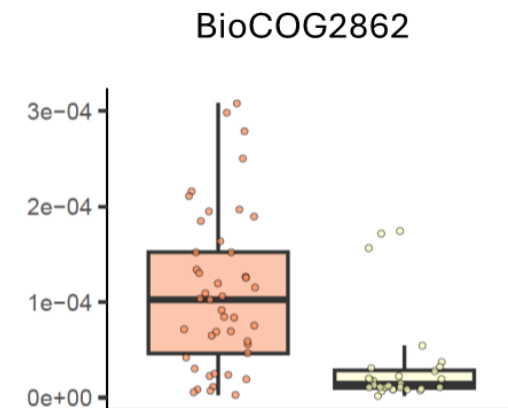
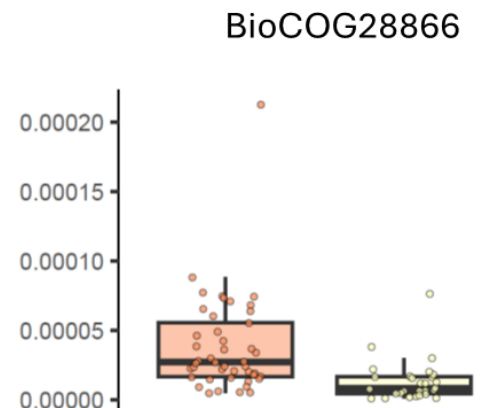
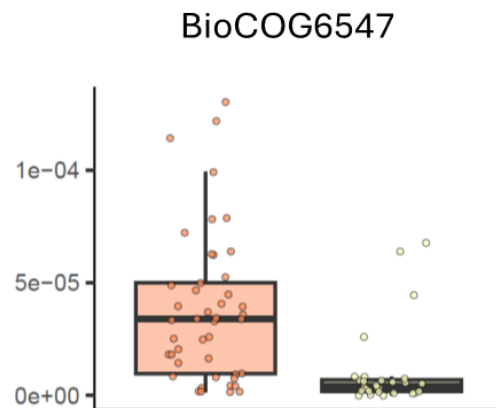
Longevity: Mining and Candidates' Identification

- Potential candidate strains display similar abundance in Centenarians and Young adults, but significantly lower abundance in Elderly.
- Initial functional analysis points to beneficial properties of candidate strains, with specific functions enriched in Centenarians.

