Novel antimicrobials to combat antibiotic resistance Gram-positive bacteria

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

Skin infections with (multi-resistant) S. aureus

Healthy carriers of methicillin resistant S. aureus (MRSA)

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

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 233-fold in 23 days
- The sensitivity of S. aureus to JBC 1847 decreased 3.5 fold 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 show 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

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

Contact information
Peter Stein Nielsen
Commercial Officer
+45 2164 7447
peter.nielsen@adm.ku.dk

Anders Permin
Business development