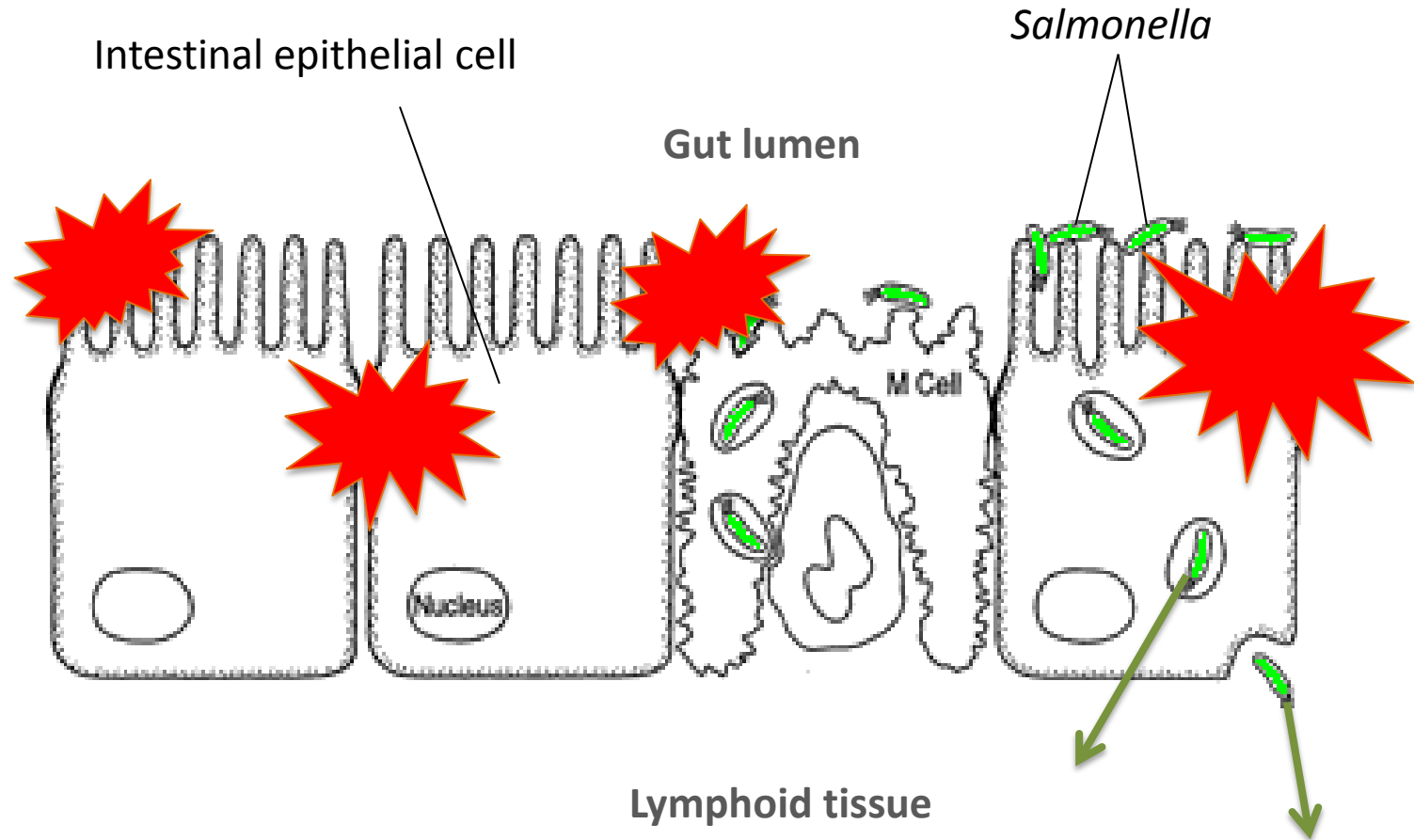


The infection biology of pig-associated *Salmonella*

Georgina Crayford

Host-pathogen Interaction

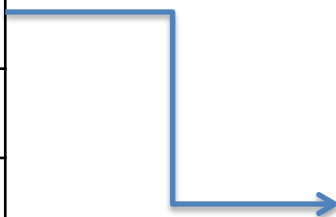


Current GB Situation

Top serovars (multiple incidents) in Great Britain – Pigs (Jan-June 2010)

