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Bacteriophages therapy for the control of columnaris diseases in aquaculture

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Flavobacterium columnare is bacterial agent of columnaris diseases which is an acute to chronic bacterial infection in many commercially important fish species such as channel catfish (*Ictalurus punctatus Rafinesque*), carp (*Cyprinus carpio Linnaeus*), rainbow trout (*Oncorhynchus mykiss Walbaum*), tilapia (*Oreochromis spp.*) and goldfish (*Carassius auratus Linnaeus*). Effective disease control is quite important to prevent and then treat diseases before economic losses for aquaculture industry in Turkey. Recent biotechnology studies shows that bacteriophages can be used as bio control agents of bacterial pathogens in medical, veterinary and agriculture applications. Although vaccination, usage of probiotics and antibiotics are conventional methods to prevent or treat infections, bacteriophage therapy can also provide an alternative, cheap, safe and an environmental friendly approach to control diseases. In our study, we determined whether columnaris disease in carp (*Cyprinus carpio*) could be prevented by using bacteriophages in aquarium conditions similar to those on fish farm. We have isolated and characterized two lytic *F. columnare*-specific phages (PFlc-1 and PFlc-2) by using conventional microbiological methods and by looking their genomic sizes. Our trail results showed that phage therapy was very effective and valid at preventing and controlling disease in carp.

Biography

Ifakat Tulay Cagatay has completed her Master degree in Microbiology at Hacettepe University, Ankara, Turkey, in 1997 and PhD in Molecular Microbiology at Lincoln University, New Zealand, 2005. She has been working at Akdeniz University as a Researcher and Lecturer. Recently, she and her group are working on bacterial fish diseases projects and also lecturing microbiology, genetics, molecular biology and marine microbiology.

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