Royal Veterinary College
University of London

Towards eradication of *Mycoplasma hyopneumoniae* from the UK pig herd

Production of an antibody to *Mycoplasma hyopneumoniae*

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Introduction

- Economically important multifactorial respiratory disease of pigs
- Control and eradication of *M. hyopneumoniae* rely on the availability of good diagnostic tests
  - Current diagnostics have many limitations
- Immunohistochemitsry (IHC) identifies *M. hyopneumoniae* within a lung sample
  - Requires an antibody

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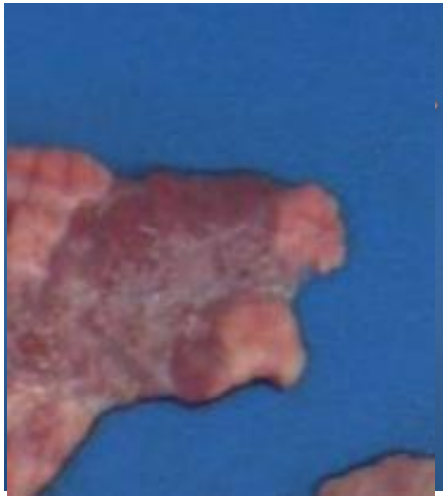
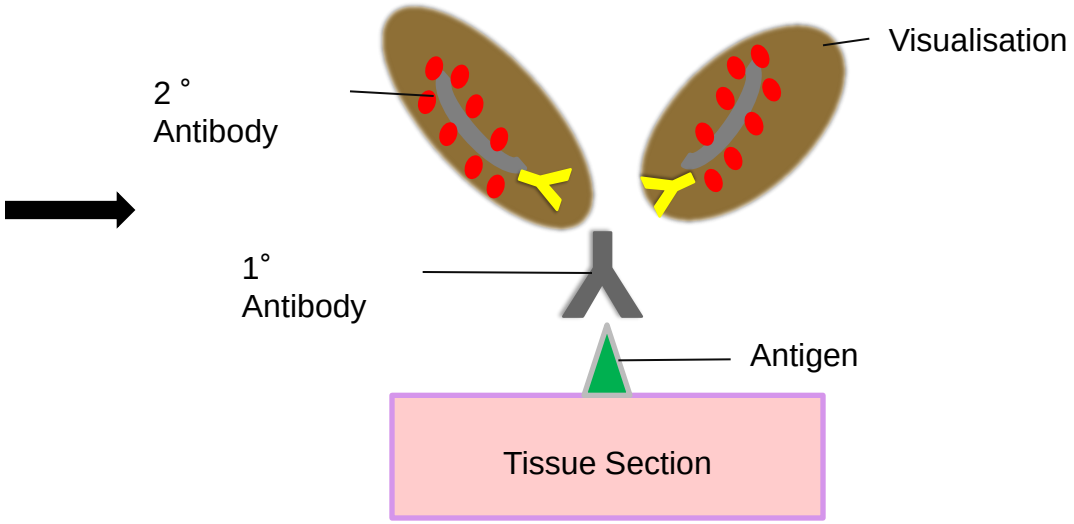
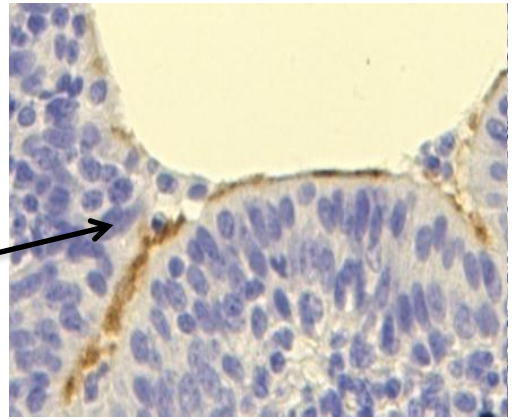
M & M: Background







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M & M: Steps to produce a polyclonal antibody

1. Synthesizing DNA by PCR
2. Inserting DNA into vector
3. Grow *E.coli* containing vector
4. Use PCR to confirm presence vector
5. Purify vector & Inject into rabbit
6. Harvest serum containing polyclonal antibody
7. Purify polyclonal antibody

