

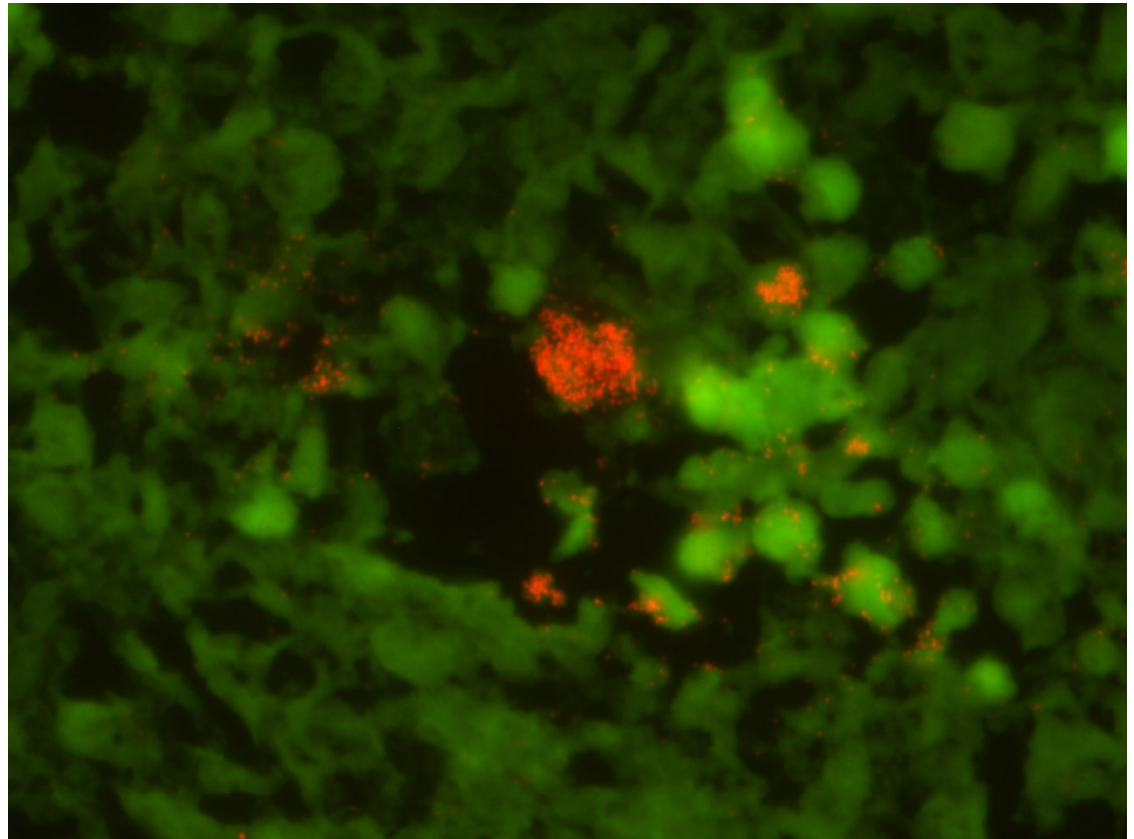
Application of fluorescent *in situ* hybridisation for identification of *Chlamydiaceae* in formalin-fixed, paraffin-embedded tissue.

DVHS

Kolding 6. nov. 2014

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FISH for Chlamydiaceae in formalin-fixed, paraffin-embedded tissue

