



# Abstract Submission for Having IMPACTT 3: Advancing Microbiome Research Symposium

July 10-12, 2023

Malcolm Hotel, Canmore, AB, Canada

## Presenter Information

First Name*	Maricarmen
Last Name*	Salas-López
Email Address*	maricarmen.salas@cinvestav.mx
Institution*	CINVESTAV Zacatenco
Current Position/Title*	Graduate Student

\*Mandatory field

## Submission Information

What would you like to be considered for?*	<input type="checkbox"/> Short Talk (10 min + Q&A) <input checked="" type="checkbox"/> Poster Presentation
If you are selected for a Poster Presentation, would you like to be considered for a Flash Talk (3 min)?*	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No

\*Mandatory field

Note: If you select Short Talk but are not successful, you will automatically be considered for a Poster Presentation

## Travel Award

If you're a postdoc or graduate student and would like to be considered for a travel award (\$250 CAD), please check the appropriate box.	<input type="checkbox"/> Postdoctoral Researcher Travel Award <input checked="" type="checkbox"/> Graduate Student Travel Award
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## **Abstract Information**

### **Title (30 words max.)**

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

### **Author List (please add in order of appearance and include affiliations)**

Maricarmen Salas-López<sup>1</sup>, Carmen Josefina Juárez-Castelán<sup>1</sup>, Karina Corona-Cervantes<sup>1</sup>, Alberto Piña-Escobedo<sup>1</sup>, José Manuel Hernández-Hernández<sup>1</sup>, Martín Noé Rangel-Calvillo<sup>2</sup>, Claudia Pérez-Cruz<sup>3</sup> and Jaime García-Mena<sup>1</sup>.

<sup>1</sup>Departamento de Genética y Biología Molecular, Cinvestav, Av. Instituto Politécnico Nacional 2508, Ciudad de México 07360, México

<sup>2</sup>Hospital General “Dr. José María Rodríguez”, Ecatepec de Morelos, Estado de México, México

<sup>3</sup>Departamento de Farmacología, Cinvestav, Av. Instituto Politécnico Nacional 2508, Ciudad de México 07360, México

### **Abstract (300 words max.)**

Human milk is the perfect food for a newborn. It is mainly composed 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, to colonize the intestine of the neonate by vertical transference during lactation. In recent reports, archaea have been cultivated from human milk; however, their taxa composition is not well characterized, and it is unclear if as occurs with bacteria, they are vertically transmitted. Also, their role in health remains to be elucidated. In this study, we sought to characterize the diversity of the archaeal community by next-generation sequencing of V5-V6 regions of the 16S-rRNA gene from colostrum and fecal samples of 42 mothers and neonate pairs. It was hypothesized that the archaeal community diversity present in the colostrum samples would be similar to the diversity in the neonate feces, supporting the hypothesis that vertical transfer occurs during lactation. Our results indicate that alpha diversity differences between groups are significant, possibly due to the difference in the milieu which is the source of the samples. The beta diversity analysis disclosed that the two samples' microbial diversities are similar. Relative abundance results show a dominance of the archaeal genera *Methanoculleus* and *Methanosarcina* in both fecal and colostrum samples. Additional analyzes revealed 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, giving the idea that these archaea may be specifically selected to fulfill an important role in the newborn intestine. Acknowledgements. Work supported by CONACyT 163235 INFR-2011-01 and CONACyT FORDECYT-PRONACES/6669/2020\_Programa Presupuestario F003-Ciencia de Frontera 2019.



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To whom it may concern,

This letter is to confirm that Maricarmen Salas López (CINVESTAV, México) attended the **Having IMPACTT 3: Advancing Microbiome Research Symposium** on July 10-12, 2023 in Canmore, Canada and presented a poster titled *Characterization of the archaeal community of colostrum and fecal samples of Mexican mothers and newborns* (Poster 68). Maricarmen's abstract can be found on the IMPACTT website [here](#).

Kind regards,

**Sydney Morgan, PhD**  
*IMPACTT Education & Communication Coordinator*  
University of Calgary  
Calgary, Canada