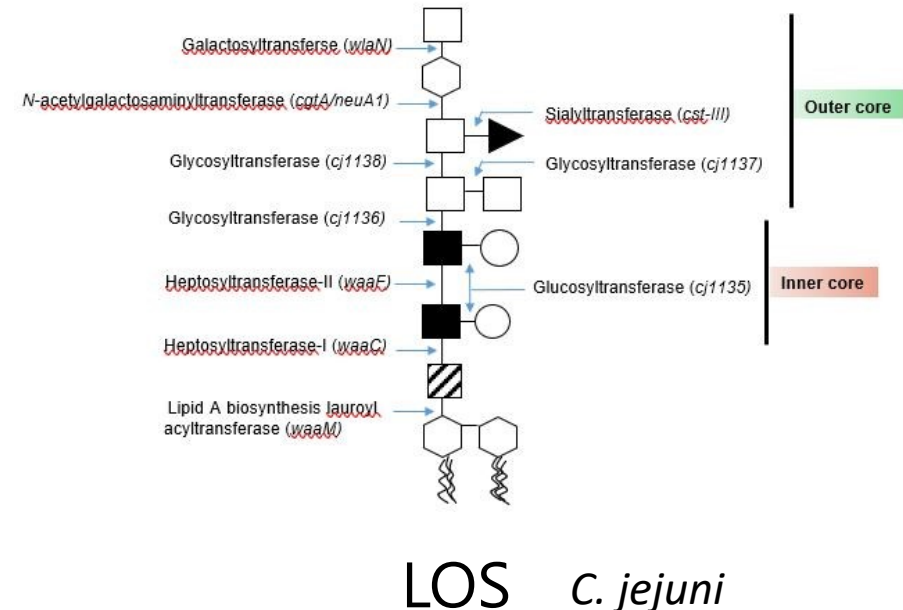
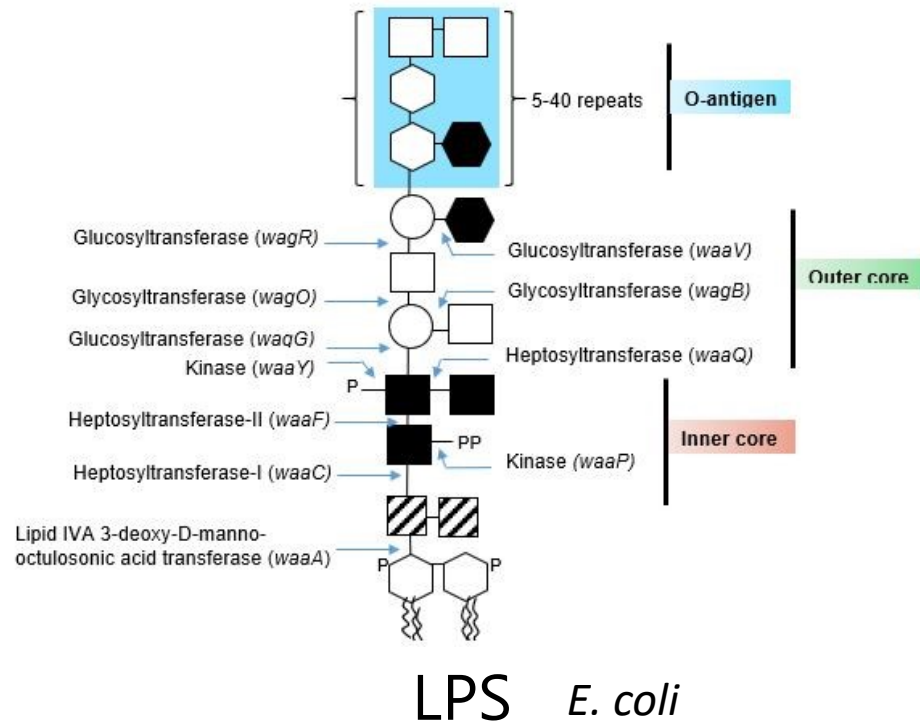




Induction of inflammasome- dependent signalling in the human monocytic cell line THP-1 by *Campylobacter* lipooligosaccharides

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G.L Marsden

Campylobacter Lipooligosaccharides (LOS)



