Title: Monitoring host-pathogen interaction during Adherent-invasive *Escherichia coli* infection

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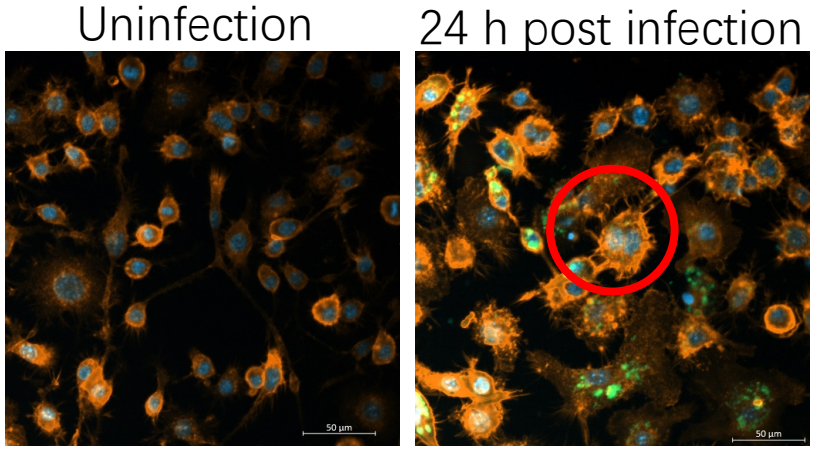
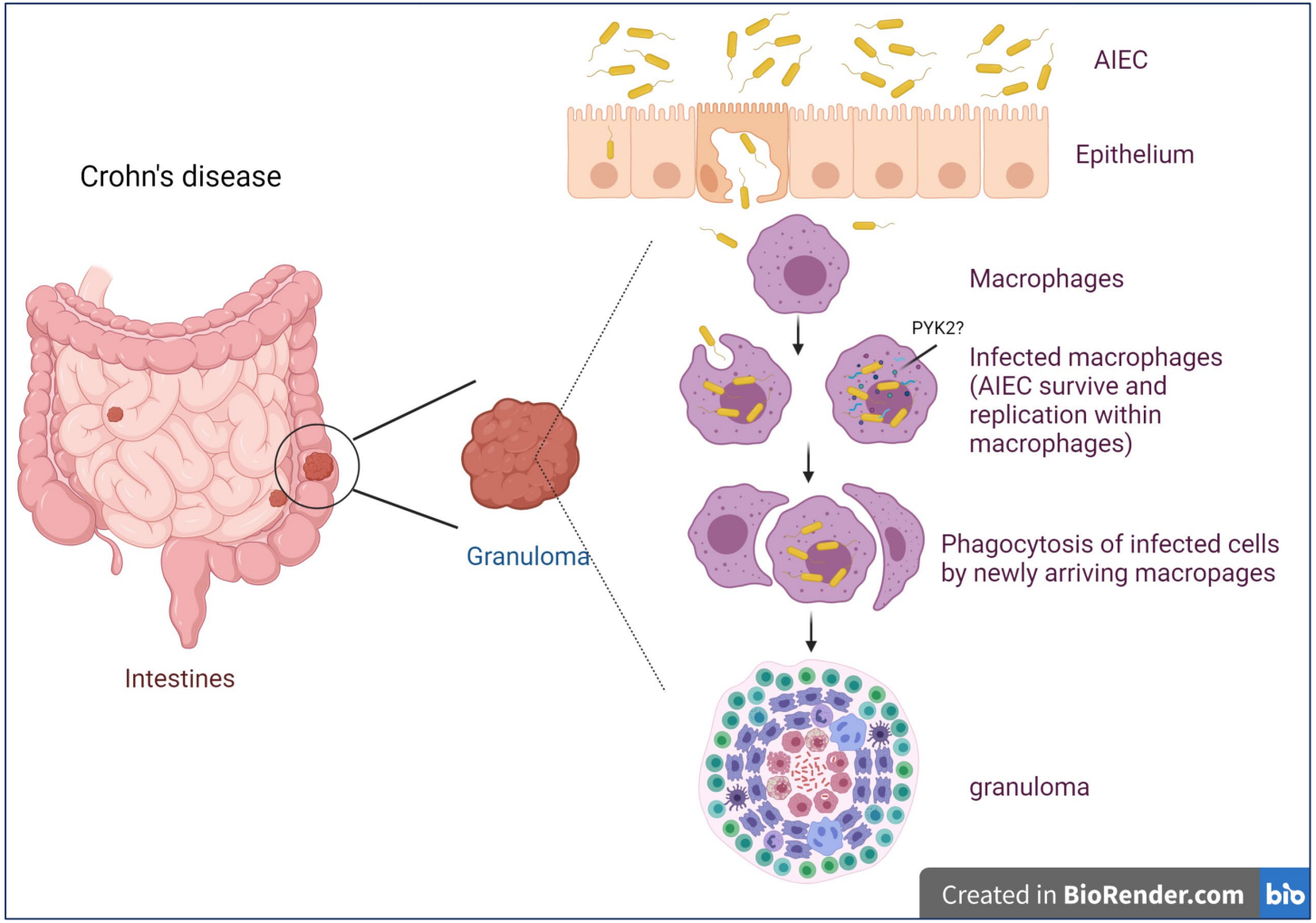
Aims:

