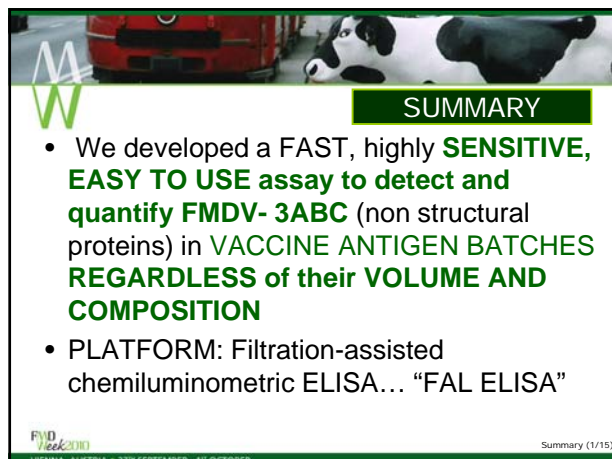




Filtration-Assisted Chemi-Luminometric Immunoassay "FAL-ELISA" to Quantify Foot and Mouth Disease virus (FMDV) Non Capsid Proteins in Vaccine Antigen Batches

Alejandra Capozzo
ICT MILSTEIN, CONICET, ARGENTINA

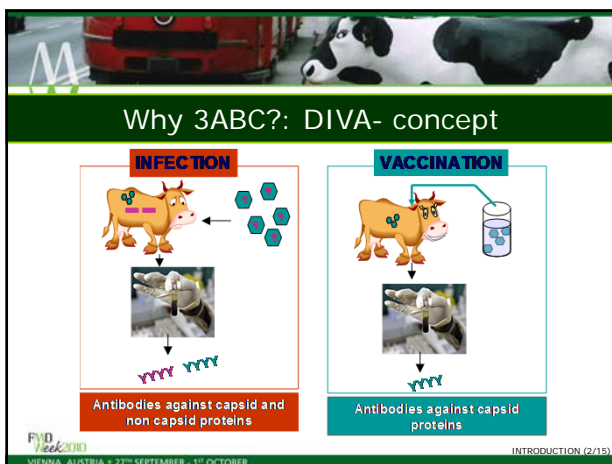
VIENNA, AUSTRIA • 27th SEPTEMBER - 1st OCTOBER



SUMMARY

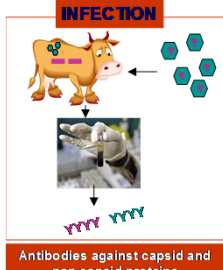
- We developed a FAST, highly **SENSITIVE**, **EASY TO USE** assay to **detect and quantify FMDV- 3ABC** (non structural proteins) in **VACCINE ANTIGEN BATCHES REGARDLESS of their VOLUME AND COMPOSITION**
- PLATFORM: Filtration-assisted chemiluminometric ELISA... "FAL ELISA"

Summary (1/15)



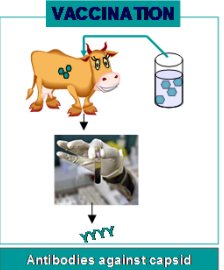
Why 3ABC?: DIVA- concept

INFECTION



Antibodies against capsid and non capsid proteins

VACCINATION



Antibodies against capsid proteins

INTRODUCTION (2/15)



FMD - VACCINATION AND CONTROL

VACCINATED vs INFECTED ANIMALS

REQUIREMENT DIVA 3ABC FREE VACCINES

- PURITY IN TERMS OF NCP IS ACTUALLY ASSESSED *IN VIVO* (OIE):**
 - NAIVE CATTLE** ARE VACCINATED THREE TIMES DOUBLE DOSE OF THE VACCINE TO BE EVALUATED
 - SEROLOGY** IS PERFORMED AT REGULAR INTERVALS (up to 90 dpv)

INTRODUCTION (3/15)



