Reviewer's report

Title: Proprotein convertase subtilisin/kexin type 9 expression is transiently up-regulated in the acute period of myocardial infarction in rat

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Reviewer: Guy ROUSSEAU

Reviewer's report:

The study of Zhang et al. examines the effect of myocardial infarction in the expression of the proprotein convertase subtilisin/kexin type 9 (PCSK9). Myocardial infarction has been induced in rats and measurements of PCSK9 and other lipid parameters were performed at different times after MI. The results indicated that the plasmatic concentrations of PCSK9 are increased between 12 - 96h post MI as well as the mRNA expression of the hepatic PCSK9.

The paper is clearly written and the data are interesting. However, I have some concerns:

Major:
- I have some concerns about the effect of the post-MI diet on the expression of the different lipid parameters. I believe that animals with 1 to 6 h occlusion were still anesthetized and they are starving until the sacrifice. In contrast, animals with longer period of occlusion should have eaten something and the diet may influence the lipid parameters. This should be taken into consideration.
- Is the sacrifice performed at the same time of the day for animals with 24, 48 or 96 h of occlusion?
- The description of the diet should be presented in the text. What is the percentage of the lipid in the chow used?
- Student t test is inadequate for the statistical analysis. Performing multiple t tests with the same groups creates a type I error. ANOVA followed by Dunnett (if considering basal as the control) should be performed.

Minor:
- Do you have an idea about the infarct size? Although I understand that the hypothesis of the infarct size may affect PCSK9 concentrations is under investigation, in many occasions during the discussion (page 8 neutrophils and tissue injury; page 9 clinical severity; page 9 end of the page related to infarct size), the authors referred to this hypothesis. It appears as a central point of the paper.

Level of interest: An article whose findings are important to those with closely related research interests
Quality of written English: Acceptable

Statistical review: Yes, and I have assessed the statistics in my report.

Declaration of competing interests:

I declare that I have no competing interests