

# MaaT Pharma Microbiota as a Therapy

Company Presentation
June 2022

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# A Uniquely-Positioned Microbiome Company





Multi-asset clinical and preclinical pipeline with near-term, value-creating catalysts

**Proprietary gutPrint® metagenomics technology platform** driving product candidate generation

**European cGMP production facilities** supporting versatile product range and optimized positioning

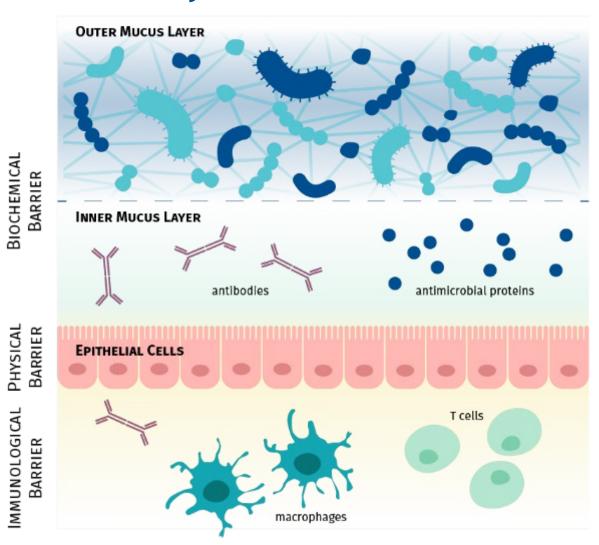
**Strong IP portfolio** of 13 patent families that **provides protection until 2036-2041 in all major markets** 

**Strong leadership team** with a proven track record and supported by a **scientific advisory board of global experts** and **top tier specialist investors** 





# Host – Microbiota Interactions are Critical for a Functional Immune System



A rich and diversified gut ecosystem actively modulates the immune system functionality

- A diversified microbiome contributes to the education and modulation of our immune system throughout life
- Bacterial richness and mucus layer prevent colonization by pathogens and improve gut barrier
- 80% of cellular host defense are localized in the gut (including innate and adaptive systems)

Cross-section of a healthy gut



# Diversity matters! Higher gut microbiome diversity is associated with ...

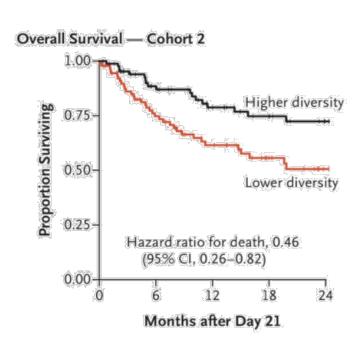
### **Liquid Tumors**

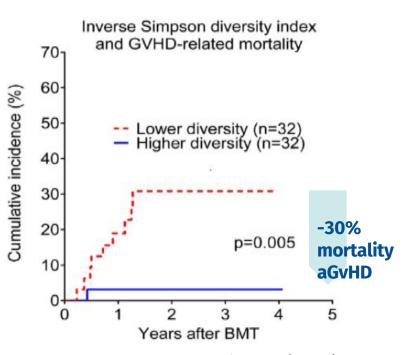
### Solid Tumors

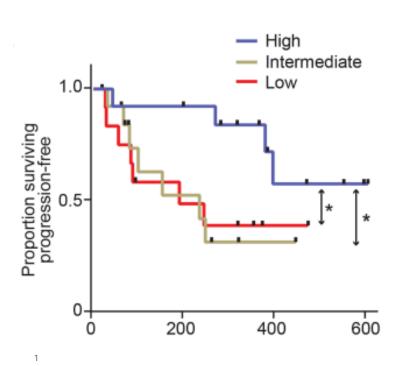
Higher survival rate in patients receiving allo-HSCT \*,1

Lower incidence and lower mortality from aGvHD\*,2

Higher response rate to ICI\* in patients with metastatic melanoma<sup>3</sup>







MaaT Pharma MET Inverse Simpson (mean): 24

\*allo-HSCT: allogeneic hematopoietic stem cell transplantation; aGvHD: acute Graft-vs-host-Disease; ICI: Immune Checkpoint Inhibitors <sup>1</sup>Peled, J.U. & al N Engl J Med 2020;382:822-34; <sup>2</sup>Ghani, 2021; <sup>2</sup>Jenq RR. et al, Biol Blood Marrow Transplant 21 (2015) 1373e1383; Pamer, Blood, 2014; Gopalakrishnan et al., Science, 2017, Routy et al, Science, 2018; Vetizou et al Science 2015;



# MaaT Pharma's Microbiome Ecosystem Therapy (MET) platform has generated a diverse line of product candidates

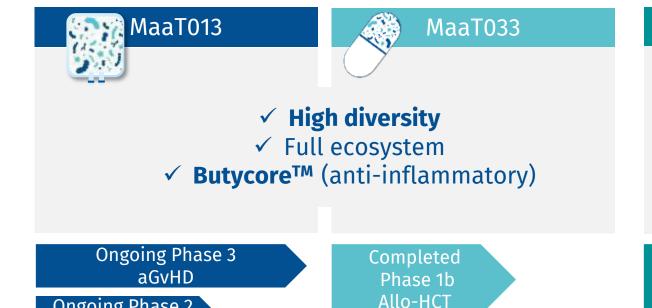


Ongoing Phase 2

# **Microbiome Ecosystem Therapies (MET)**

cGMP Platform

### **Native**



### **Co-fermented**



### MaaT03X

- ✓ Indication-specific designed ecosystem (from clinical data)
- ✓ Innovative ecosystem cofermentation technology

