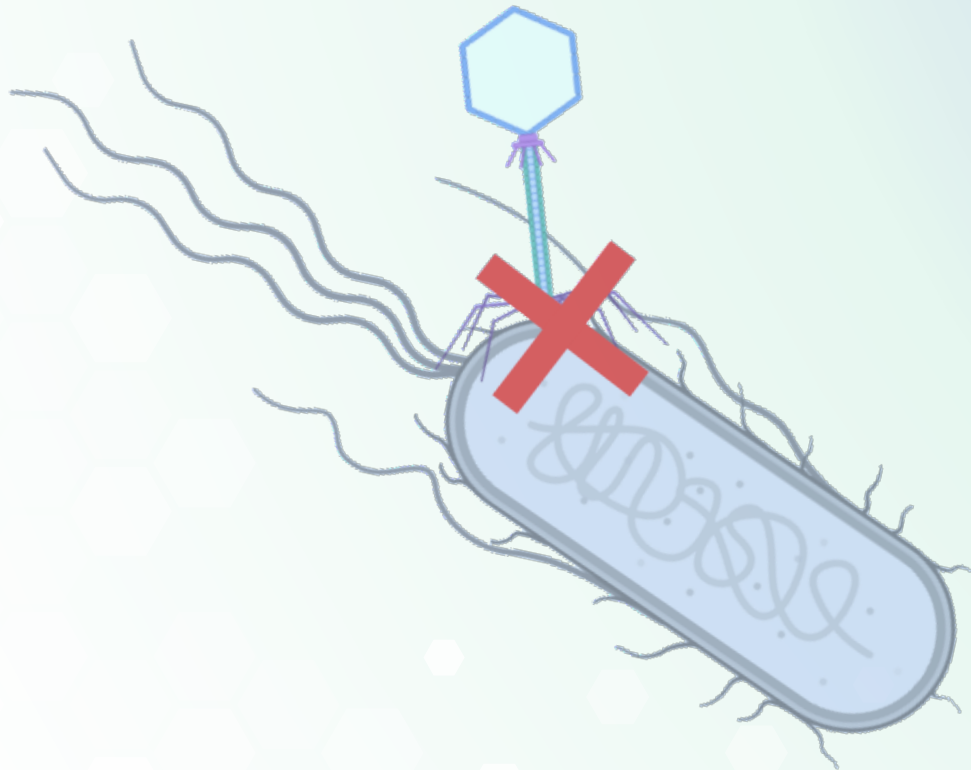




K1 Capsule-dependent phage-driven evolution in *Escherichia coli* leading to phage resistance and biofilm production



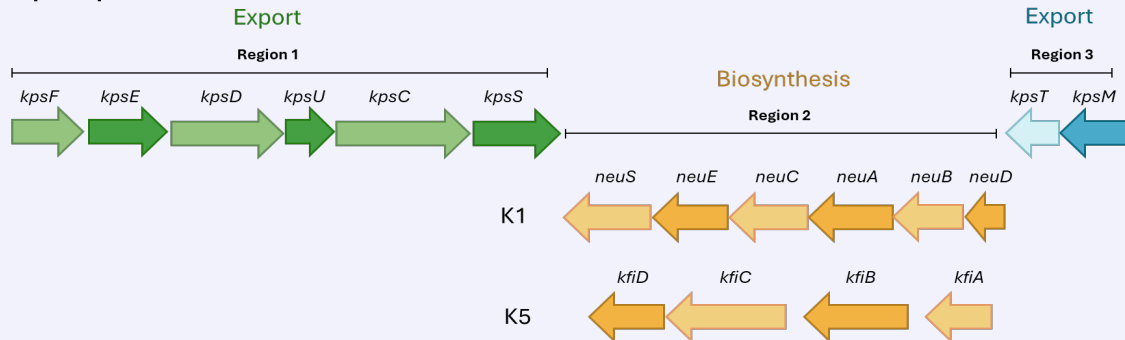
/ ÚÿAÛ" AÿçìAÛÛÿ5² a ÿt é5

E. coli K1

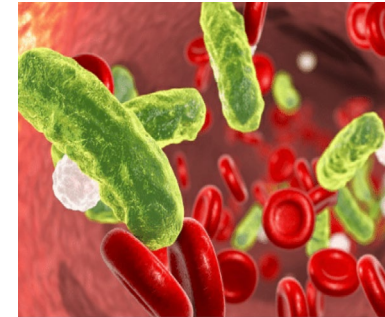
Extraintestinal pathogenic *E. coli* (ExPEC)

