

**An experimental study to evaluate pathogenicity of *Yersinia ruckeri* isolated from rainbow trout (*Oncorhynchus mykiss*) in Caspian trout (*Salmo caspius*)**

**ABSTRACT**

The main objective of this study was to evaluate the pathogenicity of isolated *Yersinia ruckeri* from Caspian trout. *Y. ruckeri* specimens were isolated from infected rainbow trout farms located in north of Iran. The identification was confirmed by biochemical tests and 16s rRNA gene sequencing. The pathogenicity test was carried out to determine the virulence of the *Y. ruckeri* by IP injection, and histopathological and hemato-biochemical changes were evaluated pre and post challenge. Based on the results, LD50 were calculated as  $1 \times 10^5$  CFU ml<sup>-1</sup>, while  $1 \times 10^7$  CFU ml<sup>-1</sup> caused 100% mortality after 10 days in the experimental groups. The main histopathological changes were seen in liver, kidney, spleen and intestine, including erosion and necrosis, infiltration of inflammatory cell, hyperplasia and catarrhal enteritis in the infected organs. Also, a significant decrease in glucose, RBC counts, Hb values and HCT percentage and significant increase in the WBC counts, neutrophils percentage, AST, ALP and LDH values were observed in infected fish after challenging. Finally, Caspian trout is susceptible to Yersiniosis and can play important role in transmission of *Y. ruckeri* to cultured and wild fish.

**Keyword:** Caspian trout; *Yersinia ruckeri*; Pathogenicity; Hemato-biochemical changes; Histopathological changes