Reviewer's report

**Title:** Use of a Chemically Induced-Colon Carcinogenesis-Prone Apc-Mutant Rat in a Chemotherapeutic Bioassay

**Version:** 1  **Date:** 8 June 2012

**Reviewer:** Michihiro Mutoh

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The authors demonstrated an ideal chemotherapeutic bioassay system using AOM/DSS-treated Apc-mutant rats, KAD rats. KAD rat was developed by the authors’ group and the system seems quite unique. Previously, they showed that treatment of KAD rats with AOM/DSS developed colon tumors quickly and at a high incidence. In the present study, the model was applied to chemotherapeutic examination after averaging the number of tumors between the groups by colonoscopy. There are several points to be improved in this article. Thus, this article is not acceptable for publication in “BMC Cancer” in this form.

1. Page 9, lines 5-12: Are there any detailed methods to remove feces from the colon before the colonoscopic examination? This point should be added in the Materials and Methods Section.

2. Page 15, lines 13-14: The authors described that “the averaging of the group should improve the precision of the chemotherapeutic assay”. However, the evidence for this idea is not shown. How does the number of tumors observed by endoscope at 8 weeks show any effects of the reduction of tumor volume ratio in each mouse? This point should be analyzed and addressed in the text to supports the authors’ idea. If possible, the size of the tumor at the 8 weeks should be shown. Moreover, if the authors have previous histopathological information about the tumor developed at 8 weeks in this model, it would be better to be given in the text.

3. Figure 5: Tumor volume is the only factor to evaluate the effects of agents in this chemotherapeutic bioassay system. Change of other biomarkers, such as serum markers are desired to be included in this system. If there are any implied factors, they should be additionally described in the text. Moreover, a proof-of-concept for 5-FU treatment is not shown in the manuscript. Evaluation for apoptosis or cell growth inhibition by 5-FU treatment, which may responsible for tumor size reduction is desired, i.e. TUNEL assay etc.

**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.