Xinzhong Wu et al., J Aquac Res Development 2016, 7:11(Suppl)
http://dx.doi.org/10.4172/2155-9546.C1.011



# Response of the oyster *Crassostrea ariakensis* environmental stress under experimental conditions

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The oyster *Crassostrea ariakensis* is an important bivalve species cultured in southeastern China. In the year of 2004, farmed oyster *C. ariakensis* in Hailing Bay, GuangDong province of China had suffered from mass mortalities in autumn and winter. When analyzing the weather data of this area, we found it has been exposed to severe aridity. In this study, by pathological observation, the haemocytes in oyster were found present less than normal. By studying the haemocytes producing Reactive Oxygen Species (ROS) and percentage of haemocytes apoptosis of oyster cultured in higher temperature and salinity, it was found that the oysters in higher salinity and temperature could produce more ROS and present more haemocytes apoptosis than those cultivated in lower temperature and salinity. Subsequently, some cloned oyster innate immunity related genes and transcription level under different salinity and temperature were investigated by real-time PCR. It was found the gene galectin was extremely significantly up-regulated and met was very distinctly down-regulated from the oyster cultivated in higher salinity and temperature. It can be inferred that the higher temperature and salinity could induce oyster *C. ariakensis* producing more ROS, and then ROS could result in oyster haemocytes apoptosis and impairing the innate immunity and finally leading oysters to fatal death.

## Biography

Xinzhong Wu is currently a Professor at Qinzhou University and Dean of Ocean College, Qinzhou University China. He is a Scientific Researcher in Marine Mollusc Disease, and Mollusc and Fish Immunology. He has published about 46 papers in English reputed journals and more than 60 papers in Chinese. Now, he is the 11th council member of Asian Fisheries Society and the Chair of Workshops, Symposia and Training Committee of AFS, the Councilor of Federation of Asian Biotech Association, member of Steering Committee of the World Oyster Society, Councilor of the China Society of Fisheries and Councilor of the Chinese Society of Oceanography. He served as Editorial Board Member in several journals of China and international journals.

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