

## Modulation of Lipopolysaccharide Induced Interleukin-17F and Cyclooxygenase-2 Gene Expression by Echinacea purpurea in Broiler Chickens

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**Abstract :** This study was conducted to evaluate the effect of *Echinacea purpurea* on the expression of cyclooxygenase-2 (COX-2), interleukin-17F (IL-17F) in seven-day-old broiler chickens. Four groups were fed with concentration of 0 g/kg, 5 g/kg, 10 g/kg and 20 g/kg from the root of *E. purpurea* in the basal diet and two other groups were only fed with the basal diet for 21 days. At the 28<sup>th</sup> day, lipopolysaccharide (LPS, 2 mg/kg diet) was injected in four groups and the basal diet group was injected by saline as control. The chickens' spleen RNA expression was measured for the COX-2 and IL-17F genes by Real-Time PCR. The results have shown that chickens which were fed *E. purpurea* had a lower COX-2 and IL-17F mRNA expression. The chickens who have received LPS only, lymphocyte was lower than other treatments. Vital organ weights were not significantly different, but body weight loss was recovered by dietary herbs inclusion. The results of this study have shown the positive effect of an anti-inflammatory herb to prevent the undesirable effect of inflammation.

**Keywords :** broiler chickens, Echinacea purpurea, gene expression, lipopolysaccharide

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