Preclinical Solid Tumors I/O

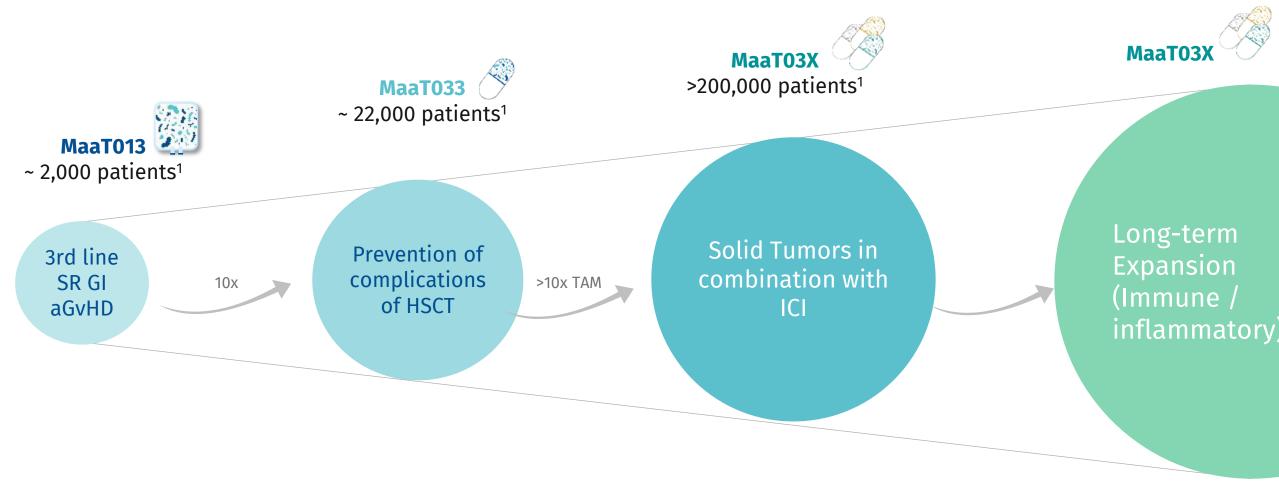


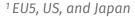
<sup>1</sup> **Butycore**: Group of 15 different genera known to produce short-chain fatty acids with anti-inflammatory properties

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# Looking ahead: addressing growing market opportunities with severe medical need



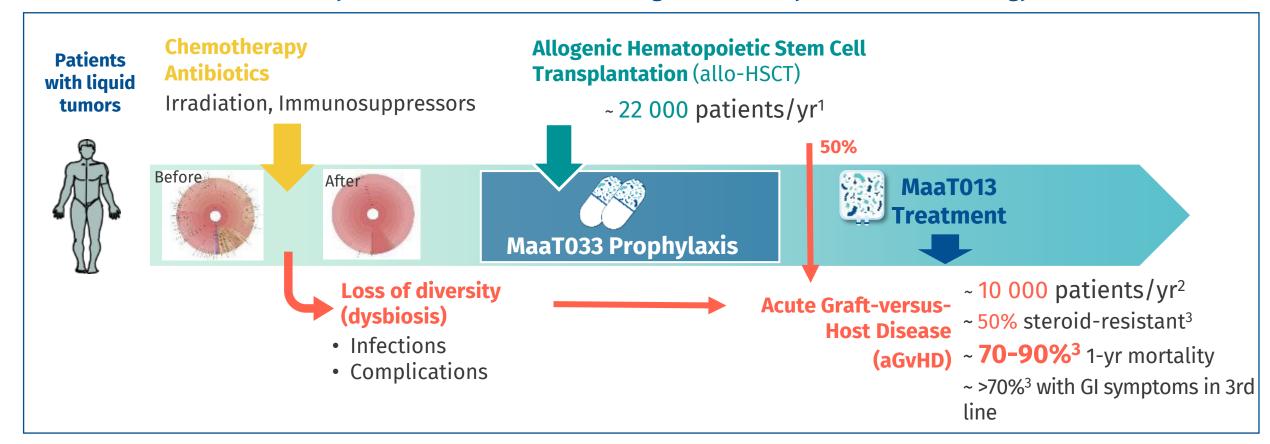






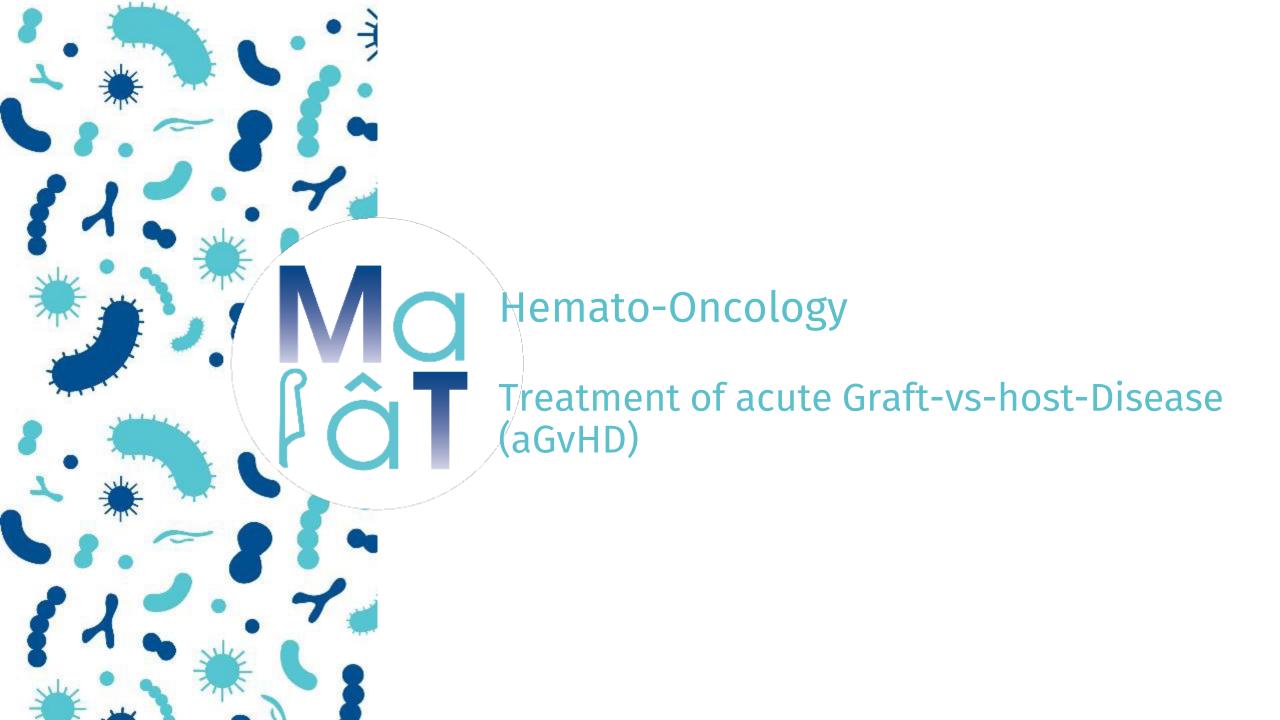
# MaaT013 and MaaT033 aim to restore the gut microbiota to improve survival in patients with liquid tumors

