



MbruBOOST: NOVEL IMMUNOMODULATOR FOR PREVENTION & CONTROL OF BACTERIAL INFECTIONS



CHALLENGE

Multidrug-resistant bacteria (**MDR**) are strains of bacteria that have become resistant to multiple antibiotics. The emergence of MDR poses a significant **public health issue**, and recent alarming reports from the Infectious Disease Society of America, the European CDC, and the WHO have raised public awareness about an emerging **antibiotic crisis**.

The control and treatment of MDR infections is an urgent unmet medical need. However, the development of new antibiotics is not keeping pace with the rising threat as major pharmaceutical companies are reducing dramatically their investment in antimicrobial R&D.



MARKET

Antibiotic resistance is among the most significant threats to human health, causing an estimated **1.3 million annual deaths** worldwide, and projected to surpass all other causes of mortality by 2050. The emergence and prevalence of multidrug-resistant bacteria has encouraged vigorous efforts to develop antimicrobial agents with new mechanisms of action.

The global annual impact of antibiotic-resistant infections reaches **\$700 billion** in excess healthcare costs and nearly **\$200 billion** in productivity losses, alongside an increased mortality and extended hospital stays.



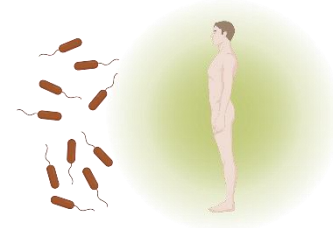
ASSET

Novel immunomodulatory agent to **prevent** and **combat bacterial infections** caused by different pathogenic bacterial strains, including those caused by multidrug-resistant bacteria.

ASSET VALUE

MbruBOOST is an effective alternative for preventing and treating infections caused by different pathogenic bacteria, including multi-resistant strains.

- **Safe and non-toxic non-antibiotic immunomodulatory agent**
- **No resistance development to the product**
- **Boost natural body defenses**
- **Combat bacterial infections effectively**
- **Cost-effective mass production of the product**



Team

Eduard Torrents, Scientific Leader (IBEC/UB)
Esther Julián, Scientific Leader (UAB)
Núria Blanco, Scientific (IBEC)
Beatriz Monsalve, Tech Transfer (UAB)
Zoi Melissari, Tech Transfer (IBEC)
Eduardo Salas, Tech Transfer (IBEC)

Stage of Development

- **Current TRL:** 3
- **Proof of Concept:** Demonstrated in *Galleria mellonella* larvae and murine models.
- **Dose and administration:** Optimal dose and route of administration identified in mice.
- **Mechanism of action:** Immunostimulatory pathways characterized in murine models.
- **Efficacy:** Validated in mice with lung and urinary infection models caused by antibiotic-resistant *Pseudomonas aeruginosa* and uropathogenic *Escherichia coli*.

Intellectual Property Status

PCT was filed in February 2025 by IBEC, UB, UAB. Entering national phases in August 2026.

Exploitation Plan

- Patent available for co-development and/or licensing.
- Potential spin-off creation.

USES

- **As a preventive agent in cases of potential risk of bacterial infections**
- **As a prophylactic agent for bacterial chronic lung infections**