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The hematopoiesis in gill and its role in the immune response of Pacific oyster *Crassostrea gigas* against secondary challenge with *Vibrio splendidus*

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1       **The hematopoiesis in gill and its role in the immune response of**  
2       **Pacific oyster *Crassostrea gigas* against secondary challenge with**  
3       ***Vibrio splendidus***

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12  
13       **Abstract**

14       Increasing evidences have demonstrated that the invertebrate gill is a  
15       predominant tissue participating in the immune response during pathogen challenge.  
16       In the present study, the hematopoiesis and immune activities in gill of Pacific oyster  
17       *Crassostrea gigas* were investigated. Stem-like cells with big nuclei and thin  
18       cytoplasm were found in the tubules of gill filaments, where DNA synthesis is active  
19       and hemocytes production are exuberant. The oysters primarily stimulated by  
20       formaldehyde-killed *Vibrio splendidus* exhibited stronger immune responses and

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