

Efficacy and Cross-Reactivity Tests of FMDV Lineages Circulating in Asia Against Bovine and Swine Serum of Animals Vaccinated with Vaccines Strains from EURO-SA Topotype

Juver Membrebe – Asia Technical Manager



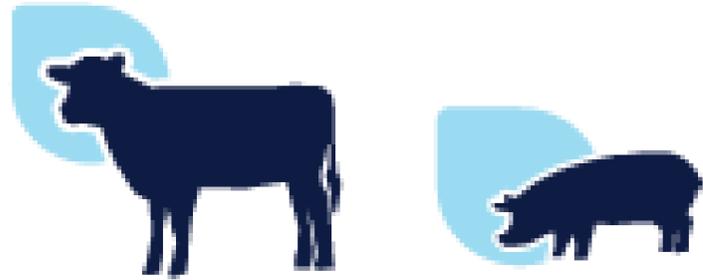
**Biogénesis
Bagó**



Key aspects for a successful control of FMD by vaccination

- Veterinary service: robust and efficient
- Vaccine and antigen banks
- Commitment of farmers association
- Support of scientific community
- *Availability of high-quality vaccine with broad cross-protection and long duration of immunity*

Study design



O1 Campos
A24 Cruzeiro
A2001 Argentina



VNT titer and r1 value

O SEROTYPE

TOPOTYPE ME-SA LINEAGE IND-2001d

O/SKR/1/2017

O/VIT/9/2017

TOPOTYPE SEA LINEAGE MYA-98

O/SKR/84/YDM

O/VIT/1/2017

O/VIT/5/2017

TOPOTYPE ME-SA LINEAGE PANASIA

O/VIT/1/2018

O/VIT/2/2017

TOPOTYPE AND LINEAGE CATHAY

O/VIT/26/2017

A SEROTYPE

TOPOTYPE ASIA LINEAGE SEA-97

A/SKR/2/2010

A/SKR/3/2017

A/SKR/4/2018

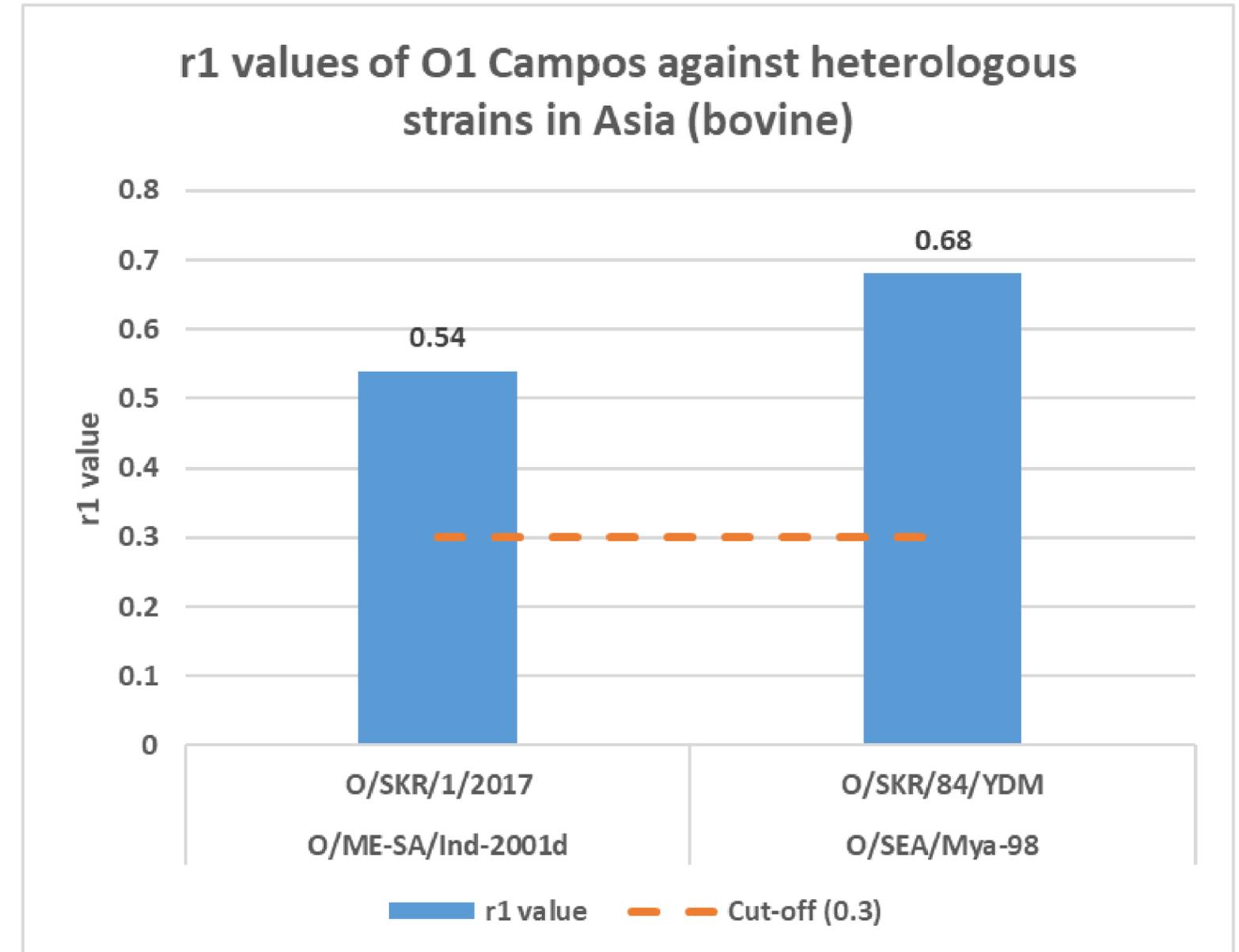
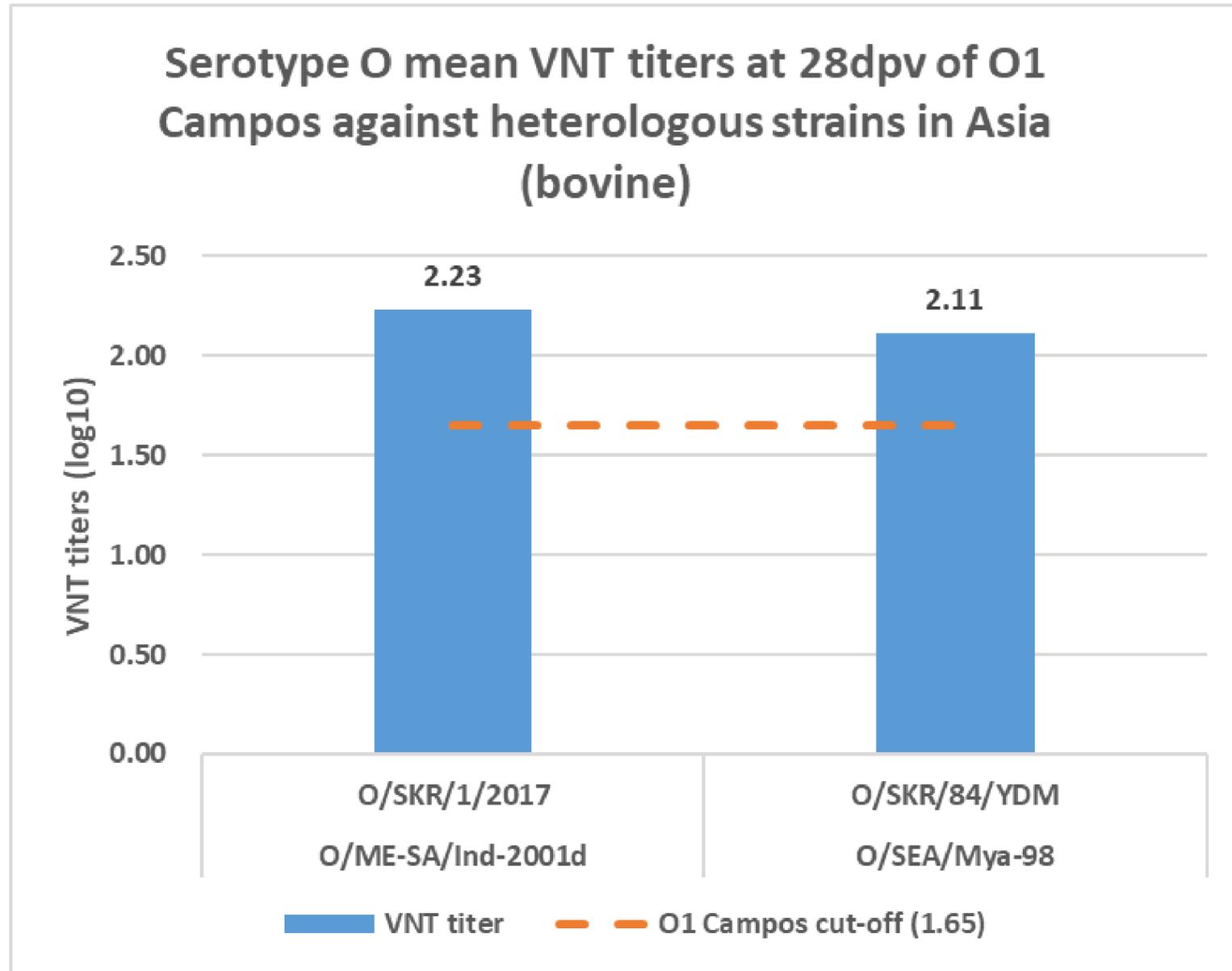
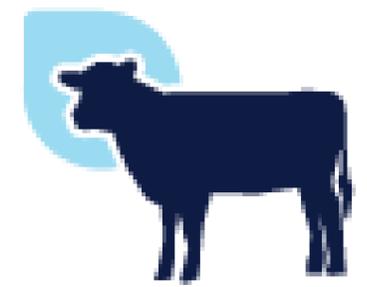
A/VIT/3/2015