Rank	Serovar	%
1	Typhimurium	64.6
2	4,5,12:i:-	10.8
3	4,12:i:-	6.2
4	Derby	4.6
5	Bovismorbificans	3.1

All incidents of *S. Typhimurium* in GB pigs by definitive phage type (Jan-June 2010)



Phage Type	Number
DT32	1
DT104	2
DT120	4
DT193	17
DT208	1
U288	15
Untyped	2

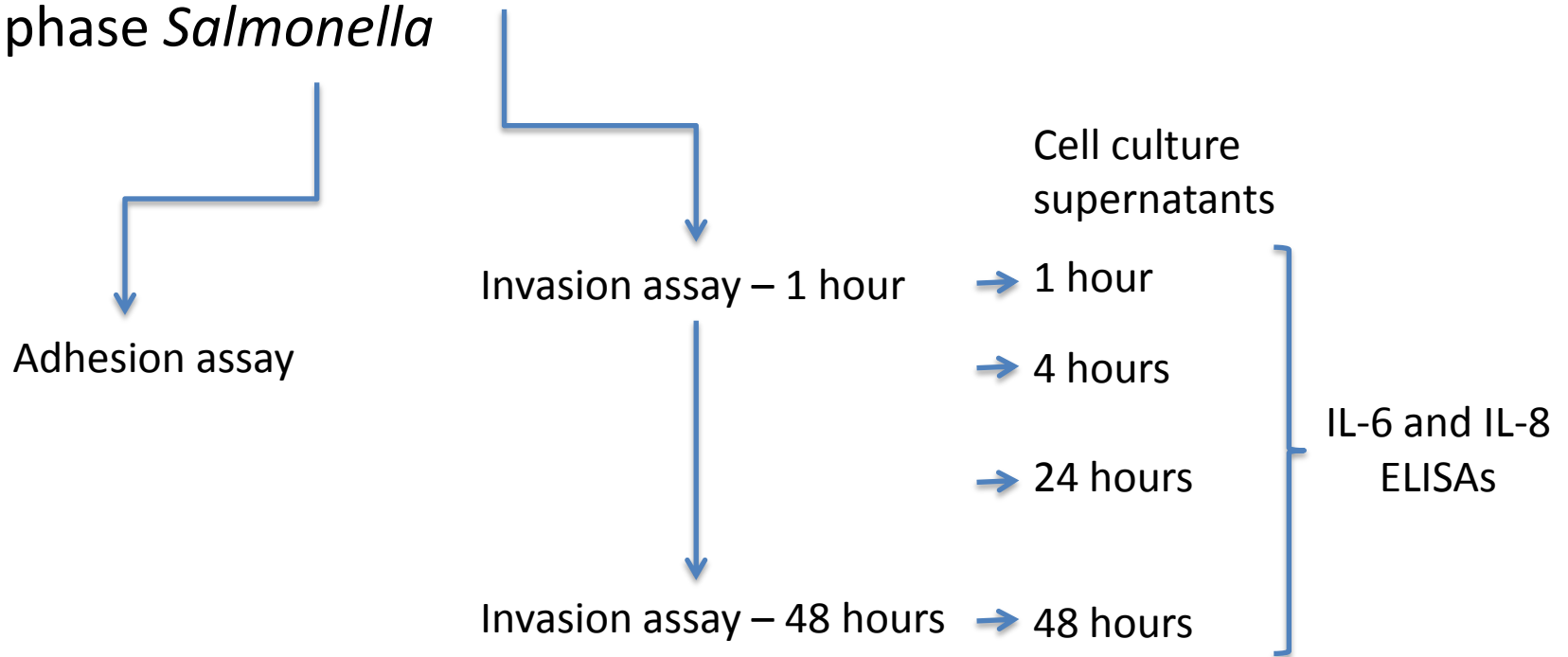
Salmonella Typhimurium

- DT193 4,12:i:-
- DT193 4,5,12:i:- (multiresistant)
- DT193 (multiresistant)
- DT208
- U288
- 474 (lab strain)

