Reviewer’s report

Title: Changes in the gene expression programs of renal mesangial cells during diabetic nephropathy

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Reviewer: Akira Mima

Reviewer’s report:

Brunskill et al. showed changes in the mesangial gene expression in diabetic conditions. Overall this is an interesting study, however several issues need clarification.

1) The authors used mesangial cells from db/db with GFP, but how to establish the db/db mice that express GFP positive in glomeruli? Did you crossbreed db/db mice with GFP mice? I think it is very difficult to breed db/db mice and if the breeding be success, we cannot know whether the mouse is truly db/db or not. (One possibility is measuring blood glucose.)

2) The authors have the data using insulin dependent mice model (e.g. STZ)? Are there any differences between type 1 and 2?

3) The authors indicated increases in TGF-b expression. It is well known that TGF-b is upstream of Smads. Did you check Smads expression?

4) Recent study suggests that PKCb expression is recognized in diabetic nephropathy. Please discuss about this.

5) I think, especially in mesangial cells, type IV collagen expression is recognized from early to late stage of diabetic nephropathy, however, the authors claimed only type I collagen was detected. Please indicate this mechanism.

Minor

What age of mice did the author use? Also, what passages of primary cell culture did the author use?

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

Quality of written English: Acceptable

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

Declaration of competing interests:
I declare that I have no competing interests.