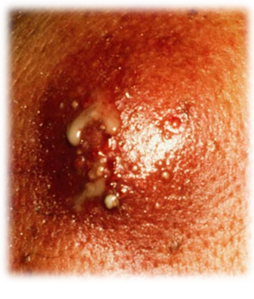
Novel antimicrobials to combat antibiotic resistance Gram-positive bacteria

Biotech & Pharma

Challenge:

Emergence of bacterial resistance against antimicrobials currently used to treat/eradicate MRSA in:



Skin infections with (multi-resistant) *S. aureus*

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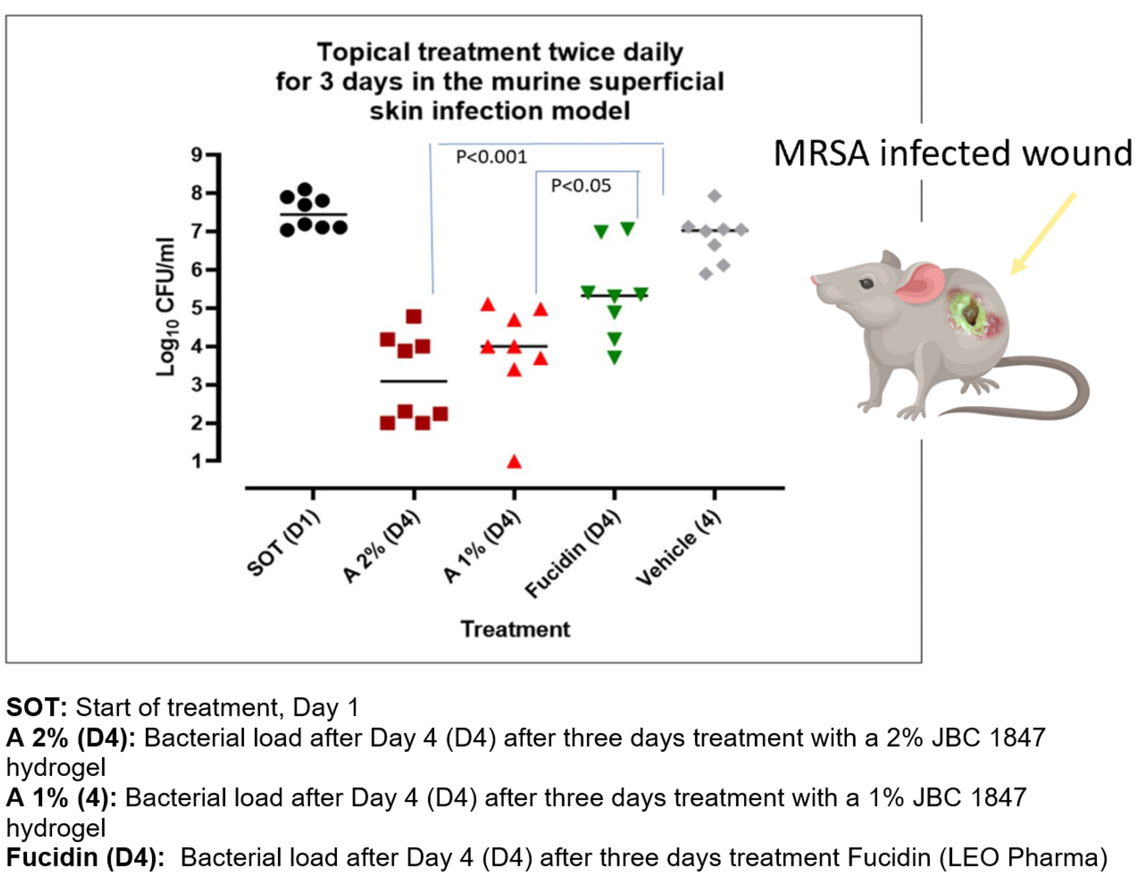
Healthy carriers of methicillin resistant *S. aureus* (MRSA)

Solution: A novel highly potent antimicrobial with low rates of resistance development



MRSA infected wound

SOT: Start of treatment, Day 1
A 2% (D4): Bacterial load after Day 4 (D4) after three days treatment with a 2% JBC 1847 hydrogel
A 1% (4): Bacterial load after Day 4 (D4) after three days treatment with a 1% JBC 1847 hydrogel
Fucidin (D4): Bacterial load after Day 4 (D4) after three days treatment Fucidin (LEO Pharma)

Low resistance development

JBC 1847 is remarkably stable compared to fusidic acid* – (* API in standard treatment of *S. aureus* skin infections**)**

- The sensitivity of *S. aureus* to fusidic acid decreased **<u>233 fold</u>** in 23 days
- The sensitivity of *S. aureus* to JBC 1847 decreased **<u>3.5 fold</u>** in 23 days

JBC 1847 as a Business case – Key selling points

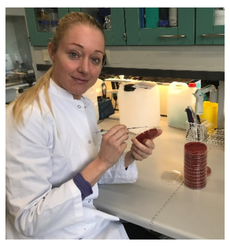
- Superior to Fucidin® in reducing *S. aureus* load
- Due to low resistance rate, the expected antibiotics markets for JBC-1847 include both treatment and eradication of *S. aureus*
- Unique CAS number expected
- Estimated price 10,000 DKK/kg
- Compounds patented

Technology Description

The inventors have a collection of 51 novel compounds synthesized at University of Copenhagen, all with antimicrobial activity. Compound JBC1847 is currently our lead candidate, yet we have eight “close-to-lead” compound.
In vivo data in mice MRSA skin infection model have shown JBC 1847 to be highly superior to Fusidic acid (LEO Pharma) in reducing the load of MRSA in wounds, while in vitro data has shown a resistance development rate more than 50-times lower than fusidic acid.
In addition to *S. aureus*, the novel compounds also shows high activity against other skin pathogens, e.g. *Cutibacterium acnes*, the causative agents of severe acne.

Intellectual Property Rights

Priority patent application submitted April 2019



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Current State

In vitro: High in vivo activity documented against 11 different bacterial species, including strains highly resistant to conventional antibiotics
In vivo: High efficacy in skin models
Next steps : 1) In vivo POC comparing JBC 1847 to Bactoban (to eradicate MRSA from health carriers); 2) Regulatory toxicological studies (in vivo) to further document safety of JBC1847

Business opportunity and Call to action

- Establish University **SPIN-OUT** company – Open position for experienced biotech CEO
- Funding and investments' to drive the further development activities
- Industrial partner to complete all mandatory pre-clinical assessments to allow the lead compound to enter Clinical Phase 1

DANISH **IP** FAIR
Inventions from Danish Research Institutions

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