Reviewer’s report

Title: Reduction in Podocyte Density as a Pathologic Feature in Early Diabetic Nephropathy in Rodents: Prevention of by Lipoic Acid Treatment

Version: 1 Date: 5 October 2005

Reviewer: Kerstin Amann

Reviewer’s report:

General
The study by Siu et al describes the early diabetic nephropathy in rodents. The authors emphasize the reduction in podocyte density and the preservation of podocyte number by use of lipoic acid treatment.

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

The paper didn’t provide sufficient scientific accuracy, i.e. there are at least 2 studies in animal models of type I and II diabetes that describe a reduction in podocyte number i.e. loss of podocytes in diabetic nephropathy using highly accurate stereological techniques (Gross et al., Diabetologia 2004, Gross et al, Lab Invest 2004).

Therefore the statement “no determination of podocyte density has been reported in diabetic animals” (p. 2, l.3-4) is definitely not correct.

What does the term “apparent” podocyte number mean? Why did authors not examine also serial sections and semithin sections where podocyte number can reliably be estimated?

The authors speculate that the WT1 and GLEPP1 antibodies are sensitive enough for the detection. This is not the case since podocytes are known to lose their specific markers in case of damage or shortly before they undergo apoptosis or necrosis. What about control slides?

Nephrin immunohistochemistry should also be done since nephrin loss has also been shown to occur in diabetic nephropathy.

The authors do not discuss the differences between rats and mice with respect to the increase glomerular volume/podocyte after 2 weeks of diabetes.

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

Meyer TW quoted in text at page 4 as referee 2 must be listed in the bibliography as referee 3.

It is very unusual to cite references in the result section.

Page 2: “renal glomerular podocytes” could be replaced by “podocytes” since these cells do only occur in the glomerulus.

Conclusion should not start with “...”.

Page 13: step should be written with one “e”.

Page 17: Who is BB? Another author? Or Brian Siu?

Page 24-25, Figure 3, 4, 5, and 6: per podocyte and not “pre” podocyte.

Discretionary Revisions (which the author can choose to ignore)
**Which journal?:** Too insignificant to warrant publication in BMC Nephrology

**What next?:** Reject because scientifically unsound

**Quality of written English:** Acceptable

**Statistical review:** No

**Declaration of competing interests:**

I declare that I have no competing interests