Intestinal dysbiosis is associated with higher mortality in hemato-oncology



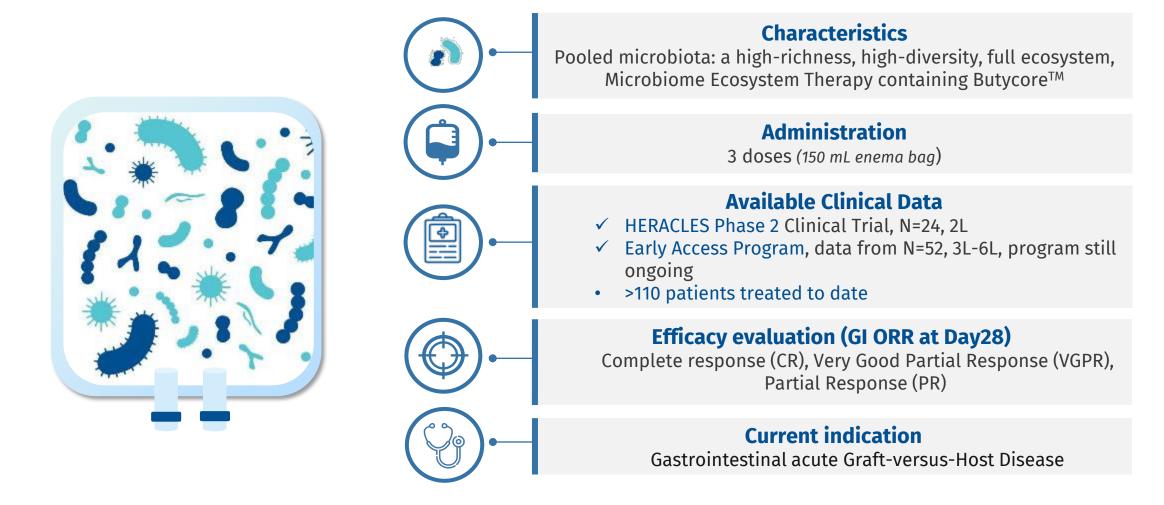
1. EU5 + US : (~ 20 500 primary procedures with an additional 7%-10% recurring), 2. EU5 + US, <sup>3</sup> According to MAGIC database







# MaaT013: restore the microbiome to *cure* acute Gastro-Intestinal graft vs. Host disease.





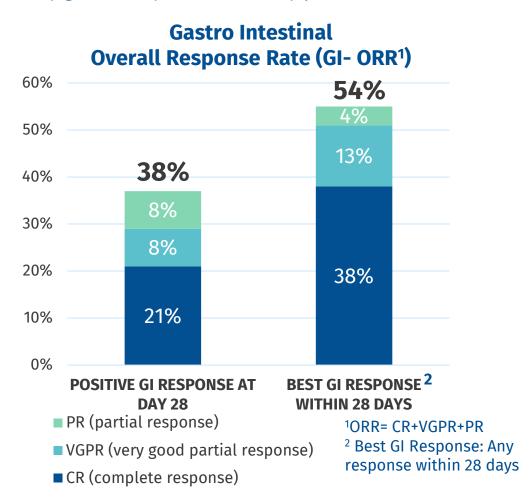


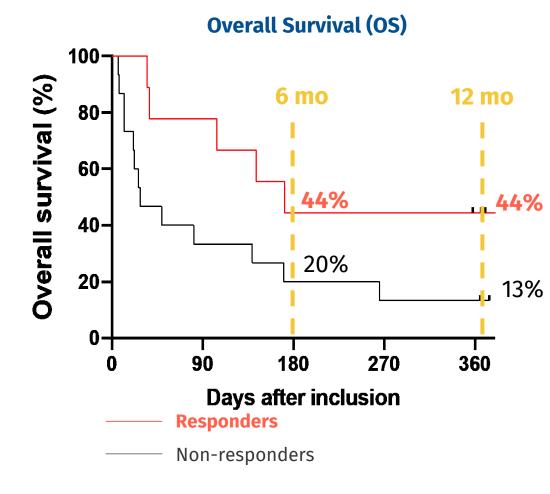
# **HERACLES Phase 2 Clinical Trial** Promising results in a very severe (III-IV) GI aGvHD population

