New anti-malarial drug discovery projects with Japanese Partners

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Defeating Malaria Together

MMV
Medicines for Malaria Venture

A child dies every 2 minutes

3.2 billion
people at risk[1]

Devastating economic impact
in countries that can least afford it[2]

Children and pregnant women
disproportionally affected[1]

Resistance
to current medicines

1. WHO World Malaria Report 2016
2. Gallup JL and Sachs JD. *Am J Trop Med Hyg,* 64: 1 suppl: 85-96 (2001).

MMV Medicines for Malaria Venture

MMV Team March 2017

A foundation of ~80 people working towards the same mission, to reduce the burden of malaria in disease-endemic countries by

DISCOVERING, DEVELOPING and DELIVERING new, effective and affordable antimalarial drugs

Objectives and Goals:
Screening/HTLP Platform: GHIT funding to deliver Early Lead (Start of Lead Optimisation Program)

RESISTANCE

CHILDREN & PREGNANT WOMEN

1x

SINGLE DOSE CURES

PREVENTION OF RELAPSE

TRANSMISSION BLOCKING

CHEMO PREVENTION

Exciting opportunity to collaborate with Japanese Partners

Access to novel chemical structures and new drug discovery expertise

GOAL: Deliver the next generation of antimalarial drugs

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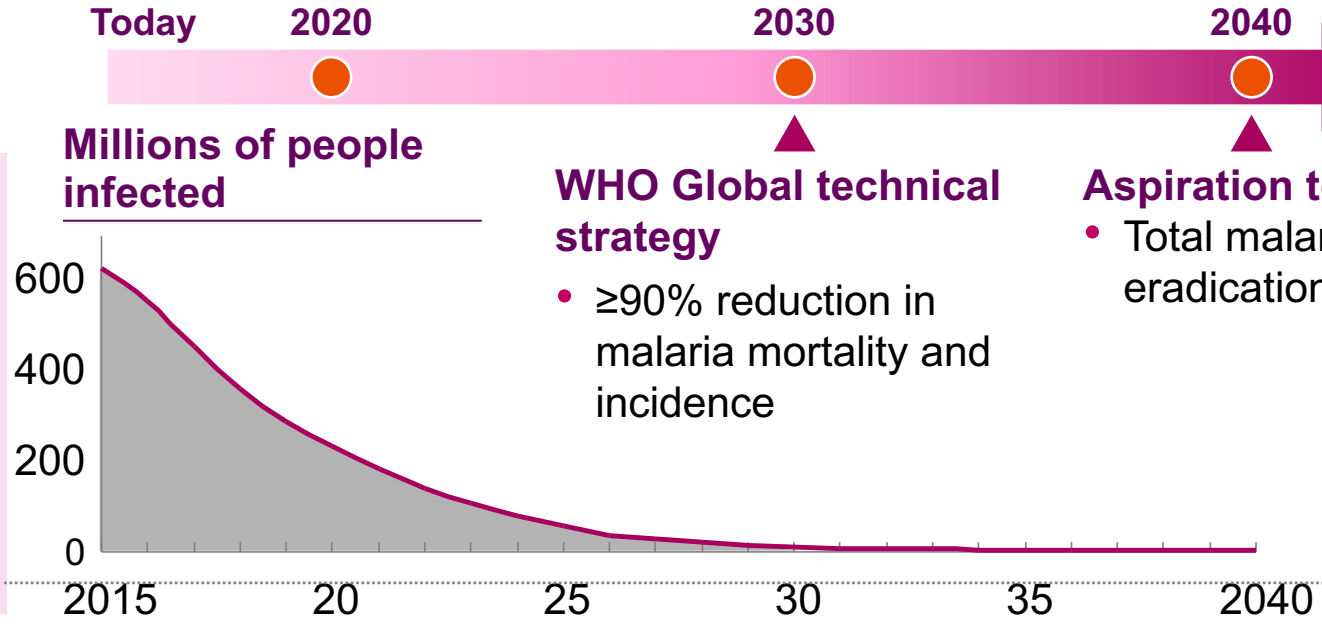
Impact on Global Health

Enhanced discovery efforts over the next decade are critical for an eradication agenda over the next 25 years

To reach aspirational targets…,



WHO Global technical strategy

- ≥90% reduction in malaria mortality and incidence

Aspiration to Action

- Total malaria eradication

… an innovative drug pipeline will be a critical enabler

Discovery

- Next ~5–10 years are critical for discovering drugs to address remaining gaps towards malaria eradication