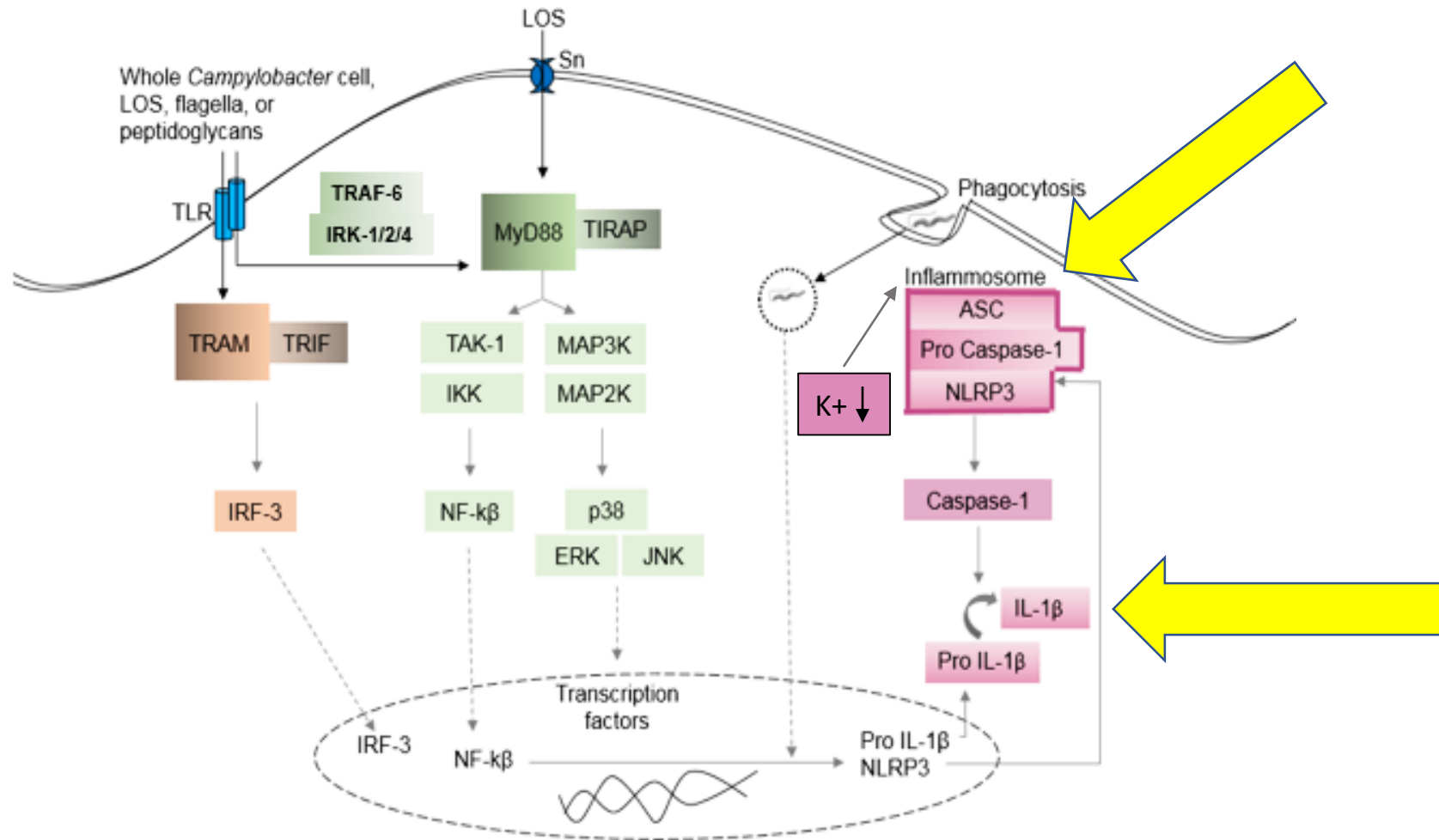
- Structural integrity
- Antibiotic susceptibility
- Invasion

