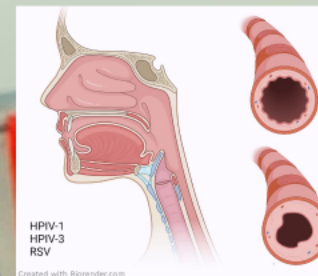


Nye virusinfektioner i Grise-Danmark

Human laryngotracheitis - falsk
strubehoste



"ukendte"
respiratoriske
grise vira

PRV-1 - Porcine Respirivirus 1
SOV - Swine Orthopneumovirus



Relevante
mikrober

Traditionel: Kochs postulat
- Sygdom, isolering, sygdomsinduktion og re-isolering
Moderne: Fund af arvemateriale (RNA/DNA)
- Mikrobieltidsskrift, isolering, induktion og sygdomsbehandling



Relevante mikrober

Traditionel: Kochs postulater

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Moderne: Fund af arvemateriale (RNA/DNA)

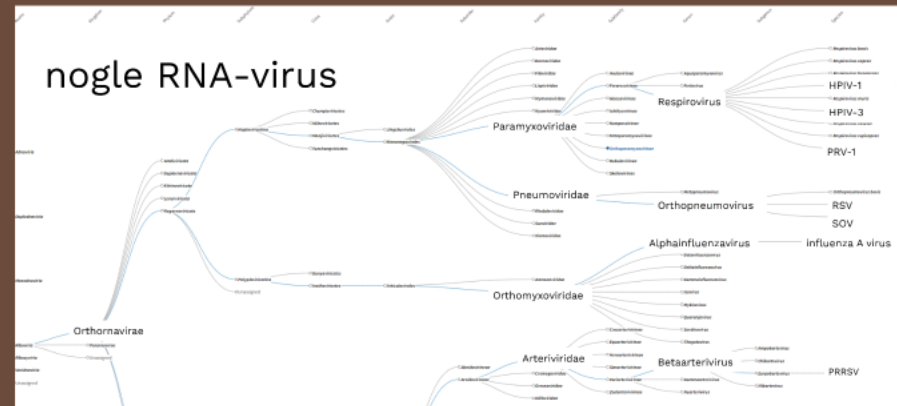
- Mikrobetilstedeværelse, isolering, induktion og sygdomstegn?



