APAC DA-EWG

DA-EWG Session

April, 2025

Jun Terauchi（DA-EWG, JPMA, JMBC）

APAC
Asia Partnership Conference of Pharmaceutical Associations

JMBC
JAPAN MICROBIOME CONSORTIUM

The 14th Asia Partnership Conference of Pharmaceutical Associations

DA session

Accelerating Microbiome-Based Drug Discovery in Asia

-The Power of Public-Private Partnerships-

2025.4.22.

Jun Terauchi, Ph. D.

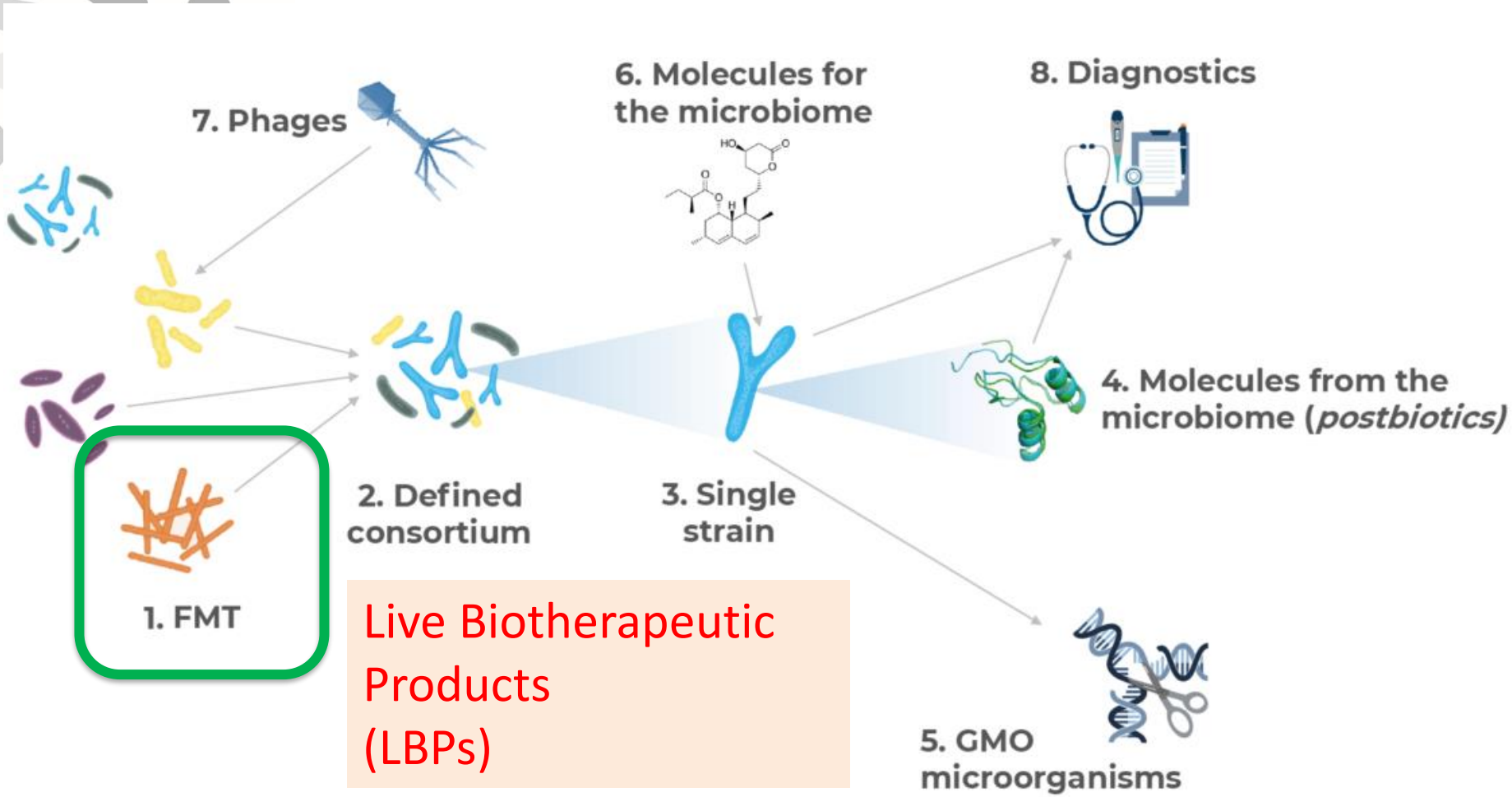
Japan Microbiome Consortium Steering Committee Chair/

