

Antibacterial cyclic peptide (PLP-3)

ISGlobal Barcelona
Institute for
Global Health

IRB
BARCELONA
INSTITUTE
FOR RESEARCH
IN BIOMEDICINE



Partners

Clínica
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NIH
NIAID



Market Opportunity

- Antibiotic resistance was responsible for **1.27 M deaths** worldwide in 2019. By **2050, 10 M people may die every year** from infections caused by multidrug resistant bacteria, surpassing the number caused by cancer.
- It causes **2.5 M days of extra hospitalization** per year throughout the EU resulting in huge **costs of 900 M€**.
- The global AMR market for Gram negative infections is estimated to be **\$3.4 B by 2026**, with a **CAGR of 10.8%** from 2019 to 2028.



Technology

- **Potent Antibacterial.** The cyclic peptide possesses low Minimal Inhibitory Concentration (MIC₅₀) values under **4 µg/ml** for Pan-R *A. baumannii*, *K. pneumoniae* and MDR *P. aeruginosa*.

Microorganism	PLP-3 (µg/mL)	
	MIC ₅₀	MIC ₉₀
<i>Acinetobacter baumannii</i>	1	2
<i>Klebsiella pneumoniae</i>	4	16
<i>Pseudomonas aeruginosa</i>	4	8



Intellectual Property

- **ISGlobal (47 %), Institute for Research in Biomedicine Barcelona (40 %), Barcelona Clinic Hospital (7 %) and University of Barcelona (6 %)** share joint ownership.
- **European patent application** submitted 27th of May 2022. Positive EESR after EPO examination.
- Aiming to **broad patent protection** through PCT pathway.

- **Stable and active under physiological conditions.** No significant changes in antimicrobial activity of PLP-3 in the presence of human albumin were observed.

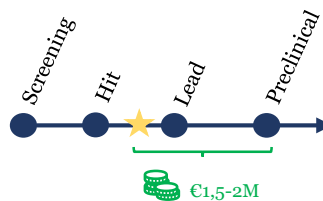
- **Low *in vitro* toxicity in human cells.** IC₅₀ values of ca. **227 µg/ml** for XTT assays indicating up to >100 folds over MIC values for strains of the tested bacterial species over cells.

- IC₅₀ of **48 µg/ml** for haemolysis assays.



Development

- We are currently completing the Hit-to-Lead stage:



- Presently analyzing the activity of **3 new derivatives** synthesized and performing assays to determine the **Mechanism of Action, ADMET and PK screening in mouse**.

- **OUR ASK: CO-DEVELOPMENT, LICENSE AGREEMENT and/or INVESTMENT.**



Competitive Advantage

- **Novel cyclic peptide** designed and synthesized.
- **Antibacterial activity** against the most problematic **Gram negative** pathogens., including *A. baumannii*, *P. aeruginosa* and *K. pneumoniae*.
- **Low *in vitro* toxicity** in human cells.
- Bactericidal and very **rapid killer**.
- **Service agreement** signed with **NIAID** preclinical services for five years.

Our Team



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