Study of antimicrobial resistances in *Escherichia coli* strains isolated from pigs

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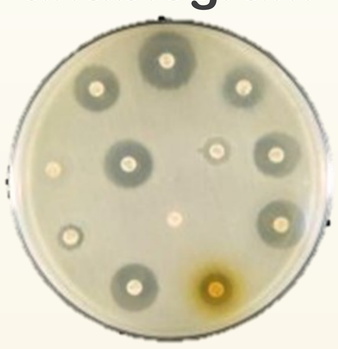
Objectives

- ☑ Determine whether the antimicrobial sensitivity profiles of *E. coli* isolated from pigs since 1999 have changed
- ☑ Study of the prevalence of cephalosporins resistance genes by molecular methods

Materials and methods

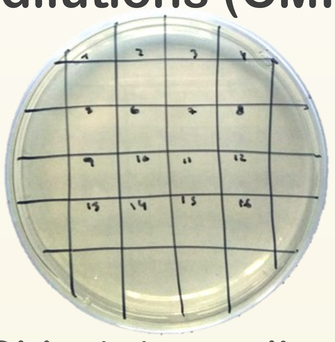
67 strains (1999-2014) + 15 strains (2017-2018)

Kirby-Bauer antibiogram



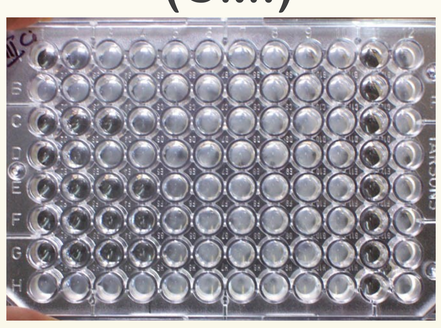
Colistin, tylosin, enrofloxacin, gentamicin, ceftiofur, amoxicillin

Media with antibiotic dilutions (CMI)



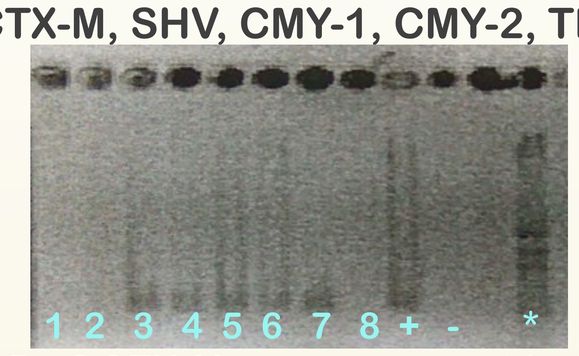
Chlortetracycline

Broth microdilution (CMI)



