Reviewer's report

Title: Polymorphisms in Cyclooxygenase-2 gene and breast cancer risk in Brazilians: a case-control study

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Reviewer: James McKay

Reviewer's report:

A reasonable study of genetic variants in cox2 in relation to breast cancer risk in Brazil. The authors have identified genetic variation in the 3'UTR and tested them in a breast cancer case control study to determine if these variants may have a role in susceptibility to breast cancer. The genetic effects results are not striking, with one variant showing modest evidence of association (p 0.04).

Given the highly heterogeneous nature of the brazilian population, and even though there appears to be no differences in freq's across ethnicities (in controls? also true in breast cancer cases?), population stratification could still be an issue. This should be discussed and, if available, the results from the case control study presented should be adjusted for the "classification scheme in the 2000 Brazilian census" variable as well as age.

Some adjustment for multiple testing seems to be need & discussed (are these 9 variants in LD? If not significance level 0.05/9 using a bonferroni correction)

Level of interest: An article whose findings are important to those with closely related research interests

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