Reviewer’s report

Title: Expression of a-Tocopherol-Associated protein (TAP) Is Associated With Clinical Outcome in Breast Cancer Patients

Version: 2 Date: 26 July 2015

Reviewer: Kevin Kalinsky

Reviewer’s report:

Major Compulsory Revisions
Abstract/paper:
Would recommend that the median follow-up be in years, not days.

It is mentioned in the paper that vitamin E is thought to have anti-proliferative effects. Was ki-67 done on these tumors? If so, should be included. If not, may want to address as a limitation.

In the introduction, LVI is mentioned as a routine pathologic characteristic. This assessed in this cohort?

Methods
Please, state the hypothesis. In addition, was there a power calculation? How come 271 patients were selected? In addition, why an independent cohort of 71 patients for the Oncotype analysis? It feels like that was the total number of cases that the authors had – and that is why these were the number evaluated. This needs significant clarification.

When discussing the characteristics of the cohort (for instance number with stage I, chemotherapy, etc.) – rates should be included.

No patients were treated with Herceptin. But, 1/4 were HER2+. Please, explain. This cohort representative of a modern population?

How was ER and PR defined? > 1%? > 10%? IHC?
What about HER2?

Further describe TAP expression. This stained from 0-3+? You look beyond categorical expression and continuous expression?

Results
It seems that when reporting these results – they should be reported as HR+/HER2- (for instance in table 2). For instance, in table 2, are these luminal A tumors (see comment about ki-67). Is expression of TAP higher in an HR+/HER2- than HR+/HER2+?

For figure 2, HER2 is an important clinicopathologic feature. I think it is more
clinically meaningful to demonstrate this data in figure 2 than ER/PR (without HER2).

Think it is worth showing ten year data --- as HR+/HER2- breast tumors have a risk of recurrence beyond 5 years.

For the manuscript, I would consider the following subtypes: HR+/HER2-, HR+/HER2+, HR-/HER2-, HR-, HER2+. Otherwise, it is getting confusing – and your message is getting lost.

Oncotype: these all lymph node negative patients? Concerned that this is a very small cohort.

Table 1:
Did this population receive hormone therapy? What percentage. This is an important aspect to report. Should it be included in MV analysis? Justify why not.

Figures: Would include p-values and consider further labeling the figures.

Table 3:
5 year recurrence: stage--- is the p value just 0? Beyond the first set of variables – TAP, chemotherapy, grade, stage, and age…the rest of the tables below (for instance, TAP and stage) necessary?

Minor Essential Revision:
Check spelling and grammar. For instance, line 81 – candidate is misspelled.

**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