- Variable structures
- Ganglioside mimics



Guillan Barré and Miller Fisher Syndromes

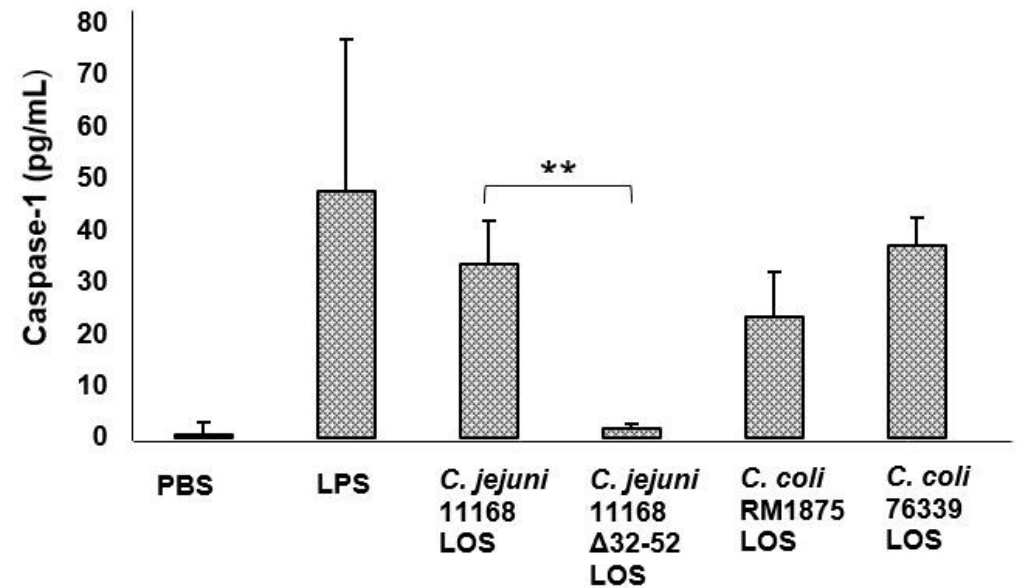
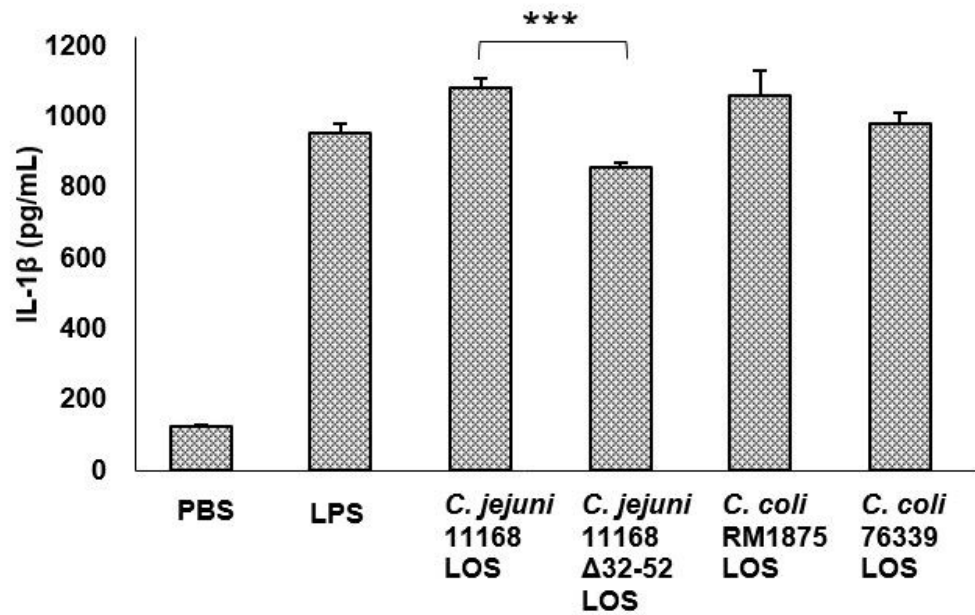
Model for immune responses to LOS



