Reviewer's report

Title: Targeting cyclin-dependent kinase 1 (CDK1) but not CDK4/6 or CDK2 is selectively lethal to MYC-dependent human breast cancer cells

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Reviewer: Nicholas Johnson

Reviewer's report:

The manuscript "Targeting cyclin-dependent kinase 1 (CDK1) but not CDK4/6 or CDK2 is selectively lethal to MYC-dependent human breast cancer cells" reports the effect of MYC and cyclin dependent kinase depletion on mitosis and apoptosis of a large panel of cell lines. This is a well written and thorough piece of research. The following suggestions should be considered as Minor Essential Revisions:

1) Please include a Table (perhaps derived from Table S3) into the main text summarising the MYC dependence of each cell line and any other information on that cell line (e.g. level of MYC expression etc). Also keep the order of cell lines consistent throughout in accordance with Figure 2A. This will assist the reader in following the effect of the various treatments and conclusions made for each cell line.

2) Can the authors give the level of MYC expression to normal tissue? This would provide support to the final conclusion that MYC expression is high but relative to other cell-lines derived from breast cancer.

3) For clarity, please label Figure 5C (upper panel) with the CDK1 inhibitor and state this in the legend i.e. "...treated with CDK1 inhibitor RO-03306 (upper panel) or CGP74514A (lower panel) at ....".

4) Could the authors consider in the discussion why inhibition of CDK1 selectively effects high MYC expression cells selectively? This seems counter intuitive as CDK1 could be considered a downstream product of MYC transcription activation. Are there other, direct interactions between these molecules?

Level of interest: An article of importance in its field

Quality of written English: Acceptable

Statistical review: Yes, and I have assessed the statistics in my report.

Declaration of competing interests:

I have no conflict of interest with authors or the subject area.