A/VIT/11/2017

TOPOTYPE ASIA LINEAGE G-VII

A/IRN/22/2015

VNT titer and r1 value of O1 Campos against threats in Asia



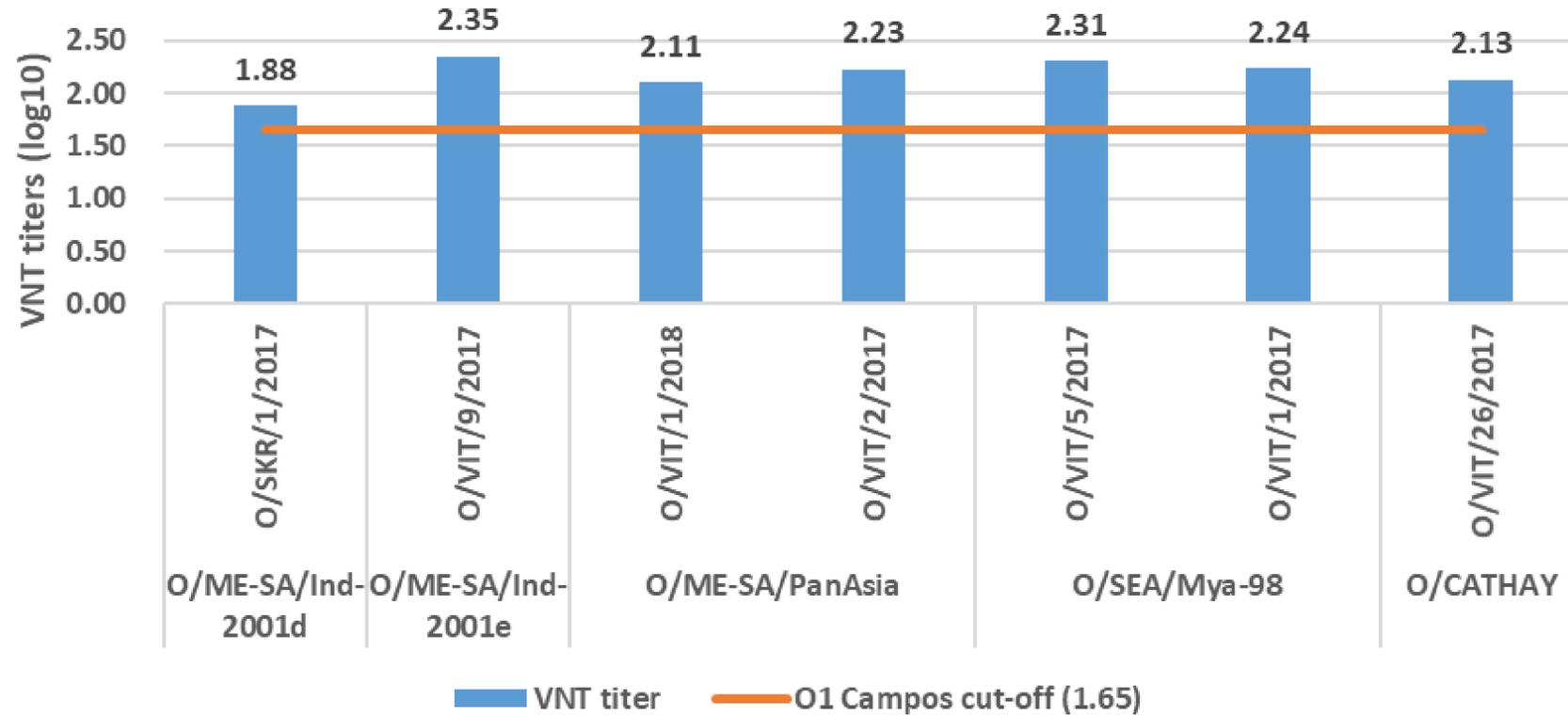
Protective cut-off of 1.65 is correlated to 75% EPP

