

Reviewer Report

Title: Accelerated deciphering of the genetic architecture of agricultural economic traits in pigs using the low coverage whole-genome sequencing strategy

Version: Revision 1 **Date: 4/16/2021**

Reviewer name: Martien Groenen

Reviewer Comments to Author:

The manuscript has been greatly improved and the authors have addressed my comments made on the original version of the manuscript. This has enormously improved the readability of the current manuscript. I only have a few minor comments, most of which concern some further small suggestions to improve the English.

Page 2, line 8: Change "We described a" to "We describe a"

Page 2, lines 10-13: I suggest changing this long sentence to the following two sentences: "Based on these SNPs, a genome-wide association study (GWAS) was performed resulting in 14 quantitative trait loci (QTLs) for seven of 21 important agricultural traits in pigs. These QTLs harbour genes, such as ABCD4 for total teat number and HMGA1 for back fat thickness and provided a starting point for further investigation."

Page 4, line 28: I suggest changing this sentence to: "The results generated by the BGI platform had a smaller number of PCR duplicates (2.23%), a higher number of index reads (97.10%),....."

Page 5, line 3: Insert "the" between "and" and "majority"

Page 6, line 12: "Fluidigm" instead of "Fludigm"

Page 7, line 2; Replace "in all" by "for all" or by "using all"

Page 7, line 17-18: "We further studied the high level of LD, and found that it could be a consequence of long-term strong natural or artificial selection." I don't agree with this statement. The high LD is the result of the small effective population size used for these breeding lines.

Page 8, line 13: Replace "each" by "individual"

Page 8, line 15: "We first focused on QTLs that could be narrowed". The authors do not show how this is done. Based on what information could these QTL be narrowed?

Page 10, line 3: Change "which in turn led to the result of no significant QTL." To "which in turn resulted in no significant QTL."

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