ECCMID 2023 | Poster #P0151

Activity of SPR206 and Comparator Compounds against Enterobacterales Isolates Responsible for Infections in Hospitals in Europe and Adjacent Regions

RE Mendes[1], HS Sader[1], SJR Arends[1], N Cotroneo[2], IA Critchley[2], M Castanheira[1]

[1] JMI Laboratories, North Libert , IA, USA; [2] Spero Therape tics, Cambridge, MA, USA

Introd ction

- The proportion of isolates prod cing e tended-spectr m β-lactamases (ESBLs) has increased in both hospital and nosocomial settings worldwide.
  - This increased freq enc challenges empiric treatment of serio s infections and ma promote the se of more potent antimicrobial agents, s ch as carbapenems.
- This scenario helped potentiali e the emergence and dissemination of Gram-negati e m ltidr g-resistant (MDR) pathogens in recent decades, incl ding carbapenem-resistant Enterobacterales, for which treatment options are often limited.
- SPR206 is a ne t-generation pol m in nder clinical de elopment to treat pne monia, bloodstream, and rinar tract infections ca sed b Gram-negati e MDR pathogens.
- The *in vitro* acti it of SPR206 and comparators was monitored against Gram-negati e pathogens ca sing infection in E ropean hospitals d ring 2021 as part of the SENTRY Antimicrobial S r eillance Program.
- We report the acti it of SPR206 and comparators against Enterobacterales from E ropean co ntries and adjacent regions.

Res lts

- *E. coli* (425 isolates) and *K. pneumoniae* (425) were the most common pathogens, followed b *Enterobacter cloacae* species comple (213), *Citrobacter* spp. (121), *K. oxytoca* (110), *Serratia marcescens* (106), *K. aerogenes* (65), *P. mirabilis* (60), *Morganella morganii* (60), and 8 other species/gro ps (29) (data not shown).
- O erall, SPR206 and colistin had MIC_{50} res lts of 0.06 mg/L and 0.25 mg/L against Enterobacterales, respecti el , e cl ding those isolates intrinsicall resistant to pol m ins (Tables 1 and 2).
  - Indole-positi e Proteeae, *Proteus* spp., and *Serratia* spp., which are intrinsicall resistant to pol m ins (MIC, >8 mg/L), had ele ated SPR206 MICs of >8 mg/L (data not shown).
  - E cl ding these organisms, SPR206 ($MIC_{50/90}$, 0.06/0.25 mg/L) and meropenem ($MIC_{50/90}$, 0.03/0.06 mg/L) showed the lowest MICs against this s bset, followed b colistin ($MIC_{50/90}$, 0.25/0.5 mg/L) and cefta idime-a ibactam ($MIC_{50/90}$, 0.12/0.5 mg/L) (Table 2).
- In general, *E. coli* isolates were s sceptible to ario s agents tested, s ch as colistin (99.8% s sceptible), cefta idime-a ibactam (100% s sceptible), piperacillin-ta obactam (90.6% s sceptible), ceftolo ane-ta obactam (99.1% s sceptible), and the carbapenems (100% s sceptible) (Table 2).
  - Howe er, 21.6% were classified to pres mpti el prod ce ESBL en mes, which was reflected in decreased s sceptibilities to cefta idime (21.6% non-s sceptible), ceftria one (20.7% non-s sceptible), and a treonam (21.6% non-s sceptible).
- SPR206 ($MIC_{50/90}$, 0.06/0.25 mg/L) and [illegible] ($MIC_{50/90}$, 0.25/0.5 mg/L) against *K. pneumoniae* (Table 2).
  - Colistin (92.9% s sceptible) and cefta idime-a ibactam (98.6% s sceptible) were aa21o 1.1 Td4K. pne moniae –

>> BD). –All Enterobacterales