DTU Food
National Food Institute

EQAS 2014

Genotypic characterisation

EURL-AR workshop, April 23-24th, 2015

Genotypic characterisation - background

Strains

β-lactamases 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

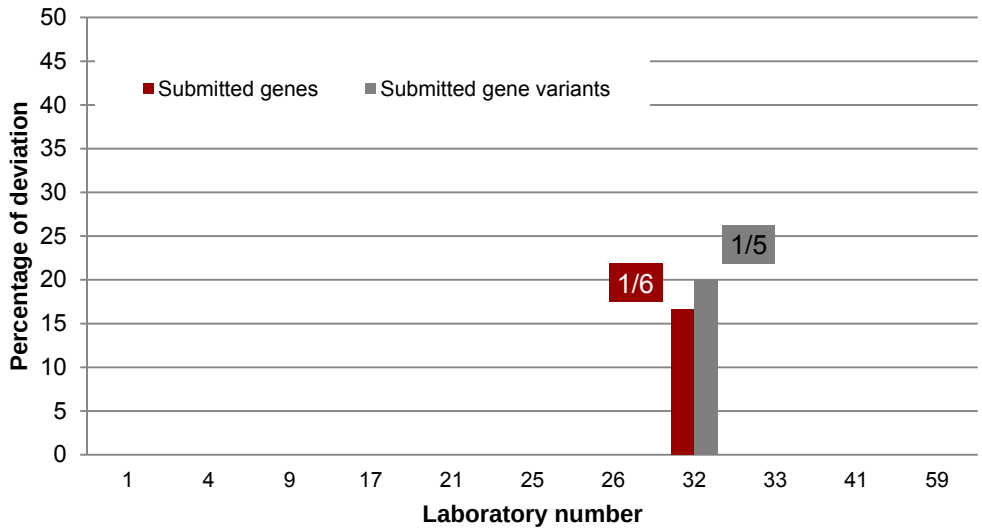
Genotypic characterisation

- Eleven 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-9.3	CMY-2	11/11 (100%)	10/10 (100%)	
S-9.4	CTX-M-9	11/11 (100%)	8/9 (89%)	CTX M-14
	TEM-1	8/8 (100%)	5/5 (100%)	
S-9.5	VIM-2	10/10 (100%)	7/7 (100%)	
	TEM-1	5/5 (100%)	3/3 (100%)	
S-9.6	OXA-48	10/10 (100%)	10/10 (100%)	VIM*

*Participant informed that this gene was not detected, but was incorrectly introduced to the database

Individual participants´ deviations



Discussion / Conclusion

- 11/32 labs took part in the genotypic characterization.
  All participating laboratories obtained satisfying results

- **TEM-1 detection**

Strain	TEM-1
S-9.4	8/8 (100%)
S-9.5	5/5 (100%)