"ukendte" respiratoriske grise vira

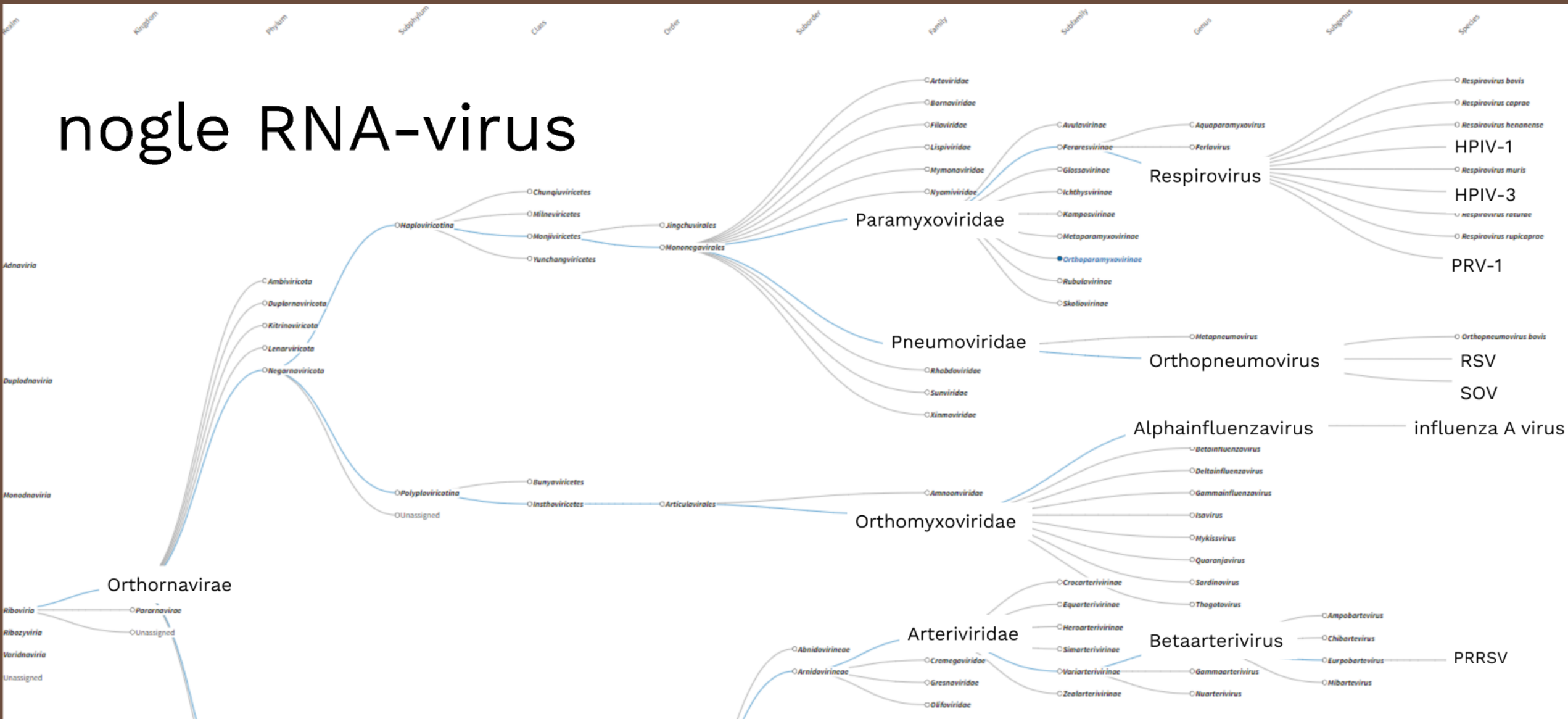
PRV-1 - Porcine Respirovirus 1

SOV - Swine Orthopneumovirus

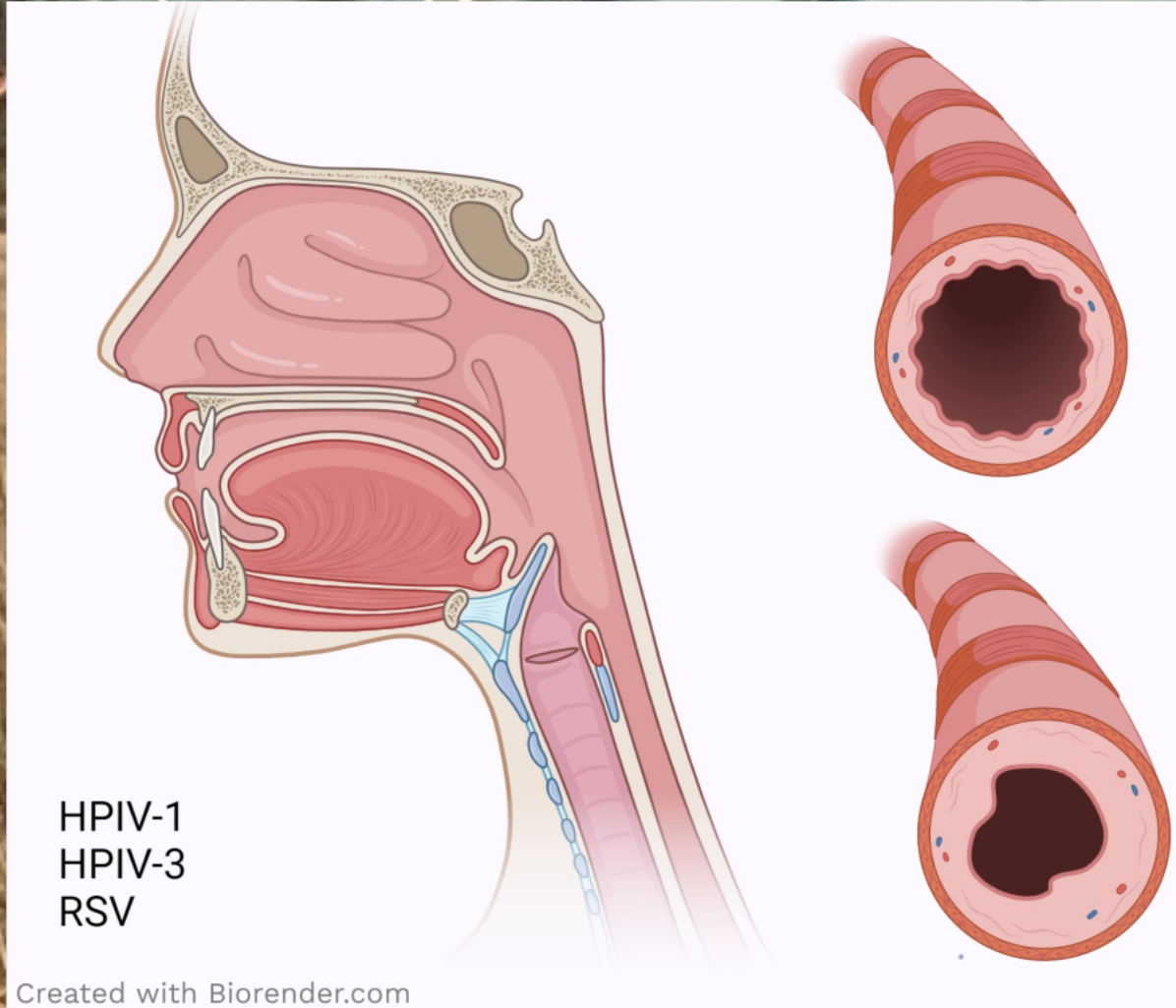


Modificeret fra www.ictv.global/taxonomy

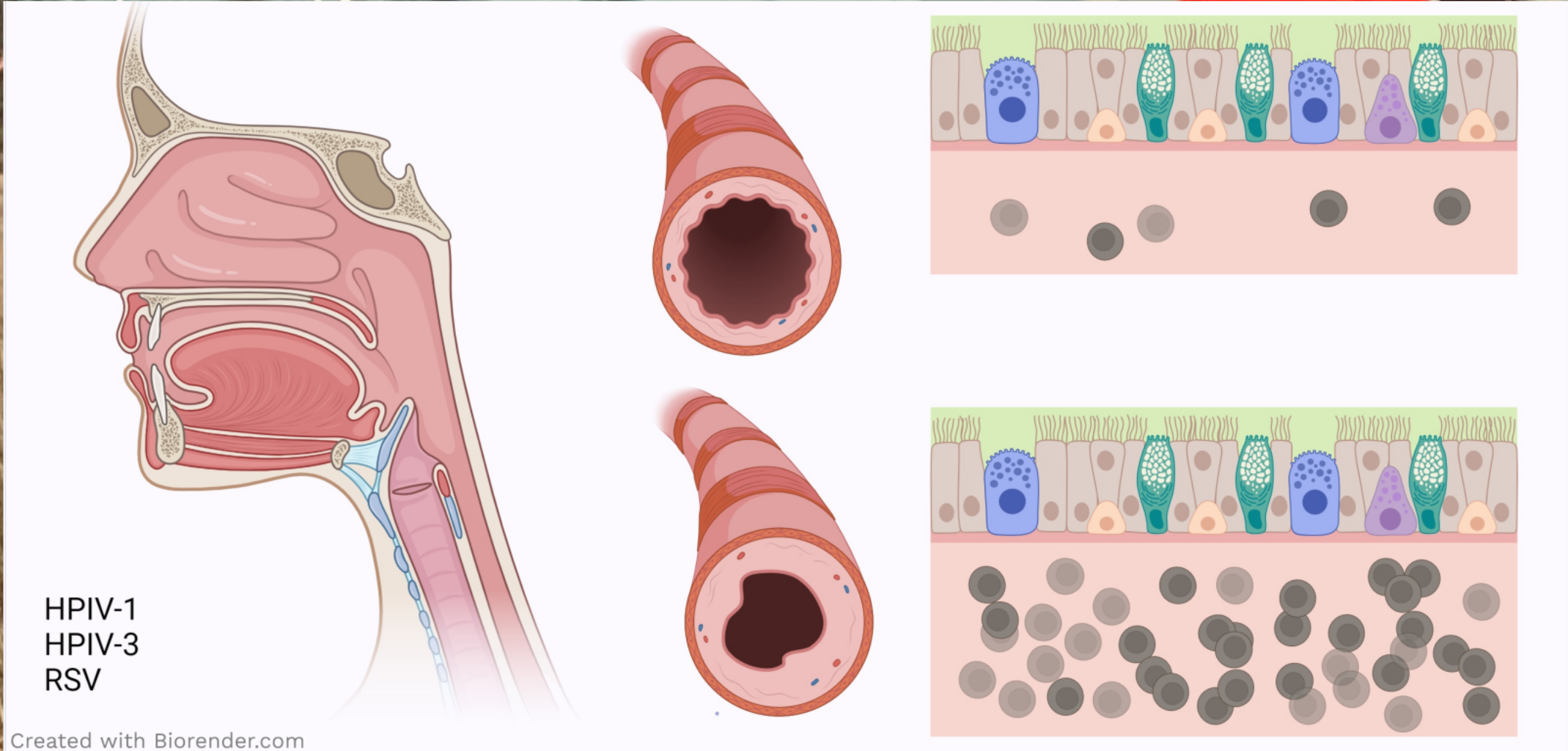
nogle RNA-virus



Human laryngotracheitis - falsk strubehoste



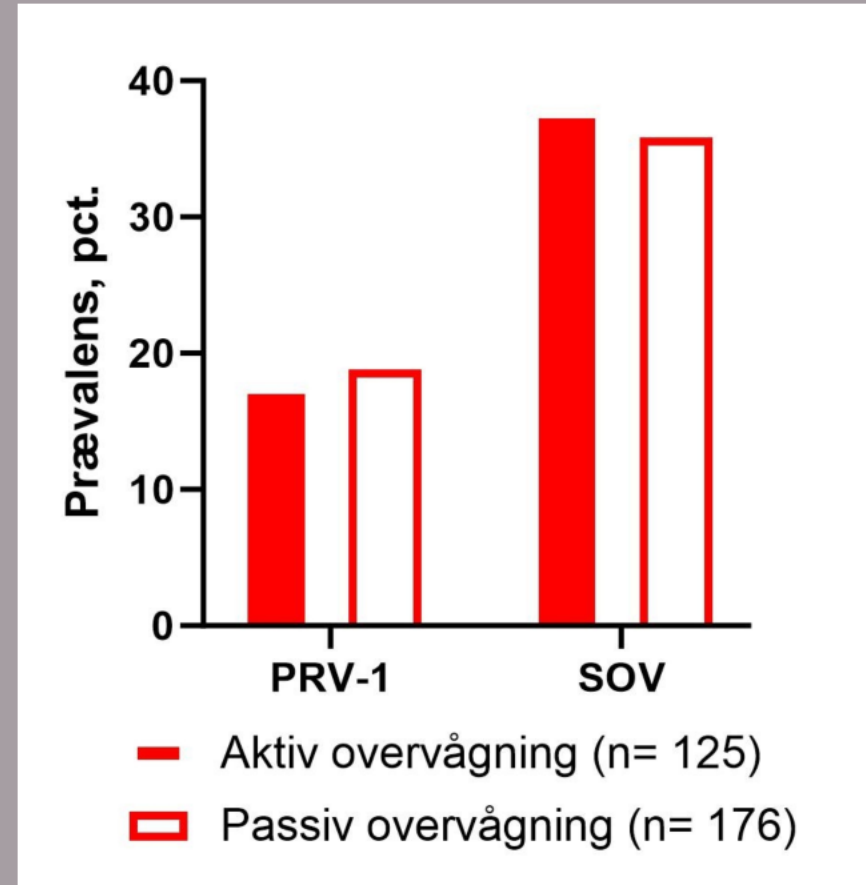
Human laryngotracheitis - falsk strubehoste