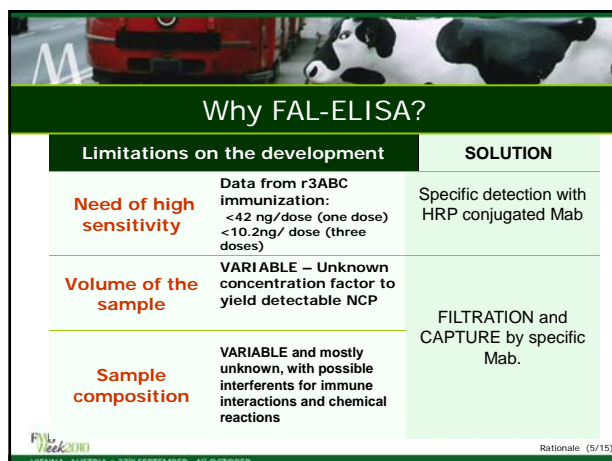
SPECIFIC OBJECTIVE

Develop an alternative *in vitro* test for evaluation of purity in FMD vaccine antigen batches

GENERAL OBJECTIVE

Reduce the use of animals for the evaluation of biological products, the 3 Rs concept of Russell and Burch (1959)

OBJECTIVES (4/15)



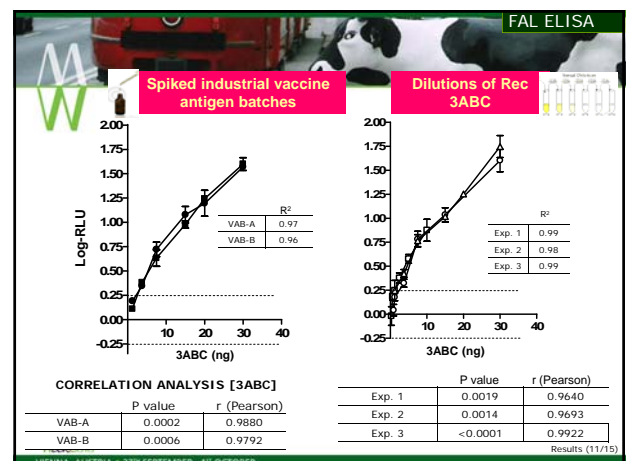
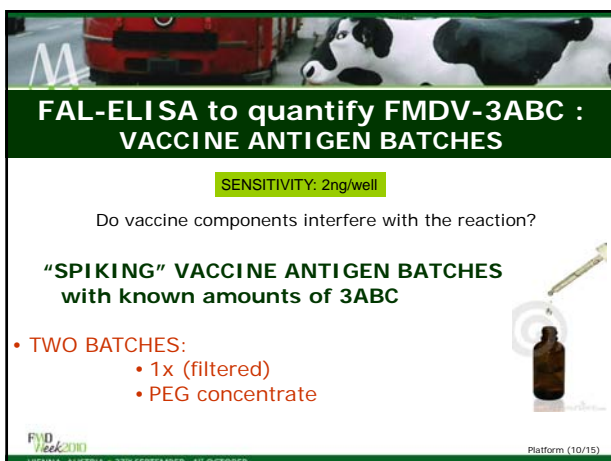
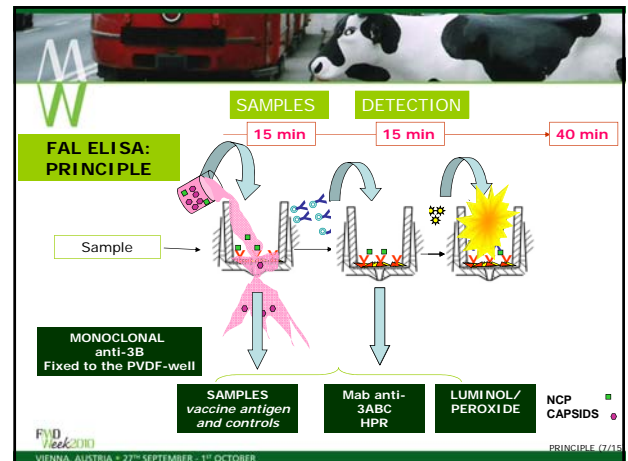
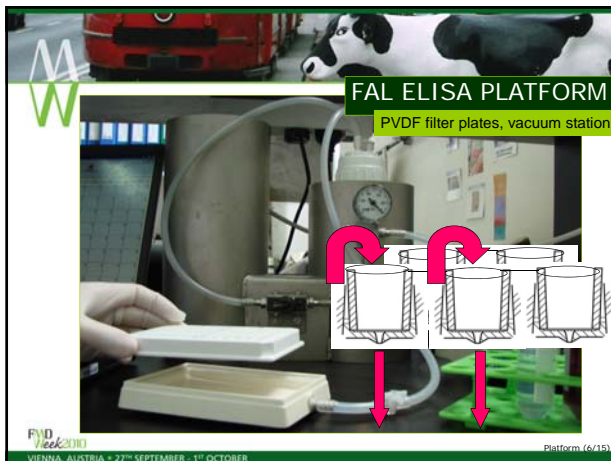
Why FAL-ELISA?