Development

Requires ~10–15 years post-discovery

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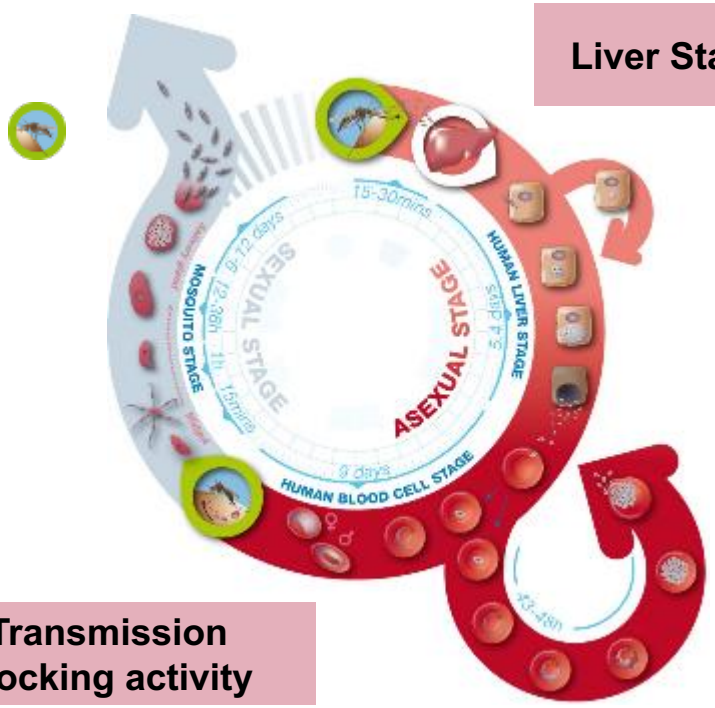
Partnerships: Screening For High Value Hits

Compounds screened 'blinded' at MMV centres of Excellence

Prof Winzeler
UCSD

Prof Avery
GRIDD



Liver Stage Activity

Transmission blocking activity

Blood Stage Activity

- Libraries of compounds from Japanese Institutes
- Screening results returned to Japanese Partner
- Partner decides which structures they are prepared to disclose to MMV
- MMV advice on novel series and portfolio fit
- Joint Decision on GHIT Hit to Lead Funding Application

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Partnerships: GHIT MMV Projects

Projects A

Japanese Partner

- **Medicinal Chemistry Synthesis**
- **Biology**
- **Drug Metabolism**

MMV: **malaria lifecycle assays**

Projects B

Japanese Partner
Med Chem, Drug Discovery advice

Indian CRO
Synthesis

Australian Universities
Biology and Drug Metabolism

MMV: **Medicinal chemistry**
Malaria lifecycle assays

Flexibility: Configure project based on needs

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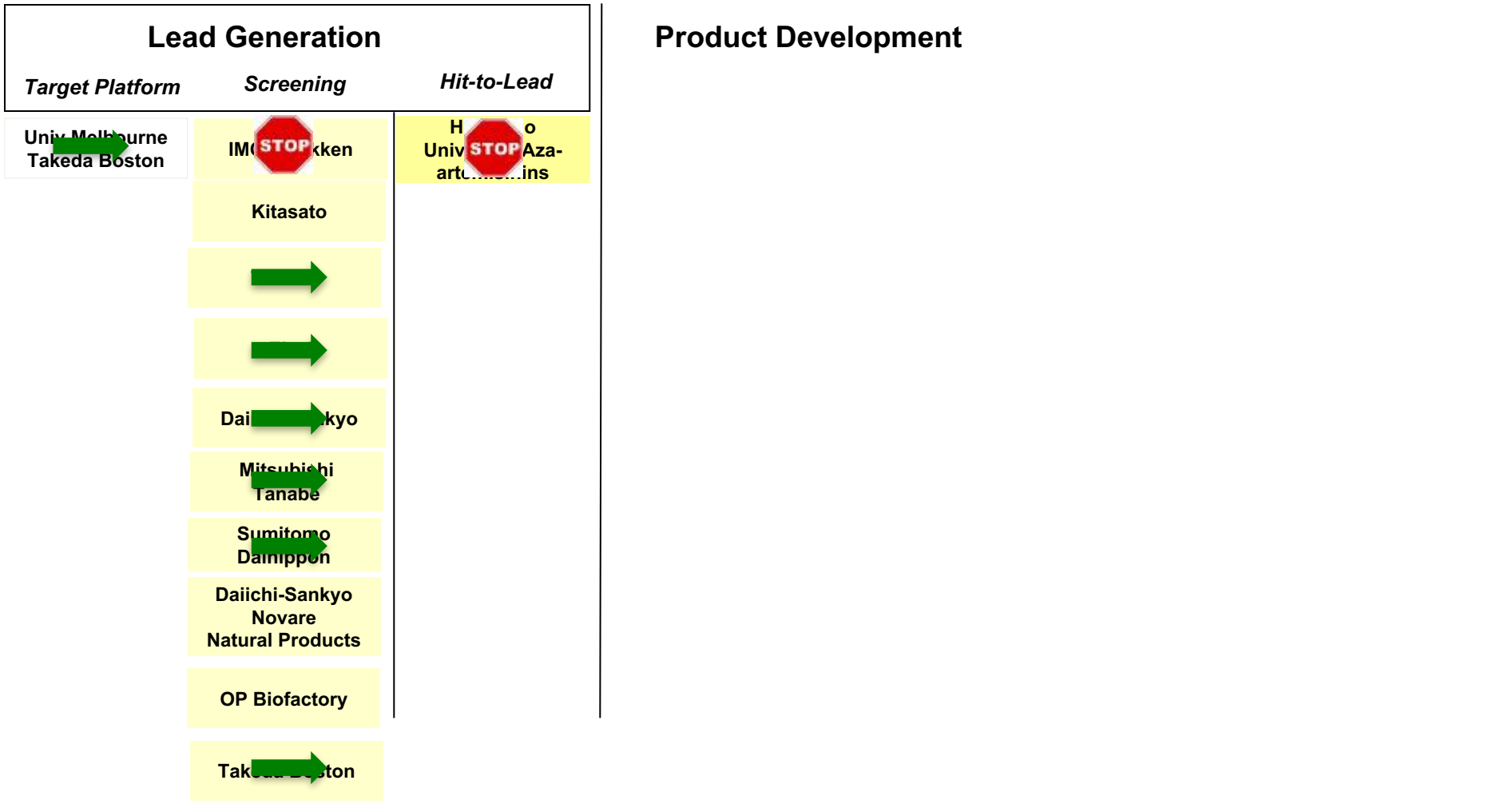
Activities and Results