An illustration of a person wearing a white protective suit and large blue goggles. The person's face is obscured by the goggles. Several orange, spiky virus particles are floating around the person. A dark brown banner is positioned across the lower part of the image, containing the text 'Εpidemiologische studier' in white.

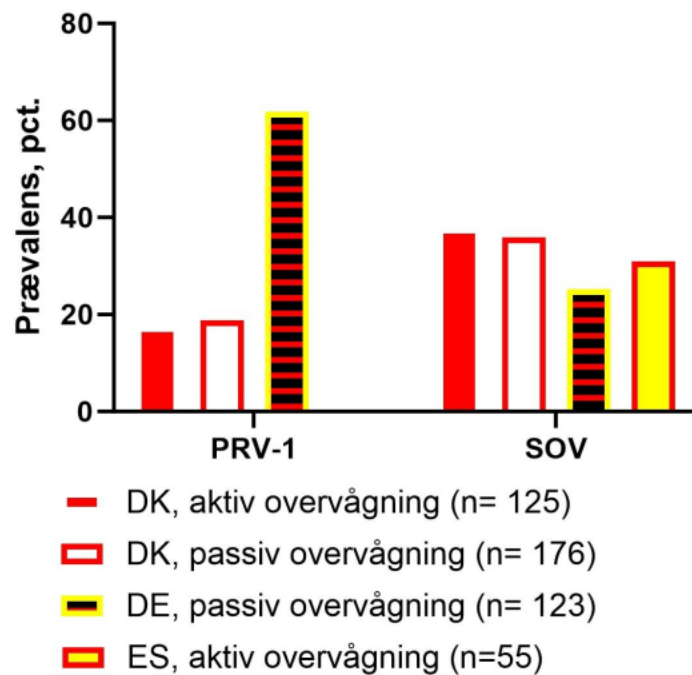
Εpidemiologische studier

Detektion af PRV-1 og SOV i Danmark



Modificerea fra Bedsted et al., (manuskript under udarbejdning)