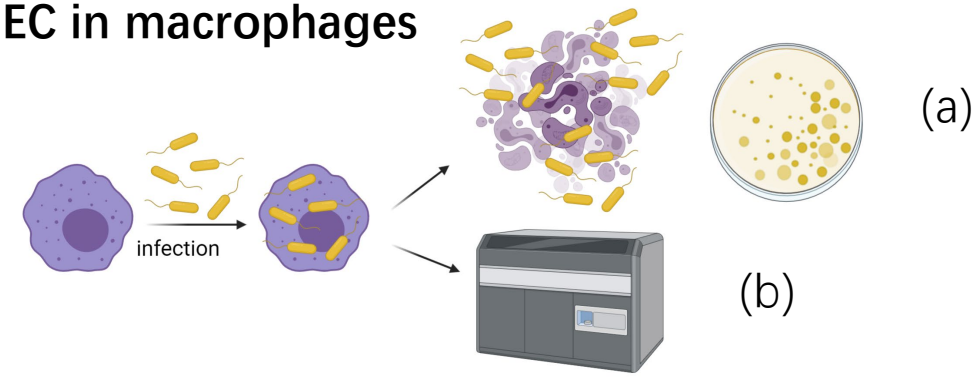
1. Characterising the role of PYK2 during AIEC infection of macrophages
2. To study cell-cell interaction in AIEC infections using image flow cytometer



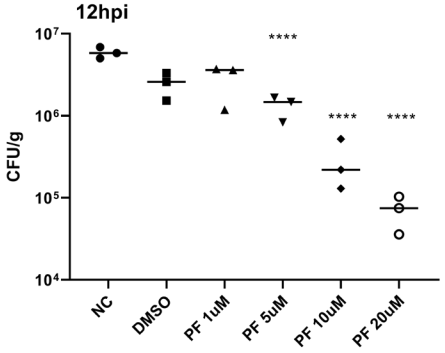


Results

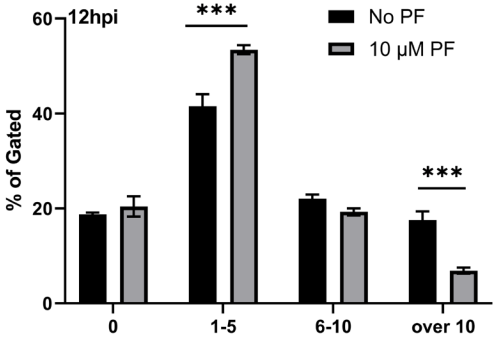
PYK2 is important for intracellular survival of AIEC in macrophages



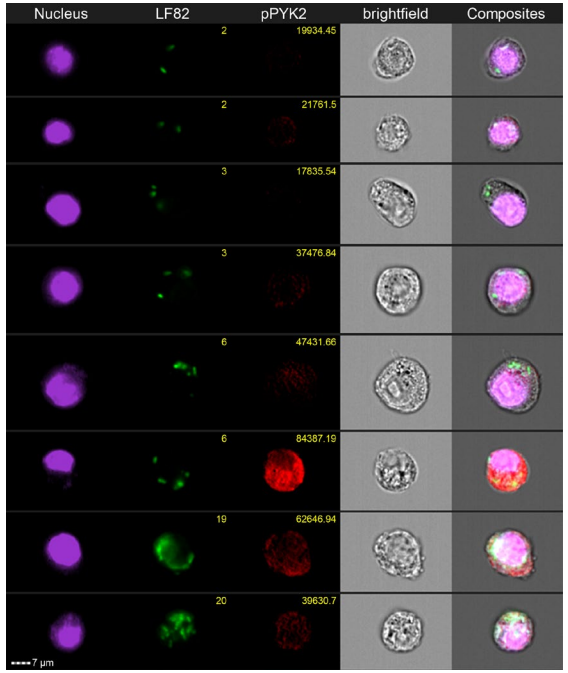
(a)