The evolution of animal health

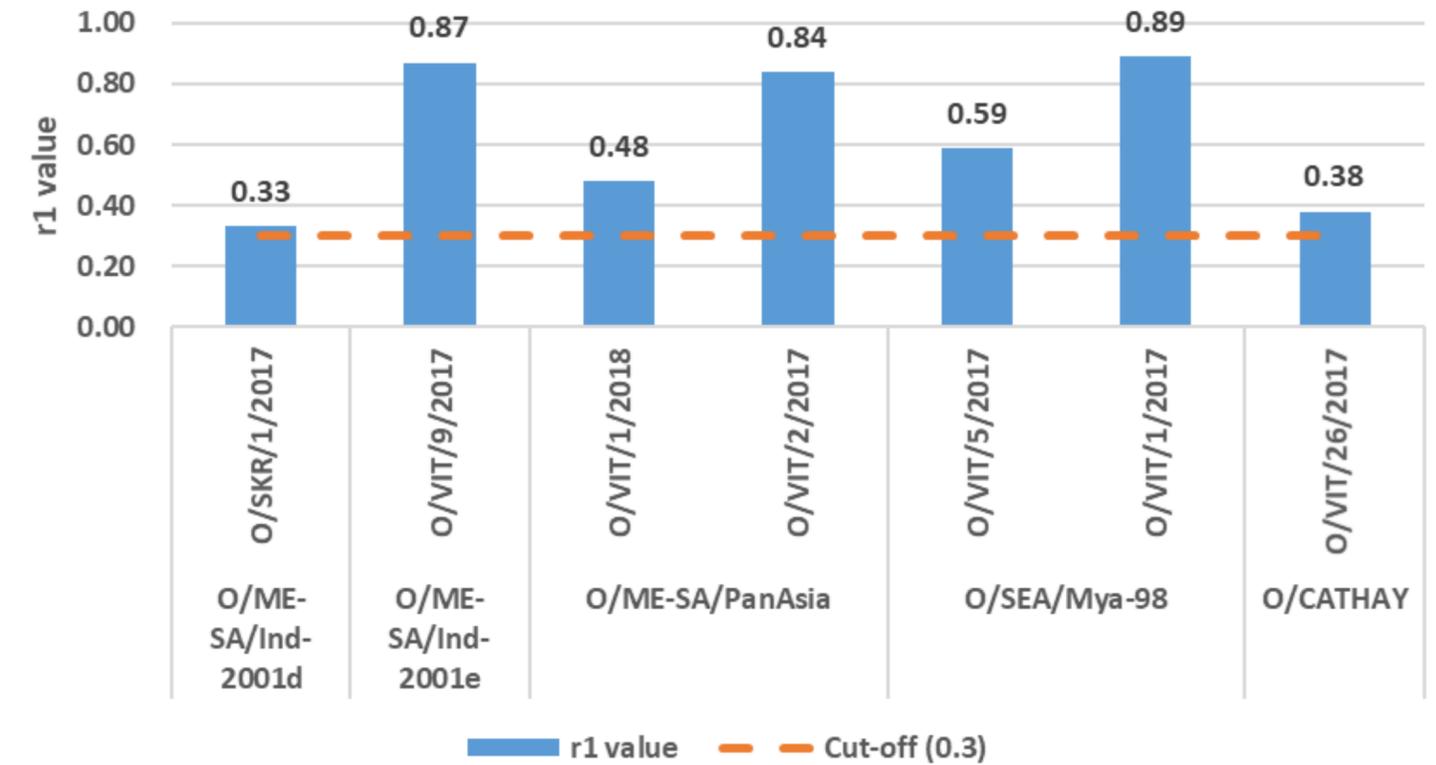
VNT titer and r1 value of O1 Campos against threats in Asia



Serotype O VNT titers at 21dpv of O1 Campos against heterologous strains in Asia (swine)



r1 values of O1 Campos against heterologous strains in Asia (swine)