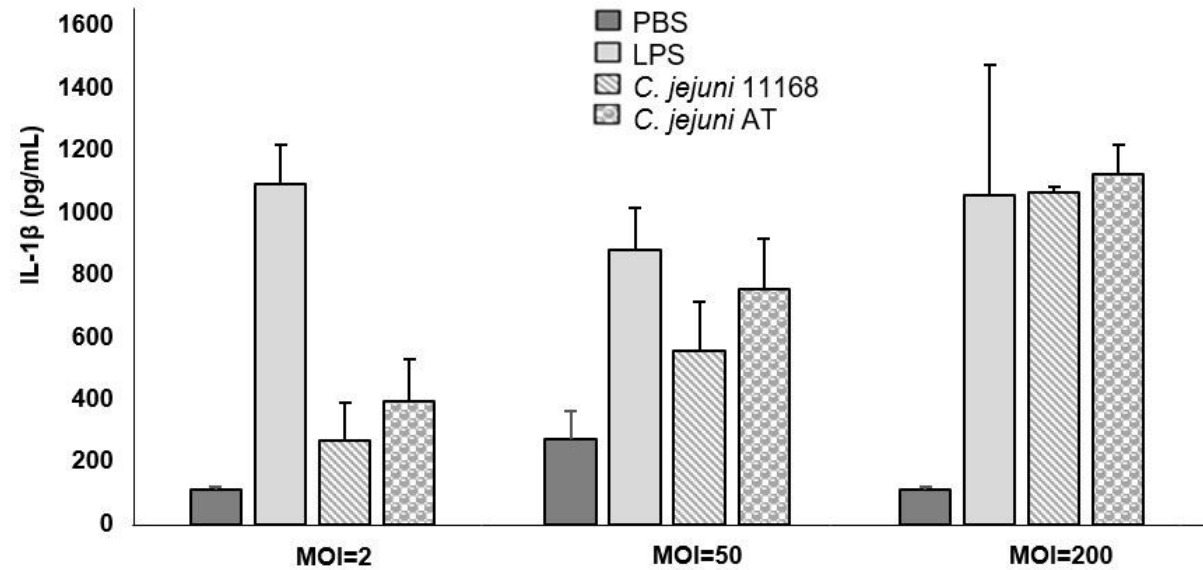
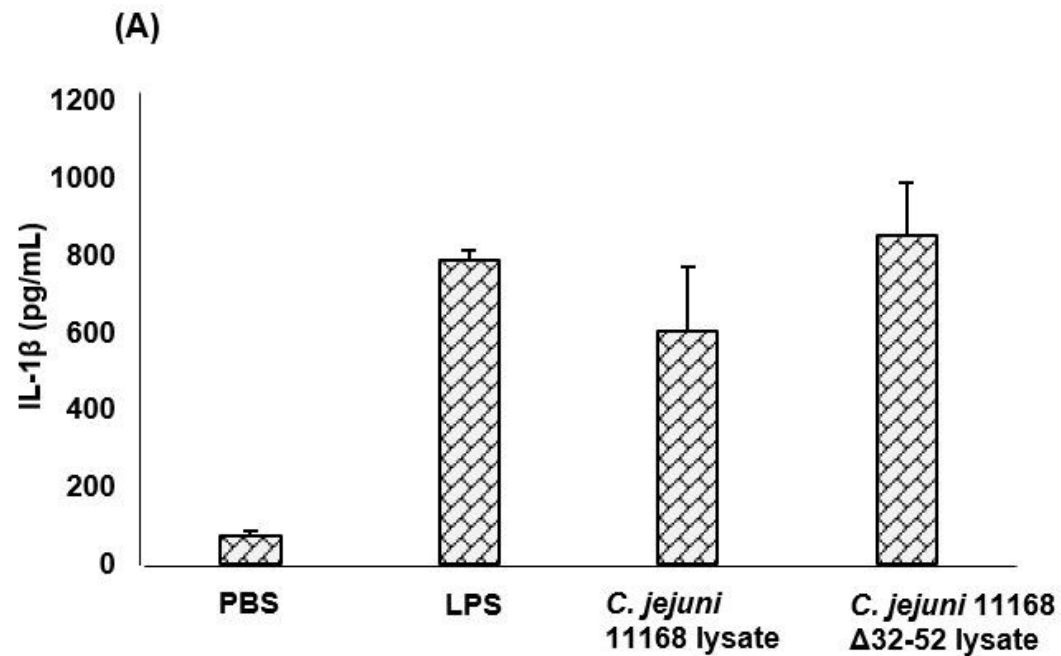
Does Campylobacter LOS induce IL-1 β in THP-1 cell lines?

- THP-1 is a human monocytic cell line
- Activated by PMA to induce differentiation to macrophages
- *N. gonorrhoea* LOS induces IL-1 β (Duncan *et al.*, *J Immunol*, 2009)
- Previously used to demonstrate inflammasome activation by *C. jejuni* is LOS-independent (Bouwman *et al.*, *J Immunol*, 2014)
 - However, only single gene deletions tested
- **Our study**
 - Large scale deletion of LOS biosynthesis genes
 - Purified LOS

