

Assessment of *Salmonella* Typhimurium load within infected nematodes

School of Biosciences, University of Birmingham, Birmingham, UK.

CONTEXT

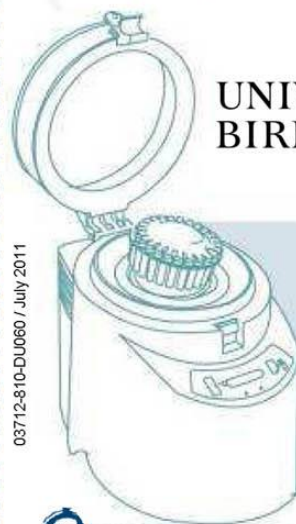
The nematode *Caenorhabditis elegans* is a powerful model system for the study of host-pathogen interactions.

This study looked at innate immune response of *C.elegans* to *Salmonella* Typhimurium. To test whether the altered resistance of *lys-7* and *abl-1* (tyrosine kinase ABL-1) mutant nematodes to *Salmonella* Typhimurium was due to a lower bacterial load within infected animals, wild type (N2), *lys-7* and *abl-1* animals were exposed to *S. Typhimurium* L1019, and infectious burden quantified over time through viable counts [1].

MATERIAL

- Precellys 24 homogenizer.
- Precellys kit: 03961-1-004 (0.5 mm glass beads)
- Sample: *C. elegans* (Six animals at L4 stage) infected with *S. Typhimurium* strain L1019.
- Buffer: 200 μ l M9 with 25 mM levamisole hydrochloride.
- 10 replicates / 5 time points (5 days).

[1] Marsh EK, van den Berg MCW, May RC (2011) A Two-Gene Balance Regulates *Salmonella* Typhimurium Tolerance in the Nematode *Caenorhabditis elegans*. *PLoS ONE* 6(3): e16839. doi:10.1371/journal.pone.0016839



UNIVERSITY OF
BIRMINGHAM

03712-810-DU060 / July 2011

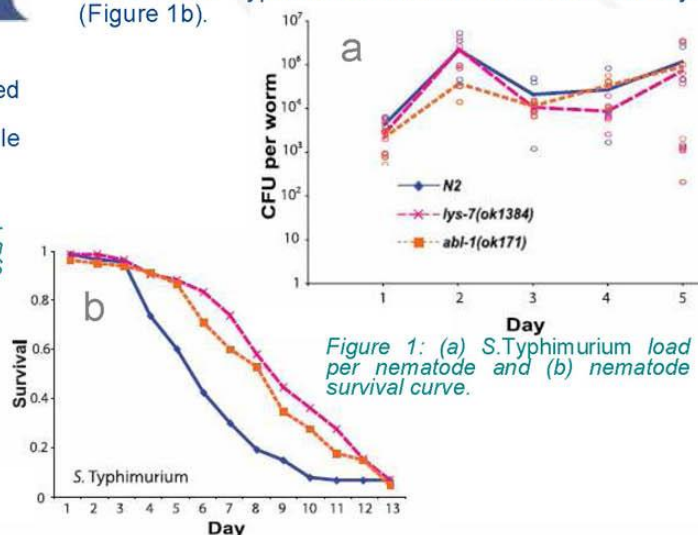


PROTOCOL

- Precellys 24: 6500rpm, 1x10s.
- Analysis: Lysates were serially diluted in M9 and plated onto LB plates containing kanamycin (30 μ g/ml) to select for L1019. Colonies were counted by eye and scaled to the original concentration per nematode.

RESULTS

Infection load was assessed through viable counts for 5 days / each 24 hours. *lys-7* and *abl-1* mutant animals are tolerant of *S. Typhimurium* infection (Figure 1a). There was no difference between any of the strains (p.0.2) showing that *lys-7* and *abl-1* single mutants are tolerant to *S. Typhimurium* infection for at least six days (Figure 1b).



CONCLUSION

Lysing nematodes infected with *Salmonella* using the **Precellys 24** does not affect the bacteria viability, allowing infection load to be accurately assessed.

The potential to process up to 24 individual samples in a short time period with no risk of cross-contamination and reproducibility has considerable benefits over traditional homogenization methods.

In this study, **Precellys 24** homogenizer was also used to lyse worm to extract total RNA in order to prepare cDNA and perform an qRT-PCR.

For more details, please contact
precellys@bertin.fr

bertin
TECHNOLOGIES



 **エムエス機器株式会社**

<http://www.technosaurus.co.jp>

□東京 〒162-0805 東京都新宿区矢来町 113 番地 TEL (03) 3235-0661(代) / FAX (03) 3235-0669
□大阪 〒532-0005 大阪市淀川区三国本町2丁目12番4号 TEL (06) 6396-0501(代) / FAX (06) 6396-0508
□福岡 〒812-0054 福岡市東区馬出 1 丁目 2 番 23 号 TEL (092) 631-1012(代) / FAX (092) 641-1285