Reviewer’s report

Title: Large-scale computations on histology images reveal grade-differentiating parameters for breast cancer.

Version: 1 Date: 31 August 2006
Reviewer: George Nikiforidis

Reviewer’s report:

General

This manuscript presents a method for the automatic segmentation and classification of Hematoxylin and Eosin (H&E) stained nuclei in breast tumors and applies this procedure to histological, H&E stained sections of 24 cases with different malignancy grades.

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Major Compulsory Revisions (that the author must respond to before a decision on publication can be reached)

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

The objective behind this study is highly justified and essential in bringing more of the advanced methods in quantitative pathology. The paper is mostly written in clear and understandable English. The paper in its current form requires minor revisions before it can be accepted for publication. The authors are suggested to further clarify the following issues, which might significantly improve readability.

1. The core contribution of this paper became clearer after the revision. However, its comparison with previous research efforts is still not explained adequately. The authors write in page 4, row 15 “Our study benefits from these efforts and aims at developing new indices for classifying breast histology images based on tissue microtexture motives”. It is unclear how the authors’ method benefits from previous efforts and it is also unclear what is the advantage of this method in comparison to previous works. Authors are advised to include such a discussion and clarify these points.
2. page 4, row 8. ‘….nonrecurrent DCIS…’. The abbreviation DCIS is not explained.
3. page 5, row 8. ‘…These new findings, when combined with data from multiple platforms, indicate the potential for automated evaluation of the metastasis potential of breast tumors….’. This combination that the authors refer to, is not supported anywhere in the document or by any reference. The authors are advised either to delete this sentence, or to explain how the combination of their findings with data from multiple platforms could contribute in investigating the potential of metastasis of breast tumors.
4. Correct formatting in references 17, 18 and 19
5. Correct Table 4, row 1 column 2, row 1 column 5

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Discretionary Revisions (which the author can choose to ignore)

What next?: Accept after minor essential revisions
Level of interest: An article whose findings are important to those with closely related research interests
Quality of written English: Needs some language corrections before being published
Statistical review: No
Declaration of competing interests:
I declare that I have no competing interests