

RESEARCH

A sample article title

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Abstract
First part title: Text for this section.
Second part title: Text for this section.
Keywords: sample; article; author

Content
Text and results for this section, as per the individual journal’s instructions for authors.

Section title
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Sub-sub-sub heading for section Text for this sub-sub-sub-heading ... In this section we examine the growth rate of the mean of Z_0 , Z_1 and Z_2 . In addition, we examine a common modeling assumption and note the importance of considering the tails of the extinction time T_x in studies of escape dynamics. We will first consider the expected resistant population at vT_x for some $v > 0$, (and temporarily assume $\alpha = 0$)

$$E[Z_1(vT_x)] = E\left[\mu T_x \int_0^{v\wedge 1} Z_0(uT_x) \exp(\lambda_1 T_x(v-u)) du\right].$$

If we assume that sensitive cells follow a deterministic decay $Z_0(t) = xe^{\lambda_0 t}$ and approximate their extinction time as $T_x \approx -\frac{1}{\lambda_0} \log x$, then we can heuristically estimate the expected value as

$$\begin{aligned} E[Z_1(vT_x)] &= \frac{\mu}{r} \log x \int_0^{v\wedge 1} x^{1-u} x^{(\lambda_1/r)(v-u)} du \\ &= \frac{\mu}{r} x^{1-\lambda_1/\lambda_0 v} \log x \int_0^{v\wedge 1} x^{-u(1+\lambda_1/r)} du \\ &= \frac{\mu}{\lambda_1 - \lambda_0} x^{1+\lambda_1/rv} \left(1 - \exp\left[-(v\wedge 1)\left(1 + \frac{\lambda_1}{r}\right) \log x\right]\right). \quad (1) \end{aligned}$$

Thus we observe that this expected value is finite for all $v > 0$ (also see [?, ?, ?, ?, ?]).

Competing interests
The authors declare that they have no competing interests.

Author's contributions
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References

1. Koonin, E.V., Altschul, S.F., Bork, P.: Brca1 protein products: functional motifs. *Nat Genet* **13**, 266–267 (1996)
2. Orengo, C.A., Bray, J.E., Hubbard, T., LoConte, L., Sillitoe, I.: Analysis and assessment of ab initio three-dimensional prediction, secondary structure, and contacts prediction. *Proteins Suppl* **3**, 149–170 (1999)
3. Kharitonov, S.A., Barnes, P.J.: Clinical Aspects of Exhaled Nitric Oxide. in press
4. Zvaifler, N.J., Burger, J.A., Marinova-Mutafchieva, L., Taylor, P., Maini, R.N.: Mesenchymal cells, stromal derived factor-1 and rheumatoid arthritis [abstract]. *Arthritis Rheum* **42**, 250 (1999)
5. Jones, X.: Zeolites and synthetic mechanisms. In: Smith, Y. (ed.) *Proceedings of the First National Conference on Porous Sieves: 27-30 June 1996; Baltimore*, pp. 16–27 (1996). Stoneham: Butterworth-Heinemann
6. Schnepf, E.: From prey via endosymbiont to plastids: comparative studies in dinoflagellates. In: Lewin, R.A. (ed.) *Origins of Plastids vol. 2*, 2nd edn., pp. 53–76. Chapman and Hall, New York (1993)
7. *Innovative Oncology*
8. Smith, Y. (ed.): *Proceedings of the First National Conference on Porous Sieves: 27-30 June 1996; Baltimore*. Butterworth-Heinemann, Stoneham (1996)
9. Margulis, L.: *Origin of Eukaryotic Cells*. Yale University Press, New Haven (1970)
10. Hunninghake, G.W., Gadek, J.E.: The alveolar macrophage. In: Harris, T.J.R. (ed.) *Cultured Human Cells and Tissues*, pp. 54–56. Academic Press, New York (1995). Stoner G (Series Editor): *Methods and Perspectives in Cell Biology*, vol 1
11. *Advisory Committee on Genetic Modification: Annual Report*. London (1999). *Advisory Committee on Genetic Modification*
12. Kohavi, R.: *Wrappers for performance enhancement and obvious decision graphs*. PhD thesis, Stanford University, Computer Science Department (1995)
13. The Mouse Tumor Biology Database. http://tumor.informatics.jax.org/cancer_links.html

Figures

Figure 1 Sample figure title. A short description of the figure content should go here.

Figure 2 Sample figure title. Figure legend text.

Tables

Table 1 Sample table title. This is where the description of the table should go.

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