Reviewer's report

Title: Displayed correlation between gene expression profiles and submicroscopic alterations in response to cetuximab, gefitinib and EGF in human colon cancer cell lines

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Reviewer: Burkhard Brandt

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Displayed correlation between gene expression profiles and submicroscopic alterations in response to cetuximab, gefitinib and EGF in human colon cancer cell lines

Solmi et al.

The authors address a very important topic in oncology, the targeting of the EGF receptor by specifically inhibiting drugs. The EGFR is frequently expressed in many tumors and is associated with progressive disease and drug resistance. In contrary to the clear rational of the therapy and the well defined molecular target, in colon cancer the application of the EGFR-inhibiting antibody Cetuximab (Erbitux®) improved the cure rates only moderately.

The authors used two cell lines derived from colon cancer for their studies. However, the two cell lines have been described to show large differences in their phenotype. Unfortunately the authors didn’t mention which type of colon cancer the cell lines represent.

Furthermore, the authors did a huge work and collected a lot of data. Unfortunately they present and describe them poorly. The descriptions are far away to be precise or concise. The definitions of many terms are unclear.

They do not clearly take their conclusions from the experimental data. They do not show what are the properties of the HT29 and what are the properties of the Caco-2 cell lines derived from their experiments and where are differences.

They compared TKI and antibodies. However, they did not show where are the consequences on the gene expression level. They have the data, but did not show up with them.

The idea to test for drug sensitivity with and without EGF is great. But they did not take any conclusion from the experimental results. For example, there are 3-fold differences in G2/M phase fraction proportions between cetuximab and Iressa treated cells which might point to differences in apoptosis, which was not addressed by the authors.

I would recommend to rewrite the paper. The data look good but they have to be presented in a right way.
**What next?:** Unable to decide on acceptance or rejection until the authors have responded to the major compulsory revisions

**Level of interest:** An article whose findings are important to those with closely related research interests

**Quality of written English:** Not suitable for publication unless extensively edited

**Statistical review:** No, the manuscript does not need to be seen by a statistician.