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A gene may functionally associated with reovirus infection in grass carp

Yaping Wang, Rong Huang, Xiaojun Kang, Libo He, Lanjie Liao, Yongming Li and Zuoyan Zhu
Chinese Academy of Sciences, China

Grass carp (*Ctenopharyngodon idellus*) is the most dominate farming species with annual yield of 4.6 million tons, accounting for 15.6% of global freshwater aquaculture production. However, this business is suffering heavy losses from hemorrhage disease that is caused by grass carp reovirus (GCRV) infection. Here, we carried out a whole genome expression profile study in which 296 genes displaying significantly elevated expression in gills, intestine, liver and spleen of the grass carp in the first day after reoviral infection. Pooled DNA from 100 viable or dead fries after a full sib GCRV challenge were subjected to PCR amplification and Illumina sequencing. Of the 296 genes, allele frequency comparison revealed that the expression level of the eight genes showed significant differences between two pools. Based on the parental genomic sequences, the polymorphic SNP loci within these eight genes were selected and genotyped in the 100 surviving samples. Fitness of chi-square test demonstrated that four genotypes of a gene (*g094*) significantly deviated from Mendelian ratio; with the TAG/TAG genotype being the most dominant one. Interestingly, the survival rate of the TAG/TAG genotype carriers after the GCRV infection was two times more than that of their siblings. These results suggest that the *g094* in the grass carp may functionally associated with the GCRV.

Biography

Yaping Wang has completed his PhD from Institute of Hydrobiology, Chinese Academy of Sciences (IHB, CAS) in 2000. He has published more than 50 papers in reputed journals. He was elected as academician of Chinese Academy of Sciences in 1997 and elected as Academician of the Third World Academy of Sciences (TWAS) in 1998. Currently, still he works at IHB and serves as President of China Association for International Science and Technology Cooperation. He has published more than 100 papers in reputed journals and has been serving as the chief editor of *Science in China and Chinese Science Bulletin*.

wangyp@ihb.ac.cn

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