

Evaluation of DNA extraction methods and DNA preservation solution to study soil microbial communities

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Abstract

During high-throughput sequencing, the outcome microbial community composition can be altered when DNA is incomplete purified or by DNase activity. The objectives are to estimate biases associated with the DNA purification of soils and evaluate the effect of a DNA preservation solution in the composition of the microbial community. To do this, DNA extractions efficiencies were compared among single strains, a mix of strains and soil microbial communities. The 16S ribosomal RNA gene of soils was amplified and sequenced to compare structural differences of microbial communities resulted from two commercial DNA purification kits. Besides, soil samples were collected from the Delta Nigeria and transported to the Netherlands using a DNA preservation solution to evaluate the stabilization of the DNA microbial community. The results suggest a bias in the quantification of Gram positives that is related mainly with cell lysis capacity of the DNA extraction kits. This bias would have important repercussions in microbial ecology studies were the abundance and function of Gram positives may be underestimated.

Biography:

Paul Iturbe-Espinoza has obtained his Bachelor's degree in Biology in the National University San Antonio Abad from Cusco, Peru in 2012. Later, He has finished a Master's degree in Molecular Biotechnology in the University of Barcelona, Spain in 2014. Currently, as a result of a grant from FONDECYT-CONCYTEC Peru, He is a PhD student in the Systems Bioinformatics group at the VU Amsterdam.



Speaker Publications:

1. The Fungus *Tremella mesenterica* Encodes the Longest Metallothionein Currently Known: Gene, Protein and Metal Binding Characterization Article Feb 2016 DOI: 10.1371/journal.pone.0148651 ISBN: 1932-6203

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