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Poster abstract submission

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Country Norge

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Poster title

APC301 - The most Potent Antibiotic against MBL-producing Pathogens?

Poster abstract

Problem:
Pathogens defend themselves by producing enzymes that destroy antibiotics. Bacteria producing metallo-β-lactamases (MBL) and serine β-lactamases (SBL) are spreading at an alarming rate world-wide, causing patient morbidity and millions of deaths. No antibiotics that effectively targets MBLs are available on the market.
Solution:
APC148 irreversibly inhibits all major MBLs (NDM, VIM, IMP) and when combined with broad-spectrum antibiotics and SBL-inhibitors offers new treatment options of multidrug-resistant pathogens. The in vitro susceptibility of different APC148 combinations was tested in two collections of MBL-producing Enterobacterales.
Method:
AdjuTec Pharma tested APC148 16µg/mL in combination with meropenem/avibactam 8µg/mL (APC301) and cefepime/avibactam 8µg/mL (APC302) in a global collection of 176 MBL-producing Enterobacterales. APC301 and APC302 were compared to aztreonam/avibactam 4µg/mL, ceftazidime/avibactam 4µg/mL, cefepime/taniborbactam 4µg/mL, aztreonam/nacubactam (1:1) and cefepime/nacubactam (1:1). CLSI break-point criteria were applied.
Another susceptibility study is on-going in an Indian collection of MBL-producing Enterobacterales. APC148 16µg/mL is combined with meropenem/avibactam 4µg/mL and meropenem/avibactam 8µg/mL, and compared to meropenem alone and meropenem/APC148 16µg/mL. EUCAST break-point criteria are applied.
Result/conclusion:
In the global collection, all 176 isolates were non-susceptible to meropenem alone as well as ceftazidime/avibactam. 100% of K.pneumonia and E.coli isolates were susceptible to APC301 with non-susceptibility in one isolate of S. marcescens. 100% of K.pneumonia isolates and 97% of E.coli isolates were susceptible to APC302 with non-susceptibility in five E.coli isolates producing NDM-5 or NDM-19 MBLs. The two products were significantly more potent compared to all comparators. (JMI report 2025)

Interim result from the Indian collection of 182 Enterobacterales included 178 MBL-producing isolates and confirmed a high susceptibility of 97% to meropenem/APC148 with both avibactam doses. (Venus report 2025)
The results have been confirmed in on-going mice infection models. A dose-escalation safety study of APC148 in 46 volunteers was recently successfully completed. The study supported the development of these highly effective antibiotics in the treatment of multidrug resistant pathogens. AdjuTec Pharma is seeking investments to continue the clinical development of APC301 and APC302.

Research topic

Small molecule therapeutics

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