Reviewer's report

Title: Maternal undernutrition does not alter Sertoli cell numbers or the expression of key developmental markers in the mid-gestation ovine fetal testis

Version: 1 Date: 24 October 2012

Reviewer number: 3

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The authors applied 50% global undernutrition (L) to pregnant ewes from day 0 to day 110 of gestation. Normal duration of gestation is approximately 145 days. The critical window for testis development is approximately from day 30 to day 90 as described in other studies.

L nutrition reduces maternal body fat (body condition score). However, in the developmental stage between d0 and d110, maternal undernutrition does not have an impact on fetal testis morphology at day 110 of pregnancy. I think this finding is important because it helps to further clarify the mechanisms of disturbed gonadal morphology and function in some adult ewes.

Major Compulsory Revisions:
1. I think the introduction is not really straightforward. The aim of the study is not really clear.
2. Do the authors want to show that there are sex differences in gonadal development? Data on females is not provided, but cited.
3. Do the authors want to investigate which developmental window is important for testis development? Previous studies show that days 30 – 90 seem to be the critical window.
4. Do the authors want to show that undernutrition during pregnancy has different impact on testis development than overnutrition/placental insufficiency/IUGR?
5. Do the authors want to show that testicular alterations in adult ewes, as described by other studies after undernutrition, may be due to secondary factors because there are no primary alterations?
6. Please provide maternal body weight at day 110 of pregnancy.
7. Please provide fetal body weight at day 110 of pregnancy.

Minor Essential Revisions:
8. Please provide a short explanation of the body condition score in the text (estimation of body fat content), which parameters have influence on the score?
9. I think the individual housing of the animals may be a stressor. Was stress assessed in pregnant sheep or the fetuses, e.g. by measurement of steroid concentrations?
10. When does gestation (d0) begin? First day of mating? Last day of mating?
Does nutritional intervention last exactly 110 days, or 110 days + mating time (14 days)?

**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.