

Reviewer Report

Title: Whole-genome resequencing reveals signatures of selection and timing of duck domestication

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Reviewer name: Henner Simianer, Prof.

Reviewer Comments to Author:

Overall a very nice paper, detailed comments to the authors:

Line 35: 45X coverage is misleading since the individual coverage was much smaller, please make a clearer statement here

L40: Our FST analysis also indicates for the first time ...

L52: of particular economic importance ...

L60-72: This is not introduction, but actually another summary, which I think is obsolete, a slightly more extended real introduction discussing background prior knowledge, and aims of the study, would be preferred

Figure 1B: this panel is nice, but not very informative, what exact information is retrieved from the graph?

L95: The number of deletions was higher than the number of insertions in all nine populations

L105: Move the sentence "Single base-pair INDELs were the predominant form, accounting for 38.63% of all detected INDELs (Supplemental Table S3)." before the sentence "Both the number of SNPs ..."

L111: ... clustered together, the three ...

L117: Show figure for K=2?

L155: ... had the lowest Akaike Information Criteria (AIC) value, ...

L166: ... are lower than in wild mallards ...

Table 1: is it possible to report standard errors or confidence intervals of the reported estimates?

L197: ... white plumage phenotype suggesting a causative mutation. Our result indicates for the first time the duck white plumage associated with selection at ...

L213: of 10kb size.

L224: "... scaffolds longer than 10-kb by 10-kb windows with 5-kb steps." This is not clear to me, please describe better.

L237 was shown

L240 level differs between domesticated and wild duck.

L245 I understand that you limited the GO analysis to certain processes, what happened if you included other processes as well?

L252 identified as being under positive selection

L258 Is "neuronal genes" the right term?

L260 fatty acid

L269 and no gene in breast muscle

L273 The results suggest that the PDC gene is of substantial functional importance in

phenotypic differentiation among wild and domestic ducks.

L289 catalogued 36.1M SNPs and 3.1M INDELS,

L333 ... showed particularly strong signs of selective sweeps presumably associated with domestication.

L340 brain and liver of domesticated ducks compared to ...

L351 differential selection? Do you mean directional selection?

L362 Taken together, our results show that duck domestication was a relatively recent and ...

L440 From the 28,199,227 SNPs not confirmed by dbSNPs, 390 randomly chosen (?) nucleotide sites

L448 Principal Component Analysis (PCA), first by generating the genetic relationship matrix (GRM) from which the first 20 eigenvectors were extracted.

Methods

Are the methods appropriate to the aims of the study, are they well described, and are necessary controls included? Yes

Conclusions

Are the conclusions adequately supported by the data shown? Yes

Reporting Standards

Does the manuscript adhere to the journal's guidelines on [minimum standards of reporting](#)? Yes

Statistics

Are you able to assess all statistics in the manuscript, including the appropriateness of statistical tests used? Yes, and I have assessed the statistics in my report.

Quality of Written English

Please indicate the quality of language in the manuscript: Needs some language corrections before being published

Declaration of Competing Interests

Please complete a declaration of competing interests, considering the following questions:

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