Reviewer's report

Title: Lemon juice has protective activity in a rat urolithiasis model

Version: 1 Date: 2 August 2007

Reviewer: Mirian Boim

Reviewer's report:

General
This paper evaluated the potential effect of lemon juice on calcium oxalate nephrolithiasis in rats. Authors found a protective effect of lemon juice preventing the urolithiasis. The paper is confusing mainly due to a discrepancy between figures and the legend.

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

Major criticisms
1. EG has been used as an agent to induct calcium oxalate precipitation, however, this is not a suitable model to study nephrolothiasis, due to the high toxicity of this drug to the kidney. Most of the results observed concerning the renal function are due to the drug nephrotoxicity more than a result of the lithiasis. This toxicity can be clearly demonstrated by the body weight loss, showed by all animals receiving EG. Lemon juice had no effect in this parameter.
2. It is very difficult to follow the paper because the legend does not correspond to the figures! There are 21 figures and only 6 legends different to the correspondent figure!
3. Table 1 is confused. Letters size must be reduced other wise it is impossible to understand what it means.
4. Graphics needs improvements, for instance the Y axis is confused with X axis or the title of the figures 1,2,3,4, and 6 must be the Y axis
5. Statistical analysis is wrong. If there are more than 2 groups it must be used Variance analysis (ANOVA)
6. How was determined the doses of the lemon juice? Why 6 ul/g?
7. Histological data do note correspond to what has been described in the text.
8. What is the difference between figure 1 and figure 6?
9. Water intake and urinary volume should be provided.
10. If I understood well Group 2 presented reduced levels of calcium in serum and kidney tissue. There was calcium lost in the urine?
11. It was measured urinary calcium excretion?
12. Is the lemon juice hypercalciuric?  
All these issues must be discussed.

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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)

**Minor**

1. English must be revised.
2. In the material and Methods section, 2nd paragraph "gavage" instead "lavage".
3. Lemon juice causes hypocalcemia and hypophosphatemia so it is necessary to add a control group only taking lemon juice

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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 limited interest

**Quality of written English:** Needs some language corrections before being published

**Statistical review:** Yes, and I have assessed the statistics in my report.

**Declaration of competing interests:**

I declare that I have no competing interests