+ Salmonella Derby

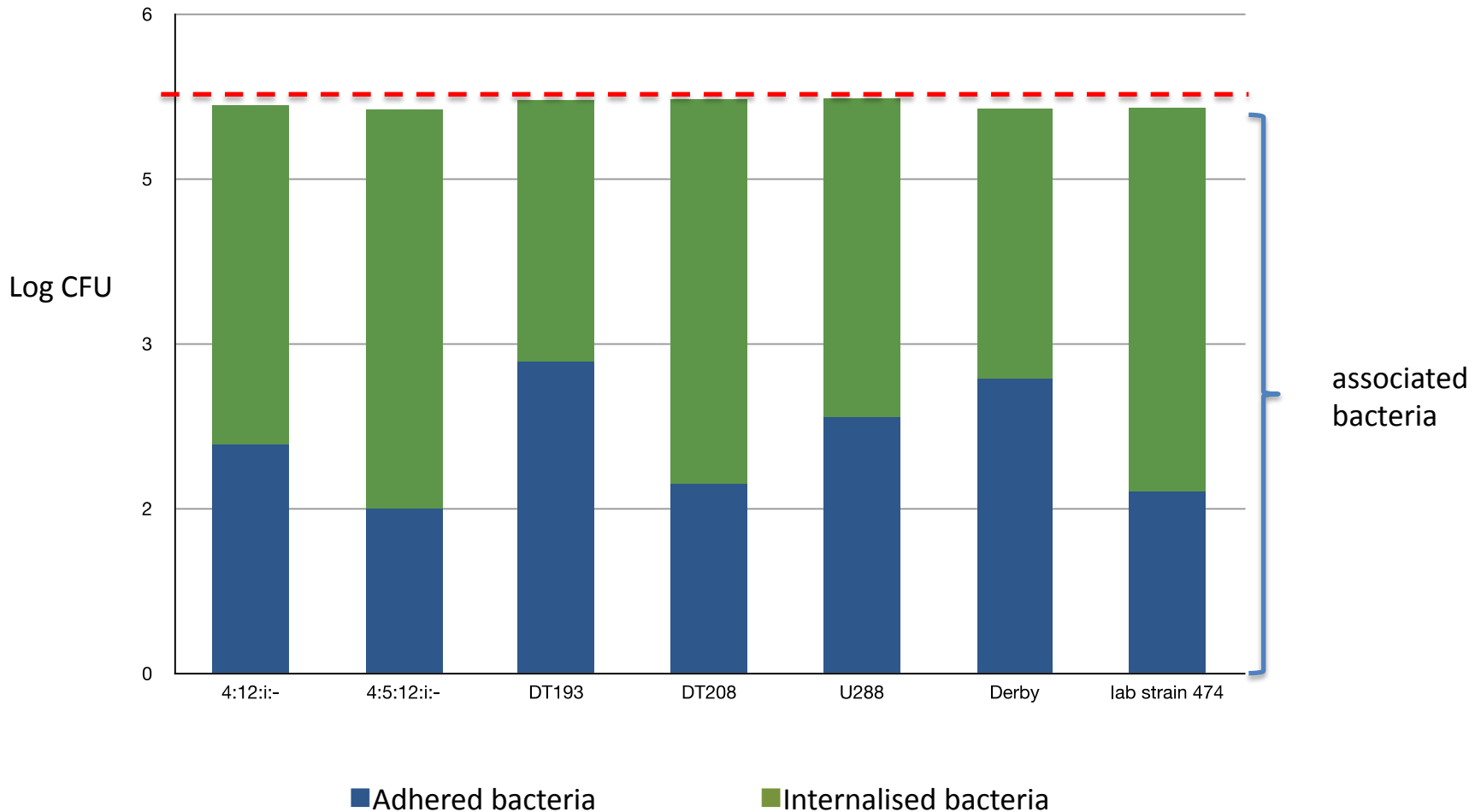
Materials and Methods

1. Growth curves
2. Infected confluent IPEC-1 cells