Variation of the human milk bacterial diversity during the time of the day

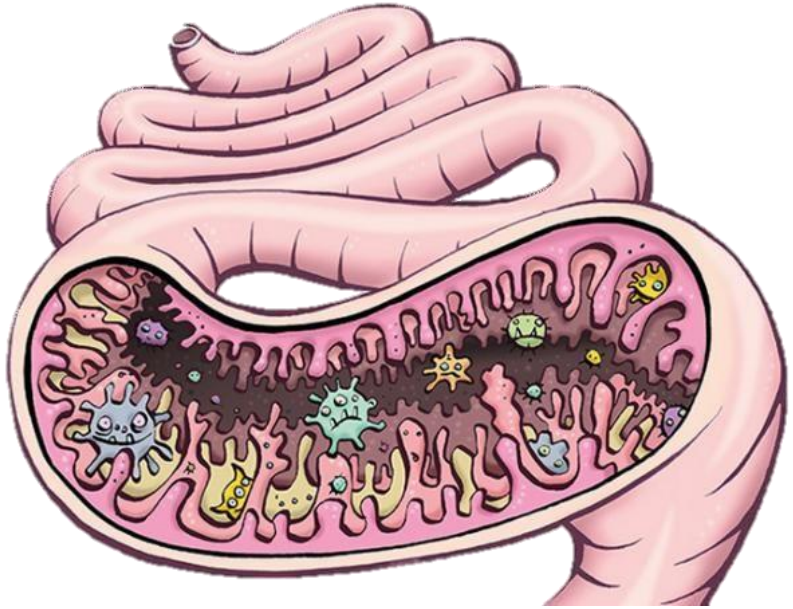
Karina Corona-Cervantes , Norma Gabriela Zavala-Torres, Rodrigo García- Gutiérrez , Alberto Piña- Escobedo, Fernando Hernández-Quiroz and Jaime García- Mena

Circadian rhythm

Present in almost every organism in respond to continuous change in light for the rotation of the planet around its axis

including…

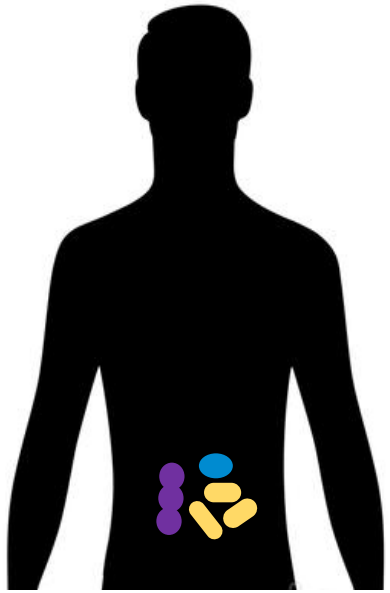
Gut microbiota



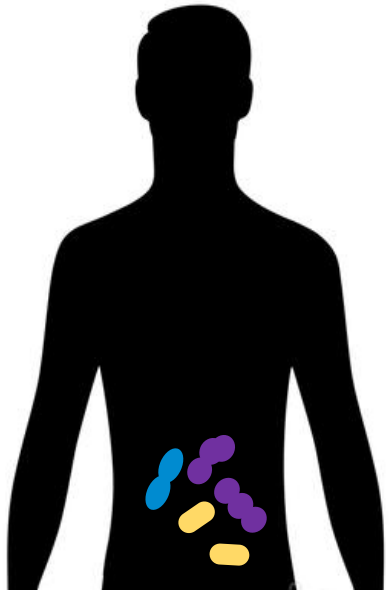
Oscillations trought the day

The gut microbiota composition and diversity are delicate to changes in the host like the circadian cycle

