Reviewer's report

Title: Wnt/beta-Catenin Pathway Regulates ABCB1 Transcription in Chronic Myeloid Leukemia.

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Reviewer: Frank Thevenod

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Major Compulsory Revisions:

General:
Despite a revision, including new data, the evidence provided is still not convincing enough or even contradictory to the conclusions. Some data have been taken out from the manuscript to be used for the revision of another manuscript, which is rather disturbing, considering possible copyright issues with BMC Cancer.

1. Figure 1: Competition experiments with 200x excess wild-type oligos do not show any competition in all EMSAs. Moreover, the “unrelated” Smad8 shows a supershift as well. Both results cast doubts on the specificity of the performed experiments.

2. Figure 4: It is striking that LiCl has no effects whatsoever on the nuclear translocation of beta-catenin. This is particularly prominent in Lucena cells, where beta-catenin is excluded from the nucleus despite a significant increase in beta-catenin protein (Figure 3). In spite of the obvious result the authors claim the contrary (line 278).

3. Figure 5: Lithium blocks both GSK3-alpha and –beta with similar affinitites (Ki 3.5 vs. 2.0 mM) by competing with the co-factor Mg2+ and/or activating Akt-mediated phosphorylation of GSK3. Why is GSK3-alpha expression increased, but GSK3-beta expression abolished by lithium? No change in expression should be expected.

4. Figure 9: It is unclear why increased nuclear translocation of beta-catenin induced by lithium (which is actually not the case; see Figure 4) should decrease reporter gene activity. Lines 312-314 do not make sense: A reduction of luciferase activity does not indicate activation of ABCB1 through TCF binding sites, rather inhibition of ABCB1 transactivation.

Minor Essential and Discretionary Revisions: None

Level of interest: An article of limited interest

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'