

# The impact of host-genetics on the microbiota, health and development of *L. vannamei*

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## Abstract:

There is growing evidence on the importance of the gut microbiota to improve and maintain the host's health. However, the influence of the host genome on the microbiota composition is still unexplored.

To study this association on shrimp under aquaculture conditions, we used 16S rRNA amplicon sequencing to characterize the hepatopancreas and gut microbiota of two genetically different populations of *L. vannamei* shrimps collected from three ponds of a shrimp hatchery in Mexico.

We observed that the organ was the first variable that impacts the microbiota composition, followed by the host genetics. Further, the genetic line also influenced the functions associated with the microbiota. Interestingly, the first genetic line showed a functional profile similar to wild-type shrimps, while the second genetic line showed functions related to xenobiotics degradation.

These observations can help better understand the shrimp's development and provide clues for better management of shrimp under aquaculture conditions.