Open peer review report 1

Reviewer: Olga Chechneva, University of California Davis, USA.

Comments to the authors:

The manuscript "Modulation of microglial functions by methyl jasmonate" investigates the effect of plant-derived oxylipin, methyl jasmonate (MJ) on production of reactive oxygen species (ROS) by human promyelocytic HL-60 cells and beads phagocytosis by BV-2 microglia cell line. Pre-treatment with 10 uM of MJ reduced ROS and increased phagocytosis in LPS-stimulated cells. The findings are novel and have a potential for regulation of microglia function in neuroinflammation.

Minor points:

1. More information on MJ's chemical structure and its safety will be an advantage.
2. Page 4, line 47. The statement "microglia may be unable to efficiently clear…. leads to their adverse activation" is confusing. How does not efficient Aβ clearance lead to microglia activation? Explanation is needed.
3. Paper by Taki-Nakano et al., 2016 Biochemical and Biophysical Research Communications, compares anti-inflammatory activity of several oxylipins, including MJ. No anti-inflammatory activity for MJ was found there. Authors need to cite this paper and discuss the possible reasons why different effects of MJ are found in their study compared to already reported.
4. The experimental details in the Result section are unnecessary. The details of the experimental procedures need to be added to the Experimental part.
5. Why do authors use two different cell lines to characterize two different functions? HL-60 are more neutrophils than microglia. It would be more informative to narrow the functional characterization to BV-2 microglia as closer resembling the microglia.
6. How long the cells were pre-treated with MJ before LPS stimulation for ROS?