

Open session of the Standing Technical and Research Committees of the EuFMD

Cavtat (Croatia), 29-31 October 2014



New competitive ELISAs for detection of non-structural or structural FMDV antibodies

Mickaël ROCHE, Fabien DONNET, Muriel MALZAC, Loïc COMTET, Philippe POURQUIER

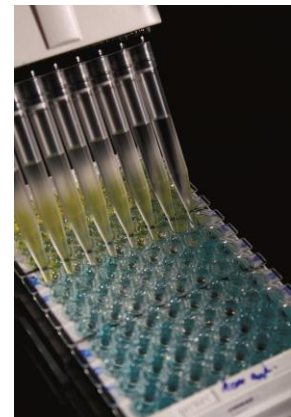


» Offer Solid Phase Competitive ELISA kits for FMDV Ab detection

- anti-NSP 3ABC Ab
- serotype specific Ab ELISAs (FMD O and FMD A)

» Objective :

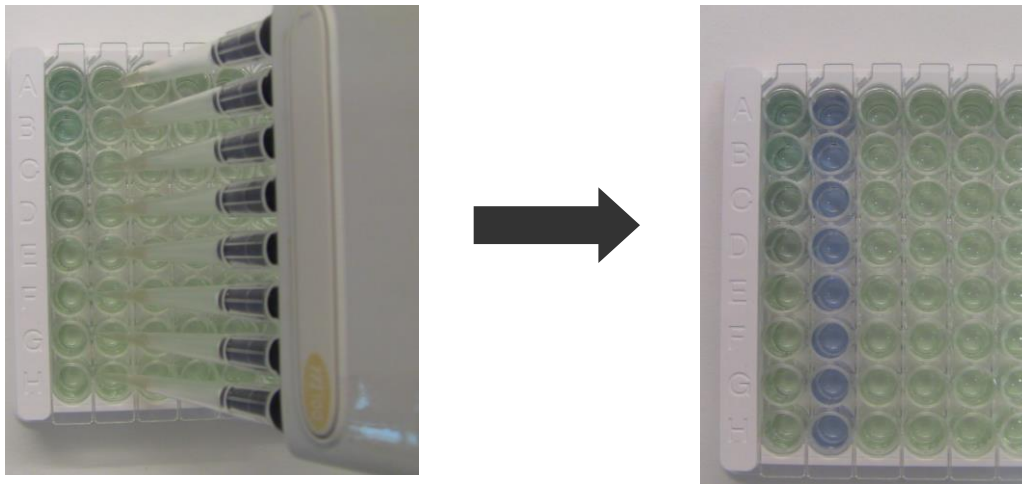
- easy
- stable
- diagnostic performance



ID Screen[®] FMDV NSP

➤ **cELISA** detects Ab to the **3ABC NSP** protein

- **coloured and ready-to-use** reagents



- **overnight / short** sample incubation protocol
/ **results in 3 hours only**

ID Screen[®] FMDV NSP

» Specificity (n=960)

► Specificity for all species was high

Species	Specificity (%) (number of samples)	CI _{95%}
Bovine	99.5 (364)	98.0–99.9
Swine	99.7 (295)	99.7-99.9
Caprine	100.0 (111)	96.9-99.9
Ovine	99.4 (400)	96.5-99.9

» Sensitivity

► The IDvet kit detects a high number of experimentally-infected animals

	Results obtained at ANSES, FRANCE		Results obtained at Pirbright, UK	
	ID Screen [®] FMD NSP		ID Screen [®] FMD NSP	
	cutoff 50% night incub	cutoff 50% short incub	cutoff 50% night incub	cutoff 50% short incub
detected /total	35/36	34/36	33/36*	32/36**