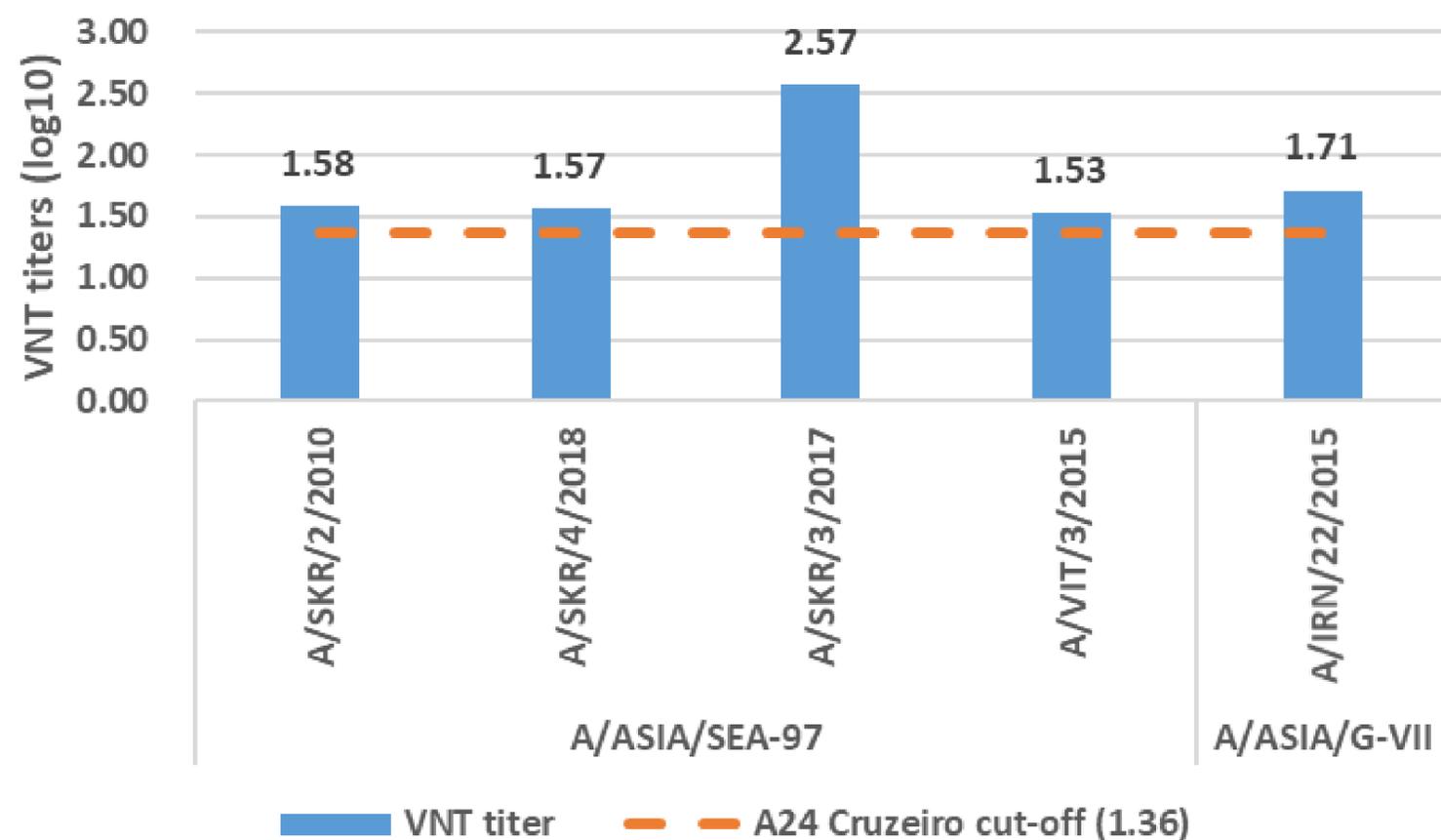
Protective cut-off of 1.65 is correlated to 75% EPP