- aGvHD Phase 2



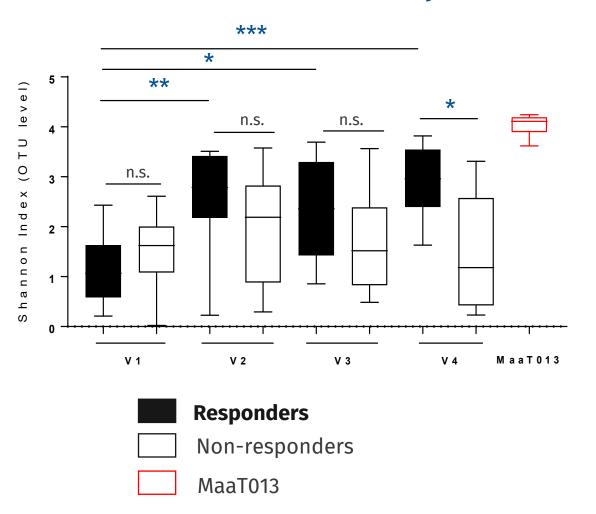
- N=24 patients, 96% grade III (4% grade IV), 2<sup>nd</sup> line (Steroid-resistant)
- Very good safety and tolerability profile



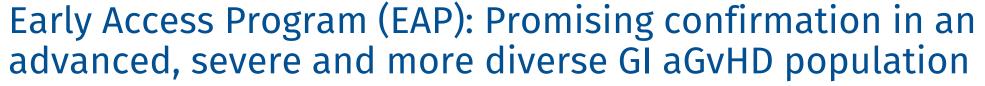


# HERACLES: MaaT013 increases Responders' gut microbiome diversity

### **Microbiota Diversity**





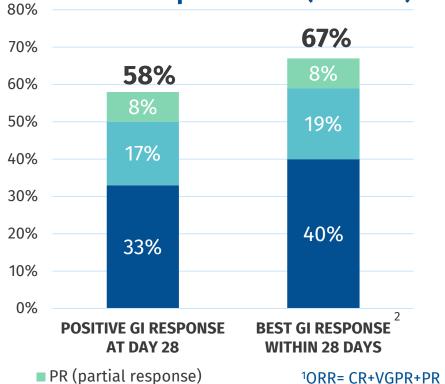


aGvHD **EAP** 

- N=52 83% SR; 94% grade III, Up to 6 lines of prior treatment (median: 3; 77% received ruxolitinib)
- Good tolerability and safety profile in a fragile population

## **EBMT Overall Survival Rate**



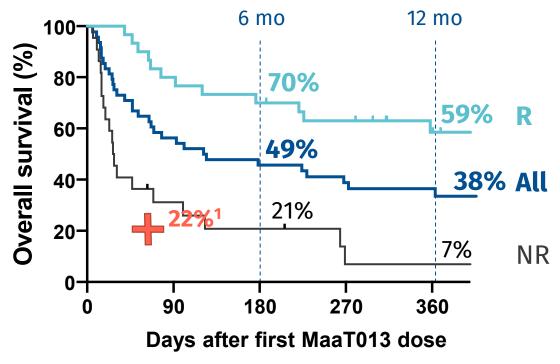


■ VGPR (very good partial response) <sup>2</sup> Best GI Response: Any

■ CR (complete response)

response within 28 days





<sup>1</sup>OS expected in ruxolitinib-resistant patients at 2 months (REACH1 study)





# The ARES Phase 3 study is designed to establish MaaT013 as the 3<sup>rd</sup> line agent in GI aGvHD treatment

- Pivotal single-arm trial of MaaT013 as 3rd line (steroid-resistant & ruxolitinib-resistant) in n=75 GI-aGvHD patients
- Primary endpoint: GI-ORR at Day28 EUROPE:
  - ✓ First patient dosed in Q1 2022
  - CTA approved in 3 European countries. Expected to expand to additional EU countries

### USA:

- FDA requested further information on clinical hold.
- → Submitted a request for a "Type A" meeting to the FDA by the end of 2021, with the support of well-respected regulatory consultants, aiming to resolve the clinical hold and expand ARES to US sites. Exchanges ongoing.

### Targeted Timelines ARES Phase III Trial



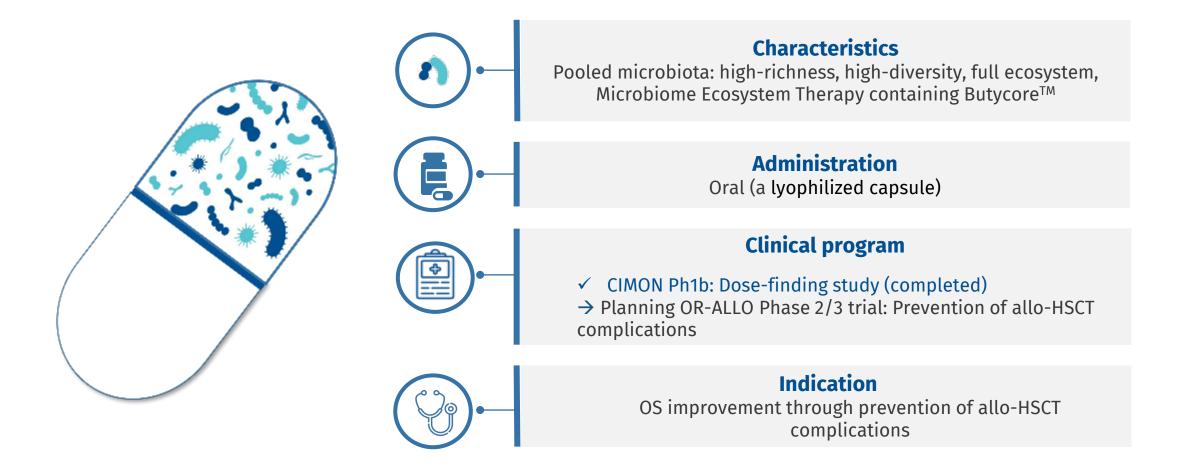


¹ subject to the lifting of the FDA clinical hold; ORR: overall response rate; OS: overall survival; MAA: Market approval application; BLA: Biological License Application





