

Reviewer Report

Title: "Draft genome of the sea cucumber *Apostichopus japonicus* and genetic polymorphism among color variants"

Version: Original Submission **Date:** 10/14/2016

Reviewer name: Jonathan Rast

Reviewer Comments to Author: The authors document the production and analysis of a genome assembly from the sea cucumber *Apostichopus japonicus*. This species has significant commercial value and is the subject of considerable comparative research against the background of other available echinoderm genomes. The manuscript is concise and well-written. It is a useful description consolidating the biological and computational aspects of the genome sequence assembly process and will be a convenient resource for researchers using the sequence.

Below are a few comments for clarifications that may improve the manuscript.

1. A small description (a few sentences) referencing what is known of the genetics/biology of the color morphs used in the project would be useful to the reader.
2. The authors created other assemblies using different methods that appear less complete (Table S1) but did they analyze these using their core eukaryotic and metazoan gene sets (or with other approaches) to assess potential non-overlap from the alternative assemblies. Could they contribute unique sequence?
3. What transcriptome resources were used in the annotation process and what tissues/ developmental stages did these come from?

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Level of Interest

Please indicate how interesting you found the manuscript: An article of importance in its field

Quality of Written English

Please indicate the quality of language in the manuscript: Acceptable

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