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*Publication date:*  
2011

*Document Version*  
Early version, also known as pre-print

[Link back to DTU Orbit](#)

*Citation (APA):*

Henriksen, M. M. M., Kania, P., Madsen, L., Buchmann, K., & Dalsgaard, I. (2011). *Immune response in rainbow trout against infection with Flavobacterium psychrophilum*. Abstract from 15th International Conference on Diseases of Fish and Shellfish, Split, Croatia.

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## **Immune response in rainbow trout against infection with *Flavobacterium psychrophilum***

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The fish pathogen *Flavobacterium psychrophilum* is one of the main causes of mortality in farmed rainbow trout and other salmonid fish. An infected farm can expect mortality rates around 50-60% in fry and 2-10% in juvenile fish within few weeks. Presently no commercial vaccine exists, and fish farmers control the disease with antibiotics. The pathogen has a limited ability to cause disease in an experimental setting without applying a stressor.

A bath-model using 150mg/L H<sub>2</sub>O<sub>2</sub> for 60 minutes as a stressor was used on 1.4g rainbow trout fry in four experimental groups: 1) no H<sub>2</sub>O<sub>2</sub>/no bath infection, 2) H<sub>2</sub>O<sub>2</sub>/no bath infection, 3) no H<sub>2</sub>O<sub>2</sub>/ bath infection and 4) H<sub>2</sub>O<sub>2</sub>/ bath infection. Bath infections were carried out in 10<sup>7</sup> CFU/ml *F. psychrophilum* bath solution and control groups were bathed in sterile medium. Samples from all internal organs, head and skin were taken before pathogen exposure and 4 hours, 2 days, 5 days, 8 days and 17 days after exposure. The samples will be used for examining the gene expression in rainbow trout related to infection with *F. psychrophilum* and results will be presented. Furthermore, antibody production will be assessed using ELISA on serum samples. The results will be used in order to optimize vaccination or immune-stimulation.