Reviewer’s report

Title: Overexpression of EMMPRIN is associated with lymph node metastasis and advanced stage of non-small cell lung cancer: a retrospective study

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Reviewer: Mattia Boeri

Reviewer's report:

Dr. Bing Liu and co-workers analysed the expression of EMMPRIN in tissue and serum samples of 55 and 72 non-small cell lung cancer (NSCLC) patients, respectively. IHC analysis of tissue samples showed a higher expression of EMMPRIN in tumor tissues compared to normal tissues and it was also correlated with clinicopathological features such as histology, pathological grade, lymphatic invasion and tumor stage. On serum samples, EMMPRIN expression levels measured by ELISA were able to discriminate NSCLC patients from diseases free individuals with a sensitivity and specificity of 97% and 95%, respectively. Despite of certain interest the paper cannot be accepted as it is.

Major concerns:

1) In both the Introduction and Discussion sections, authors referred to early diagnosis of lung cancer. However, the series analyzed has no stage I, but only II-IV. Authors should either add early stages in the study (possibly including a validation set), or resize terms by talking about diagnosis of "advance" clinically detected tumors.

2) Figure 5 and the results reported in the related paragraph in the Results are completely wrong:

- Despite considering the subgroup of 55 out of 72 patients with both tissue and serum samples available, being the sensitivity reported in Table 4 (using the 80.3pg/ml threshold) of 97%, it is impossible that 25 (45.5%) patients in Table 5 are below that threshold. Probably, Tissue in column and Serum in row should be inverted.

- In any case, the Chi-square and respective p-value reported seems somewhat unlikely. The association between rows and columns can never be statistically significant with those data.

- Finally, being included values lower than 5, it should be used the Fisher's exact test, rather than the Chi-square to evaluate concordance.

3) The Statistical section should be more detailed.
Minor concerns:

1) Figure 2: What does the star stand for?

2) Information in Table 2 and Figure 2 are redundant. I suggest maintaining only Table 2. The same applies to Figure 3 and Table 3.

3) Legend of Figure 4 A and B does not describe what is represented in the figures, making it difficult to understand what is reported. In addition, axes titles are missing and in Figure 4A there is no legend to discriminate between the two curves, which I suppose to be one of the controls and one of the patients.

Are the methods appropriate and well described?
If not, please specify what is required in your comments to the authors.

No

Does the work include the necessary controls?
If not, please specify which controls are required in your comments to the authors.

Yes

Are the conclusions drawn adequately supported by the data shown?
If not, please explain in your comments to the authors.

No

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I am able to assess the statistics

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