in 24-well plates with late-log phase *Salmonella*



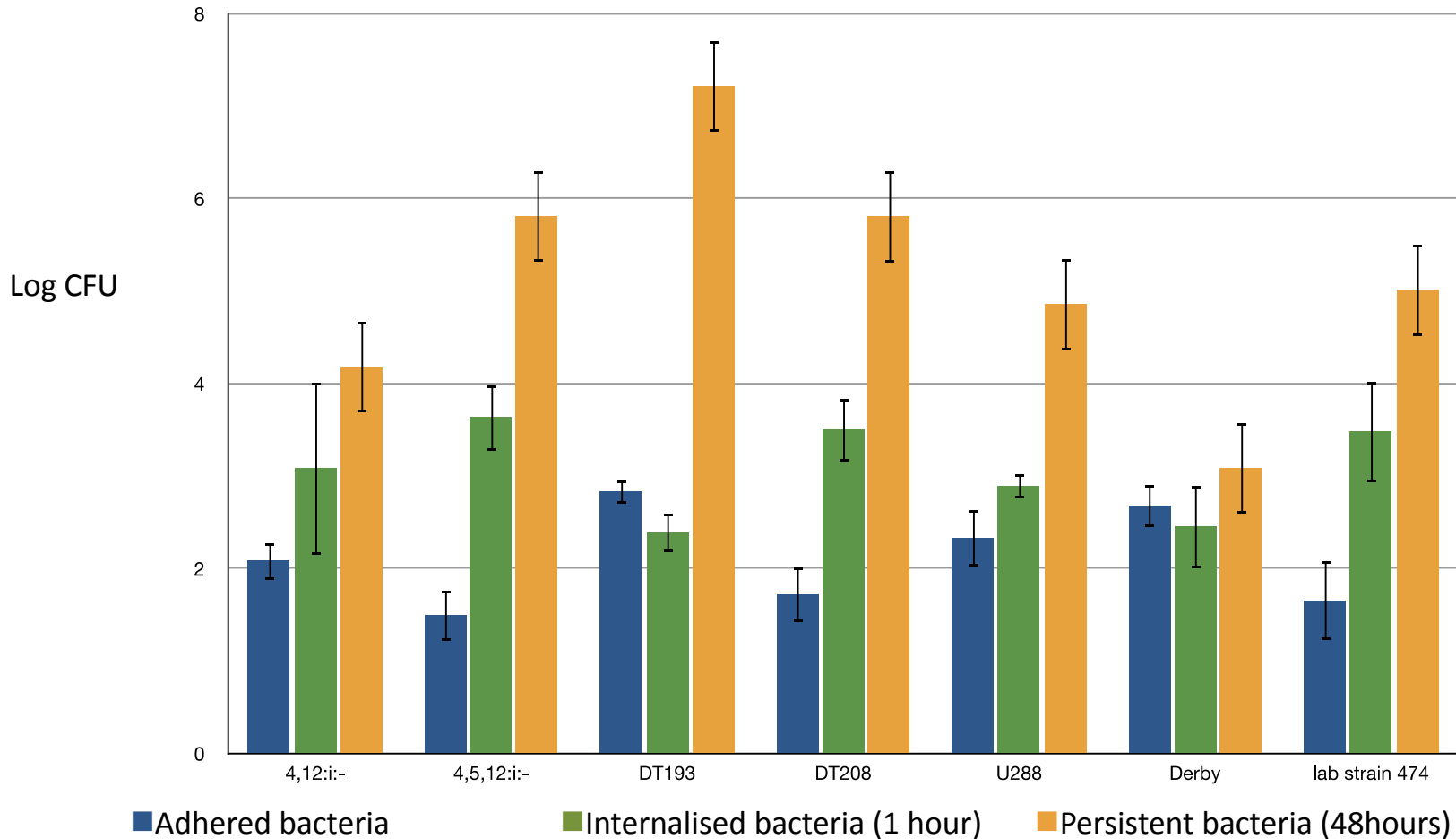
Adhesion/Invasion Results

