Author's response to reviews

Title: Promoter methylation correlates with reduced ndrg2 expression in advanced tumour colon stage

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Dear Editors,

You will find enclosed a copy of the manuscript entitled “Promoter methylation correlates with reduced NDRG2 expression in advanced tumour colon stage”, that I hope it will be of interest for publication as Research article in BMC GENOMIC.

First aim of this manuscript was identify tumour biomarkers involved in colon cancer combining genomic, in silico, epigenetic, and expression data. Gene expression profile assay on both cancer and normal colonic tissues by DNA microarray in order to detect genes whose expression was up- or down-regulated in cancer cells was performed. Twenty-four out of 647 deregulated genes were selected for validation with qPCR and a perfect correlation between these results and those obtained from DNA microarray was found implying that microarray technology is a reliable tool to search for new genes significantly deregulated in cancer. Nineteen of 24 genes were selected as possible targets of epigenetic modifications in colon cancer and after treatment with demethylating agent, six of them showed a significant increase of mRNA expression. From a in silico screening only 5 genes were considered as possible candidates for the presence of CpG islands in their 5’-UTR. In 2 genes (CSEIL and NDRG2) a significant methylation status in colon cancer cell lines and in tumour tissue compared to normal tissue was observed.
Second aim of this manuscript was observe the NDRG2 methylation status in 30 primary colon tumour tissue compared to normal colonic mucosal samples. MSP assay was used to detect methylation status: after sorting colon cancer patients by age, gender, tumour site, and MSI status, no statistically significant association was observed between these features and NDRG2 methylation. Nevertheless, there was a trend towards NDRG2 methylation status with an advanced tumour stage of the CRC samples, with significant value detected in patients with stage IV.

The content of the manuscript is original and it has not been published or accepted for publication, either in whole or in part, in any form (other than as an abstract or other preliminary publication). No part of the manuscript is currently under consideration for publication elsewhere. Irrelevant parts of Figure 2 was been deleted without any change in the interpretation. We will be able to provide the complete, unaltered data upon request. Discussion full-length is of 1395 words.

Sincerely yours,

Piepoli Ada

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