Reviewer's report

Title: Gene Profiling Suggests a Common Evolution of Bladder Cancer Subtypes

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Reviewer: Lourdes Mengual

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In this manuscript the authors aim to investigate the relationship between two subtypes of bladder cancer; UCa and SCCa. They identify 137 dysregulated genes in common between these two subtypes of bladder cancer. They also identify 366 and 18 genes uniquely dysregulated in SCCa or UCa, respectively. Finally they conclude that the similarity in dysregulated gene products suggests that SCCa may be a much more closely related entity at the molecular level to conventional UCA than previously hypothesised. The authors address an interesting issue on bladder cancer. However there are a few questions to be answered.

• Minor Essential Revisions

Abstract: Results section has to be rewritten in order to make the text clearer to the reader.

Background: First two words (Invasive high-grade) must be deleted, since the most common form of bladder cancer is UCa in general, and specifically non-muscle invasive bladder cancer, which account for around 75% of cases.

Methods: reference number 32 does not fit in this sentence. Please modify accordingly.

Results: From the sentence “The mitotic spindle checkpoint....” until the end of the results section should be rewritten. Most of the paragraphs are discussion of the results instead of results. These have to be added to the discussion section.

• Major Compulsory Revisions

The authors use a fold change of 5 as a cutoff value to declare a gene significant. They should report the corrected p value (False Discovery Rate) for each gene to be considered differentially expressed. Frequently, genes with fold changes values lower than 2 or 3 are significantly differentially expressed between the compared groups and contrary, genes with fold changes higher that 2 or 3 are not differentially expressed.

Reporting the results in this way may change some of the data and maybe some of the conclusions taken.

The number of cases analyzed is rather low. The authors must state this limitation of the study in the discussion section.

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