Number of *Salmonella* associated with IPEC-1 cells after 1 hour

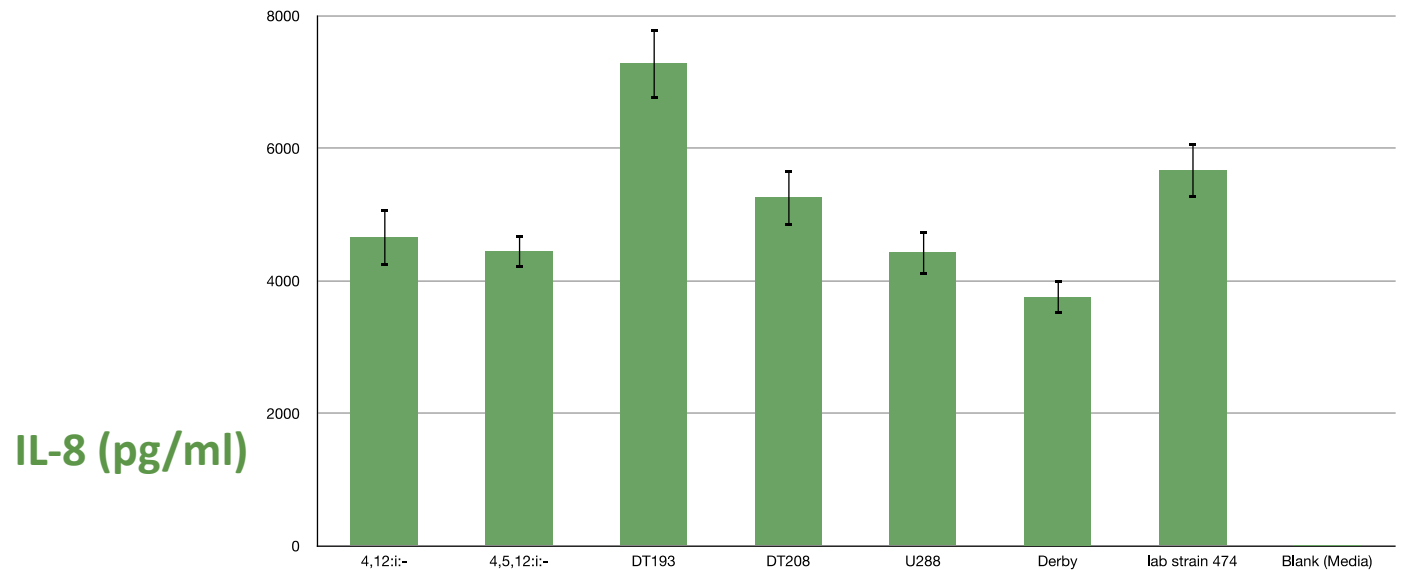
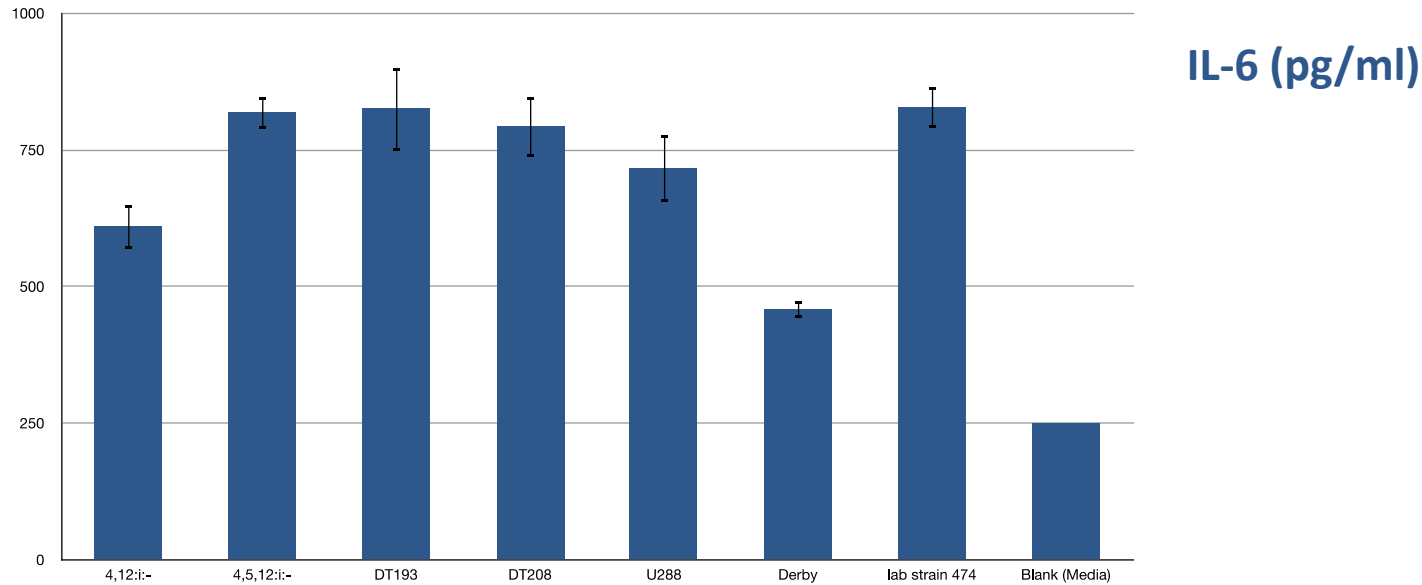