* ** sera closed to the cut-off

ID Screen[®] FMDV type O and type A

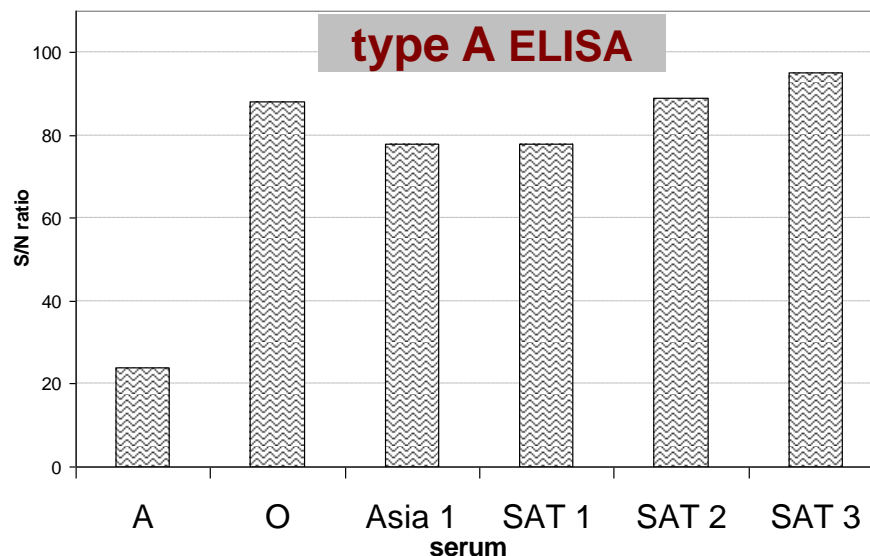
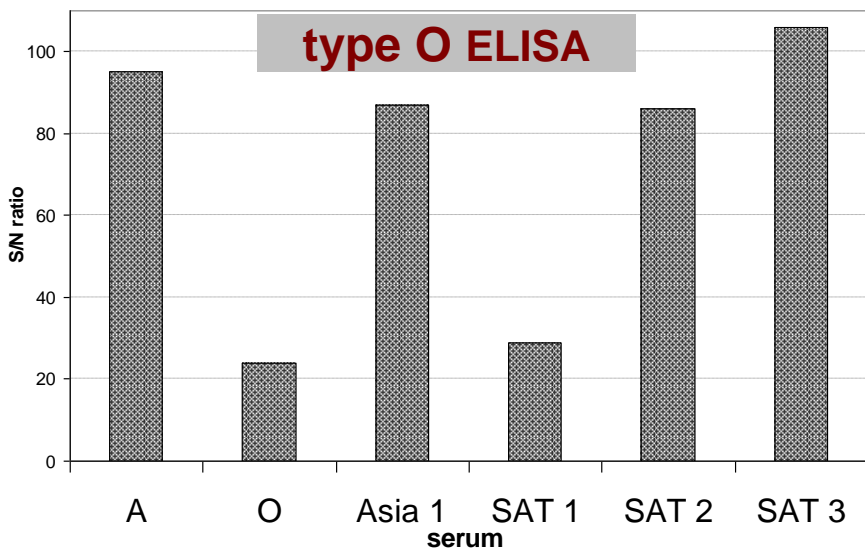
Specificity

(n=1120 & 640)

▶ Excellent specificity

Species	FMD type O		FMD type A	
	Specificity (%) (number of samples)	CI _{95%}	Specificity (%) (number of samples)	CI _{95%}
Bovine	100 (248)	98.5–100	100 (208)	98.2-100
Swine	100 (400)	99.1-100	100 (216)	98.3-100
Caprine	99.6 (263)	97.9-99.9	100 (88)	95.9-100
Ovine	99.1 (210)	96.6-99.7	100 (128)	95.9-100

Exclusivity IAEA reference sera



▶ All sera correctly identified. Cross-reactions with other serotypes may occur

Conclusions

3 new cELISA for FMD diagnosis

- anti-NSP 3ABC
- anti-serotype specific ELISA (FMD O and FMD A)



Objective :

- easy
 - ✓ ready-to-use (no freeze-dried reagents)
 - ✓ shorter incubation time
 - ✓ use of a single protocol for serotype ELISAs
- stable
 - ✓ 18 months shelf-life
- diagnostic performance
 - ✓ validated / ongoing

Thank you for your attention !



Acknowledgements:

S. Zientara, L. Bakkali Kassimi, S. Blaise-Boisseau
Relmy - **ANSES**, FR

S. Parida & colleagues - **Pirbright Institute**, UK

E. Brocchi - **IZS**, IT

K. de Clercq - **CODA-CERVA**, BE

P. Hudelet, P. Dubourget – **MERIAL**, FR



ID.vet
Innovative Diagnostics

With you at every step

