



|                  |  |
|------------------|--|
| Title            | IMMUNE RESPONSES OF RAINBOW TROUT AGAINST VIBRIO ANGUILLARUM : MEASUREMENT OF MACROPHAGE ACTIVITY BY CHEMILUMINESCENCE |
| Author(s)        | YAMADA, Fumitaka   |
| Citation         | Japanese Journal of Veterinary Research, 34(2), 166-166  |
| Issue Date       | 1986-04-30   |
| Doc URL          | <a href="http://hdl.handle.net/2115/3013">http://hdl.handle.net/2115/3013</a>  |
| Type             | bulletin (article)   |
| File Information | KJ00002374420.pdf  |



[Instructions for use](#)

IMMUNE RESPONSES OF RAINBOW TROUT AGAINST *VIBRIO ANGUILLARUM*:  
MEASUREMENT OF MACROPHAGE ACTIVITY BY CHEMILUMINESCENCE

Fumitaka YAMADA

*Department of Epizootiology  
Faculty of Veterinary Medicine  
Hokkaido University, Sapporo 060, Japan*

It is known that phagocytes participate in the host defense against bacterial infection in fish as well as in mammalian and avian species. In the present study, the author investigated the role of macrophages of rainbow trout against the infection with *Vibrio anguillarum* by measuring the chemiluminescent (CL) reaction of the macrophages.

1. Normal macrophages from the peritoneal cavity, head kidney, spleen and peripheral blood exhibited CL reaction against *V. anguillarum* and zymosan. However, lymphocytes did not exhibit any CL reaction.

2. The macrophages stimulated with viable *V. anguillarum*, regardless of the treatment of the bacteria with rainbow trout complement, exhibited a strong CL reaction. By contrast, the macrophages stimulated with formalin-inactivated bacteria treated with complement showed a low and slow process of CL reaction. However, the macrophages did not respond to inactivated bacteria untreated with complement.

3. The macrophages of fish vaccinated with inactivated *V. anguillarum* emulsified in Freund's complete adjuvant showed an increased CL reaction seven days after vaccination when compared to that of unvaccinated fish. Though serum agglutinins were not detected in fish at this stage, 3/5 and 4/4 of the fish resisted challenge with *V. anguillarum*.

The results of the present study indicate that the activity of macrophages of rainbow trout increases within a short period of time after immunization, and the macrophages play a role in host defense before protective humoral immunity is established.