Reviewer's report

Title: Effects of Diabetes and Hypertension on Macrophage infiltration in the rat kidney

Version: 1 Date: 21 February 2005

Reviewer: Dick de Zeeuw

Reviewer's report:

General
Induction of diabetes in mRen2-transgenic hypertensive rats aggravates renal injury. The authors investigate whether hypertension and diabetes act synergistically to induce macrophage induction and MCP-1 expression in the kidney.
Well written, well designed and conducted study.

Major Compulsory Revisions (that the author must respond to before a decision on publication can be reached)

In ref 10, Kelly et al, describe severe glomerulosclerosis in diabetic mRen2 trangenic hypertensive TGR at week 12. Non-diabetic TGR showed only mild glomerulosclerosis. The authors of the paper under review, use this model to test whether hypertension and diabetes mellitus act synergistically to induce macrophage infiltration at week 5.
- The authors do not test this model. They do not show that the damage at week 12 is greater for the diabetic TGR group than for the non-diabetic TGR group. Alternatively, proteinuria should be increased in the diabetic TGR group compared to the nondiabetic TGR group.

Minor Essential Revisions (such as missing labels on figures, or the wrong use of a term, which the author can be trusted to correct)

Specifics:
- Why did the authors pick week 5? Several time-points should be observed.
- Does MCP-1 expression correlate with macrophage scores?
- The authors raise the question â€œWhich mechanisms could account for the induction of MCP-1 in glomeruli and cortex in diabetes mellitus and hypertension?â€. However, the results obtained in this paper, hardly contributes to answering this questions and therefore this section should be shortened.
- Values for MCP-1 mRNA and protein levels are not given. Only two gels are shown, showing the results of just a few animals. No statistics has been performed.
- The numbering of the figures is not very logical; In the results, authors start with Fig. 2.
Discretionary Revisions (which the author can choose to ignore)

**What next?:** Unable to decide on acceptance or rejection until the authors have responded to the major compulsory revisions

**Level of interest:** An article of importance in its field

**Quality of written English:** Acceptable

**Statistical review:** No