Reviewer's report

Title: Identification of genes specific to cisplatin resistance in human oral squamous cell carcinoma cell line

Version: 5 Date: 17 March 2006

Reviewer: Kevin J Cullen

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General

The manuscript by Zhang P et al entitled “Identification of genes specific to cisplatin resistance in human oral squamous cell carcinoma cell line”, describes the global gene expression changes associated with cisplatin resistance in a pair of isogenic oral cancer cell lines. Using Affymetrix expression microarray chips, they identified 63 genes which are altered during the process of acquired resistance to cisplatin. Expression changes of 4 candidates from the list were verified by RT PCR and Western Blotting.

The authors reported the genomewide expression changes associated with the development of cisplatin resistance in a new isogenic head and neck cancer model. Therefore, the study represents some novelty and provides new findings for further understanding the mechanisms of cisplatin resistance in human cancers. However, the study is somewhat descriptive and superficial with regard to the results and discussion. Address on the following two points will substantiate the novelty and significance of the study.

1. Numerous studies have investigated global gene expression changes in acquired and intrinsic resistance to cisplatin using cell lines, primary tumors and xenografts in various cancers models including head and neck cancer. Therefore, it is important to point out the uniqueness of the findings or the cell models from the current study compared to previous published studies using the similar approaches. In addition, it would be interesting to indicate the genes which overlap the current study and other previous studies, especially the studies using in vivo models.

2. It is well-known that gene expression changes in the cell lines substantially differ with primary tumors. To enhance the significance of the finding from the study, its necessary to show that the results seen in cell culture are also seen in analogous primary head and neck cancers and, consistent with the chemotherapy resistance pattern of the tumors.