



Review Article

## Efficacy of Levamisole as Non-Specific Immunomodulator: A Review

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### ABSTRACT

Levamisole is a non-specific immunostimulator can enhance both the humoral and cellular immunity in vaccinated hosts. When the vaccinated hosts are administered with levamisole then the activity of immune effector cells also markedly increased.

**Keywords:** Immunity, Levamisole, Non-specific Immunostimulant

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### 1. Introduction

Levamisole is a broad spectrum anthelmintic which functions in a manner similar to thymopoietin, a thymic hormone. It stimulates T-cell differentiation and T-cell response to antigens. It also elicits cell-mediated cytotoxicity, lymphokine production, phagocytosis by macrophages and neutrophils. Levamisole may therefore be

of assistance in the treatment of chronic infections and neoplastic diseases, but may exacerbate disease caused by excessive T-cell function [1, 2]. Cattle, sheep, goat, pig, chicken, mice, fish treated with levamisole show enhanced cellular and humoral immune response providing protection against different types of bacterial and viral infections [3].

## 2. Efficiency of levamisole as immunostimulant in small ruminants and poultry

Sheep administered with levamisole @ 2.5mg/kg body weight at repeated doses prior to blue tongue virus (BTV) vaccination and levamisole showed good anthelmintic and immunostimulating properties [4]. Levamisole acts as a non-specific immunostimulant increased the level of immunoglobulin in colostrum and in cell-mediated and humoral immune response [5]. Levamisole can be used in

small ruminants as a non-specific immunostimulator in a concentration of 2.5 mg/kg [6]. Levamisole had immunostimulating effect in turkey when administered together with the CU strain of *Pasteurella multocida*. Vaccinated turkeys treated with levamisole had persistent higher systemic humoral immunity and cell-mediated immune responses than turkeys administered with the vaccine [7].

## 3. Conclusion

Levamisole as a non-specific immunomodulator when administered with vaccine it significantly raises the immune

system activity in immunologically challenged hosts. So, the level of immunity also increases.

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