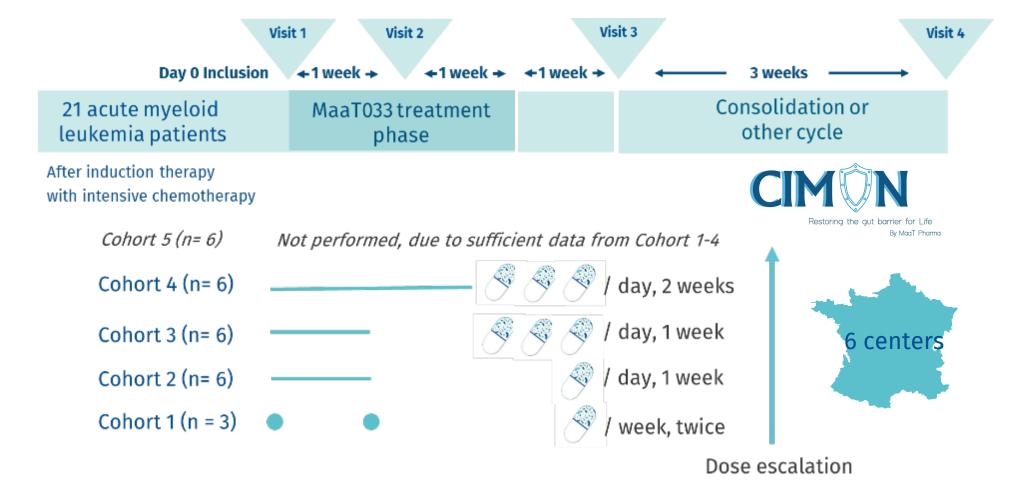
# MaaT033: An optimized oral capsule to restore and maintain a healthy gut microbiome in patients with severe dysbiosis







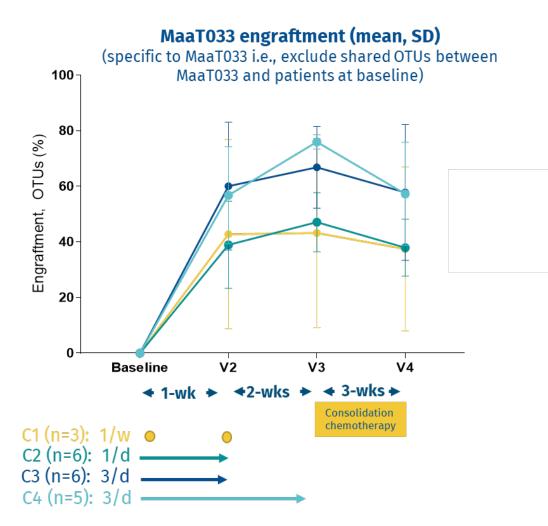
# Phase Ib CIMON study aimed to determine MaaT033 dose for further clinical development







# Phase Ib CIMON study: Positive topline engraftment and safety data



- First clinical POC of MaaT033 oral formulation
  - ✓ Robust and persistent engraftment
  - ✓ Good safety profile:
    - 21 patients exposed, 20 completed.
    - 100% drug compliance.
    - 4/4 positive DSMB meetings

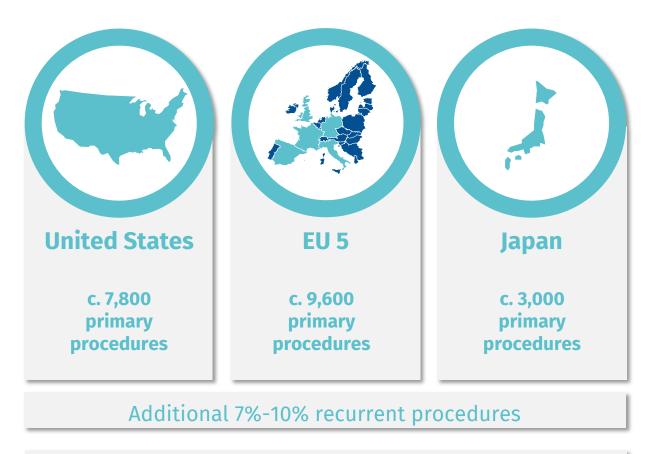
→ Dose selected for planned Phase II-III pivotal OR-ALLO study

(342 patients, RCT, double-blind, placebocontrolled, evaluating overall survival after allo-HSCT)





# CIMON results open an attractive market opportunity: Improving survival in patients receiving allo-HSCT



### Hematological Malignancy Patients Receiving Allo-HSCT<sup>1</sup>



AML: acute myeloid leukemia; ALL: acute lymphoblastic leukemia; MDS: myelodysplastic syndrome; MPN: myeloproliferative neoplasms; CML: chronic myeloid leukemia; CLL: chronic lymphocytic leukemia; HL: Hodgkin's Lymphoma; NHL: Non Hodgkin Lymphoma

### **Approximately 22,500 procedures/year**



<sup>1</sup>EBMT aHCT Survey, 2017 (published in Bone Marrow Transplantation (2019) 54:1575–1585), Global Data 2020



# A diverse gut microbiome increases survival in patients receiving immune checkpoint inhibitors (ICI)

FMT from ICI responders to ICI non-responding patients with metastatic melanoma

**√** 6/15

√ 3/10

Non-responders

→ Responders

(Davar et al, 2021)

Non-responders

→ Responders
(Baruch et al, 2021)



