Reviewer's report

Title: Mitochondria-targeted antioxidant MitoQ ameliorates experimental mouse colitis by suppressing NLRP3 inflammasome-mediated inflammatory cytokines

Version: 3 Date: 6 May 2013

Reviewer: Atsushi Mizoguchi

Reviewer's report:

This manuscript proposes the potential therapeutic effect of MitoQ (an orally available mitochondria-targeted derivative of the antioxidant ubiquinone) on acute colonic injury induced by oral administration of dextran sulfate sodium (DSS). Overall, this is a well written manuscript that contains attractive and translational information. However, there is a terminological, but important, issue to be corrected for avoiding mislead the readers.

Minor Essential revision: The authors emphasize DSS colitis as a model of inflammatory bowel disease (IBD). Although DSS colitis is useful to study the mechanism of acute intestinal damage and following wound healing process, it is still under very controversy whether this injury model can be used as a model of IBD. In addition, the authors used an unusual protocol for DSS administration, which should cause continuous epithelial damages by the chemical. Therefore, the authors need to change the term “IBD” to “acute colonic damage or injury”. If the authors eager to keep it, additional studies to test the therapeutic effect of MitoQ on another well-accepted mouse IBD model (e.g. IL-10 knockout mice) would be necessary.

Quality of written English: Acceptable

Statistical review: No, the manuscript does not need to be seen by a statistician.

Declaration of competing interests:

No COI