Reviewer Report

Title: The genome of the Marco Polo Sheep (Ovis ammon polii)

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Reviewer name: Brian P. Dalrymple

Reviewer Comments to Author:

The manuscript describes the construction of a draft assembly of the Marco Polo Sheep to an equivalent standard to the sheep, goat and cattle genomes. The assembly parameters are in line with what can reasonably be expected for the approach used. The text adequately documents the assembly and analysis methodologies. The analysis results are also consistent with expectations.However, I think that the use of variation in a single animal to make such a strong statement about effective population size, and endangered population, of Marco Polo Sheep may not be warranted (lines 145-146).I am also concerned about Table S21, where enrichment of potentially selected genes in GO category is shown. The p-values shown are marginal for p-values adjusted for multiple testing (I generally disregard adjusted p-values of >10-3). However unlike other tables the p-values are not indicated as adjusted. If they are not adjusted the table should be omitted and the wording altered at lines 252/3. I note that "enriched" rather than "significantly enriched" is used in the text, but readers will tend to assume "significantly enriched" from such a mention in the text even if it is not stated that way.Line 57, "long horns" rather than "long horn"Lines 110/111, it is not clear exactly which versions of the sheep and goat genomes are being used here, one would have to check the references to find out, whereas elsewhere specific versions are mentioned in the text. I suggest that assembly version designations consistent with those used elsewhere are included here.Line 130 two goat assemblies are mentioned without references. How do they relate to each other and which assembly is being used on other occasions where only one goat genome assembly is mentioned? This is not clear in a number of the tables and at places in the text.

Level of Interest

Please indicate how interesting you found the manuscript: An article whose findings are important to those with closely related research interests

Quality of Written English

Please indicate the quality of language in the manuscript: Acceptable

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