K1 capsular type allows **survival and multiplication of *E. coli* K1 outside the gastro-intestinal tract**

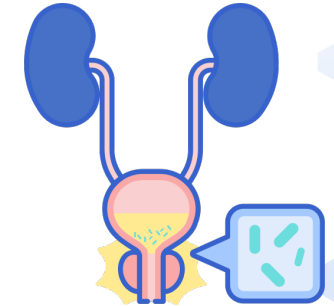
Group 2 capsules



Meningitis

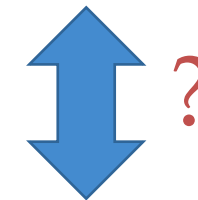


Sepsis

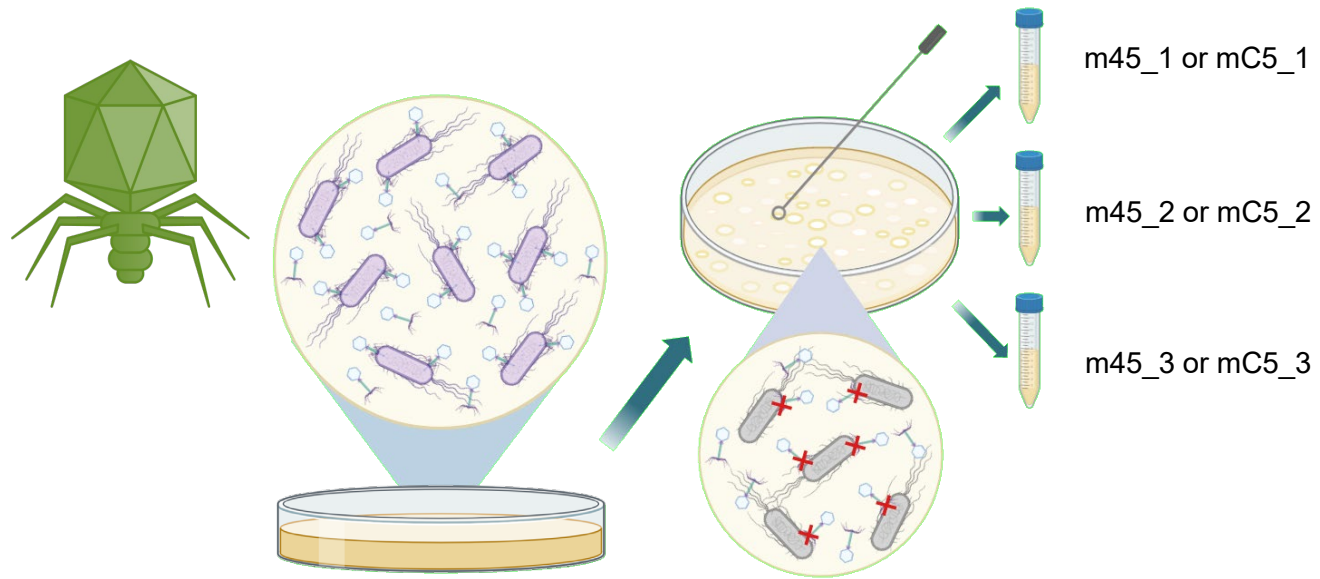


Urinary tract infections

