Antibiotic drug development in ENABLE-2

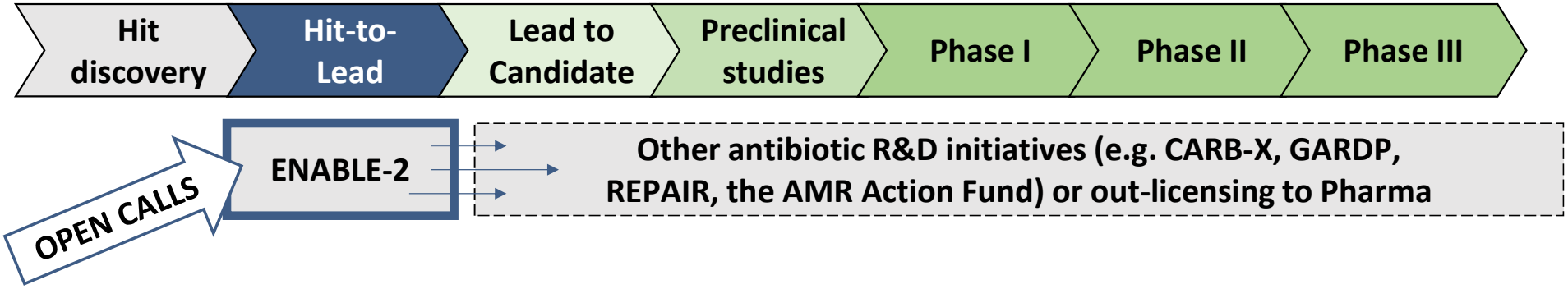
Anders Karlén
Coordinator

ENABLE-2
Antibacterial Drug Development Engine

ENABLE-2 is helping to fill the antibiotic pipeline

ENABLE-2 goal

To develop antibacterial Hits coming from university drug discovery projects into high quality programmes that can graduate to other funding bodies for further development



ELIGIBILITY: Researchers at publicly funded universities and research institutes in Europe

MIC ≤ 16 µg/mL vs. at least one of the key ENABLE-2 pathogens
E. coli, K. pneumoniae, P. aeruginosa, A. baumannii, S. aureus, E. faecium

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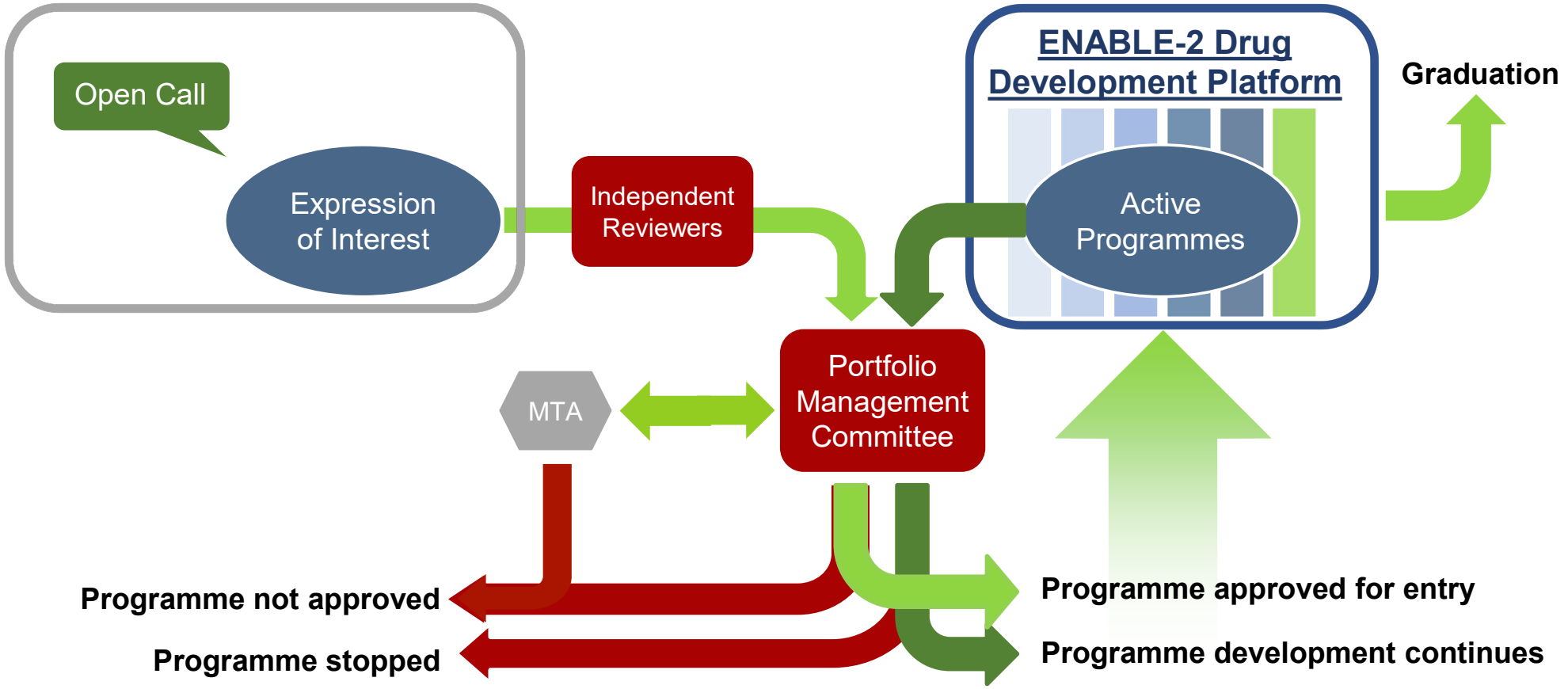
ENABLE-2 Mechanics



