

Original article

The *in vitro* effect of bovine lactoferrin on the activity of organ leukocytes in rainbow trout (*Oncorhynchus mykiss*), European eel (*Anguilla anguilla*) and wels catfish (*Silurus glanis*)

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Abstract

Lactoferrin (LF) is a glycoprotein found in milk, neutrophil granules, secretions and selected organs of mammals. Lactoferrin exhibits antibacterial, antiviral, fungicidal, immunoregulatory and other functions. Although fish are devoid of this protein and its cell receptors, LF effect on the immune mechanisms of fish has been demonstrated. The objective of this study was to investigate the effect of bovine lactoferrin, applied *in vitro*, on the activity of head kidney and spleen leukocytes in three freshwater fish species: rainbow trout (*Oncorhynchus mykiss*), European eel (*Anguilla anguilla*) and wels catfish (*Silurus glanis*). The obtained results validate LF beneficial effect on the respiratory burst of phagocytes in rainbow trout and wels catfish despite the fact that the potential killing activity against *Aeromonas hydrophila* was not stimulated in any of the studied species. Bovine lactoferrin enhanced the proliferation of T-lymphocytes in rainbow trout and European eel, as well as of B-lymphocytes in rainbow trout.

Key words: lactoferrin, fish leukocytes, *in vitro*