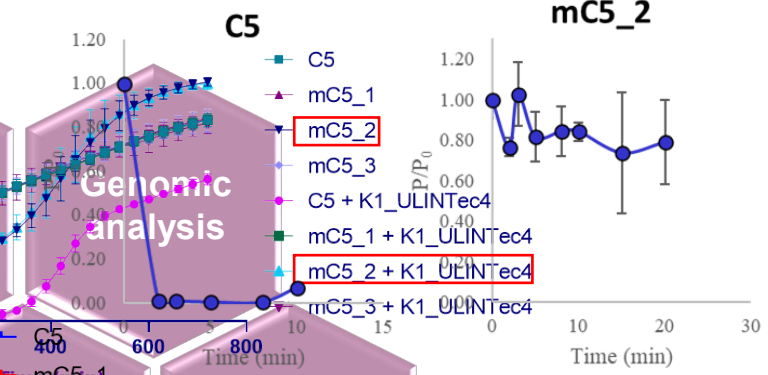
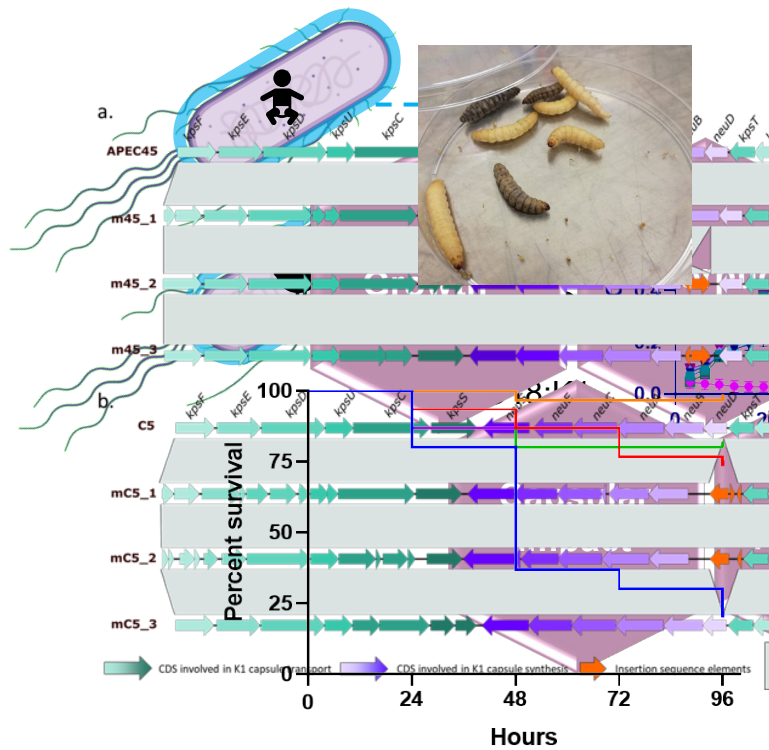
Zoonotic potential strongly suspected



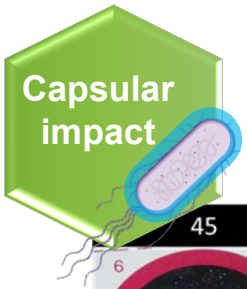
Colibacillosis



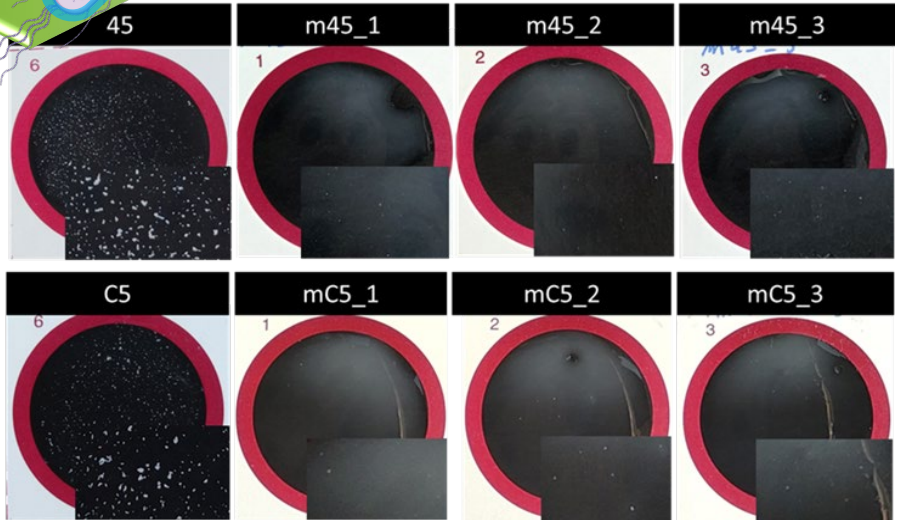
Autograph...
 K1 specific
 Fast adsorption
 Good T°/pH resistance
 Survival in *G.mellonella*