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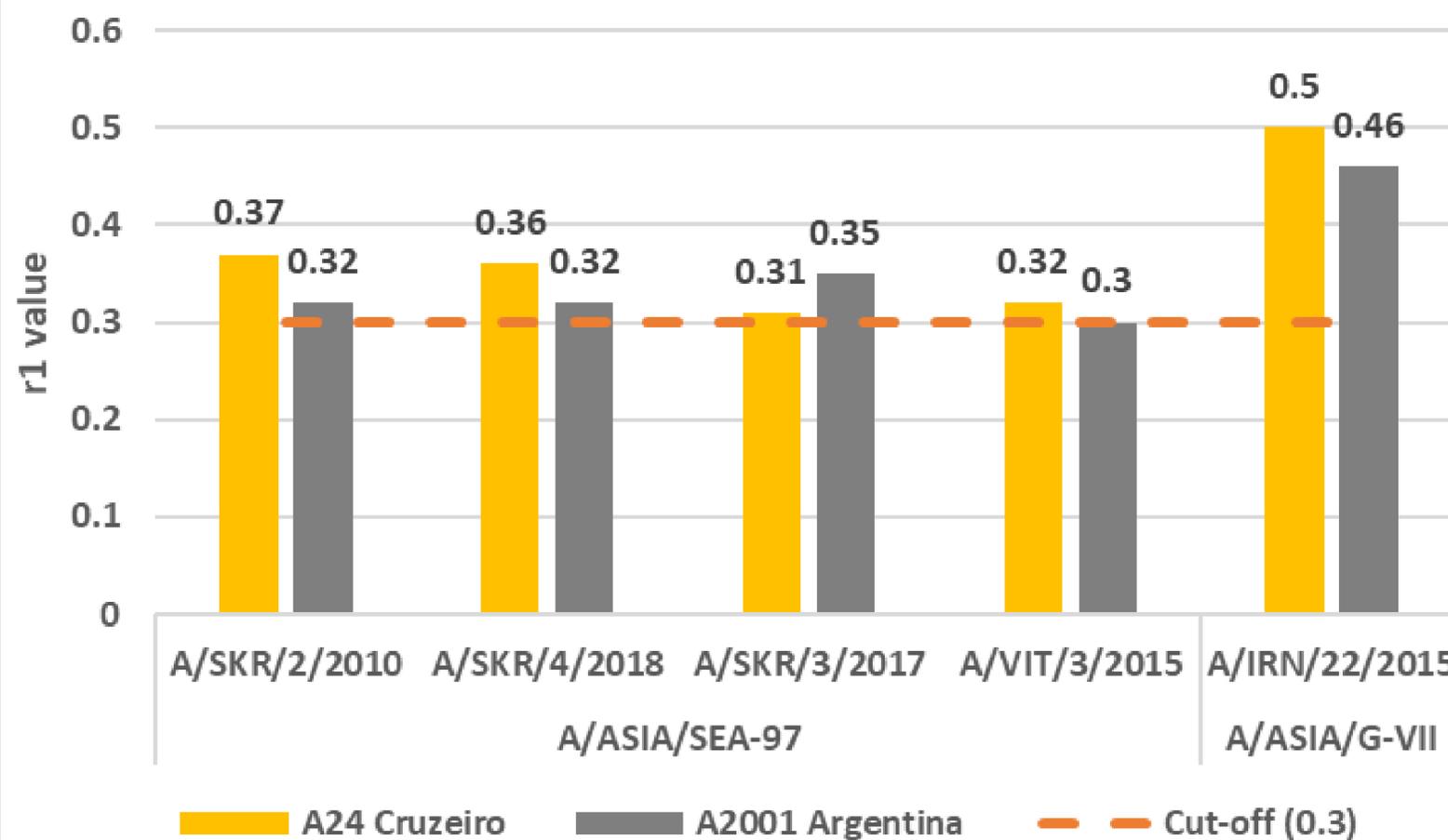
VNT titer and r1 value of A24 Cruzeiro and A2001 Argentina against threats in Asia



Serotype A mean VNT titers at 30dpv of A24 Cruzeiro and A2001 Argentina against heterologous strains in Asia (bovine)



r1 values of A24 Cruzeiro and A2001 Argentina against heterologous strains in Asia (bovine)



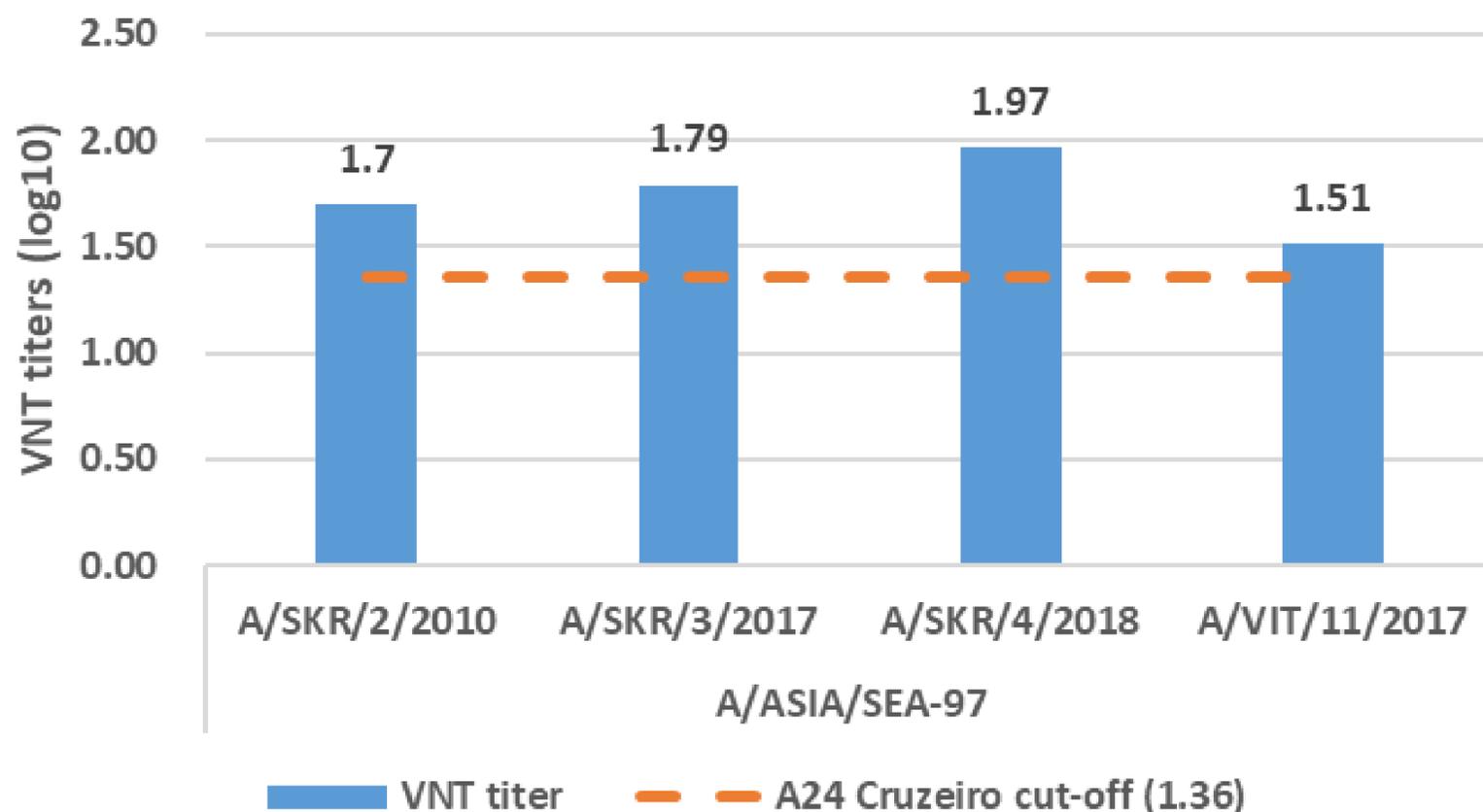
Protective cut-off of 1.36 (A24 Cruzeiro) and 1.43 (A2001 Argentina) are correlated to 75% EPP

