Reviewer’s report

Title: Usefulness of PKH to study leukemic cell proliferation with various cytostatic drugs or acetyl tetrapeptide -AcSDKP

Version: 1 Date: 6 April 2005

Reviewer: Guenter Valet

Reviewer’s report:

General

1. PKH67 dynamic labeling was used to assess the proliferative behaviour of leukemic AML blasts from 29 patients under AraC, VP16, AMSA, Mitox and DNR treatment. Proliferation was assessed in parallel by BrdUrd incorporation and antibody labeling in combination with PI cell cycle phase determination. Cells were furthermore stimulated by a G-CSF, GM-CSF, IL3, SCF, EPO cytokine cocktail following 1 day exposure to AcSDKP and AcSDKP-NH2 stem cell proliferation regulating tetrapeptides.

2. The addressed issue is of interest to BMC Cancer especially since patients cells are used for the investigation. PKH67 is a superior marker in cytostatic treatment studies since cell behaviour can be dynamically followed during therapy for a certain time unlike the snapshot methods BrdUrd/PI where cells have to be sacrificed at given time points.

3. Publication of the manuscript is recommended provided that the below addressed issues are clarified in a satisfactory way.

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Major Compulsory Revisions (that the author must respond to before a decision on publication can be reached)

1. p.7 par.1: as it appears now, samples #4/5 have different AcSDKP concentrations and samples #6/7 are duplicates and there is no sample with AcSDKP together with cytokines. This is in contrast to the Results section especially on p.9 and also to the legend of tab.III. Altogether it is presently not possible to really understand the details of the experimental logic. In case the explanations of the tab.III legend are correct, why was there no AcSDKP incubation similar to the AcSDKP-NH2 incubation of sample #3 and what is the reason for the two quite different AcSDKP concentrations in samples #4/5 ? These points have to be clarified to be able to fully understand the Results and Discussion sections.

2. D0 and D4 represent characteristic fluorescence values of PKH67 labeled cells at days 0 and 4. It has to be indicated whether the D0 and D4 fluorescence values (tab.I) represent the maximum, mean or median fluorescence of PHK67 labeled cells at the respective days.

3. fig.2-4: the PHK67 fluorescence distribution curves for the various treatment modalities have to be labeled in the various graph panels. Otherwise it is impossible for the reader to unambiguously assign the PHK67 fluorescence distributions to the various treatments.

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Minor Essential Revisions (such as missing labels on figures, or the wrong use of a term, which the
author can be trusted to correct)

4. p.2 Reagents: indicate anti-BrdURD label (FITC, PE ?)

5. p.2 Reagents: indicate source for AcSDKP

6. p.8 last par: To resynchronize the reader, the paragraph should start: "In the first group, cells from patient Gi presented ..."

7. fig.4: It should be explained in the legend that the inscriptions S1-S7 in the figure panels correspond to samples 1-7 of p.7


Discretionary Revisions (which the author can choose to ignore)

9. Tab.II: separate the three patient groups by bold lines for better overview

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: Acceptable

Statistical review: No

Declaration of competing interests:

I declare that I have no competing interests