



**DTU Food**  
National Food Institute

# **EQAS 2015**

## **Genotypic characterization**

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# Genotypic characterization - background

## Strains

ESBL-producing *Salmonella* test strains

## Method

Participants were encouraged to use their own laboratory's method(s) for the testing.

(Appendix 9: References and primer-sequences)

## Expected results (identified genes)

Analysis by whole genome sequencing

## Verification of results

None



## Genotypic characterization

- Nine laboratories participated
- All participating laboratories obtained satisfying results

Test strain	Expected gene	Proportion of correct results (gene level)	Proportion of correct results (variant level)	Additional genes/variants identified
S-10.3	TEM-1	7/7 (100%)	5/5 (100%)	CTX M-4
	CTX-M-9	9/9 (100%)	7/8 (88%)	
S-10.4	TEM-1	6/6 (100%)	4/4 (100%)	
	OXA-48	9/9 (100%)	9/9 (100%)	
S-10.7	TEM-1	8/8 (100%)	6/6 (100%)	CTX M-1
	SHV-12	8/8 (100%)	6/6 (100%)	
	CTX-M-15	9/9 (100%)	7/8 (88%)	
S-10.8	TEM-52	9/9 (100%)	8/8 (100%)	



## Background Norwegian Veterinary Institute (NVI)

- ESBL:
  - 2009: Singleplex PCR (CTX, SHV, TEM)
- AmpC:
  - 2011: multiplex PCR (ACC, CMY, DHA, FOX, MOX, EBC)
  - 2014: real-time PCR *bla*CMY-2
- Carbapenemase:
  - 2015: OXA-48, VIM, IMP, NDM, KPC

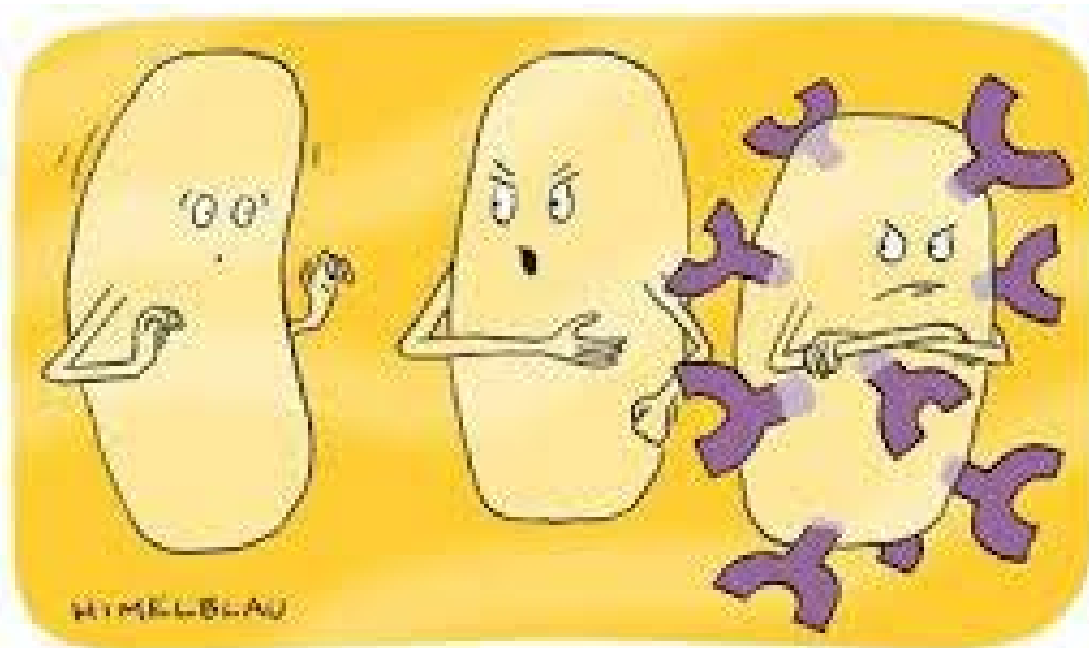
## EQAS - what's in it for the NVI?

- First reported EQAS on genotypic characterization in 2015
- No methods for genotypic characterization of carbapenemases before 2015
- Experienced great help from EURL-AR and other NRL to set up PCR and providing control strains
- Good evaluation:
  - find the genes expected
  - that our methods work

## Concluding remarks EQAS 2015 on GC

- 31 participating countries in the Salmonella EQAS all with acceptable results on reporting the ESC Salmonella
- Only 9 participated in the optional GC EQAS
- The EU focuses on GC
  - Improve lab detection and confirmation
- EQAS on GC
  - Good for implementing new methods for GC in the lab
  - Quality check on performance

Thanks for the attention!



«Don't pick it up,» I say, and he says, «It's just a *plasmid*, what harm could it do?» well just look at him now....God knows *what* protein he's expressing!