Roles of ENABLE-2 partners

- **Active Programmes (Hit owner)**
  - Owns all the intellectual property and assay results generated
  - Makes all decisions regarding the development of the programme
- **ENABLE-2 Drug Development Platform**
  - Provides development advice for programmes
  - Conducts assays and MedChem development with input from the hit owner
- **Portfolio Management Committee**
  - Provides development advice for programmes
  - Decides which programmes will be accepted, continued and terminated
- **Scientific Advisory Board**
  - Provides advice for programmes, e.g. Target Product Profile, Chemistry issues

Current ENABLE-2 programmes

BamA Inhibitors

Novel antibiotics that hit a new target against Gram-negative bacteria

Till Schäberle, **Justus Liebig University Giessen**

GmPcides

A new class of antibacterial compounds against gram-positive bacteria & a well-developed chemistry platform to improve these new compounds

Fredrik Almqvist and Helén Fält, **QureTech Bio AB**

Strathclyde Minor Groove Binders

An anti-infective drug discovery programme with a novel mechanism of action resilient to target-based resistance

Fraser Scott, Department of Pure and Applied Chemistry, **University of Strathclyde**

JEDI

A novel target with no preexisting resistance and a new compound class showing very good efficacy in animal models

Anders Karlén and Diarmaid Hughes, Drug Design and Discovery, Dep of Medicinal Chemistry & Dep of Medical Biochemistry and Microbiology, **Uppsala University**

EbsArgent

A novel class of antibiotic active against multidrug-resistant gram-positive as well as gram-negative bacteria

Elias Arnér and Mohamad Takwa, **Thioredoxin Systems AB**

Ornicidine

A novel class of anti-bacterial agents active against multi drug-resistant Gram-negative bacteria

Nathaniel Martin, **Leiden University** and Stephen Cochrane, **Queen's University Belfast**

