Reviewer’s report

Title: Control of the growth of human breast cancer cells in culture by manipulation of arachidonate metabolism

Version: 1 Date: 9 November 2006

Reviewer: Robert Newman

Reviewer’s report:

General
The concept of understanding an inflammatory process within breast cancer (drug sensitive and drug resistant) vs bone marrow cells is very worthy and the investigators are to be commended for trying to understand the relevance of this important pathway to this disease. The data obtained suggests that inhibition of 5-LOX may be much more important and effective as a means of controlling breast cancer cell proliferation than COX inhibition. If this proves to be true in an in vivo setting this may very well be an important lead for future clinical pharmacologic investigation of this in vitro finding.

Major Compulsory Revisions (that the author must respond to before a decision on publication can be reached)
The concept behind the research (understanding the role of eicosanoid metabolism in breast cancer) is worthy and the authors are to be commended for undertaking this. However, what they present is rather descriptive at best without any associated mechanisms or supporting cellular data. That is, although they show that inhibitors of COX and certain LOX enzymes, especially inhibitors of 5-LOX, can result in significant inhibition of breast cancer cell growth without any effect on normal bone marrow cell proliferation the authors do not show either the relative amount of enzymes (Western blot) nor effect of the inhibitors on product formation (i.e. PGE2 or 5-HETE [by ELISA or mass spectrometry methods] for COX-2 or 5-LOX, respectively). These additions would have greatly enhanced their argument that these types of inhibitors may be useful for treatment of this disease.

The diverse array of inhibitors the authors used makes little sense and strongly detracts from the focus of the paper. Not all of them may even apply to arachidonic acid metabolism as their primary mechanisms of action. The paper would have been much better focused had they just reported on COX and 5-LOX inhibitors with the corresponding cellular determination of enzyme content and product formation as mentioned above.

Minor Essential Revisions (such as missing labels on figures, or the wrong use of a term, which the author can be trusted to correct)

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 whose findings are important to those with closely related research interests

Quality of written English: Acceptable

Statistical review: No

Declaration of competing interests:
I declare that I have no competing interests