Tyskland og Spanien



Modificeret fra:
Graaf-Rau et al., 2023, <https://doi.org/10.1080/22221751.2023.2239938>
Wozniak et al., 2022, 8. <https://doi.org/10.3390/v14010148>



Collaborating Veterinary Laboratories "CoVetLab"

– joint research

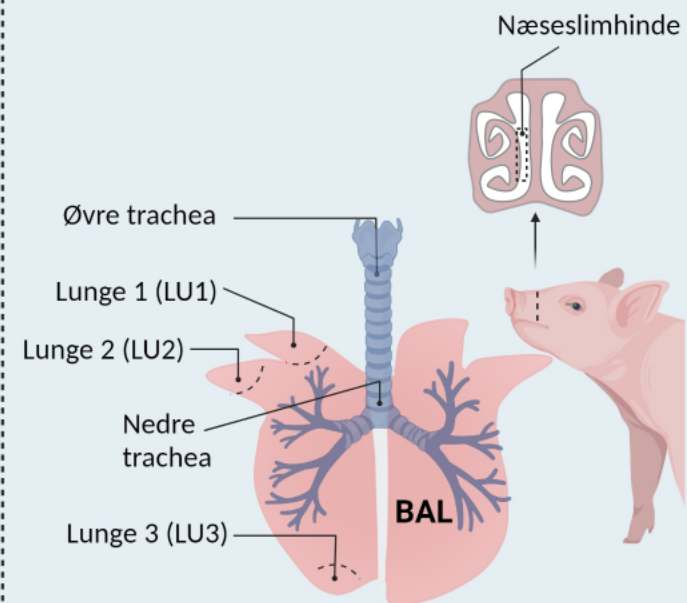
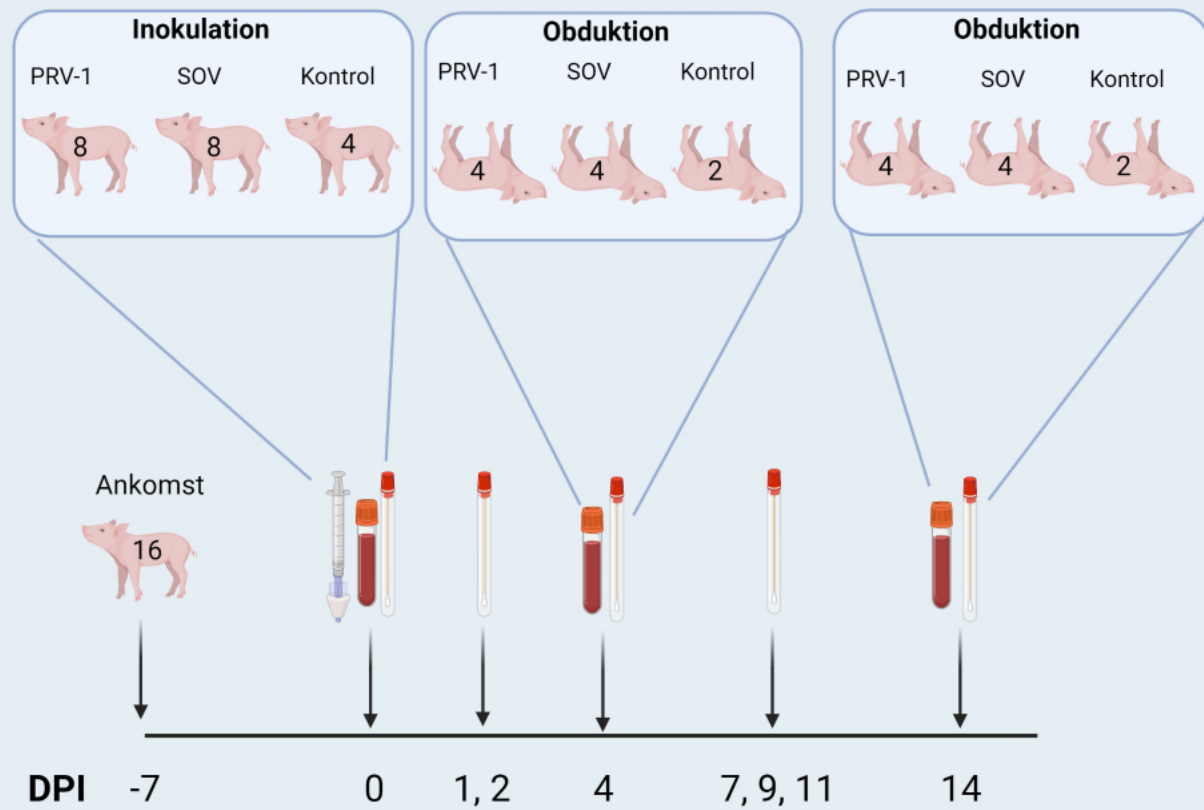
UCPH, SSI, ANSES, SVA, APHA, WUR + FLI and UAB

Diagnosis, epidemiology and clinical impact of porcine parainfluenza virus 1 (PRV-1) in Europe (PorParEU)