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How to apply

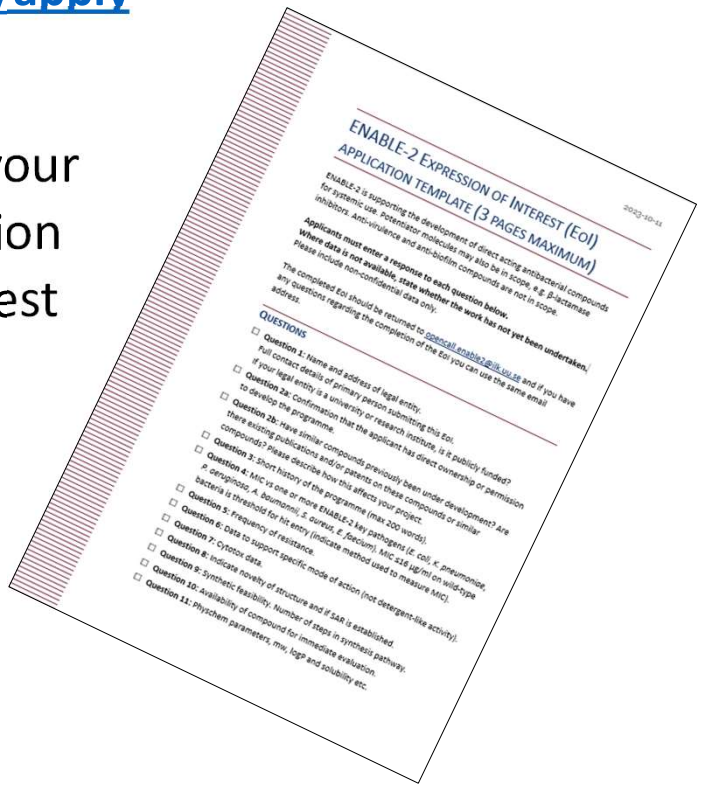
Open call on the ENABLE-2 website: www.ilk.uu.se/enable2/apply

Apply to join the ENABLE-2 consortium

Open Call for new antibiotic programmes

ENABLE-2 is accepting applications from researchers at publicly-funded universities and research institutes throughout Europe. The call is for novel Hit compounds with the potential for development as direct-acting antibiotics for systemic use.

Submit your Expression of Interest



ENABLE-2 EXPRESSION OF INTEREST (EOI) APPLICATION TEMPLATE (3 PAGES MAXIMUM)

2023-10-11

ENABLE-2 is supporting the development of direct acting antibacterial compounds for systemic use. Potentiator molecules may also be in scope, e.g. β-lactamase inhibitors. Anti-virulence and anti-biofilm compounds are not in scope.

Applicants must enter a response to each question below.
Where data is not available, state whether the work has not yet been undertaken.
Please include non-confidential data only.

The completed EoI should be returned to openCall.enable2@ilk.uu.se and if you have any questions regarding the completion of the EoI you can use the same email address.

QUESTIONS

- **Question 1:** Name and address of legal entity.
- **Question 1a:** Full contact details of primary person submitting this EoI.
- **Question 2:** If your legal entity is a university or research institute, is it publicly funded?
- **Question 2a:** Confirmation that the applicant has direct ownership or permission to develop the programme.
- **Question 2b:** Have similar compounds previously been under development? are there existing publications and/or patents on these compounds or similar compounds? Please describe how this affects your project.
- **Question 3:** Short history of the programme (max 200 words).
- **Question 4:** MIC vs one or more ENABLE-2 key pathogens (*E. coli*, *K. pneumoniae*, *P. aeruginosa*, *A. baumannii*, *S. aureus*, *E. faecium*). MIC ≤16 µg/ml on wild-type bacteria is threshold for hit entry (indicate method used to measure MIC).
- **Question 5:** Frequency of resistance.
- **Question 6:** Data to support specific mode of action (not detergent-like activity).
- **Question 7:** Cytotox data.
- **Question 8:** Indicate novelty of structure and if SAR is established.
- **Question 9:** Synthetic feasibility. Number of steps in synthesis pathway.
- **Question 10:** Availability of compound for immediate evaluation.
- **Question 11:** Physchem parameters, mw, logp and solubility etc.

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Summary

- ENABLE-2 is funded by the Swedish Government (currently up to the end of 2027)
- We are working on a more long-term financial solution that also includes accepting EoIs from SMEs
- There is no cost for the programme owner associated with running a programme in ENABLE-2
- The support of ENABLE-2, a national platform for antibiotics development funded by the Swedish Research Council and the National research programme on antibiotic resistance (Dnr 2021-06603) is gratefully acknowledged

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Contact

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