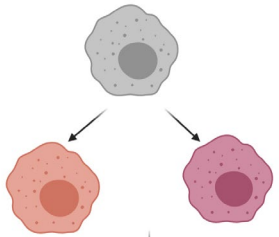
(b)



Infected cells treated with 10 μM PF

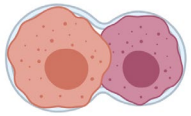


Cell-cell interaction experiments



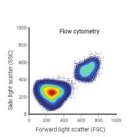
Stained separately with Orange or Red

co-incubation



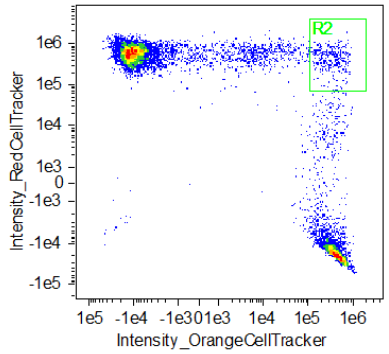
Both colour will be deteced if cells happen fusion

Post 24h infection

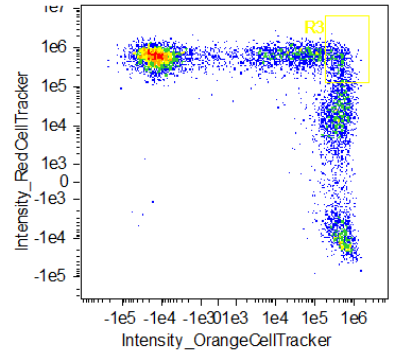


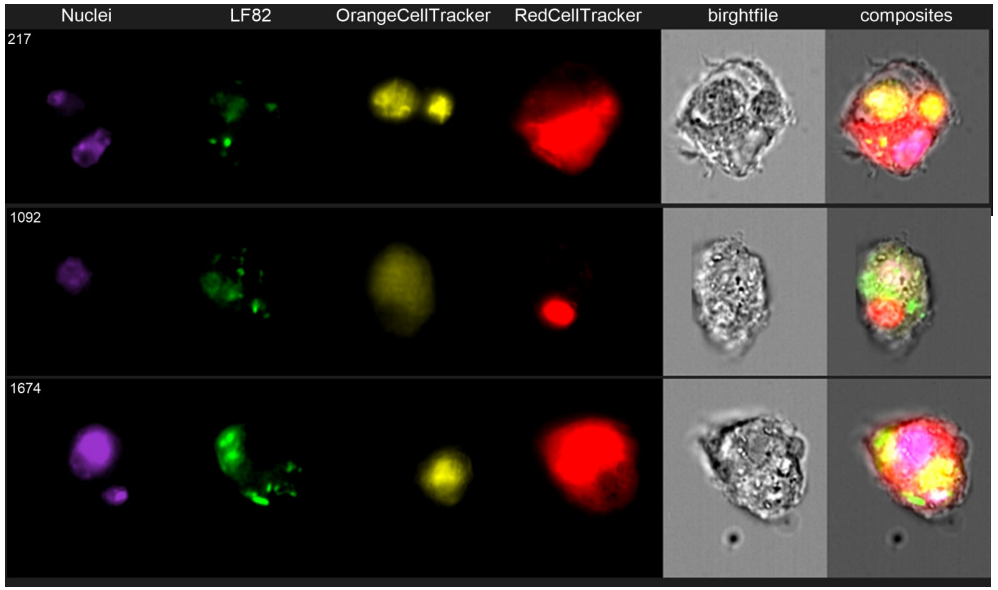
Cells are processed to Image flow cytometry

uninfection



24h post infection





Conclusions and Future Work

Summary:

1. PYK2 inhibition directly affects intracellular replication of AIEC.
2. Infected macrophages had a propensity to aggregate *in vitro*.
3. Multinuclear cells are supported by macrophages phagocytosis. Infected macrophage recruitment of new macrophages can facilitate bacteria spread from macrophage to macrophage.

Future work:

Still do not understand what macrophages aggregation inciting antigens are?

Method: Cell sorting + RNA seq