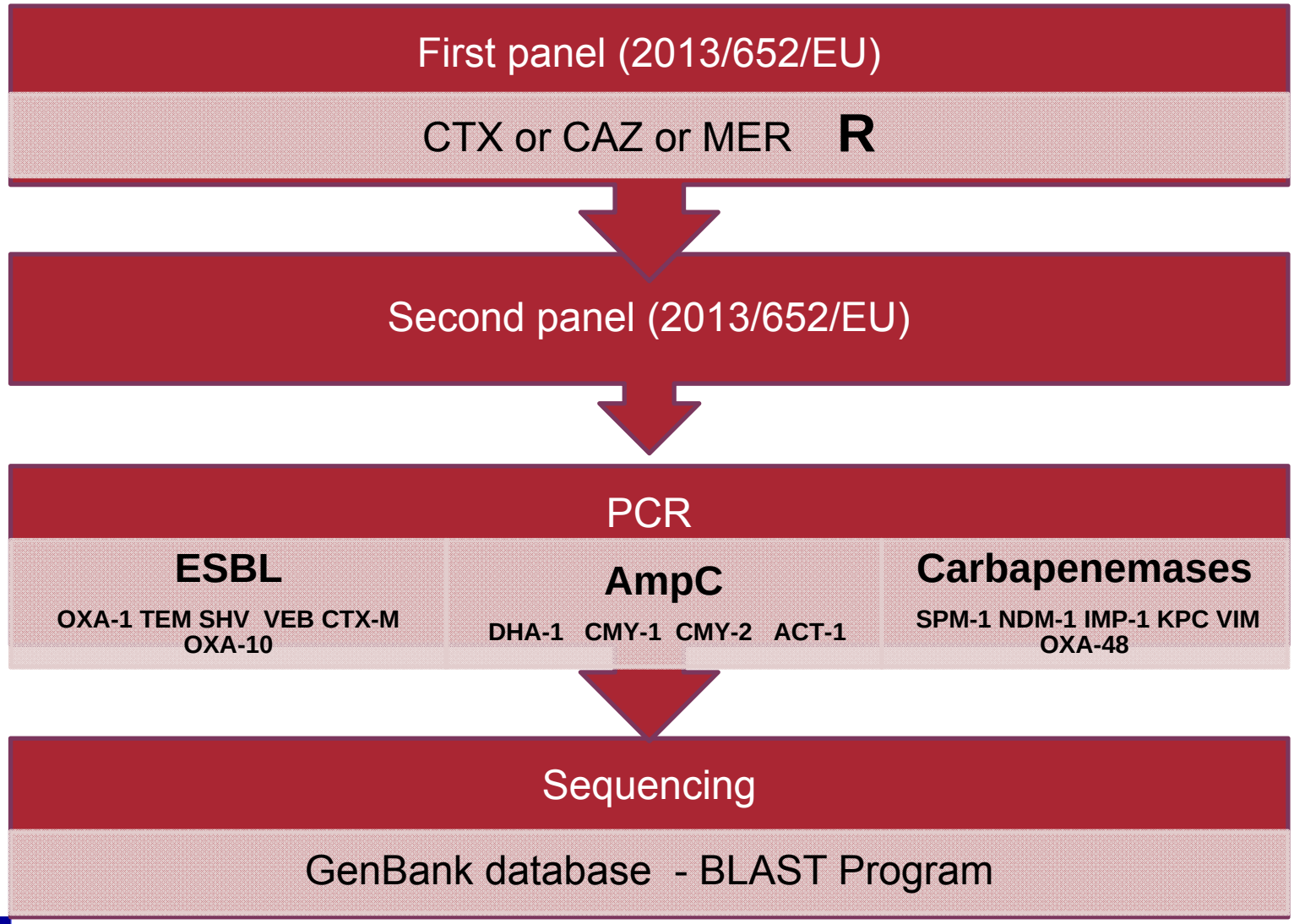
Some laboratories only inform about detected genes, not about genes tested but not detected.

Are we missing information about possible problems?

- **Carbapenemase genes :**Good performing

Strain	VIM-2	OXA-48
S-9.5	10/10 (100%)	
S-9.6		10/10 (100%)

LCV-MAGRAMA-Spain - Our method



β-lactamases genotypic characterisation at our lab background

- We began setting up the PCRs for β-lactamases genes in 2012.
- We worked with published PCR: EURL and EFSA recommendations.
- At the moment we are working only with Salmonella isolates coming from National Control Programs. Few strains

Usefulness of participating in Genotypic- EQAS

- Getting information about methods used by other labs. Help for setting up new PCRs

- Important tool for quality control of our method
  - Confirm that our PCRs detect some variants that we don´t find usually at our lab
  - Detection of some mistakes

Detection of mistakes

- 2012

	EURL expected	OUR NRL detected
S.7.2	OXA 10	OXA 30

Journal of Antimicrobial Chemotherapy (2009) 64,1181-1186

Do not detect all OXA types ¡¡

OXA10 : Voets et al.2011

- 2014

	EURL expected	OUR NRL detected
S.9.4	CTX-M-9	CTX-M-14

We restricted BLAST to *Salmonella spp*¡¡

Thank you for your attention ¡

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