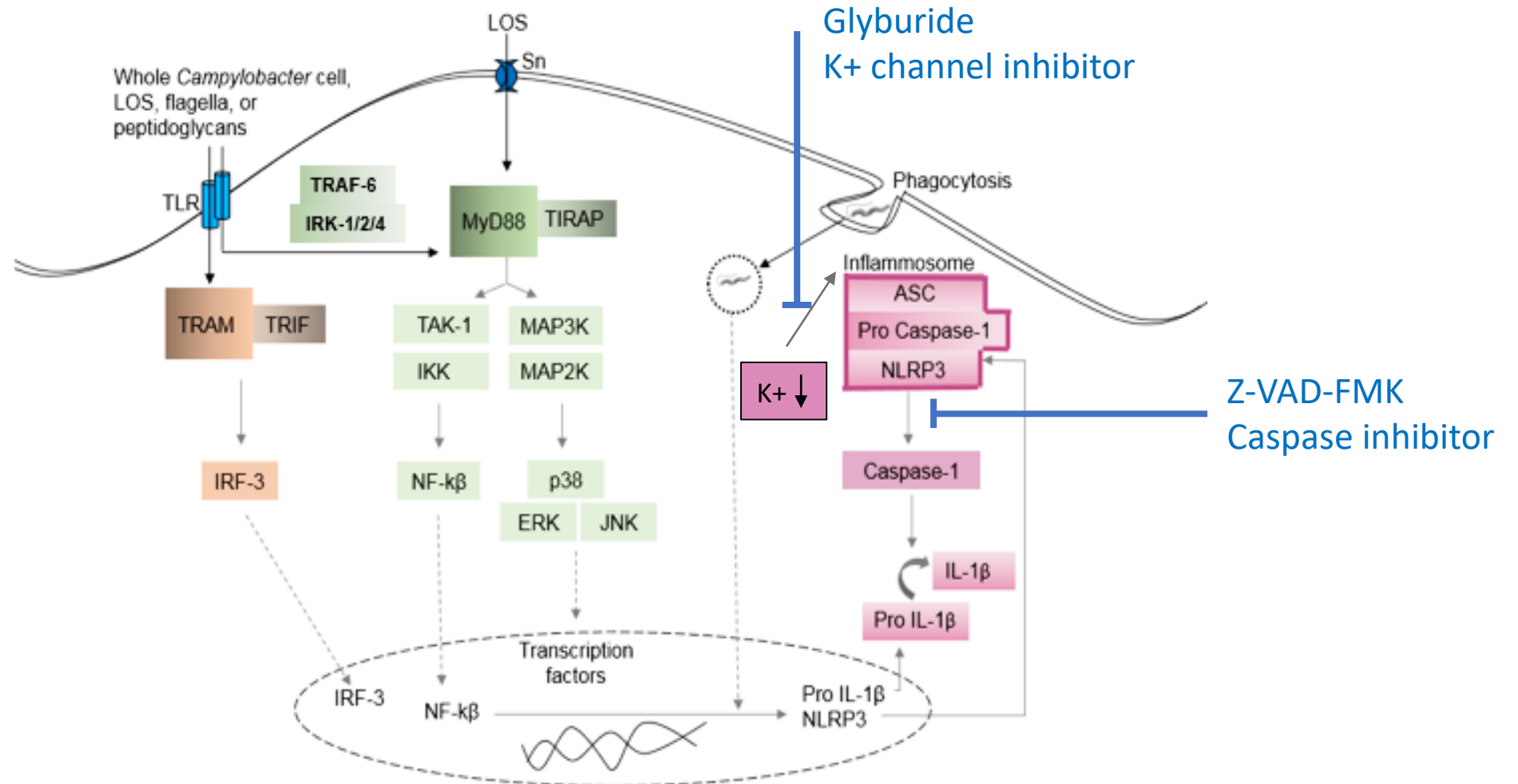
Does purified LOS stimulate immune responses in THP-1 cell lines?