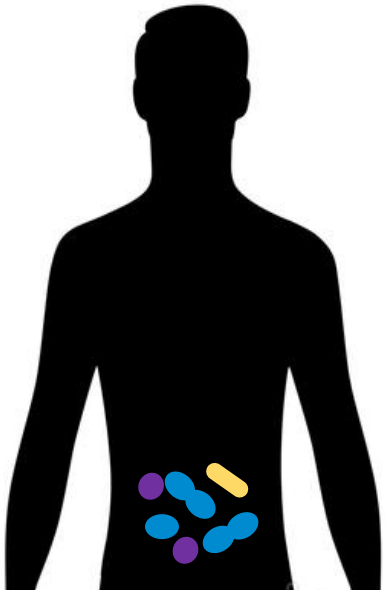
7:00 AM



3:00 PM

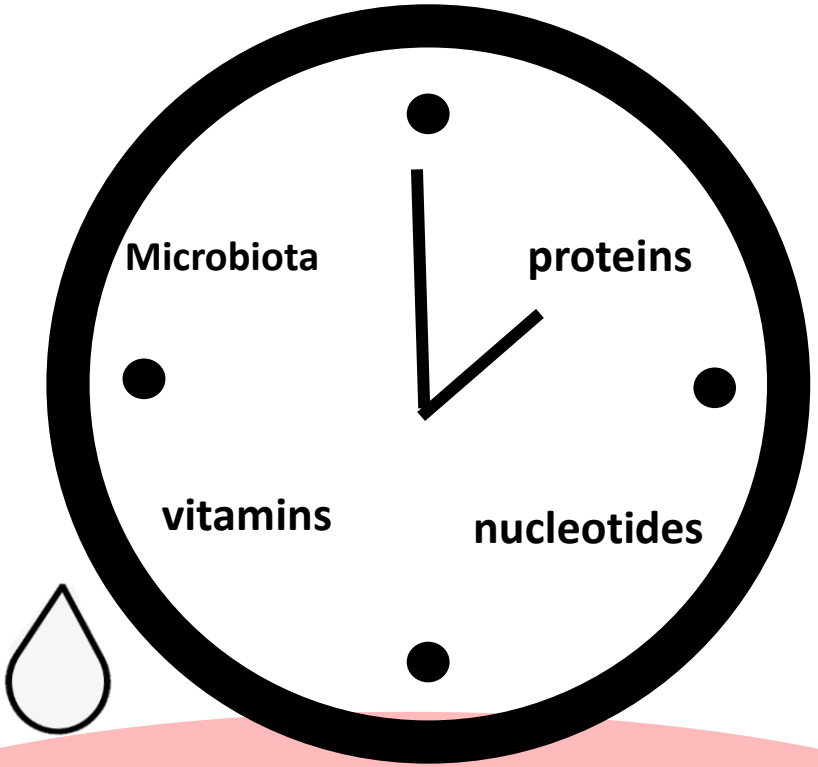


11:00 PM



Human milk variations

Human milk componentes undergo diurnal variations in the same way the gut microbiota does

