Reviewer's report

**Title:** Microarray analysis of DNA damage repair gene expression profiles in cervical cancer cells radioresistant to 252Cf neutron and X-rays

**Version:** 1  **Date:** 1 July 2009

**Reviewer:** Khew-Voon Chin

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Qing et al. characterized the cell biological properties and the gene expression profiles of two HeLa derivative cell lines that have been selected for resistance to either ionizing radiation or neutron radiation. The authors examined the resistance properties of these cell lines by colony forming assay, their doubling time, cell cycle distribution characteristic, and susceptibility to apoptosis, following radiation exposure. Gene expression profiling was conducted with an array that contained 113 targets, comprising mostly of genes that are involved in DNA damage signaling, response, and repair. Cell biological results are. However, differential expression pattern was noted between HeLaNR (neutron ray) and HeLaXR (X-ray) resistant cells. The study is interesting, comparing the emergence of resistance to neutron and gamma irradiation. The results are straightforward as expected of resistant cell lines and the following issues need to be addressed:

**Major Compulsory Revisions**

1. Current finding in the manuscript is adequate but could be significantly enhanced if the authors further examine the cross-resistance patterns of these two cell lines with respect to DNA damaging and non-DNA targeting chemotherapeutic agents to better characterize these cells.

**Discretionary Revisions**

2. The author should also point out the differences between neutron- and x-irradiation and describe the rationale for the studies in the manuscript, including the reasons for generating the two resistant cell lines.

3. The differential gene expression patterns observed between HeLaNR and HeLaXR cells should be further examined and the authors should discuss in greater detail the significance of these differences with respect to the differential clinical response in patients to these treatment modalities, and their implications.

**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, the manuscript does not need to be seen by a statistician.

**Declaration of competing interests:**

I declare that I have no competing interests