Potential Candidate Strains

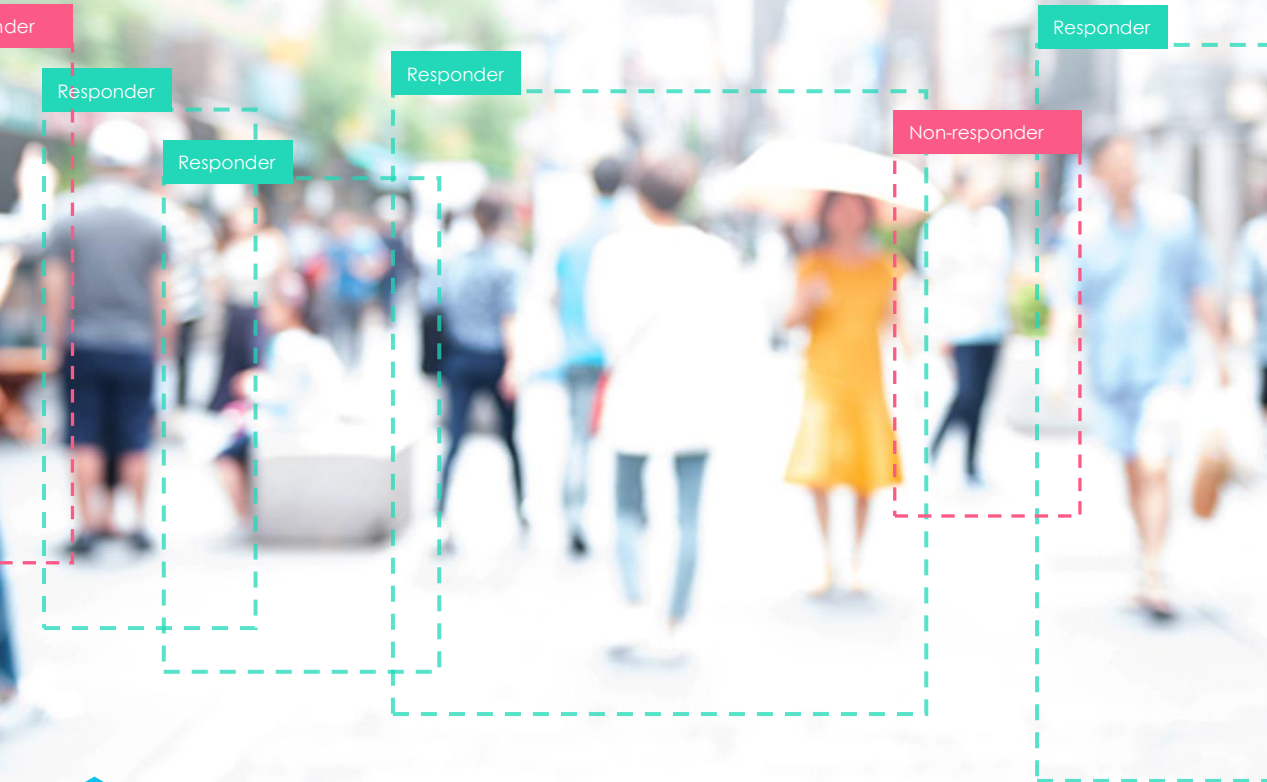


Potential Functions of interest



Upcoming advancements

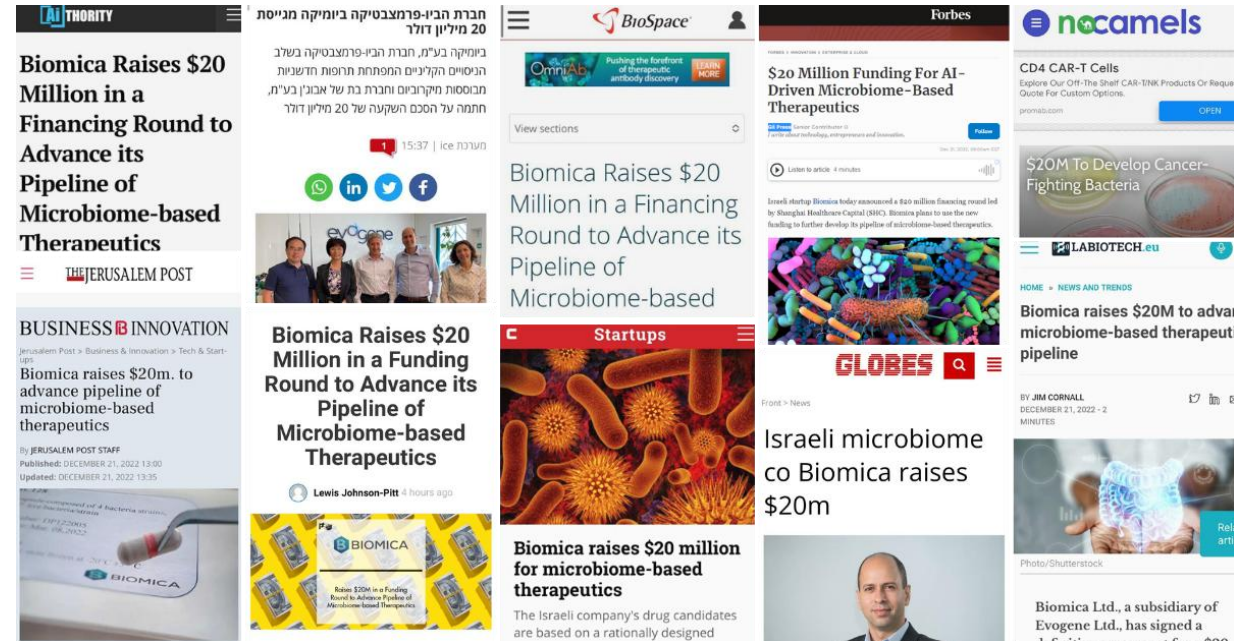
Predictions for patients' response to ICI



The potential for future drugs



\$20M Funding Round - 2023



Led by **Shanghai Healthcare Capital (SHC)**, a leading Chinese private equity fund, focused on biotech and healthcare investments

Board of directors



Ofer Haviv
Chairman

Mr. Ofer Haviv serves as Evogene's (Nasdaq: EVGN) President and CEO since of late 2004.



Jing Bao, MD, PhD
Director

Dr. Bao is a partner of Shanghai Healthcare Capital, has with more than 30 years of experience in cancer research, infectious disease control, fund management and drug clinical trials.



Doron Ben Ami
Director

Mr. Doron Ben Ami is a highly experienced executive with a successful track record of more than 20 years of in the Pharma industry.



Kinneret Savitsky, PhD
Director

Dr. Kinneret Livnat-Savitzky is a Managing Partner in Team8 Health. Previously served as the CEO and board member of FutuRx Ltd (OrbiMed, J&J Innovation and Takeda's accelerator), with over 25 years of experience in the biopharmaceutical industry.



World-class scientific advisory board & advisors



Prof. Yehuda Ringel

Chief Division of Gastroenterology and Hepatology at Meir Medical Center, Israel. Professor of Medicine at Chapel Hill, North Carolina and is affiliated with University of North Carolina Hospitals.



Prof. Willem M De Vos

Professor and Chair of Microbiology at Wageningen University, the Netherlands and Professor of Human Microbiomics at the University of Helsinki, Finland.



Prof. R. Balfour Sartor

Serves as the Midget Distinguished Professor of Medicine, Microbiology and Immunology and Director of the Multidisciplinary IBD Center at the University of North Carolina, Chapel Hill.



Prof. James Versalovic

Pathologist-In-Chief at Texas Children's Hospital and Director of Texas Children's Microbiome Center, Professor and Vice Chair of Pathology & Immunology at Baylor College of Medicine.



Prof. Gal Markel

Director of the Davidoff Cancer Center & Deputy Director General of the Rabin Medical Center. An internationally recognized expert in translational tumor immunology and clinical immunology.



Prof. David Rubin

Section chief of gastroenterology, hepatology, and nutrition at University of Chicago Medicine. Chair-elect of the National Scientific Advisory Committee of the Crohn's and Colitis Foundation.



Dr. Ravid Straussman

Principle investigator of the Tumor microenvironment, tumor microbiome and resistance to anti-cancer therapy lab at the Weizmann Institute of Science, Israel.



Summary



Human microbiome-based therapeutics is a rapidly growing space, and represents a multi \$Bn market opportunity.



Biomica develops innovative microbiome-based therapeutics utilizing dedicated computational predictive biology tools.



Biomica's computational tools and unique approach provide a significant differentiation.



Clinical POC - Positive preliminary results, showcased at ASCO 2024 annual conference



Focus on high-value clinical programs for the development of therapies for immuno-oncology, metabolic diseases and microbiome-related gastrointestinal (GI) disorders.



Experienced management team, board of directors & world-class scientific advisory board.



Thank you!

info@biomica.com