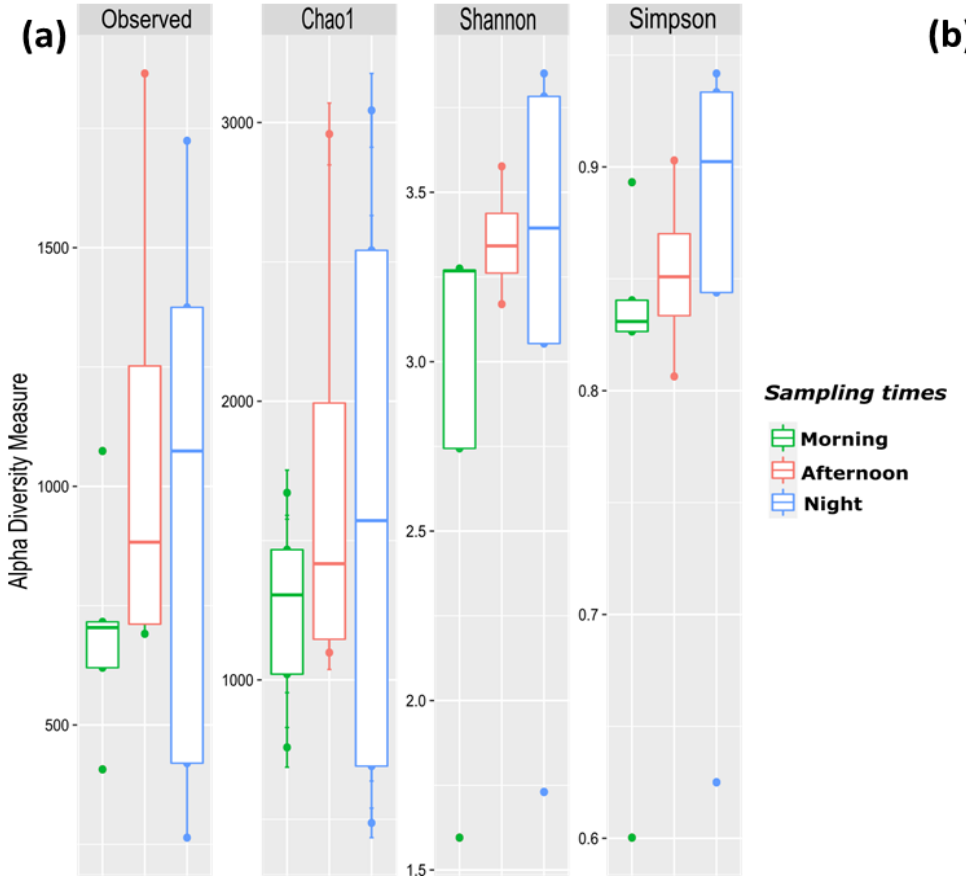


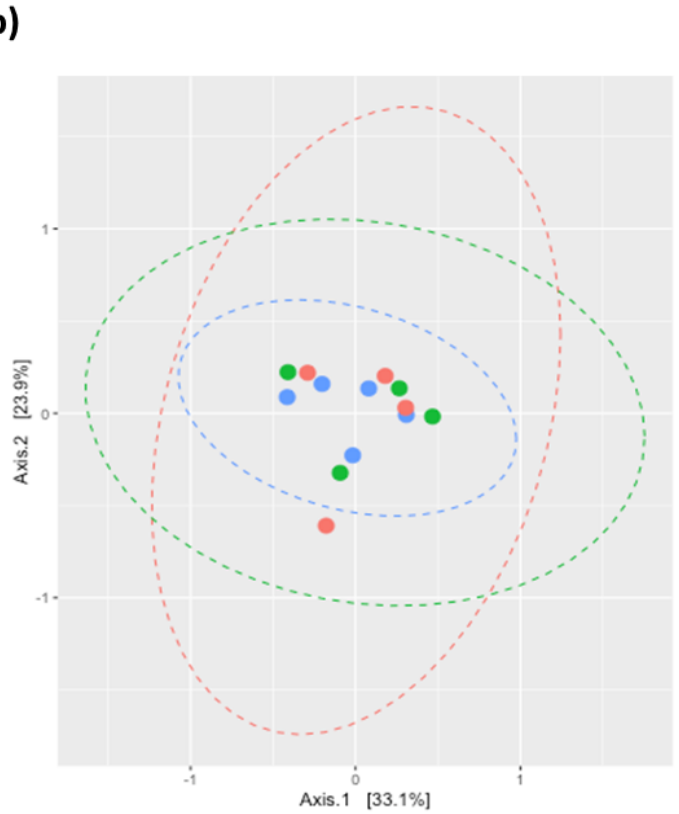
Objetive of the study

Is not well understood the relationship of the variation of the bacterial diversity in the human milk in a different hour of the day

The aim of this work is to characterize the bacterial community in the human milk of a single women over the course of the day and to identify the possible changes in the bacterial composition and diversity in the human milk microbiota

