Title

Characterization of the archaeal community of colostrum and fecal samples of Mexican mothers and newborns

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Abstract

Introduction. Human milk is the perfect food for a newborn. It is composed mainly of water, proteins, lipids, carbohydrates, and biological components, such as bacteria, viruses, and archaea. The central bacteriome of human milk is known. These bacteria are considered to reach human milk via the entero-mammary route and from there, they colonize the intestine of the neonate by vertical transfer during lactation. In recent reports, archaea have been cultivated from human milk; however, their composition is unknown and is unclear if they are vertically transmitted. Also, their role in health remains to be elucidated. **Methods**. In this study, we sought to characterize the diversity of the archaeal community by V5-V6 16S-rRNA NGS from colostrum and fecal samples of 42 Mexican mothers and neonates. It was hypothesized that the archaeal community diversity present in the colostrum samples would be similar to that in neonate feces, showing a possible vertical transfer during lactation. **Results:** Our results indicate that alpha diversity differences between groups are significant; this is possibly due to the difference in biomass between samples. The beta diversity analysis featured that the sample types are quite similar. More robust analyzes reveal the absence of differential taxa between both groups, which is consistent with our hypothesis. This result is confirmed by the prediction of metabolic pathways, which indicates that there are no differential metabolic pathways between colostrum and feces. **Conclusions**: Overall, this gives the idea that these archaea may be specifically selected to fulfil an important role in the newborn intestine. **Acknowledgements.** Work supported by CONACyT 163235 INFR-

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Keywords
Archaea; Human Milk Microbiota; Fecal microbiota; High-throughput DNA sequencing.