

## Documents

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**Virulence factors and mechanisms of *Aeromonas hydrophila* infection in catfish Siluriformes: a review and bibliometric analysis**

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**Abstract**

*Aeromonas hydrophila*, a gram-negative bacterium belonging to the Aeromonadaceae family, has significantly impacted global catfish production within the Siluriformes family, resulting in economic losses. Despite being recognized as part of the normal flora found in water systems and fish organs, the pathogenicity of *A. hydrophila* is often activated by the expression of virulence genes encoding toxins. To systematically gather reliable scientific studies on the virulence of *A. hydrophila* in catfish Siluriformes, the PRISMA method was employed, utilizing the Scopus database. Following the application of inclusion and exclusion criteria, a total of 66 documents were scrutinized, and a bibliometric analysis was conducted using VOSviewer. Based on the keyword analysis, aerolysin toxin emerged as the most prevalent virulence factor, appearing in 64% (n = 42) of the papers, followed by hemolysin, enterotoxin, and biofilm. The analysis also revealed that the primary organs associated with infection were the kidney and liver, recognized as immune secretion organs, followed by the gills, intestine, skin, and mucus, identified as entry points. The major clinical signs of *A. hydrophila* infection included hemorrhage, lesion, ulceration, and septicemia. This study elucidates the scientific consensus on the infection mechanisms of *A. hydrophila*, covering entry points, adherence, and invasion. The ranked entry points and virulence factors identified herein offer valuable insights for designing novel treatments or preventive measures in catfish farming. © 2023 Desalination Publications. All rights reserved.

**Author Keywords**

Aerolysin; *Aeromonas hydrophila*; Catfish; Siluriformes; Virulence; VOSviewer

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