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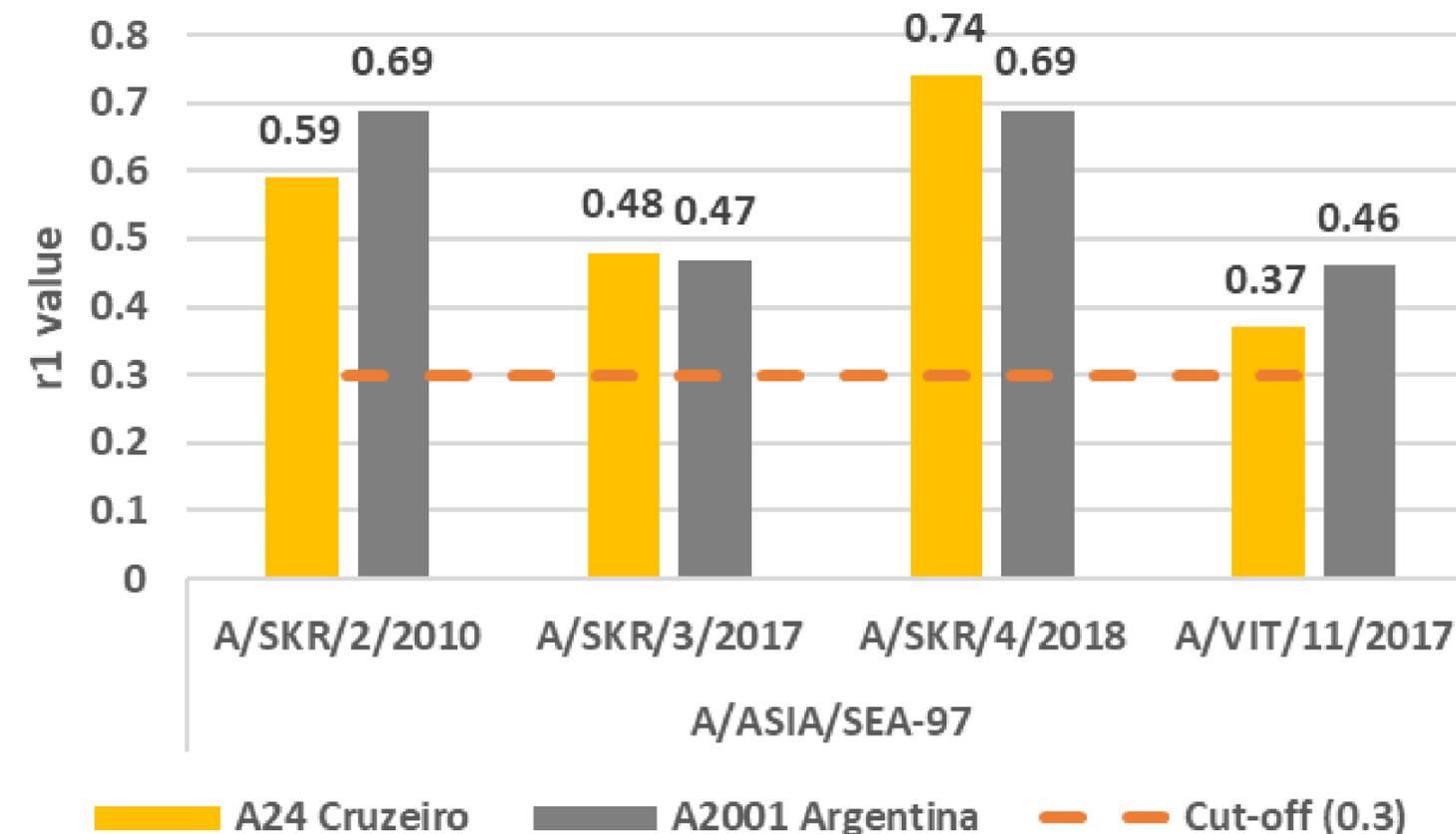
VNT titer and r1 value of A24 Cruzeiro and A2001 Argentina against threats in Asia