- Immune check-point inhibitors (ICI) therapies have established themselves as key therapeutic options in solid tumors, but ORR may be as low as 20% in some indications.
- Richness, Diversity and composition of gut microbiome drive survival and ICI toxicity in patients receiving ICI<sup>1,2,3,4</sup>
- FMT from ICI responders (R) could induce response in metastatic melanoma non-responders (NR)<sup>5,6</sup>

→ Leveraging the gut microbiome richness, diversity and its key functional networks may be a game-changer in immunooncology in the coming years

<sup>&</sup>lt;sup>4.</sup> Mc Culloch et al, Nat Med 2022; <sup>5.</sup> Baruch et al, Science 2021; <sup>6.</sup> Davar et al, Science 2021



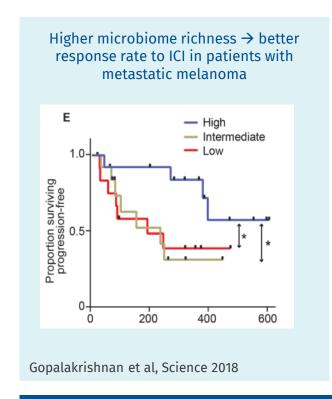
<sup>&</sup>lt;sup>1.</sup> Gopalakrishnan et al, Science 2018, <sup>2.</sup> Matson, et al Science 2018; <sup>3.</sup> Routy et al, Science 2017;

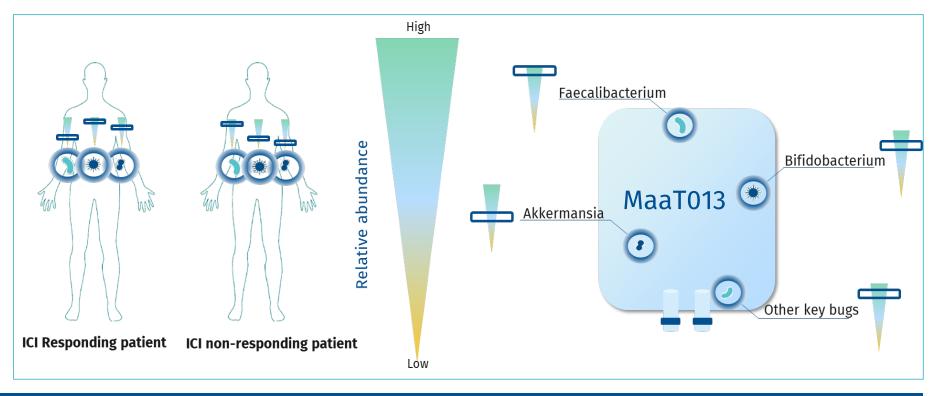
# MaaT013 ensures high diversity and contains specific bacterial strains that have been identified to improve ICI response





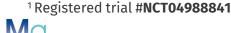






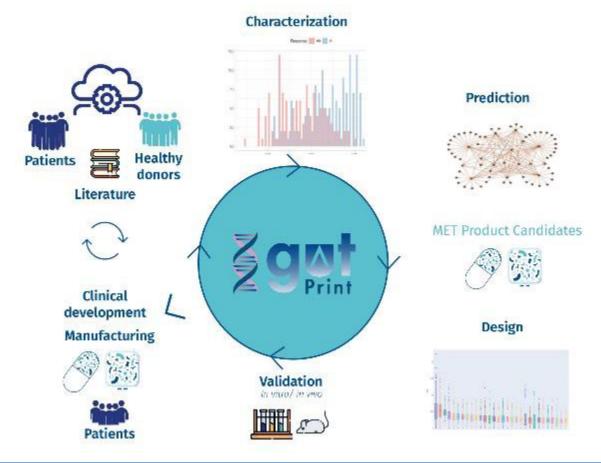
Ongoing Phase IIa PICASSO trial<sup>1</sup>, in collaboration with Assistance Publique - Hôpitaux de Paris (sponsor). ✓ RCT [MaaT013 + ICI] vs. [Placebo + ICI] in 60 metastatic melanoma patients

✓ Assessing **Safety** and **Efficacy** (iRECIST) of MaaT013 vs. placebo after 23 weeks of treatment





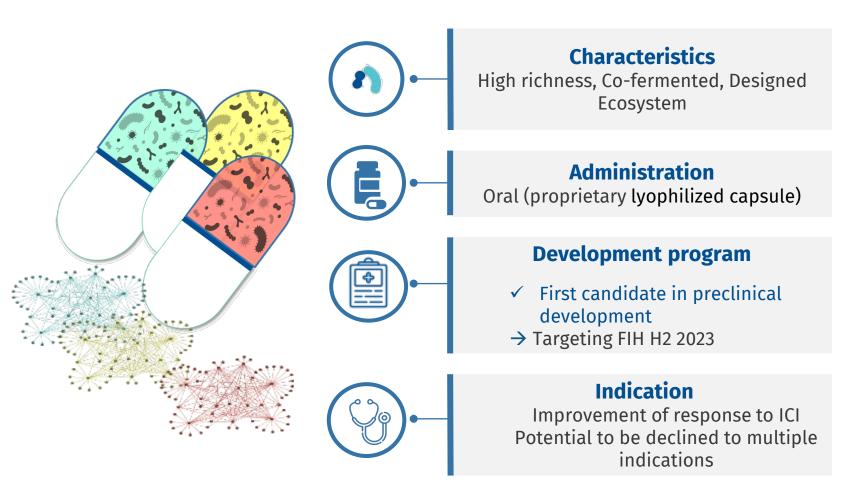
Proprietary gutPrint® platform synergizes multi-source data to generate innovative and indication-specific microbiome ecosystem therapies



gutPrint® is the engine that drives MaaT Pharma's MET product candidate generation capabilities to broaden and strengthen the pipeline



# MaaT03X: Modulate the gut microbiome to improve response to Immune Checkpoint Inhibitors treatment in solid tumors



# Customizable, donor-independent, scalable process Original microbial ecosystem cultures Species Species depletion

**CO-FERMENTING A FULL ECOSYSTEM** 

capsule

MaaT03X



# Building Europe's largest specialized cGMP manufacturing facility for Microbiome Ecosystem Therapies





Building a dedicated 1,500 square meter site (which could be doubled).



