Reviewer's report

Title: Identification and Regulation of c-Myb Target Genes in MCF-7 Cells

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Reviewer: Karl-Heinz Klempnauer

Reviewer's report:

The work reported in this manuscript is an extension of the authors’ previous work on the identification of Myb target genes in the MCF-7 breast cancer cell line model. Here they have used chromatin IP coupled to whole genome promoter tiling arrays to identify genes regulated by c-Myb. They have identified several thousand Myb binding sites a few of which they have validated by real time PCR analysis. The most surprising and interesting observation is the finding that estrogen treatment increases the binding of c-Myb to several of its target promoters and stimulates the expression of the corresponding mRNAs although the total amount of c-Myb remains unaltered. This points to an estrogen-dependent post-translational mechanism that increases DNA-binding of c-Myb. Overall, this is a very interesting study with conclusions well supported by the data.

Major compulsory revisions:
none

Minor essential revisions:
The authors should comment on why more c-Myb is in the cytoplasmic rather than in the nuclear fraction (Fig. 1B). Has the fractionation been controlled by analyzing a marker for nuclear protein and cytoplasmic proteins?

The authors state that they performed Chip-on-chip assays on material derived from estrogen-deprived or -treated cells. However, it is no clear whether the binding of Myb to the majority of the approximately 2,600 binding sites is affected by estrogen treatment of the cells. The authors should comment on this.

Discretionary revisions:
It would have been more relevant if the authors had performed the reporter gene experiment in Fig. 5C in MCF-7 cells in the presence and absence of estrogen.

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