Herbmedotcin: An Antimicrobial Material Used for Controlling Pathogenic Vibrio in Hatchery-Reared White Shrimp

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Abstract

Vibrio spp. are widespread in aquaculture environments, especially in white shrimp (*Litopenaeus vannamei*) farming. Certain pathogenic strains can cause significant tissue damage to the hepatopancreas, intestines, and gills. *Vibrio parahaemolyticus* is known to cause Acute Hepatopancreatic Necrosis Disease (AHPND), while Highly Lethal *Vibrio* Disease (HLVD) is an emerging threat that further endangers shrimp production.
While conventional water quality management and *Vibrio* detection systems are essential, proactive strategies that reduce harmful *Vibrio* populations are increasingly important. Lowering the environmental burden of these pathogens helps mitigate disease risk and supports healthier shrimp development.

Herbmedotcin is a novel microbial control agent that combines natural antimicrobial compounds with advanced formulation technologies. This enhances the bioavailability and efficacy of its active ingredients, enabling them to function effectively in complex aquaculture microbial ecosystems.

In vitro studies have shown that Herbmedotcin inhibits a broad spectrum of *Vibrio* strains, including key pathogens. When administered via feed or directly into culture water, it significantly reduces *Vibrio* density, improving shrimp survival rates, production efficiency, and product quality.
In conclusion, diseases such as AHPND and HLVD remain critical concerns in shrimp aquaculture. Integrating microbial control solutions like Herbmedotcin with early detection and water quality management provides a more precise, proactive approach to disease prevention. It contributes to the sustainability of shrimp farming operations.

Keywords: Herbmedotcin, Pathogenic Vibrio, Acute Hepatopancreatic Necrosis Disease (AHPND), Highly Lethal Vibrio Disease (HLVD), Antimicrobial Material

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