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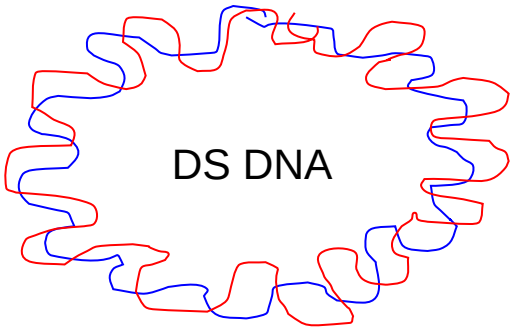
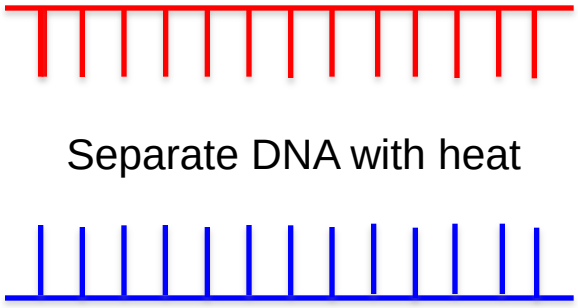
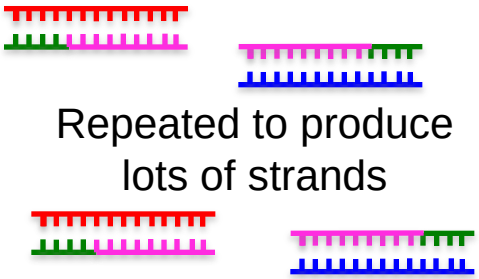
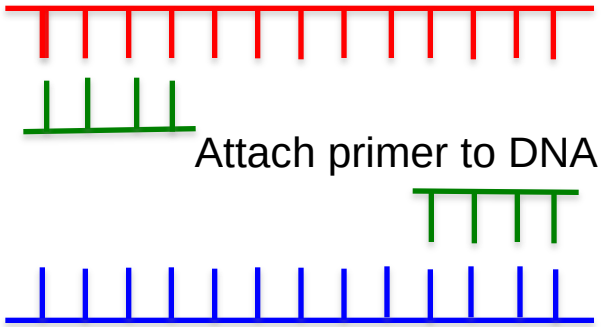
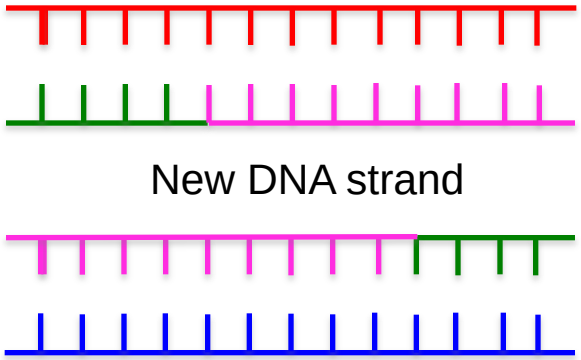
M & M: Synthesizing DNA by PCR