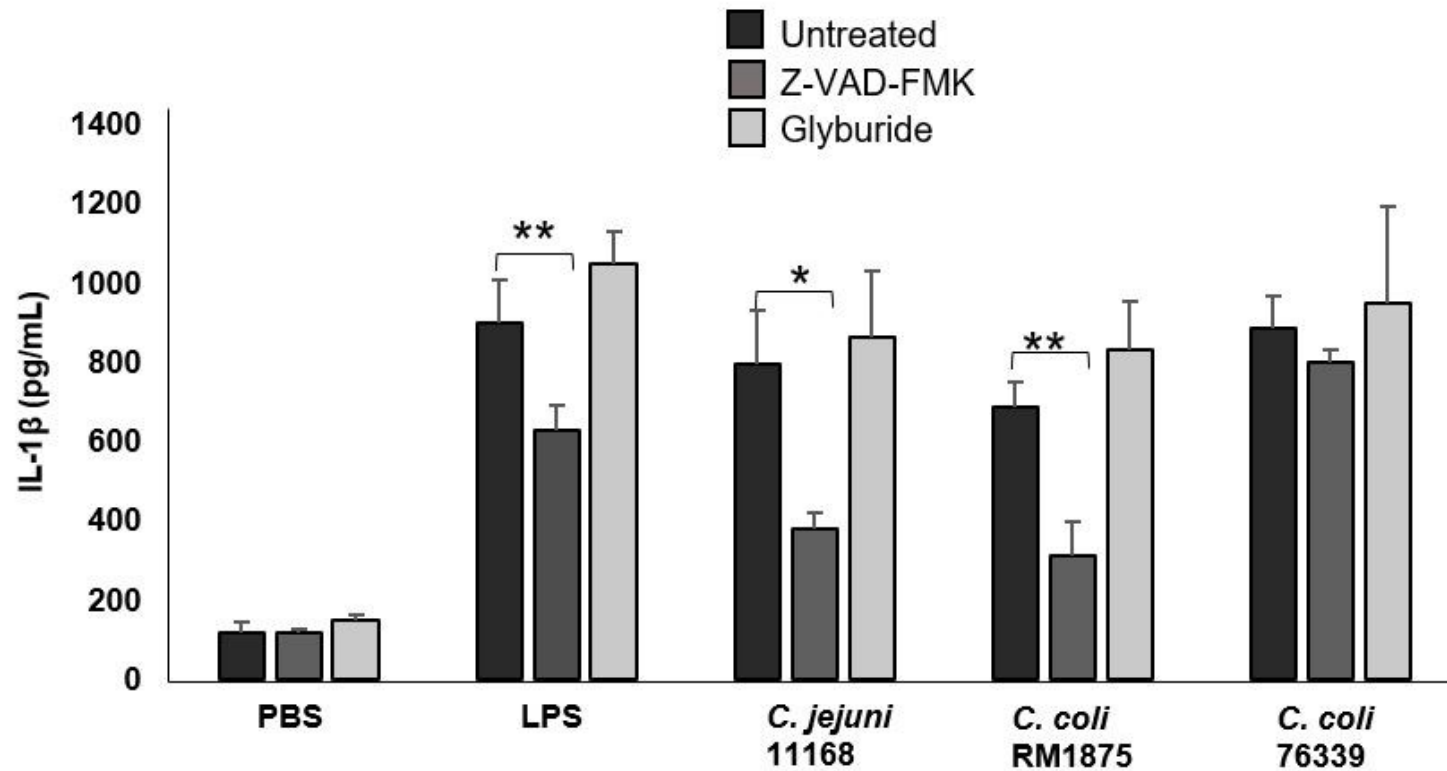
Does LOS also affect IL-1 β in whole cells?



Which pathway increases IL-1 β in response to live *Campylobacter* cells?