Colistin

PCR of cephalosporines resistance genes:
CTX-M, SHV, CMY-1, CMY-2, TEM

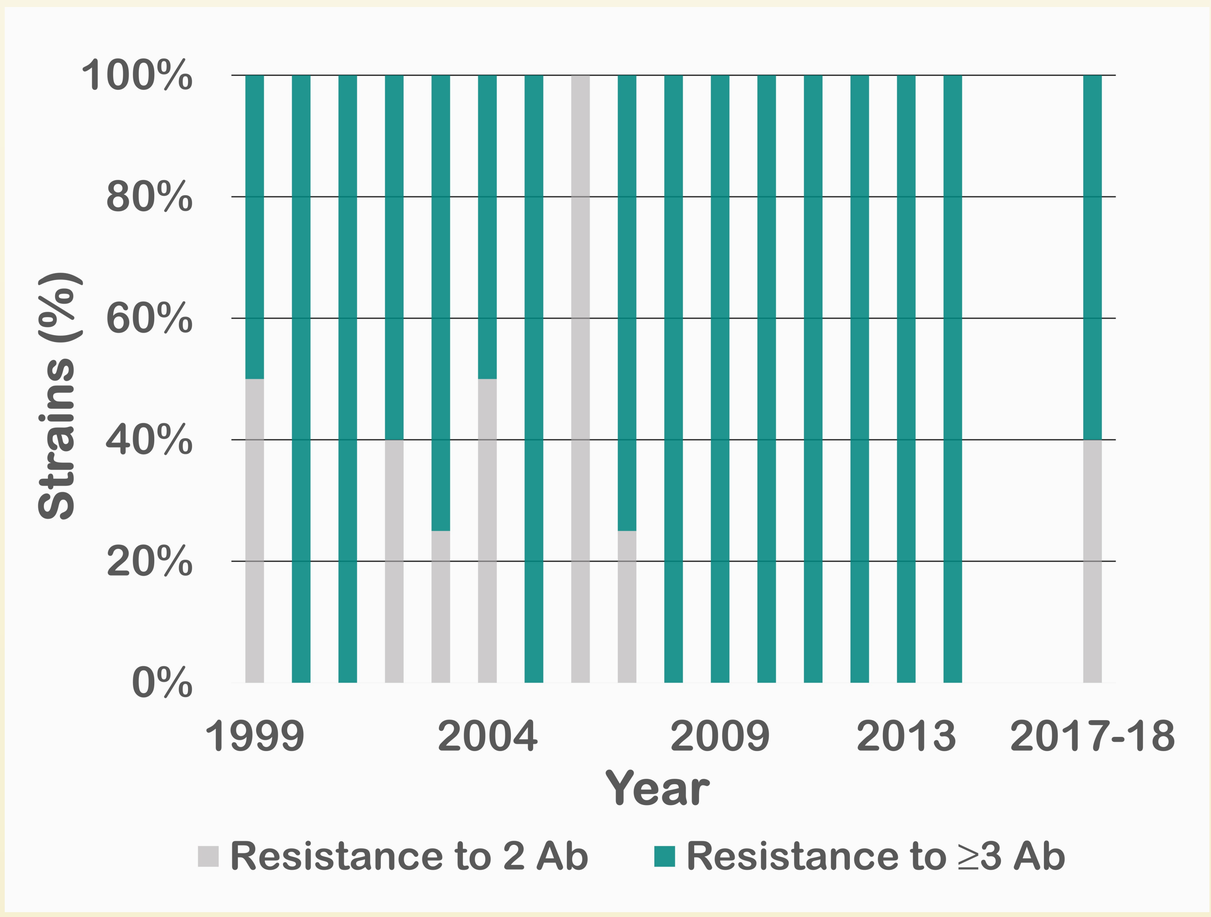


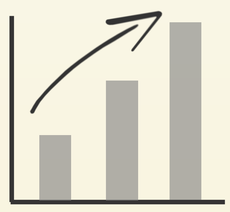
PCR of CTX-M gene: present in 5/8 resistant strains to ceftiofur

* molecular weight marker

Results and discussion

High levels of multiresistances since 1999

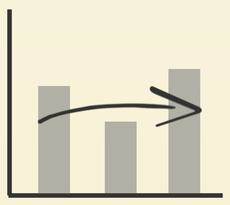




Increased resistance:

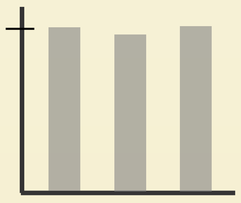
- **Ceftiofur**
  PCR: only **CTX-M** gene detected
- **Colistin,** except reduction since 2014*
  CMI: more sensitive than Kirby-Bauer
- **Gentamicin** (intermediates), except reduction since 2014*

*possibly due to restrictions



Stable level of resistances:

- **Enrofloxacin** (~40%)
- **Chlortetracycline** (~65%)



>99% resistant strains since 1999:

- **Amoxicillin:** ↑ prevalence of betalactamases
- **Tylosin:** natural resistance in Enterobacteriaceae

Conclusions

- No general increase of multirresistances since 1999, although the increase of resistances to some antibiotics in some periods
- Broth microdilution (CMI) is a more sensitive method than the Kirby-Bauer antibiogram for colistin resistance testing
- Resistance to ceftiofur was associated to the CTX- M gene in 5 of the 8 resistant strains