Metagen Therapeutics Inc. CSO

Today's Contents

1. Recent topics of microbiome Based Drug Discovery and Development
2. Pre-competitive activities by consortiums in the world

Various Microbiome related drug discovery approach



Live Biotherapeutic Products (LBPs)

https://www.sandwalkbio.com/microbiome-drug-database

MBDD(FMT) : Recognized Globally

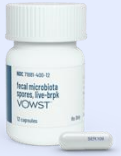
Moving towards becoming standard of care

Stool-derived product development accelerating in the U.S

✓ Nov. 2022, world's first FDA approval of REBYOTA for CDI *1

150 mL fecal microbiota suspension containing a consortia of 10^8 to 10^{10} (CFU)/mL

✓ Apr. 2023, FDA approval of VOWST, as first oral treatment for CDI *2



Australia leads in FMT regulations globally

✓ Nov 2022, BIOMICTRA, a FMT syringe formulation developed by BiomeBank, receives first-ever regulatory approval for CDI *3

Dec. 2022, European Medicines Quality Directorate sets guidelines for FMT

Aug. 2022, UK's NICE creates guideline for FMT for CDI

Regulatory Status

- **FDA-approved FMT products available in the U.S. and EU**
- **Japan/Asia needs regulatory standards**

*1:https://www.fda.gov/news-events/press-announcements/fda-approves-first-fecal-microbiota-product
*2:https://www.fda.gov/news-events/press-announcements/fda-approves-first-orally-administered-fecal-microbiota-product-prevention-recurrence-clostridioides
*3:https://www.biomebank.com/news/biomebank-announces-world-first-regulatory-approval-for-donor-derived-microbiome-drug/

Maat Pharma announced positive outcome of Maat013 for aGVHD

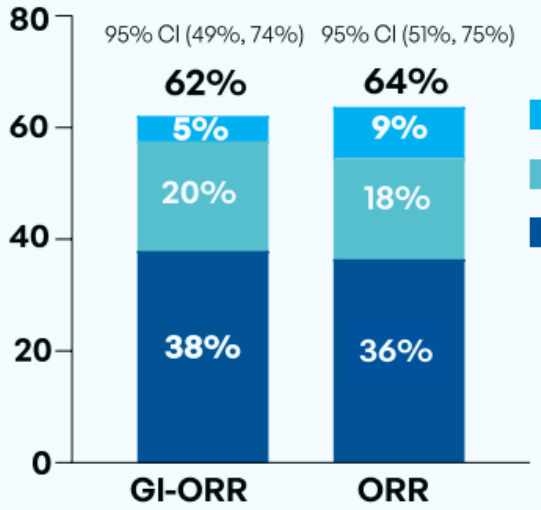
MaaT013 • aGvHD
ODD EMA/FDA
→ Salvage
→ Quick action

January 2025 15

ARES: Strong Response to MaaT013 in aGvHD Following Steroid and Ruxolitinib Failure

Topline Results

D28 Response Rate (%)



- **62% GI-ORR** with high CR and VGPR rates
- **64% ORR** demonstrating a global systemic response

"These outcomes underscore the curative role of microbiota-based therapies in achieving durable responses leading to prolonged survival. As MaaT013 gains adoption in Europe, it has the potential to redefine care standards for patients facing this life-threatening complication.

Prof. Malard, MD, hematology professor at Saint-Antoine Hospital and Sorbonne University, lead investigator for the Phase 3 ARES trial

The study met its primary endpoint with a significant gastrointestinal **overall response rate (p < 0.0001)**

https://www.maatpharma.com/wp-content/uploads/2025/02/2025_Corporate_presentation-MaaT-Pharma-Feb25.pdf

Maat Plans to submit EMA

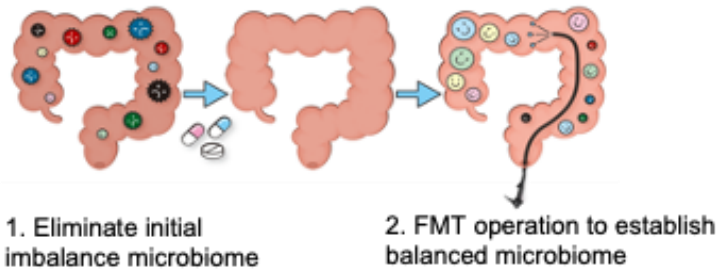
MaaT Pharma Announces Positive Outcomes from Final DSMB Meeting for Pivotal Phase 3 Clinical Trial Evaluating MaaT013 in Acute Graft-versus-Host Disease

