The disease outbreak occurred in rainbow trout (15-107g) at an average water temperature of 13.5°C during September-December 2012. The cumulative mortality rate was approximately 15% within 4 months. The most typical symptoms in infected fish were marked mono and bilateral exophthalmos, opacity and thickening, along with pseudomembrane formation in swim-bladder and bulbus arteriosus walls described for the first time during an epizootic outbreak of lactococcosis, petechial and focal haemorrhages in viscera, enlarged liver and spleen. 25 bacterial isolates from sick fish were identified as Lactococcus garvieae by morphological, physiological, and biochemical features and confirmed by PCR using species-specific primers. Furthermore, 16S rRNA gene of one isolate (KC4) was partially sequenced and showed 100% identity with the Genbank sequences of L. garvieae. According to the histopathological examination, severe panophthalmitis, peri and myocarditis and gastritis were described. Pathological findings were also observed in kidney and liver. Subcapsular and sinusoidal mononuclear cell infiltration and necrosis of the hepatocytes has not been described previously for lactococcosis. Moreover, this is the first report of a focal mononuclear cell infiltration in the lamina propria of stomach in some fish.

In conclusion, this study presents interesting and original data on the characterization of L. garvieae isolated from rainbow trout, particularly new histopathological observations.