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Effect of feeding Lipopolysaccharide as an immunostimulant on immune response and immune gene expression of *Labeo bata*

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Highlights:

- This study investigated the effects of dietary lipopolysaccharide (LPS) on immune response, immune gene expression of *Labeo bata*.
- Dietary LPS enhances the immunity and disease resistance in *L. bata*.
- The optimum requirement for LPS in feed of *L. bata* was estimated to be 100 mg Kg⁻¹.
- Short term feeding of LPS may help *L. bata* to overcome periods of increased disease risk.

Abstract:

This study investigates the effects of dietary lipopolysaccharide (LPS) as an immunostimulant on hematology, innate immunity, immune gene expression and protection against *Edwardsiella tarda* on *Labeo bata*. A basal diet supplemented with 0, 50, 100 and 150 mg LPS Kg⁻¹diet was fed to the four different groups for 30 days. The haematological (total erythrocyte count, total leukocyte count, total serum protein, albumin and globulin), innate immune parameters (respiratory burst, serum lysozyme, myeloperoxidase and serum bactericidal activity), immune gene expression (C3, β -2 microglobulin, lysozyme g, transferrin, IFN-1, IFN- γ) were monitored at 7th, 15th, 30th day and one day post challenge (DPC) with *E. tarda*. All the studied haematological, innate immune parameters and expression of immune gene increased

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