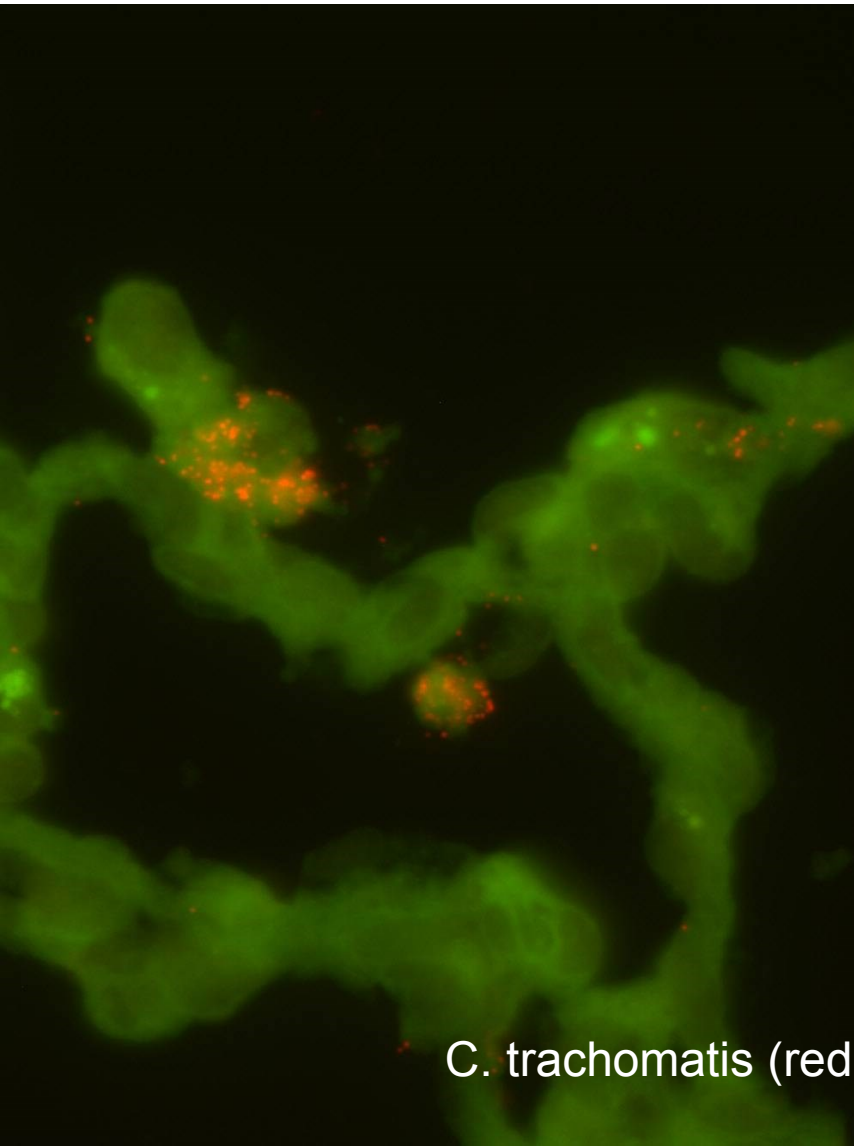
- Identification / verification of infection
- Routine diagnostic tool
- Retrospective studies
- Robust
- Additional analyses can be initiated

FISH for Chlamydiaceae in formalin-fixed, paraffin-embedded tissue

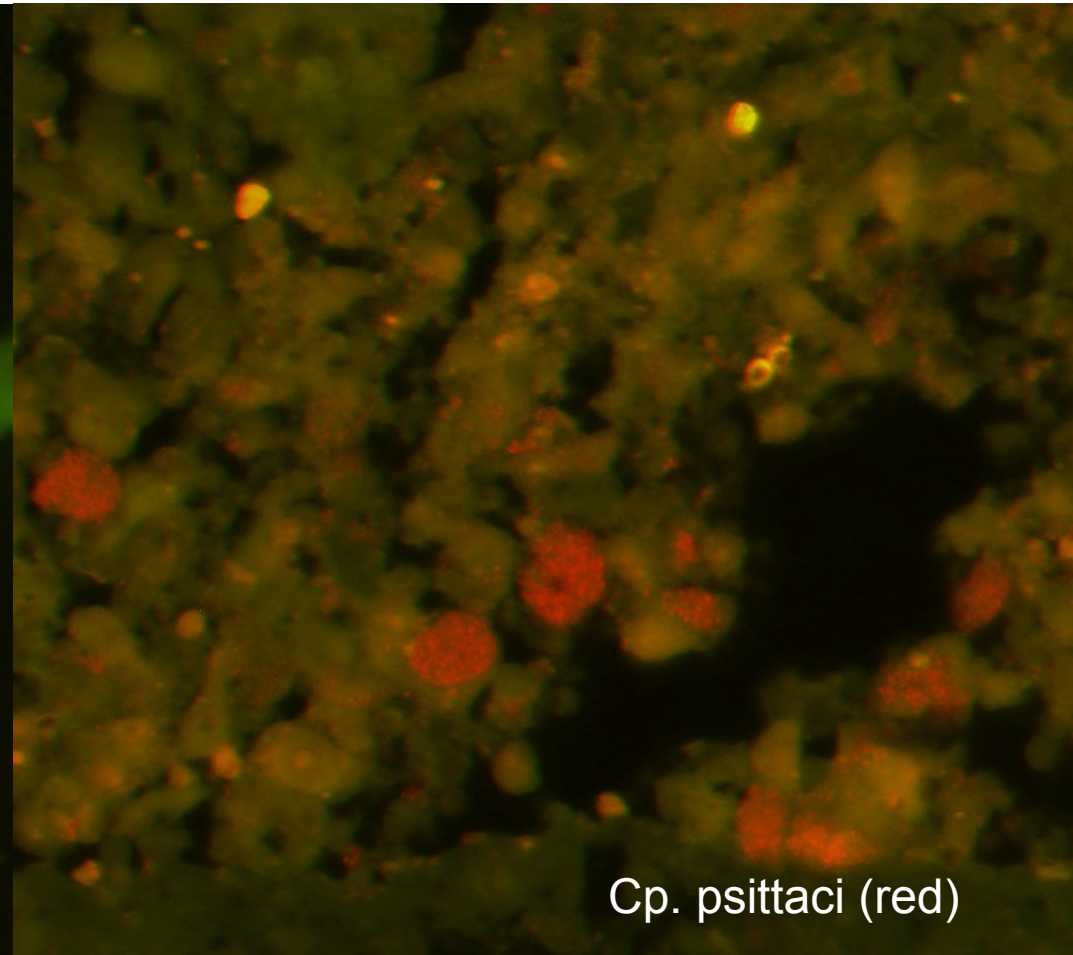
Novel Two-step method using oligonucleotide probes targeting 16S ribosomal RNA:

- 1: A probe specific for both *genus Chlamydia* (C.) and *genus Chlamydophila* (Cp.) used together with a probe for Domain bacterium (for detecting other bacterial infection)
- 2: Species specific probes targeting
 - *Cp. abortus*
 - *Cp. pecorum*
 - *C. suis*
 - *Cp. psittaci* (zoonotic)
 - *C. trachomatis* (humans)
 - *Cp. felis* (not yet tested)

FISH for Chlamydiaceae in formalin-fixed, paraffin-embedded tissue



C. trachomatis (red)



Cp. psittaci (red)

Positive control tissue

FISH for Chlamydiaceae in formalin-fixed, paraffin-embedded tissue

Bovine ileum with *Cp. pecorum* infection

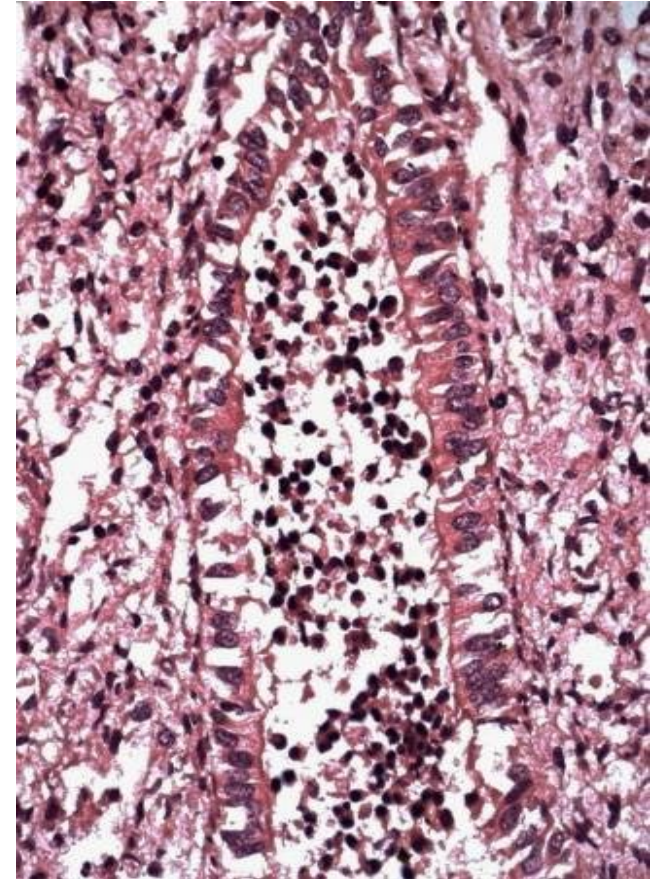
Probe for
C. trachomatis (red)

Probe for
Cp. abortus (red)