Adhesion, Invasion and Persistence

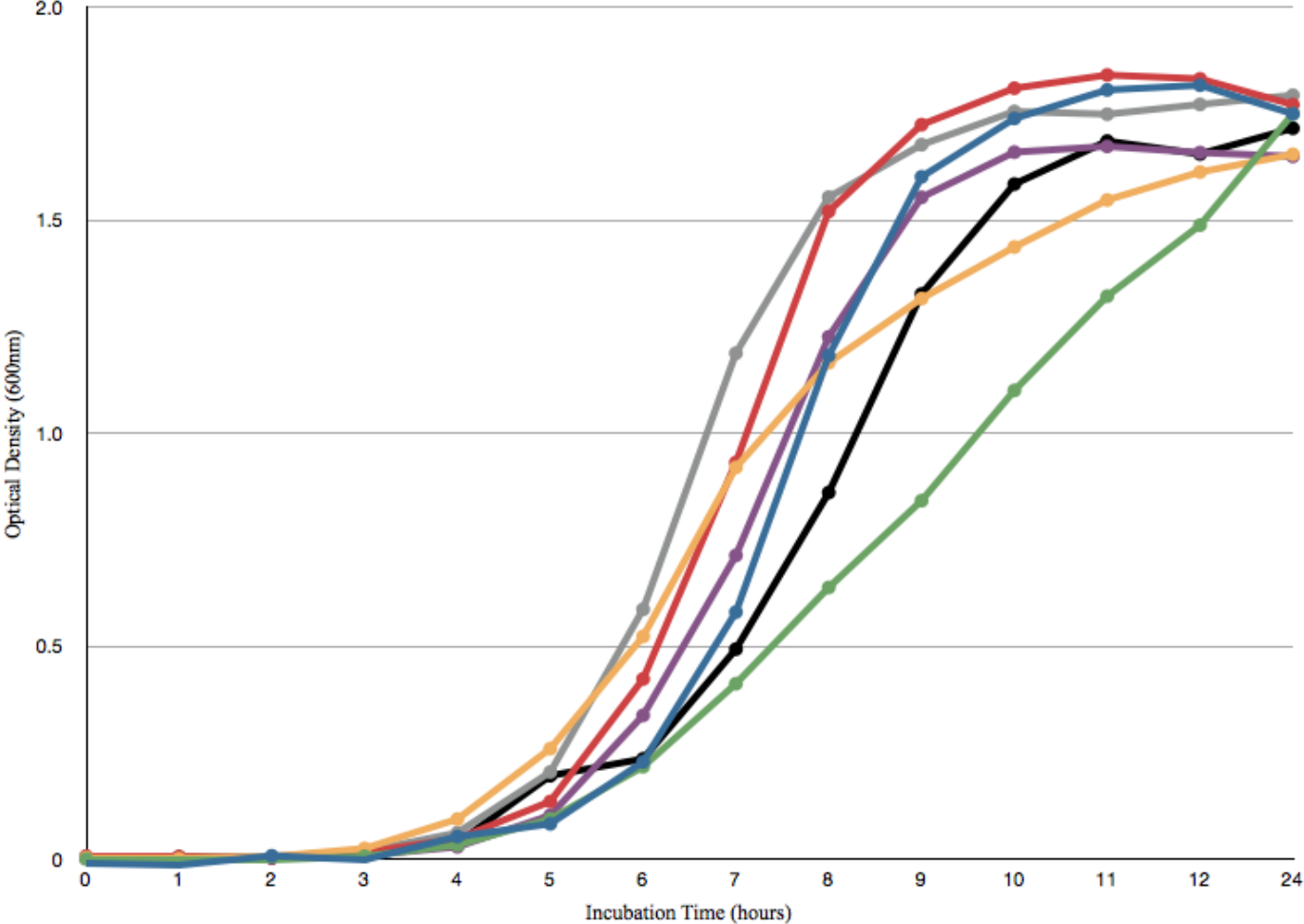
Number of adhered *Salmonella* and number of intracellular *Salmonella* after 1 hour and 48 hours culture with IPEC-1 cells



Proinflammatory Response



Growth Patterns



● 4,12:i- ● 4,5,12:i- ● DT193 ● DT208 ● U288 ● Derby ● lab strain 474

Conclusions

- Limited number of adhesion sites on IPEC-1
- Variation between strains
 - in invasiveness
 - in stimulating host proinflammatory response
 - S. Derby less invasive
 - monophasic strains partly evade immune response
- Relationship between antibiotic multiresistance, growth rate and virulence?
- Need for vaccine to be *multivalent*

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Thank you for listening.

