Reviewer's report

Title: The functional cancer map: A systems-level synopsis of genetic deregulation in cancer

Version: 1 Date: 1 March 2011

Reviewer: Edward J Perkins

Reviewer's report:

In general I found the paper to be interesting and the results valuable in highlighting potential new areas for research. The paper needs to proofed by someone with English as a first language as many grammatical, phrasing and spelling errors exist. Detailed comments follow:

Major Compulsory Revisions
1. Page 2, A more detailed description of actual methods would be useful in the results section of the abstract
2. Page 3, A more detailed background into approaches developing pathway models and other global tools to understand cancer might be more appropriate in the introduction. Should split paragraph at "we therefore..."

Minor Essential Revisions
3. Page 3, Content: "development of novel to specialized therapies. Therein the gene expression profiling has " Change to " novel and specialized..."
4. Page 3, Content: "provide a systems view on cancer development in more signaling pathway and function oriented as well as easy to interpret way. In addition we provide tumor phylogeny based " Reword to read " development in a more.." and " oriented in an easy to interpret way."
5. Page 3, Content: "on semantic aggregated profiles neither based on gene expression, .... " This sentence is confusing. Do the authors mean "not" rather than "neither"?
6. Page 4, Content: " Ignoring cell line and time line depending " Change " depending" to " dependent"
7. Page 4, Verb tense should be in the past
9. Page 4, Content: "After the calculation of the folds relative " Change "folds" to "fold change"
10. Page 5, Content: "After the filtering for outliers we calculated the log2 of the folds for each gene " Change "folds" to "fold change"
11. Page 6, Content: "Calculate tumor phylogeny" Change to "calculation"
12. Page 8, Content: "functional tumor data into a clearly structured compendium, we generated the data into the functional cancer map (Figure 1). " Should reword: we generated a functional cancer map to visualize the data (figure1).

13. Page 8, Content: "The ‘Cell cycle’ pathway is the most cited pathway with focus on tumor progression with more than 1000000 search results per modifier " Use past tense, cycle misspelled

14. Page 8, Content: "‘Melanoma’ and ‘Acute myeloid leukemia’ with 718282 respectively 493765 tumor associated publications ranks on top. " Correct grammar and spelling

15. Page 8, Formatting of text needs to be consistent

16. Page 8, Content: "Laying down new starting points for the efficient combination of tumor therapeutics as well as for expanding the application area of well established tumor therapies we made further use of the functional cancer map to calculate tumor phylogeny. " This sentence should start with "we made further use...

17. Page 9, Content: "has exposed the most functional " Unclear what the authors intent is with this sentence

18. Page 11, Authors should provide references to support their statements

19. Page 11, Change "lit up" to "highlighted"

20. Page 11, Content: "Thus our work demonstrated key roles of additional signaling pathways in cancer biology. " Note: The work has identified potential roles for additional pathways, but has not demonstrated them.

21. Page 11, Content: "..the ECM receptor interaction and mechanisms of focal adhesion were not in the center of biomedical research on cancer mechanisms. " Rephrase to "..have not been a focus of biomedical research..."

22. Page 11, Content: " This is reflected by searching for abstracts containing cancer and cell cycle against cancer and extracellular matrix or microenvironment a ratio of 10:1 in number of articles opened up (122 594 vs. 20 287 articles). This may be due " This sentence needs rewritten for proper grammar

23. Page 11, "this may be due that the..." change to "this may be due to the fact that...

24. Page 13, Acronyms need defined (e.g. HCC, OGTT)

25. Page 14, Content: "As a side note, just looking at the upregulated genes and clustering the tumor entities by " Delete "just looking at.." replace with "examination of ..."

Discretionary Revisions

Page 4, Content: "human two channel cDNA microarrays " Recommend change to " two-color"
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: Yes, but I do not feel adequately qualified to assess the statistics.

Declaration of competing interests:

I declare that I have no competing interests.