Reviewer's report

Title: Voluntary Exercise Inhibits Intestinal Tumorigenesis in Azoxymethane/Dextran Sulfate Sodium-Treated and ApcMin/+ Mice

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Reviewer: Chinthalapally V. Rao

Reviewer's report:

This manuscript from an established group and reports the role of voluntary exercise on AOM/DSS induced colon tumorigenesis in CF-1 mice and APC-min mice intestinal carcinogenesis. Also, authors studied the effect of voluntary exercise in intestinal tumor IGF and its binding protein and PGE2 and LTB4 levels and expression of E-cadherin and B-catenin levels. Recent studies suggest that lack of physical activity may associate with risk of colon cancer and certain extent it has proven in laboratory rodent models. In this manuscript authors provides further evidence using two different models of colon tumorigenesis and understanding the possible mechanisms of action in rodent models. In these animal models authors utilized two different types of experimental diets and both the experiments shows a significant decrease of colon tumors multiplicity in CF1 mice and particularly of proximal area APC-min mice. Also, author’s results shows a novel finding of decrease of tumor volume in mice on the voluntary exercise. Further, authors results show that modest to significant reduction of IGF, PGE2 and LTB4 and beta-catanin levels and an increase of E-cadherin and IGFBP levels in animals on the exercise.

Minor Concerns

Results of Table 4 on high fat effects on tumor LTB4 levels (~150% increase) in voluntary exercise mice when compared control group. This is somewhat contrast to serum levels and low-fat diet animal tumor levels. Author should explain these contrasting results

Level of interest: An article of outstanding merit and interest in its field

Quality of written English: Acceptable

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

Declaration of competing interests:

'I declare that I have no competing interests'