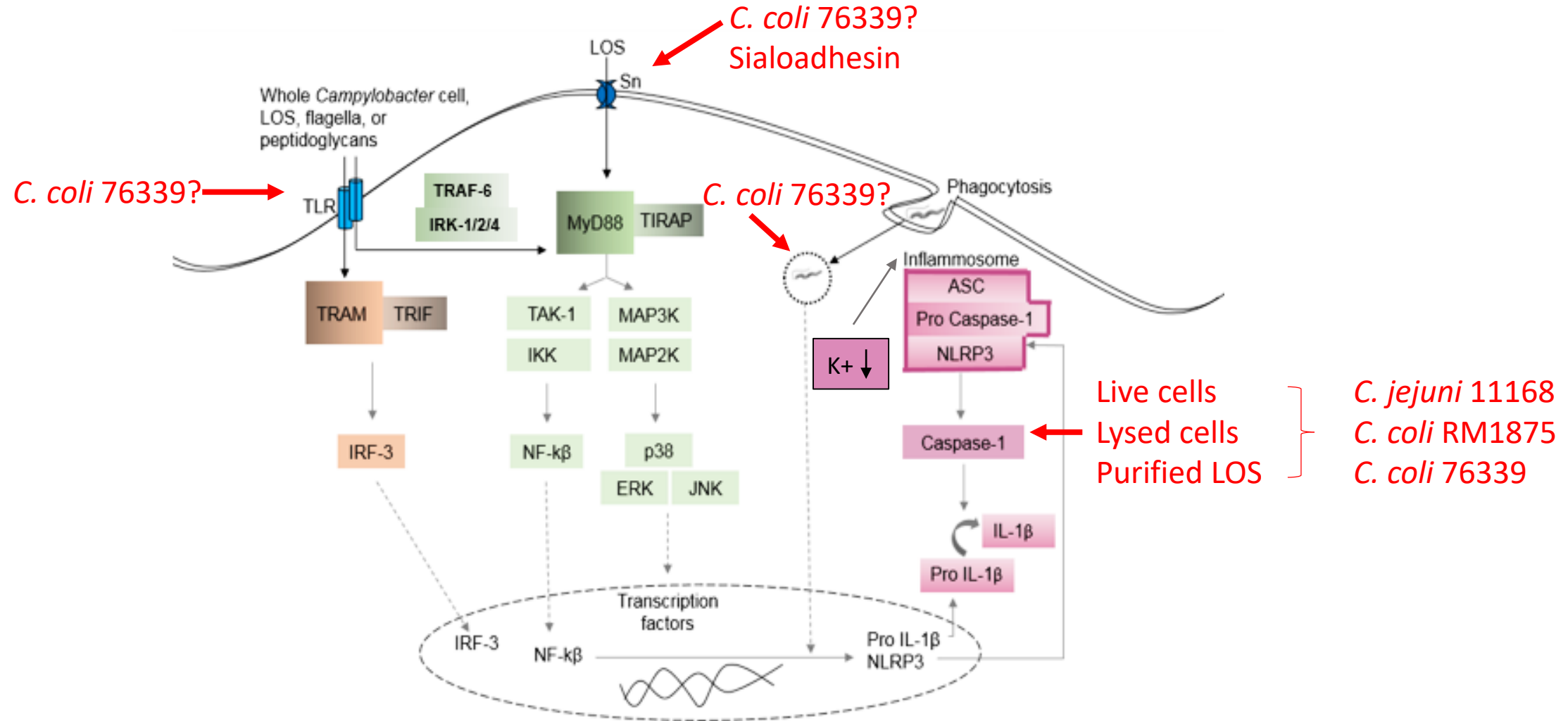


Which pathway increases IL-1 β ?

