Reviewer's report

Title: Combined mRNA expression levels of members of the urokinase plasminogen activator (uPA) system are correlated with disease-associated survival of soft-tissue sarcoma patients

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Reviewer: Andreas Scorilas

Reviewer's report:

Dear Editor,

This is an interesting research article that adds new knowledge regarding the prognostic role of uPA system components, including the uPAR-del4/5 mRNA transcript variant, in soft-tissue sarcoma patients. The results of this study provide novel clinical information for the group of STS patients characterized by complete tumour resection. Nevertheless, some major issues should be addressed in order for this article to be competitive enough for publication in “BMC Cancer” journal.

1. “Background” section: Clinical and key biological data regarding soft tissue sarcomas should be described. On the contrary, the role of the components of the uPA system in soft tissue sarcoma patients is described in the “discussion” section as well and should be removed from the introduction or presented more briefly.

2. More data should be presented about the characteristics and the putative role of uPAR-del4/5 variant compared to the “wild type” transcript.

3. “Methods” section: Real time PCR methodology is described very briefly. More data should be shown regarding the type of chemistry used, the characteristics of primers/probes (sequence, Tm, site of hybridization etc), the efficiency of the reaction for each transcript, the specificity of the products, cycling conditions, concentration of cDNA, primers/probe etc.

4. “Results” section: Why did the authors use the 33th as a cut off? Was any statistical test used for this reason (for example X-tile analysis etc)?

5. “Results” section: The part of the analyses where the combination of PAI-1 and uPAR-del4/5 mRNA is used should be described more thoroughly, because it is quite confusing as it is. The authors should consider establishing 2 groups (high expression for both transcripts, low expression for both transcripts). Does any other combination of the molecules assessed in this study provide additional prognostic information?

6. “Figure 1”: The figure should present Kaplan Meier survival curves, rather than Cox’s regression analysis. Additionally, the p value calculated by the log rank analysis for survival should be presented.

7. Table 3”: The RR for the relevant clinical prognostic factors used in the
statistical model should also be presented. Additionally, the authors do not explain the use of the 66th percentile. It is only mentioned that “Relative expression ratio mRNA/HPRT according to 33% and 66% percentiles. Subgroup 1 (low): up to 33% percentile, subgroup 2 (high): from 33% percentile up to 100%”

**Level of interest:** An article of outstanding merit and interest in its field

**Quality of written English:** Needs some language corrections before being published

**Statistical review:** Yes, and I have assessed the statistics in my report.