Designed to support commercial manufacturing of MaaT013 and MaaT033 and clinical manufacturing of MaaT03X products



Skyepharma already manufactures approved drugs for the USA and Europe



Building will host manufacturing and R&D activities







# Delivering on our objectives

		Clinical program	Milestones announced at IPO (Nov 2021)	Status
Onco-hematology		MaaT013 (pooled enema) FDA & EMA Orphan Drug Designation	Launch of the first Phase 3 trial in oncology in the world	
		MaaT033 (pooled capsule) Post allo HSCT	Completion of Phase 1b trial and positive preliminary safety and engraftment data	
Immuno-oncology		MaaT013 (pooled enema) Improving ICI responses in metastatic melanoma	Launch of Phase 2 trial* - POC * Sponsored by AP-HP	
		MaaT03X (fermented capsule) Undisclosed indications	Preclinical activities to enter clinical development in H1 2023	
iMP production	Skyepharm	Increasing cGMP production capacities	Partnership with Skyepharma to build the first and largest exclusive Microbiome Ecosystem Therapies facility in Europe	

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# Looking ahead

		Clinical program	Next Step	Expected timeline
ology		MaaT013 (pooled enema) FDA & EMA Orphan Drug Designation	Intermediate review	H1 2023
ıematc			ORR	H2 2023
Onco-hematology		MaaT033 (pooled capsule) Post allo HSCT	Launch of Phase 2/3 OR-ALLO (pivotal)	Q4 2022
250		MaaT013 (pooled enema) Improving ICI responses in metastatic melanoma	Interim partial data review	H1 2023
oloono				H1 2023
Immuno-oncology		MaaT03X (fermented capsule) Undisclosed indications	Start of Phase 1/2	2023
duction	144	Increasing cGMP production capacities	Opening of the first and largest	2023



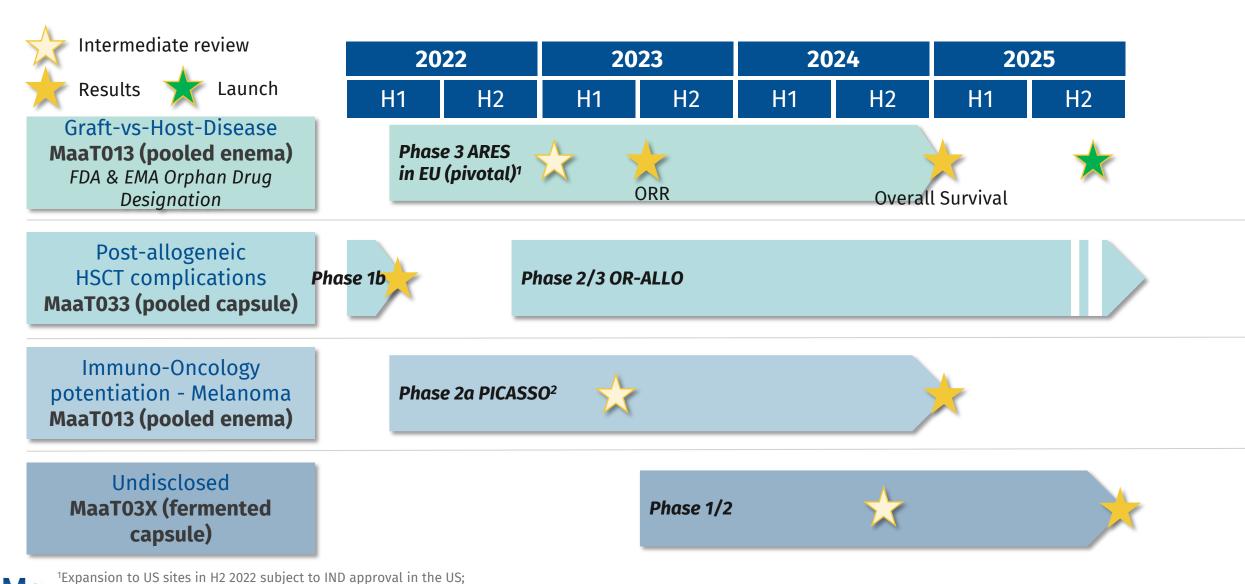


**Increasing cGMP production capacities** 

Skyepharma

exclusive Microbiome Ecosystem
Therapies facility in Europe

# Meaningful milestones in both the near and long term





# Key differentiators of MaaT Pharma from other microbiome competitors

# Leveraging the complexity of the microbiome

Pioneering a full ecosystem
approach to restore
host/microbiome immune
symbiosis, based on proprietary
Al and manufacturing capacities

# Manufacturing versatility

**cGMP manufacturing** scalability for both native and co-fermented products and building of a new plant

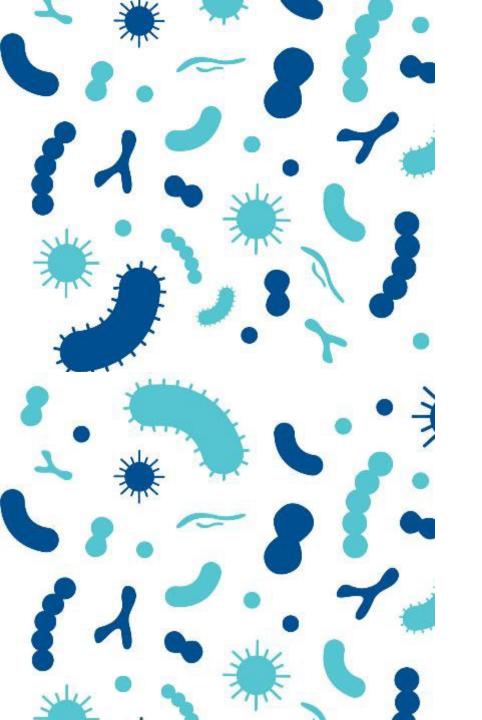


Addressing **high unmet needs** in the hemato-oncology and immuno-oncology therapeutic areas



