Reviewer's report

Title: Expression profiling in canine osteosarcoma: identification of biomarkers and pathways associated with outcome

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Reviewer: Jingfang Ju

Reviewer's report:

O'Donoghue et al. reported here a study on the expression profiling in canine osteosarcoma: identification of biomarkers and pathways associated with outcome. Although the study is interesting, several major issues need to be addressed:

1. This is a much smaller study compared to previous published work (e.g. Mol Cancer. 2009 Sep 7; 8:72.). The sample size is too small for the outcome study. It is difficult to obtain large number of human OS specimens, however, they should have more canine specimens for this study.
2. The p<0.05 cut-off may be not powerful enough to generate true prognostic biomarkers. This could be the reason for the lack of correlation between qRT-PCR and array data.
3. It is not clear on the rationale for selecting 28 genes for validation.
4. It is known that different genes and sensitivity were associated with OS chemosensitivity to cis-pt and doxorubicin.
5. It is not clear on how the canine data correlated with reported human OS studies in terms of chemosensitivity and prognosis (e.g. Clin Cancer Res. 2009 Dec 1;15(23):7161-9.). Also it is not clear what is new compared to previous canine studies.

Level of interest: An article of limited interest

Quality of written English: Acceptable

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