

## **2C-106: Bacteriophage-displayed peptides for the control of pathogens in swine**

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### **Aims and Objectives**

To use phage display to isolate phage display peptides that bind to the receptors/epitopes on the cell surface of *E. coli* 0157 using direct selection and subtraction procedures.

At the end of the selections the phage displayed peptides were tested for potential antimicrobial activity using functional-based assays. The binding of the phage peptides to *E. coli* 0157 using dot-blot assays were also tested.

### **Key Findings**

The key findings were:

1. As proof-of-concept, phage peptides that completely inhibited the growth of *E. coli* 0157 were isolated.
2. The sub-libraries generated in this project are a resource to be used for further isolation of antimicrobial phage peptides
3. It was demonstrated that, using dot-blot, the phage peptides bound to cell surface receptors on *E. coli*. This could be used as a strategy for the isolation and development of vaccine candidates.

### **Application to Industry**

This project produced proof-of-concept. The therapeutic developed from this project would be used on-farm by the pork producers for the control of pathogenic *E. coli* strains.