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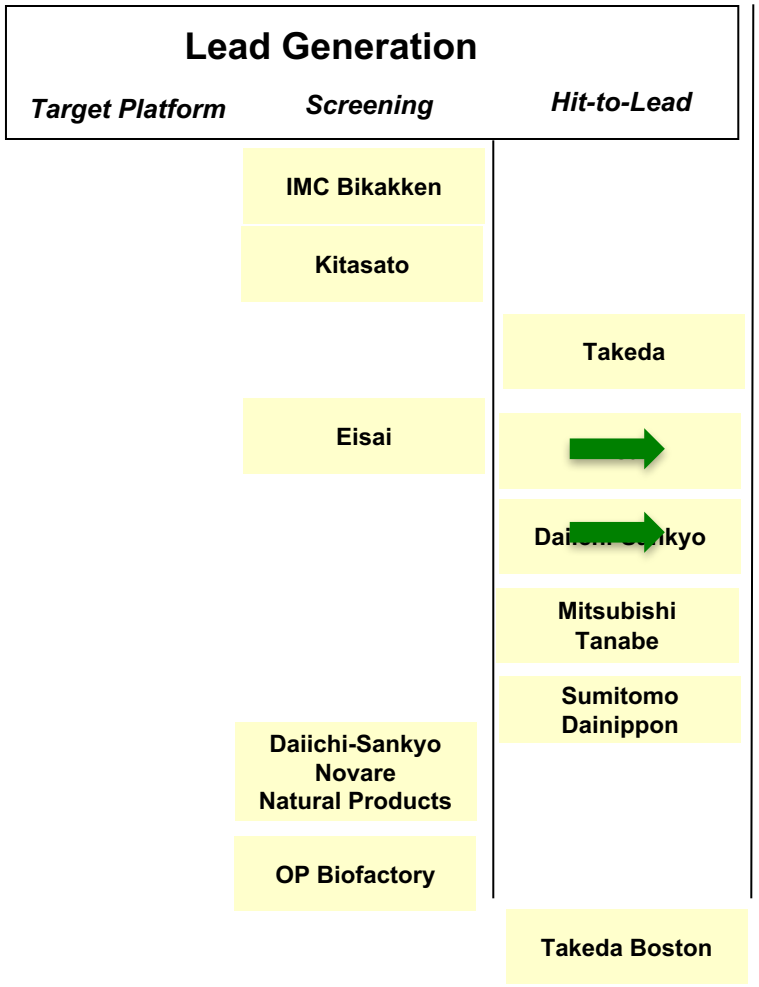
Activities and Results



