



Animal &
Plant Health
Agency



Variable susceptibility of poultry species to H7N7 avian influenza viruses is host response dependent

Shannon Leetham, PhD Student

Avian Influenza Research Team,

Avian Virology and Mammalian Influenza Workgroup

Animal and Plant Health Agency, United Kingdom

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Department
for Environment
Food & Rural Affairs

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1. Background and aims of the studies

Aims:

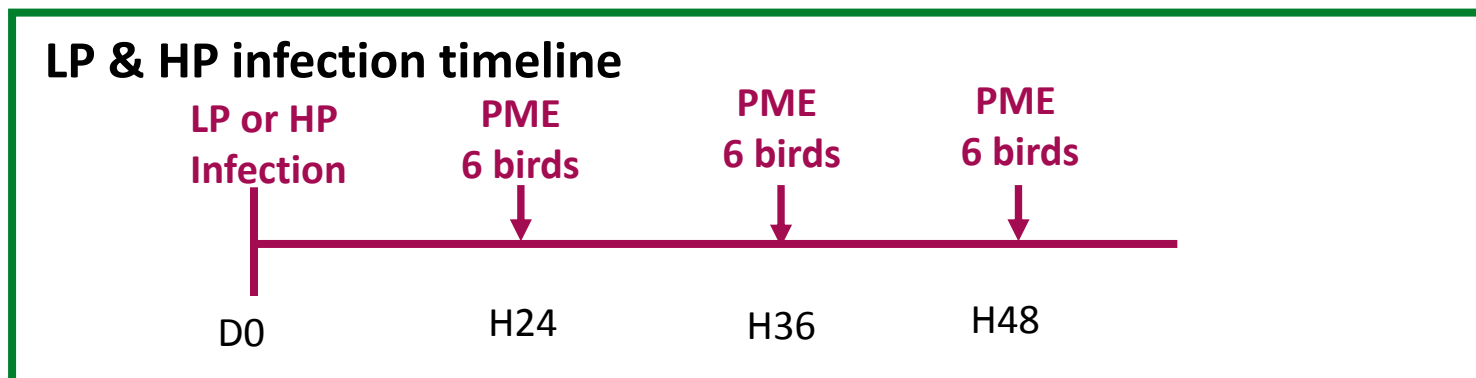
Determine how the host immune responses of chickens differ in response to H7N7 LPAIV and H7N7 HPAIV.

- **A/mallard/Netherlands/19/2015 H7N7 LPAIV and A/chicken/England/26352/2015 HPAIV**
- **A/chicken/Germany/AR915/2015 H7N7 LPAIV and A/chicken/Germany/AR1385/2015 H7N7 HPAIV.**
- Compare the results of both H7N7 LPAIV/HPAIV pairs from Netherlands/UK and Germany.





2. Study design and timeline



Samples taken:

- Spleen and blood peripheral mononuclear cells
- Tissue subset:
 1. Trachea
 2. Lung
 3. **Intestine**
 4. Spleen
 5. Bursa of Fabricius
 6. Caecal tonsil
 7. Brain (viral detection)

Genes of interest:

TLR7
MDA5
IL-6
IL-8
LITAF
IL-1 β
IFN 1
IFN 2





Conclusion

- MDA5 differs to rest of the innate immune genes for German 2015 LPAIV.
- For the A/Chicken/England/26352/2015 infection in the intestine of the chickens, IFN 1, IFN 2 and TLR7 was most induced at 24 hpi but at 36 hpi for MDA5.
- A subset of birds gave a higher induction for IFN 1 and 2 for LPAI with A/Mallard/Netherlands/19/2015 at 24 hpi.
- Results for rest of tissues and conclude what to investigate next.





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for Environment
Food & Rural Affairs

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