Serotype A VNT titers at 28dpv of A24 Cruzeiro and A2001 Argentina against heterologous strains in Asia (swine)



r1 values of A24 Cruzeiro and A2001 Argentina against heterologous strains in Asia (swine)



Protective cut-off of 1.36 (A24 Cruzeiro) and 1.43 (A2001 Argentina) are correlated to 75% EPP

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Conclusions

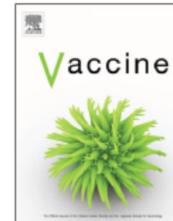
Previous in vivo and in vitro studies reported **O1 Campos and its broad cross-protection** results against isolates from Asia



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Short communication

Antigenic and immunogenic spectrum of foot-and-mouth disease vaccine strain O₁ Campos against representative viruses of topotypes that circulated in Asia over the past decade

S. Galdo Novo^a, V. Malirat^{b,*}, E.D. Maradei^a, A.M. Espinoza^c, E. Smitsaart^c, A.R. Pedemonte^a, N. Mattion^b, I.E. Bergmann^{b,*}



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Efficacy of a high quality O₁/Campos foot-and-mouth disease vaccine upon challenge with a heterologous Korean O Mya98 lineage virus in pigs

S. Galdo Novo^a, V. Malirat^{b,*}, E.D. Maradei^a, A.R. Pedemonte^a, A.M. Espinoza^c, E. Smitsaart^c, K.N. Lee^d, I.H. Park^d, I.E. Bergmann^{b,*}



Conclusions

Constant cross protection studies.
VNT and ELISA cut-off for **O1**
Campos, A24 Cruzeiro, and A2001
Argentina = 75% EPP
Reducing in vivo challenge studies



Updating of the correlation between IpELISA titers and protection from virus challenge for the assessment of the potency of polyvalent aphtovirus vaccines in Argentina

Eduardo Maradei^{b,1}, José La Torre^{a,1}, Blanca Robiolo^a, Jorge Esteves^b, Cristina Seki^a, Andrea Pedemonte^b, Marcela Iglesias^a, Ricardo D'Aloia^b, Nora Mattion^{a,*}

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O1 Campos
A24 Cruzeiro
A2001 Argentina



- O/ME-SA/Ind-2001**
- O/ME-SA/PanAsia**
- O/SEA/Mya-98**
- O/Cathay**
- O/ME-SA/PanAsia-2**
- O/EA**
- A/ASIA/Iran-05**
- A/ASIA/Sea-97**
- A/ASIA/G-VII**
- A/AFRICA/G-IV**

Closing statement

Vaccine strains (independent of the origin) that can prevent circulating strains and potential threats is essential for contingency plans

O1 Campos, A24 Cruzeiro, and A2001 Argentina vaccine strains can confer protection against relevant FMDV isolates circulating in SE and SEA



Muchas gracias
Thank you
Muito obrigado
谢谢
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About the speaker

2007: Graduated from College of Veterinary Medicine, University of the Philippines Los Baños (UPLB) Philippines, Specialization in diagnostics

2007-2009: Farm veterinarian at Robina Farms; Rizal, Philippines

2009-2010: Research Assistant at Clinical Vaccine R&D Center; Hwasun S. Korea

2010-2018: Global Technical Service and Regulatory Affairs Manager at Choong Ang Vaccine Laboratories; Daejeon S. Korea

2013-2015: Completed Masters in Chemical and Biomolecular Engineering in Korea Advanced Institute of Science and Technology (KAIST) in Daejeon S. Korea; Specialization in FMD Vaccine Delivery and Streptococcal vaccine

2018-present: Asia Technical Service and Regulatory Affairs Manager at Biogenesis Bago; Shanghai, PRC