8 Projects
Progressed screening hits to hit to lead programs

Eisai

Takeda

Daiichi-Sankyo

DAINIPPON SUMITOMO PHARMA

Mitsubishi Tanabe Pharma Corporation

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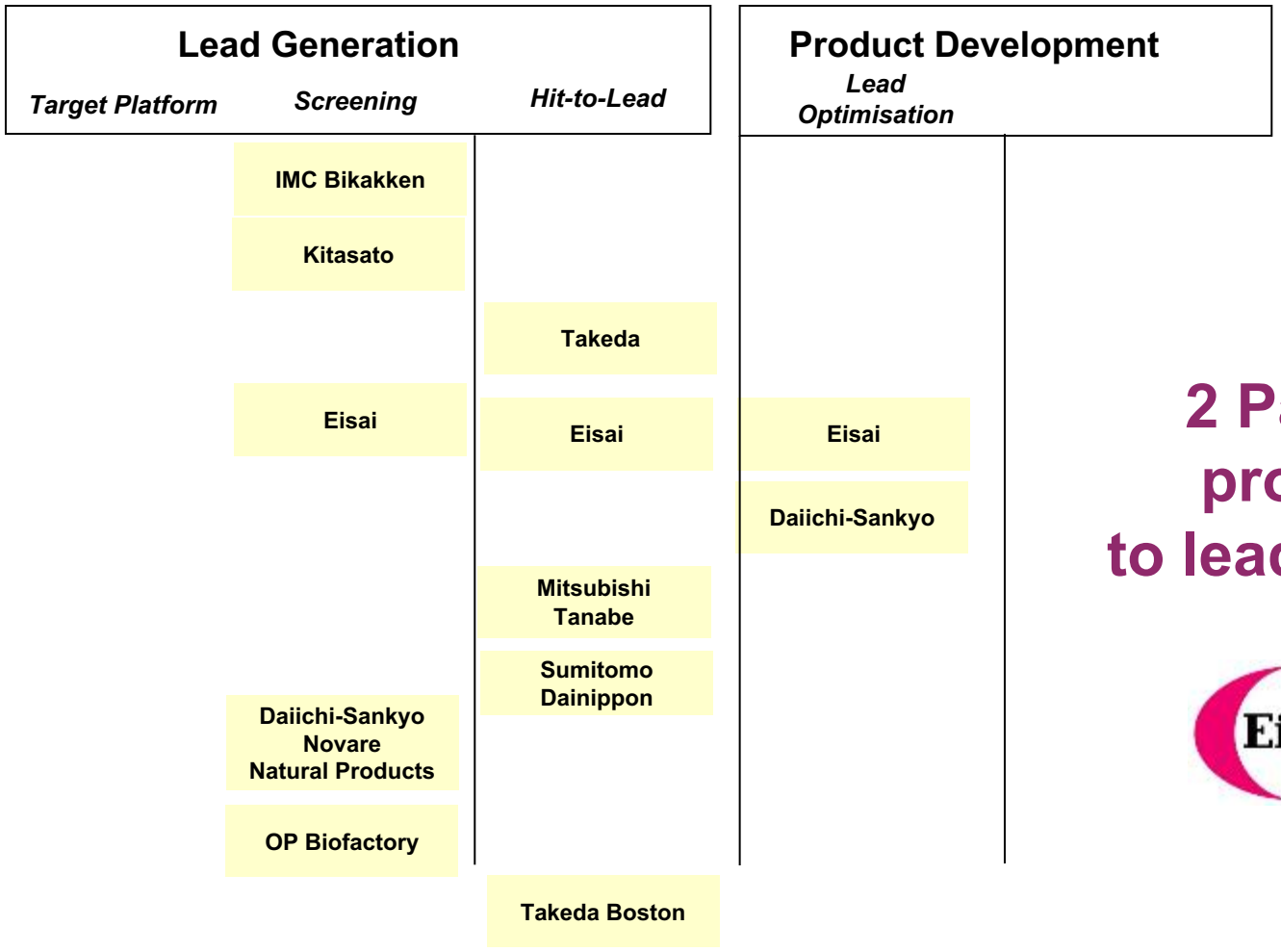
Activities and Results



2 Partners now progressed to to lead optimisation

Eisai

Daiichi-Sankyo

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Lessons Learned

- **Strategy validated: successful progression of projects**
- **`Blinded` screening encourages initial collaboration**
- **Each Project configured according to needs**
- **Expertise of Japanese institutions highly valued**
  - Drug discovery and series specific expertise
- **Assess to MMV screening centers and expertise is key**
- **MMV Partner meeting: great sharing of knowledge**
- **Challenge: Work to improve screening turnaround times**

Comments

- **New focus on malaria eradication projects**
  - Blood stage PLUS chemoprotection, transmission blocking, anti-hypnozoite activity
- **Strong portfolio of GHIT funded MMV projects**
- **GHIT and Japanese Partners, working with MMV will play leading role in new era of anti-malarial drug discovery**
- **Thanks to all Scientific Partners and Funding bodies**

GHIT Fund
Global Health Innovative Technology Fund

BILL & MELINDA GATES foundation

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