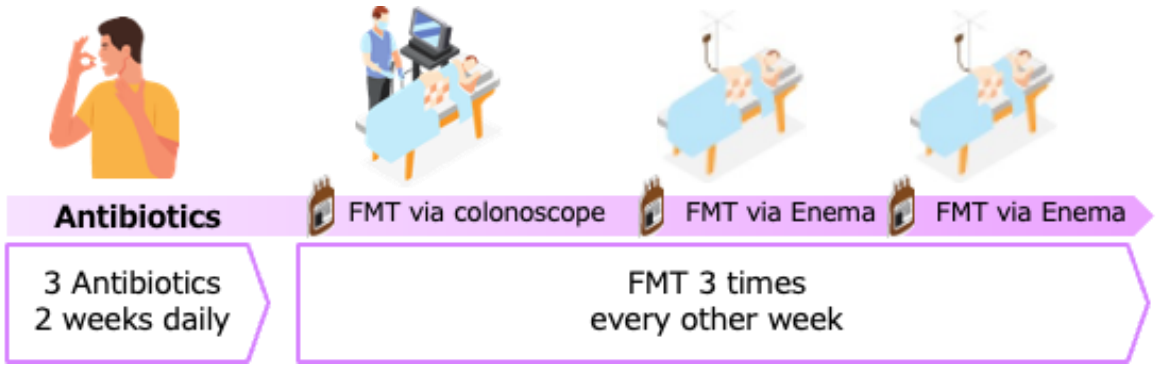
- The Independent Data Safety and Monitoring Board (DSMB) confirmed the remarkable efficacy results and a positive benefit/risk profile of MaaT013 in this patient population
- The Company plans for submission with the European Medicines Agency in June 2025, targeting a potential approval in mid-2026

https://www.maatpharma.com/march-18-2025-maat-pharma-announces-positive-outcomes-from-final-dsmb-meeting-for-pivotal-phase-3-clinical-trial-evaluating-maat013-in-acute-graft-versus-host-disease/

A-FMT for Ulcerative Colitis (UC)

- **Our FMT method: A-FMT (Pretreatment with combination of three Antibiotics and FMT)**
  - Aiming to eliminate the initial imbalance in the microbiome and establish a balanced microbiome through FMT
- **Juntendo University and MGTx initiated pivotal study of A-FMT for UC from Jan. 2023 under the *Advanced Medical Care Program* authorized in Japan**
  - Advanced Medical Care Program offers an official approval path for medical treatments and potential reimbursement
  - We **have completed clinical studies with 37 patients in December 2024.**



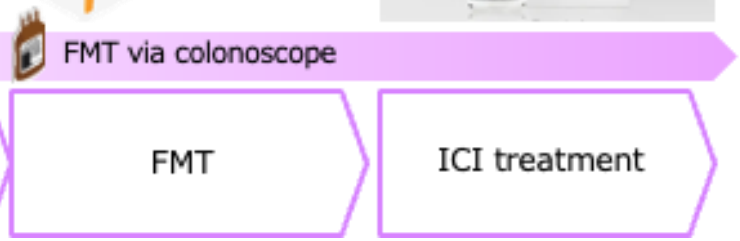


Indication Expansion

A-FMT clinical study for cancer patients treated with immune checkpoint inhibitors (ICI) in collaboration with National Cancer Center Japan

- Safety study for up to 45 patients with esophageal and gastric cancer will begin soon (jRCTs031240170, NCCH2308)
- A-FMT aimed at improving the response rate to ICI

国立研究開発法人
国立がん研究センター
National Cancer Center Japan



A-FMT clinical study for Parkinson's disease is scheduled to begin this year in collaboration with Juntendo University Hospital

- In an aging society, Parkinson's disease continues to increase
- Parkinson's disease has the highest number of patients among designated intractable diseases in Japan

JUNTENDO UNIVERSITY TOKYO 1838


Observational Study

Medicine

OPEN

Fecal microbiota transplantation therapy for Parkinson's disease

A preliminary study

Liu-Jun Xue, MD[a], Xiao-Zhong Yang, MD, PhD[b], Qiang Tong, MD[a], Peng Shen, MD[b], Shi-Jie Ma, MD[b], Shang-Nong Wu, MD[b], Jin-Long Zhang, MD, PhD[a,*], Hong-Gang Wang, MD[a,*]