Human milk diversity according times pf sampling in the day

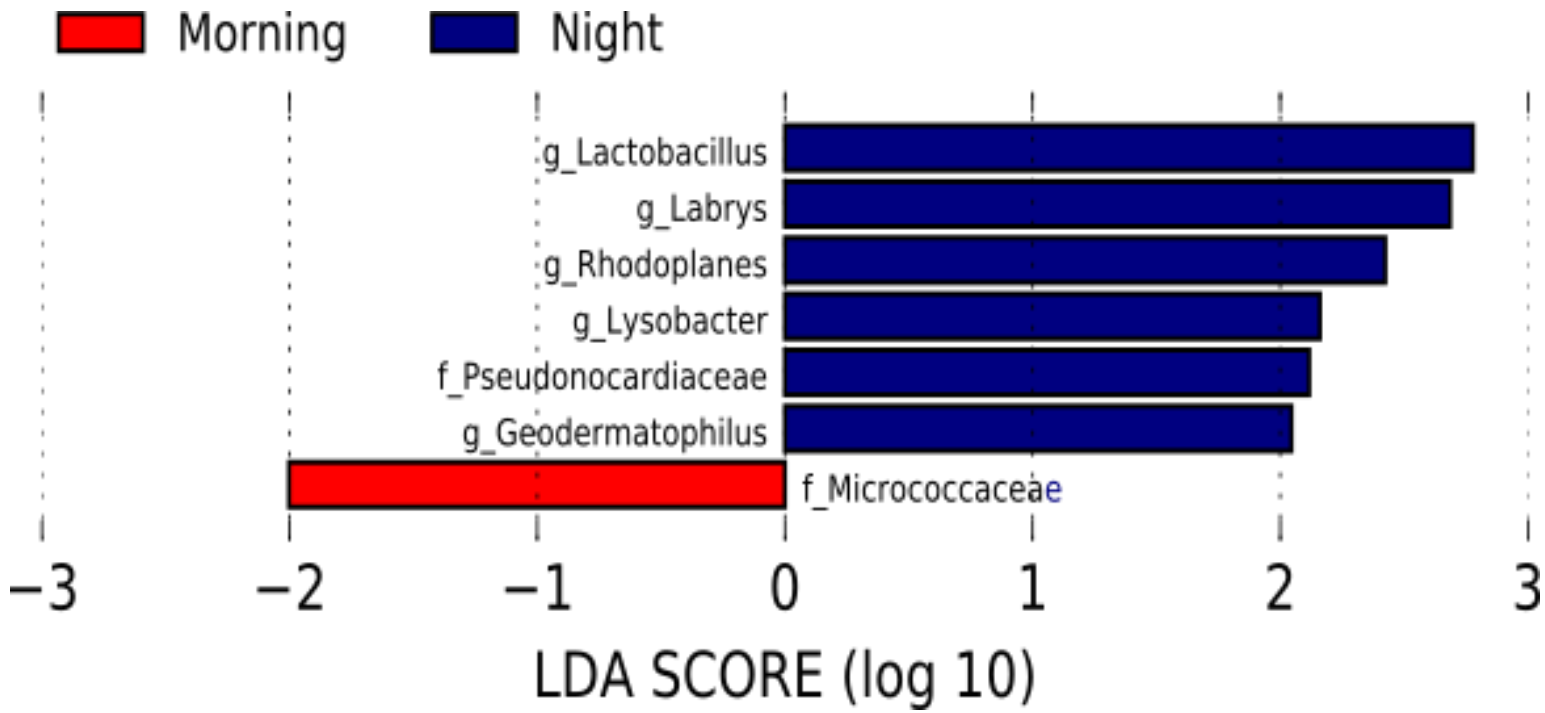




alpha and beta diversity

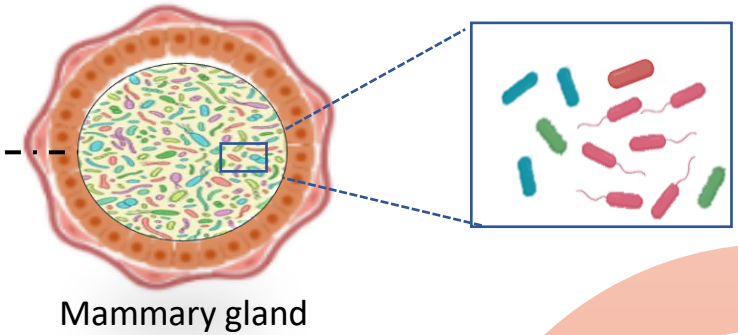
No differences were observed in the bacterial composition or diversity (alpha and Beta diversity) in the afternoon group compared with the morning and night groups