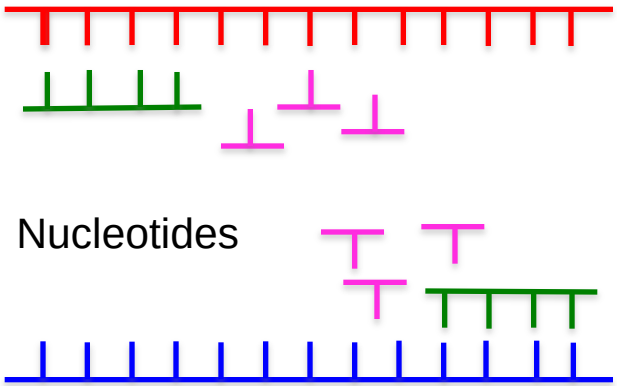












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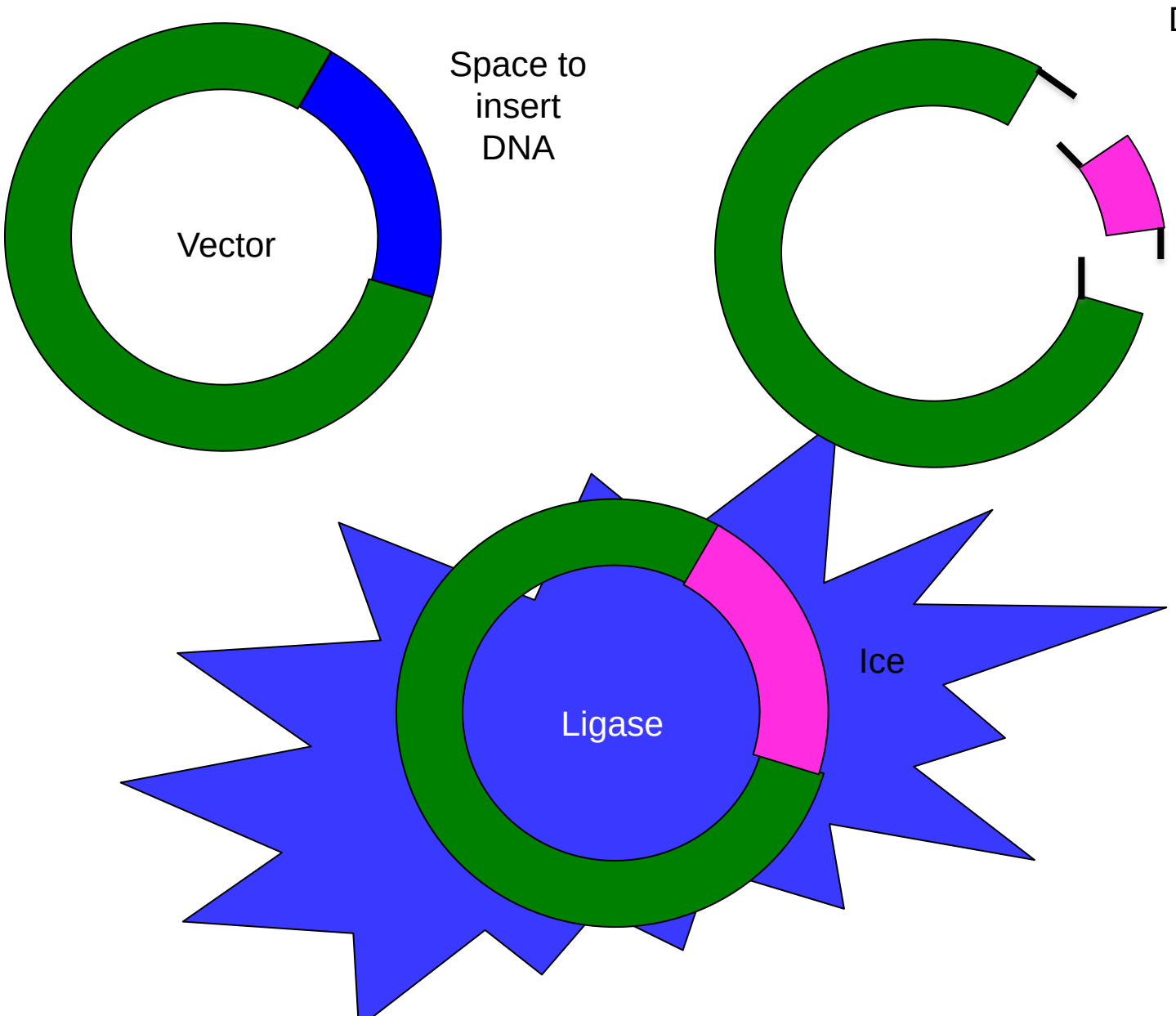
Material and Methods: Vector



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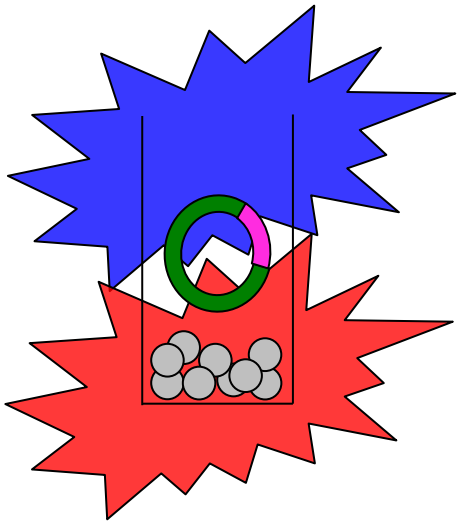
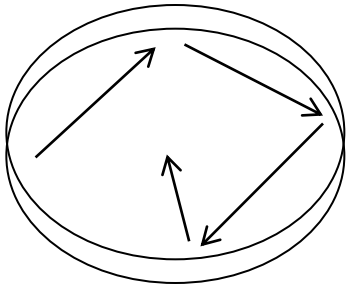
M & M: Growing *E. coli* & Colony PCR

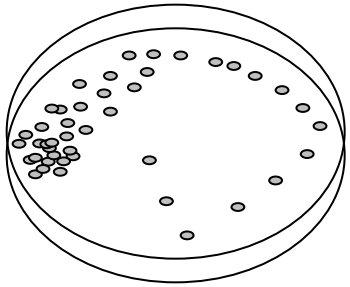
Transformation

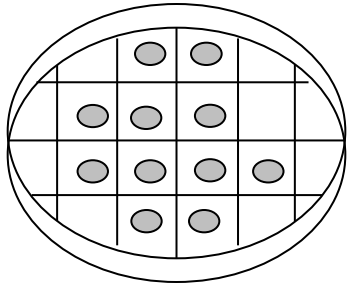


Grow *E. coli and plate*



Pick Colonies





PCR

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Results

- Synthesized DNA
- Inserted DNA into pMAL Vector
- Transformed DH5 alpha E. coli cells
  - Now contain pMAL vector
- Confirmed with colony PCR

