Reviewer's report

Title: Aberrant methylation of the M-type phospholipase A2 receptor gene in leukemic cells

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Reviewer: David Bernard

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In the study entitled "Aberrant methylation of the M-type phospholipase A2 receptor gene in leukemic cells", the authors are interested in discovering whether the DNA methylation of PLA2R1 promoter is altered in leukemic cells.

The authors display for the first time an increase in PLA2R1 promoter methylation in peripheral blood samples and in bone marrow aspirates from leukemic patients when compared to healthy ones. Hypermethylation of the promoter is also observed in some cancer cell lines, and a treatment by a demethylating agent in 2 cancer cell lines provokes PLA2R1 mRNA re-expression. They also displayed that PLA2R1 methylation status correlates with IPSS classification and thus may be useful as an additional biomarker.

The first figure supports a link between PLA2R1 DNA methylation and its mRNA level in 2 cancer cell lines. Unfortunately, in patient samples there is no demonstration of this link between the increase in PLA2R1 promoter methylation observed in leukemia samples compared to the healthy ones and a decrease levels of PLA2R1 mRNA. I think this point have to be tackle.

I do not understand the interest of the figure 3 that is just a zoom (if I understand properly) of the results presented for the patients in the Figure 2B. If presented, it should be as Figure 2C.

In conclusion, I recommend publication only if the authors are able to show a correlation between PLA2R1 DNA methylation and mRNA expression in leukemia samples.