Positive clinical outcome in Oncology from Taiwan

MICROBIO

MS-20

Innovative Modulator for Immuno-Oncology

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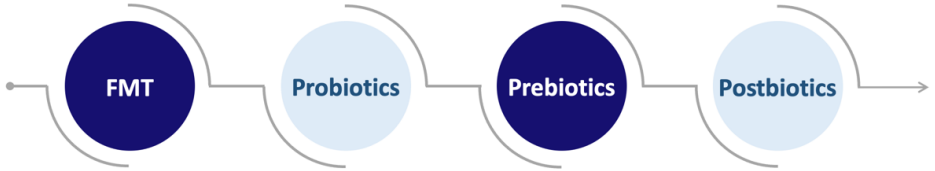
MICROBIO

What is MS-20?



- MS-20 is metabolites (without live bacteria) made by commensal anaerobic bacteria.
- MS-20 improves syndrome or treat disease by modulating specific bacteria (increase beneficial ones and/or inhibit pathogens).

2

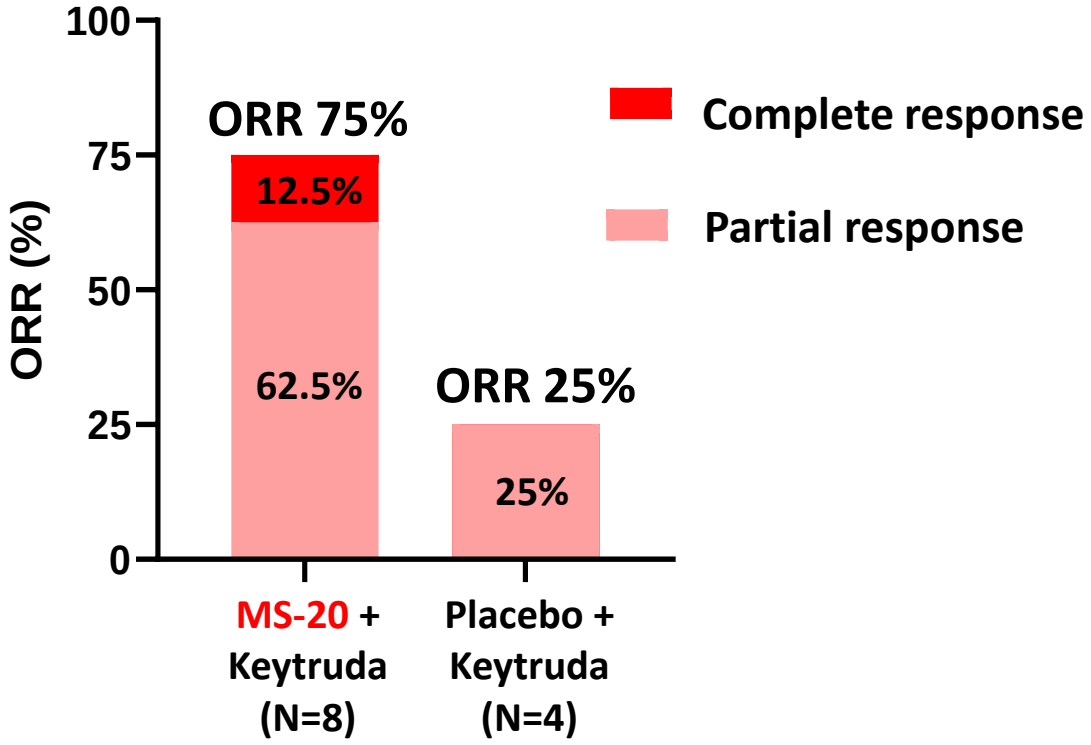
MS-20 is categorized in the “Microbiome Modulator”.

