Reviewer's report

Title: The aberrant asynchronous replication -- characterizing PHA-stimulated lymphocytes of patients with hematological malignancies -- is erased following stem cell transplantation

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Reviewer: yaqub hanna

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Nagler et al. present a carefully performed study on human blood samples, and characterize asynchronous replication of activated lymphocytes and bone marrow samples of hematologic patients before and after allogeneic transplantation. The authors convincingly demonstrate that asynchronous replication of 3 independent loci is reverted following transplantation. The authors relied on solid methodology and their results are solid and sound. Moreover, this characterization, though still lacking a mechanistic basis, is of potential importance for delineating new markers of hematologic disease status.

I suggest the following minor Discretionary Revisions:

1) The authors state the age range of the different patient groups, however average values should also be provided.

2) It would be of importance to provide non-healthy patients without hematologic malignancy as controls (e.g. patients with ongoing infections, pneumonia etc) , and indicate or rule out whether asynchronous replication can be observed in response to chronic inflammation .

3) The authors should better discuss the mechanistic implication of their results achieved by utilizing the demethylating drug 5-Aza-dc.

Level of interest: An article of importance in its field

Quality of written English: Acceptable

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

Declaration of competing interests:

I declare that I have no competing interests.