Effects of Dietary Nucleotide Yeast on Immune Responses and Antioxidant Enzyme Activities of Rainbow Trout Juveniles (*Oncorhynchus mykiss*)

Arzu Özlüer-Hunt¹*, Ferbal Özkan-Yılmaz², Mehmet Berköz³, Kenan Engin¹, Suna Gül Gündüz², Serap Yalın⁴

¹ Mersin University, Faculty of Fisheries, Department of Aquaculture, 33169, Mersin, Turkey
² Mersin University, Faculty of Fisheries, Department of Basic Sciences, 33169, Mersin, Turkey
³ Yuzuncu Yıl University, Faculty of Pharmacy, Department of Pharmaceutical Technology, Van, Turkey
⁴ Mersin University, Faculty of Pharmacy, Department of Biochemistry, 33169, Mersin, Turkey

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Abstract

This study aimed at demonstrating the effects of dietary supplementation of nucleotide yeast base protein (Nu-Pro®) (NP) on the antioxidant enzyme activities and immune response in liver and blood tissues of rainbow trout (*Oncorhynchus mykiss*). Fish with an average initial weight of 27.75±0.26 g were randomly assigned to four groups with three replicates. Throughout the 60 day grow-out period the control group was fed a fish meal based basal diet, and three other groups were fed diets in which 20 (NP 20), 40 (NP 40) and 60 % (NP 60) fish meal was substituted with nucleotide (Nu-Pro® (NP) yeast). There were no significant changes of superoxide dismutase (SOD) and catalase (CAT) activities in liver among the experimental groups. A significant decrease ($P<0.05$) in malondialdehyde (MDA) level of tissue was observed in all nucleotide supplemented groups when compared to the control group. Serum lysozyme (LYZ) and myeloperoxidase (MPO) activities and nitric oxide (NO) level of liver tissue were significantly ($P<0.05$) increased in fish fed with nucleotide yeast based protein diets. The results showed that the fish in all nucleotide supplemented groups showed significantly better antioxidant activity and immune responses.

* Corresponding author. Dr. Arzu Özlüer Hunt; Tel.: +90-324-3412815-1325, fax: +90-324-3413025, e-mail: huntarzu@hotmail.com; ahunt@mersin.edu.tr