Reviewer's report

Title: Immunomodulatory intervention in sepsis by multidrug-resistant Pseudomonas aeruginosa with thalidomide: an experimental study

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Reviewer: William Bishai

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In this paper Giamarellos-Bourboulis et al. extend their earlier work on thalidomide in experimental models of sepsis, by evaluating Pseudomonas aeruginosa sepsis in rats with and without thalidomide pretreatment. The results show that while all rats succumbed to their bacteremic infection, there was statistically significant survival prolongation in the thalidomide recipients. Analysis of biomarkers of sepsis showed statistically significant reductions in TNF-alpha and nitric oxide in the thalidomide-treated rats.

The experiments are cleanly conducted, important controls are performed, and the findings are clearly presented.

The following considerations might be helpful to further strengthen the manuscript:

In figures 1, there is one rat in the thalidomide group which survived for 170 hours and appears to have been an outlier. It would be helpful to inform readers of whether the survival benefit of thalidomide is still observed when this rat is omitted from the Kaplan Meier analysis. TNF inhibition with infliximab in humans did not prove to be an effective anti-sepsis intervention. The authors should cite this fact and the relevant papers. Thalidomide has many effects on mammalian physiology in addition to TNF-alpha inhibition, it would be useful to elaborate on these and to remind readers that while TNF-alpha inhibition may be a likely explanation for the effect it is not the sole explanation.

page 4, paragraph 3. What kind of seed oil (cottonseed, linseed?) was it? And what route was used to administer the oil to group B rats?

page 4, paragraph 5 running on to page 5. The timing of animal sacrifice with respect to vena cava sampling is confusing. At the beginning of the paragraph it says the animals were sacrificed before sampling, but at the end of the paragraph describing how the sampling was done it says the animals were then sacrificed.