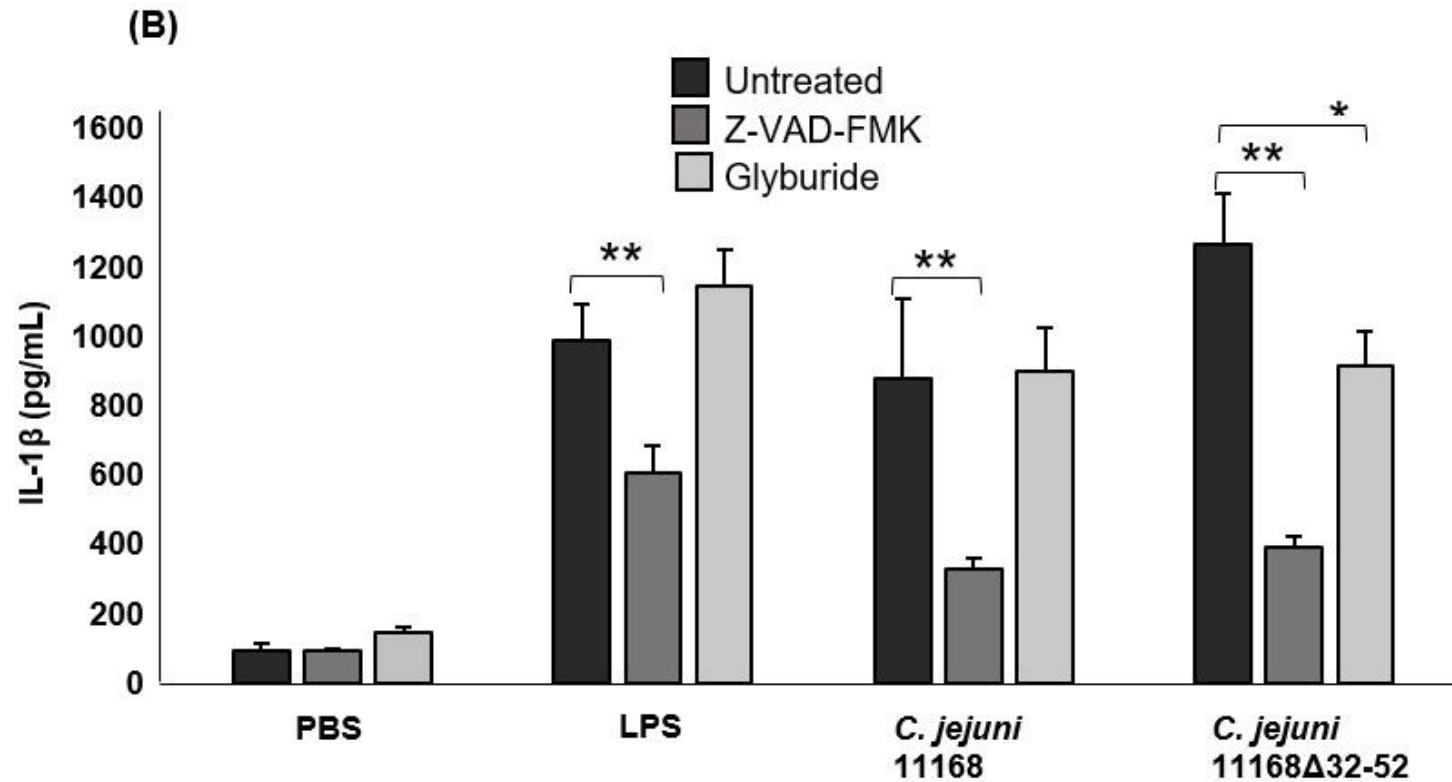


Sialylated LOS

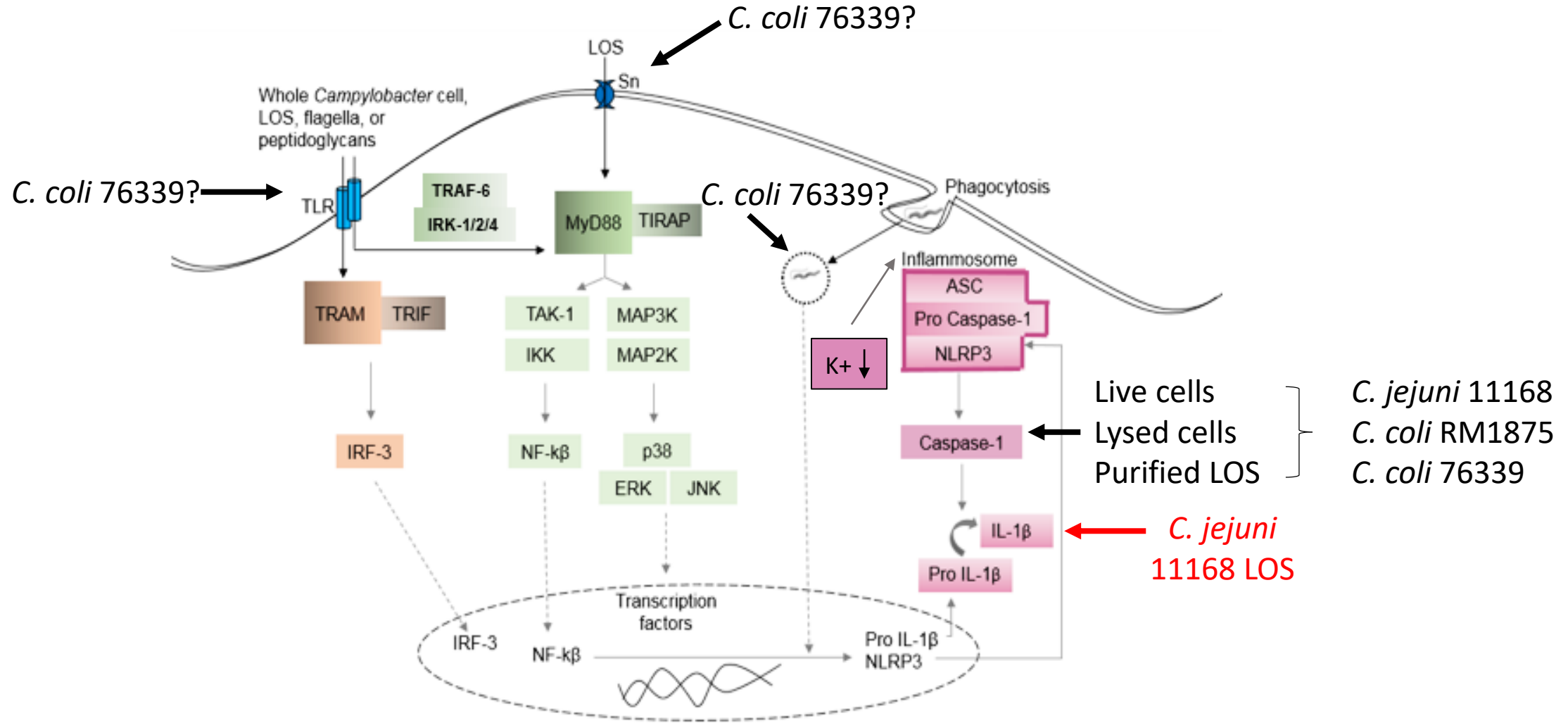
Which pathway increases IL-1 β in response to Campylobacters?



Is LOS important for induction of IL-1 β ?



IL-1 β induction in response to *Campylobacter* cells and LOS molecules



In summary

- Campylobacter LOS can induce IL-1 β secretion
 - Primarily caspase-dependent?
- Effect of the native LOS in whole or lysed cells is difficult to detect but *C. jejuni* LOS does affect levels of IL-1 β in the absence of K⁺ efflux
 - Whole cells may elicit K⁺ efflux but not purified LOS?
 - Multiple dynamic factors stimulating inflammasomes?
- *C. coli* 76339 with sialylated LOS induces caspase-independent IL1- β secretion