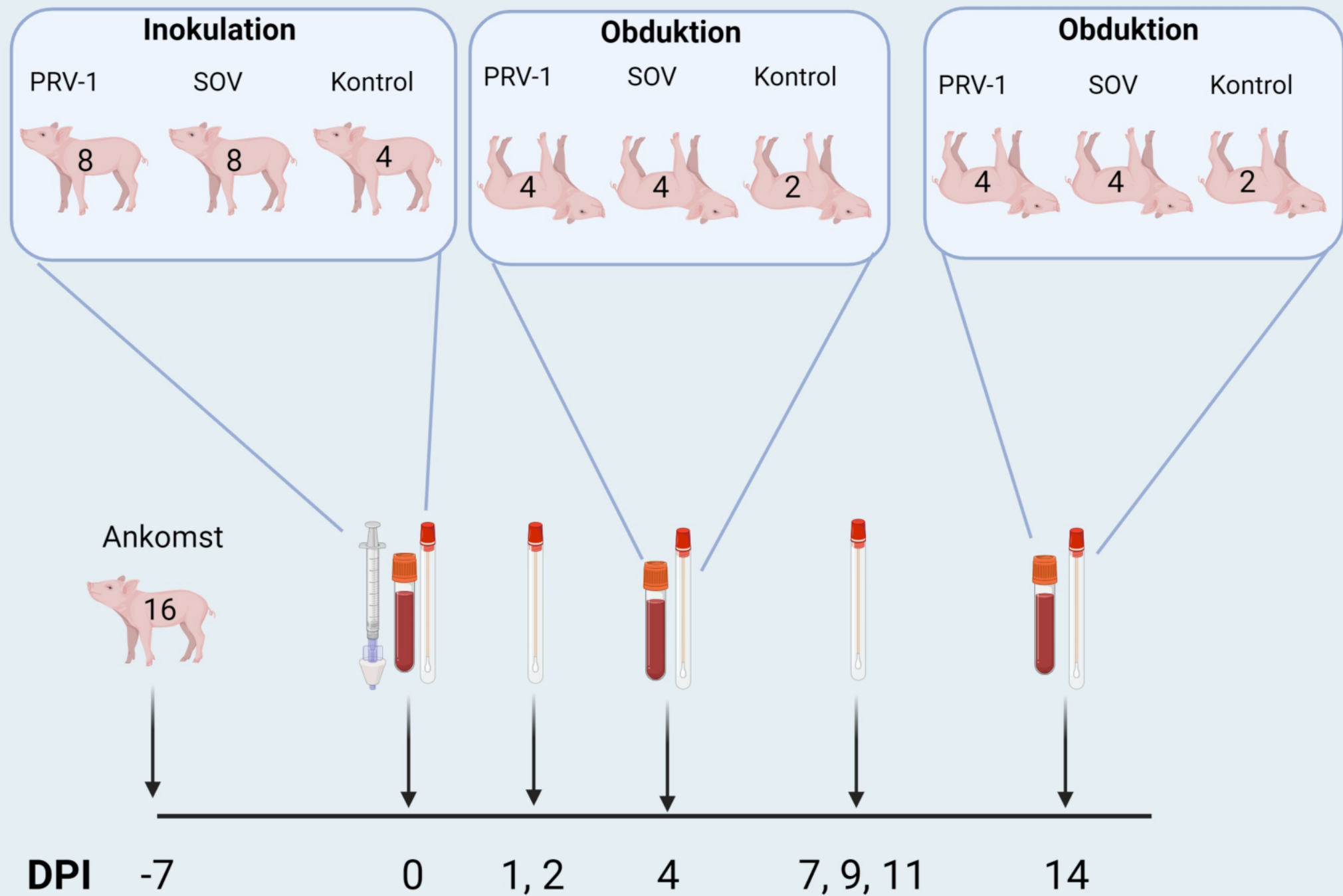
Mål

- (1. Bestem **tilstedeværelsen** af PRV-1 i partnerlandene)
- (2. Definer de **aldersgrupper**, der er klinisk påvirket af virussen)
- (3. Beskriv den **genetiske mangfoldighed** af PRV-1-stammer, der cirkulerer i Europa)
4. Forbind tilstedeværelsen af PRV-1 til specifikke **kliniske og patologiske manifestationer** og/eller tilstedeværelsen af andre respiratoriske patogener