**First company to reach Phase 3 testing** for a microbiome product in oncology globally

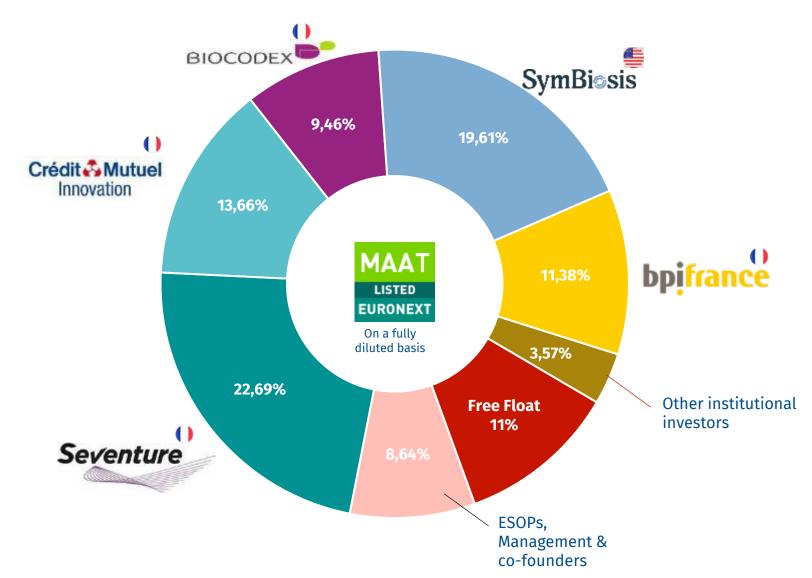




# THANK YOU



## MaaT Pharma is listed on Euronext Paris - 35.7M€ IPO Nov. 2021



### **BOARD OF DIRECTORS**



Jean-Marie Lefèvre
Chairman & Non-Executive Director
President - Biocodex



Isabelle de Crémoux Non-Executive Director CEO & Managing Partner - Seventure



Claude Bertrand
Non-Executive Director
General Director R&D - Servier



Jean Volatier
Non-Executive Director
CFO - Inventiva



Dorothée Burkel
Non-Executive Director
Chief Corporate and People Operations Officer
- PartnerRe



Muriel Prudent Censor VC Investment Manager – Fonds PSIM - Bpifrance



Hervé Affagard
Executive Director
MaaT Pharma

# Management Team



**Siân Crouzet**Chief Operating Officer



**Hervé Affagard** Founder & CEO



**Dr. Carole Schwintner**Chief Technology Officer















**Dr. Savita Bernal**Chief Business Officer







**Dr. Isabelle Adeline**Chief of Staff









# ARES, a pivotal study to treat GI-aGvHD







International study incl. **6 to 8 countries** with first-time countries working with MaaT013 – up to 50 reference centers



**Pivotal single arm trial** of MaaT013 as 3rd line (steroid- & ruxolitinib-refractory patients)



29 months total duration



Up to one year follow-up



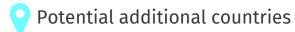
Est. **75 patients** 



First patient treated in March 2022 in Spain



ClinicalTrials.gov Identifier: NCT04769895

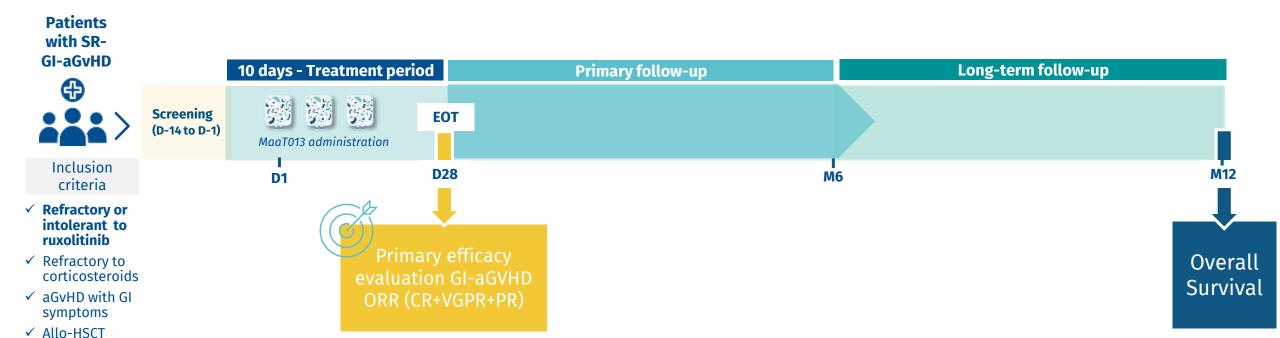




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# ARES, a pivotal Phase 3 trial to treat aGvHD in 3<sup>rd</sup> line





### Abbreviations:

- D: Day, M: Month, EOT: End of treatment
- SR-GI-aGvHD: Steroid-refractory gastro-intestinal acute Graft-versus-Host Disease
- ORR: Overall Response Rate; CR: Complete Response; VGPR: Very Good Partial Response; PR: Partial Response



✓ Age > 18