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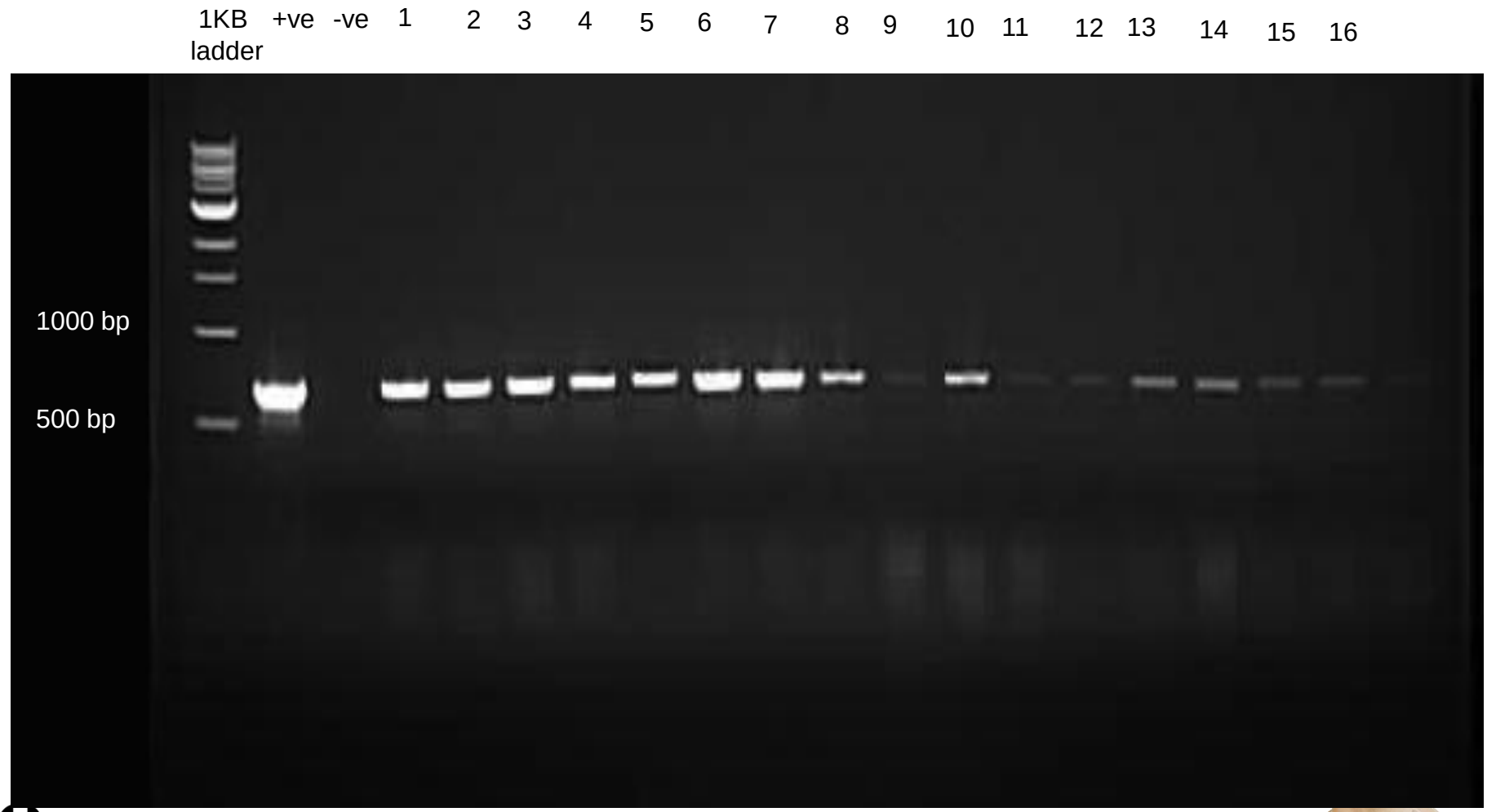
Results Cont



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Next Steps

- Complete remaining steps to produce the polyclonal antibody
- Validate antibody using immunohistocemistry (IHC)
- Outsource production of monoclonal antibody

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Industry Focus

- Correct diagnosis of EP is crucial
- The availability of a stand alone diagnostic test (IHC) will be invaluable to the industry
- Production of an antibody would ensure the longevity of the IHC
  - Would not have to rely on an outside source

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Acknowledgements

- Supervisors
  - Dr Mandy Nevel
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- Sponsors