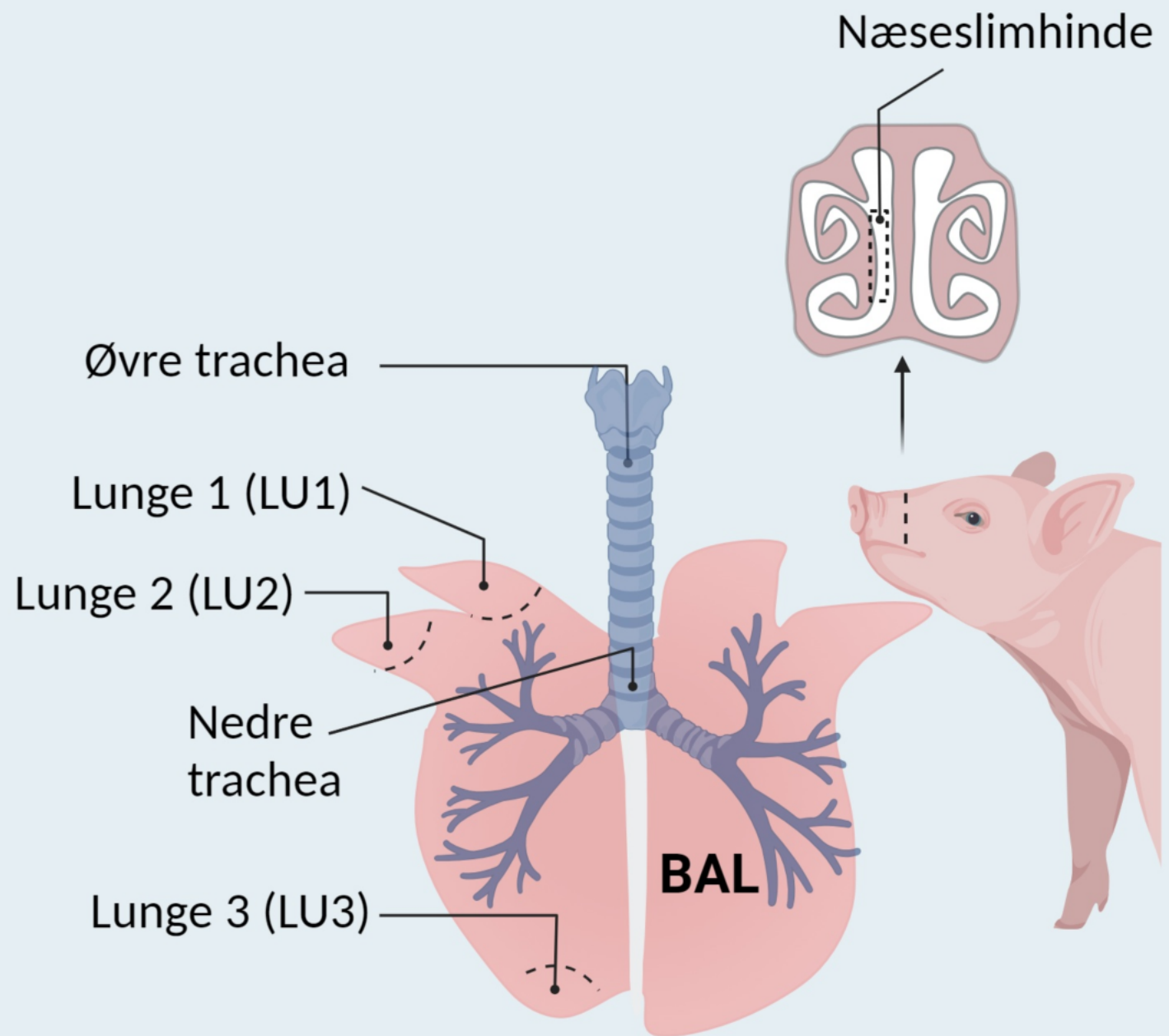
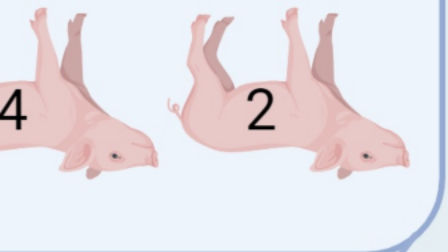


Biorender.com

Forsøgs design



Øv
Lun
Lunge
Lun

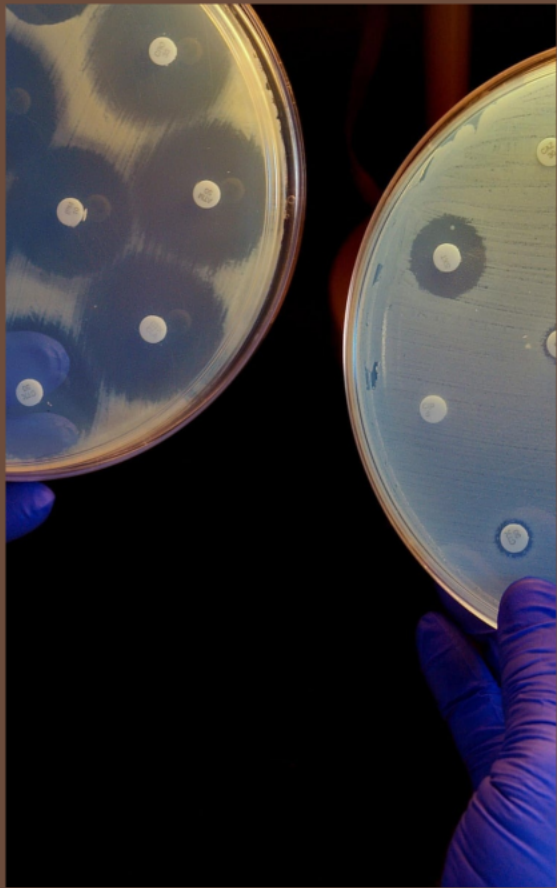


Respiratorisk "mikrobiom"

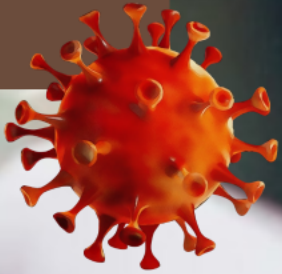
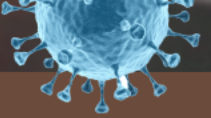
Tid	Gruppe	Gris nr	Inf A - M	H1pdm	PCV2	PCV3	PCMV	M. hyop	M. hyor	S. suit 2	B. bronc	AP	P. mul	G. parasuis	PRCV	PRV1	SOV	Nagy 2
Screening	Kontrol	616								18,81								
Screening	Kontrol	569								13,20				22,44				
Screening	Kontrol	670								15,86								
Screening	Kontrol	668							21,70									
Screening	PRV-1	688								17,55				11,74				
Screening	PRV-1	532								13,13				21,56				
Screening	PRV-1	612								17,80								
Screening	PRV-1	687								18,52				14,39				
Screening	PRV-1	505								12,53				13,81				-/+
Screening	PRV-1	512			22,19					17,16				23,57				
Screening	PRV-1	658								12,63				11,56				
Screening	PRV-1	499								17,42				17,31				
Screening	PRV-1 P	546							21,15	17,94								
Screening	PRV-1 P	507								14,52								
Screening	PRV-1 P	550								15,34								
Screening	PRV-1 P	659								16,50				21,23				

