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The inhibition effect of phage display peptides on E. coli 0157:H7

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E. coli 0157: H7 strain is a strong food borne pathogen that lives in the cattle GI tract. It has been estimated that 76 million or more food borne illness occurs in the United States every year. In the last few years, massive amounts of beef were recalled because of E. coli 0157:H7. The focus of this study was to determine the minimal concentration of phage producing strains of E. coli to inhibit the pathogen E. coli 0157:H7. These strains were selected by Dr. C. J. Fu to bind to E. coli 0157: H7. This will guide us to determine the potential application of peptides carried on the phage in animal science and human health areas as replacements of antibiotics. We used a micro plate test to find out if the phage/peptide could inhibit E. coli 0157:H7 pathogen. The wells contained E. coli 0157:H7 and a phage- producing E. coli BluKan strain in varying ratios. We determine the minimum ratio of phage-producing E. coli that would inhibit E. coli 0157: H7 growth. We assayed the presence of the different strains by selective plating on antibiotics containing media. Both strains were resistant to Tetracycline; however, E. coli Blukan was also resistant to Kanamycine while E. coli 0157: H7 was also resistant to Nalidixic acid. We identified the selected peptides that inhibited E. coli 0157:H7 growth.