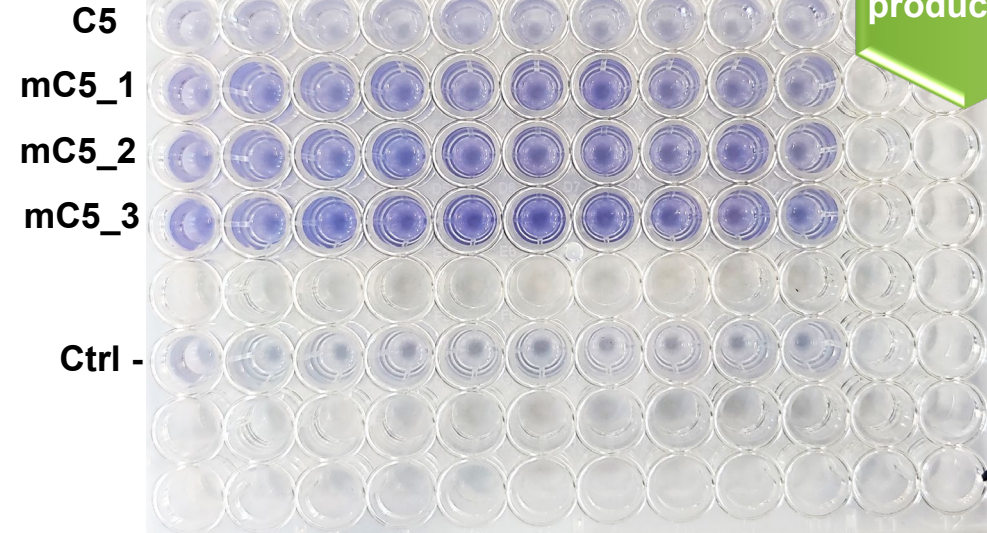
Genomic analysis
 Virulence *G. mellonella*



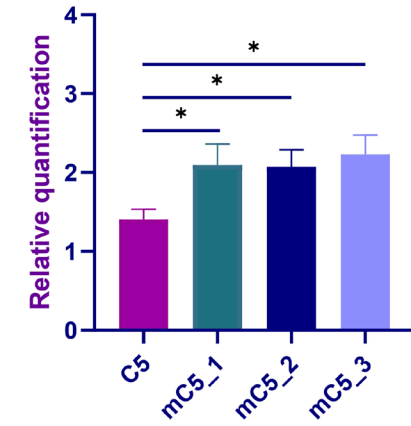
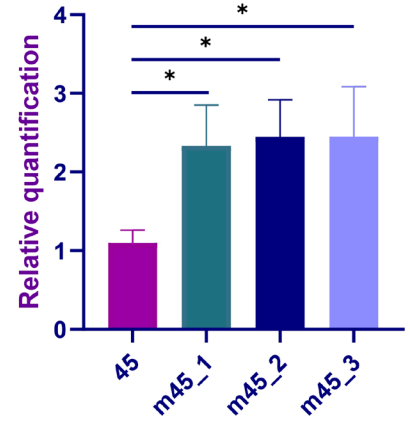
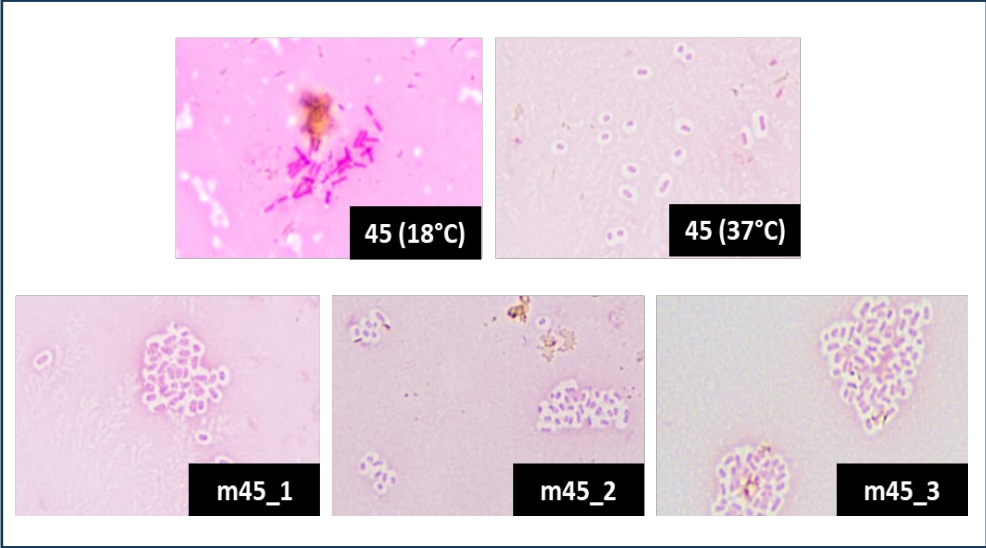
Latex agglutination



Cristal violet staining



Microscopy



Study 3: Conclusions

- Significant impact on K1 capsule production, \searrow **phage adsorption**
- **Insertion sequences** in capsular genes
- Microscopy: **Capsule** detection in phage resistant mutants
→ K1 capsule modification ?
- Phage resistant *E. coli* K1 are \searrow **virulent in *G. mellonella***
- \nearrow **Biofilm production**
→ Potentially problematic for the persistence of *E. coli* K1 in hospitals