Tulathromycin

Tid	Gruppe	Gris nr	Inf A - M	H1pdm	PCV2	PCV3	PCMV	M. hyop	M. hyor	S. suit 2	B. bronc	AP	P. mul	G. parasuis	PRCV	PRV1	SOV	Nagy 2
Dag 0	Kontrol	616							23,27									
Dag 0	Kontrol	569																
Dag 0	Kontrol	670																
Dag 0	Kontrol	668																
Dag 0	PRV-1	688								25,54								
Dag 0	PRV-1	532																
Dag 0	PRV-1	612							21,70									
Dag 0	PRV-1	687								22,77				23,03				
Dag 0	PRV-1	505																
Dag 0	PRV-1	512																
Dag 0	PRV-1	658																
Dag 0	PRV-1	499																
Dag 0	PRV-1 P	546							21,46									
Dag 0	PRV-1 P	507							22,40									
Dag 0	PRV-1 P	550																
Dag 0	PRV-1 P	659																



Andre PRV-1-eksperimentielle forsøg



Virology 563 (2021) 88–97



Contents lists available at ScienceDirect

Virology

journal homepage: www.elsevier.com/locate/virology



Pathogenesis of a novel porcine parainfluenza virus type 1 isolate in conventional and colostrum deprived/caesarean derived pigs

Michael Welch^a, Jie Park^{a,1}, Karen Harmon^a, Jianqiang Zhang^a, Pablo Piñeyro^a, Luis Giménez-Lirola^a, Min Zhang^{a,b}, Chong Wang^{a,b}, Abby Patterson^c, Phillip C. Gauger^{a,*}

^a Department of Veterinary Diagnostic and Production Animal Medicine, Iowa State University, 1850 Christensen Drive, Ames, IA 50011, USA

^b Department of Statistics, Iowa State University, 2438 Osborn Drive, Ames, IA 50011, USA

^c Boehringer Ingelheim Animal Health, 2412 S. Loop Drive, Ames, IA 50010, USA



veterinary
sciences



Article

Characterization of Two Porcine Parainfluenza Virus 1 Isolates and Human Parainfluenza Virus 1 Infection in Weaned Nursery Pigs

Michael Welch, Karen Krueger, Jianqiang Zhang[✉], Megan Neveau, Pablo Piñeyro, Drew Magstad and Phillip Gauger^{*}

Department of Veterinary Diagnostic and Production Animal Medicine, Iowa State University, Ames, IA 50011, USA

* Correspondence: pcgauger@iastate.edu; Tel.: +1-515-294-2437



Veterinary Microbiology 285 (2023) 109850

Contents lists available at ScienceDirect

Veterinary Microbiology

journal homepage: www.elsevier.com/locate/vetmic



Pathogenesis of an experimental coinfection of porcine parainfluenza virus 1 and influenza A virus in commercial nursery swine

Michael Welch^{a,1}, Karen Krueger^a, Jianqiang Zhang^a, Pablo Piñeyro^a, Abby Patterson^b, Phillip Gauger^{a,*}

^a Department of Veterinary Diagnostic and Production Animal Medicine, Iowa State University, 1800 Christensen Drive, Ames, IA 50011, USA

^b Boehringer Ingelheim Animal Health Inc., 2412 S. Loop Drive, Ames, IA 50010, USA

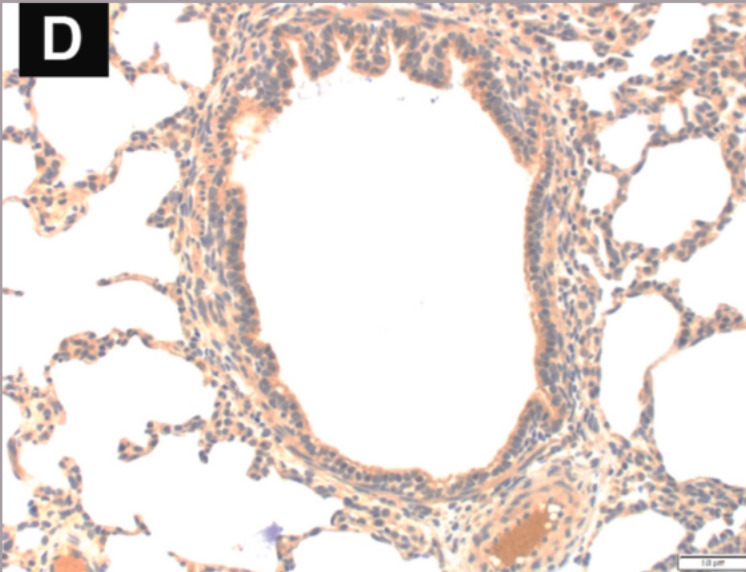


Patogenesestudie

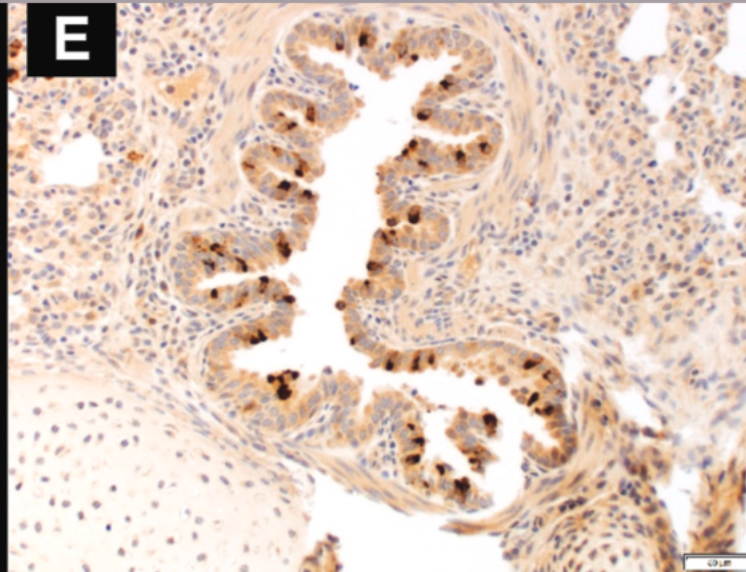
		1	2	3	4
HPIV-1	1		65.14	65.26	65.32
PRV1DE	2	65.14		90.27	90.14
IA17	3	65.26	90.27		98.17
MN16	4	65.32	90.14	98.17	