NSCLC Human Clinical trial
MS-20 + Keytruda for treatment of advanced NSCLC

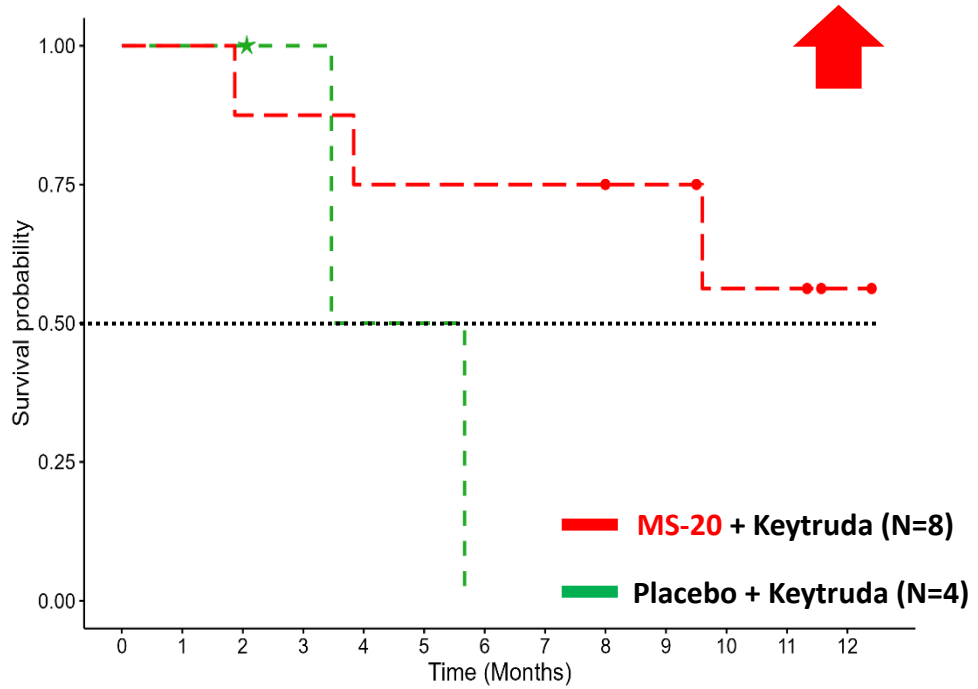
- Placebo + Keytruda, ORR=25%
- MS-20 + Keytruda, ORR=75%, complete response rate=12.5%

- Placebo + Keytruda, mPFS=4.5 months
- MS-20 + Keytruda, in 1 year of observation period, the median PFS has yet to be reached

Object response rate (ORR)



Progression free survival (PFS)



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APMC Public Private Partnership outcome

Guideline

Development of live biotherapeutic products: a position statement of Asia-Pacific Microbiota Consortium

Ching-Hung Tseng [1], Sunny Wong [2], Jun Yu [3], Yeong Yeh Lee [4], Jun Terauchi [5], Hsin-Chih Lai [6], Jiing-Chyuan Luo [7], Cheng Yen Kao [8], Sung-Liang Yu [9], Jyh-Ming Liou [10], Deng-Chyang Wu [11], Ming-Chih Hou [7, 12], Ming-Shiang Wu [10], Jiunn-Jong Wu [13], Joseph J Y Sung [2], Emad M El-Omar [14], Chun-Ying Wu [15, 16, 17]

Correspondence to Professor Chun-Ying Wu; dr.wu.taiwan@gmail.com; Professor Emad M El-Omar; e.el-omar@unsw.edu.au; Professor Joseph J Y Sung; josephsung@ntu.edu.sg

https://gut.bmj.com/content/early/2025/02/26/gutjnl-2024-334501

Created LBP guideline under **Asia Pacific Microbiota Consortium(APMC)** discussion lead by Taiwan Microbiota Consortium(TMC)

Member: Taiwan, Australia, Hong Kong, Japan, Malaysia, Singapore

A New US/EU collaboration is started

MTIG(US) and EMIH(EU) Sep. 2024.

The Microbiome Therapeutics Innovation Group (MTIG) today announced an **agreement between MTIG and the European Microbiome Innovation for Health (EMIH) association** for a collaboration to **advance microbiome drug development**, explore synergies between international regulators, and convene cross-continental meetings to incorporate the perspectives of a wide-range of drug developers.

https://www.globenewswire.com/news-release/2024/09/23/2951313/0/en/European-Microbiome-Innovation-for-Health-and-Microbiome-Therapeutics-Innovation-Group-Announce-New-Collaboration-Agreement.html

https://microbiometig.org/statements/

A New Initiative in JMBC

- In Japan, JMBC created a new project for the acceleration **of FMT drug development** in January
- JMBC plans to accelerate to develop **FMT drugs with appropriate stakeholders**.
- Preparation of the initiative is on the way.
- In the future JMBC hopes to collaborate with MTIG and EMIH.

Summary

- Development of Microbiome Based Drug continues to deliver new drugs as one of the **promising new modalities**.
- Industry group such as MTIG, EMIH and JMBC are currently collaborating regulatory authorities, such as FDA, EMA and PMDA to create **appropriate regulatory environment** for Microbiome Based Drugs.
- **Acceleration through Public Private Partnership is powerful way for the new modality drug development.**