Reviewer’s report

Title: Prediction and diagnosis of bladder cancer recurrence based on urinary content of hTERT, SENP1, PPP1CA, and MCM5 transcripts

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Reviewer: Toru Shimazui

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Because molecular diagnosis using urine samples is probably a promising tool for detection of bladder tumor, this study could be very informative for readers.

Major revisions:

1. Although in Table 3 plenty of marker combinations are shown with similar sensitivity, specificity, PPV, NPV, and p value, it is not persuasive which combination demonstrates the best performance to detect or predict occurrence or recurrence of bladder tumor. To omit cystoscopy, new markers could diagnose not only presence of tumor but also location and morphology of tumor. Therefore, cystoscopy is anyhow inevitable in case that these molecular markers are positive.

From a practical point of view, it might be important to construct any combinations, which indicates the best NPV and compensates urine cytology.

2. In the analyses of recurrence free survival, it is recommended to analyze not only univariate analysis, such as Kaplan-Meier method with Log-rank test, but also multivariate analysis, e.g. proportional hazard analysis.

Minor revision:

To evaluate predictive value of new molecular markers for non-muscle invasive bladder tumor, T2-4 tumors should be excluded from the analysis. Otherwise, it could be included an additional analysis regarding correlation between these markers and T classification, i.e. tumor stage.

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

Quality of written English: Acceptable

Statistical review: Yes, but I do not feel adequately qualified to assess the statistics.