

## The effect of acute and sub-acute pathogenicity Lactococcosis on hematological parameters and some parameters of innate immune response of infected rainbow trout (*Oncorhynchus mykiss*)

Takavar Mohammadian<sup>1\*</sup>

Mina Tahmasebi<sup>2</sup>

Mohammad Khosravi<sup>3</sup>

Mehdi Pour mehdi<sup>4</sup>

1. Assistant Professor,  
Department of Clinical Sciences,  
Faculty of Veterinary Medicine,  
Shahid Chamran University of  
Ahvaz, Ahvaz, Iran

2. DVM Graduated of Veterinary  
Medicine, Shahid Chamran  
University of Ahvaz, Ahvaz, Iran

3. Assistant Professor,  
Department of Pathobiology,  
Faculty of Veterinary Medicine,  
Shahid Chamran University of  
Ahvaz, Ahvaz, Iran

4. Associate Professor,  
Department of Food Hygiene,  
Faculty of Veterinary Medicine,  
Shahid Chamran University of  
Ahvaz, Ahvaz, Iran

\*Corresponding author:

tak.mohammadian@gmail.com

Received date: 2018/01/01

Reception date: 2018/07/15

### Abstract

The aim of this study was to evaluate the symptoms, variation of hematological parameters and some parameters of innate immune response of rainbow trout (*Oncorhynchus mykiss*) infected with chronic and acute forms of *Lactococcus garvieae*. The total of 270 Fish were allocated to three groups included *Lactococcus garvieae* acute infection, *Lactococcus garvieae* chronic infection and a control group without infection. Acute group was injected with 80% of LD<sub>50</sub> and chronic group was injected with 40% of LD<sub>50</sub> via intra peritoneal route.. Blood and tissue (brain, head kidney and spleen) samples were collected from each group (n=6 fish) at 0, 1, 3, 14 and 21 days after treatment. In tissues analyzing, lethargy, exophthalmia, ascites and high mortality were seen. The activity of serum lysozyme and myeloperoxidase significantly ( $P<0.05$ ) induced in treatment groups. Results indicated that hematocrit and hemoglobin levels decreased in treatment groups ( $P<0.05$ ); white blood cells clearly increased in treatment groups. According to these results, acute infection of rainbow trout with *Lactococcus garvieae* in comparison to chronic infection cause more variations on hematological and immunological parameters; whoever in chronic group the symptoms and change the noted parameters were documented.

**Keyword:** *Oncorhynchus mykiss*, *Lactococcus garvieae*, Clinical sign, Innate immune.