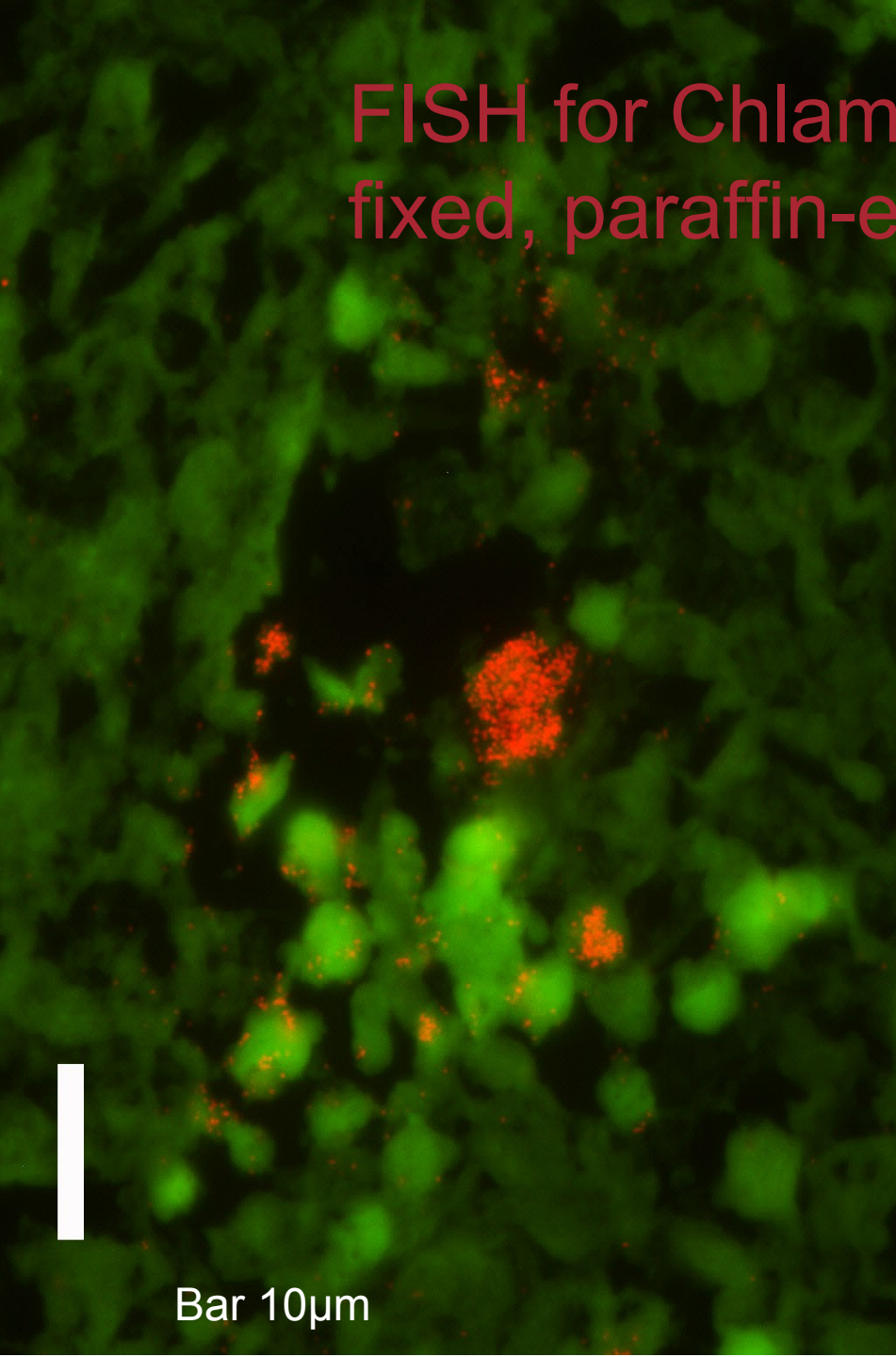
Cp. pecorum (red)