Diferences relative abundance



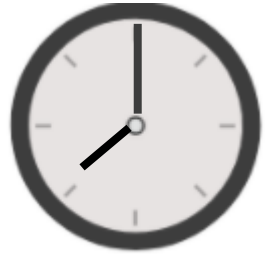
Represented significant bacterial taxa for each time of the day, comparison of differentially abundant bacterial taxas between human milk morning samples and night samples.

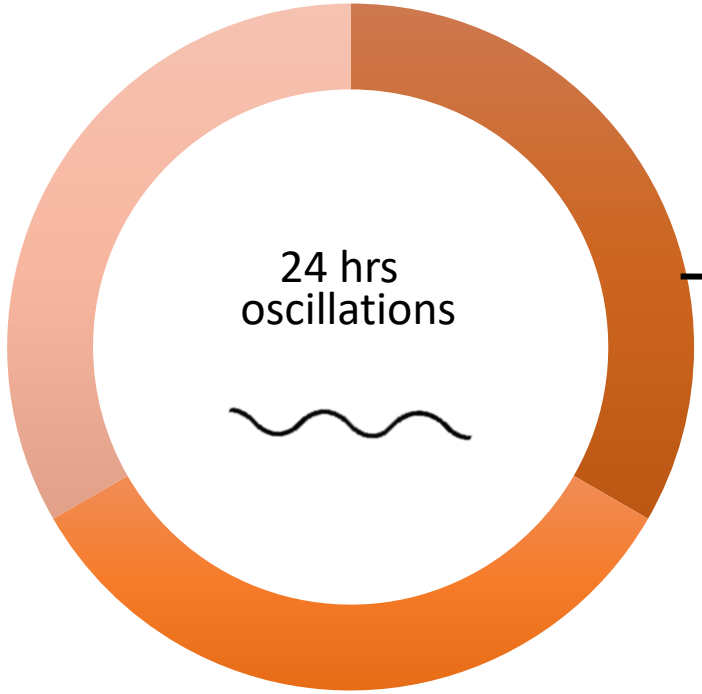
Breastfeeding



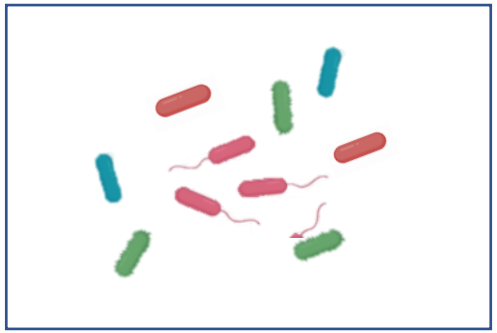
Mammary gland

Morning

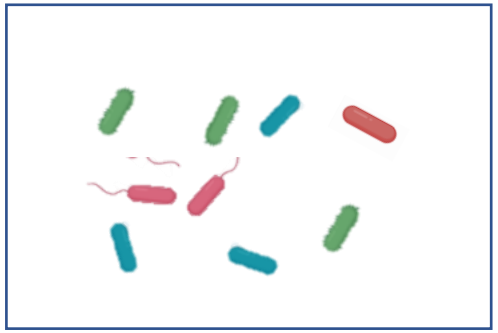


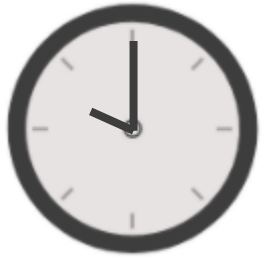


Afternoon



Night





Conclusions

As some of the human milk components, the human milk microbiota seems to be affected by the daytime changes. The results presented in this work suggest that the milk microbiota exhibits diurnal fluctuation resulting in time of day-specific taxonomic arrangement, however it is necessary more samples for obtain more conclusive results