

Novel Antimicrobial Peptides from the Histone H1 of *Carassius auratus*

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In innate immunity, antimicrobial peptides (AMPs) are important effector molecules, and exhibit broad-spectrum antimicrobial activities. Fish have evolved to thrive in an aqueous environment with a rich microbial flora and are presumed to use their innate immune system as the first line of defense against microbial invasion. In this presentation, we report new histone H1 antimicrobial peptide from goldfish, *Carassius auratus*. We designed 3 pairs of primers based on the previous antimicrobial peptide sequences from fish (histone H1 from *Salmo gairdneri*, piscidin 1 from hybrid striped bass, and a family of pleurocidin like peptide from winter flounder) and performed reverse transcriptase-polymerase chain reaction (RT-PCR) to obtain potential antimicrobial peptides from isolated total RNA of blood cells of *C. auratus*. Among several obtained PCR products, we identified novel histone H1 coding sequence of 576 bp and revealed it has 80% homology with amino acid sequence of histone H1 from *S. gairdneri* (*Salmon salar*), which had been demonstrated that it play an important role in the first line of salmon defenses against infectious pathogens and that while some histone fragments may have direct antimicrobial effects, others improve existing defenses.