FISH for Chlamydiaceae in formalin-fixed, paraffin-embedded tissue

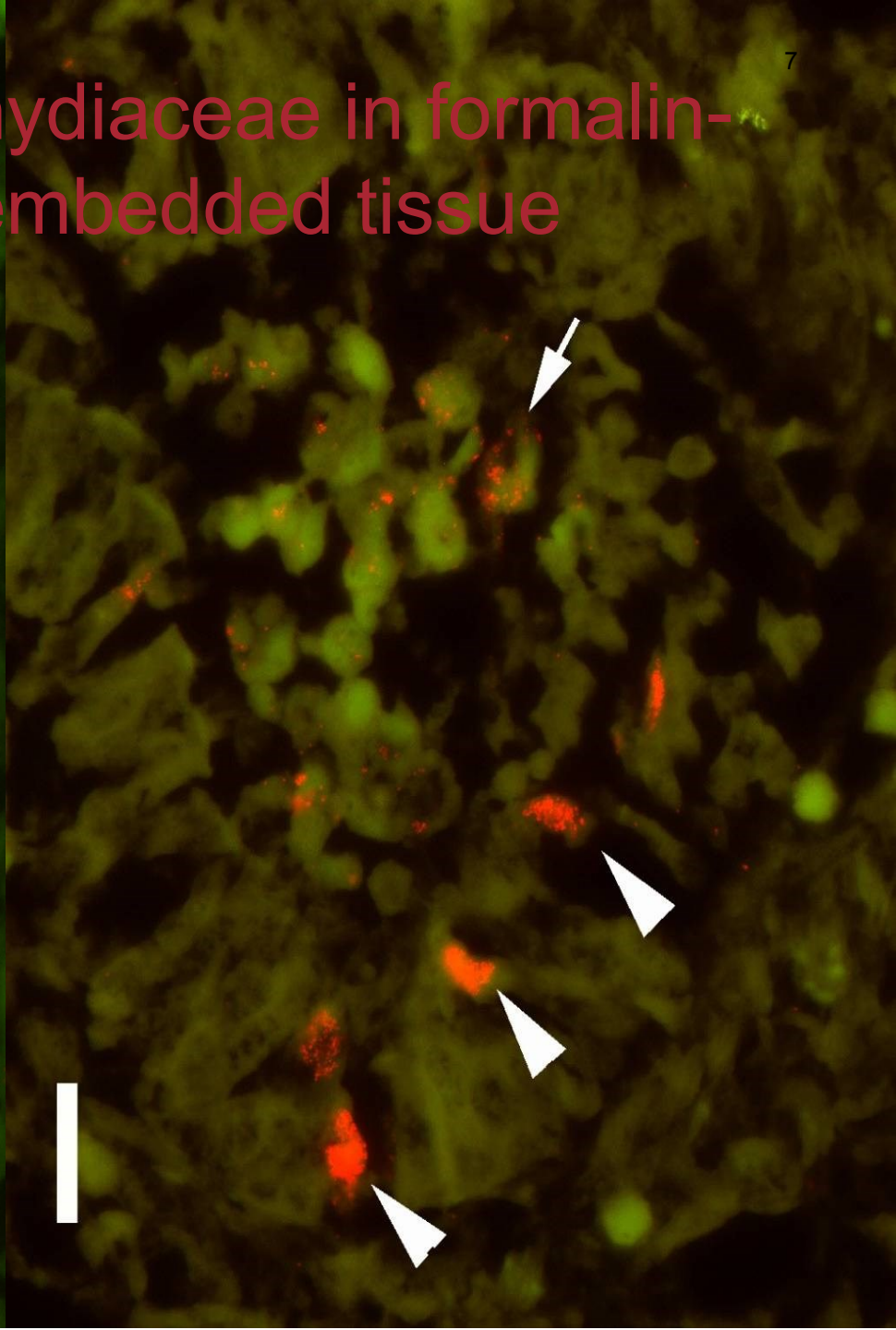
- Investigation of porcine abortions
 - Heart, lung, liver, kidney, umbilicus and placenta
- Preliminary results: +30 foetus/placenta positive for *Chlamydiaceae*.



FISH for Chlamydiaceae in formalin-fixed, paraffin-embedded tissue



Bar 10μm



FISH for Chlamydiaceae in formalin-fixed, paraffin-embedded tissue

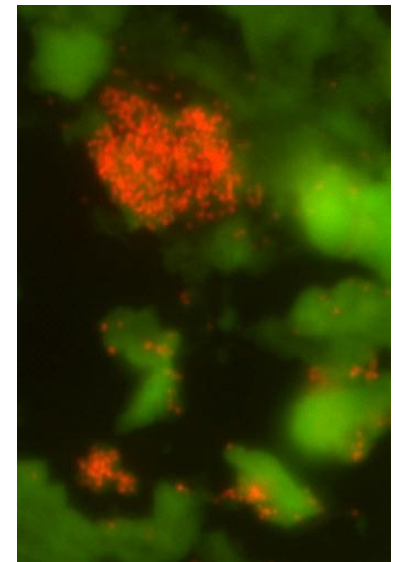
Investigation of porcine abortions – preliminary results

- Only Cp. pecorum has been identified so far.
- negative for: Cp. abortus,
 - » C. suis,
 - » C. trachomatis
 - » Cp. psittaci
- Usually other bacterial infection is not present
- Main target organs: Lung and placenta

Chlamydial infection

Conclusion:

- Chlamydial infection is associated with porcine abortion in Denmark
- Prevalence? Not just sporadic!
- Placentitis and pneumonia
 - *Cp. pecorum* identified.
 - *C. trachomatis* and *Cp. psittaci* negative.
- Chlamydiaceae are easily detected by FISH in host cells
 - Species specific probes



Chlamydial infection

Thank you for the
attention

Cp. pecorum (red)
infected trophoblast cells,
porcine placenta.

Mette Sif Hansen
Mette Boye
Svend Haugegaard
Flemming Thorup
Birgitta Svensmark