Immunhistokemi:

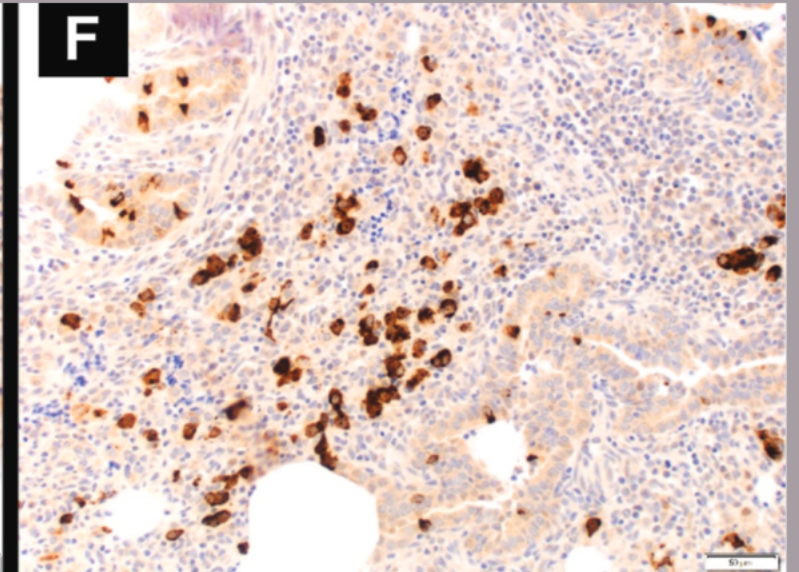
- Detektion af PRV-1 antigen i det tracheale epithel.
- Detektion af PRV-1 antigen i det respiratoriske epithel af bronkierne og bronkiolerne samt det alveolare interstitium.



Kontrol

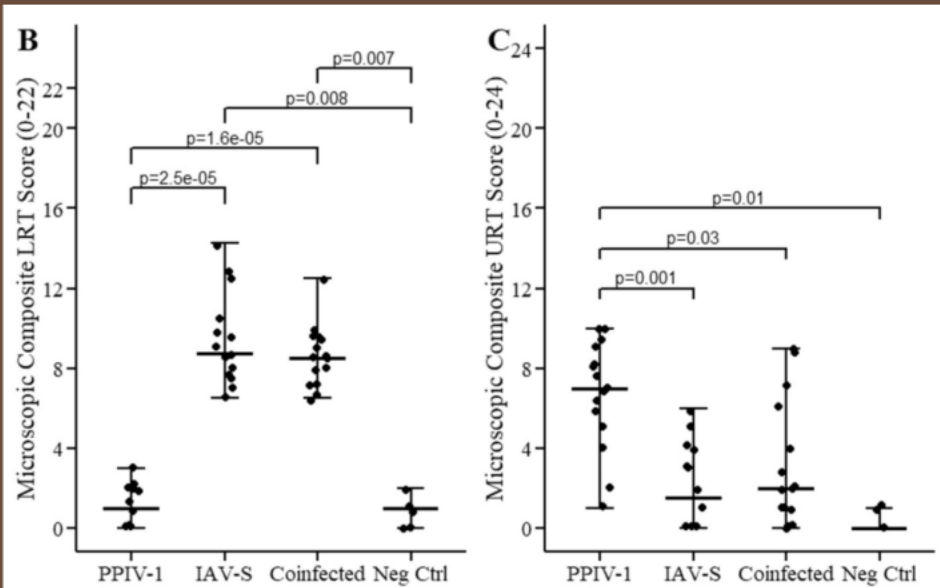
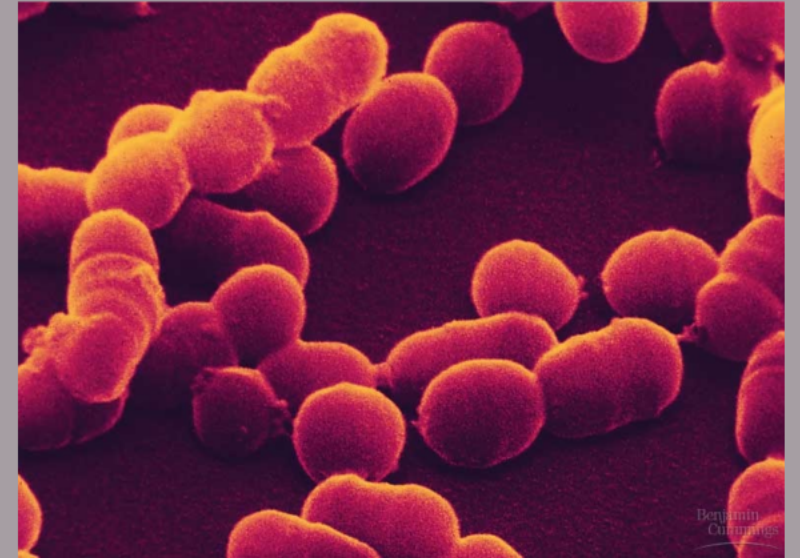


Case



Case

Co-infektion med IAV?



Opsummering



"Det kan da godt
være PRV-1 spiller
en lille rolle
klinisk.."

Høj replikation i de
øvre luftveje

Høj virusudskillelse

Mangel på kliniske tegn

Immunologisk barriere?

"Mikroskopiske" forandringer
- Svækket mukociliær clearance

Er PRV-1 og SOV klinisk relevante?

SOV: ?

PRV-1:

- Patogen: ja
- Virulens: lav

Hypotetisk set sammen med andre mere virulente patogener, ja.

