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Reviewer Comments

Comment 1: This is an early laboratory data showing promise in favour of use of JAK inhibitor in MLL ALL. It needs going through multiple more steps before it can be an option in clinical practice. That should be reflected in the abstract, introduction and conclusion.

Reply 1: Thanks for the reviewer's useful suggestion. Now we have modified our text as advised (see Page 2, line 53-55; Page 4, line 102-105; Page 12, line 374-377).

Comment 2: Also, there are some reports of use of ruxolitinib in paediatric ALL that can be included in the discussion with references:

1. Kołodrubiec J, Kozłowska M, Irga-Jaworska N, Sędek Ł, Pastorczak A, Trelńska J, Młynarski W. Efficacy of ruxolitinib in acute lymphoblastic leukemia: A systematic review. *Leuk Res.* 2022 Oct;121:106925. doi: 10.1016/j.leukres.2022.106925. Epub 2022 Aug 2. PMID: 35939887.

2. Böhm JW, Sia KCS, Jones C, Evans K, Mariana A, Pang I, Failes T, Zhong L, Mayoh C, Landman R, Collins R, Erickson SW, Arndt G, Raftery MJ, Wilkins MR, Norris MD, Haber M, Marshall GM, Lock RB. Combination efficacy of ruxolitinib with standard-of-care drugs in CRLF2-rearranged Ph-like acute lymphoblastic leukemia. *Leukemia.* 2021 Nov;35(11):3101-3112. doi: 10.1038/s41375-021-01248-8. Epub 2021 Apr 24. PMID: 33895784.)

3. Downes CE, McClure BJ, McDougal DP, Heatley SL, Bruning JB, Thomas D, Yeung DT, White DL. JAK2 Alterations in Acute Lymphoblastic Leukemia: Molecular Insights for Superior Precision Medicine Strategies. *Front Cell Dev Biol.* 2022 Jul 12;10:942053. doi: 10.3389/fcell.2022.942053. PMID: 35903543; PMCID: PMC9315936.

Reply 2: Thanks for your nice comment. Now these reports of use of ruxolitinib in paediatric ALL now were included in the discussion section(see Page 11, line 340-357).

Comment 3: I would also suggest expanding the results section with more detail description of results along with figures to enhance readability and removing the repetitions, particularly in the discussion section.

Reply 3: That is a good suggestion. Now we expanded the results section with more detail (see Page 8, line 260-266; Page 9, line 282-289; Page 10, line 299-300).

Comment 4: With regards to the limitations, I would suggest that the first limitation is rather put in a more positive way – next step should be in in-vivo study animal models.

Reply 4: Thanks for the advice. Now we revised our limitations in the discussion as you suggest (see Page 12, line 367-369).

Comment 5: Please check for typos and syntax and avoid or define abbreviations at the first use.

Reply 5: We are so sorry for our poor English. Now we revised and correct the typos and syntax for the whole manuscript.