Reviewer's report

Title: Sry Delivery to the Adrenal Medulla Increases Blood Pressure and Adrenal Medullary Tyrosine Hydroxylase of Normotensive WKY Rats

Version: Date: 3 January 2007

Reviewer: John Imig

Reviewer's report:

General
The present study determined the effects on blood pressure control in WKY rats in response to elevating the transcription factor Sry in the adrenal medulla. Experiments linked this tyrosine hydroxylase transcription factor to norepinephrine production. WKY rats that had Sry vector injected into the adrenal medulla had elevated tyrosine hydroxylase content and plasma norepinephrine levels as well as increased blood pressure. This preliminary finding is potentially interesting and data support this concept. On the other hand, there was no attempt made to evaluate other mechanisms that could also have contributed to the increase in blood pressure.

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

The experiments are carefully done to make a strong association between adrenal medulla Sry levels, tyrosine hydroxylase and norepinephrine to the elevation in blood pressure. These experiments do not actually determine if tyrosine hydroxylase content and norepinephrine are responsible for the elevated blood pressure in the male WKY rats. The most obvious experiment is to inhibit tyrosine hydroxylase in the adrenal medulla and assess blood pressure. Additionally, Sry is a transcription factor that could have impact on the regulation of other genes that could be responsible for the elevation in blood pressure. Is it possible that aldosterone production by the adrenal cortex was increased by Sry injection? There are a number of studies that have implicated aldosterone and the renin angiotensin system in blood pressure control. The possible involvement of the renin angiotensin aldosterone system must be evaluated to exclude its involvement.

Where experiments done to determine the involvement of the sympathetic nervous system to the increase in blood pressure in the WKY rats injected with Sry?

This transcription factor has actions on the testis and nervous system and I on the Y chromosome. Does injection of this transcription factor into female WKY rats have the same effect on tyrosine hydroxylase, norepinephrine and blood pressure?

Figure 5 suggests that the Sry injection was confined to the adrenal medulla; however, these experiments did not determine if the Sry vector remained confined to the adrenal medulla.

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

The blood pressure at all time points measured should be reported.

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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, the manuscript does not need to be seen by a statistician.

Declaration of competing interests:

I declare that I have no competing interests.