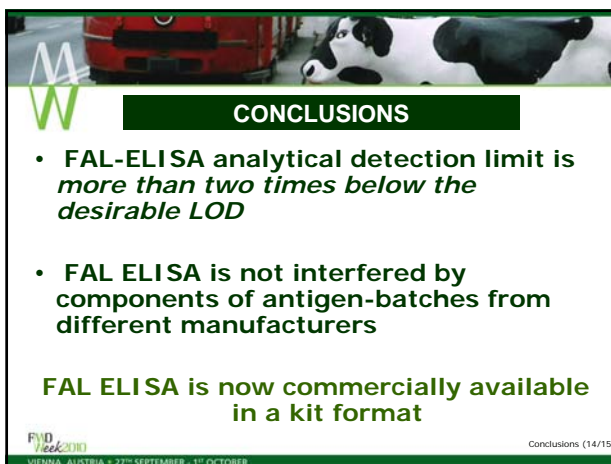
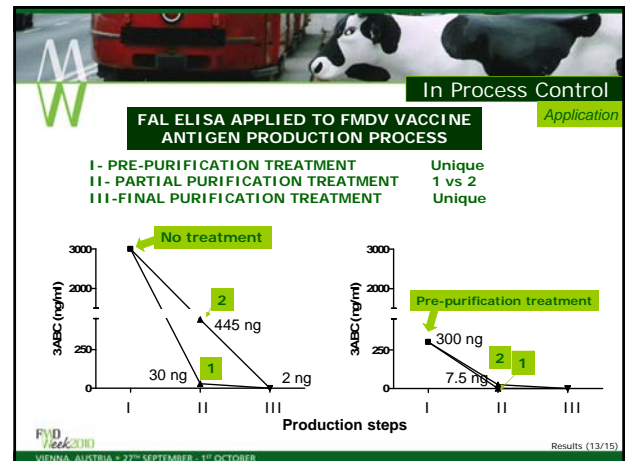
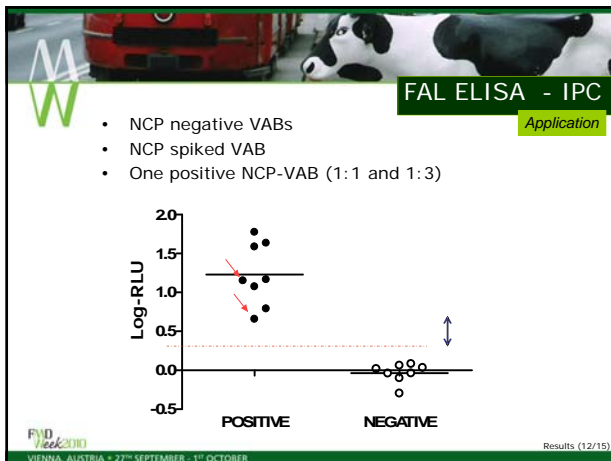
Limitations on the development	SOLUTION
Need of high sensitivity	Data from r3ABC immunization: <42 ng/dose (one dose) <10.2ng/ dose (three doses)
Volume of the sample	VARIABLE – Unknown concentration factor to yield detectable NCP
Sample composition	VARIABLE and mostly unknown, with possible interferents for immune interactions and chemical reactions
	Specific detection with HRP conjugated Mab
	FILTRATION and CAPTURE by specific Mab.

Rationale (5/15)

"New tools and challenges for progressive control"

Open Session of the EuFMD Research Group, Vienna (Austria) 29 September - 1 October 2010





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